RECORD OF DECISION
DuPont-Stauffer Landfill Site
Newburgh (C), Orange County, New York
Site No. 3-36-009

August 2006

Prepared by:

The Division of Environmental Remediation
New York State Department of Environmental Conservation

DECLARATION STATEMENT - RECORD OF DECISION

DuPont-Stauffer Landfill Site
Newburgh (C), Orange County, New York
Site No. 3-36-009

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the DuPont-Stauffer Landfill Site 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 DuPont-Stauffer Landfill Site inactive hazardous waste site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

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

Description of Selected Remedy

Based on the results of the Supplemental Remedial Investigation (SRI) for the DuPont-Stauffer Landfill Site, the criteria identified for evaluation of alternatives and comments received on the PRAP, the NYSDEC has selected Alternative 2; Excavation, Characterization and Off-Site Disposal of Identified Waste Types; Construction of an Engineered Part 360 Cap for Consolidation of all Remaining Waste Fill Types in North Landfill Area, and Soil Cover for all Excavated Areas. The components of the remedy are as follows:

- A remedial design program, including pre-design investigations;
- The excavation, characterization and off-site treatment/disposal of all the Waste Fill Type D in the North Landfill area and the South Landfill waste where the metals exceed characteristic hazardous waste regulatory levels in the ash. Disposal will be at a permitted hazardous waste disposal facility. ;

- The excavation of all waste remaining in the South Landfill area and the waste areas in the

North Landfill property where Waste Fill Types A, B, C, E and F were historically disposed of. The waste from these areas will be consolidated to the northern portion of the North Landfill area where the waste fill Type A is currently disposed;

The North Landfill area where the wastes consolidation would occur will be capped with an engineered cap designed to the substantive requirements of 6 NYCRR Part 360 solid waste regulations for landfills and caps;

All of the Waste Fill Type areas of the site that are excavated as well as all areas where surface soils would remain above SCGs/area background would be covered with a minimum of one (1) foot of soil meeting the requirements of NYSDEC TAGM 4046, or area background, with appropriate seeding and grading to establish a vegetated cover and demarcation layer from the surface and subsurface soils. New building foundations or a paving system may be also be used in place of the soil cover if acceptable to the NYSDEC. The extent of the soil cover will be determined by sampling during the remedial design;

Since the remedy results in contamination above unrestricted levels remaining at the site, an institutional control in the form of an environmental easement will be required for the remedy; and

- A site management plan (SMP) will be developed and implemented.

New York State Department of Health Acceptance

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

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

AUG 31 2006

Date

Dale A. Desnoyers, Director
Division of Environmental Remediation

TABLE OF CONTENTS

RECORD OF DECISION

DuPont-Stauffer Landfill Site
Newburgh(C), Orange County, New York
Site No. 3-36-009
August 2006

SECTION 1: SUMMARY AND PURPOSE OF RECORD OF DECISION

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the DuPont-Stauffer Landfill site. The presence of hazardous waste has created significant threats to human health and/or the environment that are addressed by this remedy. As more fully described in Sections 3 and 5 of this document, the burning and burial of wastes resulting from the manufacture of coated fabrics have resulted in the disposal of hazardous wastes, including volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and metals. These wastes have contaminated the surface and subsurface soil at the site, and have resulted in:

- a significant environmental threat associated with impacts of hazardous wastes associated with waste material in the subsurface and resulting impacts to groundwater; and

  a significant threat to human health associated with potential exposure to both metals in surface soils and hazardous waste in waste materials and subsurface soils.

To eliminate or mitigate these threats, the NYSDEC selects the following remedy:

- A remedial design program, including pre-design investigations;

- The excavation, characterization and off-site treatment/disposal of all the Waste Fill Type D in the North Land fill area and the South Landfill waste where the metals exceed characteristic hazardous waste regulatory levels in the ash. Disposal will be at a permitted hazardous waste disposal facility ;

  The excavation of all waste remaining in the South Landfill area and the waste areas in the North Landfill property where Waste Fill Types A, B, C, E and F were historically disposed of. The waste from these areas will be consolidated to the northern portion of the North Landfill area where the waste fill Type A is currently;

- The North Landfill area where the wastes consolidation would occur will be capped with an engineered cap designed to the substantive requirements of 6 NYCRR Part 360 solid waste regulations for landfills and caps;

  All of the Waste Fill Type areas of the site that are excavated, as well as all areas where surface soils would remain above SCGs/area background, would be covered with a minimum of one (1) foot of soil meeting the requirements of NYSDEC backfill

guidance, or area background, with appropriate seeding and grading to establish a vegetated cover and demarcation layer for the surface and subsurface soils . New building foundations or a paving system may be used in place of the soil cover if acceptable to the NYSDEC. The extent of the soil cover will be determined by sampling during the remedial design;

Since the remedy results in contamination above unrestricted levels remaining at the site, an institutional control in the form of an environmental easement will be required for the remedy; and

- A site management plan (SMP) will be developed and implemented.

The selected remedy, discussed in more detail in Section 8, is intended to attain the remedial goals identified for this site in Section 6. The remedy must conform with officially promulgated standards and criteria and guidance that are directly applicable, or that are relevant and appropriate. These are referred to as Standards, Criteria and Guidance and are hereafter called SCGs.

SECTION 2: SITE LOCATION AND DESCRIPTION

The DuPont-Stauffer Landfill Site is on Pierces Road located in a light industrial/residential area of the City of Newburgh, Orange County (See Figure 1). The landfill is bordered on the east by the former Newburgh City Landfill, Gidneytown Creek to the west, Interstate I-84 to the north, and South Street to the south. The site is completely fenced and is situated on a 38 acre parcel of land however, the area of waste disposal covers approximately 17 acres. Residential properties border Gidneytown Creek to the west and light industrial facilities are present on Pierces Road and South Street. Old Pierces Road is an unused paved road that separates the northern and southern portions of the site. The area south of Old Pierces Road includes an area referred to as the South Landfill. This portion of the site contains a few gravel areas and concrete platforms and is overgrown with grasses, scrub brush, and small trees. The North Landfill portion of the site consists of heavily wooded and vegetated terrain and has been largely undisturbed.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

E.I. duPont de Nemours and Company (DuPont) purchased the manufacturing facility from the Fabrikoid Company of Newburgh in 1911. The main manufacturing areas were located on South Street with waste disposal occurring at the landfill on Pierces Road. DuPont used nitrocellulose to coat fabrics from the late 1950s to the early 1960s when vinyl replaced nitrocellulose as the coating agent. Coated fabric was primarily used in manufacturing of automobile car seats and interiors. Stauffer Chemical (Stauffer) purchased the site from DuPont in 1967. Stauffer continued production of coated fabrics and also produced PVC sheeting until January 1979, when operations at the plant were shut down. The manufacturing facility (FCIP) was purchased by Creek Industrial Center in 1979 with Stauffer Chemical Company retaining ownership of the landfill.

As previously described, the site consists of two waste disposal areas referred to as the South and North Landfills. The South Landfill was reportedly used for storage, burning and burial of various plant wastes and residual waste ash. The North Landfill contained an incinerator that was used to burn wastes and an open field used for evaporation and disposal purposes. Non-burnable wastes were disposed of on-site or were transported to the Newburgh City Landfill, located just east of the site. Wastes reportedly disposed of at the DuPont-Stauffer Landfill site include methyl ethyl ketone (MEK), methyl isobutyl ketone (MIBK), pigments, polyvinyl chloride (PVC) resins, oils, toluene and other volatile organic compounds (VOCs), metal wastes and various solids such as fabric, metal cans, cotton synthetics, and PVC film.

3.2: Remedial History

In 1986, the NYSDEC first listed the site as a Class 2a site in the Registry of Inactive Hazardous Waste Disposal Sites in New York (the Registry). A Class 2a listing is a temporary classification assigned to a site that has inadequate and/or insufficient data for inclusion in any of the other classifications. In 1994, after a preliminary site investigation, the NYSDEC listed the site as a Class 2 site. A Class 2 site is a site where hazardous waste presents a significant threat to the public health or the environment and action is required.
The NYSDEC completed a Phase I investigation of the landfill in 1986, resulting in the Class 2a listing. The United States Environmental Protection Agency (USEPA) also performed a site inspection of the landfill in 1987. Sampling conducted by the USEPA indicated the presence of polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and metals in the surface and subsurface soils. Additional work was performed by the USEPA in 1992 which included soil, creek sediment, and creek surface water sampling. The results confirmed the presence of PAHs and metals in soil and sediment.

A Preliminary Site Assessment (PSA) was then conducted by the NYSDEC in 1994 with the results being similar to the previous investigations. Groundwater sampling results indicated the presence of trichloroethene (TCE) and bis(2-ethylhexyl)phthalate (BEHP) and the potential for impacts to Gidneytown Creek was noted. Based on this data, the site was reclassified from a Class 2a to a Class 2 status in September 1994. DuPont-Stauffer then completed a Supplemental PSA in 1999. Groundwater sampling results confirmed the presence of BEHP, likely due to the plastic nature and burning of the waste stream.

SECTION 4: 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 PRPs identified for the site are DuPont and Stauffer, the present owners of the site.

The NYSDEC , DuPont and Stauffer entered into a Order on Consent in March 1999. The Order obligated the responsible parties to perform a Supplemental PSA. An amendment to the Order on Consent dated March 2002 required the responsible parties to complete a Supplemental Remedial Investigation (SRI) program. The SRI report was approved by the NYSDEC in July 2003. A second Order on Consent was signed in August 2005 which requires the DuPont and Stauffer Companies to complete the Focused Feasibility Study (FFS), remedial design, remedial

construction, and implement a site management plan that includes operation, monitoring, and maintenance (OM&M) and environmental easements.

SECTION 5: SITE CONTAMINATION

A supplemental Remedial Investigation/Focused Feasibility Study (SRI/FFS) has been conducted to evaluate the alternatives for addressing the significant threats to the human health and the environment.

5.1: Summary of the Remedial Investigation

The purpose of the SRI was to define the nature and extent of any contamination resulting from previous activities at the site. The SRI was conducted between September 2001 and February 2004. The field activities and findings of the investigation are described in the SRI report.

The following activities were conducted during the SRI:

- Research of plant records and aerial photographs to determine historical waste disposal areas;

  Geophysical survey to determine the existence of an 8-foot diameter steel tank in the former landfill and other potential structures;

  Excavation of test pits to determine the nature and extent of the soil contamination in the various waste fill types;

  Installation of soil borings, eight (8) temporary monitoring wells, four (4) permanent monitoring wells, and two (2) bedrock wells for analysis of soils and groundwater as well as physical properties of soil and hydrogeologic conditions;

  Installation of six (6) piezometers adjacent to Gidneytown Creek to perform a hydraulic assessment and determine if the creek does not provide recharge to the overburden aquifer at the site;

  Collection of five (5) surface water samples and seven (7) aquatic sediment samples from Gidneytown Creek to assess potential impacts to the creek from the site;

  Conducted a water use survey in conjunction with the local public water providers in order to determine what public water supply was available or if there were private groundwater uses in the vicinity of the site;

  Conducted a survey of any private or public wells west of the site along Taft and Dix Avenues.

To determine if the waste materials, groundwater, surface water, soil and soil vapor contain contamination at levels of concern, data from the Remedial Investigation were compared to the following SCGs:

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

Soil SCGs are based on the NYSDEC "Technical and Administrative Guidance Memorandum (TAGM) 4046; Determination of Soil Cleanup Objectives and Cleanup Levels".

- Sediment SCGs are based on the NYSDEC "Technical Guidance for Screening Contaminated Sediments".

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

5.1.1: Site Geology and Hydrogeology

The site is underlain by two main geologic units: glacial till and carbonate bedrock of the Cambrian-Ordovician Age Wappinger Group. Boring logs indicate that the glacial till is up to 20 feet thick and consists of sand, silt, gravel, cobbles, and boulders. Bedrock is encountered at depths ranging from exposed at the surface to 20 feet below grade surface (bgs). The bedrock is highly fractured gray dolomitic limestone with some calcite deposits and shaly bands that generally dip towards the south. The middle and eastern portions of the site contain a thin overburden layer that has limited groundwater. Recharge of the overburden aquifer is mostly attributed to seasonal precipitation.

