Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision
Kliegman Brothers Site
Operable Unit No. 1
Glendale, Queens, New York
Site Number 2-41-031

March 2006

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

DECLARATION STATEMENT - RECORD OF DECISION

Kliegman Brothers Inactive Hazardous Waste Disposal Site
Operable Unit No. 1
Glendale, Queens New York
Site No. 2-41-031

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for Operable Unit 1of the Kliegman Brothers site, a Class 2 inactive hazardous waste disposal site. The selected remedial program was chosen in accordance with the New York State Environmental Conservation Law and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for Operable Unit 1of the Kliegman Brothers inactive hazardous waste disposal site, and the public's input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened releases of hazardous 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/or the environment.

Description of Selected Remedy

Based on the results of the Remedial Investigation and Feasibility Study (RI/FS) for the Kliegman Brothers site and the criteria identified for evaluation of alternatives, the NYSDEC has selected soil vapor extraction (SVE). The components of the remedy are as follows:

- A Remedial Design program will be necessary to provide the details required to implement the remedial program.

- The existing Interim Remedial Measure (IRM) - SVE system will remain in-place and continue to operate.

- New components will be added to the existing IRM remedial system including: 1) additional vapor extraction wells and 2) a SVE Treatment System.

- Development of a site management plan to address residual contamination and any use restrictions.
- Imposition of an environmental easement.
- Periodic certification of the institutional and engineering controls.
- Long term monitoring.

New York State Department of Health Acceptance

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

Declaration

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

MAR 2 9 2006

Date

Dale A. Desnoyers, Director
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RECORD OF DECISION

Kliegman Brothers Site
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SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), has selected this remedy for the on-site soil and soil vapor above the water table (the vadose zone) at the Kliegman Brothers Site, referred to as Operable Unit 1. 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, operations of a dry cleaning supply company have resulted in the disposal of hazardous wastes, including tetrachloroethene and associated breakdown chemicals. These wastes have contaminated the soil and soil vapor at the site, and have resulted in:

- a significant threat to human health associated with exposure to contaminated indoor air;
- a significant environmental threat associated with the impacts of soil contamination to groundwater.

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

- A Remedial Design program will be necessary to provide the details required to implement the remedial program.
- The existing Interim Remedial Measure (IRM) - SVE system will remain in-place and continue to operate.
- New components will be added to the existing IRM remedial system including: 1) additional vapor extraction wells and 2) a Soil Vapor Extraction (SVE) Treatment System.
- Development of a site management plan to address residual contamination and any use restrictions.
- Imposition of an environmental easement.
- Periodic certification of the institutional and engineering controls.

- Long term monitoring.

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

SECTION 2: SITE LOCATION AND DESCRIPTION

The Kleigman Brothers Site is located in an urban setting at 76-01 77th Avenue in Queens County, New York City (Figure 1). The site is bordered to the north by the Long Island Railroad. Residences border the site to the east, west and south. This site is an area approximately 37,000 square feet, of which 26,000 is occupied by a building. A basement exists under the western portion of the building.

Operable Unit (OU) No. 1, which is the subject of this document, consists of the on-site portion of the remedy and will address on-site contaminated soils and soil vapor issues only. An operable unit represents a portion of the site remedy that for technical or administrative reasons can be addressed separately to eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination.

The remaining operable unit (OU 2) for this site will address the groundwater both on-site and off-site as well as the soil vapor impact off-site. A study is ongoing to determine the remedy to address contaminated groundwater and soil vapor off-site.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

The site was formerly owned by Kliegman Bros. Inc. This site was used as a warehouse and distribution center for laundry and dry-cleaning supplies from the 1950s through the 1990s. The site contained two 6,000 gallon above ground storage tanks (ASTs) which were used to store tetrachloroethene (PCE) (Figure 2). Tetrachloroethene is also known as perchloroethylene, PERC, or PCE. The tanks have since been removed from the property. Although these tanks are the presumed source of contamination, it is unknown if, and when, product was released or, whether contamination was due to a singly catastrophic release or a chronic leak problem. Kliegman Brothers ceased operation in 1999. The site was purchased in 2000 and is currently being used as a warehouse for an imported food distributor.

3.2: Remedial History

In June 2000, 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). Class 2a is a temporary classification assigned to a site that has inadequate and/or insufficient data for inclusion in any of the other classifications. In November 2000, the NYSDEC listed the site as a Class 2 site in the

Registry of Inactive Hazardous Waste Disposal Sites in New York. 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.

There were at least six previous investigations performed at this site from 1997 through 2002. The initial investigations were performed in 1997 and 1998, respectively. These investigations comprised soil vapor collection and analysis in the area between the building and the railroad, where the PCE storage tanks were located. Additional soil vapor sampling was later performed for a prospective site owner and for the NYSDEC in 2000. All of these investigations revealed the presence of PCE, often at high concentrations.

A fifth investigation was performed in 2001 as part of a Voluntary Cleanup Program (VCP) agreement with NYSDEC, and included soils and groundwater sampling as part of a Focused Remedial Investigation/Interim Remedial Measure (FRI/IRM). The objective of the FRI/IRM was to delineate on-site soil contamination to enable design of a soil vapor extraction system or systems to remediate on-site soil. As part of the study, nine borings, SVE-1 through SVE-5 and EB-1 through EB-4 and 26 soil samples were collected from beneath the subfloor of the building, approximately 0-12 inches below the concrete floor/soil interface. (Figure 2)

Between October 2000 and August 2001, the New York State Department of Health (NYSDOH) conducted ambient air sampling in 17 residences east, west, and south of the facility. PCE vapors were detected in 16 of the 17 residences tested.

In September 2002, the site owner discontinued his participation in the VCP. Because of documented ongoing PCE vapor exposures to people in adjacent residences, the NYSDEC tasked a consultant to do an interim remedial measure (IRM) and construct a soil vapor extraction (SVE) system which began operation in August 2004.

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 only PRPs for the site documented to date are the Kliegman Brothers, Inc. and, the current property owner, Arimax Realty, LLC.

The PRPs declined to implement the RI/FS at the site when requested by the NYSDEC. After the remedy is implemented, the PRPs will again be contacted to assume responsibility for the remedial program. If an agreement cannot be reached with the PRPs, the NYSDEC will evaluate the site for further action under the State Superfund. The PRPs are subject to legal actions by the state for recovery of all response costs the state has incurred.

SECTION 5: SITE CONTAMINATION

A remedial investigation/feasibility study (RI/FS) has been conducted to evaluate the alternatives for addressing the significant threats to human health and the environment.

5.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The RI was conducted between April 2002 to April 2003. The RI focused on both the on-site and off-site portions of this site, but this summary will generally pertain only to the on-site portions of the site (Operable Unit 1). The field activities and findings of the investigation are described in the RI report dated February 2004.

The following activities were conducted during the first phase of the RI from April 2002 to August 2002:

- Research of historical information;
- Geophysical survey to determine depth to bedrock;
- Installation of 9 soil borings and 4 monitoring wells for analysis of soils and groundwater as well as physical properties of soil and hydrogeologic conditions;
- Sampling of 4 new monitoring wells;
- A survey of public and private water supply wells in the area around the site;
- Collection of 35 indoor air samples from 17 different residences using PCE badge testing method.

