SUPERFUND FINAL CLOSE-OUT REPORT

PASLEY SOLVENTS AND CHEMICALS, INC. SUPERFUND SITE

TOWN OF HEMPSTEAD

NASSAU COUNTY, NEW YORK

Prepared by

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I. INTRODUCTION

The U.S. Environmental Protection Agency (EPA) has determined that all appropriate response actions at the Pasley Solvents and Chemicals, Inc. Superfund Site (Site) have been successfully implemented in accordance with *Close-Out Procedures for National Priorities List Sites* (OSWER Directive 9320.2-09A-P).

In accordance with the *Comprehensive Environmental Response, Compensation, and Liability Act* (1980) (CERCLA) and the *Superfund Amendments and Reauthorization Act of 1986* (SARA), responsible parties and others have implemented all appropriate response actions selected in the April 24, 1992 Record of Decision (ROD) and the May 22, 1995 ROD Amendment.

II. SUMMARY OF SITE CONDITIONS

Site Location and Description

The Site is located at 565 Commercial Avenue, Town of Hempstead, Nassau County, New York. The Site lies between the borders of the political subdivisions of the Villages of Garden City and Uniondale, in the Town of Hempstead. The immediate area has light industrial and commercial properties and the closest residential community is approximately 1/4 mile away. The Pasley property measures 75' by 275' with a fenced boundary on the north, east and south sides. A building and loading platform form the western boundary of the Site.

Site Background

The Site is a former tank farm used for storage of oils, solvents and chemicals. From 1969 until 1982, the Site was occupied by the Pasley Solvents and Chemicals Company (Pasley) and was used as a chemical distribution facility. Activities at the Site included delivery and storage of chemicals in tanks on-site, and transfer of the chemicals to 55-gallon drums for delivery to customers. Used chemicals and empty drums were reportedly returned to the Site by some customers. These chemicals included a wide range of aromatics and halogenated aliphatic hydrocarbons, solvents, ketones and alcohols. The Site was owned by Commander Oil Corporation (Commander) and leased to Pasley. Prior to 1969, the Site was occupied by Commander for distribution of fuel oils.

In 1980, Pasley applied for a New York State Department of Environmental Conservation (NYSDEC) permit to store and remove chemicals. Subsequently the Nassau County Department of Health (NCDOH) collected soil samples from the Site. Sample analysis indicated that the soils were contaminated with volatile organic compounds (VOCs). NCDOH then referred the Site to NYSDEC and these agencies recommended that Pasley submit a plan for remedial investigation and cleanup. In 1981, the Lakeland Engineering Company (Lakeland) performed a limited well drilling and ground water sampling program. Six monitoring wells (five on-site and one off-site) were installed and ground water samples were collected by Lakeland and NYSDOH. Contaminants were detected above State Drinking Water Standards.

In May 1982, Pasley operations ceased when the company filed for bankruptcy. On June 10, 1986, the Site was placed on the National Priorities List (NPL).

There are eight known hazardous wastes sites within a one-mile radius of the Pasley Site, including seven sites on the NYSDEC Registry of Inactive Hazardous Waste Sites and one site on the National Priorities List (Roosevelt Field). In addition, there are six sites on the NPL within a four mile radius of the Pasley Site. All of these sites have shown VOC contamination (including, Trichloroethene (TCE) and Tetrachloroethene (PCE)) in the ground water.

Results of Remedial Investigation and Feasibility Study

On August 19, 1988, EPA and Commander entered into an Administrative Order on Consent (Index No. II CERCLA-80212). The Order required Commander to perform a Remedial Investigation/Feasibility Study (RI/FS) to determine the nature and extent of contamination at the Site, to develop and analyze cleanup alternatives and to remove the 12 above-ground storage tanks located on the Site. In November of 1988, Commander completed the tank removal.

The RI was performed by Metcalf and Eddy, Inc. for Commander in 1990. During the RI subsurface soil samples, ground water samples and surface soil samples were collected and analyzed. As part of the ground water investigation, eighteen ground water monitoring wells were installed. The monitoring wells were clustered in six locations (three wells each, screened at depths of 30, 60, and 90 feet). The ground water quality of the aquifer underlying the Site, downgradient and upgradient of the Site was assessed by two rounds of water quality sampling in 1990 and a third round of partial sampling in 1991. The most prevalent VOC detected in ground water during the RI was trans-1,2-dichloroethene at a maximum concentration of 37,000 parts per billion (ppb). Samples collected from upgradient off-site monitoring wells showed a maximum level of 27 ppb of PCE (monitoring well location MW-1S) and 15 ppb for TCE (monitoring well location MW-1D). Benzene was also detected at a maximum level of 38 ppb (monitoring well location MW-1I).

Since a contaminant plume could not be defined by plotting the Total Volatile Organic Compounds (TVOCs) associated with the Site study area, a group of VOCs which were found at the Site but which were not detected in upgradient well cluster well MW-1 were chosen to define the plume associated with the Site (identified as Site Index Compounds (SICs)). Through the use of the index compounds, a well defined contaminant plume could be identified for the Site.

The SICs chosen to define the plume for the Site are the following: chloroform, 1,1-dichloroethene, 1,1-dichloroethane, trans-1,2-dichloroethene, 1,1,1-trichloroethane, ethylbenzene, toluene, chlorobenzene, and xylene. The SICs were found to contribute a major part (99%) of the contamination found in the monitoring well cluster located on-site (MW-2). Non-site index compounds acetone, benzene, TCE and PCE, which were found in on-property wells and upgradient were also monitored. However, the use of SICs does not imply that non-index compounds are absent from the Site.

The SIC plume for the 20 to 30-foot depth Upper Glacial aquifer extends approximately 400 feet to the southwest, parallel to the ground water flow direction and the contaminant plume is approximately 390 feet wide. The maximum level of SIC contamination detected was 37,000 parts per billion (ppb) for trans-1, 2,dichloroethene, 7400 times the Federal Maximum Contaminant Level (MCL) of 5 ppb). TCE, although not part of the SIC plume, was also detected at a maximum concentration of 320 ppb, 64 times its MCL of 5 ppb. The SICs plume for the 50 to 60 foot depth in the lower portion of the Upper Glacial aquifer was found to be much smaller, and centered on MW-4I, directly downgradient of the Site. The maximum level of SICs contamination in this portion of the plume was 15 ppb for trans-1,2-dichloroethene. TCE was also detected at 15 ppb. No SICs contamination was found directly downgradient or on-site in the 80 to 90 foot depth in the Upper Magothy aquifer.

Fifty (50) surface soil grab samples were collected and analyzed for VOCs. These samples were collected from an approximate 30-foot grid pattern at a depth of 6 to 12 inches below grade. Samples were then collected and composited for metals and semi-volatile organic analyses. Each composite sample consisted of soil from five adjacent discrete sample locations.

Data from the surface soil samples revealed elevated levels of VOCs originating from three primary locations. The concentrations of TVOCs, primarily PCE and trans-1,2-dichloroethene, were detected in concentrations of 1,000 ppb up to concentrations of 603,000 ppb. Additionally, total semi-volatile organic compounds were detected in composite samples collected from ten locations. The highest concentrations of total semi-volatiles were detected in composite samples 8 and 9 (204,000 ppb and 126,500 ppb, respectively) collected on the eastern edge of the Site.

Subsurface samples were also collected from eight locations on-site and five locations off-site. On-site, two samples were collected from each of the eight borings at depths of 12 to 14 feet and 23 to 25 feet (or the first two feet below the water table). A total of sixteen samples were collected. Elevated levels of total VOCs (greater than 1,000 ppb) were detected in six of the 16 samples.

Based on the results of the RI report a risk assessment was performed for the Site. The risk assessment determined that although the risk posed by the soils are within EPA's acceptable risk criteria, contaminants in the soils, if not addressed, would continue to contribute to further contamination of the ground water, resulting in a potential future risk from ground water ingestion.

A FS was then completed to identify and evaluate remedial alternatives that would be effective and implementable in addressing the contamination, based on site-specific conditions. The FS Report was developed based on the "Guidance for conducting Remedial Investigation and Feasibility Studies under CERCLA." Remedial alternatives were developed to satisfy the following Remedial Action Objectives (RAOs) for the Site:

- *The soils will be treated until the soil cleanup objectives are met or until no more VOCs can be effectively removed from the unsaturated zone.*
- *Contaminated ground water will be treated to meet either federal or state ground water standards except in those cases where upgradient concentrations are above such standards.*

Remedy Selection

Based upon the results of the RI/FS, on April 24, 1992, a Record of Decision (ROD) was signed, selecting a remedy for the Site. The major components of the 1992 ROD included the following:

- Treatment of approximately thirteen thousand (13,000) cubic yards of contaminated soil by soil vacuuming and/or by soil flushing;
- Disposal of treatment residuals at a RCRA Subtitle C facility;
- Remediation of the ground water by extraction/metals precipitation/air stripping with vapor phase granular activated carbon (GAC) polishing/recharge;
- Pumping of contaminated ground water from three extraction wells at a combined flow rate of approximately 450 gallons per minute (gpm).
- Implementation of a long-term monitoring program to track the migration and concentrations of the contaminants of concern; and
- Implementation of a system monitoring program that includes the collection and analysis of the influent and effluent from the treatment systems and periodic collection of well-head samples.