On the DuPont-Stauffer Landfill site, the groundwater is predominately found in the bedrock aquifer as evidenced by the installation of bedrock wells installed during the SRI. The overburden groundwater fluctuates across the site and is influenced by seasonal precipitation events. The overburden and bedrock groundwater flows are predominantly toward the west and to the south of the site. Some hydraulic evaluations were conducted that indicated Gidneytown Creek may function as a groundwater divide for the DuPont-Stauffer Landfill site, thereby limiting recharge to the overburden.

In general, during precipitation events, resulting stormwater runoff from the site drains towards Gidneytown Creek. Gidneytown Creek has been classified as a Class D water body by the NYSDEC. Designated uses of a Class D water body may include fishing and secondary contact recreation use. This urban stream receives stormwater from local runoff, drainage from Interstate I-84 and from other upstream sources, such as the Newburgh City landfill. The creek, which forms the northern and western boundaries of the site, flows to the south to Quassaic Creek. The stretch of the stream that flows adjacent to the site is located in the upper reaches of the Gidneytown Creek drainage basin and as such, the creek has been observed to have considerable fluctuations in flow due to seasonal variations in precipitation and runoff from nearby highways.

5.1.2: Nature of Contamination

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

The VOCs that most commonly exceed their SCGs in the landfill waste are acetone, benzene, methyl ethyl ketone, methyl isobutyl ketone, and toluene. The SVOCs of concern are bis(2-ethylhexyl)phthalate (BEHP), buytl benzene phthalate, N-dioctyl phthalate, and phenol. The inorganic metals that most commonly exceed their SCGs are cadmium, lead, and mercury.

5.1.3: Extent of Contamination

This section describes the findings of the investigation for all environmental media that were investigated.
Chemical concentrations are reported in parts per billion (ppb) for water and parts per million (ppm) for soil and sediment. For comparison purposes, where applicable, SCGs are provided for each environmental medium. Table 1, summarizes the degree of contamination for the contaminants of concern in surface soil, subsurface soil, groundwater and sediment and compares the data with the SCGs for the site. The following are the media which were investigated and a summary of the findings of the investigation.

Landfill Waste

Data collected during the test pit excavations and soil boring installation activities in the North and South Landfill areas were used to determine the nature and extent of the landfill waste. Six (6) distinct waste fill types were identified in the North Landfill (Waste fill Types A through F). One common waste fill type was discovered in the South Landfill. The waste fill types, their lateral extent, and approximate size in acres are shown on Figure 2. The total extent of waste fill covers approximately 17 acres.

The single fill type in the South Landfill is an ash material which has elevated levels of metals, as well as polycyclic aromatic hydrocarbons (PAHs) typical of any product of combustion. However, cadmium is present in select areas of the South Landfill ash at levels which exceed the Toxic Characteristic Leaching Procedure (TCLP) regulatory level of 1 ppm, indicating this waste material is a characteristic hazardous waste and must be handled and disposed of off-site accordingly.

Waste Type A fill consists of an ash/cinder/soil material with other miscellaneous debris (glass, wood, and brick). Waste Type B fill was found to consist of hardened PVC colored sheeting, fabrics, construction and demolition (C&D) debris, and scrap metal. Waste Type C fill contained C&D debris (glass, wood, and brick), PVC, and fabrics. Waste Type D fill consists of volatile and semi-volatile organics as well as various colored paste/putty material which was mixed with fabrics and other contaminated debris and inorganic metals. Waste Type E fill material is located in the western portion of the site and consists of soils impacted primarily by inorganic metals. Waste Type F fill is found in an area where mounded soils are impacted by inorganic metals and PAHs along Old Pierces Road. The waste material found in the South Landfill was comprised primarily of black ash/cinder with C&D debris (brick, concrete, and wood), SVOCs as well as inorganic metals.

Analytical results shows concentrations of inorganic metals and SVOCs mainly in the shallow soils, that were above NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 for all waste fill Types. Several VOCs, SVOCs, inorganic metals, and PCBs were detected above TAGM 4046 remedial objectives for Waste Type D fill in both surface and subsurface soils.

These findings are consistent with waste streams commonly found in closed industrial waste landfills. The majority of the waste encountered at the site is found at or just below the surface and contains concentrations of contaminants such as inorganic metal compounds and SVOCs. The areas where the Waste Type D fill was observed also correspond with the historical location of the former trenched disposal areas. These areas reportedly contain non-burnable wastes but are relatively small in volume and mostly isolated. There have been some limited impacts from the site wastes to the groundwater, surface water, or sediment.

Surface Soil

Forty six (46) surficial samples were collected from 0 to 6 or 0 to 12 inches below ground surface (bgs) at several test pit and soil boring locations from within and outside of the waste fill areas. Additional depth for the samples was required at certain locations due to the presence of debris or excessive vegetative cover. Eleven (11) SVOCs were identified above SCGs as listed in Table 1. Fifteen (15) inorganic metal compounds were detected above their respective SCGs as listed in Table1.

Ten (10) soil samples were collected from outside of the fill areas and two (2) of these samples, SB-6 and SB-19, were used to determine levels of naturally occurring background inorganic metal compounds in the surrounding site soils. These results, shown in Table 1, were used as background levels to which site soil and waste samples were compared.

Soil

Ninety one (91) subsurface soil samples were collected in test pits, both within and outside the waste fill areas. Contaminated waste fill and underlying soil were generally observed in the interval of 1.5 to 6 feet bgs. Ten (10) VOCs were detected above SCGs; 1,1-dichloroethane, 1,2-dichloroethane, acetone, benzene, methyl ethyl ketone (MEK), MIBK, methylene chloride, toluene, trichloroethene, and total xylene. Seventeen (17) SVOCs were identified above SCGs, (See Table 1). One PCB compound, Arochlor 1254 was detected above the SCG. Fifteen (15) inorganic metal compounds were observed above their SCGs as listed in Table 1.

Groundwater

Four (4) rounds of groundwater monitoring were conducted during the SRI with fourteen (14) wells selected for sampling. In 2001, both sampling of groundwater in the overburden and bedrock zones was conducted. Inorganic metals and one SVOC, BEHP were detected at or above State groundwater standards in the overburden groundwater. BEHP, was identified above groundwater standards at 60 ppb. The bedrock data indicated that five (5) VOCs, chlorobenzene, 1,2-dichloroethane, tetrachloroethene, toluene, and trichloroethene were identified above SCGs of 5ppb at 36 ppb, 16 ppb, 8 ppb, 12 ppb, and 61 ppb respectively.

Subsequent overburden groundwater sampling in 2003 resulted in BEHP data that did not exceed groundwater standards. Four (4) inorganic metal compounds, iron, magnesium, manganese, and sodium were identified above their SCGs in many of the wells. These four (4) inorganic metals are pre-dominantly naturally occurring and their presence is not believed to be due to landfill waste disposal activities. Several other inorganic metal compounds; antimony, arsenic, beryllium, chromium, copper, lead, mercury, nickel, thallium and zinc were also identified above SCGs in two (2) temporary overburden wells: TMW-1 and
TMW-6. Lead was above SCGs in TMW-4 and Zinc above SCGs in TMW-5. Barium was above SCGs in Well LF-2B.

Also it was determined that the majority of residents located to the south of the site and within a half mile radius of the site are supplied with a municipal water supply, according to records maintained by the Town and the City of Newburgh. Some private wells were identified west of the site (across from the creek) and to the north, which is upgradient of the site. In response to the presence of private wells, a residential well survey was mailed to thirty eight (38) residents on Taft and Dix Avenues, located west of the site.
Twenty (20) responses were received and it was determined that three (3) of the nine (9) private wells identified were used for drinking water purposes. The NYSDOH sampled the private wells at the three residences in November 2001. No exceedances of New York State drinking water standards were noted.

Surface Water

A total of five (5) surface water samples were collected in Gidneytown Creek during the SRI . The results of this sampling were compared to SCGs. Low levels of VOCs and SVOCs were detected in surface water (including some which may be associated with the Dupont-Stauffer Landfill waste). Mercury was also elevated in all the surface water samples collected. Mercury is also noted above SCGs in surface and subsurface soil at the Dupont-Stauffer landfill. No PCBs or pesticides were detected. Other sources of contamination to this stream are likely (e.g. urban runoff, Interstate 84 and the adjacent Newburgh City Landfill) as observed in the upstream surface water samples. However, there is the potential that the Dupont-Stauffer Landfill is contributing to low level impacts noted in Gidneytown Creek.

Sediment

Sediment samples were collected at six (6) locations in Gidneytown Creek with one location, SED-1, located slightly upstream of the Dupont Stauffer Landfill . Surface samples were collected from 0 to 6 inches bgs at each of the seven (7) locations. Subsurface samples were collected at three (3) locations, SED-1, SED-4, and SED-7, which were obtained from the interval of 6 to 12 inches bgs. No VOCs were detected above SCGs. No PCBs or pesticides were detected. Several SVOCs were identified in downgradient sampling locations along the southern portion of the site. These SVOCs were predominantly identified as polycyclic aromatic hydrocarbons (PAHs). Several inorganic compounds, including several identified above SCGs in surface and subsurface soil at the Dupont Stauffer Landfill, were detected in the sediments above SCGs. Zinc was detected above the severe effect level (SEL) in 3 samples and nickel was detected above the lowest effect level (LEL) in all sediment samples. Other urban sources of contamination to the stream are likely (urban runoff, Interstate 84 and the adjacent Newburgh City Landfill) as observed in the upstream sediment sample. However, there is the potential that the Dupont-Stauffer Landfill is contributing to the impacts noted in Gidneytown Creek

5.2: Interim Remedial Measures

An Interim Remedial Measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS. There were no IRMs performed at this site during the SRI/FFS.

5.3: Summary of Human Exposure Pathways :

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the human exposure pathways can be found in Section 5.0 of the SRI Report.

An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: [1] a contaminant source, [2] contaminant release and transport mechanisms, [3] a point of exposure, [4] a route of exposure, and [5] a receptor population.

The source of contamination is the location where contaminants were released to the environment (any waste disposal area or point of discharge). Contaminant release and transport mechanisms carry contaminants from the source to a point where people may be exposed. The exposure point is a location where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters or contacts the body (e.g., ingestion, inhalation, or direct contact). The receptor population is the people who are, or may be, exposed to contaminants at a point of exposure.

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

Given current site conditions there are no completed pathways of exposure at this site. In the absence of remedial intervention, the potential pathways of exposure to contaminants present at this site include:

Direct contact with and the incidental ingestion of contaminated surface soil for trespassers, site workers and future employees and/or residents

Direct contact with and the incidental ingestion of contaminated subsurface soil for site workers, particularly those engaged in any excavation activities, and future residents who chose to garden.

- Ingestion of contaminated groundwater for future employees and/or residents if drinking water wells are developed on-site.

Inhalation of VOCs off-gassing from contaminated soil for site workers involved with site excavations and the inhalation of VOCs via the soil vapor intrusion pathway for future site employees and/or residents occupying structures built in areas where VOC contamination is present in soil or groundwater.

5.4: Summary of Environmental Impacts

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

Based on the groundwater data, it was concluded that impacts to groundwater in both the overburden and bedrock, were limited to the immediate area of the waste disposal. No impacts to off-site groundwater associated with the former landfill were identified.

Surface water and sediment samples indicate the potential for contaminant migration from the Dupont-Stauffer Landfill to Gidneytown Creek. Several VOCs, SVOC and inorganics were noted in surface water and sediment above SCGs and similar contaminants were also noted above SCGs in surface and subsurface soil samples from the Dupont-Stauffer Landfill. However, there are other off-site sources that also contribute some contamination to the Creek (including urban runoff, runoff from Interstate I-84 and the adjacent Newburgh City Landfill) as noted by an upstream surface water and sediment sample. As this is the upper reach of the Gidneytown Creek drainage system, as such the creek has been observed to have considerable fluctuations in flow due due to seasonal variations in precipitation and runoff from adjacent highways. Therefore, the stream does appear to be capable of supporting a game fish population suitable for ingestion by the public and the ecological importance of this stretch of creek is important. The remedy will address impacts to sediments due to runoff by the removal of the Waste fill Type D and Ash with heavy VOC/SVOC contamination and the consolidation under the cap of the remaining waste, which would remove these potential sources.