The second phase of the RI field activities were conducted between February 2003 to April 2003 and included:

- Installation of 5 soil borings and 5 monitoring wells for analysis of soils and groundwater as well as physical properties of soil and hydrogeologic conditions;
- Sampling of 9 new and existing monitoring wells;

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

- Groundwater, drinking water, and surface water SCGs are based on NYSDEC "Ambient Water Quality Standards and Guidance Values" and Part 5 of the New York State Sanitary Code.
- Soil SCGs are based on the NYSDEC "Technical and Administrative Guidance Memorandum (TAGM) 4046; Determination of Soil Cleanup Objectives and Cleanup Levels".
- Concentrations of PCE in air were evaluated using the NYSDOH draft "Guidance for Evaluating Soil Vapor Intrusion in the State of New York, dated February 2005."

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

5.1.1: Site Geology and Hydrogeology

The regional geology of Queens County consists of Upper Cretaceous and Pleistocene sands, gravels, and clays which overlie southeasterly sloping bedrock. Bedrock in Queens County consists of Precambrian age, crystalline, igneous and metamorphic rocks which outcrop in northwestern Queens County, dip steeply to the southeast at a gradient of 40 to 80 feet per mile and is expected to occur at approximately 500 feet below grade at the site.

The site-specific geology was obtained from boring logs from previous subsurface investigations at the site and activities performed during this investigation. In general, beneath a fill layer (concrete or asphalt underlain by reworked native materials) of variable thickness (up to two feet), brown loose to dense, fine to coarse silty sand to sandy silt with localized sandy clay seams was observed to depths of approximately 10 feet bgs. This was underlain by brown loose to dense, fine to coarse sand with variable amounts of fine to coarse gravel to depths of 148 feet bgs. At some areas the layer could be described as an interbedded silty clay and silty fine sand.

There are six major hydrogeologic units identified in the vicinity of the site. They are in ascending order: 1) the Lloyd aquifer; 2) the Raritan confining unit; 3) the Magothy aquifer; 4) the Jameco aquifer; 5) the Gardiners Clay; and 6) the upper glacial (i.e., Pleistocene) deposits. As part of the remedial investigation field activities, only the upper glacial deposits were penetrated. However, in general, the aquifers are laterally extensive and yield significant quantities of water. The most permeable units are the sands and gravels. The two clayey units represent confining units. These are several orders of magnitude less than the sands and gravels.

The regional groundwater table occurs at the site at approximately 70 feet bgs within the upper glacial aquifer. However, perched groundwater was observed in several wells above the clay layer in the eastern portion of the site. Measurements of groundwater elevations were used to develop groundwater contour maps and generally determine the site-specific direction of groundwater flow in the perched groundwater zone, the water table aquifer, and the deeper groundwater zone approximately 30- to 40-feet below the water table. Perched water is present in the eastern portion of the site at depths of 10-12 feet bgs. The flow direction in the perched zone was somewhat variable on other dates measured, possibly due to local fluctuations in the perched zone.

In the shallow regional groundwater zone, groundwater measurements indicate that the flow direction varies. The overall groundwater flow direction was generally towards the south at a very gentle horizontal hydraulic gradient. In general, the groundwater flow direction in the shallow groundwater zone was determined to be variable, possibly due to the very gentle horizontal hydraulic gradients and seasonal fluctuations in the water table.

In the deeper groundwater zone (approximately 30- to 40-feet below the water table), the groundwater flow direction appears to be towards the southeast.

There is little to no discernible vertical hydraulic gradient observed at the paired deep and shallow groundwater wells.

5.1.2: Nature of Contamination

As described in the RI report, many soil, soil vapor, and groundwater samples were collected to characterize the nature and extent of contamination. As summarized in Table 1, the main categories of contamination that exceed SCGs are volatile organic compounds (VOCs).

The primary contaminant of concern is PCE. Other VOCs of concern are the degradation products of PCE: trichloroethene (TCE), cis-1,2-dichloroethene (DCE), and vinyl chloride. Other compounds that were found include carbon tetrachloride, 1,1,1-trichloroethane (1,1,1-TCA) and chloroform.

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, parts per million (ppm) for waste, soil, and sediment, and micrograms per cubic meter ($\mu g/m^3$) for air samples. For comparison purposes, where applicable, SCGs are provided for each medium.

Table 1 summarizes the degree of contamination for the contaminants of concern in soils, groundwater and soil vapor 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.

It should be again noted that the focus of this ROD is the on-site contamination and the extent of the on-site impacts. However, due to the interrelated nature of the RI report that investigates both on-site and off-site contamination, the following discussions of the extent of contamination lists both on-site and off-site impacts. The off-site section was added to provide the reader a view of the entire affected area.

On-Site Impacts

Subsurface Soil

Soil contamination in the vicinity of the building was characterized as part of previous investigations and is primarily limited in extent to the area north of the building.

Nine borings were installed in the north yard (north parking lot) at the site in 2001 (Figure 2). Soil analytical results showed elevated levels of benzene, toluene, ethylbenzene, xylene (BTEX), tetrachloroethene (PCE), and 1,2-dichloroethene (DCE). PCE was detected most frequently, and at the highest concentrations. Several detections of PCE were above the SCG value of 1.4 ppm presented in the NYSDEC Technical Administrative Guidance Memorandum (TAGM) #4046. Results from the subsurface soils ranged from 0.018 ppm to 6,700 ppm. The borings showed a

clay layer with perched water in the eastern portion of the north yard. PCE was detected above the clay layer at concentrations above the SCG value in the eastern portion of the north yard; however, samples were not collected below the clay layer.

A total of 26 soil samples were collected from below the building. Results indicated that concentrations of PCE generally exceeded the SCG only in shallow (less than one foot below the floor) samples. PCE results were in the range from 0.03 ppm to 320 ppm.

Groundwater

Although most of the soils are covered by asphalt, groundwater has been adversely impacted by the soil contamination. The contaminated soils near the building represent a continuing source of contamination. The discussions in the section below labeled "Off-Site Impacts" presents the results of the field activities and environmental sampling data for groundwater.

Soil Vapor

An extensive onsite soil vapor survey was performed in 2000. Soil vapor results from onsite and offsite laboratory analysis are summarized in Figure 3. As shown, high concentrations of PCE were detected at all locations on site. The concentrations of PCE in soil vapor ranged from non-detectable to 165,000,000 ug/m^3.

Soil vapor data indicates that contamination is likely widespread and extends throughout the depth of the vadose zone. For example, significant quantities of VOCs have been removed by the deep (screened from 30 to 65 feet bgs) SVE well during the IRM and high PID readings were recorded at depth in some borings. It is inferred that the entire vadose zone onsite is contaminated by VOCs – mainly PCE. The estimated area of the site is 37,000 square feet and the depth to the water table is approximately 70 feet.

Additional discussions in the section below labeled "Off-Site Impacts" presents the results of the field activities and environmental sampling data for soil vapor.

Off-Site Impacts

Contaminants have been found off the Kliegman Brothers site as well. Both groundwater and soil vapor/indoor air were found to be impacted. As was mentioned in Section 2 of this ROD, a separate ROD will be written for the remaining operable unit (OU 2) to address the groundwater both on-site and off-site as well as the soil vapor impacts off-site. A brief description is listed below to provide information of known off-site impacted areas.

Groundwater was found to be contaminated in off-site areas in October 2002 when nine wells were sampled. These wells were located outside, or on the perimeter of, the Operable Unit 1 boundary. The results for PCE ranged from 1,200 ppb to 45,000 ppb and the applicable SCG (Class GA groundwater criteria is 5 ppb.) The deep groundwater aquifer, where most of the samples were taken from, is approximately 65 feet below ground surface.

