Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision and RCRA Statement of Basis

Spaulding Composites Site
Operable Unit Nos. 1 to 4
Tonawanda, Erie County, New York
Site Numbers 9-15-050B & E

March 2003

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

DECLARATION STATEMENT - RECORD OF DECISION AND RCRA STATEMENT OF BASIS

Spaulding Composites Inactive Hazardous Waste Disposal Site
Operable Unit Nos. 1 to 4
Tonawanda, Erie County, New York
Site Nos. 9-15-050B & E

Statement of Purpose and Basis

The Record of Decision (ROD)/Statement of Basis (SOB) presents the selected remedy for the Spaulding Composites site, a Class 2 inactive hazardous waste disposal 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 Spaulding Composites inactive hazardous waste disposal site, and the public's input to the Proposed Remedial Action Plan (PRAP)/Statement of Basis (SOB) 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/SOB.

Assessment of the Site

Actual or threatened releases of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD/SOB, presents a current or potential significant threat to public health and/or the environment.

Description of Selected Remedy

Based on the results of the Remedial Investigation/RCRA Facility Investigation (RI/RFI) and the Feasibility Study/Corrective Measures Study (FS/CMS) for the Spaulding Composites site, and the criteria identified for evaluation of alternatives, the NYSDEC has selected Excavation and Disposal for Operable Units 1, 2 and 4, and In-Situ Bioremediation for Operable Unit 3. The components of the remedies are as follows:

1. **Operable Unit 1:**

- Excavation of wastes and contaminated soils associated with the Resin Drum and Laminant Dust Landfills with disposal in an appropriate offsite facility.

- Excavation of contaminated sediments in the ditch adjacent to the Resin Drum Landfill. These sediments will be disposed of with the wastes and contaminated soils.

- Excavation will be to contaminant levels consistent with the goal of meeting Technical and Administrative Guidance Memorandum (TAGM) 4046 cleanup objectives.

- All excavated areas will be backfilled with clean soils and restored to grade.

2. <u>Operable Unit 2:</u>

- Excavation of PCB contaminated soils associated with three Sludge Settling Ponds, a Former Tank Farm, the Therminol Building and a Former Transformer Explosion Area with disposal in an appropriate facility.

- Excavation will be to contaminant levels consistent with the goal of meeting Technical and Administrative Guidance Memorandum (TAGM) 4046 cleanup objectives.

- All excavated areas will be backfilled with clean soils and restored to grade.

- Sampling and analysis of sediment in the K-Line storm sewer to evaluate how much contamination, if any, is present in the sewer. If contaminated, these sediments will be removed and disposed of with the contaminated soil from this operable unit.

- Continued operation of the on-site water treatment system following the remediation of Operable Unit 2 until PCBs are no longer detected in K-Line storm sewer waters. Treated water will continue to be sampled and analyzed during this time for compliance with the 65 parts per trillion (ppt) discharge limit for PCBs.

3. <u>Operable Unit 3:</u>

- In-Situ Bioremediation of volatile organic and petroleum contaminated soils associated with a Former Tank Farm and a Former Grinding Oil Tank.

- During design, a field test will be completed to evaluate the effectiveness of this alternative in remediating contaminated low permeability soils.

- During remediation, sampling and analysis of soil and groundwater will be conducted to evaluate the progress of the in-situ bioremediation program.

4. <u>Operable Unit 4:</u>

- Excavation of contaminated soils associated with the Lab Waste Storage Area, a Rail Spur, two Drum Storage Areas, a Bulk Chemical Unloading Area, a Zinc Chloride Sludge Container Storage Area, one Sludge Settling Pond and the Paper Sludge Application Area with disposal in an appropriate offsite facility.

- Excavation will be to contaminant levels consistent with the goal of meeting Technical and Administrative Guidance Memorandum (TAGM) 4046 cleanup objectives.

- All excavated areas will be backfilled with clean soils and restored to grade.

- Sampling and analysis of groundwater at AOC 45 (Rail Spur) following remediation to evaluate the effectiveness of soil removal activities on ground water contamination at this area of the site.

5. <u>Institutional Controls:</u>

- Imposition of a deed restriction will be required if warranted by residual soil or groundwater contamination remaining after remedial actions are completed. If determined necessary by NYSDEC, the deed restriction will require compliance with an approved soils management plan and prohibit site groundwater use. Annual certification to the NYSDEC will be required.

6. <u>Long-Term Groundwater Monitoring:</u>

- Long-term groundwater sampling and analysis of the former production well to further evaluate contamination in upper bedrock groundwater. If contaminant concentrations increase and exceed SCGs, the need to remediate this water will be evaluated.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedies selected for this site are protective of human health.

Declaration

The selected remedies are protective of human health and the environment, comply with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial actions to the extent practicable, and are cost effective. These remedies utilize permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfy the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

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Date

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Dale A. Desnoyers, Director
Division of Environmental Remediation

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March 2003

SECTION 1: SUMMARY OF THE RECORD OF DECISION AND STATEMENT OF BASIS

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), has selected a series of remedies to address the significant threat to human health and the environment created by the presence of hazardous waste at the Spaulding Composites Site. As more fully described in Sections 3 and 4 of this document, on-site disposal, on-site landfilling, leaking storage tanks and spills have resulted in the presence of numerous hazardous wastes at the site including polychlorinated biphenyl (PCB) oil, various raw chemicals that were utilized in former manufacturing operations and wastes that fail testing for hazardous waste characteristics. These disposal activities have resulted in the following significant threats to public health and the environment:

- a significant threat to human health associated with direct exposures to contaminated surface soils; and

- a significant threat to the Niagara River associated with the direct discharge of PCB contaminated water.

In order to restore the Spaulding Composites Site to predisposal conditions to the extent feasible and authorized by law, but at a minimum to eliminate or mitigate the significant threats to public health and the environment that the hazardous waste disposed at the Site has caused, the following remedies are selected for the Site:

- Operable Unit 1 - Excavation and Disposal. Under the selected remedial action for this operable unit (OU), wastes associated with the Resin Drum and Laminant Dust Landfills, and contaminated sediments from the drainage ditch adjacent to the Resin Drum Landfill, will be excavated and disposed of at an appropriate offsite disposal facility. All excavated areas will be backfilled with clean soils and restored to grade. Excavations will be to contaminant levels consistent with the goal of meeting Technical and Administrative Guidance Memorandum (TAGM) 4046 cleanup objectives.

- Operable Unit 2 - Excavation and Disposal. Under the selected remedial action for this OU, PCB contaminated soils associated with three Sludge Settling Ponds, a Former Tank Farm, the Therminol Building and a Former Transformer Explosion Area will be excavated and disposed of at an appropriate disposal facility. All excavated areas will be backfilled with clean soils and restored to grade. Excavations will be to contaminant levels consistent with the goal of meeting TAGM 4046 cleanup objectives.

Sampling and analysis of sediment in the K-Line storm sewer will also be required to evaluate how much contamination, if any, is present in the sewer. If contaminated, these sediments will be removed and disposed of with the contaminated soil from this operable unit.

In addition, the on-site water treatment system will continue to operate following the remediation of Operable Unit 2 until PCBs are no longer detected in K-Line storm sewer waters. Treated water will continue to be sampled and analyzed during this time for compliance with the 65 parts per trillion (ppt) discharge limit for PCBs.

- Operable Unit 3 - In-Situ Bioremediation. Under the selected remedial action for this OU, volatile organic and petroleum contaminated soils associated with a Former Tank Farm and a Former Grinding Oil Tank will be treated in-place by adding nutrients to stimulate biological activity that will degrade the contaminants. During design, a field test will be completed to evaluate the effectiveness of this alternative in remediating contaminated low permeability soils. During remediation, sampling and analysis of soil and groundwater will be conducted to evaluate the progress of the in-situ bioremediation program.

- Operable Unit 4 - Excavation and Disposal. Under the selected remedial action for this OU, contaminated soils associated with the Lab Waste Storage Area, a Rail Spur, two Drum Storage Areas, a Bulk Chemical Unloading Area, a Zinc Chloride Sludge Container Storage Area, one Sludge Settling Pond and the Paper Sludge Application Area will be excavated and disposed of at an appropriate offsite disposal facility. All excavated areas will be backfilled with clean soils and restored to grade. Excavations will be to contaminant levels consistent with the goal of meeting TAGM 4046 cleanup objectives.

Following remediation of the site, groundwater monitoring will be required to evaluate the effectiveness of the remedial actions and to ensure that human health and the environment remain adequately protected. Imposition of a deed restriction will be required if warranted by residual soil or groundwater contamination remaining after remedial actions are completed. If determined necessary by NYSDEC, the deed restriction will require compliance with an approved soils management plan and prohibit site groundwater use. Annual certification to the NYSDEC will be required.

Long-term groundwater sampling and analysis of the former production well will also be required to further evaluate contamination in upper bedrock groundwater. If contaminant concentrations increase and exceed standards, criteria and guidance values (SCGs), the need to remediate this water will be evaluated.

The selected remedies, discussed in detail in Section 7 of this document, are intended to attain the remediation goals selected for this site as described in Section 6 of this Record of Decision/Statement of Basis (ROD/SOB), in conformity with applicable SCGs.

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

The 46 acre Spaulding Composites Site is located at 310 Wheeler Street in the City of Tonawanda, Erie County, New York. The site is bounded by Dodge and Enterprise avenues and residential property to the north, Wheeler Street and a mix of commercial and residential properties to the east, Hackett Drive and commercial properties to the south, and Hinds Street and a mix of commercial and residential properties to the west (Figures 1 and 2). The topography of the site and the surrounding area is relatively flat, with most surface water runoff toward on-site drainage ditches and storm sewers. The Niagara River is located approximately one mile to the north, while Two Mile Creek is located approximately one mile to the west (Figure 1).

The Spaulding Composites Site has been subdivided into four Operable Units (OUs), each consisting of multiple Solid Waste Management Units and Areas of Concern. An Operable Unit is a term that defines a portion of the site that for technical or administrative reasons can be addressed separately to eliminate or mitigate a release, threat of release or exposure pathway resulting from site contamination. A Solid Waste Management Unit (SWMU) is a Resource Conservation and Recovery Act (RCRA) term that defines a discernible unit where solid or hazardous wastes have been placed at any time, or any area where solid wastes have been routinely and systematically released. An Area of Concern (AOC) is also a RCRA term, and defines an area not known to be a SWMU, where hazardous waste and/or hazardous constituents are present, or are suspected to be present, as a result of a release from the facility.

The Operable Units at the Spaulding Composites Site, with the included SWMUs and AOCs, are defined as follows:

OU1: Regulated Landfill Wastes

SWMU 7 Resin Drum Landfill (Site No. 915050B);
SWMU 8 Laminant Dust Landfill (formerly Site No. 915050C);

OU2: PCB-Contaminated Wastes

SWMU 11 Sludge Settling Pond (formerly Site No. 915050A);
SWMU 12 Sludge Settling Pond (formerly Site No. 915050A) and Former Fuel Oil Tanks;
SWMU 13 Sludge Settling Pond - South Area (formerly Site No. 915050A);
SWMU 23 Former Tank Farm Area;
SWMU 38 Therminol Building Area;
AOC 48 Transformer Explosion Area;

OU3: Petroleum Contaminated Wastes

SWMU 13 Former Grinding Oil Tank and Sludge Settling Pond - North Area (formerly Site No. 915050A);
SWMU 36 Former Tank Farm Area;

OU4: Multiple Contaminant Wastes

SWMU 3 Zinc Chloride Sludge Container Storage Area;
SWMU 5 Empty Drum Storage Dock;
SWMU 14 Sludge Settling Pond (formerly Site No. 915050A);
SWMU 26 Paper Sludge Land Application Area;
SWMU 35 Lab Waste Storage Area
AOC 45 Rail Spur;
AOC 46 Drum Storage Dock;
AOC 47 Bulk Chemical Unloading Area.

These operable units are shown on Figure 2, with the individual SWMUs and AOCs shown on Figure 3.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

Spaulding Composites (Spaulding) began operations as a manufacturer of vulcanized fiber, an early "plastic" made by treating paper with a zinc chloride solution. The paper used to produce vulcanized fiber was also manufactured at the site. During the late 1940s to early 1950s, the plant began production of composite laminates (Spauldite®) that were made by impregnating natural fibers with phenolic resins (and later, melamine and epoxy resins and synthetic fibers). Many of the phenolic resins used in the production of Spauldite® were manufactured on-site. In the fall of 1992 Spaulding ceased manufacturing operations at the site and commenced decommissioning activities of the plant. Spaulding, however, maintains a limited manpower staff at the site to: (1) operate an on-site water treatment system, and (2) maintain the facility (e.g., lawn mowing and security).