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. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

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

- Exposure to the surface and subsurface waste and contaminated soils and other identified waste fill types in the North and South Landfill areas;
- The potential for exposure to on-site soil vapor and groundwater.
- The potential for degradation to the Gidneytown Creek due to runoff from the site.

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. Potential remedial alternatives for the DuPont-Stauffer Site are identified, screened and evaluated in the February 2006 PRAP which is available at the document repositories identified in Section 1. The PRAP was developed and focused on alternatives consisting of appropriate components of a 6 NYCRR Part 360 engineered cap system, the No Action alternative and a total removal alternative.

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

7.1: Description of Remedial Alternatives

The following potential remedies were considered to address the wastes disposed at the site, as well as the contaminated surface and subsurface soils, sediments and surface water and groundwater at the site.

Alternative 1: No Action

Present Worth: ..... *$ 179,000*
Capital Cost: ..... *$ 100,000*
Annual OM&M (30 Years): ..... *$ 5,000*

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

Alternative 2: Excavation, Characterization and Off-Site Disposal of Identified Waste Types, Construction of an Engineered Part 360 Cap for Consolidation of all Remaining Waste Fill Types in North Landfill Area, and Soil Cover for all Excavated Areas

Present Worth: ..... *$ 12,100,000*
Capital Cost: ..... *$ 11,310,000*
Annual OM&M (30 Years): ..... *$ 50,000*

This Alternative would include excavation, characterization and removal of all of the Type D waste in the North Landfill area and the waste in those locations on the South Landfill area where metals exceed Toxicity Characteristic Leaching Procedure (TCLP) regulatory levels in the ash. This waste would be sent for off-site treatment and disposal at a permitted hazardous waste disposal facility. Removal would be to confirmed by post excavation sampling, which would

demonstrate that volatile organic compound levels were below SCGs in the Type D waste removal areas and below TCLP metals levels in the South Landfill.

The alternative would also require the excavation, characterization and disposal of all remaining ash waste in the South Landfill and of waste fill types A, B, C, E, F in the North Landfill area. These wastes fill types would be consolidated to the northern portion of the site where the Waste fill Type A is currently. Should any of this waste be characterized as TCLP characteristic hazardous waste during the pre-design sampling, it would also be disposed of off-site as noted above. The consolidation area would have an engineered cap designed and constructed in conformance with the substantive requirements of 6 NYCRR Part 360 solid waste regulations for landfills and caps. All waste excavation would be based on visual observations and confirmatory sampling determined appropriate for the waste type.

The volume of the waste fill types and impacted underlying soil to be consolidated would be approximately 90,000 cubic yards. The volume of waste fill types estimated for off-site disposal would be from 12,000 to 20,000 cubic yards. All excavated areas would be restored with either a one (1) foot soil cover, with a demarcation layer, of non-impacted soil meeting the requirements of NYSDEC TAGM 4046 or area background with a demarcation layer and appropriate seeding and restoration to establish a vegetated cover. Building foundations or sidewalks/paving system associated with the development may be used in place of the soil cover, if acceptable to the NYSDEC. The limits of the area where the soil cover would be required would be determined by a pre-design investigation.

An institutional control in the form of an environmental easement would be implemented to require development of a site management plan (SMP) that would include a groundwater monitoring system to assess the effectiveness of the remedy, as well as a post remedial evaluation of Gidneytown Creek; limit the use and development of the property to commercial/industrial uses only and to prevent unauthorized use of site groundwater. The SMP would also include plans for the inspection and maintenance of the cap and any related storm water management system, as well as the areas of soil/pavement cover.

Alternative 3 : Excavation with Characterization and Off-Site Disposal of All Waste Fill Materials

Present Worth: ..... *$ 23,698,000*
Capital Cost: ..... *$ 23,390,000*
Annual OM&M (30 Years): ..... *$ 20,000*

This Alternative would include the excavation, characterization and off-site treatment/disposal of all waste fill materials identified (Waste Types A, B, C, D, E, F, and South Landfill waste), as well as impacted underlying soil, at either a permitted hazardous or solid waste disposal facility (as appropriate for the waste material). The excavated areas and surrounding soil would then be covered with one foot of soil or the structures associated with the site development and restored as detailed in alternative 2. An institutional control in the form of an environmental easement and site management plan similar to Alternative 2 would be required.

7.2 Evaluation of Remedial Alternatives

The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375, which governs the remediation of inactive hazardous waste disposal sites in New York State. A detailed discussion of the evaluation criteria and comparative analysis is included in the February 2006 PRAP.

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

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

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the NYSDEC has determined to be applicable on a case-specific basis.

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

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

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

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

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

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

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

8. Community Acceptance - Concerns of the community regarding the SRI reports and the PRAP were evaluated. A responsiveness summary has been prepared that describes public comments received and their responses. The selected remedy does not differ significantly from the proposed remedy that was presented in the February 2006 Proposed Remedial Action Plan (PRAP).

SECTION 8: SUMMARY OF THE REMEDY

The NYSDEC is selecting Alternative 2, Excavation, Characterization and Off-Site Disposal of the Identified Waste Types, Construction of an Engineered Part 360 Cap for Consolidation of all Remaining Waste Fill Types in the North Landfill area, and Soil Cover for all Excavated Areas. This Alternative includes the excavation, characterization and off-site treatment/disposal of all waste fill Type D and the South Landfill TCLP metals characteristic ash. It also includes the excavation and consolidation of all remaining waste fill types within the North Landfill Area, under an engineered cap that meets the substantive requirements of Part 360 solid waste regulations. The elements of this remedy are described at the end of this section.
The selected remedy is based on the results of the SRI and an evaluation and compilation of remedial alternatives that were evaluated in the PRAP.

Alternative 2 is being selected because, as described below, it satisfies the threshold criteria and provides the best balance of the primary balancing criteria described in Section 7.2. It will achieve the remediation goals for the site by the off-site disposal of all hazardous waste from the site that creates the most significant threat to public health and the environment, with the encapsulation of all remaining waste Types under an on-site Part 360 engineered cap with appropriate groundwater monitoring. This will be adequate to eliminate the potential for direct human exposure to all remaining waste fill material and impacted underlying soil in the North Landfill that would remain.

Alternative 1 was rejected because leaving the landfill in its current state will not meet the threshold criteria. Alternative 3 would also satisfy the threshold criteria but at a much greater cost, with significantly more intensive short term impacts, but without additional major benefits to public health and the environment for the additional cost.

Alternatives 2 and 3 both would have short-term impacts due to excavation, characterization and off-site disposal activities. However, Alternative 3 would be significantly greater due to the large increase in volume waste going off-site with associated additional construction time. These impacts can be managed by instituting engineering controls. The time needed to achieve the remediation goals would be shorter for Alternative 3 than Alternative 2, since all the impacted wastes would be disposed of off-site. However, both Alternatives would similarly be protective to human health and the environment, since they would both achieve the remediation goals for the site.

Achieving long-term effectiveness would best be accomplished by total excavation and off-site disposal of the contaminated waste fill and underlying soils as is stated in Alternative 3. However, Alternative 2 is more practical and feasible alternative since it will remove the most contaminated hazardous waste material from the site and also will relocate the remaining non-hazardous waste fill and soils from the various locations of the site to beneath an engineered cap in the North Landfill Area, meeting the substantive requirements of Part 360, with appropriate monitoring systems being installed to ensure the effectiveness of the cap system.

The cost of these alternatives vary significantly. Alternative 2 will be less expensive than Alternative 3, and although it will not permanently remove all the waste and dispose of off-site, all of the waste fill types at the site would be addressed. Alternative 2 will effectively remove the most heavily contaminated and potentially mobile waste to a permitted off-site treatment and disposal facility and also will permanently contain and monitor the remaining wastes which would eliminate the continuing source of human health and environmental impacts at the site, including the groundwater contamination.

Surface water and sediment samples indicate the potential for contaminant migration from the Dupont-Stauffer Landfill to Gidneytown Creek. VOCs, SVOC and inorganics were noted above SCGs and similar contaminants were also noted in surface and subsurface soil samples from the Dupont-Stauffer Landfill. However, there are other sources of contamination to the Creek (including urban runoff, runoff from Interstate I-84 and the adjacent Newburgh City Landfill) which are also likely to contribute to the degradation of the stream system as noted by the upstream surface water and sediment samples. The selected remedy will stop erosion of surface and subsurface soil from the Dupont-Stauffer Landfill into the Gidneytown Creek by consolidating contaminated soil under the engineered landfill cap or the one (1) foot soil cover/paving/buildings. The remedy will include, as a component of the site management plan, a requirement for post construction evaluation of the Gidneytown Creek to determine if the remedy has effectively cutoff the potential pathway of migration and/or additional remedial measures will be necessary for the Creek. This further evaluation of Gidneytown Creek will be required because of the contribution of contamination from the Dupont-Stauffer landfill.

The estimated present worth cost to implement the remedy would be $12,100,000. The cost to construct the remedy is estimated to be $11,310,000 and the estimated average annual site management costs for 30 years would be $50,000 per year.

The elements of the selected remedy are as follows:

1. A remedial design program, including pre-design investigations, in order to provide the necessary engineering details to implement an effective remedial program. This program will include the further delineation of the extent and depth of the waste fill type removal areas; the extent of the area of the soil cap; and installation of the monitoring wells for the North Landfill consolidation area to provide baseline groundwater conditions prior to the waste consolidation.

2. Excavation, characterization, and off-site treatment/disposal of all of the waste fill Type D in the North Land fill area and the South Landfill waste where the metals exceed characteristic hazardous waste regulatory levels. Disposal would be at a permitted hazardous waste disposal facility. Excavation would be based on visual confirmation of

the removal of the waste type D with confirmatory sampling to assure volatile organic compounds do not exceed SCGs. For the South Landfill, ash characteristic metal levels would determine this phase of the removal was complete. Approximately 12,000 - 20,000 cubic yards of waste material will be treated/disposed of off-site.

3. Excavation and characterization of all waste remaining in the South Landfill area and the waste areas on the North Landfill where waste fill types A, B, C, E and F were historically disposed of. Should any waste fill type be characterized as TCLP characteristic hazardous waste, it will be disposed of as described above. All waste excavation will be based on visual observations and confirmatory sampling determined appropriate for the waste type. The remaining wastes will be consolidated to the northern portion of the North Landfill area of the site where Waste fill Type A is currently located. Approximately 90,000 cubic yards of waste material will be consolidated.

4. The consolidation area in the North Landfill will be covered with an engineered cap. The engineered cap will be designed and constructed in conformance with the substantive requirements of a 6 NYCRR Part 360 solid waste regulations for landfills and caps, including design of a landfill monitoring well system in the overburden and bedrock aquifers to ensure the effectiveness of the engineered cap system and an appropriate storm water management system. The capped area will be fenced, as appropriate.

5. All waste fill areas excavated and any remaining areas of elevated surface soils above SCGs or area background will be covered with a minimum of one (1) foot of soil meeting the requirements of NYSDEC backfill guidance (or area background), the soil cover will include a demarcation layer and appropriate seeding and grading to establish a vegetated cover. Building foundations and/or a paving systems as part of any development of the site could be used in place of the soil cover, if acceptable to the NYSDEC. The extent of the covered areas will be determined by pre-design sampling.

6 Since the remedy results in contamination above unrestricted levels remaining at the site an institutional control in form of an environmental easement will be required for the site. The environmental easement will:

(a) Restrict the use of the site to " Commercial/industrial use or Restricted - recreational use" which includes passive recreational activities ;

(b) Restrict any development of the consolidation area that will impact the integrity of the engineered cap;

(c) Restrict use the use of groundwater on the site; and

(d) Require management of the site in accordance with the provisions of the site management plan to be approved for the site by the NYSDEC.