Soil vapor samples were also found to be contaminated with PCE at different depths. Samples were taken at 10, 18 , and 20 feet below ground surface. Similar to the on-site soil vapor results, the highest concentration were found at 18 feet below ground surface, however, the levels found at 10 feet below ground surface were high as well. This prompted the NYSDEC to perform indoor air and subslab air sampling in residences around the Kliegman Brothers site. Several air sampling events have been conducted since 2002. In response to the sampling results, owners of 10 properties located south and west of the former Kliegman Brothers facility have been offered sub-slab depressurization systems. These systems (similar to radon removal systems) can remove contaminated air under a property preventing it from entering the building. Additional homes may be sampled in the future to determine if more properties may benefit from mitigation systems.

5.2: Interim Remedial Measure

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.

A soil vapor extraction (SVE) system was installed at at the Kliegman Bros. Site as an IRM in 2004. The system utilizes three extraction wells (SVE-1, SVE-6S and SVE-6D). SVE-1 is a one-inch diameter well screened from 5 to 25 feet below ground surface (bgs). Wells SVE-6S and 6D are two-inch diameter wells screened from 5 to 25 feet bgs (6S) and 30 to 65 feet bgs (6D). SVE-6S and SVE-6D are separate wells installed at the same location. The three wells are connected through a subsurface trench to the SVE system consisting of a moisture separator, an extraction blower, and vapor phase carbon vessels. Operation of the system began on August 23, 2004. Since operation began, the SVE system has removed over 35,000 pounds of PCE from the vadose zone. Most of this removal occurred in the first three months of operation then the rate of removal dropped off dramatically. The system is presently removing PCE at a rate of between 500 to 1,000 pounds per month.

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 6 of the RI report.

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

The source of contamination is the location where contaminants were released to the environment (any waste disposal area or point of discharge). Contaminant release and transport mechanisms carry contaminants from the source to a point where people may be exposed. The exposure point is a location where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters

or contacts the body (e.g., ingestion, inhalation, or direct contact). The receptor population is the people who are, or may be, exposed to contaminants at a point of exposure.

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

There are potential exposure pathways associated with contaminated soil vapor and groundwater from this site.

The area is served by a public water supply, which is derived from reservoirs located in upstate New York. In addition, it is frequently tested to ensure that the water distributed to consumers complies with drinking water standards. No private supply wells have been found in the area; therefore, exposure to contaminated groundwater is not expected. Exposures could potentially occur, if someone were to install a private supply well; however, a permit would be required from the New York City Department of Environmental Protection.

Soil vapor is contaminated with volatile organic compounds. A completed exposure pathway through the inhalation of contaminated indoor air exists on-site. PCE was detected in the basement of the on-site building above the NYSDOH guidance level. Ventilation fans were installed to help circulate fresh air into the basement and lower the PCE levels. In addition, a soil vapor extraction system located on the site is operating continuously to remediate the on-site contamination. These measures minimize the potential for soil vapor intrusion. The potential for soil vapor intrusion to occur in the surrounding neighborhood is being investigated as a separate operable unit.

Exposure to contaminated soil is unlikely since it is located on-site at depth.

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.

Site contamination has impacted the groundwater resource in the overburden aquifer, however, groundwater near this site is not used as a source of drinking water.

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:

- exposures of persons at or around the site to PCE and its degradation products (TCE, DCE, and vinyl chloride) in contaminated soils;

- the release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards; and

- the release on contaminants from soil vapor into indoor air through vapor intrusion.

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

- ambient groundwater quality standards and

- soils SCGs.

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 Kliegman Brothers Site Operable Unit No. 1 were identified, screened and evaluated in the FS report which is available at the document repositories identified in Section 1.

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

7.1: Description of Remedial Alternatives

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

Alternative 1 – No Further Action

Present Worth: *$476,000*
Capital Cost: *$0*
Annual OM&M:
(Years 1-5): *$110,000*
(Years 5-30): *$0*

This alternative would leave the site in its present condition. Operation of the existing SVE system would continue and only OM&M would be necessary. This existing SVE system will

continue to treat the western side of this site, but was not designed with an adequate area of influence to treat the eastern side of the site.

Alternative 2 – Soil Vapor Extraction (SVE)

Present Worth: *$920,000*
Capital Cost: *$350,000*
Annual OM&M:
(Years 1-5): *$132,000*
(Years 5-30): *$0*

Under this alternative, the existing IRM would remain in-place and continue to operate. In addition, new components would be added to the remediation including the following:

1. Vapor Extraction Wells: Three new well pairs would be installed in the northern yard (parking lot) near the existing building (Figure 4). The wells would be spaced about 80 feet apart based on an 80-foot radius of influence selected during the IRM design. This spacing and radius of influence provides coverage for the entire OU1 area. Two-inch diameter wells would be installed. A shallow and deep well would be installed at each of the three locations.

2. Treatment System: A new SVE treatment system would be installed for the additional extraction wells. The new system would be designed to handle about three times the amount of extracted soil vapor as the current IRM. Extraction wells would be connected to the SVE system by underground pipe. A carbon filter media would remove PCE from the soil vapors.

It is expected to take approximately 2 to 3 months to implement this alternative. Remediation of soil by SVE typically is accomplished within 2 to 10 years depending on site conditions. For this analysis, the operating phase will cease and remediation will be complete after five years.

Alternative 3 – Enhanced Soil Vapor Extraction (ESVE)

Present Worth: *$1,720,000*

Capital Cost: *$820,000*

Annual OM&M:

(Years 1-5): *$207,000*

(Years 5-30): *$0*

A conventional SVE system, such as Alternative 2, might not completely address the zone of perched water in the eastern portion of the site. Alternative 3 includes Alternative 2 (the existing IRM and additional SVE components) plus a groundwater depression system to address the perched water zone.

The groundwater depression system would operate independently of the SVE system. Its purpose is to both lower the water level in the perched water zone, thus exposing the contaminated soil to venting, and to provide soil vapor extraction from the desaturated zone. The system would extract both water and soil vapor by means of dual-phase extraction wells.

Analysis indicated that the feasibility of implementing this method strongly depends on the unknown factors of recharge and hydraulic conductivity of the perched zone. For the purpose of this description, as well as the cost estimate, it is assumed that extraction wells would be spaced every 25 feet. A pilot test would need to be performed to confirm this spacing.

Forty-eight dual phase extraction wells would be installed. The wells would be 2-inch diameter, PVC, penetrating to the bottom of the clay layer where the perched zone occurs. Wells would be equipped with a 1-foot long screen. Each well would contain a drop tube, whose opening would be placed immediately above the bottom of the screen. Drop tubes would be connected to a header pipe, terminating in a building housing a high-vacuum blower.

An additional dual phase extraction treatment system would also be installed. The system would include a high-vacuum blower, a moisture separator and carbon vessels to treat air and water.

It is expected to take approximately one year to implement this alternative. Remediation of soil by SVE typically is accomplished within 2 to 10 years depending on site conditions. For this analysis, the operating phase would cease and remediation would be complete after five years.

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 FS report.

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

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

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

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

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or

implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

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

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

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

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

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

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the PRAP have been evaluated. The responsiveness summary (Appendix A) presents the public comments received and the manner in which the NYSDEC addressed the concerns raised.

No significant public comments were received.