Contamination of site soils and groundwater (in limited areas) has resulted largely from bulk chemical and waste handling practices at the facility. These practices include: (1) historical leaks and spills (at least 17 incidents were reported between 1958 and 1994), (2) on-site waste disposal in pits excavated into native soils (the Resin Drum and Laminant Dust Landfills), and (3) the use of settling ponds (four settling lagoons were located throughout the site). In addition, a number of disposal pits were located inside plant buildings; these pits were cleaned during decommissioning activities following facility closure in 1992.

The following section provides an account of disposal practices at the site as they relate to specific Operable Units.

OU1: Regulated Landfill Wastes

The Resin Drum Landfill was utilized by Spaulding from February through September 1978 for the disposal of 750 drums of resin wastes. This landfill is approximately 50 feet by 70 feet in size and was excavated about 15 feet into native soils. The Laminant Dust Landfill was utilized by Spaulding from the fall of 1977 through September 1978 for the disposal of approximately forty (40) tons of fiberglass, asbestos, cellulose and resin dusts. This landfill is approximately 25 feet by 70 feet in size and was also excavated about 15 feet into native soils.

OU2: PCB-Contaminated Wastes

The Sludge Settling Ponds were excavated into native soils and were utilized from approximately 1930 to 1972 when they were reportedly decommissioned. PCBs found in the lagoons may have been contained in grinding wastes discharged to the lagoons, resultant of indirect stormwater runoff to the lagoons or from other unidentified discharges.

The Former Tank Farm Area included eight 10,000 gallon above ground steel tanks. While allegedly not utilized by Spaulding, residuals in five of the tanks, totaling approximately 3,000 gallons, consisted of an asphalt roofing material and thinner. These residuals were found to contain PCBs.

The Therminol Building housed a Therminol heat exchange unit utilized during the 1960s and 1970s as part of Spauldite® production. Oil containing 85% PCBs was the heat exchange media of the Therminol Unit. At times of system failure, PCB oils were discharged to the grounds adjacent to the Therminol Building or to floor drains discharging to the K-Line storm sewer serving the northwest portion of the facility. PCB contaminated waters continue to be generated from areas within and near the Therminol Building during rainfall events and associated storm water runoff. As discussed in Section 3.2, K-Line storm waters contaminated with PCBs are currently collected and treated on site prior to discharge to the Niagara River.

Sometime during the 1960s a transformer allegedly exploded outside the northwest portion of the plant, releasing PCB transformer oil to the ground surface.

OU3: Petroleum Contaminated Wastes

Spills and leaks of petroleum products occurred during operation of the Former Grinding Oil Tank and Former Tank Farm Area. Spills and leaks at the Former Grinding Oil Tank contaminated the north portion of the adjacent Sludge Settling Pond.

OU4: Multiple Contaminant Wastes

Numerous leaks and spills associated with the handling and storage of various bulk chemicals and wastes occurred at the facility when it was operating. These releases resulted in the contamination of several areas of the site including drum and bulk chemical storage areas, chemical unloading areas and a rail siding. Between 1983 and 1986, wet paper sludge was spread in a 5,000 square feet area (the Paper Sludge Application Area) south of the plant building and allowed to dry prior to disposal. Contaminants released from this practice impacted area soils.

3.2: Remedial History

In the late 1980s, a consultant under contract with the United States Environmental Protection Agency (USEPA) conducted a RCRA Facility Assessment (RFA) at the site. This assessment identified 36 Solid Waste Management Units (SWMUs) and several potential Areas of Concern (AOCs). Several of these SWMUs are included in the Registry of Inactive Hazardous Waste Disposal Sites in New York State (Registry). The RFA Report included a summary of the analytical data for site surface water, soil and groundwater that were obtained by NUS Corporation in April 1987 during a Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Site Investigation.

Spaulding has completed a number of remedial activities over the years to address contamination at the site. In the late 1970s the four settling lagoons (formerly Site Number 915050A; Class 5) were excavated and backfilled with clean fill. The contaminated sludge and soils were reportedly disposed of at Seaway Landfill in Tonawanda, New York. These lagoons were utilized from 1930 to 1972 to collect and settle out wet grinding wastes. Due to the limited documentation available regarding this removal activity, these lagoons were further evaluated during the RI/RFI.

In August 1985 the Zinc Chloride Sludge and Drum Landfill (Site Number 915050D; delisted) was excavated. This area was a 60 cubic yard landfill located beneath the plant floor inside the main plant building and contained zinc chloride sludge contaminated with cadmium and lead, drummed lab chemicals and resin solvent mixtures. The pit was backfilled and a new concrete floor installed over it.
That same year Spaulding removed lead contaminated zinc hydroxide sludge from the Zinc Hydroxide Sludge Storage Tank (SWMU 24). The sludge was disposed of at a permitted off-site secure landfill. The storage tank and surrounding area were decontaminated with high pressure water.

The Paper Sludge Land Application Area (SWMU 26) was a 5,000 square yard area where paper sludge was spread on the ground to dry prior to disposal. In 1987 this area was closed and the remaining paper sludge removed. Due to the limited documentation available regarding this removal activity, this SWMU was further evaluated during the RI/RFI.

Spaulding initiated decommissioning activities at the site in August 1992 following plant closure. The majority of these activities were completed from September 1992 to February 1993 with the remaining decommissioning activities completed by mid 1995. These activities are documented in the Plant Decommissioning Final Report dated August 1995.

In early 1993 Spaulding constructed an on-site water treatment system to treat PCB contaminated water from the Spauldite® basement sump, the on-site K-Line storm sewer (Figure 3) and other wastewaters generated on-site. This system was moved to its current location (Figure 3) in September 1994. In October 1994, that portion of the K-Line sewer impacted by PCB contamination was isolated from the remaining K-Line system. Contaminated storm water from the isolated portion of the K-Line storm sewer is pumped to the on-site water treatment system and discharged to an off-site storm sewer. Prior to discharge, however, this water must meet applicable PCB discharge limits (65 parts per trillion) as specified in the Order on Consent. Periodic sampling and analysis of waters from the isolated portion of the K-Line sewer (treatment system influent), the water treatment system effluent and the remaining (untreated) portions of the K-Line sewer system is conducted as part of the current storm water monitoring program.

In June 1993 a portion of the on-site K-Line storm sewer was flushed and the sediments removed in accordance with a NYSDEC approved work plan. This work was completed following the detection of PCBs in the K-Line storm sewer sediments at concentrations up to 1,065 parts per million (ppm). The removed sediments were dewatered, placed in roll-offs, and sent to Chemical Waste Management in Model City, New York for disposal.

On October 21, 1994 it was discovered that an out-of-service transformer had been vandalized, resulting in a spill of PCB transformer oil. The transformer had been staged in a building pending transfer off-site. All visible fluids were immediately cleaned up by Spaulding personnel and the affected ground outside the building covered with plastic. This area was subsequently excavated, with the contaminated soils placed in roll-offs for off-site disposal. After several unsuccessful attempts to clean the concrete floor inside the building, the floor was broken up, placed in roll-offs, and sent to Chemical Waste Management in Model City for disposal.

On December 21, 1994 Spaulding successfully plugged an on-site gas well. The well was inspected by the NYSDEC on January 10, 1995 with no detectable leaks observed. The NYSDEC formally approved this project on January 19, 1995.

SECTION 4: SITE CONTAMINATION

To evaluate the contamination at the Spaulding Composites Site and to evaluate remedial alternatives to address the significant threat to human health and the environment posed by the presence of hazardous waste, Spaulding completed both a Remedial Investigation/RCRA Facility Investigation (RI/RFI) and a Feasibility Study/Corrective Measures Study (FS/CMS) at the site. This was a joint project between the State CERCLA and RCRA programs, with overall NYSDEC management, coordination and oversight provided by CERCLA staff. To satisfy both programs, Spaulding decided to conduct a single investigation of the site. The results of the RI/RFI are discussed in the remainder of Section 4, while a summary of the FS/CMS is presented in Section 7.

4.1: Summary of the Remedial Investigation/RCRA Facility Investigation

The purpose of the RI/RFI was to define the nature and extent of contamination resulting from previous waste handling practices at the site.

The RI/RFI was conducted in 4 phases: the first phase was conducted between April and October 1995; the second phase between July and September 1996; the third phase between October and December 1998; and the fourth phase in August 1999. Reports entitled RCRA Facility Investigation and Remedial Investigation Report, September 1998; Supplemental Remedial Investigation/RCRA Facility Investigation, May 24, 1999; and Limited Groundwater Sampling Program, August 30, 1999 were prepared by Spaulding's consultant and describe the field activities and findings of the RI/RFI in detail.

The RI/RFI included the following activities:

- Collection and analysis of soil samples from 83 boreholes completed throughout the site, and at specific SWMUs and AOCs to further delineate the nature and extent of contamination;
- Collection and analysis of soil/waste samples from 6 test pits completed at SWMUs 7 and 8;
- Collection and analysis of sediment samples from a drainage ditch adjacent to SWMU 7;
- Excavation of 5 test pits in the utility bedding to determine if contaminants are migrating along these utilities;
- Excavation of test pits in a Former Tank Farm area (SWMU 36) to delineate the extent of contamination;
- Conversion of 17 boreholes to monitoring wells;
- Groundwater sampling and analysis from 20 wells (17 new wells and 3 existing wells);
- A push probe soil investigation around the Therminol Building (SWMU 38) to delineate the extent of contamination; and
- Inspection of off-site storm sewers for the presence of sediments (no sediment samples were collected since little or no sediments were observed).

To determine which media (soil, groundwater, etc.) have been impacted by the Spaulding Composites Site, the RI/RFI analytical data was compared to environmental standards, criteria, and guidance values (SCGs). Groundwater, drinking water and surface water SCGs identified for the Spaulding Composites Site are based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part 5 of NYS Sanitary Code. For soils, NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 provides soil cleanup guidelines for the protection of groundwater, background conditions, and health-based exposure scenarios. Guidance values for evaluating contamination in sediments are provided by the NYSDEC "Technical Guidance for Screening Contaminated Sediments".

Based upon the RI/RFI results, in comparison to the SCGs and potential public health and environmental exposure routes, the 17 SWMUs and AOCs listed in Section 2 were identified as requiring remediation. The contamination and impacted environmental media associated with these areas are summarized below. More complete information can be found in the RI/RFI Reports.

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: <u>Site Geology and Hydrogeology</u>

The geology and hydrogeology of the Spaulding Composites Site have prevented the offsite migration of contaminants via shallow groundwater and have prevented the regional bedrock aquifer from becoming severely impacted by site related contaminants. Due to their importance, therefore, the geology and hydrogeology of the Site are briefly described in this section.

At the Spaulding Composites Site four distinct geologic units exist. These units, in order of increasing depth, are as follows:

- Fill consisting primarily of reworked silty clay with lesser amounts of sand and gravel. Concrete rubble, crushed stone, cinders, and minor amounts of wood debris, brick and miscellaneous waste were also encountered, often mixed into the reworked silty clay. The thickness of this unit is typically less than 4 feet;

- Glaciolacustrine silty clay consisting primarily of reddish brown silty clay with a small sand component. This unit has a very low permeability (meaning that groundwater cannot easily move through it). The thickness of this unit ranges from 36.4 to 45.8 feet;

- A dense glacial till consisting of dark reddish brown to gray, silty clay with abundant rock fragments and gravel. This unit was observed in 3 of 4 deep boreholes, and is less than 5 feet in thickness; and

- Shale bedrock of the Camillus Shale Formation. This unit was encountered at depths ranging from 38.5 to 54.9 feet.

In addition, the glaciolacustrine silty clay consists of two subunits. The upper silty clay unit, which is approximately 28 feet thick, is unsaturated (dry) and contains fine vertical desiccation cracks. The lower silty clay unit is saturated (wet) and does not contain these fractures. The thickness of this lower unit ranges from 10.5 to 26.9 feet.

Shallow groundwater is sporadically encountered within the fill material. This water is perched (located) on top of the glaciolacustrine silty clay because of the unit's low permeability. Small quantities of perched water, however, can move into the upper silty clay unit through the desiccation cracks. Soil pore water, found in very small quantities, is largely bound to the soil particles of the upper (unsaturated) silty clay unit. As a result, this water has very low mobility.

The Camillus Shale Formation is part of a regional aquifer in the Erie-Niagara basin. Groundwater from this bedrock aquifer, however, is not utilized as a source of drinking water in the Tonawanda area because of naturally occurring high mineral content and the close proximity of the Niagara River, an important source of municipal drinking water throughout the Western New York area. Groundwater flow in the upper bedrock aquifer is to the north toward the Niagara River.

4.1.2 Nature of Contamination

As described in the RI/RFI Reports, many soil, groundwater, surface water and sediment samples were collected at the site to characterize the nature and extent of contamination. The main categories of contaminants that exceed their SCGs are inorganics (metals), volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and polychlorinated biphenyls (PCBs).