After the ROD was issued, EPA sent notice letters and a draft Consent Decree (CD) to Commander and to the operators of the Site (Robert Pasley and Pasley Solvents and Chemicals

Company) for implementation of the remedy selected in the ROD. These parties declined to perform the selected remedial action. Counsel for Commander contended that Commander was not financially able to implement the remedy which was estimated to cost 14 million dollars. As a result, in 1993 EPA obligated Superfund monies for performance of the remedial design (RD) by Ebasco Services, Inc., an EPA contractor.

Subsequently, Commander notified EPA that it believed that an innovative technology, air sparging modification to the ground water remedy would be an effective means to remediate the ground water, at approximately half the cost of the selected remedy. EPA evaluated all available information on the air sparging technology and gave approval for Commander to submit a work plan to conduct a pilot study to evaluate the effectiveness of air sparging at the Site. The results of the pilot study, which were documented in the Air Sparging (AS)/Soil Vapor Extraction (SVE) Pilot Test Study Report, demonstrated that air sparging would be an effective means of remediating the ground water at the Site.

As a result, EPA determined that AS was a viable technology in combination with SVE to clean up the ground water and soils at the Site and subsequently, on May 22, 1995, EPA issued a ROD Amendment selecting the following remedy:

- Remediation of the ground water by AS in the contaminated saturated zone underlying the property;
- Remediation of the on-property unsaturated zone soils by SVE and collection of AS vapors;
- Interception and remediation of the off-property ground water plume by AS accompanied by SVE in the area of the off-site Park;
- Implementation of a long-term ground water monitoring program to track the migration and concentrations of the contaminants of concern; and
- Implementation of a remediation system and monitoring program that includes vapor monitoring, ground water monitoring and soil sampling.

In 1995, EPA concluded CD negotiations with the PRPs related to the performance of the remedial design, remedial construction, operation, maintenance, and monitoring of the remedy selected in the ROD Amendment. On January 26, 1996, the CD was entered in United States District Court (approved by the Judge) for the Eastern District of New York. Conestoga-Rovers & Associates (CRA) was then approved as the supervising contractor to conduct the remedial design and construction work at the Site.

Cleanup Levels

The objective of the remedy is to address the source of contamination at the Site, the contamination in the surface soils, and ground water contamination attributable to the Site. For the ground water remediation alternative, the contaminated ground water will be treated to meet either federal or state ground water standards (MCLs), as outlined in Table 1, below, except in those cases where upgradient concentrations are above such standards. For the soil remediation alternative, the contaminated soil will be treated until the recommended soil cleanup objectives as outlined in the Table 1 below are met or until no more VOCs can be effectively be removed from the unsaturated zone.

Table 1

Contaminant	Ground water Cleanup Goal (ppb)[1]	Recommended Soil Cleanup Goals (ppm)[2]
Chloroform	7	0.3
1,1-Dichloroethene	5	0.4
1,1-Dichloroethane	5	0.2
Trans-1,2-Dichloroethene	5	0.3
1,1,1-Trichloroethane	5	0.8
Ethylbenzene	5	5.5
Toluene	5	1.5

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[1] *Maximum Contaminants Levels (MCLs)*

[2] *NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 446: Determination of Soil Cleanup Objective and Cleanup Levels, Rev Jan 1994.*

Chlorobenzene	5	1.7
Xylene	5	1.2
Acetone	50	0.2
Benzene	5	0.06
Tetrachloroethene	5	1.4
Trichloroethene	5	0.7
VOCs (total)	N/A	10

Remedial System Overview

Commander hired CRA Services to perform the Remedial Design/Remedial Action (RD/RA) at the Site. Construction of the remedy started on June 26, 1997 and was completed on October 21, 1997. Construction activities are summarized in the Remedial Action Report dated July 14, 1998.

The RA Report documented that the work was performed in accordance with the approved design, consistent with the decision documents and that appropriate construction standards and QA/QC procedures were used.

The Pasley remediation system consists of on-site ground water and soil remediation and off-site ground water remediation. The remediation system consisted of two SVE/AS systems: one on the Site property; and one off the property in Cluster Park. The system worked by introducing air into the aquifer to volatilize organic compounds and capturing the organic vapors. The vapors from the on-property system were treated with GAC, prior to discharge. Rotary-vane AS compressors and rotary-lobe SVE blowers, housed in the on-property treatment building, were used to “push” and “pull” the air and soil vapor from both systems.

Under normal conditions, the on-property and off-property SVE/AS systems were automated and did not require continuous attention. The SVE and AS wells (except the off-property SVE wells) were connected to headers with automatic valves. Under normal operating conditions, the headers would operate alternately between idle and active service. Timers, programmed into the programmable logic controller (PLC), activated the automatic valves in a pre-determined sequence to pulse the wells. The PLC had auto-dial capability to notify the operator of a malfunction. In the event of a system malfunction, the PLC would fax an alarm report to the operator at the CRA Services office and/or at the contractor’s home and appropriate action would be taken.

Major components of the constructed remedy included:

On-property

- 19 AS wells, 2-inch PVC, screened 50-52-feet below ground surface (bgs)
- Eight shallow SVE wells, 2-inch PVC, screened 5-10 feet bgs
- Eight deep SVE wells, 4-inch PVC, screened 15-20 feet bgs
- Five monitoring well clusters
- Buried piping to each SVE/AS well
- 24 x 24-ft Treatment Building
- AS and SVE blowers, piping and controls
- GAC vapor treatment system
- Condensate collection and GAC treatment system
- Re-infiltration gallery
- Off-property AS and SVE blowers, piping, controls

Off-property

- Fifteen AS wells, 2-inch PVC, screened 50-52 feet bgs
- Five SVE wells, 2-inch PVC, screened 15-20 feet bgs
- Six monitoring-well clusters
- Buried piping to each AS/SVE well
- Buried distribution vault and controls

Pre-final and final Inspection

On October 21, 1997, a pre-final inspection was conducted by EPA and NYSDEC. Based on the results of this inspection, it was determined that the construction for the entire Site was completed and that the remedy that was implemented was consistent with the ROD and ROD Amendment. A Preliminary Close-Out Report was signed on September 30, 1999.

The SVE/AS system operated from October 1997 to October 2002. System was shut down when monitoring data indicated that ground water and soil cleanup levels specified in the 1995 ROD had been met. The Notice of Completion and Final Operation and Maintenance (O&M) Report were submitted by Commander in 2003. In January 2004, post remediation monitoring began to ensure site-related contamination had been effectively remediated.

Institutional Controls

The ROD and ROD Amendment were intended to remediate the soil so that the Site property, which does not currently have permanent structures present, could be used without restriction. In addition, the ROD and ROD Amendment intended to restore ground water contamination attributed to the CERCLA release. Both of these goals have been achieved, therefore, no ICs are required for the Site.

Reuse/Redevelopment

Plato Holding LLC bought the property from Commander in August 2003 and concluded negotiations with the MTA to utilize the Site as a police station. The Site was paved and an office trailer was placed on concrete blocks. Plato Holding sold the property to Yonah Reality in March 2007. It is Yonah Reality's intent to continue to use the property as a police station. There are no plans to further develop the Site at this time.

Community Involvement Activities

EPA has worked closely with public officials and residents of the community. Their participation and contributions to the Site investigation and remediation process have benefitted the Agency in achieving its goal of effectively protecting human health and the environment. Public participation activities for this Site have been satisfied as required by CERCLA § 113(k) and Section 117. As part of the remedy selection process, the public was invited to comment on EPA's proposed remedy. All other documents and information which EPA relied on or considered in recommending this deletion are available for the public to review a NYC Manhattan, and at the information repository at the Levittown Library, located at 1 Bluegrass lane in Levittown, New York.

III. MONITORING RESULTS

The remedial systems operated very reliable and effectively during the O&M period. The on-Site SVE/AS system averaged 16 percent down time over the five-year period, while the off-site SVE/AS system was even more reliable at 13 percent downtime. GAC was a very effective treatment for the VOC vapors extracted and captured by the SVE/AS system. Average vapor discharge quality (after GAC treatment) was 1 part per million (ppm) or less as measured by the Photoionization Detection (PID) Method. Approximately 14,000 pounds of VOCs were removed from the soil and ground water and adsorbed by the GAC during the five-year O&M period (1997-2002).