SECTION 8: SUMMARY OF THE SELECTED REMEDY

Based on the Administrative Record (Appendix B) and the discussion presented below, the NYSDEC has selected Alternative 2, Soil Vapor Extraction as the remedy for this site. The elements of this remedy are described at the end of this section.

The selected remedy is based on the results of the RI and the evaluation of alternatives presented in the FS.

Alternative 2 was 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 removing VOCs that create the significant threat to

public health, it will remove the source of contamination to groundwater, and it will create the conditions needed to restore groundwater quality to the extent practicable.

Alternative 1 would not address the soil vapor throughout the site and thus would not comply with the threshold criteria.

Because Alternatives 2 and 3 satisfy the threshold criteria, the five balancing criteria were particularly important in selecting a final remedy for the site.

Alternatives 2 (Soil Vapor Extraction) and 3 (Enhanced Soil Vapor Extraction) both have short-term impacts. Alternative 2 would have less intrusive impact than Alternative 3 since it would involve installing less wells. In both cases, there are possible impacts to workers or the community from VOCs during drilling; however, these impacts should be easily controlled by a properly administered health and safety program. Construction would be completed in 2- to 3-months for Alternative 2 and in about 1-year for Alternative 3.

Achieving long-term effectiveness is anticipated to be accomplishable by both Alternatives 2 and 3. Alternative 3 might provide an additional level of protection; however, this would not be certain until a pilot test was completed to confirm the effectiveness of the dual-phase extraction wells and the dewatering of the perched groundwater. In both cases, little residual contamination would be expected to be left in the site soils. The monitoring of the soil vapor would continue until the soil vapor does not pose a human health threat. Once the soil sampling results were satisfactory, no further monitoring or controls would be required for OU1 soil.

Both Alternative 2 and 3 would be equally effective at reducing toxicity, mobility and volume. By removing the VOCs from the soils, the toxicity and volume of contaminated soils would be reduced. The mobility of VOCs off-site would also be greatly reduced since the source volume of on-site soils would be removed.

Alternative 3 would be more difficult to implement because much of the construction would occur inside the on-site building which is in use. Significant coordination with the site owner and interruption of the daily business activities would result in increased costs and delays in implementation of the project. Under Alternative 3, there would be increased risks to both the workers conducting the remedial activities and the workers at this business since it would involve much more intrusive work. Alternative 2 would be easier to implement since the work would be done outside the building in the parking lot.

The estimated present worth cost to implement the remedy is $920,000. The cost to construct the remedy is estimated to be $350,000 and the estimated average annual operation, maintenance, and monitoring costs for $132,000 assuming that the SVE system will be in operation for 5-years.

The elements of the selected remedy are as follows:

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

- The existing Interim Remedial Measure (IRM) - SVE system will remain in-place and continue to operate.

- An additional SVE treatment system and new extraction wells will be constructed and installed. The new SVE system will be designed to handle about three times the amount of extracted soil vapor as the current IRM. Extraction wells will be connected to the SVE system by underground pipe. (Figure 4)

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

- Imposition of an institutional control in the form of an environmental easement that will (a) require compliance with the approved site management plan; (b) limit the use and development of the property to commercial, industrial and/or restricted residential only; (c) restrict the use of groundwater as a source of potable water, without necessary water quality treatment as determined by NYSDOH and/or the New York City Department of Environmental Protection; and (d) require the property owner to complete and submit to the NYSDEC a periodic certification.

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

- The operation of the components of the remedy will continue until the remedial objectives have been achieved, or until the NYSDEC determines that continued operation is technically impracticable or not feasible.

- Since the remedy results in untreated hazardous waste remaining at the site, a long term monitoring program will be instituted. Monitoring of the extracted soil vapor will continue to confirm the effectiveness of the remedy. This program will allow the effectiveness of the SVE system to be monitored and will be a component of the operation, maintenance, and monitoring for the site.

SECTION 9: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of Citizen Participation activities were undertaken to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- Repositories for documents pertaining to the site were established.
- A public contact list, which included nearby property owners, elected officials, local media and other interested parties, was established.
- A public meeting was held on February 28, 2006 to present and receive comments on the PRAP.
- A responsiveness summary (Appendix A) was prepared to address the comments received during the public comment period for the ROD.

TABLE 1

Nature and Extent of Contamination

1997 - 2002 (various sampling events conducted by different consultants)

SUBSURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	benzene	ND - 200	0.06	2 of 20
	1,2-dichloroethylene	ND-1.2	0.25	1 of 20
	ethylbenzene	ND-65	5.5	1 of 20
	methyl chloride	ND-66	0.10	1 of 20
	tetrachloroethylene	0.018-6,700	1.4	9 of 20
	toluene	ND-39	1.5	2 of 20
	1,2,4-trimethylbenzene	ND-36	13	1 of 20
	1,3,5-trimethylbenzene	ND-14	3.3	2 of 20
	xylenes (total)	ND-191	1.2	1 of 20

SUB FLOOR SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
	1,2-dichloroethylene	ND-0.36	0.25	2 of 35
	methyl chloride	ND-14B	0.10	12 of 35
	tetrachloroethylene	0.03-320	1.4	17 of 35
	toluene	ND-2.2	1.5	1 of 35
	xylenes (total)	ND-8.7	1.2	1 of 35

GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	benzene	ND-28J	1	1 of 7
	n-butylbenzene	ND-17J	5	1 of 7
	carbon tetrachloride	ND-140J	5	1 of 7
	2-chlorotoluene	ND-160J	5	3 of 7
	1,1-dichloroethylene	ND-13J	5	1 of 7
	1,2-dichloroethylene	ND-47J	5	2 of 7
	methylene chloride	ND-1,600	5	5 of 7
	n-propylbenzene	ND-110J	5	3 of 7
	tetrachloroethylene	1,200-45,000	5	7 of 7
	toluene	ND-50J	5	2 of 7
	trichloroethane	ND-75J	5	1 of 7
	1,2,4-trimethylbenzene	ND-130J	5	3 of 7
	1,3,5-trimethylbenzene	ND-140J	5	3 of 7
	trichloroethylene	ND-120J	5	1 of 7
	xylenes (total)	ND-11J	5	1 of 7

Soil vapor	Contaminants of Concern	Concentration Range Detected ($\mu g/m^3$)[a]	SCG[b] ($\mu g/m^3$)[a]	Frequency of Exceeding SCG
Compounds (VOCs)	1,1-Dichloroethene	ND-25,000	NA	NA
	cis-1,2-Dichloroethene	ND-26,200	NA	NA
	trans-1,2-Dichloroethene	ND-887,000	NA	NA
	Tetrachloroethene	ND-165,000,000	NA	NA
	Trichloroethene	ND-618,000	NA	NA
	Vinyl chloride	ND-2,1800	NA	NA

Indoor Air (Facility)	Contaminants of Concern	Concentration Range Detected ($\mu g/m^3$)[a]	SCG[b] ($\mu g/m^3$)[a]	Frequency of Exceeding SCG
	Tetrachloroethene	ND-1,587	100	2 of 36
	Trichloroethene	ND-4.2	5	0 of 36
	Vinyl chloride	ND-7	NA	NA

[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

NA = none available

Table 2

Remedial Alternative Costs

Remedial Alternative	Capital Cost	Annual OM&M (years 1-5)	Total Present Worth
No Further Action	$0	$110,000	$476,000
Soil Vapor Extraction	$350,000	$132,000	$920,000
Enhanced Soil Vapor Extraction	$820,000	$207,000	$1,720,000