The primary inorganic contaminant of concern is zinc, which was found at all four operable units. Zinc is the principal contaminant of concern at SWMUs 3 and 35 of OU4.

VOCs were detected at several SWMUs and AOCs and are the principal contaminants of concern at OU3. The VOCs identified at this operable unit include benzene and toluene. Methanol, ethanol and petroleum were also detected at OU3. Toluene, ethanol and methanol were also detected at the Resin Drum Landfill (SWMU 7 of OU1) along with trichloroethene. Toluene was detected at the Laminant Dust Landfill (SWMU 8 of OU1), while toluene and ethylbenzene were detected at SWMU 11 (one of the Sludge Settling Ponds of OU2).

The SVOC contaminants of concern include phenol, cresols, di-n-butylphthalate and aniline, with combinations of these compounds associated with all four operable units. Dichlorobenzene and trichlorobenzene were also detected at OU2.

PCBs are found at Operable Units 1, 2 and 4, but are the principal contaminants of concern at the six SWMUs and AOCs of OU2.

4.1.3 Extent of Contamination

Table 1 summarizes the extent of contamination for the contaminants of concern in soil, groundwater, surface water and sediment, and compares these data with the SCGs for the site. These data have been summarized by operable unit for clarity. The following are the media that were investigated during the RI/RFI and a summary of the findings of the investigation.

Soil

Numerous surface and subsurface soil samples were collected during the RI/RFI, and reveal that these soils are extensively contaminated with organic and inorganic compounds (Table 1). A brief summary of this contamination follows. For clarity, this discussion is presented by operable unit, and differentiates between surface and subsurface soil contamination.

Surface soils at OU1 are contaminated with toluene, phenol, cresols (2-methylphenol and 3&4-methylphenol), di-n-butylphthalate, aniline, PCBs and zinc at concentrations that exceed the SCGs (Table 1). The primary contaminants in subsurface soils at OU1 are PCBs and zinc, which were detected at concentrations up to 68.0 ppm and 544.0 ppm, respectively (Table 1). The quantity of contaminated soil associated with this operable unit (approximately 200 cubic yards) is small compared to the total quantity of waste material that must be remediated (approximately 2,500 cubic yards).

Approximately 1,900 cubic yards of surface and subsurface soils at OU2 are extensively contaminated with PCBs, with 83% of the surface soil samples and 45% of the subsurface soil samples containing PCBs at concentrations that exceed the SCGs. Concentrations of PCBs range from non-detect (ND) to 144,000 ppm (Table 1). Surface soils at this operable unit are also contaminated with dichlorobenzene, toluene, ethylbenzene and zinc at concentrations that exceed the SCGs. In addition to PCBs, trichlorobenzene, phenol, cresols, di-n-butylphthalate and zinc were also detected in subsurface soils at concentrations that exceed the SCGs.

Surface soils at OU3 are not contaminated, however, approximately 21,000 cubic yards of subsurface soils at this operable unit are contaminated with benzene, toluene, ethanol, methanol and petroleum (Table 1). Only the concentrations of benzene and toluene exceed the SCGs. SCGs, however, are not available for ethanol, methanol and petroleum products.

Surface soils at OU4 are contaminated with phenol, cresols, di-n-butylphthalate, aniline, PCBs and zinc at concentrations that exceed the SCGs (Table 1). These contaminants are also detected in the subsurface soils of this operable unit at concentrations that exceed the SCGs (Table 1). Approximately 9,000 cubic yards of contaminated soil associated with this operable unit require remediation.

Sediments

Sediment samples from the drainage ditch adjacent to the Resin Drum Landfill (SWMU 7 of OU1) reveal the presence of several site related contaminants above the SCGs (Table 1). These contaminants include phenol, cresols, di-n-butylphthalate, aniline, PCBs and zinc. Surface soil SCGs were utilized for ditch sediment as surface water in this ditch is intermittent, the ditch does not harbor an aquatic environment and any exposures would be to site workers and trespassers through direct exposures.

PCB contaminated sediments were removed from the on-site K-Line storm sewer in June 1993 as discussed in Section 3.2. Sediments were not found in the off-site storm sewer along Gibson Street so samples could not be collected for analysis.

Groundwater

Twenty on-site monitoring wells were sampled on at least two occasions during the RI/RFI. Groundwater contamination was detected in only three of these wells, with the most significant contamination associated with the Rail Spur (AOC 45 of OU4), an area where bulk chemicals were historically unloaded from rail tanker cars (Table 1). Groundwater in this area is contaminated with benzene (2.8-3.2 ppb), toluene (24-32 ppb), xylenes (16-18 ppb), phenol (100,000-190,000 ppb, cresols (160,000-270,000 ppb), methanol (6,800-10,000 ppb) and unknown hydrocarbons (25,000-26,000 ppb). Contamination was not detected in two downgradient wells along Wheeler Street, indicating that contaminants from AOC 45 are not migrating off-site at this location.

Contamination of groundwater within the Resin Drum Landfill (SWMU 7 of OU1) was also documented during the RI/RFI. This groundwater is significantly contaminated with tetrachloroethane (1,000 ppb), toluene (140,000 ppb), ethylbenzene (2,500 ppb), phenol (390,000 ppb), cresols (240,000 ppb), di-n-butylphthalate (570 ppb), aniline (370,000 ppb), ethanol (200,000 ppb), methanol (550,000 ppb) and zinc (5720 ppb). Groundwater contamination, however, was not detected in six shallow overburden wells that surround the landfill, indicating that the silty clay soils at the site have prevented the migration of contaminants from the landfill.

Low concentrations (below groundwater standards) of dichloroethene were detected in two upper bedrock monitoring wells installed at the site. Trichloroethene was also detected in one of these wells at a concentration below the groundwater standard.

Surface Water

Surface water at the site occurs intermittently, primarily during rain events. Surface water samples from 9 outfalls (where surface water leaves the site) and the drainage ditch immediately adjacent to the Resin Drum Landfill (SWMU 7 of OU1) did not exceed any of the surface water SCGs. The exception to this is storm water that enters the on-site K-Line storm sewer (Figure 3), which is contaminated with PCBs. As discussed in Section 3.2, this water is pumped to the on-site water treatment system before discharge to the off-site storm sewer. Treated water must meet applicable discharge limits as specified in the RCRA Corrective Action Order on Consent.

Waste Materials

The only waste materials encountered during the RI/RFI were the drums in the Resin Drum Landfill (SWMU 7 of OU1) and the bags of dust in the Laminant Dust Landfill (SWMU 8 of OU1). The contaminants detected at these SWMUs are summarized in Table 1, and include toluene, trichloroethene, phenols, cresols, di-n-butylphthalate, methanol, ethanol, aniline and zinc.

4.2 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. A more detailed discussion of the health risks can be found in Section 8.0 of the RI/RFI Report and Section 6.0 of the Supplemental RI/RFI Report.

An exposure pathway is how an individual may come into 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.

Potential exposure pathways at the site include:

- ingestion of contaminated soils and sediment;
- inhalation of particulates generated from contaminated soils, and vapor emissions from contaminated soils and groundwater; and
- dermal contact with contaminated soils, sediment, groundwater and surface water.

The potential for human exposure to contaminated soils, sediment, groundwater and surface water is currently limited by the absence of ground invasive activities at the site and the presence of a perimeter fence. Exposure potentials exist, however, for on-site workers and trespassers who can come into contact with contaminated environmental media. Recent breaks in the perimeter fence have allowed increased trespassing, thus increasing the exposure potential for these individuals.

Because the property is proposed for redevelopment, future on-site workers would face an increased exposure potential to contaminated soils, sediment, groundwater and surface water if site remediation is not completed prior to redevelopment or access to contaminated areas is not restricted.

4.3 Summary of Environmental Exposure Pathways

The completion of an environmental risk assessment to evaluate ecological receptors was not required during the RI/RFI because the site is located in a mixed industrial, commercial and residential area that does not provide sufficient habitat for ecological receptors. Although operation of the on-site water treatment system is intended to prevent PCB contaminated water from entering the Niagara River through off-site storm sewers, some PCB contaminated surface water is occasionally discharged from the site. The affect of this discharge on the Niagara River, however, was not evaluated during the RI/RFI and will be required during the design phase of the remedial process.

SECTION 5: ENFORCEMENT STATUS

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

The NYSDEC and the Spaulding Composites Company entered into two Orders on Consent (legal agreement) on October 25, 1994. These Orders obligated Spaulding to implement an RI/RFI and FS/CMS at the site, and to continue operation of the on-site water treatment system to treat PCB contaminated waters. Upon issuance of the Record of Decision the NYSDEC will approach the PRP to implement the selected remedies under another Order on Consent.

The following is the chronological enforcement history of the site:

Index No.	Subject of Order *
91-18-R9-3425-91-04	RFI/CMS
B9-0399-92-03	RI/FS

* Operation of the on-site water treatment system and remedial programs are subject of prospective Orders on Consent.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS

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 SCGs and be protective of human health and the environment. At a minimum, the remedies selected should eliminate or mitigate all significant threats to public health and the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The goals selected for the Spaulding Composites Site are described as follows:

- *Eliminate, to the extent practicable, the potential for ingestion of contaminated soils and sediment;*

- *Eliminate, to the extent practicable, the generation of particulates from contaminated soils and vapor emissions from contaminated soils and groundwater that could result in inhalation exposures;*

- *Eliminate, to the extent practicable, dermal contact with contaminated soils, sediment, groundwater and surface water;*
- *Eliminate, to the extent practicable, off-site migration of PCB contaminated water; and*
- *Eliminate, to the extent practicable, exceedances of applicable environmental quality standards related to releases of contaminants to groundwater.*

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedies should be protective of human health and the environment, be cost effective, comply with other statutory laws and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. Potential remedial alternatives for the Spaulding Composites Site were identified, screened and evaluated in the report entitled Feasibility Study and Corrective Measures Study, December 2000.

A summary of the detailed analysis follows. As presented below, the time to implement reflects only the time required to implement the remedy, and does not include the time required to design the remedy, procure contracts for design and construction or to negotiate with responsible parties for implementation of the remedy.

It is important to note that the on-site water treatment system would continue to operate until remediation of Operable Unit 2 is complete and PCBs are no longer detected in K-Line storm sewer waters. Treated water would continue to be sampled and analyzed during this time for compliance with the 65 parts per trillion discharge limit. Because it is not known how long the treatment system would need to operate or how long untreated water would have to be sampled and analyzed, costs for these activities are not included in the cost estimates shown below.

7.1: Description of Alternatives

The potential remedies are intended to address contaminated soils, sediments, surface water (K-Line storm sewer) and groundwater at the Site. ***Because some of these alternatives are applicable to more than one operable unit, a range of values for present worth, capital cost and time to implement is given. These ranges represent the minimum and maximum costs associated with the given remedial alternative for the operable units in which the alternative was evaluated. Therefore, to directly compare the costs of each remedial alternative for a given operable unit, the reader is referred to Table 2, where the detailed costs are broken down by operable unit.***

7.1.1 Alternative 1: No Action

The No Action alternative is evaluated as a procedural requirement and as a basis for comparison with the other alternatives. Under this alternative, the site would remain in an unremediated state and would not provide any additional protection to human health or the environment.

7.1.2 Alternative 2: Limited Action

Present Worth per OU: *$ 346,000 - $ 3,668,000*

Capital Cost per OU:	*$ 6,000 - $ 17,000*
Annual O&M per OU:	*$ 24,000 - $ 254,000*
Time to Implement per OU:	*0 - 1 month*

The Limited Action alternative would limit public access to the site and contact with contaminated soils, sediment and water. This alternative would include repair and maintenance of site fencing, groundwater monitoring for at least 30 years, facility maintenance (i.e., lawn mowing and security) and deed restrictions. The on-site water treatment system would continue to operate in accordance with the RCRA Corrective Action Order on Consent. The upper range of costs listed above are associated with this operation. This alternative is applicable to all four operable units.

7.1.3 Alternative 3: Excavation and Disposal

Present Worth per OU:	*$ 404,000 - $ 1,858,000*
Capital Cost per OU:	*$ 404,000 - $ 1,858,000*
Annual O&M per OU:	*$ 0 - $ 4,000*
Time to Implement per OU:	*6 months - 1 year*

This alternative would include the excavation and removal of soil, sediment and waste above the SCGs, with the excavated materials disposed of at an appropriate disposal facility. Dust and vapor control measures would be implemented during excavation to protect on-site workers and nearby residents. This alternative is applicable to all four operable units.