7. A site management plan (SMP) will be developed and implemented. The SMP will identify the institutional controls and engineering controls (IC/ECs) required for the remedy and detail their implementation. The SMP for this remedy will include:

(a) An IC/EC control plan to establish the controls and procedures necessary to: (I) manage residual contaminated soils that may be excavated from the site during future activities, including procedures for soil characterization, handling, health and safety of workers and the community, as well as disposal/reuse in accordance with applicable NYSDEC regulations and procedures; (ii) evaluate the potential for vapor intrusion for any buildings developed on the site, including mitigation of any impacts identified; (iii) maintain use restrictions regarding site development or groundwater use identified in the environmental easement; and (iv) require the property owner to provide an Institutional Control/ Engineering Control (IC/EC) certification, as required by regulations, on a periodic basis;

(b) A monitoring plan to be designed to monitor the consolidation area and overall site wide groundwater quality, as well as a post construction evaluation of surface water and sediment in Gidneytown Creek; and

(c) An operation and maintenance plan to provide the detailed procedures necessary to maintain the engineered cap and related storm water management system. The operation and maintenance plan will include inspection and maintenance of the engineered cap, any site fencing determined necessary, as well all other areas of the site with cover systems included as part of the remedy.

SECTION 9: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial 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 and maintained.
- A public contact list, which included nearby property owners, elected officials, local media and other interested parties, was established and updated by the NYSDEC.
  Fact sheets were prepared and distributed.
  The Proposed Remedial Action Plan (PRAP) was prepared and open to public comment.
- A public meeting was held on March 6, 2006.
- A public informational session was held on April 4, 2006.
- A responsiveness summary (Appendix A) was prepared to address the comments received during the public comment period for the PRAP.

TABLE 1

Nature and Extent of Contamination

SURFACE SOIL 2001 - 2004	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	none above SCGs	----	----	----
Semivolatile Organic Compounds (SVOCs)	benzo(a)anthracene	0.0525 - 55	0.224	18 of 42
	benzo(a)pyrene	0.039 - 54	0.061	35 of 42
	benzo(b)fluoroanthene	0.056 - 64	1.1	11 of 42
	benzo(k)fluoroanthene	0.052 - 25	1.1	7 of 42
	bis(2-ethylhexyl)phthalate	0.098 - 89	50	1 of 17
	chrysene	0.052 - 77	0.4	16 of 42
	dibenzo(a,h)anthracene	0.043 - 7.5	0.014	20 of 42
	fluoranthene	0.095 - 120	50	6 of 42
	indeno(1,2,3-cd)pyrene	0.057 - 40	3.2	7 of 42
	phenanthrene	0.052 - 110	50	6 of 42
	pyrene	0.1 - 140	50	6 of 42
PCB/Pesticides	none above SCGs	----	----	----
Inorganic Compounds	antimony	1.01 - 116	5.5 (d)	9 of 39
	arsenic	2.6 - 47.3	9.7 (d)	8 of 38
	barium	45.3 - 18,800	300 (d)	23 of 46
	beryllium	0.44 - 1.76	0.81	13 of 38
	cadmium	0.074 - 536	10 (d)	16 of 46
	chromium	14.2 - 1,690	50 (d)	5 of 46
	copper	9.1 - 7,200	25	16 of 38
	lead	12.6 - 35,900	118 (d)	12 of 42
Inorganic Compounds (Cont'd	mercury	0.022 - 1.6	0.1	34 of 42
	nickel	0.227 - 75.3	19.8 (d)	26 of 38
	selenium	0.53 - 44.1	2	14 of 42
	silver	0.26 - 41.4	1.1 (d)	31 of 42

	thallium	0.93 - 2.01	1 (d)	6 of 38
	vanadium	16.3 - 153	150	1 of 38
	zinc	61.7 - 30,400	108 (d)	25 of 38

SUBSURFACE SOIL 2001 - 2004	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	1,1-dichloroethane	0.057 - 1.1	0.2	2 of 64
	1,2-dichloroethane	0.19	0.1	1 of 64
	acetone	0.014 - 140	0.2	10 of 64
	benzene	0.057 - 1.1	0.2	2 of 64
	methyl ethyl ketone	0.006 - 16,000	0.3	19 of 64
	methyl isobutyl ketone	0.004 - 1,600	1.0	17 of 64
	methylene chloride	0.002 - 14	0.1	3 of 64
	toluene	0.002 - 160	1.5	12 of 64
	trichloroethene	0.003 - 1.5	0.7	3 of 64
	xylene (total)	0.002 - 12	1.2	9 of 64
Semi-volatile Organic Compounds (SVOCs)	4-methylphenol	0.096 - 140	0.9	12 of 62
	4-nitrophenol	2.4 - 9.9	0.1	3 of 62
	benzo(a)anthracene	0.037 - 6.1	0.224	6 of 85
	benzo(a)pyrene	0.037 - 8.7	0.061	10 of 85
	benzo(b)fluoroanthene	0.037 - 7	1.1	1 of 85
	benzo(k)fluoroanthene	0.037 - 5.6	1.1	3 of 85
SVOCs (Cont'd)	bis(2-ethylhexyl)phthalate	0.083 - 40,000	50	23 of 62
	butyl benzyl phthalate	0.2 - 1,100	50	13 of 62
	chrysene	0.037 - 13	0.4	5 of 85
	di-n-butyl phthalate	0.33 - 230	8.1	10 of 62
	dibenzo(a,h)anthracene	0.037 - 2	0.014	17 of 85
	hexachlorobenzene	0.42	0.41	1 of 62
	indeno(1,2,3-cd)pyrene	0.037 - 3.6	3.2	1 of 85
	n-octyl phthalate	9.3 - 22,000	50	11 of 62
	o-creosol	0.6	0.1	1 of 62
	pentachlorophenol	4.8	1	1 of 62
	phenol	0.25 - 550	0.03	15 of 62
PCB/Pesticides	Arochlor 1254	0.016 - 4.7	1.0	1 of 46

		(ppm)[a]		
Inorganic Compounds	antimony	076 - 27,500	5.5	31 of 84
	arsenic	1.31 - 111	9.7	17 of 84
	barium	8.5 - 23,600	300	30 of 86
Inorganic Compounds (Cont'd)	beryllium	0.198 - 2.85	0.81	7 of 84
	cadmium	0.0597- 2,710	10	23 of 91
	chromium	9.44 - 11,400	50	17 of 86
	copper	6.23 - 1,550	25	33 of 84
	lead	3 - 53,800	118	20 of 85
	mercury	0.01 - 518	0.1	29 of 85
	nickel	5.4 - 186	19.8	46 of 84
	selenium	0.5 - 33.4	2	9 of 85
	silver	0.16 - 17.6	1.1	10 of 85
	thallium	1 - 3.29	1	17 of 84
	vanadium	5.67 - 355	150	1 of 84
	zinc	8.2 - 31,000	108	38 of 84

GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	1,2-dichloroethane	3 - 16	0.6	2 of 15
	chlorobenzene	1 - 36	5.0	1 of 14
	tetrachloroethene	8	5.0	1 of 14
	toluene	2 - 12	5.0	1 of 14
	trichloroethene	6 - 61	5.0	2 of 14
Semivolatile Organic Compounds	bis(2-ethylhexyl)phthalate	5 - 60	5.0	1 of 26
Inorganic Compounds	Antimony	6.1- 12	3.0	2 of 6
	Arsenic	51.8 - 64.1	25.0	2of 6
	Beryllium	4.8 -5.4	3.0	2 of 6
	Barium	1300	1000	1 of 6
	Cadmium	9.6	5.0	1 of 6
	Chromium	113 - 478	50.0	2 of 6
	Cobalt	94.8	5.0	1 of 6
	Copper	356 -384	200.0	2 of 6
	Lead	28.5 -679	25.0	3 of 6
	Mercury	1.3	0.7	1 of 6

	Nickel	229 -660	100.0	2 of 6
	Thallium	19.6	0.5	1 of 6
	Zinc	2200 - 46000	2000	4 of 6

SURFACE WATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds	none above SCGs	----	----	----
Semi-volatile Organic Compounds (SVOCs)	2,4 Dinitrophenol	20 -22	5	6 of 6
	Benzo(a)anthracene	1.0	0.23	6 of 6
	Benzo(a)pyrene	1.0	0.0012	6 of 6
	Hexachlorobenzene	2.0	0.00003	6 of 6
	Hexachlorobutadiene	2.0	0.01	6 of 6
	Hexachlorocyclopentadiene	5.0	4.5	6 of 6
	Hexachloroethane	1.0	0.6	6 of 6
	Pentacholorophenol	3.0	1.0	6 of 6
PCB/Pesticides	none above SCGs	----	----	----
Inorganic Compounds	Mercury	0.026 -0.038	0.0007	6 of 6

SEDIMENT	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds(VOCs)	none above SCGs	----	----	----
Semivolatile Organic Compounds (SVOCs)	Total PAHs	6.2 -200	4-35	3 of 11
PCB/Pesticides	none above SCGs	----	----	----
Inorganic Compounds	Arsenic	19.5 -36.4	6 -33 (c)	3 of 11
	Copper	17.4 - 75.5	16 -110 (c)	10 of 11
	Lead	42.1 - 79.4	31 -110 (c)	6 of 11
	Manganese	833 - 3180	460 -1100(c)	5 of 11
	Mercury	0.16 - 0.19	0.15 -1.3(c)	1 of 11
	Nickel	18.3 -35	16 -50(c)	10 of 11
	Silver	1.7 -2.3	1.0 -2.2(c)	3 of 11
	Zinc	128 -332	120 -270(c)	3 of 11

[a] ppb = parts per billion, which is equivalent to micrograms per liter, ug/L, in water;
ppm = parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
ug/m^3 = micrograms per cubic meter

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

[c] LEL = Lowest Effects Level and SEL = Severe Effects Level. A sediment is considered to be contaminated if either of these criteria is exceeded. If both criteria are exceeded, the sediment is severely impacted. If only the LEL is exceeded, the impact is considered to be moderate.

[d] Site Background

Table 2

Remedial Alternative Costs

Remedial Alternative	Capital Cost	Annual OM&M	Total Present Worth
Alternative No. 1: No Action	$100,000	$5,000	$179,000
Alternative No. 2: Excavation & Characterization for Off-Site Disposal of Type D/TCLP ash, Excavation & Consolidation of Remaining Waste Types to North Landfill Area, with the Installation of a Part 360 Engineered Cap with a SMP and easement	$11,310,000	$50,000	$12,100,000
Alternative No. 3: Excavation and Off-Site Disposal of All Waste Materials	$23,390,000	$20,000	$23,698,000

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY
FOR THE DuPONT-STAUFFER SITE

SITE NO. 3-36-009

DuPont-Stauffer, PRAP Public Meeting Comments Summary
Delano Hitch Park Multipurpose Activity Center
March 6, 2006 7:00pm

The Proposed Remedial Action Plan (PRAP) for the DuPont-Stauffer site, was prepared by the New York State Department of Environmental Conservation (Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on February 17, 2006 . The PRAP outlined the remedial measure proposed for the contaminated environmental media, soil, sediments and groundwater at the DuPont-Stauffer site.

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

A public meeting was held on March 6, 2006 , which included a presentation of the Remedial Investigation (RI) and the Feasibility Study (FS) as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on April 20, 2006 . The public comment period was originally to close on March 20, 2006. It was extended to April 20, 2006 at the request of the public to allow for receipt of further comments and the holding of a public informational session on April 4, 2006.
This responsiveness summary responds to all questions and comments raised during the public comment period. The following are the comments received at the public meeting, with the Department's responses.

Comment 1: Is the removal of certain material to another spot – where's it going? Would the cap prevent exposure to people?

Response: As stated in the PRAP and ROD (Record of Decision), the hazardous waste will be excavated, transported and disposed of at an off-site permitted facility, either in New York State or out of State. The consolidation of the non-hazardous waste and containment beneath an engineered cap will effectively eliminate exposure the potential for exposure to the site-related contaminants.

Comment 2: We played and ate at the site when we were kids, what's going to happen to us? We all have private wells and all my kids have skin problems and allergies. Are they a result of this?

Response: It is very difficult to evaluate exposures that may have occurred many years ago and determine what effect, if any, they may have on an individual's health in the future. The information currently available to the Department and NYSDOH does not indicate that contaminants from the site have impacted private wells. It is unlikely that skin problems and allergies are a result of consuming private well water. Residents living near the site in homes currently served by private drinking water wells are encouraged to contact the NYSDOH at 1-800-458-1158 to arrange for the collection of a well water sample.