URS	KLIEGMAN BROTHERS SITE LOCATION MAP	FIGURE 1

N:\11171964.00000\DB\GIS\site.apr SITE LOCATION
10/7/2005

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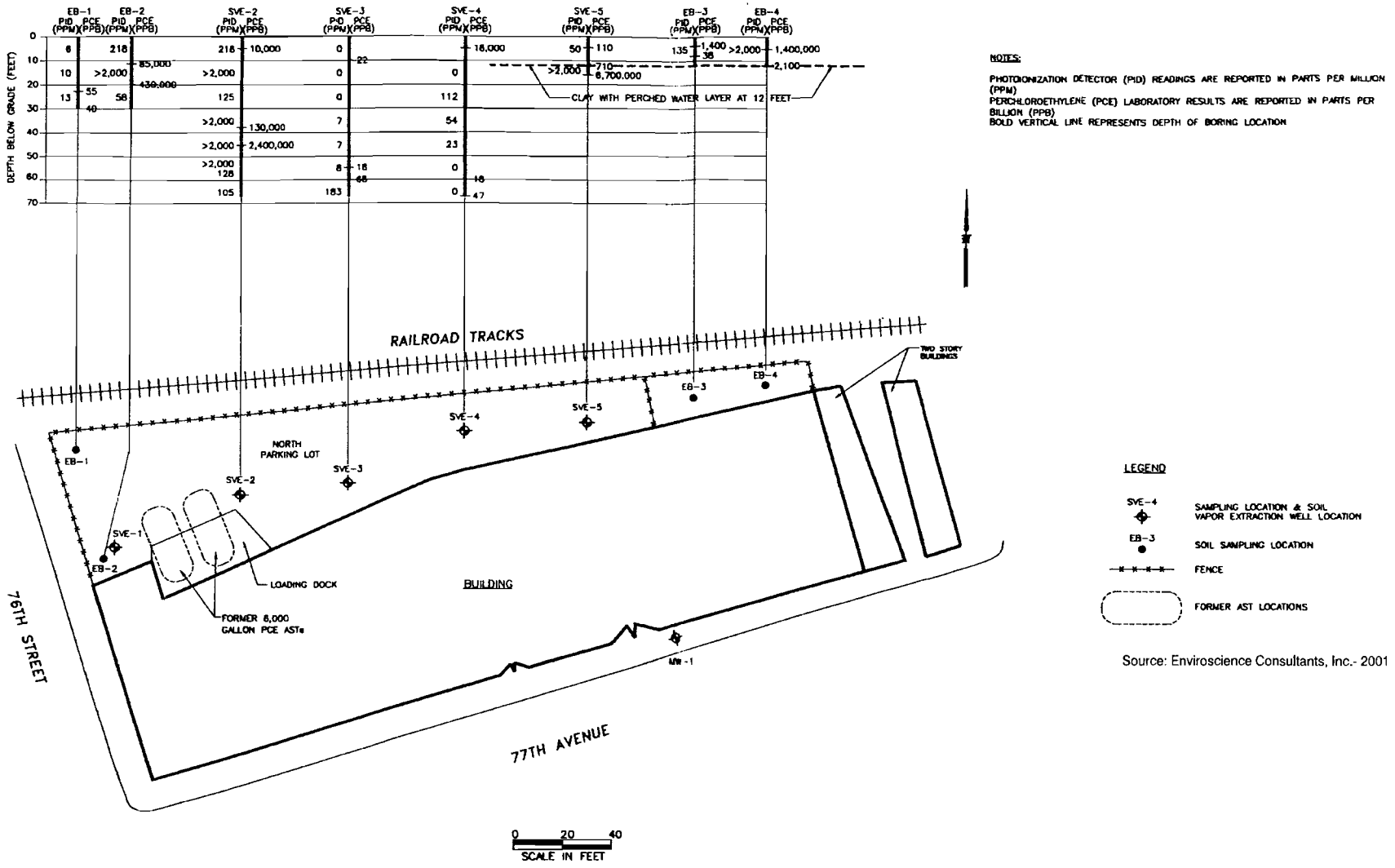


NOTES:

PHOTOIONIZATION DETECTOR (PID) READINGS ARE REPORTED IN PARTS PER MILLION (PPM)
PERCHLOROETHYLENE (PCE) LABORATORY RESULTS ARE REPORTED IN PARTS PER BILLION (PPB)
BOLD VERTICAL LINE REPRESENTS DEPTH OF BORING LOCATION

LEGEND

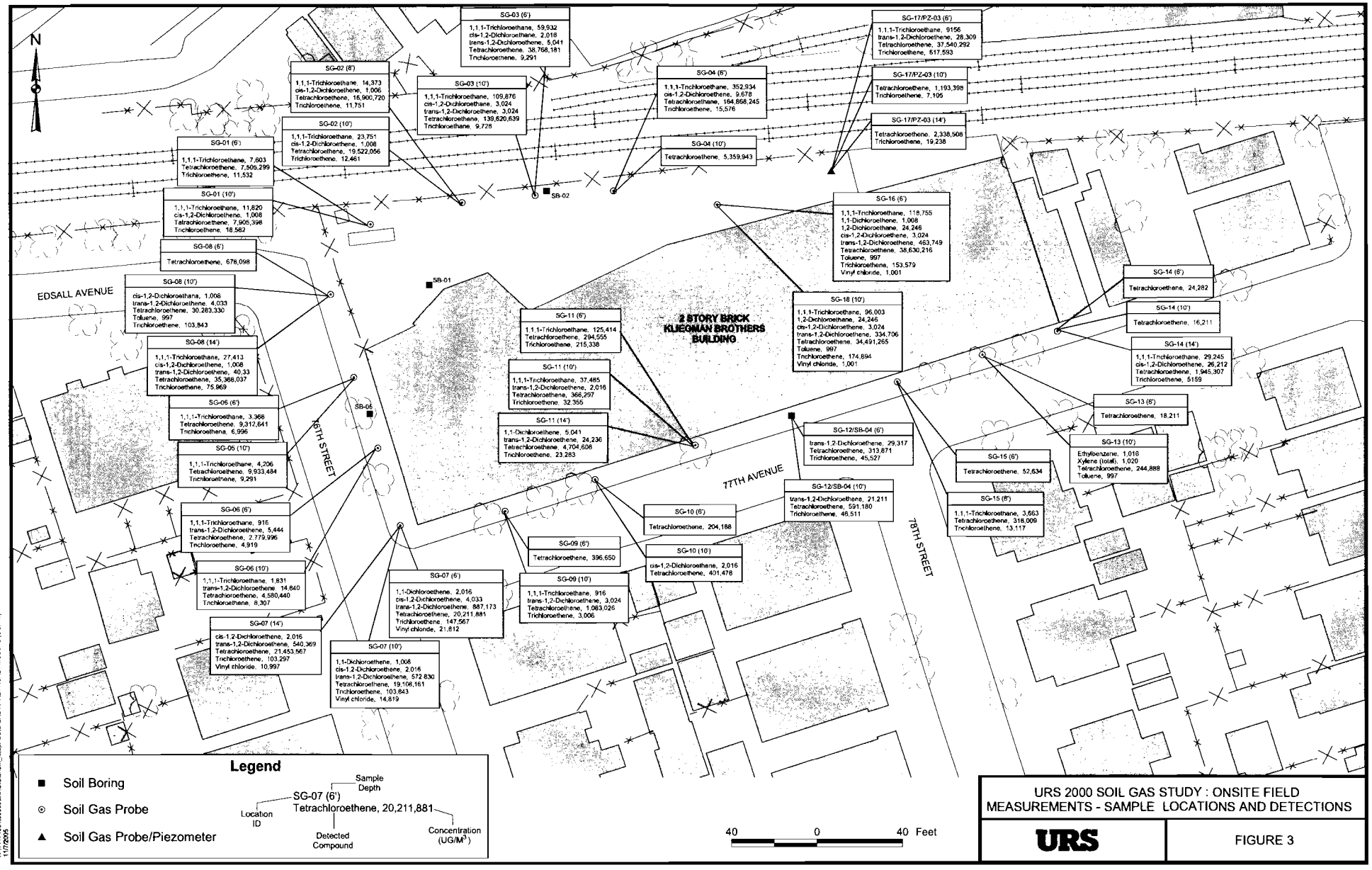
SVE-4 — SAMPLING LOCATION & SOIL VAPOR EXTRACTION WELL LOCATION
EB-3 — SOIL SAMPLING LOCATION
FENCE
FORMER AST LOCATIONS