7.1.4 Alternative 4: Consolidation and Capping

Present Worth per OU:	*$ 582,000 - $ 955,000*
Capital Cost per OU:	*$ 236,000 - $ 609,000*
Annual O&M per OU:	*$ 24,000*
Time to Implement per OU:	*6 months - 1 year*

Under this alternative, contaminated soils, sediment and waste would be excavated and consolidated within an existing on-site landfill or a newly constructed cell. A cap would be installed over the landfill to limit surface water infiltration and migration of the contaminants. Long term groundwater monitoring and maintenance of the landfill and cap would be required to ensure that human health and the environment remain adequately protected. This alternative applies to Operable Units 1 and 4.

7.1.5 Alternative 5: Excavation and Ex-Situ Bioremediation

Present Worth per OU:	*$ 294,000 - $ 2,869,000*
Capital Cost per OU:	*$ 294,000 - $ 2,869,000*
Annual O&M per OU:	*$ 0*
Time to Implement per OU:	*3 months*

Under this alternative, PCB, volatile organic and petroleum contaminated soils would be excavated and treated on-site in a "heap soil" reactor. Excavated soils would be transferred to an accessible on-site building and stockpiled. Effluent would be pumped from the reactor vessel and distributed through the stockpile via an irrigation network. Bacteria would come into contact with the contaminants and, through the throttling between aerobic and anaerobic conditions, would breakdown chemical bonds to destroy the contaminants. Leachate would be collected from the bottom of the stockpile and recirculated through the system. Periodic mixing of the soil would be required to enhance contact with the bacteria. The remediated soils could be backfilled on-site if the appropriate SCGs were achieved. A field test would be required to evaluate the effectiveness of this remedial alternative, which is applicable to Operable Units 2 and 3.

7.1.6 Alternative 6: In-Situ Bioremediation

Present Worth per OU:	*$ 880,000*
Capital Cost per OU:	*$ 842,000*
Annual O&M per OU:	*$ 20,000*
Time to Implement per OU:	*6 months - 2 years*

In-situ bioremediation involves the treatment of contaminated soils by injecting nutrients, oxygen and cultured bacteria into the subsurface environment. This technology uses much of the same methodology, biology and chemistry as ex-situ bioremediation. In addition to the reactor vessel, in-situ bioremediation includes the installation of an extraction/injection well network surrounding the perimeter of the contaminated area. The injection wells provide water to saturate the soil and deliver the bacteria, while the extraction wells provide negative pressure to pull the introduced water and bacteria through the soil and back into the reactor vessel. Due to soil permeability and the fact that the soil is not mixed, treatment is slower than ex-situ bioremediation, thereby requiring longer remediation times. Sampling and analysis of soil and groundwater would be completed during remediation to evaluate the progress of the in-situ bioremediation program. Prior to full scale remediation, a field test would be required to evaluate the effectiveness of this remedial alternative in the low permeability soils that underlie the site. This alternative is only applicable to Operable Unit 3.

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 inactive hazardous waste sites in New York State (6 NYCRR Part 375). The evaluation of these criteria will also satisfy RCRA requirements. For each of the criteria, a brief description is provided, followed by an evaluation of the alternatives against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is included in the FS/CMS 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. 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 most significant SCGs relating to the site include NYSDEC Ambient Water Quality Standards and Guidance Values for groundwater, and NYSDEC TAGM 4046 for soils.

Alternatives 1 and 2 would not meet the applicable SCGs since no action would be taken to remove or treat contaminated soils, sediment and water. All waste material would remain on-site. Alternative 3 would meet SCGs at all operable units as all wastes, and contaminated soils and sediment, would be removed from the site. Alternative 4 would not meet chemical specific SCGs because contaminated soil and sediment would remain on-site. Alternative 4 would meet SCGs for landfills, however, by containing all contaminated soils and waste within an on-site landfill. Alternatives 5 and 6 would meet the applicable SCGs for volatile and petroleum contaminated soils at the operable units in which they are proposed by treating contaminated soils to concentrations below the SCGs. Alternative 5, however, may not meet the applicable SCGs for PCBs as bioremediation is not a proven technology for the remediation of PCB contaminated soils.

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.

Alternatives 1 and 2 would not be protective of human health and the environment as no remedial actions would be conducted under these alternatives. Alternatives 3, 4 and 6 would be protective of human health and the environment by either removing, containing, or treating contaminated media at the Site. Alternative 5 would also be protective of human health and the environment by treating volatile and petroleum contaminated soils. While this alternative could greatly reduce the PCB concentrations in contaminated soils, the final concentrations may not be protective of human health and the environment.

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 actions 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.

Alternatives 1 and 2 would have the highest short-term effectiveness because no active remedial work would be conducted under these alternatives. As such, there would be no additional risks posed to the community, site workers or the environment if these alternatives were implemented. Alternative 6 would also have a high short-term effectiveness because contaminated soils would be treated in-situ (i.e., no excavation would take place). Alternatives 3, 4 and 5 would have the lowest short-term effectiveness because active removal of contaminated media would occur, which would increase the potential for worker and community exposures. The length of time to bioremediate soils by Alternatives 5 and 6, however, could be significant, which has the potential to impact Site redevelopment.

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.

Alternatives 1 and 2 would not result in a long-term or permanent remedy because contaminated media would remain on site. Current and potential future risks would remain under these alternatives. Alternative 3 would have the highest long-term effectiveness because all contaminated soil and waste would be removed from the Site and replaced with clean soil. The long-term effectiveness of Alternative 4 would be dependent upon proper maintenance of the cap, but experience at other sites reveals that the effectiveness of this alternative is also high. Alternative 6 would have a high long-term effectiveness because contaminants at the site would be treated below SCGs. The long-term effectiveness of Alternative 5 is unknown because bioremediation may not achieve SCGs for PCBs.

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.

Alternatives 1 and 2 would not reduce the toxicity, mobility or volume of waste and contaminated soils, sediment and water as no remedial actions would be conducted under these alternatives. The remaining alternatives would reduce the toxicity, mobility or volume of contaminated environmental media and waste by either removing, containing, or treating these materials. The amount of reduction for Alternative 5, however, is unknown as bioremediation is not a proven technology for the remediation of PCB contaminated soils.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with 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.

Alternatives 1 and 2 would be the most implementable because no active remedial work would be conducted under these alternatives. The excavation of contaminated soil and waste under Alternatives 3, 4 and 5 would be easily implementable with standard excavation equipment and techniques. The construction of the treatment systems for Alternatives 5 and 6 would also be easily implementable with standard construction and well drilling techniques.

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.

Because the Spaulding Composites Site has been subdivided into four operable units, the costs for each alternative have been evaluated by operable unit, rather than the site as a whole. The detailed costs for each alternative are presented in Table 2.

In general, alternatives 1 and 2 would be the least expensive as no remedial actions would be conducted under these alternatives. The exception to this is OU2, where the on-site water treatment system would continue to operate at significant expense. For Operable Units 1 and 4, the costs for the remaining alternatives would be similar. For OU2, alternative 5 would be 58% lower in cost than alternative 3; however, as stated above alternative 5 is not a proven technology for PCB contaminated soils. For OU3, alternative 3 would be 35% lower in cost than alternative 5, but 53% more expensive than alternative 6.

For alternatives that involve treatment or disposal, significant variations in cost may arise due to unanticipated events, such as longer soil treatment periods, changes in disposal pricing, changes in commercial acceptance of the materials, and larger volumes of materials requiring disposal/treatment, etc. Thus, it is typical for treatment or disposal alternatives to exhibit larger cost variations than those involving no action, limited action or containment only.

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/Statement of Basis have been received.

8. **Community Acceptance** - Concerns of the community regarding the RI/RFI and FS/CMS reports, and the PRAP/SOB 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 remedies. Several comments were received, however, pertaining to the operation of the on-site treatment system, who will pay for site remediation now that Spaulding is in bankruptcy, and the lack of off-site testing during the RI/RFI. These comments do not change the selected remedies for the site.

SECTION 8: SUMMARY OF THE SELECTED REMEDY

Based upon the Administrative Record (Appendix B) and the discussion presented below, the NYSDEC has selected the following Alternatives as the remedy for the Spaulding Composites Site:

- Operable Unit 1 - Excavation and Disposal. Under the selected remedial action for this OU, wastes associated with the Resin Drum and Laminant Dust Landfills, and contaminated sediments from the drainage ditch adjacent to the Resin Drum Landfill, will be excavated and disposed of at an appropriate offsite disposal facility. All excavated areas will be backfilled with clean soils and restored to grade. Excavations will be to contaminant levels consistent with the goal of meeting Technical and Administrative Guidance Memorandum (TAGM) 4046 cleanup objectives.

- Operable Unit 2 - Excavation and Disposal. Under the selected remedial action for this OU, PCB contaminated soils associated with three Sludge Settling Ponds, a Former Tank Farm, the Therminol Building and a Former Transformer Explosion Area will be excavated and disposed of at an appropriate disposal facility. All excavated areas will be backfilled with clean soils and restored to grade. Excavations will be to contaminant levels consistent with the goal of meeting TAGM 4046 cleanup objectives.

  Sampling and analysis of sediment in the K-Line storm sewer will also be required to evaluate how much contamination, if any, is present in the sewer. If contaminated, these sediments will be removed and disposed of with the contaminated soil from this operable unit.

  In addition, the on-site water treatment system will continue to operate following the remediation of Operable Unit 2 until PCBs are no longer detected in K-Line storm sewer waters. Treated water will continue to be sampled and analyzed during this time for compliance with the 65 parts per trillion (ppt) discharge limit for PCBs.

- Operable Unit 3 - In-Situ Bioremediation. Under the selected remedial action for this OU, volatile organic and petroleum contaminated soils associated with a Former Tank Farm and a Former Grinding Oil Tank will be treated in-place by adding nutrients to stimulate biological activity that will degrade the contaminants. During design, a field test will be completed to evaluate the effectiveness of this alternative in remediating contaminated low permeability soils. During remediation, sampling and analysis of soil and groundwater will be conducted to evaluate the progress of the in-situ bioremediation program.

- Operable Unit 4 - Excavation and Disposal. Under the selected remedial action for this OU, contaminated soils associated with the Lab Waste Storage Area, a Rail Spur, two Drum Storage Areas, a Bulk Chemical Unloading Area, a Zinc Chloride Sludge Container Storage Area, one Sludge Settling Pond and the Paper Sludge Application Area will be excavated and disposed of at an appropriate offsite disposal facility. All excavated areas will be backfilled with clean soils and restored to grade. Excavations will be to contaminant levels consistent with the goal of meeting TAGM 4046 cleanup objectives.

Following remediation of the site, groundwater monitoring will be required to evaluate the effectiveness of the remedial actions and to ensure that human health and the environment remain adequately protected. Imposition of a deed restriction will be required if warranted by residual soil or groundwater contamination remaining after remedial actions are completed. If determined necessary by NYSDEC, the deed restriction will require compliance with an approved soils management plan, prohibit site groundwater use and/or require annual certification to the NYSDEC, by future property owners, that the implemented remedy has been maintained in accordance with the soils management plan.

Long-term groundwater sampling and analysis of the former production well will also be required to further evaluate contamination in upper bedrock groundwater. If contaminant concentrations increase and exceed SCGs, the need to remediate this water will be evaluated.

The selected remedies are based upon the results of the RI/RFI and the evaluation of alternatives presented in the FS/CMS. With the exception of the No Action and Limited Action alternatives, each of the alternatives will comply with the threshold criteria, with the possible exception of biotreatment of PCB contaminated soils. In addition, the remaining four alternatives are similar with respect to the majority of the balancing criteria. The major differences between these alternatives is the amount and duration of operation & maintenance activities that will be required, the time to achieve SCGs (longer for Bioremediation than Excavation and Disposal) and the uncertainties of success for the bioremediation alternatives compared to Excavation and Disposal.

For Operable Units 1, 2 and 4, Alternative 3 (Excavation and Disposal) is the most suitable alternative that is applicable to the wastes and contaminants in these areas. Therefore, Excavation and Disposal is selected as the remedial alternative for these operable units.

For Operable Unit 3, Alternatives 5 (Excavation and Ex-Situ Bioremediation) and 6 (In-Situ Bioremediation) remain viable options. While Alternative 6 will require a longer time to implement that Alternative 5, the depth of contamination at SWMU 36 (Former Tank Farm area) will increase excavation costs under Alternative 5. As a result, In-Situ Bioremediation is selected as the remedial alternative for this operable unit. It is important to note, however, that should the field test determine that this alternative is ineffective due to low soil permeability, remediation of this operable unit will proceed by Alternatives 3 (Excavation and Disposal) or 5 (Excavation and Ex-Situ Bioremediation).

Table 2 shows that the estimated present worth cost to implement the selected remedies at all four operable units is \$2,823,000. The cost to construct these remedies is estimated to be \$2,728,000 and the estimated average annual monitoring, maintenance and security cost is \$24,000. These cost estimates, however, do not include the cost to operate and maintain the on-site water treatment system. This system will continue to operate after the remediation of Operable Unit 2 until PCBs are no longer detected in storm water influent. The duration of continued system operation is unknown.