Comment 3: I grew up on Prospect street which had a great playground. We fished at the bridge and one day all the fish were floating and we watched as all the turtles ate all the dead fish. Then a couple of days later, all the turtles were dead. I saw many dead birds and rats, all of which died periodically en masse. Smoke from the incinerators would cause all sorts of respiratory aliments in my family, and our white laundry hung outside turned grey. Is there going to be testing of surrounding areas? How did the dust and ash from the incinerators affect the surrounding areas?

Response: The RI did not identify any current impacts to the stream ecology, even though at some time in the past releases to the stream may have resulted inimpacts to the stream. While it is possible that the incinerators that operated at the site dispersed dust and ash across the immediate area of the site, on-site surface soil samples collected during the RI did not indicate any widespread ash dispersion off - site. Therefore, there are no plans to expand the testing off-site. .

Comment 4: Who is going to be responsible for the easement and operation and maintenance component of the site management plan? Is monitoring to be done by an outside party?

Response: The Department along with the NYSDOH will oversee the implementation of the site management plan (SMP) and ensure that the SMP and the requirements of the environmental easement are properly implemented and enforced. The responsible parties and/or the Department may hire an environmental consultant to monitor the site. .

Comment 5: This area is so toxic, this might be as bad as Love Canal. The discoveries thus far are just scratching the surface of a huge problem – even the steel drums are rotted out. We need total remediation, should do Alternative 3.

Response: Although this is a Class 2 site, the contaminants found at this site are in no way comparable to Love Canal contamination. If drums are discovered during the remediation, they will be characterized and any contents properly disposed of off-site. The Department has determined that Alternative # 2, will provide a remedy for the site that is protective of human health and the environment.

Comment 6: Why are we settling for not the best cleanup if we don't know everything about the site? Do we know how many people in this immediate area have cancer or other maladies? Let's go for the best – nothing but total removal.

Response: The PRAP provides for pre-design investigation prior to any remediation in order to ensure that all areas of the site are properly characterized and remediated. The proposed remedial alternative is a protective and appropriate remedy for this site. Information on cancer incidence in New York State is routinely collected by NYSDOH. This information is then summarized at the county or zip code level depending on the type of cancer. This cancer information (available at http:\\www.health.state.ny.us) does not suggest an unusual disease pattern in the area. If you have specific concerns about rates of cancer or non-cancer health outcomes in the area, you are encouraged to contact the NYSDOH Center for Environmental Health at 1-800-458-1158.

Comment 7: No reviews of nearby sites (like Consolidated Iron and Metals) are included in the investigation. Every effort should be made and everything should be considered in order to clean this site right. Alternate 3 should be done. Will neighbors around the site get soil vapor intrusion testing?

Response: This site is independent of the nearby industrial sites noted by the comment. . The Department and the NYSDOH have determined that the selected remedy is protective for the site. There is currently no plan to conduct a soil vapor intrusion investigation on residential properties bordering the site since there is no indication that site-related volatile organic contaminants have migrated beyond site borders. However, the remedy includes a provision for in the SMP which will require evaluation of soil vapor intrusion for any future buildings erected on the site.

Comment 8: We should have an extension to the comment period and a public meeting on the weekend.

Response: The public comment period was extended to April 20, 2006 and a public informational session was held on April 4, 2006.

Comment 9: Cancer studies show elevated levels for Newburgh; will that be taken into consideration?

Response: NYSDOH is not aware of any cancer studies showing elevated levels in Newburgh. Please see response to Comment 6.

Comment 10: Why isn't it proposed that there is a liner underneath the capped waste?

Response: Non-hazardous ash waste is already in the area of the landfill where similar wastes from the site will be consolidated and covered by an engineered cap system. No liner is considered necessary, since the proposed consolidation area has a soil cover and the ash wastes found there are not impacting the subsurface soil below the area. With the addition of the engineered cap and groundwater monitoring required by the selected remedy, the added cost to place a liner, coupled with the additional length of any short term exposure risks during construction, was not deemed to be a more protective option.

Comment 11: There was not enough sampling done to choose the Alternative 2 over Alternative 3.

Response: The Department considers the sampling performed during the RI and supplemental RI sufficient to properly characterize the nature and extent of the contamination and allow a remedy to be selected. However, as part of the remedial design, additional pre-design investigations are planned to gather information and data necessary to design the appropriate components of the remedy for the site.

Comment 12: How is the cap designed and maintained over time? How do you know it won't break down? Who will pay for its maintenance?

Response: The engineered cap will be designed in accordance with the applicable Department 6NYCRR Part 360 regulations for landfill cover systems. Any maintenance and/or repair of the cap will be addressed by the SMP which will include periodic inspections and maintenance and/or repair as required to maintain its integrity. This remedy is expected to be funded and constructed by DuPont-Stauffer, with oversight by the Department. Should DuPont-Stauffer not to fund the remedy the Department is prepared to fund the remedy and site management using the State Superfund.

Comment 13: What kinds of metals will be in the capped sediment (soils) and how small are those particulates? What is the threshold level for these metals? Will the other materials be disposed of in the Orange Co. Landfill?

Response: Various non-hazardous metals, such as iron, aluminum, manganese and copper are included in the material to be consolidated and capped in the Northern Landfill Area. The majority of the material is soil, ash and soil mixed with construction and demolition (C & D) material. The off-site disposal facilities will be identified during the remedial design and approved by the Department.

Comment 14: How deep down does the Type D waste go? How do you know you'll reach clean margins?

Response: The depth of the Type D waste is in the range of 6 to 8 feet below the ground surface. The final cleanup depth and extent will be determined by visual observations followed by collecting confirmation samples which will be compared to the cleanup criteria for the site.

Comment 15: Has DuPont-Stauffer started the design of the remediation? Should monitoring trigger remedial action in the future, who takes care of that?

Response: The remedial design will be started once the Record of Decision is issued by the Department. Should additional remedial action be necessary in the future, the Department has the authority to require the responsible parties to institute the required actions to correct a problem.

Comment 16: Please define "restricted commercial use?" Does the land use differ from Alternative 2 to Alternative 3?

Response: The term "restricted commercial use" means the use of the site for commercial purposes, provided the development of the site is consistent with and maintains the integrity of the remedy. "Restricted-commercial use," is a land use for the primary purpose of buying, selling or trading of merchandise or services. The land use restrictions are the same for Alternatives 2 & 3.

Comment 17: Is the land use of the site dependent upon the level of remediation? In this case, would there be a difference in land use between Alternative 2 and Alternative 3?

Response: The land use restrictions are based upon the level of remediation. See Response to Comment 16 above.

Comment 18: Many ailments exist for people living in houses on the other side of Gidneytown Creek, and many cancer incidences on South Street as well as Dix Ave. Six out of nine siblings have died in one instance. Please check on the cancer levels for homes surrounding these toxic areas.

Response: Please see response to comment 6.

Comment 19: What regulations are in place for any other businesses or occupants on site so that re-contamination will not recur?

Response: There will be an environmental easement on the property that will include restrictions on the site use (restricted to commercial), groundwater use and the future development/use of the site in order to maintain the integrity of the remedy and protect those working or visiting the site. There are many federal, state and local environmental laws in place that future property owners would have to follow that should prevent re-contamination of the site.

Comment 20: Who makes the final decision on which remedial action to take? What restrictions are on the present site owner to transfer property to somebody else? If company folds, would the city take responsibility?

Response: The Department, in conjunction with the NYSDOH, makes the final decision on the remedy for the site after a careful consideration of comments received during the comment period. This decision is set forth in the Record of Decision (ROD) which is signed by the Department. DuPont-Stauffer can transfer the property to others who are willing to assume the environmental easement that binds any future owners to the use restrictions and implementation of the SMP to maintain the remedy, monitor the site, and make corrective actions as required by the Department. If DuPont-Stauffer should be unable to complete their obligations for the site management, the Department would manage the site utilizing the State Superfund.

Comment 21: The DEC tip line has never called back. With all the DEC cuts, how will you come down here to oversee all the work?

Response: The comment has been forwarded to the attention Director Robert Lucas, Division of law Enforcement, in our Albany Headquarters. That division's public web page provides the following guidance:

> "When the officers are on patrol, you may contact them through the DEC dispatch by dialing 1-877-457-5680 . . . if you are unable to contact an Environmental Conservation Officer (ECO) to report a serious on-going crime, call the nearest police department immediately. The New York State Police and some local law enforcement agencies are able to contact the ECOs via their police radios."

In addition, the following web address will provide information concerning each Region 3 ECO, the geographic area they patrol, and their direct phone numbers:
www.dec.state.ny.us/website/dle/r3roster.html

Comment 22: Have there been any airborne contaminant patterns in association with this site? Will there be airborne risks with remediation?

Response: There have not been any airborne contaminant patterns identified as emanating from the site. During remediation there is the potential for dust to be generated, due to excavation and movement of soil/wastes, but this will be closely monitored and controlled by the contractor doing the work through the use of various engineering controls. A community air monitoring program will be in place to monitor the site perimeter and to ensure that there are no significant off-site impacts from the site remediation. See also Response to comment 3.

Comment 23: Any air sampling done on an average day (i.e. background or ambient air sampling), not just during remediation?

Response: There will be background air monitoring conducted during the pre-design investigation, which will be used in the final remedial design.

Comment 24: How did you determine where to sample on this site? Did you set up random sampling grids?

Response: The sampling conducted during the RI and supplemental remedial investigation, was based on a visual observation and historical investigation of where the waste was disposed. No random sampling grids were set up for this task.

Comment 25: I would like to see a time-line of negotiations, present and past, with DuPont and Stauffer. How are the present negotiations going, and would there be a prolonged legal process if they pull out of the project?

Response: As stated in the PRAP and ROD, DuPont and Stauffer signed an Order on Consent in 2005, that order required them to evaluate remedies for the site, conduct a Remedial Design (RD) and implement the Remedial Action (RA) selected. However, the order does allow them to terminate the order after the ROD is signed. As soon as the ROD is executed, the Department will request DuPont-Stauffer to commence the Remedial Design, in accordance with the ROD. Should DuPont-Stauffer refuse to continue the project, the Department is prepared to fund the RD and RA using the State Superfund and seek cost recovery through legal process. As with any legal process, there would be some delay in the program if this is required.

Comment 26: Only 1of 46 samples showed presence of PCBs. How do you know they're not in unsampled areas? My older brother died after his second case of cancer. When we were kids, we bounced up and down on the rubbery material which poured out of overturned drums.

Response: Based on the data collected to date there is little evidence of PCBs at this site. However during the pre-design investigation, additional sampling will be conducted which will include PCB analysis. Also, see response to comment 6.

Comment 27: The capping program is unacceptable. This waste contains toxins in there which aren't even accepted in most landfills. Gidneytown Creek has only dried up 3 times in my lifetime. Nothing less than total remediation should be accepted.

Response: The selected remedy will remove all identified hazardous waste from the site and is protective of public health and the environment. The remedy also includes provision for the Gidneytown Creek to be further evaluated and if determined to be impacted, remediated.

Comment 28: The on-site capped area will have a soil and vegetative cover installed. What impacts would water have on the capped area while establishing the grass. Are there plans for test wells off-site? Where, and how many?

Response: The cap design includes an impermeable layer covered by soil, a vegetative cover and various geotextiles to drain precipitation and water to drainage swales. The impermeable cap will act as a barrier to prevent the generation of landfill leachate and leachate seeps from the capped area. A monitoring well network will be designed during the Remedial Design phase and installed along the perimeter of the cap and the site to evaluate the groundwater quality. into the capped area. It also includes the establishment of a vegetative cover which will require some watering.

Comment 29: Are there any other known dump sites in the area which may cause any false positives of contamination, at this site?

Response: While the City of Newburgh landfill is adjacent to the DuPont-Stauffer landfill, it is not expected to have an impact on this site.

Comment 30: Should we limit the remedial action to just this site?

Response: Each site is treated separately and has a site specific remedial action identified, designed and implemented.

Comment 31: Who would be responsible to do a health survey of residents near the landfill?

Response: The NYSDOH Center of Environmental Health has primary responsibility for addressing residents' concerns regarding the environment and their health. There are no current plans for conducting a health survey of residents near the landfill. Also see response to comment 6.