Source: Enviroscience Consultants, Inc.- 2001

URS

ABOVE GROUND STORAGE TANK LOCATIONS AND ON-SITE SOIL BORINGS

FIGURE 2


N
SG-03 (6')
1,1,1-Trichloroethane, 59,932
cis-1,2-Dichloroethene, 2,016
trans-1,2-Dichloroethene, 5,041
Tetrachloroethene, 38,768,181
Trichloroethene, 9,291
SG-17/PZ-03 (6')
1,1,1-Trichloroethane, 9156
trans-1,2-Dichloroethene, 28,309
Tetrachloroethene, 37,540,292
Trichloroethene, 617,593
SG-02 (8')
1,1,1-Trichloroethane, 14,373
cis-1,2-Dichloroethene, 1,008
Tetrachloroethene, 16,960,720
Trichloroethene, 11,751
SG-03 (10')
1,1,1-Trichloroethane, 109,876
cis-1,2-Dichloroethene, 3,024
trans-1,2-Dichloroethene, 3,024
Tetrachloroethene, 139,620,639
Trichloroethene, 9,728
SG-04 (6')
1,1,1-Trichloroethane, 352,934
cis-1,2-Dichloroethene, 9,678
Tetrachloroethene, 164,868,245
Trichloroethene, 15,576
SG-17/PZ-03 (10')
Tetrachloroethene, 1,193,398
Trichloroethene, 7,105
SG-02 (10')
1,1,1-Trichloroethane, 23,751
cis-1,2-Dichloroethene, 1,008
Tetrachloroethene, 19,522,056
Trichloroethene, 12,461
SG-17/PZ-03 (14')
Tetrachloroethene, 2,338,508
Trichloroethene, 19,238
SG-01 (6')
1,1,1-Trichloroethane, 7,603
Tetrachloroethene, 7,505,299
Trichloroethene, 11,532
SG-04 (10')
Tetrachloroethene, 5,359,943
SB-02
SG-01 (10')
1,1,1-Trichloroethane, 11,820
cis-1,2-Dichloroethene, 1,008
Tetrachloroethene, 7,905,398
Trichloroethene, 18,582
SG-16 (6')
1,1,1-Trichloroethane, 118,755
1,1-Dichloroethene, 1,008
1,2-Dichloroethane, 24,246
cis-1,2-Dichloroethene, 3,024
trans-1,2-Dichloroethene, 463,749
Tetrachloroethene, 38,630,216
Toluene, 997
Trichloroethene, 153,579
Vinyl chloride, 1,001
SG-08 (6')
Tetrachloroethene, 678,098
SB-01
SG-08 (10')
cis-1,2-Dichloroethene, 1,008
trans-1,2-Dichloroethene, 4,033
Tetrachloroethene, 30,283,330
Toluene, 997
Trichloroethene, 103,843
EDSALL AVENUE
SG-14 (6')
Tetrachloroethene, 24,282
SG-11 (6')
1,1,1-Trichloroethane, 125,414
Tetrachloroethene, 294,555
Trichloroethene, 215,338
2 STORY BRICK
KLIEGMAN BROTHERS
BUILDING
SG-18 (10')
1,1,1-Trichloroethane, 96,003
1,2-Dichloroethane, 24,246
cis-1,2-Dichloroethene, 3,024
trans-1,2-Dichloroethene, 334,706
Tetrachloroethene, 34,491,265
Toluene, 997
Trichloroethene, 174,894
Vinyl chloride, 1,001
SG-14 (10')
Tetrachloroethene, 16,211
SG-08 (14')
1,1,1-Trichloroethane, 27,413
cis-1,2-Dichloroethene, 1,008
trans-1,2-Dichloroethene, 40,33
Tetrachloroethene, 35,368,037
Trichloroethene, 75,969
SG-11 (10')
1,1,1-Trichloroethane, 37,485
trans-1,2-Dichloroethene, 2,016
Tetrachloroethene, 366,297
Trichloroethene, 32,355
SG-14 (14')
1,1,1-Trichloroethane, 29,245
cis-1,2-Dichloroethene, 26,212
Tetrachloroethene, 1,945,307
Trichloroethene, 5159
SG-06 (6')
1,1,1-Trichloroethane, 3,368
Tetrachloroethene, 9,312,641
Trichloroethene, 6,996
SB-05
16TH STREET
SG-11 (14')
1,1-Dichloroethene, 5,041
trans-1,2-Dichloroethene, 24,236
Tetrachloroethene, 4,704,608
Trichloroethene, 23,283
SG-13 (6')
Tetrachloroethene, 18,211
SG-12/SB-04 (6')
trans-1,2-Dichloroethene, 29,317
Tetrachloroethene, 313,871
Trichloroethene, 45,527
SG-13 (10')
Ethylbenzene, 1,016
Xylene (total), 1,020
Tetrachloroethene, 244,888
Toluene, 997
SG-05 (10')
1,1,1-Trichloroethane, 4,206
Tetrachloroethene, 9,933,484
Trichloroethene, 9,291
77TH AVENUE
SG-15 (6')
Tetrachloroethene, 52,634
SG-12/SB-04 (10')
trans-1,2-Dichloroethene, 21,211
Tetrachloroethene, 591,180
Trichloroethene, 46,511
SG-15 (8')
1,1,1-Trichloroethane, 3,663
Tetrachloroethene, 318,009
Trichloroethene, 13,117
SG-06 (6')
1,1,1-Trichloroethane, 916
trans-1,2-Dichloroethene, 5,444
Tetrachloroethene, 2,779,996
Trichloroethene, 4,919
SG-10 (6')
Tetrachloroethene, 204,188
78TH STREET
SG-09 (6')
Tetrachloroethene, 396,650
SG-10 (10')
cis-1,2-Dichloroethene, 2,016
Tetrachloroethene, 401,478
SG-06 (10')
1,1,1-Trichloroethane, 1,831
trans-1,2-Dichloroethene, 14,840
Tetrachloroethene, 4,580,440
Trichloroethene, 8,307
SG-07 (6')
1,1-Dichloroethene, 2,016
cis-1,2-Dichloroethene, 4,033
trans-1,2-Dichloroethene, 887,173
Tetrachloroethene, 20,211,881
Trichloroethene, 147,567
Vinyl chloride, 21,812
SG-09 (10')
1,1,1-Trichloroethane, 916
trans-1,2-Dichloroethene, 3,024
Tetrachloroethene, 1,063,026
Trichloroethene, 3,006
SG-07 (14')
cis-1,2-Dichloroethene, 2,016
trans-1,2-Dichloroethene, 540,369
Tetrachloroethene, 21,453,567
Trichloroethene, 103,297
Vinyl chloride, 10,997
SG-07 (10')
1,1-Dichloroethene, 1,008
cis-1,2-Dichloroethene, 2,016
trans-1,2-Dichloroethene, 572,830
Tetrachloroethene, 19,106,161
Trichloroethene, 103,843
Vinyl chloride, 14,819
Legend
Soil Boring
Soil Gas Probe
Soil Gas Probe/Piezometer
Sample Depth
SG-07 (6')
Tetrachloroethene, 20,211,881
Location ID
Detected Compound
Concentration (UG/M3)
40 0 40 Feet
URS 2000 SOIL GAS STUDY : ONSITE FIELD MEASUREMENTS - SAMPLE LOCATIONS AND DETECTIONS
URS
FIGURE 3
N:\11717964.00000\DWG\SVchem_fs.apr SOIL GAS ANALYTICAL RESULTS (UG/M3)
1/7/2005