The elements of the selected remedy for each operable unit, including the additional elements required by the NYSDEC, are summarized as follows:

1. **Operable Unit 1:**

- Excavation and Disposal. Under the selected remedial action for this OU, wastes associated with the Resin Drum and Laminant Dust Landfills will be excavated and disposed of at an appropriate offsite disposal facility. All excavated areas will be backfilled with clean soils and restored to grade. Excavations will be to contaminant levels consistent with the goal of meeting Technical and Administrative Guidance Memorandum (TAGM) 4046 cleanup objectives.

- Excavation of contaminated sediments in the ditch adjacent to the Resin Drum Landfill that exceed SCGs. These sediments will be disposed of with the contaminated soils. Excavations will be to contaminant levels consistent with the goal of meeting TAGM 4046 cleanup objectives.

2. **Operable Unit 2:**

- Excavation and Disposal. Under the selected remedial action for this OU, PCB contaminated soils associated with three Sludge Settling Ponds, a Former Tank Farm, the Therminol Building and a Former Transformer Explosion Area will be excavated and disposed of at an appropriate disposal facility. All excavated areas will be backfilled with clean soils and restored to grade. Excavations will be to contaminant levels consistent with the goal of meeting TAGM 4046 cleanup objectives.

- Sampling and analysis of sediment in the K-Line storm sewer will also be required to evaluate how much contamination, if any, is present in the sewer. If contaminated, these sediments will be removed and disposed of with the contaminated soil from this operable unit.

- Continued operation of the on-site water treatment system following the remediation of Operable Unit 2 until PCBs are no longer detected in K-Line storm sewer waters. Treated water will continue to be sampled and analyzed during this time for compliance with the 65 parts per trillion (ppt) discharge limit for PCBs. It is anticipated that soil removal and storm sewer cleaning activities (if necessary) will address the presence of PCB contaminated storm water.

3. **Operable Unit 3:**

- In-Situ Bioremediation. Under the selected remedial action for this OU, volatile organic and petroleum contaminated soils associated with a Former Tank Farm and a Former Grinding Oil Tank will be treated in-place by adding nutrients to stimulate biological activity that will degrade the contaminants.

- During design, a field test will be completed to evaluate the effectiveness of this alternative in remediating contaminated low permeability soils.

- During remediation, sampling and analysis of soil and groundwater will be conducted to evaluate the progress of the in-situ bioremediation program.

4. **Operable Unit 4:**

- Excavation and Disposal. Under the selected remedial action for this OU, contaminated soils associated with the Lab Waste Storage Area, a Rail Spur, two Drum Storage Areas, a Bulk Chemical Unloading Area, a Zinc Chloride Sludge Container Storage Area, one Sludge Settling Pond and the

Paper Sludge Application Area will be excavated and disposed of at an appropriate offsite disposal facility. All excavated areas will be backfilled with clean soils and restored to grade. Excavations will be to contaminant levels consistent with the goal of meeting TAGM 4046 cleanup objectives.

- Sampling and analysis of groundwater at AOC 45 (Rail Spur) following remediation to evaluate the effectiveness of soil removal activities on ground water contamination at this area of the site.

5. **Institutional Controls:**

- Imposition of a deed restriction will be required if warranted by residual soil or groundwater contamination remaining after remedial actions are completed. If determined necessary by NYSDEC, the deed restriction will require compliance with an approved soils management plan and prohibit site groundwater use. Annual certification to the NYSDEC will be required.

6. **Long-Term Groundwater Monitoring:**

- Long-term groundwater sampling and analysis of the former production well to further evaluate contamination in upper bedrock groundwater. If contaminant concentrations increase and exceed SCGs, the need to remediate this water will be evaluated.

SECTION 9: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation 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 Citizen Participation (CP) Plan, dated August 1993, describes the CP activities to be completed for the site during the investigation process.
- A public meeting was held on June 28, 1994 to update the public on the decommissioning activities at the site and to inform the public about the upcoming RI/RFI.
- A Fact Sheet providing a status update on plant decommissioning activities and the RI/RFI to be implemented at the site was distributed to the mailing list in January 1995.
- A Fact Sheet announcing the completion of plant decommissioning activities and the beginning of the RI/RFI was distributed to the mailing list in August 1995.
- A Fact Sheet providing a status update on the RI/RFI was distributed to the mailing list in May 1996.

- A Fact Sheet summarizing the results of the RI/RFI was distributed to the mailing list in December 1997.

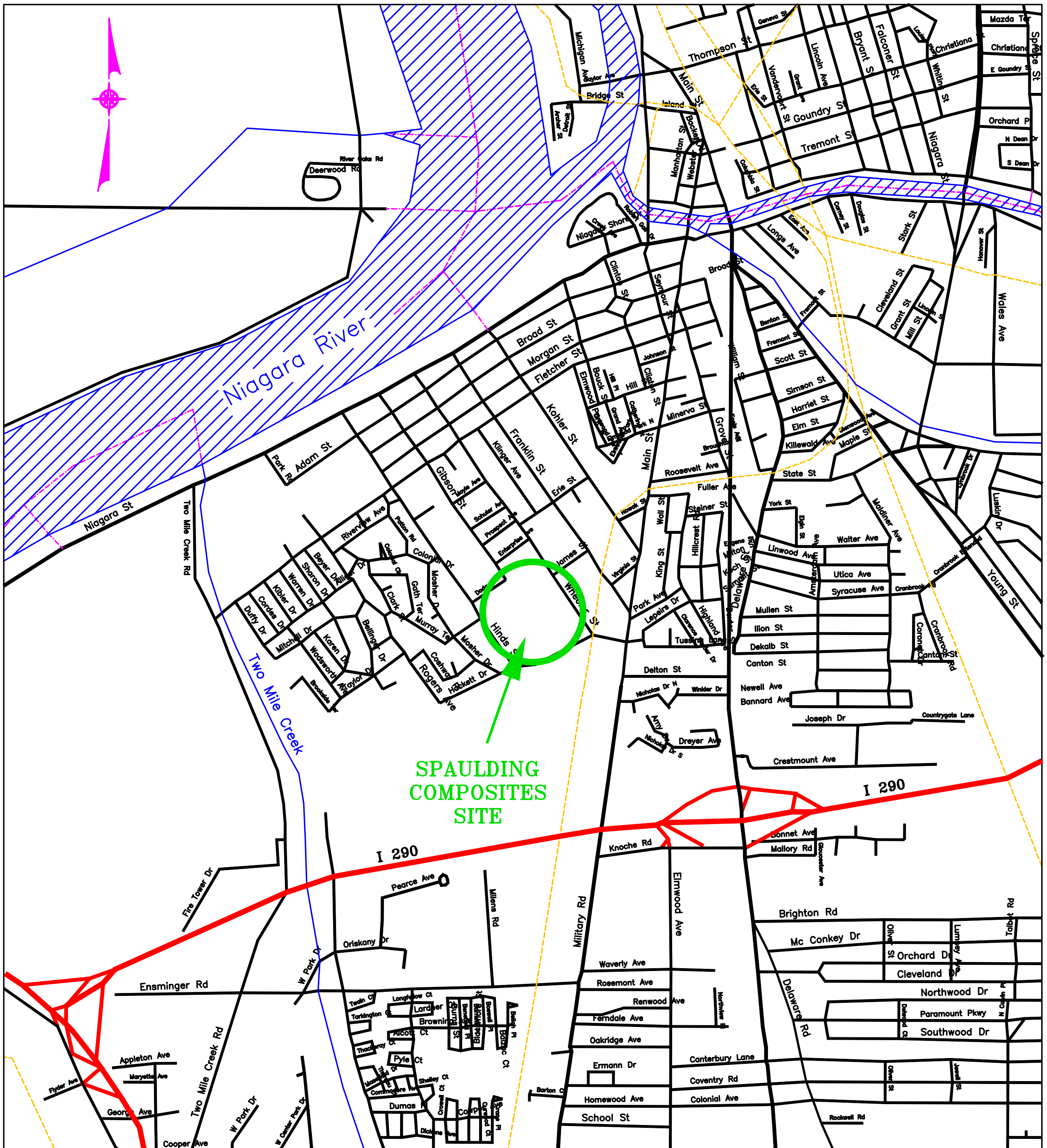
- A Fact Sheet summarizing the Supplemental RI/RFI activities was distributed to the mailing list in April 1999.

- A Fact Sheet summarizing the results of the RI/RFI and the modification of the Registry to reflect the findings of the investigation was distributed to the mailing list in April 2002.

- A Fact Sheet describing the PRAP/SOB was distributed to the mailing list in November 2002.

- A public meeting was held on December 4, 2002 to present and receive comment on the PRAP/SOB.

- A responsiveness summary (Appendix A) was prepared to address the comments received during the public comment period for the PRAP/SOB.