The contaminants in the soils were found to be a source of contamination to the ground water. Confirmatory sampling to demonstrate compliance with soil cleanup objectives was done in two phases. The first phase was conducted in July 2000 to assess interim remedial progress. A total of 12 soil borings were taken at the Site. It should be noted that sampling took into account the three primary locations of elevated concentration identified in the RI. The samples submitted for analysis were taken from the interval with the highest detected concentration of VOCs (measured by a PID) in each boring. The samples were analyzed for the target compound list (TCL) for volatiles and semi-volatiles. The results indicated that only one of the 12 areas sampled detected contamination above the soil cleanup objectives (see Attachment 1). The results indicated that an area near MW-2S (BH-12 area) required additional treatment. Contingency measures were implemented in order to decrease the concentrations of SICs (specifically xylene) below cleanup levels. Contingency measures included shutting off the east side AS wells and diverting air to the area around MW-2S. In addition, inorganic nutrients in the form of a commercial garden fertilizer (Miracid 30:10:10) were added to the west side well in an attempt to accelerate biological activity for further chemical reduction, and two more AS wells were installed in the area.

After two (2) more years of on-site treatment when system monitoring no longer detected VOCs in the west side wells, the second phase of the soil validation sampling was conducted on April 1, 2003. This was a targeted sampling effort focusing primarily in the area near MW-2S. The results presented in Attachment 2 show concentrations below the cleanup objectives.

1V. ATTAINMENT OF GROUND WATER RESTORATION CLEANUP LEVELS

Summary of Monitoring Data

Four on-site ground water monitoring wells and seven downgradient monitoring wells were monitored over the 5-year SVE/AS operation period (from 1997 to 2002). A total of 19 rounds of ground water samples were taken during that period. Samples were analyzed for SICs as described above. In addition to the SICs, acetone, TCE, benzene and PCE were included in each analysis because they were also detected on-site. Collectively the SICs and these four other compounds were described as the total volatile organic index compounds (TVOICs). The use of SICs and TVOICs provided a means of ensuring that site-related contamination was monitored and provided the ability to differentiate site-related contamination from those upgradient contaminants believed to be moving through the Site. Ground water monitoring was performed prior to the start of operation of the treatment system, during operation of the system and again during the Post Remediation Monitoring (PRM) phase. During each phase, the number of wells monitored and frequency of monitoring varied per the monitoring plans. See Attachment 3 for a map of monitoring wells and SVE/AS locations.

Prior to the start of the operation of the treatment system in November 1997, the most contaminated on-site ground water monitoring well (MW-2S) had a TVOIC concentration of 7,013 ppb and a SIC concentration of 6,914 ppb. This monitoring result indicated that acetone, benzene, TCE and PCE represented approximately 99 ppb or 1% of the TVOICs, while the SICs represented approximately 99% of the TVOICs. After the first three years of treatment activities, three of the ground water monitoring wells (MW-9701, MW-9704R, and MW-9705), located in the source area, and had SICs concentrations ranging from 0 to 3 ppb and TVOIC concentrations ranging from 8 to 27 ppb. The fourth well, MW-2S, located at the western edge of the source area, had reductions in SICs concentration of 890 ppb and TVOIC concentration of 937 ppb. MW-2S required five years of treatment and implementation of contingency measures described in the Soil section above, before the SICs (specifically xylene) were reduced below the cleanup levels.

The SVE/AS system was shut down in October 2002 to test for any rebound of contamination in the ground water. Two additional rounds of samples were collected from MW-2S and the three downgradient monitoring wells (MW-9720, MW-9722, and MW-9723); these analyses did not indicate of the presence of SICs above cleanup levels in the ground water.

Analysis to demonstrate achievement of cleanup levels

In order to demonstrate restoration of ground water and soil contamination in the source area for site-related contamination, it was assumed that if SVE/AS effectively removed all source material, then concentrations downgradient of the first line of sparge wells would have similar concentrations of SICs and TVOICs during remediation and during PRM because all VOC contamination (both SICs and TVOICs) in the saturated zone would be addressed by the system. To evaluate this assumption, results from ground water monitoring wells in this area (MW-9724 and MW-9725), were compared based on concentrations of SICs and TVOICs over time.

As shown in Table 2 below, monitoring wells, MW-9724 and MW-9725 had comparable concentrations of SICs and TVOICs from February 2000 through May 2002 during active SVE/AS operation. Over this time, well MW-9724 had concentration of SICs in 2/2000 of 197 ppb and concentrations of TVOICs of 205 ppb. Samples taken in 5/2002 showed declines from the concentrations in 2/2000 to 0 ppb SICs and 1 ppb TVOIC. Further support is provided from evaluation of the data from well MW-9725 where the concentrations in 2/2000 of SIC were 356 ppb and the concentrations of TVOIC were 360 ppb. Declines were found in 5/2002 where the concentration of SIC was 9 ppb and for TVOIC was 10 ppb.

Table 2: Comparison of Well MW-9724 and MW-9725 Data to Demonstrate Consistency in Concentrations between SICs and TVOIC				
Time Line	MW-9724 SIC concentrations	Total MW-9724 TVOIC concentrations	MW-9725 SIC concentrations	Total 9725 TVOIC concentrations
02/2000	197 ppb	205 ppb	356 ppb	360 ppb
06/2001	7 ppb	12 ppb	107 ppb	109 ppb
05/2002	0 ppb	1 ppb	9 ppb	10 ppb

These results demonstrate that any source material in the saturated zone was addressed for both SICs and any site-related TVOICs during system operation. This is further supported by the fact that confirmatory sampling of on-site soils showed that all contaminants had achieved the cleanup objectives specified in the ROD and ROD Amendment

Next, in order to verify the ROD Assumptions that upgradient contamination (particularly TCE and PCE) were present at the Site, pre-ROD, during the Remedial Action (RA), and Post RA, ground water monitoring results during these three phases were reviewed and evaluated.

Pre-ROD Determination. The RI/FS documented TCE and PCE at concentrations of 15 ppb and 27 ppb, respectively in an upgradient well (MW-1). The levels of TCE and PCE fluctuated during the RI/FS. Sample results from other on-site wells indicated concentrations lower than those found in the upgradient well. Based on this finding, further investigations were conducted at other locations within this area (outside of the site boundaries, as defined) as described below.

The Roosevelt Field, a former airfield that is now a large shopping mall located approximately 2000 feet north of the Pasley site, was identified as a potential source of PCE and TCE at the Pasley site during the RI/FS. Investigations performed at the Roosevelt field site identified three volatile organic ground water contamination plumes of TCE and PCE. Two of the contamination plumes exist in the Upper Glacial aquifer, and the third is present in both the Upper Glacial aquifer and the Magothy Formation. The Upper Glacial aquifer plumes are at depths similar to the Pasley SIC plume. These plumes were reported in 1986 to extend at least 1,000 feet to the south southwest of Roosevelt Field, and within 400 feet of the Pasley site. Specifically, the 1992 ROD Declaration of Statutory Determinations section stated that "*Due to the existence of an upgradient source of contamination, the selected ground water remedy, by itself, will not meet chemical-specific ARARs nor be capable of restoring the area ground water to applicable ground water quality standards until these upgradient source areas are removed*".

During RA. Ground water monitoring was conducted over the five year SVE/AS operation period at the Pasley site. The results of ground water monitoring during this period demonstrate the ROD assumption that upgradient contamination (particularly TCE and PCE) were present during RA. During the RA, MW-1I upgradient of the Site showed consistent elevated TVOIC concentrations. Between 1998 and 2001, TVOIC concentrations ranged from 9 to 204 ppb. SIC concentrations ranged from 2 to 32 ppb. Therefore, throughout the period of operation, TVOIC concentrations accounted for a majority of the contamination found during monitoring events. The consistently low presence of SICs indicate that site-related contamination did not impact this well. These results conclude that directly upgradient of the remediation system, VOC contamination was consistently flowing underneath the source area being remediated.

Prior to remediation the SICs represented 99% of the TVOICs present in MW-2S located on the western edge of the source area. Results for 13 of the next 15 sampling events (up until the 2002 sampling event) similarly showed the percentage of SICs as greater than 90% of the TVOICs present. These results contrasted significantly from those for the upgradient well MW-1I where the SICs represented less than 10% of the TVOICs in 6 of 8 sampling events clearly indicating that there was an upgradient source of non-site index compounds. However, by the time the remediation was complete, the percentage of SICs present in MW-2S was similar to that typically present in MW-1I (i.e., less than 10%) as the SICs concentration was reduced to 2 ppb and the TVOICs were present at 22 ppb. This data also indicates, at the end of remediation, even though SICs had been addressed; levels of other VOCs continued to be present. This data concludes that VOCS that were not site-related continued to impact the ground water being remediated. See Table 3, below.