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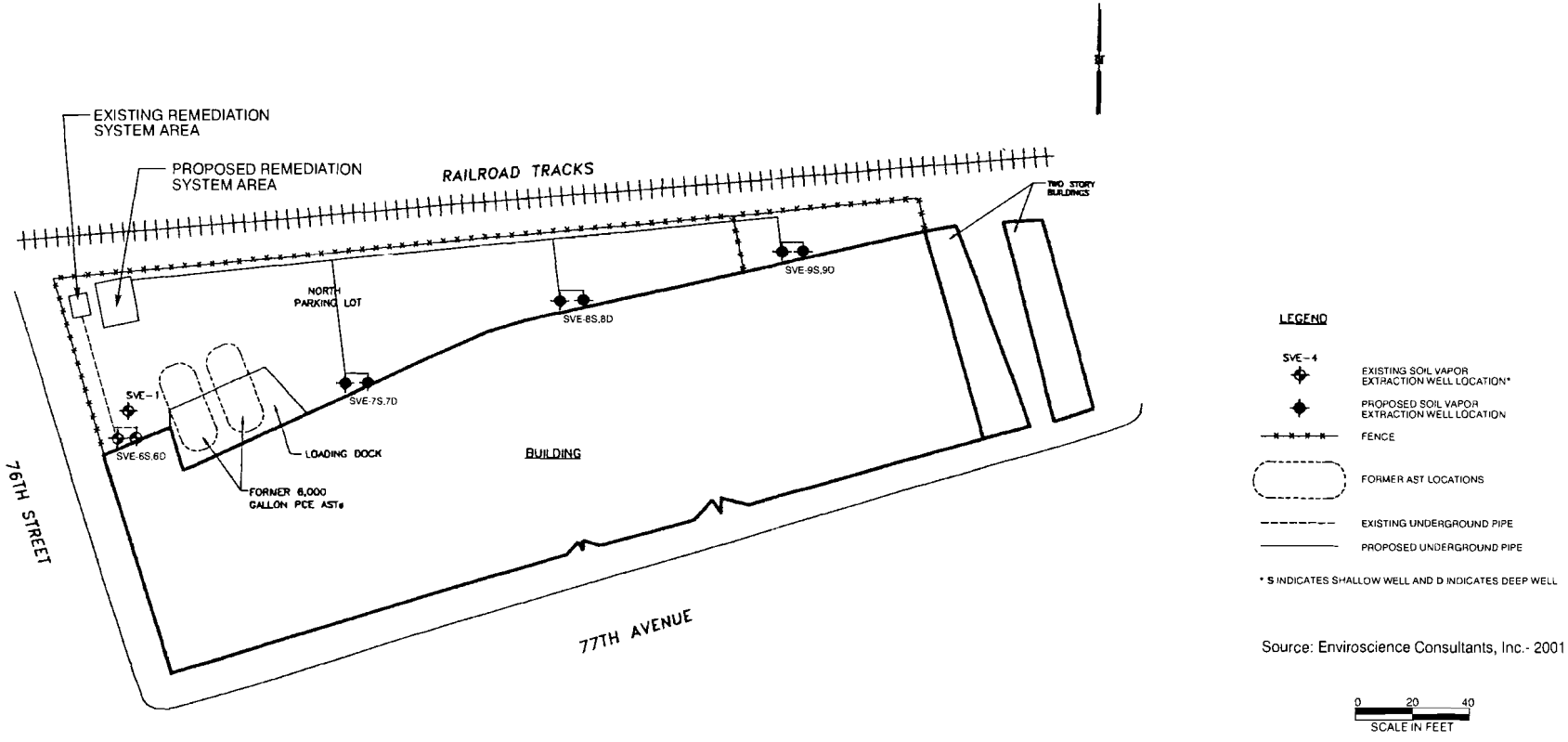

URS	CONCEPTUAL REMEDY	FIGURE 4

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Kliegman Brothers

Operable Unit No. 1

Glendale, Queens New York

Site No. 2-41-031

The Proposed Remedial Action Plan (PRAP) for the Kliegman Brothers site operable unit 1, was prepared by the New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on February 9, 2006. The PRAP outlined the remedial measure proposed for the contaminated soil and soil vapor at the Kliegman Brothers 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 February 28, 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 March 10, 2006.

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

COMMENT 1: When did the contamination begin? How long has the contamination been going on?

RESPONSE 1: The Kliegman Brothers operated the dry cleaning supply company at this location from 1950 to 1999 and tetrachloroethene (PCE) could have been released at any time during that period of operations; however, the exact date and time of a release(s) are not known. The NYSDEC does not know if a single large spill event occurred or if there was an ongoing leak of PCE.

COMMENT 2: Did they dump unused PCE in tanks or directly into the soil/water?

RESPONSE 2: As mentioned in the response 1, the NYSDEC does not know exactly how the PCE contamination entered into the environment. The Kliegman Brothers operation may have involved washing equipment that contained residual PCE and dumping the waste onto the ground, but there is no record of this.

COMMENT 3: Can confined PCE explode?

RESPONSE 3: No, PCE is a nonflammable liquid at room temperature

COMMENT 4: What could happen if PCE is not addressed?

RESPONSE 4: If not addressed, the PCE will continue to seep through the ground and into the groundwater. Also, if the source of PCE contamination on-site is not addressed, PCE vapors will continue to migrate off-site.

COMMENT 5: When will we know test results from specific wells?

RESPONSE 5: The results from sampling the groundwater monitoring wells have been released and were contained in the Remedial Investigation report dated February 2004. A copy of this report is located in the document repository - the Glendale branch of the Queens Borough Public Library. Additional reports will be added to the document repository in the future as they are made available for public release.

COMMENT 6: Will the new system be located inside the former Kliegman Brothers building? How will the new soil vapor extraction (SVE) system be protected from vandals?

RESPONSE 6: The NYSDEC plans to locate the new SVE system inside the property of the former Kliegman Brothers site. The exact location will be determined in the remedial design phase of this project; however, the current conceptualized location for the SVE system is the northern part of the parking lot of the existing business. The existing system is also located inside this property in the western portion of the site. The locations of the existing system and the proposed system are protected from vandals by the fence and security system of the existing business.