SITE LOCATION MAP

Tonawanda East & West Quadrangles; Buffalo East & West Quadrangles

Scale Depends on Final Plotted Size

DIVISION OF ENVIRONMENTAL REMEDIATION

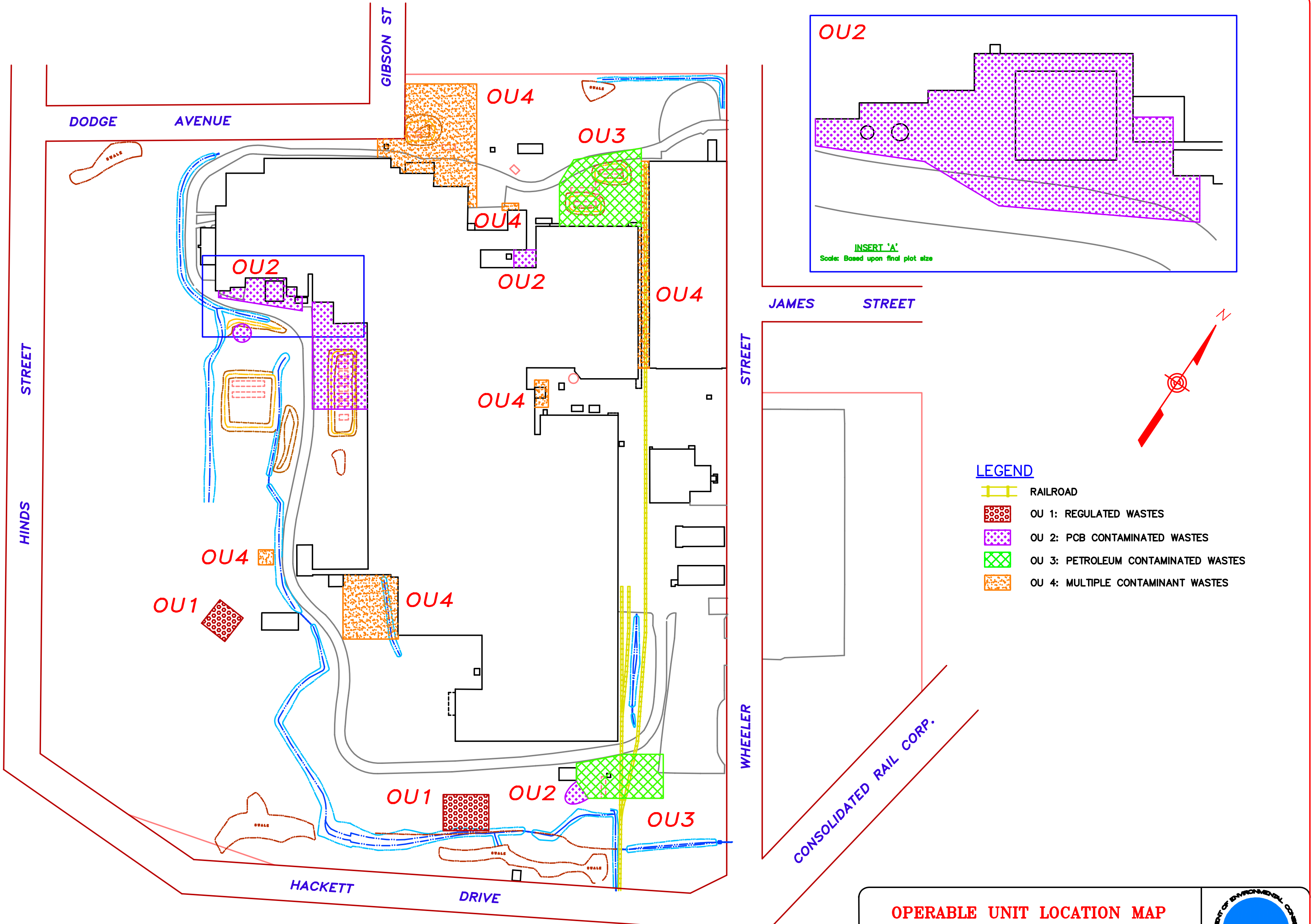
DATE: 01/25/01

DRAWING: Location.dwg

SITE: SPAULDING COMPOSITES SITE

FIGURE 1

DEPARTMENT OF ENVIRONMENTAL CONSERVATION • NEW YORK STATE •



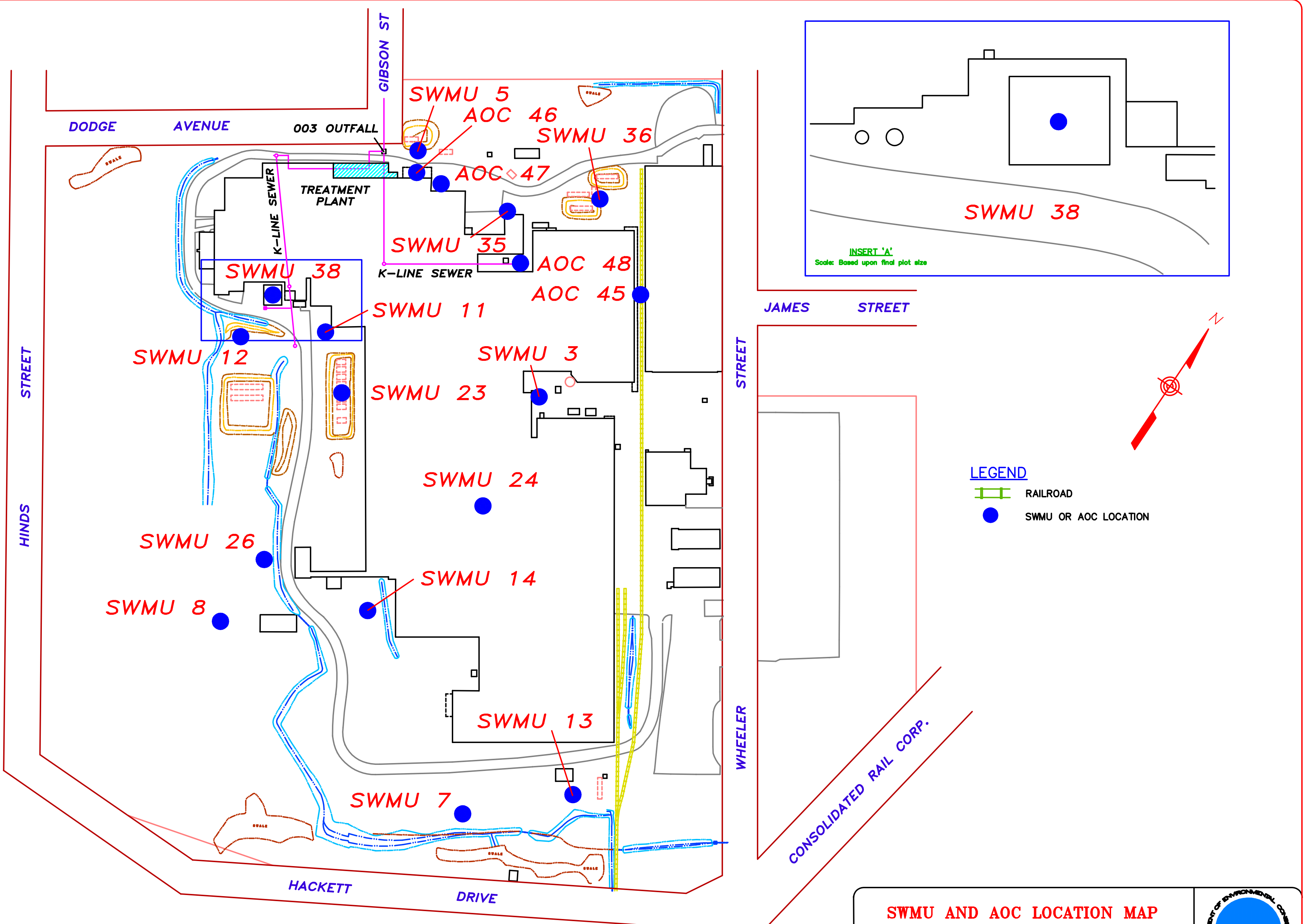
OPERABLE UNIT LOCATION MAP

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 12/28/00 DRAWING: spauldmap.dwg

SITE: SPAULDING COMPOSITES SITE

FIGURE 2



SWMU AND AOC LOCATION MAP

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 12/28/00 DRAWING: spauldmap.dwg

SITE: SPAULDING COMPOSITES SITE

FIGURE 3

Table 1.
Nature and Extent of Contamination.

Media	Class	Contaminant of Concern	Concentration Range (ppm)*	Frequency of Exceeding SCGs	SCG (ppm)*
Operable Unit 1					
Waste	Volatile Organic Compounds	Toluene	160.0 - 8,900	6/6	1.5
		Trichloroethene	ND - 5,900	1/6	0.7
	Semivolatile Organic Compounds	Phenol	38.0 - 2,000	6/6	0.03
		Cresols **	ND - 1,200	9/12	0.1/0.9
		Di-n-butylphthalate	ND - 5,600	4/6	8.1
		Aniline	ND - 3,100	3/6	0.1
	PCBs	PCBs	ND - 0.72	0/6	10.0
	Other Organic Compounds	Ethanol	ND - 3,100	N/A	NS
		Methanol	ND - 3,300	N/A	NS
	Metals	Zinc	ND - 617	3/6	SB (95)
Surface Soil	Volatile Organic Compounds	Toluene	ND - 44.0	1/3	1.5
		Trichloroethene	ND - 0.67	0/3	0.7
	Semivolatile Organic Compounds	Phenol	1.4 - 8.0	3/3	0.03
		Cresols **	0.31 - 8.8	6/6	0.1/0.9
		Di-n-butylphthalate	11.0 - 29.0	3/3	8.1
		Aniline	ND - 3.2	2/3	0.1
	PCBs	PCBs	0.032 - 41.0	5/6	1.0
	Other Organic Compounds	Ethanol	ND	N/A	NS
		Methanol	ND	N/A	NS
	Metals	Zinc	262.0 - 1,160	3/3	SB (95)
Subsurface Soil	Volatile Organic Compounds	Toluene	ND - 0.002	0/14	1.5
		Trichloroethene	ND	0/14	0.7
	Semivolatile Organic Compounds	Phenol	ND - 0.46	2/14	0.03
		Cresols **	ND - 0.73	1/28	0.1/0.9
		Di-n-butylphthalate	ND - 0.69	0/14	8.1
		Aniline	ND	0/14	0.1
	PCBs	PCBs	ND - 68.0	4/22	10.0

Table 1 (Continued).
Nature and Extent of Contamination.

Media	Class	Contaminant of Concern	Concentration Range (ppm)*	Frequency of Exceeding SCGs	SCG (ppm)*
Operable Unit 1 (Continued)					
Subsurface Soil (continued)	Other Organic Compounds	Ethanol	ND	N/A	NS
		Methanol	ND	N/A	NS
	Metals	Zinc	49.8 - 544.0	4/14	SB (95)
Sediment (ditch adjacent to SWMU 7)	Volatile Organic Compounds	Toluene	ND	0/3	1.5
		Trichloroethene	ND	0/3	0.7
	Semivolatile Organic Compounds	Phenol	1.6 - 5.4	3/3	0.03
		Cresols **	0.49 - 2.4	5/6	0.1/0.9
		Di-n-butylphthalate	27.0 - 98.0	3/3	8.1
		Aniline	ND - 2.5	1/3	0.1
	PCBs	PCBs	3.5 - 11.0	3/3	1.0
	Other Organic Compounds	Ethanol	ND	N/A	NS
		Methanol	ND	N/A	NS
	Metals	Zinc	1,970 - 7,730	3/3	SB (95)
Groundwater (includes groundwater within landfill of SWMU 7)	Volatile Organic Compounds	Tetrachloroethane	ND - 1,000	1/17	5.0
		Toluene	ND - 140,000	1/17	5.0
		Trichloroethene	ND - 1.2	0/17	5.0
		Ethylbenzene	ND - 2,500	1/17	5.0
	Semivolatile Organic Compounds	Phenol	ND - 390,000	3/17	1.0
		Cresols **	ND - 240,000	2/34	50.0
		Di-n-butylphthalate	ND - 570.0	1/17	50.0
		Aniline	ND - 370,000	1/17	5.0
	PCBs	PCBs	ND	0/17	0.09
	Other Organic Compounds	Ethanol	ND - 200,000	1/17	50.0
		Methanol	ND - 550,000	N/A	NS
	Metals	Zinc	ND - 5,720	2/17	2,000

Table 1 (Continued).
Nature and Extent of Contamination.

Media	Class	Contaminant of Concern	Concentration Range (ppm)*	Frequency of Exceeding SCGs	SCG (ppm)*
Operable Unit 2					
Surface Soil	Volatile Organic Compounds	Ethylbenzene	ND - 72.0	1/9	5.5
		Toluene	ND - 110.0	1/9	1.5
	Semivolatile Organic Compounds	Dichlorobenzene	40.6	1/5	7.9
		Phenol	ND - 0.25	1/5	0.03
		Cresols **	ND - 0.25	0/10	0.1/0.9
		Di-n-butylphthalate	ND - 3.28	0/5	8.1
		Trichlorobenzene	ND	0/8	3.4
	PCBs	PCBs	ND - 500.0	24/31	1.0
	Metals	Zinc	101.0 - 758.0	5/5	SB (95)
Subsurface Soil	Volatile Organic Compounds	Ethylbenzene	ND	0/15	5.5
		Toluene	ND - 0.005	0/15	1.5
	Semivolatile Organic Compounds	Dichlorobenzene	ND - 0.48	0/7	7.9
		Phenol	ND - 57.0	2/7	0.03
		Cresols **	ND - 12.0	3/14	0.1/0.9
		Di-n-butylphthalate	ND - 18.0	2/7	8.1
		Trichlorobenzene	ND - 130.0	2/13	3.4
	PCBs	PCBs	ND - 144,000	86/195	10.0
	Metals	Zinc	70.6 - 345.0	5/7	SB (95)
Operable Unit 3					
Surface Soil	Volatile Organic Compounds	Benzene	ND	0/1	0.06
		Toluene	ND	0/1	1.5
	Other Organic Compounds	Ethanol	ND	N/A	NS
		Methanol	ND	N/A	NS
		Petroleum ***	ND	N/A	NS
Subsurface Soil	Volatile Organic Compounds	Benzene	0.008 - 300.0	7/9	0.06
		Toluene	ND - 56.0	2/9	1.5

Table 1 (Continued).
Nature and Extent of Contamination.

Media	Class	Contaminant of Concern	Concentration Range (ppm)*	Frequency of Exceeding SCGs	SCG (ppm)*
Operable Unit 3 (Continued)					
Subsurface Soil (continued)	Other Organic Compounds	Ethanol	ND - 83.0	N/A	NS
		Methanol	ND - 14.0	N/A	NS
		Petroleum ***	ND - 1,100	N/A	NS
Operable Unit 4					
Surface Soil	Volatile Organic Compounds	Benzene	ND	0/10	1.0
		Toluene	ND - 0.023	0/10	5.0
		Total Xylenes	ND	0/10	5.0
	Semivolatile Organic Compounds	Phenol	ND - 100.0	9/17	0.03
		Cresols **	ND - 74.0	11/34	0.1/0.9
		Di-n-butylphthalate	ND - 159.1	1/10	8.1
		Aniline	ND - 50.0	2/10	0.1
	PCBs	PCBs	ND - 86.3	12/20	1.0
	Other Organic Compounds	Ethanol	ND	N/A	NS
		Methanol	ND	N/A	NS
	Metals	Zinc	123.0 - 20,500	16/16	SB (95)
Subsurface Soil	Volatile Organic Compounds	Benzene	ND - 0.14	0/8	1.0
		Toluene	ND - 0.23	0/8	5.0
		Total Xylenes	ND - 0.06	0/8	5.0
	Semivolatile Organic Compounds	Phenol	ND - 95.0	4/17	0.03
		Cresols **	ND - 54.0	5/34	0.1/0.9
		Di-n-butylphthalate	ND - 12.0	1/8	8.1
		Aniline	ND - 0.24	1/13	0.1
	PCBs	PCBs	ND - 84.5	7/22	10
	Other Organic Compounds	Ethanol	ND	N/A	NS
		Methanol	ND	N/A	NS
	Metals	Zinc	63.6 - 386.0	5/15	SB (95)

Table 1 (Continued).
Nature and Extent of Contamination.