Table 3: Comparison of SIC and TVOIC Concentration Between On-site Ground water Monitoring Well MW-2S[3] and Upgradient Well MW-1I

	On-site Wells		Upgradient Wells	
Time Line	MW-2S SIC concentrations (ppb)	Total MW-2S TVOIC concentrations (ppb)	MW-1I SIC concentrations (ppb)	Total MW-1I TVOIC concentrations (ppb)
1997 - Prior to Start of RA	6914	7013	NA	NA
8/1998	1013	1046	2	101

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[3] *MW-2S- most contaminated on site ground water monitoring well*

8/2000	890	937	9	178
6/2001	328	335	8	183
5/2002	88	288	NA	NA
1/2004	2	22		
8/2005[4]	7	32	NA	NA

The monitoring data for off-property monitoring wells also demonstrate the success of the remedy. Seven off-property wells, located approximately 400 feet downgradient of the Site, were monitored over the five-year O&M period. As described in the Remedial System Overview (above), four off-site monitoring wells (MW-9721, MW-9724, MW-9725, and MW-4S) were located upgradient of the SVE/AS off-site system. The three remaining wells (MW-9720, MW-9722, and MW-9723) were located downgradient of the SVE/AS off-site system.

Upgradient wells MW-9724, MW-9725, and MW-4S had levels of SICs and TVOICs that were elevated during the first three years of O&M. These elevated levels for both SICs and TVOICs were reduced once contaminant levels on-property were reduced by the on-site treatment efforts indicating that the system effectively addressed all VOC contamination within the treatment zone. In addition, the declining SIC concentrations indicate that no additional source material in the saturated zone is contributing the ground water contamination downgradient of the source area SVE/AS system. Once remediation started, no SICs or TVOICs contamination was detected in monitoring wells downgradient of the off-site SVE/AS system (MW-9722 or MW-9723).

Two monitoring wells (MW-9720 and MW-9721) were located downgradient of the treatment systems but were located hydraulically sidegradient of the treatment area. It was assumed, if ground water flowing on site was affected by upgradient sources, these wells would show fluctuating levels of TVOIC concentration but would not have SIC concentrations above cleanup levels. MW-9720 showed a fluctuation in TVOICs and no SICs readings throughout the entire 5 year operations monitoring period. In addition, monitoring well MW-9721 also showed consistent fluctuation in the TVOIC numbers and limited SICs numbers. The fluctuation in the TVOIC and the lack of SICs in monitoring wells (MW-9720 and MW-9721) indicate that the contamination detected was not originating from the Site.

These results indicate that the treatment system was effectively treating the contamination originating from the Site by the reduction of SICs concentration in the on-site monitoring well

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[4] *Toluene was detected at elevated concentrations in all samples collected but was found to be a laboratory contaminant; therefore the values were not included.*

MW-2S and the downgradient monitoring wells (MW-9724, MW-9725, MW-4S, MW-9722 and MW-9723) to the cleanup levels indicated in the ROD. Finally, data from MW-2S in the source area, upgradient well MW-1I, and downgradient/sidegradient wells MW-9720 and MW-9721, show persistent TVOIC concentrations in both on-site, upgradient, and sidegradient wells during the operation period supporting the ROD assumption that PCE and TCE contamination were coming on-site from upgradient sources..

During PRM. Prior to the start of the post remediation monitoring, the upgradient monitoring well (MW-1) located on private property was destroyed and could not be sampled. Sampling results for the PRM period are presented in Attachment 4. During PRM only one on-site monitoring well (MW-2S) and three downgradient monitoring wells (MW-9720, MW-9722, and MW-9723) were monitored during this period. When evaluating the PRM data, it is important to note that the 2/9/2005 sampling event is an anomaly of high concentrations due to laboratory contamination. These results were not evaluated in this analysis.

During the first two PRM sampling rounds (January and July 2004), the analytical results for samples collected from MW-2S indicated that TCE and PCE and all SICs were at or below MCLs. However, in the next three sampling events in 2005, the concentrations of PCE increased above MCLs going to 22 ppb to 170 ppb and then dropping down to an average concentration of 35 ppb in the last round of sampling in the summer of 2005. During those same sampling events, TCE concentrations were 4 ppb, 58 ppb and then an average of 9 ppb in the last round of sampling. It is believed that this spike and then steady decline in concentrations is attributable to an upgradient source. Similar slugs of contamination have been seen moving through other locations used for monitoring the Upper Glacial aquifer on Long Island; these observations are not surprising given the fact that the ground water generally moves greater than 1 foot a day in this aquifer.

During the PRM sampling rounds, downgradient wells showed limited TVOIC contamination. All three wells showed no rebound in SICs. TVOIC contamination in MW-9722 fluctuated during this two year sampling period. The PRM phase monitoring confirmed that all site-related contamination in soils and ground water had been remediated to cleanup levels specified in the ROD expect for those VOCs which were coming on site from off-site sources.

Conclusion. EPA believes that site-related contamination was remediated to ground water restoration standards. The objectives of the 1992 ROD, as modified by the 1995 ROD Amendment, were to address the source of contamination at the Site, the contamination in the surface soils, and ground water contamination attributable to the Pasley site. By treating the VOC-contaminated soils and ground water by means of SVE/AS, the Pasley site contaminants were adequately addressed by the remedial actions to cleanup levels specified in the ROD. Although ground water sampling data indicate regional contamination as evidenced by persistent PCE and TCE contamination in wells upgradient and sidegradient of the SVE/AS system before, during and after operation, the objectives of the ROD and the ROD Amendment were met.

V. SUMMARY OF OPERATION AND MAINTENANCE

The O&M Manual was approved by EPA in November 1997. The O&M manual documented the information and procedures necessary to allow for effective and efficient operation of the remedial system constructed at the Site. In accordance with the CD and the O&M Manual, the O&M period was to be performed for a minimum of five years to be followed by a PRM period. O&M activities were initiated in November 1997. During the operation of the SVE/AS system, the vapor from each of sixteen on-property and five off-property extraction wells were monitored on a monthly basis. Air discharge, prior to carbon treatment, from the SVE system was monitored on a monthly basis in order to demonstrate the effectiveness of the SVE system to remove VOCs from soil. Ground water monitoring wells were sampled quarterly from November 1997 through October 2000 and semi-annually from November 2000 through March 2003.

The Notice of Completion and Final O&M Report were submitted by Commander in 2003. The report indicated that SICs have met the cleanup standards in ground water and all Contaminants of concern (COCs) have met the cleanup standards in soil as specified in the ROD and ROD Amendment. Accordingly, EPA determined that the operation and maintenance was complete, and the Site could progress to the PRM phase. The PRM phase monitoring confirmed that all site-related contamination in soils and ground water had been remediated to cleanup levels specified in the ROD expect for those VOCs which were coming on site from off-site sources. Confirmatory sampling has indicated that all site-related contaminants have been remediated to cleanup levels that allow for unlimited use and unrestricted exposure, therefore, no CERCLA O& M activities are necessary.

VI. DEMONSTRATION OF QUALITY ASSURANCE/QUALITY CONTROL

Cleanup activities at the Site were undertaken in accordance with the AOC, the ROD, and the ROD Amendment, the CD and the RD plans and specifications, as modified by the as-built documentation. All applicable EPA and NYSDEC quality assurance and quality control (QA/QC) procedures and protocols were incorporated into the RD. EPA analytical methods and certified laboratories were used for all monitoring during remedial activities, and data validation was performed in accordance with EPA protocols. Oversight of construction activities, sampling procedures was provided EPA's contractor, Ebasco. Post-remediation monitoring oversight was provided by the US Army Corps of Engineers. In addition, the EPA Remedial Project Manager routinely visited the Site during construction activities to review construction progress and evaluate and review the results of QA/QC activities. All procedures and protocols followed during the RA are documented in the RD reports and the sample analyses were performed at state-certified laboratories.

The QA/QC program used throughout the RA was rigorous and in conformance with EPA and NYSDEC standards; therefore, EPA and NYSDEC have determined that all analytical results are accurate to the degree needed to assure satisfactory execution of the RA, in accordance with the ROD, ROD Amendment, CD and the RD plans and specifications, as modified by the as-built documentation.

VII. FIVE- YEAR REVIEW

The first five-year review for the Site was completed on August 5, 2004, pursuant to OSWER Directive 9355.7-03B-P. That review, conducted after the RA had been completed and O&M, and monitoring activities had commenced, determined that the RA as designed and constructed pursuant to the ROD Amendment, was performing satisfactorily and that the remedy implemented was protective of human health and the environment. A second five-year review for the Site was completed on July 23, 2009. That review, conducted after the RA and all O&M and Post-Remediation Monitoring period activities were completed, determined that the remedy implemented for the Site is protective of human health and the environment in the short term.

The second five-year review made a determination that the remedy for the Site was protective in the short-term because questions arose during the during the performance of the five-year review concerning the adequacy of the data set that was being used in the evaluation of the soil vapor intrusion pathway. Since there was no building on the Site during the implementation of remedial activities, the vapor intrusion pathway had not been evaluated. In response to this concern, EPA's contractor collected 10 soil gas samples from beneath the asphalt parking lot on January 9 and 12, 2006. EPA Region 2 soil vapor intrusion pathway evaluations typically rely upon data collected from sub-slab or indoor air samples. However, that was not possible since the only structure at the Site, an office trailer elevated on concrete blocks, does not have a basement or slab. At the request of New York State, soil gas sampling was conducted. A preliminary evaluation of the soil gas data collected at the Site in 2006 identified three of the ten samples at concentrations of potential concern.