Comment 32: Surface water contaminants can travel very far. Some contaminants are shown to be five orders of magnitude higher than SCG's. These could all travel down to the Hudson River, so where does the sampling stop?

Response: There has been some evidence of surface water contamination above SCGs due to inorganic sedimentation found in the stream adjacent to the site. The inorganic contaminants that were found tend to be limited to the creek sediments adjacent to the upper end of the site. . Once the remedy is in place there is provision for testing of the surface water and sediments in Gidneytown Creek as part of the remedial program for this site. In addition, the upcoming investigation of the nearby Newburgh landfill will include investigation of the adjacent wetland/Creek area.

Comment 33: Any sampling at the city landfill?

Response: See responses to comments 29 and 32.

Comment 34: What will be the size and height of a 90,000 cu-yd landfill? Every inch of the city is important to its residents.

Response: The actual size of the capped area will be determined following the pre-design investigation and will be included in the Remedial Design. However, from preliminary data the area to be capped could range from 3-5 acres with a height increase ranging from 35-40 feet above the present grade. The Remedial Design will consider future use scenarios for the site in determining the final configuration.

Comment 35: How long does it take for cleanup? Is there a time-difference between Alternative 2 and Alternative 3?

Response: The selected remedy is expected to require from 18 to 24 months to design and complete from the time DuPont-Stauffer begins the design process. The time to implement both Alternatives 2 & 3 are similar, however, Alternative 3 is reliant on disposal facilities that may have capacity issues and limitations that could slow the remedial program.

Comment 36: Is there a phase of when remedies are done? For instance, are the volatile areas cleaned first, and the least-hazardous last?

Response: The remedial design will detail the remediation schedule and when impacted areas would be remediated. .

Comment 37: Would a hotel or daycare be an acceptable land-usage after remediation of this site? They're commercial.

Response: A daycare center is not considered a commercial usage and thus would not be an appropriate or acceptable usage at this site. A hotel is considered commercial use and would be allowed along with such uses as offices, stores or warehouses.

Comment 38: What about the proposed biomass plant?

Response: The Department is unaware of plans to locate or use this site for a biomass plant.
Comment 39: Has the actual plant site been evaluated for contaminants?

Response: The former Plant site and building across South Street were not evaluated under this site remedial investigation, since they are not part of the site.

Comment 40: Is there any difference in future land use in Alternative 2 vs Alternative 3?

Response: See response to comment 16.

Comment 41: We never received a report of the results after the testing that was done. Someone from DEC said that testing would occur and that we could get results but the next thing we knew, this meeting was on. We requested Freedom of Information Law (FOIL), and haven't gotten anything. How long has the DEC been doing this kind of remedy? Can you provide lists of successful projects using this kind of remedy?

Response: The RI, Supplemental Remedial Investigation Report and Proposed Remedial Action Plan (PRAP) are available at the designated document repositories for public review and the public was notified of their availability by the Fact Sheet sent out announcing the public meeting. These document repositories were established because the volume of the reports would make it difficult and costly for every individual to purchase their own copy. However, as stated at the public meeting, your were advised that under the FOIL it would be possible to get copies made if you wanted to pay the cost of duplicating the material.

This type of remedy has been utilized many times in New York State as well as by the United States Environmental Protection Agency (USEPA) and other states nationally. The capping of residual waste and other contaminated materials at Superfund sites has been successfully implemented at hundreds of sites nation-wide without impact to the public. The removal of all waste, solid as well as hazardous, and contaminated soil would not result in an increase in the overall protectiveness to human health and the environment of the remedy, but would result in significant increase in short term impacts and would not be cost-effective. To review other Registry sites in New York where a Part 360 cap was included in the remedy, you can go to the Department's public Website at www.dec.state.ny.us, and click on the "Database Search" (in the left hand column), then click on to "Part 360 permit" under "Institutional and Engineering Controls".

Comment 42: Have you checked with people around the area for health problems? On hot summer nights you can smell the landfill. Are you sure that the toxins haven't gotten into groundwater?

Response: There is no information suggesting an unusual pattern of non-cancer health outcomes in the area. Also, please see responses to comments 2 and 6.

Comment 43: The city has a concern about the amount of land leftover – can your order be rewritten if during remediation we will wind up with 23 acres of unusable land vs 12? Do provisions exist to amend the remedy on the fly? Also, are those SCG's predefined or are you shooting from the hip during cleanup?

Response: The response to comment 34 addresses the landfill size issue. Provisions do exist to amend the remedy, however the timing of any such change would be dependent on many factors, notably the identification of new information and the significance of any change to the overall protectiveness of the remedy. The SCG's are promulgated standards, criteria and/or guidance that have been established and widely used which are protective of human health and the environment and are used in the remedial process state-wide.

Comment 44: What defines, "clean?". Sounds like you're just moving stuff around which isn't cleaning. Where is this stuff going to go?

Response: Materials characterized as hazardous waste will be removed off-site to a permitted hazardous waste treatment and disposal facility. Likewise the solvent bearing hazardous waste or Type D waste, also hazardous waste, will also go off-site to a similar facility. The remaining non-hazardous waste materials will be consolidated in the North Landfill Area and will be isolated with an engineered cap system. Site excavations will be based on visual observations followed by sampling to ensure remediation meets the clean-up objectives. Also see response to comment 1.

Comment 45: I live in the area and am concerned that you guys are convinced that capping is the right idea. We think it ought to be dug out and taken away.

Response: See response to comment 41.

Comment 46: Cap material must be impervious to all contaminants – solvents dissolve plastic, and this waste is full of solvents.

Response: The solvent contaminated waste (Type D waste) will not be consolidated in the capped area. However, pursuant to Department regulations, the engineered cap system will be designed to be impervious.

Comment 47: Is the reason you're pushing capping due to financial reasons? Must we always go the cheaper way?

Response: See response to comment 41.

Comment 48: Will any drums containing liquid material be going under the cap, or will they be carted away?

Response: See response to comment 5.

Comment 49: I grew up here and remember seeing water full of rainbows. I saw drums and barrels constantly sprinkled with water so they wouldn't blow up. All this material is dangerous and it should be taken out of the area – it's the only way it should be done. This job should be done right the first time, slowly, methodically, the right way.

Response: See response to comment 5. .

Comment 50: If determined that similar materials are found off-site, would that be cleaned up too? Would DuPont-Stauffer be responsible? Is that a separate agreement that would have to be worked out?

Response: If there are off-site impacts that can be attributed to DuPont-Stauffer, then a study would be conducted to determine the nature and extent of such contamination and actions to address the problem could be incorporated into the remedial design, the final remedy, or as part of a subsequent action.

Summary of Written Comments

Letters were received from the following individuals, Stephan Rockafellow dated March 9, 2006; Denise J. Ribble dated March 12, 2006 and Barbara J. Smith dated March 13, 2006.

Comment 51: The above noted concerned citizens requested an extension of the public comment period.

Response: See response to comment 8.

A letter dated March 11, 2006 was received from Stephan Rockafellow with the following comment:

Comment 52: The letter requested that a total removal of all contaminants from the site be considered.

Response: See response to comment 44.

A letter dated March 20, 2006 was received from Frederic McCurdy with the following comment:

Comment 53: A concerned citizen stated that a former DuPont employee saw that lead based pigments, heavy metal stabilizers and other wastes were disposed of at the site.

Response: Comment noted.

A letter dated March 20, 2006 was received from Richard G. Ostner with the following comments:

Comment 54: Both DuPont and Stauffer have not been forthcoming with wastes that have been disposed at the site including wastes that may have originated from their plants in Connecticut and New Jersey. The letter also states that there are heavy metals that were disposed of at the site and additional investigation and testing should be performed. Also, the citizen stated that there

were stacks of barrels that had to cooled by sprinklers prior to being buried. Wants no less than 100% remediation.

Response: The wastes noted in the RI were those that have been identified by the investigations to date. There will be additional pre-design investigation conducted prior to the remedial design to confirm all waste types and extent of contamination. As noted in the ROD, heavy metal contamination was found during the remedial investigation of the site. The remedy will remove characteristic metals hazardous waste from the site and ensure anything remaining at the site will be managed so as to be protective of human health and the environment. Also, see response to comments 6 and 44.

Comment 55: A resident has lived near the site for 60 years and had to put up with the black soot for years. Resident also knew of two people who lived next to the site that had cancer. They have wanted the companies to clean up the site a long time ago.

Response: Comment noted.

A letter was received from Susan Cheever by email on April 19, 2006, with the following comments:

Comment 56: Letter expressed concern whether the site is considered to be in an Environmental Justice Area.

Response: The Department's Environmental Justice Policy (EJP), does not at this time consider this site directly in a specified Environmental Justice Zone. However, the Department takes into consideration aspects of the EJP with the hazardous waste sites in the State. The Department considers each site independently when making the remedial decisions on the site cleanup which is based on the data collected and compared to risks to human heath and the environment. The Environmental Justice Policy in general, has the same mission, in that it is to ensure that each site is evaluated and remediated to protect human health and the environment. The Department considers the selected remedy and the process by which it was selected to be consistent with these criteria.

Comment 57: Is the site resulting in non-attainment of air quality and is cancer mapping proposed?

Response: There is no present "non-attainment" of air quality at this site since it has been inactive for many years and does not include any operating facility or structure that would present a significant threat to air quality. Please also see response to comment 6.

Comment 58: Does this site require a soil vapor intrusion study?

Response: Please see response to comment 7.

Comment 59: Should the cap area have a bottom liner and should there be more sampling required for the site?

Response: Please see response to comments 10 &11.

An e-mail was received from Donna Goodrich dated Aprii 19th 2006, with the following comment:

Comment 60: She and her husband have lived on South Street, near the site for many years and had seen the DuPont/Stauffer incinerator stacks emitting ash as well fumes as when the operation of the plant was active. Also, they have seen impacts in the creek from the operations. They would like DEC to ensure that the proper cleanup of the site is completed.

Response: Comment noted. .

Letter dated April 20, 2006 was received from Donna and David Schwartz with the following comments:

Comment 61: We are both small business owners and residents near the site and would like the remedy to require the excavation and removal of all wastes and fill materials from the site. They also are concerned that protective measures be taken to prevent airborne particulates from site excavation activities from entering the community.

Response: The selected remedy is protective of human health and the environment, see also response to Comment 54. There will be engineering controls as well as continued monitoring during the implementation of the remedy to ensure the safety of the community and workers.

An e-mail was received April 19th 2006 from Frank Carbone Jr.

Comment 62: He prefers the total excavation and removal remedy, and has concerns that the Gidneytown Creek is not a barrier to off-site contamination.

Response: See response to comments 3, 6 and 44. .

Comment 63: See response to comment 6.

Response: During the implementation of the pre-design investigation, there will be more borings and test pits installed to more fully characterize the waste on the site that will extend to a depth necessary for this characterization. The need for off-site testing can be re-evaluated once the pre-design investigation has been completed.

Comment 64: A complete survey of the residents that live or have lived near the site should be conducted to determine if contamination from the site has affected them.

Response: The information currently available to the Department and NYSDOH indicates that the site-related contamination has not migrated beyond site boundaries. There are no current plans for conducting a health survey of residents that live or have lived near the landfill. See response to comment 6.

A letter dated April 20th 2006 was received from Thomas A. Mullin, with the following comment:

Comment 65: I am a former resident who lived near the site for 16 years, I vigorously support the investigation and cleanup of hazardous wastes at the former DuPont-Stauffer site.

Response: Comment noted.

A letter dated April 20, 2006 was received from the City of Newburgh, with the following comments:

Comment 66: The City agrees that the site should be remediated to protect human health and the environment and that the site after remediation be redeveloped to support industrial/commercial usage.

Response: The site, when remediated in accordance with the Record of Decision (ROD), could in the future be utilized for industrial/commercial or passive recreational uses.

Comment 67: The Private well survey conducted during the Supplemental Remedial Investigation (SRI) should be expanded to include properties south of the site. The City is willing to assist in these efforts.

Response: Based on the response to the private well survey conducted during the SRI, only a few homes were served by private drinking water wells. Contaminants related to the site were not detected in samples collected from these wells. Also, please refer to comment response 2. . The City's offer for assistance in the matter is appreciated.