Media	Class	Contaminant of Concern	Concentration Range (ppm)*	Frequency of Exceeding SCGs	SCG (ppm)*
Operable Unit 4 (Continued)					
Groundwater (Well OW-8 at AOC 45 and OW-10 near SWMU 5 and AOCs 46 & 47)	Volatile Organic Compounds	Benzene	ND - 3.2	3/5	1.0
		Toluene	ND - 32.0	3/5	5.0
		Total Xylenes	ND - 17.9	3/5	5.0
	Semivolatile Organic Compounds	Phenol	ND - 190,000	3/5	1.0
		Cresols **	ND - 220,000	6/10	50
		Di-n-butylphthalate	ND	0/5	50
		Aniline	ND	0/5	5.0
	PCBs	PCBs	ND	0/5	0.09
	Other Organic Compounds	Ethanol	ND - 2,500	2/5	50
		Methanol	ND - 10,000	N/A	NS
		Unknown Hydrocarbons	ND - 26,000	N/A	NS
	Metals	Zinc	ND	0/5	2,000

ND Compound not detected.
NS No standard.
SB Site background; concentration in parentheses.
N/A Not applicable.
***** Values for groundwater are in parts per billion (ppb)
****** Cresols include 2-methylphenol and 3&4-methylphenol.
******* Petroleum includes unknown hydrocarbons and fuel oil.

Soil SCGs are from TAGM 4046; Groundwater SCGs are from NYSDEC Ambient Water Quality Standards.

Table 2.
Remedial Alternative Costs.

Remedial Alternative	Capital Cost	Annual O&M	Total Present Worth
Operable Unit 1			
No Action	$0	$0	$0
Limited Action	$17,000	$24,000	$363,000
Excavation and Disposal *	$404,000	$0	$404,000
Consolidation and Capping	$236,000	$24,000	$582,000
Operable Unit 2			
No Action	$0	$0	$0
Limited Action	$6,000	$254,000	$3,668,000
Excavation and Disposal *	$693,000	$0	$693,000
Excavation and Ex-Situ Bioremediation	$294,000	$0	$294,000
Operable Unit 3			
No Action	$0	$0	$0
Limited Action	$6,000	$24,000	$352,000
Excavation and Disposal	$1,858,000	$0	$1,858,000
Excavation and Ex-Situ Bioremediation	$2,869,000	$0	$2,869,000
In-Situ Bioremediation *	$842,000	$20,000	$880,000
Operable Unit 4			
No Action	$0	$0	$0
Limited Action	$6,000	$24,000	$346,000
Excavation and Disposal *	$789,000	$4,000	$846,000
Consolidation and Capping	$609,000	$24,000	$955,000
Total Cost for Each Alternative That Is Applicable To All Four Operable Units			
No Action	$0	$0	$0
Limited Action	$35,000	$326,000	$4,729,000
Excavation and Disposal	$3,744,000	$4,000	$3,801,000
*** Selected alternative. The total capital and present worth costs for the selected alternatives are $2,728,000 and $2,823,000, respectively. Annual O&M costs are $24,000. Additional cost for facility security, maintenance and operational housekeeping are not included.**			

Table 3.
Acronyms and Definitions.

AOC	Area of Concern
CERCLA	The Comprehensive Environmental Response, Compensation and Liability Act of 1980 (Federal Superfund)
ECL	Environmental Conservation Law
ND	Non-Detect
NYCRR	New York Code of Rules and Regulations
NYSDEC	The New York State Department of Environmental Conservation
NYSDOH	The New York State Department of Health
OU	Operable Unit
PCBs	Polychlorinated Biphenyls
ppb	parts per billion
ppm	parts per million
ppt	parts per trillion
PRAP	Proposed Remedial Action Plan
PRP	Potentially Responsible Party
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
RFI/CMS	RCRA Facility Investigation/Corrective Measure Study
ROD	Record of Decision
SCGs	Standards, Criteria and Guidance
SOB	Statement of Basis

Table 3 (Continued).
Acronyms and Definitions.

SWMU	Solid Waste Management Unit
SVOCs	Semivolatile Organic Compounds
TAGM	Technical and Administrative Guidance Memorandum
USEPA	The United States Environmental Protection Agency
VOCs	Volatile Organic Compounds

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Spaulding Composites Site
Operable Unit Nos. 1 to 4
Tonawanda (C), Erie County, New York
Site Nos. 9-15-050B & E

The Proposed Remedial Action Plan/Statement of Basis (PRAP/SOB) for the Spaulding Composites 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 November 27, 2002. The PRAP/SOB outlined the remedial measures proposed for waste and contaminated soil, sediment and water at the Spaulding Composites site.

The release of the PRAP/SOB 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 December 4, 2002, which included a presentation of the Remedial Investigation/RCRA Facility Investigation (RI/RFI) and the Feasibility Study/Corrective Measures Study (FS/CMS) as well as a discussion of the proposed remedies. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedies. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP/SOB ended on December 23, 2002.

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: Was any testing conducted in the parking lot on Wheeler Street?

RESPONSE 1: No testing was conducted in the parking lot because this area was never identified as a disposal area. The basis for the areas investigated was a RCRA Facility Assessment (RFA) completed by the United States Environmental Protection Agency (USEPA) in 1988. This assessment identified 36 Solid Waste management Units (SWMUs) and 10 Areas of Concern (AOCs). The SWMUs and AOCs inside plant buildings were addressed through plant decommissioning activities while the SWMUs and AOCs outside the buildings were investigated during the Remedial Investigation/RCRA Facility Investigation (RI/RFI) conducted at the site.

COMMENT 2: Who is paying for the on-site water treatment plant?

RESPONSE 2: Spaulding is currently paying for the operation, maintenance and compliance sampling of the on-site water treatment plant. Spaulding has been paying for the system since it began operation in 1993.

COMMENT 3: How is the groundwater being treated? What happens when it rains real hard, can the treatment system handle it? What would happen if the treatment system was shut down?

RESPONSE 3: Water flowing through the K-Line sewer is pumped from the sewer into the facility. The pumped water flows through pipes to an oil/water separator where any oil in the water is removed. The water is then pumped through a large gravel filter, similar to a swimming pool sand filter, to remove suspended sediment. The water then passes through a series of activated carbon drums that remove PCBs from the water. The treated water enters a large tank where it is sampled once a month for compliance with the 65 parts per trillion discharge limit specified in the Order on Consent. The treated water is then discharged to the Gibson Street storm sewer.

The amount of water that can be treated is largely determined by the rate at which water can be pumped from the sewer to the treatment plant. Because the K-Line sewer is walled off at a catch basin near Dodge Avenue, all water in this section of the sewer must pass through the treatment plant before it can be discharged off-site. During large rainfall events that exceed the capacity of the pump, the additional water fills up the K-Line sewer. It is estimated that the sewer can hold 30,000 gallons of water. When the rain event ends the excess water in the sewer is pumped through the system and treated. Similarly, if the treatment system were shut down, water would fill up the K-Line sewer, and if enough water were available, would eventually overflow. If the sewer was plugged off before the catch basin along Dodge Avenue, overflow would occur from a manhole near the Therminol Unit. Off-site migration of contaminated water from this area of the property is unlikely, while direct contact exposures would be minimal.

COMMENT 4: What about controlling the source of the PCBs to eliminate the need for the treatment plant?

RESPONSE 4: The source of PCB contamination in the K-Line sewer is the former Therminol Unit (SWMU 38). Because the sewer is located at a depth of approximately 11.5 feet below ground surface, contaminated soils would have to excavated to at least this depth to prevent PCB contamination from entering the sewer. To complete such an excavation the Therminol building would have to be dismantled and the concrete floor removed. Such a project would be extensive, with costs constituting a large percentage of the $693,000 estimated cost for the entire Operable Unit.

COMMENT 5: Is Spaulding responsible for the $3 million cleanup cost? Isn't there a new owner? What does this mean regarding remediation of the site?

RESPONSE 5: As a Potential Responsible Party (PRP) under State Superfund Law, Spaulding and its successor company would be responsible for the cost of site remediation. The Department recognizes, however, that due to Spaulding's re-emergence from its second bankruptcy in ten (10) years, the company likely will not have the financial resources to complete the remediation. In fact, Spaulding is negotiating with a developer to purchase the property and remediate the site as part of their redevelopment efforts. As required by law, the Department will enter into negotiations for an Order on Consent for the remediation of the site.

COMMENT 6: Will the buyer have the money to clean up the site?

RESPONSE 6: The developer claims to have the necessary finances to remediate the site, however, the sales agreement will require proof of this.

COMMENT 7: I thought the cleanup was going to cost $1.7 million, now you are talking close to $3 million. Why the difference? Will the cost keep going up?

RESPONSE 7: The $1.7 million cost estimate was based upon using an innovative technology to remediate Operable Unit 2. The developer was hoping to utilize this technology at the site; however, use of this technology has not proven effective in remediating PCB contaminated soils at other sites in New York State so it was not accepted by the Department. In addition, the final remediation cost will depend upon excavation and disposal costs at the time of remediation, and the extent of the excavation required to remove all contaminated soils and wastes.

COMMENT 8: Would the buyer be bound to pay for costs over the estimated cost?

RESPONSE 8: If the developer signs the Order on Consent, they would be responsible for site remediation regardless of the cost.

COMMENT 9: Do you know what the developer is going to do with the site?

RESPONSE 9: The Department does not know what the developer is planning to do with the site.

COMMENT 10: How long will the funding question take to resolve?

RESPONSE 10: The funding question depends largely on who will remediate the site. The Department expects the negotiations between Spaulding and the developer, and the Department and the developer, to be completed within six (6) months. If the deal is completed and the developer signs an Order on Consent, the developer would pay for remediation. If the deal falls through, and State Superfund is used to remediate the site, it is uncertain when this would take place because it is unknown when State Superfund will be re-authorized.

COMMENT 11: Are the drums still buried on site?

RESPONSE 11: Approximately 750 drums of resin waste are still buried on-site in the Resin Drum Landfill (SWMU 7). During remediation, these drums will be removed and disposed of in an appropriate off-site landfill.

COMMENT 12: Where would the excavated materials go?

RESPONSE 12: The excavated wastes and contaminated soils would be disposed of in an appropriate off-site landfill. Some materials will have to disposed of as hazardous waste, while other materials could be disposed of in a solid waste landfill.

COMMENT 13: Back in the 1960s there was a leak in a formaldehyde tank near the gate. Was that area tested?

RESPONSE 13: While the Department wasn't aware of this spill, the area in question was investigated during the RI/RFI. As part of the investigation three (3) soil samples from this area were analyzed for formaldehyde; this contaminant was not detected in these samples.

COMMENT 14: I can't believe that there was never any off-site testing. What about testing the neighbors yards? Have you tested any of the basement sumps in area homes?

RESPONSE 14: Off-site testing was not conducted during the RI/RFI because the analytical data obtained on-site did not indicate the presence of significant contaminant concentrations near the site boundary. During this type of investigation, soil borings are completed first in areas of known contamination and extend outward in a radial pattern until contamination is no longer detected. At the Spaulding Composites site the area requiring remediation that is located closest to residents consists of SWMU 5 and AOCs 45 and 47 (area near the intersection of Gibson Street and Dodge Avenue). The most extensive contamination was found in surface soil at borehole BH-63 located east of the tank berm. At this location, the soil cleanup objectives of TAGM 4046 were exceeded for aniline (27.0 ppm), 3&4-methylphenol (74.0 ppm), 2-methylphenol (14.0 ppm), phenol (100.0 ppm) and zinc (258.0 ppm). At borehole BW-9, located approximately 35 feet from the property line, the soil cleanup objectives of TAGM 4046 were only exceeded for phenol (0.63 ppm), 2-methylphenol (0.14 ppm), benzo(a)pyrene (0.16 ppm), dibenzo(a,h)anthracene (0.021 ppm) and zinc (258.0 ppm). With the exception of zinc, the concentrations at BW-9 are significantly lower than at BH-63, indicating the most extensive contamination is restricted to the area around the former aboveground storage tank.

Basement sumps in area homes were not tested during the RI/RFI. Basement sumps work by collecting groundwater during high water levels and pumping this water to storm sewers. This eliminates basement flooding. Because contaminated groundwater is not migrating from the Spaulding Composites Site, groundwater collected by nearby basement sumps would not be contaminated by Spaulding contaminants.

COMMENT 15: I can't imagine that the contaminants never got off site, how can that be?

RESPONSE 15: Contaminants have the potential to migrate from the Spaulding Composites Site via (1) contaminated groundwater, (2) contaminated surface water, and (3) erosion and transport of contaminated surface soils. Twenty on-site monitoring wells were sampled on at least two occasions during the RI/RFI. Groundwater contamination was detected in only three of these wells, with the most significant contamination detected in well OW-8. This well is located at a former Rail Spur (AOC 45 of OU4), an area where bulk chemicals were historically unloaded from rail tanker cars. Groundwater in this area is contaminated with benzene (2.8-3.2 ppb), toluene (24-32 ppb), xylenes (16-18 ppb), phenol (100,000-190,000 ppb, cresols (160,000-270,000 ppb), methanol (6,800-10,000 ppb) and unknown hydrocarbons (25,000-26,000 ppb). Contamination was not detected in two downgradient wells along Wheeler Street, indicating that contaminants from AOC 45 are not migrating off-site at this location. Migration of contaminants is severely restricted by the silty clay soils that underlie the site. These soils have very low permeability, meaning that groundwater (and contaminants) cannot easily move through it.