To address this potential vapor intrusion pathway, the second five-year review suggested that the Agency issue an explanation of significant differences (ESD) to document a final decision to include institutional controls in the form of a "red-flag" in the computer system of the Town of Hempstead Building Department as part of the overall remedy for the Site. The "red flag" is intended to provide notice of a potential vapor intrusion problem to anyone seeking a construction permit and provide notice to EPA that a permit is being sought to erect a building on the Site. Implementation of this action by the Town of Hempstead Building Department would ensure that before a building permit is granted, the owner would either have to agree to install a soil vapor mitigation system or demonstrate through sampling that a soil vapor mitigation system is not needed. This institutional control was implemented concurrent with the finalization of the second five-year review. Subsequent to the issuance of the second five-year review, EPA determined that since the vapors detected at the Site are from an off-site source, an ESD was deemed not to be necessary and CERCLA action is not appropriate. The five-year review suggestion that an institutional control be placed on the property is a helpful precautionary measure for the property and it currently remains in place. EPA is satisfied that the town notification procedure will adequately address any potential future vapor intrusion issues at the former site. Therefore, the Site is protective of human health and the environment.

Since it has been determined that the source of vapors is not related to the CERCLA release, it has been determined that five-year reviews are no longer necessary. The 2009 five-year review was the final review for the Site.

VIII. SITE COMPLETION CRITERIA

The Site meets all the site-completion requirements as specified in OSWER Directive 9320.2-09, *Close-Out Procedures for National Priorities List Sites*. Specifically, the implemented remedy achieved the degree of cleanup specified in the ROD and ROD Amendment for all pathways of exposure. The remedy, remedial action objectives and associated cleanup goals are consistent with agency policy and guidance. No further Superfund response is needed to protect human health and the environment.

Approved:

John E. LaPadula

for Walter E. Mugdan, Director
Emergency and Remedial Response Division

8/4/11
Date

IX. BIBLIOGRAPHY

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Five-Year Review, EPA, August 5, 2004

Second Five-Year Review, EPA, July 23, 2009

ATTACHMENT 1

TABLE 3

ANAYTICAL RESULTS SUMMARY - VOLATILES
SOIL SAMPLING
PASLEY SOLVENTS
HEMPSTEAD, NEW YORK
JULY 2000

Parameters	*Sample ID:*	-6461-071700-JRR-001	S-6461-071700-JRR-002	S-6461-071700-JRR-003	S-6461-071700-JRR-004	S-6461 071800-JRR-005
	Sample Location:	BH-12	BH-6	BH-4	BH-4 (Field Dup.)	BH-5
	Collection Date:	07/17/00	07/17/00	07/17/00	07/17/00	07/18/00
	Units					
Chlorobenzene	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
Chloroform	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
1,1-Dichloroethane	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
1,1-Dichloroethene	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
trans-1,2-Dichloroethene	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
Ethylbenzene	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
Toluene	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
1,1,1-Trichloroethane	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
Total Xylenes	ug/Kg	3100	1800 U	1900 U	1800 U	1600 U
Acetone	ug/Kg	1800 U	1800 U	2300	17	1700
Chloromethane	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
Bromomethane	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
Vinyl chloride	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
Chloroethane	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
Methylene chloride	ug/Kg	1800 U	1800 U	1900 U	2.1 J	1600 U
Carbon disulfide	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
1,2-Dichloroethane	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
2-Butanone	ug/Kg	1800 U	1800 U	1900 U	5.5 J	1600 U
Carbon tetrachloride	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
Bromodichloromethane	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
1,2-Dichloropropane	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
cis-1,3-Dichloropropene	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
Trichloroethene	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
Dibromochloromethane	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
1,1,2-Trichloroethane	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
Benzene	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
trans-1,3-Dichloropropene	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
Bromoform	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
4-Methyl-2-pentanone	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
2-Hexanone	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
Tetrachloroethene	ug/Kg	1800 U	1800 U	1900 U	5.0 J	1600 U
1,1,2,2-Tetrachloroethane	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U
Styrene	ug/Kg	1800 U	1800 U	1900 U	1800 U	1600 U

Notes:

Dup	Field duplicate.
J	Associated value is estimated.
TCL	Target Compound List
U	Non-detect at associated value.

TABLE 3

ANAYTICAL RESULTS SUMMARY - VOLATILES
SOIL SAMPLING
PASLEY SOLVENTS
HEMPSTEAD, NEW YORK
JULY 2000

	Sample ID:	*S-6461-071800-JRR-006*	*S-6461-071800-JRR-007*	*S-6461-071800-JRR-008*	*S-6461-071800-JRR-009*
	Sample Location:	*BH-11*	*BH-10*	*BH-9*	*BH-8*
	Collection Date:	*07/18/00*	*07/18/00*	*07/18/00*	*07/18/00*
Parameters	*Units*				
Chlorobenzene	ug/Kg	1400 U	1400 U	11 U	9.9 U
Chloroform	ug/Kg	1400 U	1400 U	11 U	9.9 U
1,1-Dichloroethane	ug/Kg	1400 U	1400 U	11 U	9.9 U
1,1-Dichloroethene	ug/Kg	1400 U	1400 U	11 U	9.9 U
trans-1,2-Dichloroethene	ug/Kg	1400 U	1400 U	11 U	9.9 U
Ethylbenzene	ug/Kg	1400 U	1400 U	11 U	9.9 U
Toluene	ug/Kg	1400 U	1400 U	11 U	9.9 U
1,1,1-Trichloroethane	ug/Kg	1400 U	1400 U	11 U	9.9 U
Total Xylenes	ug/Kg	1400 U	1400 U	11 U	9.9 U
Acetone	ug/Kg	1600	1700	11 U	9.9 U
Chloromethane	ug/Kg	1400 U	1400 U	11 U	9.9 U
Bromomethane	ug/Kg	1400 U	1400 U	11 U	9.9 U
Vinyl chloride	ug/Kg	1400 U	1400 U	11 U	9.9 U
Chloroethane	ug/Kg	1400 U	1400 U	11 U	9.9 U
Methylene chloride	ug/Kg	1400 U	1400 U	11 U	9.9 U
Carbon disulfide	ug/Kg	1400 U	1400 U	11 U	9.9 U
1,2-Dichloroethane	ug/Kg	1400 U	1400 U	11 U	9.9 U
2-Butanone	ug/Kg	1400 U	1400 U	11 U	9.9 U
Carbon tetrachloride	ug/Kg	1400 U	1400 U	11 U	9.9 U
Bromodichloromethane	ug/Kg	1400 U	1400 U	11 U	9.9 U
1,2-Dichloropropene	ug/Kg	1400 U	1400 U	11 U	9.9 U
cis-1,3-Dichloropropene	ug/Kg	1400 U	1400 U	11 U	9.9 U
Trichloroethene	ug/Kg	1400 U	1300 U	11 U	9.9 U
Dibromochloromethane	ug/Kg	1400 U	1400 U	11 U	9.9 U
1,1,2-Trichloroethane	ug/Kg	1400 U	1400 U	11 U	9.9 U
Benzene	ug/Kg	1400 U	1300 U	11 U	9.9 U
trans-1,3-Dichloropropene	ug/Kg	1400 U	1400 U	11 U	9.9 U
Bromoform	ug/Kg	1400 U	1400 U	11 U	9.9 U
4-Methyl-2-pentanone	ug/Kg	1400 U	1400 U	11 U	9.9 U
2-Hexanone	ug/Kg	1400 U	1400 U	11 U	9.9 U
Tetrachloroethene	ug/Kg	1400 U	1400 U	11 U	9.9 U
1,1,2,2-Tetrachloroethane	ug/Kg	1400 U	1400 U	11 U	9.9 U
Styrene	ug/Kg	1400 U	1400 U	11 U	9.9 U

Notes:

Dup	Field duplicate.
J	Associated value is estimated.
TCL	Target Compound List
U	Non-detect at associated value.