Comment 68: More investigation of the Gidneytown stream sediments should be conducted.

Response: See responses to comments 27 & 32.

Comment 69: The PRAP characterizes the Gidneytown Creek as an intermittent water body, which is not quite accurate and language should be revised.

Response: The language in the final Record of Decision will be revised to reflect that Gidneytown Creek is a NYSDEC Class D stream which has at times a flow rate commensurate to seasonal precipitation events and runoff.

Comment 70: The City supports the further characterization of waste fill types of hazardous as well as non-hazardous wastes. The City also guardedly supports the consolidation of the non-hazardous waste in the north landfill area contingent on the volume of waste that would be consolidated and capped to prevent exposure pathways that would compromise human health and the environment, without significantly interfering with future development of the site. If the volume of non-hazardous wastes increases to a volume that impacts this effort, the excess volume of solid wastes should also be transported offsite by DuPont-Stauffer for disposal at a permitted facility.

Response: The design will seek to limit the size of the capped area to allow for future potential development or recreational usage. The pre-design investigation and remedial design process will take this into consideration. The capped area will be designed in accordance with Department Part 360 regulations and have an appropriate groundwater monitoring program and annual inspection program of the cap to prevent deterioration.

Comment 71: Volatile Organic Contamination (VOC) in the southern portion of the site, above groundwater standards was discovered during the SRI. There may be a DNAPL source that is contributing to this contamination. Further investigation of the bedrock groundwater should be conducted during the pre-design study.

Response: Any needed evaluation of the overburden and bedrock aquifers can be conducted during the pre-design investigation of the remedy.

Comment 72: More investigation of PCB contamination should be conducted.

Response: Please see response to comment 26.

Comment 73: The selected remedy must consider the unique circumstances surrounding this site in terms of Environmental Justice Policy and that the community is not disproportionately impacted.

Response:. Please see response to Comment 56.

Comment 74: The City supports the off-site disposal of Type D Waste and Characteristic Waste identified by 6NYCRR Part 371and that no hazardous waste is allowed in the Part 360 capped area.

Response: Comment noted.

Comment 75: The City would prefer the excavation and off-site disposal of both the hazardous waste as well as the non-hazardous waste, in order that the site not have a large capped area that would be a deterrence to future site development. In addition, the capped area has the potential of future problems with leaching of waste material to the groundwater and to surface drainage area. However the City would not be opposed to the capped area, if the size of the capped area is limited and that it be constructed in a way that could promote commercial and recreational uses.

Response: See response to Comment 70.

Comment 76: The City recommends that all surface soil that does not meet SCGs/background be excavated and removed, not covered by one foot of soil cover.

Response: All the waste fill types areas that have been, or are, identified through the pre-design investigation, will be excavated, characterized and disposed of/consolidated in accordance with the ROD. Other areas of the site that do not have disposal of the waste types identified by the ROD would be covered by a foot of soil meeting Department requirements for a soil cover. This type of soil cover used at may sites and is protective of public health and the environment.

Comment 77: The City states that DuPont-Stauffer must provide the financial surety sufficient to complete the site remediation along with post-remediation monitoring and maintenance of the site.

Response: The Order on Consent (Index No. W3-0988-02-04), with DuPont-Stauffer, does not provide for DuPont-Stauffer to post bonds for financial security. However, should DuPont-Stauffer decide not to implement the remedy, then the Department will implement the remedy using State Superfund monies and seek cost recovery from DuPont-Stauffer.

Comment 78: The City recommends that an Epidemiological Study be completed by NYSDOH and NYSDEC of residents who lived near the former facility and also of former workers.

Response: Based on the currently available information regarding the health status of residents, such a study does not appear warranted at this time. There are currently no indications of an unusual disease pattern among area residents. NYSDOH will continue to evaluate this position as additional information becomes available. If residents or former workers have specific information which suggests an unusual disease pattern for cancer or non-cancer health outcomes in the area, or if they have concerns about their individual health, they are encouraged to contact the NYSDOH Center for Environmental Health at 1-800-458-1158. Also see responses to comments 2 and 6.

A letter dated April 18, 2006 was received from Rudy LaMarr, Executive Director of the Newburgh Community Action Committee, Inc. (NCAC), which provided the following comments:

Comment 79: NCAC is expecting that Stauffer Management Company (SMC) will donate the landfill site to NCAC after the cleanup, in order for NCAC to redevelop the property and encourage business reinvestment.

Response: Redevelopment and land acquisition issues between NCAC and Stauffer are outside the scope of the ROD process.

Comment 80: NCAC has concerns of the wording in Alternative 2, "limit the use and development of the property to commercial uses only", that there is not enough flexibility for light industrial and recreational usage.

Response: The ROD wording has been changed to reflect this comment to include some light industrial and also passive recreational uses.

Comment 81: NCAC states that in their recent conversations with Stauffer, Stauffer responded favorably to NCAC by articulating a 6 to 8 month clean-up strategy that they could begin in the fall of 2006 and complete by early 2007, allowing for redevelopment to begin by the spring of 2007.

Response: Upon the issuance of the ROD, DuPont/Stauffer will be requested to implement the remedy. . The 6-8 month completion schedule is very ambitious and may be hard to attain, especially with the complexities of the site. The Department's estimate is approximately 18 to 24 months. .

Comment 82: NCAC is concerned that if Stauffer challenges the ROD or if Stauffer decides to not redevelop the site, NCAC and the community will lose out of the possible creation of an eco-industrial park. NCAC will undertake any appropriate action, it deems necessary to ensure that Department and Stauffer make this happen.

Response: The Department appreciates the efforts of NCAC to aid the community. However, the Department can only enforce the Order on Consent executed by DuPont-Stauffer to implement the ROD remedy. If DuPont-Stauffer refuses to implement the selected ROD remedy and not abide by the terms of the Order on Consent, then the site would be referred to the New York State Superfund program for implementation with cost recovery. .

A letter dated May 20, 2006 was submitted by ROUX Associates, Inc. on behalf of DuPont-Stauffer, with the following comments:

Comment 83: On Page 16 of the PRAP, under the listing of elements of the proposed remedy, Element #2 states that the remedy includes excavation, characterization and offsite treatment/disposal of all wastes, including the South Landfill, where metals exceed characteristic hazardous waste regulatory levels (i.e., TCLP). The Companies recommended that Element #2 be re-stated as follows:

> *"The remedy will include excavation, onsite consolidation and capping under a modified Part 360 cap, with an evaluation of whether onsite stabilization is necessary and/or practicable for material in which metals fail TCLP prior to consolidation."* DuPont-Stauffer wants to perform an evaluation of whether stabilization of the TCLP exceeded material is necessary prior to consolidation in the onsite managed landfill.

DuPont-Stauffer feel it is appropriate, and consistent with applicable regulations and relevant precedent to establish a single Area of Contamination (AOC) that encompasses the waste disposal areas. Note that if the waste disposal areas are incorporated into an AOC, then any movement of waste to an area of consolidation within the AOC does not constitute placement, and, therefore, (1) land disposal restriction (LDRs) do not apply, and (2) the onsite managed landfill would not be subject to regulation under the Resource Conservation and Recovery Act (RCRA). Therefore, the requirement for creation of a Corrective Action Management Unit (CAMU) will not have to be met and they can dispose of the hazardous waste in the Part 360 landfill in the North Landfill.

Response: The language suggested by DuPont-Stauffer is not accepted. The PRAP was intentionally very clear that DuPont-Stauffer will not be allowed to consolidate hazardous waste and debris in the 6 NYCRR Part 360 capped area in the North Area Landfill. That area is being designated as an separate AOC solely for consolidation of solid & non-hazardous wastes.

Comment 84: On Page 17 of the PRAP, under the listing of elements of the proposed remedy, Element #3 states that excavation and characterization of all wastes remaining in the South Landfill and in fill type areas A, B, C, E and F must be performed. Based on the extensive soil boring and test pit program that was performed during the SRI, DuPont-Stauffer request that the requirement for any additional characterization be re-stated as follows:

> *"a pre-design investigation will be performed as necessary to define the limits of excavation in compliance with the following Site-specific cleanup goals:*
>
> - *volatile organic compounds and semi-volatile organic compounds except for polycyclic aromatic hydrocarbons [PAHs] that exceed the standards, criteria and guidance values (SCGs); and*
> - *PAHs and metals that exceed ten times (10x) the SCGs."*

DuPont-Stauffer believe that their proposal to use their cleanup goals of *10x the SCGs* for metals and PAHs should be acceptable in recognition of the fact that the Site is in an urban area, where offsite sources of PAHs and metals exist. Therefore, DuPont-Stauffer believe it will unnecessarily increase short-term risks to construction workers and the surrounding community to remove all soil in which metals and PAHs exceed the SCGs. The 10x SCGs for metals and PAHs would be consistent with the generally-accepted concept of historical or urban fill, and would be protective of human health and the environment under a commercial or industrial re-use scenario, which will be dictated through the use of institutional controls. DuPont-Stauffer propose that the *10x the SCGs* apply to the entire Site.

Response: The language changes suggested by DuPont-Stauffer is not consistent with applicable Department guidance and regulations and are not considered protective of human health and the environment and thus will not be included in the ROD.

Comment 85: The proposed remedy in the PRAP (page 16) includes a provision for a post-construction evaluation of Gidneytown Creek, to determine if the remedy has effectively cut-off the potential pathway of migration for contaminants to the creek. DuPont-Stauffer feel that this evaluation will be unnecessary and will prove inconclusive for the following reasons:

- *As noted in the PRAP, there are other offsite sources of contamination to the Creek, including urban runoff and runoff from Interstate-84. Therefore, it will not be possible to (1) distinguish between the potential offsite and onsite sources during a post-construction evaluation of sediment quality; or (2) evaluate the need, if any, for a Site-based remedy.*
- *There were only infrequent detection of metals and SVOCs above SCGs in sediment samples obtained during the Supplemental Remedial Investigation (SRI).*

Response: The ROD calls for a post-construction evaluation of Gidneytown Creek based upon current information or pre-design information that identifies areas where there were historic elevated levels of site contamination detected in the creek; where areas of surface runoff to the creek originated in areas of high surface soil contamination or where drainage structures or pipes that drain from the site to the creek are identified that may have contributed to contaminant levels above SCGs in the creek.

Comment 86: On page 2 of the PRAP, when discussing the proposed remedy, the bullet at the top of the page states that all of the waste fill type areas of the site that are excavated as well as all areas where surface soil would remain above SCGs/background would be covered with a minimum of one (1) foot of soil meeting the requirement of Department TAGM 4046, or area background. However, if excavation areas are in compliance with SCGs, then a one-foot soil cover is not necessary. All excavations would be backfilled, as necessary to establish reasonable site grades, with soil from onsite sources or from certified offsite sources meeting Department TAGM 4046 or area background. In addition, the Companies would like to have the flexibility of using onsite soils meeting the requirements of TAGM 4046 or area background for backfill. Areas of soil that remain in place above SCGs will be covered by either one foot of soil meeting the requirement of TAGM 4046 (or area background), or building foundations and/or paving systems as part of future development.

Response: As part of the final site grading plan, if the on-site soils meet the requirements of applicable Department guidance for fill/soil covers, they may be considered for re-use as backfill.

Comment 87: On Page 3, Section 3.1 (Operational/Disposal History), the last sentence states that Former Creek Industrial Park (FCIP) was purchased by Creek Industrial Center in 1979 with the DuPont and Stauffer Companies retaining ownership of the landfill. Please note that only Stauffer Management Company owns the Site. DuPont sold the Site in 1967.

Response: The statement reflecting ownership by Stauffer Management Company (SMC) of the site and property has been changed in the ROD.

Appendix B

ADMINISTRATIVE RECORD

1. Proposed Remedial Action Plan (PRAP) for the DuPont-Stauffer Landfill Site, dated February 2006 prepared by the NYSDEC.