Contamination of groundwater within the Resin Drum Landfill (SWMU 7 of OU1) was also documented during the RI/RFI. This groundwater is significantly contaminated with tetrachloroethane (1,000 ppb), toluene (140,000 ppb), ethylbenzene (2,500 ppb), phenol (390,000 ppb), cresols (240,000 ppb), di-n-butylphthalate (570 ppb), aniline (370,000 ppb), ethanol (200,000 ppb), methanol (550,000 ppb) and zinc (5720 ppb). Groundwater contamination, however, was not detected in six shallow overburden wells that surround the landfill, indicating that the silty clay soils at the site have prevented the migration of contaminants from the landfill.

Low concentrations (below groundwater standards) of dichloroethene were detected in two upper bedrock monitoring wells installed at the site. Trichloroethene was also detected in one of these wells at a concentration below the groundwater standard. This water is located approximately 70 feet below ground surface and is not utilized as a source of drinking water.

Surface water at the site occurs intermittently, primarily during rain events. Surface water samples from 9 outfalls (where surface water leaves the site) did not exceed any of the surface water SCGs. The exception to this is storm water that enters the on-site K-Line storm sewer, which is contaminated with PCBs. As discussed in Comment 3 above, this water is pumped to the on-site water treatment system before discharge to the off-site storm sewer. If erosion and transport of contaminated surface soils was occurring, contaminants would have been detected in the surface water outfall samples. It is likely that the extensive vegetative cover throughout the site prevents the erosion and transport of contaminated surface soils.

COMMENT 16: How do I get my kids tested for contaminants?

RESPONSE 16: Based upon the results of the RI/RFI, there is no indication that contaminants have migrated off the site where residents could be exposed. Even occasional trespassing onto the site by neighborhood youths would not necessarily expose them to site contaminants because of the extensive vegetative cover throughout the site. If you still would like to have your children tested, it is recommended that you discuss this with your family physician.

COMMENT 17: How would somebody go about having their yard soil tested?

RESPONSE 17: Based upon the results of the RI/RFI, there is no indication that contaminants have migrated off the site where residents could be exposed. The Department does not recommend that individuals collect their own samples as specific quality assurance/quality control (QA/QC) procedures must be followed. These procedures ensure the integrity of the sample being collected and analyzed, and help to eliminate cross contamination between samples. As a result, the Department recommends that individuals contact an analytical lab or environmental consultant to collect the samples.

COMMENT 18: What and where are the labs that can test my yard?

RESPONSE 18: There are numerous analytical labs and environmental consultants in the Western New York area. The names of these labs and consultants can be found in the local phone book.

COMMENT 19: Does the DEC consider this an important/large project?

RESPONSE 19: The area of the Spaulding Composites Site that requires remediation (approximately 3 acres) and the estimated cost to complete this remediation (approximately $3 million) are both lower than many projects that have been completed in Region 9 and elsewhere across the state. The Department, however, believes that the remediation of the Spaulding Composites Site is an important project because the contamination at the site presents a significant threat to human health and the environment.

COMMENT 20: What about the animals, are they contaminated? Do these animals represent a threat to the public?

RESPONSE 20: While animals that walk across the Spaulding Composites Site have the potential to be exposed to site contaminants, the extensive vegetative cover throughout the site acts as a barrier to minimize animal contact with soil contaminants. In addition, most contaminants are located below the ground surface.

COMMENT 21: What about bioremediation, will it work?

RESPONSE 21: Bioremediation is a remediation technology that has proven effective for petroleum related contaminants similar to those found in OU3. Prior to full scale remediation, however, a field test would be completed to evaluate the effectiveness of this remedial alternative in the low permeability soils that underlie the site.

COMMENT 22: Soils from the Spaulding Composites Site were used to fill low areas in my backyard. Buttons are observed in these soils. Is this soil a concern? Buttons have also been observed in soils at Kohler & Franklin Streets. How far have the buttons gone?

RESPONSE 22: The Department was not aware that soils from the Spaulding Composites Site were utilized as fill at area properties. Buttons at the Site have been observed near the Rag Shed in the area of SWMU 36 (OU3). These buttons came from rags and clothes and were removed before these items were broken down into fibers and reformulated into Spauldite®. Because buttons are presently found in areas of known contamination, properties containing soils with buttons from the Spaulding Composites Site should be evaluated further, but independent of the ROD/SOB process. This work would be completed by the NYSDEC in the Spring or early Summer when the snow has melted and the ground has thawed. It is possible that the soils in question were left over when the underground storage tanks were installed. If this is the case, it is likely that these soils are not contaminated; the contamination documented during the RI/RFI resulted from leaks and spills from the storage tanks.

COMMENT 23: It would be nice to have all this on a web site.

RESPONSE 23: The Department has a web site located at www.dec.state.ny.us. This web site contains much information about the Division of Environmental Remediation, as well as other divisions in the Department. Currently, PRAPs are not available on the web site.

COMMENT 24: The soil cleanup values, are they residential?

RESPONSE 24: When evaluating a site for remediation, the concentrations of individual contaminants are compared to their respective TAGM 4046 soil cleanup objectives. The soil cleanup objectives in this TAGM are protective of both groundwater and human health. As a result, remediation of a site to these levels would be acceptable for residential usage, although this usage is not anticipated for the Spaulding Composites Site.

Charles M. Swanick, Erie County Legislator

COMMENT 25: The cleanup of the health related issues should be a priority over development.

RESPONSE 25: Throughout Spaulding's recent bankruptcy and negotiations with perspective developers, the Department has maintained that the remediation of the Spaulding Composites Site is a priority over development. It is possible, however, for redevelopment of the property to occur concurrently with site remediation. Because the contamination to be remediated is located outside of plant buildings, and because these buildings were cleaned during decommissioning activities after the plant closed, use of these structures is not prohibited. Precautions would need to be taken, however, to protect the employees from coming into contact with contaminated surface soils and water. Such precautions could include temporary covers (e.g., soil, asphalt) or fencing. Should a developer take over the remediation of the site, the Department anticipates that remediation will take place in stages - remediation of some portions of the property to allow for redevelopment of adjacent buildings, followed by further remediation and redevelopment until remediation is complete.

COMMENT 26: There is an obligation to clean these sites up. What kind of time frame are we looking at once the ROD is issued? From Consent Order to start of construction, how long?

RESPONSE 26: The length of time required to remediate a site is dependent upon several factors including the willingness of the Potential Responsible Party (PRP) to undertake the remediation, the remedy selected, whether a pilot or field test is required, and the length and type of operation, maintenance and monitoring required. Following issuance of the Record of Decision the Department begins negotiations with the PRP to implement the remedy. The length of the negotiation period can very significantly. Once negotiations are complete and an Order on Consent has been executed (or the site has been referred to State Superfund for remediation), design of the remedy begins. This process can take up to a year (longer if a field test is required) to complete. Once the work plans are approved the remedy is implemented. This work typically takes 1 to 2 field seasons to complete depending upon the remedy. Based upon the remedy completed, operation, maintenance and monitoring activities may be required. The length of time that these activities are required is based upon the nature of these activities.

Charles M. Swanick, Erie County Legislator, and Jack E. Gallagher, City of Tonawanda Mayor, submitted a letter dated December 17, 2002 that included the following comment:

COMMENT 27: "One issue that was raised and we feel needs to be addressed is off-site contamination. Residents cited incidents including a tank leak from the 1960s, that points to a potential source of contamination.

These residents are obviously concerned about this and the impact it may be having on their homes and families. While the DEC's original plan does not include off-site testing, given this information, we would like to request testing be done to a number of properties in close proximity to Spaulding."

RESPONSE 27: As discussed in Comment 13, the leak in the 1960s was from a formaldehyde tank near the gate at the corner of Dodge Avenue and Gibson Street. During the RI/RFI three (3) soil samples from this area were analyzed for formaldehyde, which was not detected in these samples.

As discussed in Comment 14, off-site testing was not conducted during the RI/RFI because the analytical data obtained on-site did not indicate the presence of significant contaminant concentrations near the site boundary.

During the public meeting, several residents identified several neighborhood properties containing soils with buttons. These soils reportedly came from the Spaulding Composites Site and were used to fill low lying areas. As discussed in Comment 22, buttons at the Spaulding Composites Site are found in areas of known contamination. As a result, other properties containing soils with buttons will be evaluated further by the NYSDEC, but independent of the ROD/SOB process.

APPENDIX B

Administrative Record

Administrative Record

Spaulding Composites Site
Operable Unit Nos. 1 to 4
Site Nos. 9-15-050B & E

1. Proposed Remedial Action Plan/Statement of Basis for the Spaulding Composites site, Operable Unit Nos. 1 to 4, dated September 2002, prepared by the NYSDEC.

2. Order on Consent, Index No. 91-18-R9-3425-91-04, between NYSDEC and the Spaulding Composites Company, executed on October 25, 1994.

3. Order on Consent, Index No. B9-0399-92-03, between NYSDEC and the Spaulding Composites Company, executed on October 25, 1994.

4. "Phase I Summary Report", November 28, 1983, prepared by Recra Research, Inc.

5. "Industrial Waste Sites at Spaulding Fibre Company, Inc.", December 13, 1983, prepared by the Spaulding Fibre Company, Inc.

6. "Final Draft Hazard Ranking System Report", May 31, 1988, prepared by NUS Corporation.

7. "Final Draft Site Inspection Report", May 31, 1988, prepared by NUS Corporation.

8. "Preliminary Site assessment", August 1991, prepared by Dunn Geoscience Engineering Company.

9. "K-Line Sediment Sampling Report", December 1992, prepared by Conestoga-Rovers & Associates.

10. "Sewer Cleaning Work Plan", December 1992, prepared by Conestoga-Rovers & Associates.

11. "Remedial Investigation/Feasibility Study Work Plan", August 1993, prepared by Conestoga-Rovers & Associates.

12. "RCRA Facility Investigation", August 1993, prepared by Conestoga-Rovers & Associates.

13. "Health and Safety Plan", August 1993, prepared by Conestoga-Rovers & Associates.

14. "Project Management Plan", August 1993, prepared by Conestoga-Rovers & Associates.

15. "Quality Assurance Project Plan (QAPP)", August 1993, prepared by Conestoga-Rovers & Associates.

16. "Field Sampling Plan", August 1993, prepared by Conestoga-Rovers & Associates.

17. "Citizen Participation Plan for RI/FS and RFI Studies", August 1993, prepared by Conestoga-Rovers & Associates.

18. "Summary Report, K-Line and F-Line Stormwater Sampling Program", May 1994, prepared by Conestoga-Rovers & Associates.

19. Fact Sheet providing a status update on plant decommissioning activities and the RI/RFI, January 1995, prepared by the NYSDEC.

20. "Plant Decommissioning Final Report", August 1995, prepared by Conestoga-Rovers & Associates.

21. Fact Sheet announcing the completion of plant decommissioning activities and the beginning of the RI/RFI, August 1995, prepared by the NYSDEC.

22. Fact Sheet providing a status update on the RI/RFI, May 1996, prepared by the NYSDEC.

23. "Site-Specific Parameter List Report", July 1996, prepared by Conestoga-Rovers & Associates.

24. "PCB Soil Investigation Report, Therminol Building", August 1996, prepared by Conestoga-Rovers & Associates.

25. Fact Sheet summarizing the results of the RI/RFI, December 1997, prepared by the NYSDEC.

26. "RCRA Facility Investigation and Remedial Investigation Report", September 1998, prepared by Conestoga-Rovers & Associates.

27. Fact Sheet summarizing the Supplemental RI/RFI activities, April 1999, prepared by the NYSDEC.

28. "Supplemental Remedial Investigation/RCRA Facility Investigation", May 24, 1999, prepared by Leader Environmental, Inc.

29. "Limited Groundwater Sampling Program", August 30, 1999, prepared by Leader Environmental, Inc.

30. "Feasibility Study and Corrective Measures Study", December 2000, prepared by Leader Environmental, Inc.

31. Fact Sheet summarizing the results of the RI/RFI and modification to the Registry, April 2002, prepared by the NYSDEC.

32. Fact Sheet describing the PRAP/SOB, November 2002, prepared by the NYSDEC.

33. Meeting Notice announcing the public meeting on the PRAP/SOB, November 22, 2002, prepared by the NYSDEC.

34. Letter dated December 17, 2002 from Charles M. Swanick, Erie County Legislator, and Jack E. Gallagher, City of Tonawanda Mayor.