TABLE 3

ANAYTICAL RESULTS SUMMARY - VOLATILES
SOIL SAMPLING
PASLEY SOLVENTS
HEMPSTEAD, NEW YORK
JULY 2000

	Sample ID:	*S-6461-071800-JRR-010*	*S-6461-071800-JRR-011*	*S-6461-071800-JRR-012*	*S-6461-071800-JRR-013*
	Sample Location:	*BH-7*	*BH-1*	*BH-2*	*BH-3*
	Collection Date:	*07/18/00*	*07/18/00*	*07/18/00*	*07/18/00*
Parameters	*Units*				
Chlorobenzene	ug/Kg	12 U	12 U	11 U	12 U
Chloroform	ug/Kg	12 U	12 U	11 U	12 U
1,1-Dichloroethane	ug/Kg	12 U	12 U	11 U	12 U
1,1-Dichloroethene	ug/Kg	12 U	12 U	11 U	12 U
trans-1,2-Dichloroethene	ug/Kg	12 U	12 U	11 U	12 U
Ethylbenzene	ug/Kg	12 U	12 U	11 U	12 U
Toluene	ug/Kg	12 U	12 U	11 U	12 U
1,1,1-Trichloroethane	ug/Kg	12 U	12 U	11 U	12 U
Total Xylenes	ug/Kg	12 U	12 U	11 U	12 U
Acetone	ug/Kg	3.0 J	14	11 U	12 U
Chloromethane	ug/Kg	12 U	12 U	11 U	12 U
Bromomethane	ug/Kg	12 U	12 U	11 U	12 U
Vinyl chloride	ug/Kg	12 U	12 U	11 U	12 U
Chloroethane	ug/Kg	12 U	12 U	11 U	12 U
Methylene chloride	ug/Kg	12 U	12 U	11 U	12 U
Carbon disulfide	ug/Kg	12 U	12 U	11 U	12 U
1,2-Dichloroethane	ug/Kg	12 U	12 U	11 U	12 U
2-Butanone	ug/Kg	12 U	12 U	11 U	12 U
Carbon tetrachloride	ug/Kg	12 U	12 U	11 U	12 U
Bromodichloromethane	ug/Kg	12 U	12 U	11 U	12 U
1,2-Dichloropropane	ug/Kg	12 U	12 U	11 U	12 U
cis-1,3-Dichloropropene	ug/Kg	12 U	12 U	11 U	12 U
Trichloroethene	ug/Kg	12 U	12 U	11 U	12 U
Dibromochloromethane	ug/Kg	12 U	12 U	11 U	12 U
1,1,2-Trichloroethane	ug/Kg	12 U	12 U	11 U	12 U
Benzene	ug/Kg	12 U	12 U	11 U	12 U
trans-1,3-Dichloropropene	ug/Kg	12 U	12 U	11 U	12 U
Bromoform	ug/Kg	12 U	12 U	11 U	12 U
4-Methyl-2-pentanone	ug/Kg	12 U	12 U	11 U	12 U
2-Hexanone	ug/Kg	12 U	12 U	11 U	12 U
Tetrachloroethene	ug/Kg	12 U	12 U	11 U	12 U
1,1,2,2-Tetrachloroethane	ug/Kg	12 U	12 U	11 U	12 U
Styrene	ug/Kg	12 U	12 U	11 U	12 U

Notes:

Dup	Field duplicate.
J	Associated value is estimated.
TCL	Target Compound List
U	Non-detect at associated value.

ATTACHMENT 2

TABLE 1

ANALYTICAL RESULTS SUMMARY
PASLEY SOLVENTS SITE
HEMPSTEAD, NEW YORK
APRIL 2003

Parameters	*Units*	
	Sample ID:	S-6451-403-JRR-001
	Location ID:	CSMW2
	Collection Date:	4/1/03
TCL Volatiles		
Dichlorodifluoromethane	µg/Kg	66 U
Chloromethane	µg/Kg	50 U
Vinyl Chloride	µg/Kg	53 U
Bromomethane	µg/Kg	64 U
Chloroethane	µg/Kg	51 U
Trichlorofluoromethane	µg/Kg	88 U
1,1-Dichloroethene	µg/Kg	63 U
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/Kg	71 U
Acetone	µg/Kg	1400
Carbon Disulfide	µg/Kg	80 U
Methyl Acetate	µg/Kg	0.88 U
Methylene Chloride	µg/Kg	95 U
trans-1,2-Dichloroethene	µg/Kg	52 U
Methyl tert-Butyl Ether	µg/Kg	35 U
1,1-Dichloroethane	µg/Kg	46 U
cis-1,2-Dichloroethene	µg/Kg	48 U
2-Butanone	µg/Kg	240 U
Chloroform	µg/Kg	44 U
1,1,1-Trichloroethane	µg/Kg	47 U
Cyclohexane	µg/Kg	56 U
Carbon Tetrachloride	µg/Kg	48 U
Benzene	µg/Kg	40 U
1,2-Dichloroethane	µg/Kg	38 U
Trichloroethene	µg/Kg	42 U
Methylcyclohexane	µg/Kg	0.72 U
1,2-Dichloropropane	µg/Kg	52 U
Bromodichloromethane	µg/Kg	33 U
cis-1,3-Dichloropropene	µg/Kg	45 U
4-Methyl-2-pentanone	µg/Kg	100 U
Toluene	µg/Kg	41 U
trans-1,3-Dichloropropene	µg/Kg	33 U
1,1,2-Trichloroethane	µg/Kg	42 U
Tetrachloroethene	µg/Kg	120 U
2-Hexanone	µg/Kg	85 U
Dibromochloromethane	µg/Kg	41 U
1,2-Dibromoethane	µg/Kg	38 U
Chlorobenzene	µg/Kg	40 U
Ethylbenzene	µg/Kg	43 U
Xylenes (Total)	µg/Kg	130 U
Styrene	µg/Kg	37 U

TABLE 1

ANALYTICAL RESULTS SUMMARY
PASLEY SOLVENTS SITE
HEMPSTEAD, NEW YORK
APRIL 2003

Parameters	Units	
	Sample ID:	[illegible]
	Location ID:	[illegible]
	Collection Date:	4/5/03
TCL Volatiles (Cont'd.)		
Bromoform	µg/Kg	50 U
Isopropylbenzene	µg/Kg	150 J
1,1,2,2-Tetrachloroethane	µg/Kg	50 U
1,3-Dichlorobenzene	µg/Kg	40 U
1,4-Dichlorobenzene	µg/Kg	45 U
1,2-Dichlorobenzene	µg/Kg	44 U
1,2-Dibromo-3-chloropropane	µg/Kg	85 U
1,2,4-Trichlorobenzene	µg/Kg	65 U
TCL Semi-Volatiles		
Benzaldehyde	µg/Kg	77 UJ
Phenol	µg/Kg	41 U
bis-(2-Chloroethyl)ether	µg/Kg	43 U
2-Chlorophenol	µg/Kg	60 U
2-Methylphenol	µg/Kg	56 U
2,2'-oxybis (1-Chloropropane)	µg/Kg	61 UJ
Acetophenone	µg/Kg	56 U
4-Methylphenol	µg/Kg	85 U
N-Nitroso-di-n-propylamine	µg/Kg	38 U
Hexachloroethane	µg/Kg	52 U
Nitrobenzene	µg/Kg	47 U
Isophorone	µg/Kg	49 U
2-Nitrophenol	µg/Kg	32 U
2,4-Dimethylphenol	µg/Kg	33 U
bis-(2-Chloroethoxy) methane	µg/Kg	42 U
2,4-Dichlorophenol	µg/Kg	39 U
Naphthalene	µg/Kg	39 U
4-Chloroaniline	µg/Kg	26 U
Hexachlorobutadiene	µg/Kg	52 U
Caprolactam	µg/Kg	54 U
4-Chloro-3-methylphenol	µg/Kg	32 U
2-Methylnaphthalene	µg/Kg	640
Hexachlorocyclopentadiene	µg/Kg	25 U
2,4,6-Trichlorophenol	µg/Kg	26 U
2,4,5-Trichlorophenol	µg/Kg	36 U
1,1'-Biphenyl	µg/Kg	210 J
2-Chloronaphthalene	µg/Kg	34 U
2-Nitroaniline	µg/Kg	35 U
Dimethylphthalate	µg/Kg	31 U
2,6-Dinitrotoluene	µg/Kg	28 U

TABLE 1

ANALYTICAL RESULTS SUMMARY
PASLEY SOLVENTS SITE
HEMPSTEAD, NEW YORK
APRIL 2003

	Sample ID:	S-6461-403-JRR-001
	Location ID:	CSMW2
	Collection Date:	4/1/03
Parameters	Units	
Semi-Volatiles (Cont'd.)		
Acenaphthylene	µg/Kg	33 U
3-Nitroaniline	µg/Kg	35 U
Acenaphthene	µg/Kg	30 U
2,4-Dinitrophenol	µg/Kg	370 U
4-Nitrophenol	µg/Kg	36 U
Dibenzofuran	µg/Kg	36 U
2,4-Dinitrotoluene	µg/Kg	34 U
Diethylphthalate	µg/Kg	66 J
Fluorene	µg/Kg	200 J
4-Chlorophenyl-phenylether	µg/Kg	26 U
4-Nitroaniline	µg/Kg	22 U
4,6-Dinitro-2-methylphenol	µg/Kg	28 U
N-Nitrosodiphenylamine	µg/Kg	42 U
4-Bromophenyl-phenylether	µg/Kg	31 U
Hexachlorobenzene	µg/Kg	31 U
Atrazine	µg/Kg	54 U
Pentachlorophenol	µg/Kg	26 U
Phenanthrene	µg/Kg	340 J
Anthracene	µg/Kg	36 U
Carbazole	µg/Kg	33 U
Di-n-butylphthalate	µg/Kg	38 U
Fluoranthene	µg/Kg	35 U
Pyrene	µg/Kg	41 U
Butylbenzylphthalate	µg/Kg	60 U
3,3'-Dichlorobenzidine	µg/Kg	20 U
Benzo(a)anthracene	µg/Kg	37 U
Chrysene	µg/Kg	37 U
bis-(2-Ethylhexyl)phthalate	µg/Kg	48 J
Di-n-octylphthalate	µg/Kg	33 U
Benzo(b)fluoranthene	µg/Kg	51 U
Benzo(k)fluoranthene	µg/Kg	49 U
Benzo(a)pyrene	µg/Kg	34 U
Indeno(1,2,3-cd)pyrene	µg/Kg	27 U
Dibenz(a,h)anthracene	µg/Kg	23 U
Benzo(g,h,i)perylene	µg/Kg	33 U
Total Petroleum Hydrocarbons	mg/Kg	1110