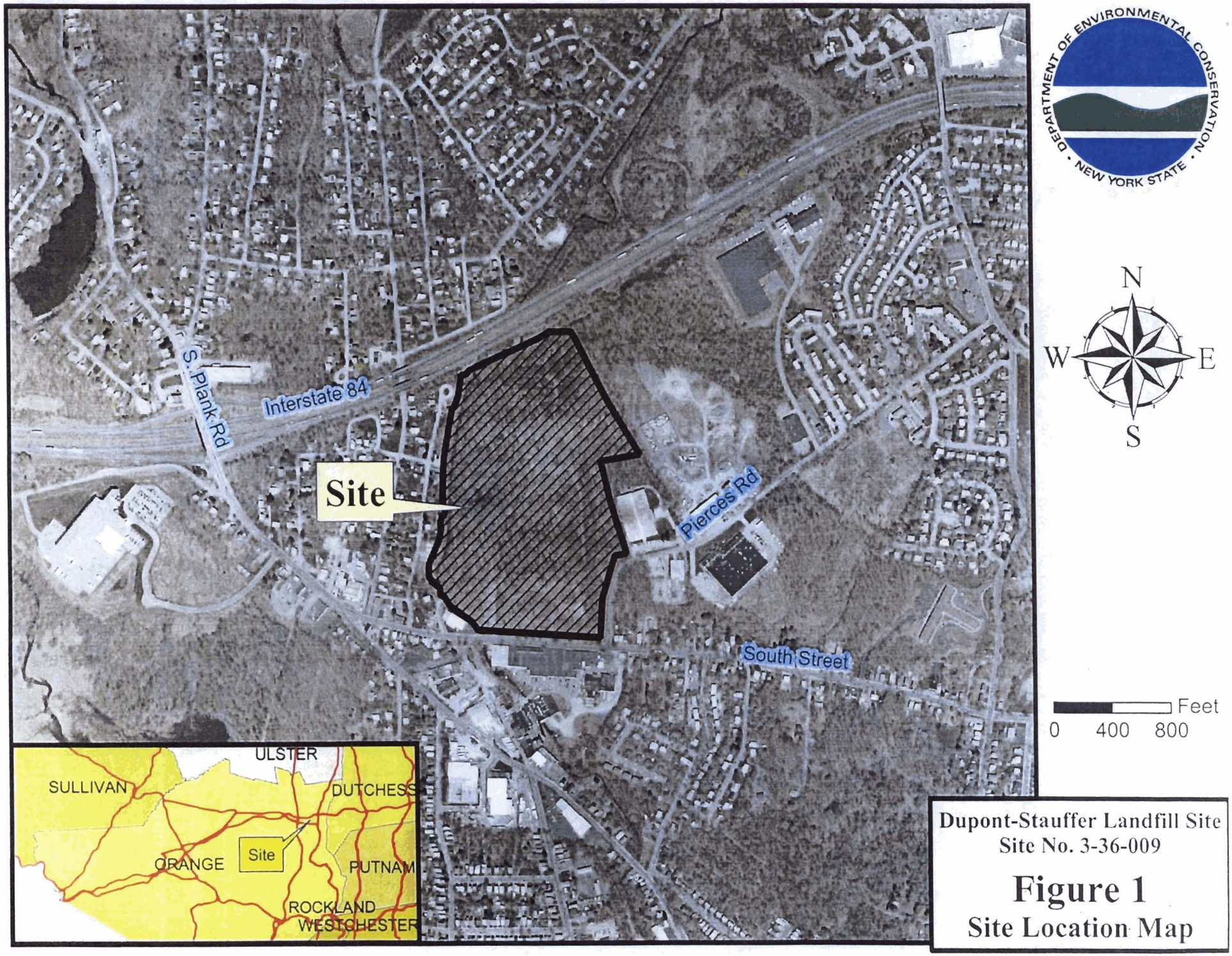
2. Order on Consent, Index No. W3-0988-02-04, between NYSDEC and E.I. DuPont deNemours and Company, Bayer Crop Science, Inc, successor-by-merger to Stauffer Chemical Company, and Stauffer Management Company, LLC, executed on July 29, 2005.

3. Supplemental Remedial Investigation Report, DuPont-Stauffer Landfill, Newburgh , New York dated July 11, 2003 and revised June 4, 2004, prepared by the DuPont Corporate Engineering and Remediation Group.

4. Draft Focused Feasibility Study, DuPont Stauffer Landfill, Newburgh New York, dated April 8, 2004, prepared by the DuPont Corporate Engineering and Remediation Group.

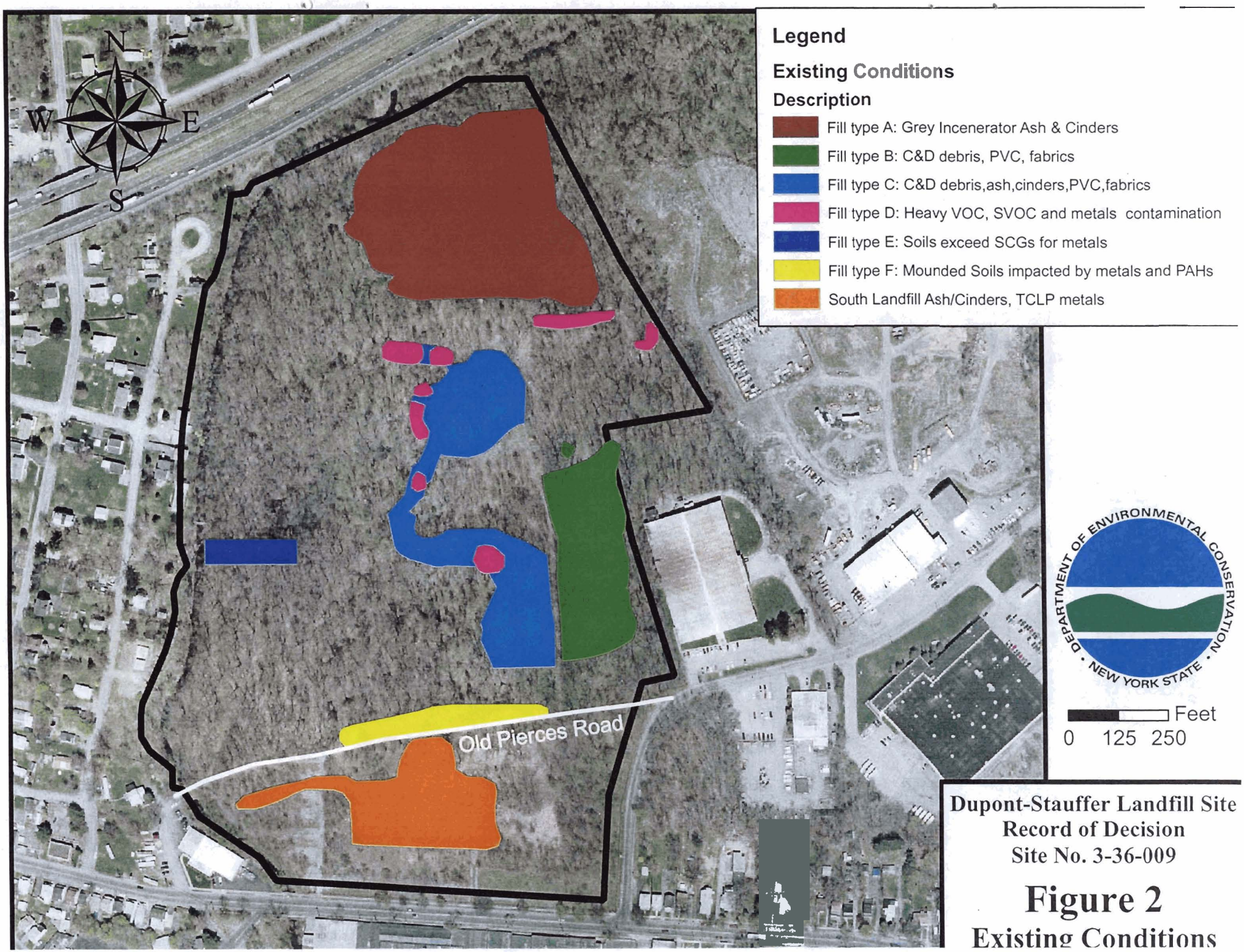
4 Fact Sheet, dated February 17, 2006 announcing release of PRAP, Comment period and Public Meeting date, prepared by the NYSDEC.

5. Notice of Public Availability Session and extension of Public Comment Period, dated March 24, 2006, prepared by the NYSDEC.



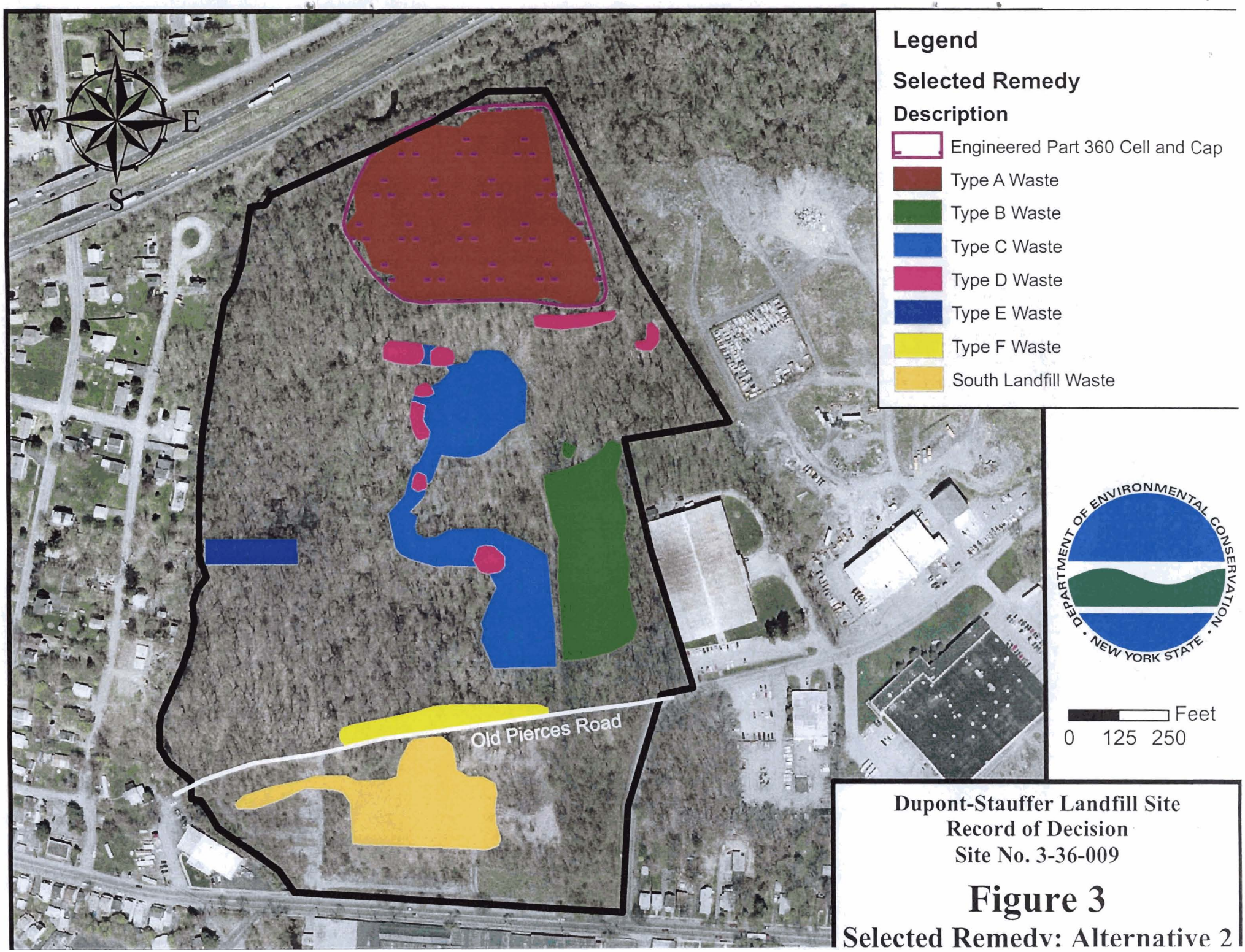
Dupont-Stauffer Landfill Site
Site No. 3-36-009

Figure 1
Site Location Map



Dupont-Stauffer Landfill Site
Record of Decision
Site No. 3-36-009

Figure 2
Existing Conditions



Dupont-Stauffer Landfill Site
Record of Decision
Site No. 3-36-009

Figure 3

Selected Remedy: Alternative 2