COMMENT 7: Why would the enhanced SVE alternative require an increase from 10 wells to 50 to 100 wells on-site?

RESPONSE 7: The enhanced SVE alternative (Alternative 3) would operate separately from the SVE and its purpose is to both lower the water table in the perched water zone, thus exposing the soil to allow soil vapor extraction from this newly desaturated zone. Since the implementation of this alternative depends on unknown factors such as recharge and hydraulic conductivity, the exact number of wells that would be required to dewater the perched zone would be determined by a pilot test. Although we know that many more wells would be necessary to implement this alternative, we do not know the exact number.

COMMENT 8: Did you consider any other alternatives other than SVE system?

What is the effectiveness of the existing SVE system?

RESPONSE 8: Since the existing SVE system is working well at removing PCE contamination from this site, potential site-wide remedial approaches were focused on SVE. There were two alternatives considered in addition to the no action alternative.

The existing SVE system began operation in August 2004. As of December 2005, the system has removed almost 35,000 pounds of PCE. The removal rate was very high

initially, but has dropped to about 500 pounds per month since the areas of highest PCE concentrations were removed. It is expected that the new systems located in other parts of this property will have similar operational characteristics with a higher removal rate initially and a gradual decreasing removal rate.

COMMENT 9: What enforcement action is being taken against the responsible party? Who is responsible and how to contact? Who can I sue for damages or a class action law suit?

RESPONSE 9: The NYSDEC did a search for a viable responsibly party prior to referring the site for investigation using State Superfund money. The former owner of record, Kliegman Brothers, Inc., is listed as a bankrupt business entity. Records indicate that the Kliegman Brothers, Inc. operated a distribution center for laundry and dry cleaning supplies business on this site and is the responsible owner/operator. The current owner is also listed as a potentially responsible party by being the owner of record of this property. After the remediation is complete, the NYSDEC will seek cost recovery, if possible, for costs incurred by the State. If litigation to recover state costs is necessary, the NYSDEC will seek the assistance of the Attorney General to seek cost recovery.

The NYSDEC recommends that parties who think they have been injured by the site to consult with their attorneys regarding legal remedies against any responsible parties.

COMMENT 10: Were there any violations given by NYCDEP or FDNY during the later years (1990's) of operations of the business at this location?

RESPONSE 10: There are no known violations issued by the NYCDEP or the FDNY during operations by Kliegman Brothers, Inc.

COMMENT 11: When will the construction begin of the new SVE systems?

RESPONSE 11: The next steps in this process will be to: begin the remedial design phase which will determine the specific layout of the piping network; design an appropriate sized SVE system to draw out the PCE contamination across the site; and plan the construction of the system. It is planned that the system be constructed within a year from the date of the Record of Decision.

COMMENT 12: How does this problem effect residents trying to sell their homes?

RESPONSE 12: The NYSDEC is not involved in assessing property values or impact to property transactions.

COMMENT 13: What are the reasons given by the current owner of the site to back out of participation of the cleanup process?

RESPONSE 13: The current owner entered into a Voluntary Agreement to investigate the site environmental conditions. There is no State mandate that a Volunteer complete an investigation or remediation. The current owner signed the Voluntary Agreement in

October 2000 and terminated the Agreement in October 2002. The NYSDEC began it's investigation of the on-site conditions in October 2002.

COMMENT 14: Is the NYS Department of Health (NYSDOH) doing any studies of local cancer rates? How many people contracted cancer and from what blocks?

RESPONSE 14: Currently, there are no plans for a cancer study specifically for the area near the Kliegman Brothers site. However, the Department of Health, through the Cancer Surveillance Improvement Initiative, has developed maps that illustrate the rate of certain types of cancer at the zip code level. The maps show the comparison of the actual cancer incidence for individual zip codes with the expected cancer incidence of this type of cancer for the zip code. The maps are available on the NYSDOH website at http://www.health.state.ny.us/nysdoh/cancer/csii/nyscsii.htm. By law, New York State must keep identifying information about individuals with cancer confidential. To protect their privacy, small geographical areas such as a neighborhood or city block where each person with cancer lives is not public information.

COMMENT 15: How do we find out what is present in our bodies? What tests are available to determine we were exposed to PCE?

RESPONSE 15: If you are concerned about exposure to PCE, you should speak with your physician regarding your concerns. There are staff at the Center for Environmental Health that a physician may speak with to determine what tests are available to detect PCE in the body.

COMMENT 16: What are the health hazards of exposure to PCE?

RESPONSE 16: To date, sampling has not shown levels of PCE in air that would be expected to cause health effects. Occupational studies of workers exposed long-term to 50,000 - 80,000 mcg/m^3 of PCE showed reduced scores on behavioral tests and biochemical changes in blood and urine indicative of liver and kidney damage. A non-occupational study included adults living near dry cleaners for 9 - 20 years and the average level of PCE was 5,000 mcg/m^3. This study showed reduced scores on behavioral test, but effects were small. A study conducted with volunteers exposed to PCE at levels of 350,000 and 700,000 mcg/m^3 for four to eight hours, respectively, showed central nervous system symptoms such as dizziness, headache, sleepiness, and lightheadedness. Effects disappeared soon after exposure ended.

COMMENT 17: Could the chemical be absorbed through old lead water mains?

RESPONSE 17: No, water pressure from inside a water supply pipe would prevent vapors or groundwater from entering inside a pipe.

COMMENT 18: Why is there a food storage/processing facility located on the worst part of the site? Why wasn't this prohibited?

RESPONSE 18: This issue was investigated previously by the NYS Department of Agriculture and Markets, which regulates food processing facilities. Samples of cheese and oil were collected and analyzed by the Food and Drug Administration. It was determined that the food processing business is not impacted by the PCE contamination beneath the building.

No written comments were received during the comment period.

APPENDIX B

Administrative Record

Administrative Record

Kliegman Brothers
Operable Unit No. 1
Site No. 2-41-031

1. Proposed Remedial Action Plan for the Kliegman Brothers site, Operable Unit No. 1, dated February 2006, prepared by the NYSDEC.

2. "Remedial Investigation/Feasibility Study Work Plan"; Project Management Work Plan Amendment No. 1, February 2003, prepared by URS Corporate Group Consultants.

3. "Remedial Investigation/Feasibility Study Project"; Remedial Investigation Report, February 2004, prepared by URS Corporation.

4. "Remedial Investigation/Feasibility Study Project"; Focused Feasibility Study Report, October 2005, prepared by URS Corporation.

5. "Operation and Maintenance Manual and As-Built Drawings for Soil Vapor Extraction System"; Kliegman Bros. Site, Queens County, Site #2-41-031, May 12, 2003, prepared by Envirotrac Ltd.

6. "Operation and Monitoring Monthly Report, Soil Vapor Extraction System, Interim Remedial Measure, for the Period November 1, 2005-December 8, 2005"; Kliegman Brothers, prepared by URS Corporation.

Cost Information

7. "Remedial Investigation/Feasibility Study Project - Project Management Work Plan - Rebudget", Work Assignment D003825-37.2A, December 2005, prepared by URS Corporation.

8. "Immediation Response Work Assignment, Project Management Work Plan/Budget Estimate, Amendment No. 2", Work Assignment D003825-39.2, May 2004, prepared by URS Corporation.

9. "Project Management Work Plan/Budget Estimate, Amendment No. 1 for Soil Vapor Extraction, Operaton and Maintenance, Kliegman Bros.", Work Assignment D003825-49, November 2004, prepared by URS Corporation.