TABLE 1

ANALYTICAL RESULTS SUMMARY
PASLEY SOLVENTS SITE
HEMPSTEAD, NEW YORK
APRIL 2003

	Sample ID:	*S-6461-403-JRR-002*
	Location ID:	CSMW2
	Collection Date:	4/1/03
Parameters	**Units**	
TVOICs		
1,1-Dichloroethene	µg/Kg	63 U
trans-1,2-Dichloroethene	µg/Kg	52 U
1,1-Dichloroethane	µg/Kg	46 U
Chloroform	µg/Kg	44 U
1,1,1-Trichloroethane	µg/Kg	47 U
Toluene	µg/Kg	41 U
Chlorobenzene	µg/Kg	40 U
Ethylbenzene	µg/Kg	43 U
Xylenes (Total)	µg/Kg	130 U
Non-TVOICS		
Acetone	µg/Kg	1400
Benzene	µg/Kg	40 U
Trichloroethene	µg/Kg	42 U
Tetrachloroethene	µg/Kg	120 U

Notes:

J	Estimated.
TCL	Target Compound List.
TVOICs	**Total Volatile Organic** Index Compounds.
U	Non-detect at the associated result.

ATTACHMENT 3

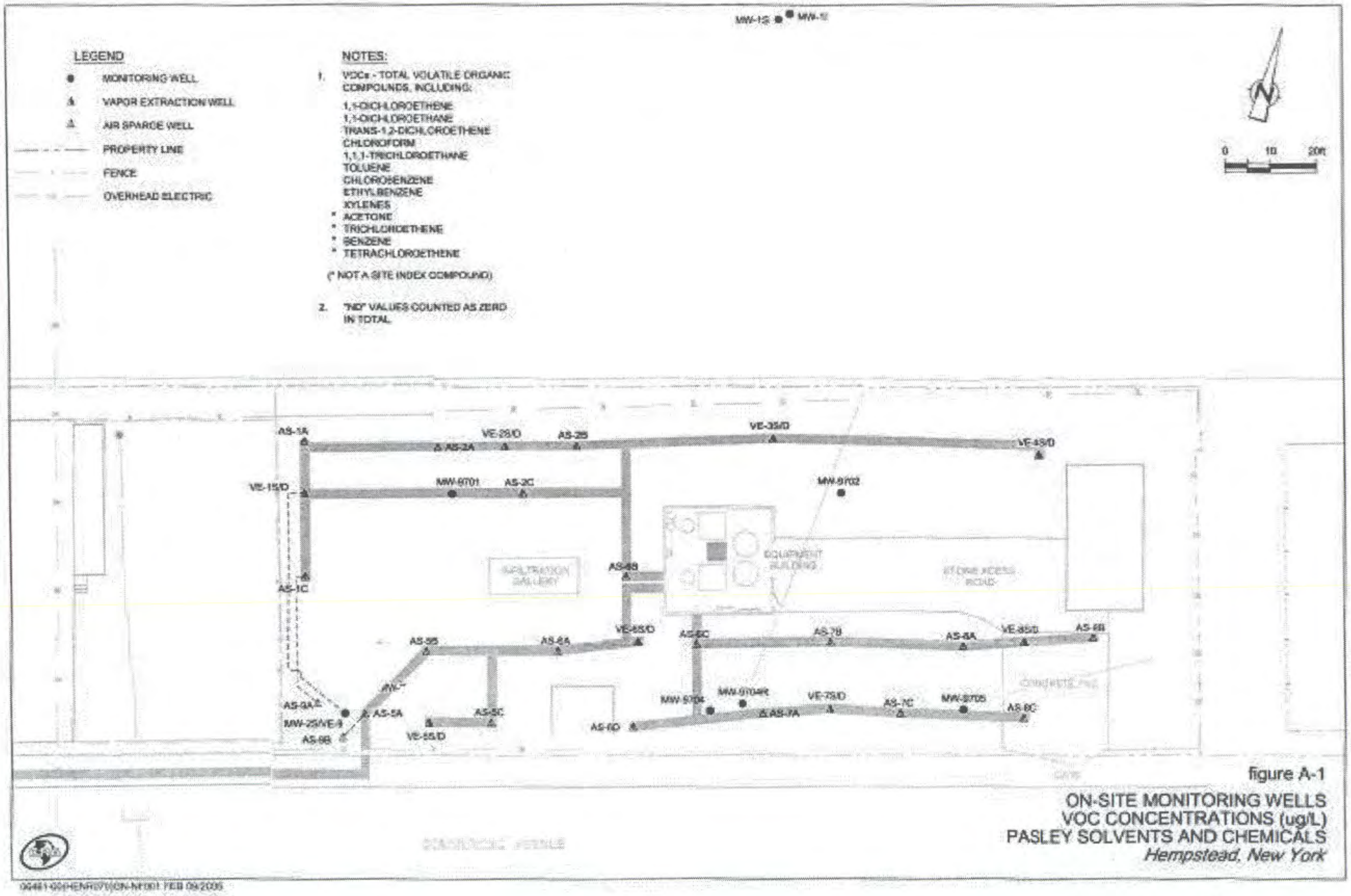

figure A-1

ON-SITE MONITORING WELLS
VOC CONCENTRATIONS (ug/L)
PASLEY SOLVENTS AND CHEMICALS
Hempstead, New York

Map of on-site monitoring wells and air sparging (AS) and soil vapor extraction (SVE) wells

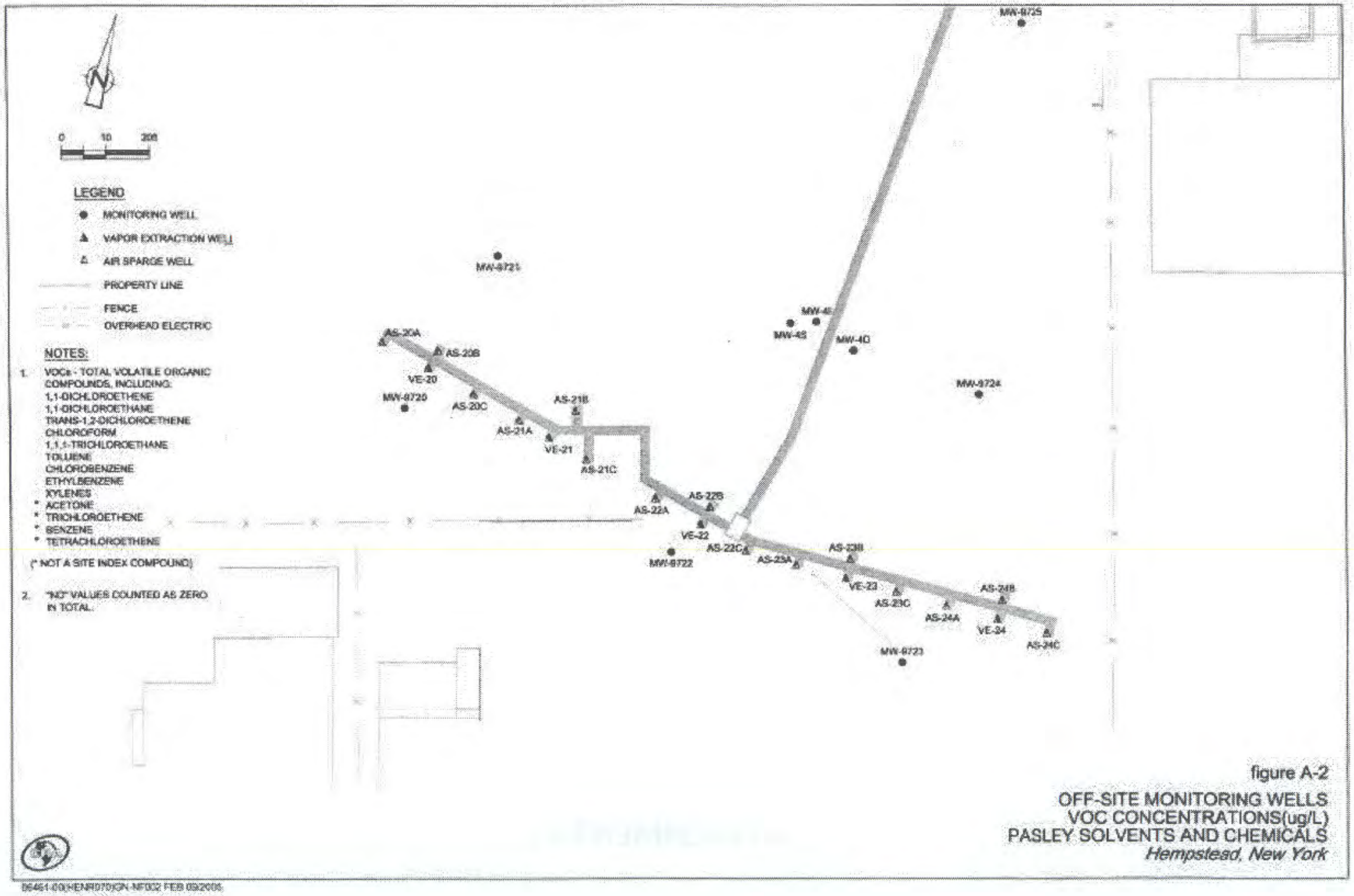

figure A-2

OFF-SITE MONITORING WELLS
VOC CONCENTRATIONS(ug/L)
PASLEY SOLVENTS AND CHEMICALS
Hempstead, New York

06461-09(HENR070)GN-NF002 FEB 09/2006

Map of off-site monitoring wells and air sparging (AS) and soil vapor extraction (SVE) wells

ATTACHMENT 4

TABLE 2
ANALYTICAL RESULTS SUMMARY
PASLEY SOLVENTS SITE
HEMPSTEAD, NEW YORK
JANUARY 2004

	Location:	*MW-2S*	*MW-2S*	*MW-9720*	*MW-9722*	*MW-9723*
	Sample ID:	*GW-6461-0104-357*	*GW-6461-0104-361*	*GW-6461-0104-358*	*GW-6461-0104-359*	*GW-6461-0104-360*
	Sample Date:	*01/22/2004*	*01/22/2004* *Duplicate*	*01/22/2004*	*01/22/2004*	*01/22/2004*
Parameter	***Units***					
TVOICs						
1,1-Dichloroethene	µg/L	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	µg/L	2 J	1 J	5 U	5 U	5 U
trans-1,2-Dichloroethene	µg/L	5 U	5 U	5 U	5 U	5 U
Chloroform (Trichloromethane)	µg/L	5 U	5 U	5 U	5 U	5 U
1,1,1 Trichloroethane	µg/L	5 U	5 U	5 U	5 U	5 U
Toluene	µg/L	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	µg/L	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	µg/L	5 U	5 U	5 U	5 U	5 U
Xylene (total)	µg/L	5 U	5 U	5 U	5 U	5 U
Total TVOICs (1)	µg/L	2	1	0	0	0
Non-TVOICs						
Acetone	µg/L	16 J	14 J	5 U	5 U	5 U
Trichloroethene	µg/L	5 U	1 J	5 U	5 U	5 U
Benzene	µg/L	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
Tetrachloroethene	µg/L	4 J	6 J	5 U	4 J	5 U
Total Non-TVOICs (1)	µg/L	20	21	0	4	0
Total Volatiles (1)	µg/L	22	22	0	4	0

Notes:

(1)	"U" values counted as zero in total.
J	Estimated.
TVOICs	Total Volatile Organic Index Compounds.
U	Non-detect at associated value.

TABLE 2

ANALYTICAL RESULTS SUMMARY
PASLEY SOLVENTS SITE
HEMPSTEAD, NEW YORK
JULY 2004

Sample Location:		**MW-2S**	**MW-2S**	**MW-9720**	**MW-9722**	**MW-9723**
Sample ID:		**GW-6461-72804-MW2S**	**GW-6461-72804-001**	**GW-6461-72804-9720**	**GW-6461-72804-9722**	**GW-6461-72804-972**
Sample Date:		**7/28/2004**	**7/28/2004** *Dupl.*	**7/28/2004**	**7/28/2004**	**7/28/2004**
Parameter	*Units*					
TVIOCs						
1,1-Dichloroethene	ug/L	5U	5U	5U	5U	5U
1,1-Dichloroethane	ug/L	1J	1J	5U	5U	5U
Trans-1,2-Dichloroethene	ug/L	5U	5U	5U	5U	5U
Chloroform (Trichloromethane)	ug/L	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	ug/L	5U	5U	5U	5U	5U
Toluene	ug/L	5U	5U	5U	5U	5U
Chlorobenzene	ug/L	5U	5U	5U	5U	5U
Ethylbenzene	ug/L	5U	5U	5U	5U	5U
Xylene (total)	ug/L	2J	2J	5U	5U	5U
Total TVOICs(1)		3	3	0	0	0
Non-TVOICs						
Acetone	ug/L	12	13	5U	5U	5U
Trichloroethene	ug/L	1J	1J	5U	5U	5U
Benzene	ug/L	0.7U	0.7U	0.7U	0.7U	0.7U
Tetrachloroethene	ug/L	6	6	5U	15	5U
Total Non-TVOICs(1)		19	20	0	16	0
Total Volatiles		22	23	0	16	0

Notes:

(1)	"U" values counted as zero in total.
J	Estimated.
TVOICs	Total Volatile Organic Index Compounds.
U	Non-detect at associated value.

TABLE 3

ANALYTICAL RESULTS SUMMARY
GROUNDWATER SAMPLING
PASLEY SOLVENTS
HEMPSTEAD, NEW YORK
FEBRUARY 2005

	Sample Location:	**MW-2S**	**MW-2S**	**MW-9720**	**MW-9722**	**MW-9723**
	Sample ID:	**GW-6461-0205-362**	**GW-6461-0205-363**	**GW-6461-0205-366**	**GW-6461-0205-365**	**GW-6461-0205-364**
	Sample Date:	**2/9/2005**	**2/9/2005**	**2/9/2005**	**2/9/2005**	**2/9/2005**
			Dupl.			
Parameter	***Units***					
TVIOCs						
1,1-Dichloroethene	ug/L	5U	5U	5U	5U	5U
1,1-Dichloroethane	ug/L	3J	3J	5U	5U	5U
Trans-1,2-Dichloroethene	ug/L	5U	5U	5U	5U	5U
Chloroform (Trichloromethane)	ug/L	5UJ	5UJ	5UJ	5UJ	5UJ
1,1,1-Trichloroethane	ug/L	5U	5U	5U	5U	5U
Toluene	ug/L	270J	200	49	60	72
Chlorobenzene	ug/L	5U	5U	5U	5U	5U
Ethylbenzene	ug/L	5U	5U	5U	5U	5U
Xylene (total)	ug/L	4J	4J	5U	1J	1J
Total TVOICs[(1)]		2	207	49	61	73
Non-TVOICs						
Acetone	ug/L	5U	10	5U	5U	5U
Trichloroethene	ug/L	4J	4J	5U	2J	5U
Benzene	ug/L	0.7U	0.7U	0.7U	0.7U	0.7U
Tetrachloroethene	ug/L	23	20	2J	17	5U
Total Non-TVOICs[(1)]	ug/L	27	34	2	19	0
Total Volatiles	ug/L	304	241	51	80	73

Notes:

(1)	"U" values counted as zero in total.
J	Estimated.
TVOICs	Total Volatile Organic Index Compounds.
U	Non-detect at associated value.

TABLE 4

ANALYTICAL RESULTS SUMMARY
PASLEY SOLVENTS
HEMPSTEAD, NEW YORK
JULY 2005

	Sample Location:	**MW-9723**	**MW-9723**	**MW-9722**	**MW-2S**	**MW-9720**
	Sample ID:	**GW-6461-0705-367**	**GW-6461-0705-368**	**GW-6461-0705-369**	**GW-6461-0705-370**	**GW-6461-0705-371**
	Sample Date:	**7/25/2005**	**7/25/2005**	**7/25/2005**	**7/25/2005**	**7/25/2005**
			Dupl.			
Parameter	***Units***					
TVIOCs						
1,1-Dichloroethene	ug/L	5U	5U	5U	10	5U
1,1-Dichloroethane	ug/L	5U	5U	5U	1J	5U
Trans-1,2-Dichloroethene	ug/L	5U	5U	5U	5U	5U
Chloroform (Trichloromethane)	ug/L	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	ug/L	5U	5U	5U	1J	5U
Toluene	ug/L	5U	5U	5U	5U	5U
Chlorobenzene	ug/L	5U	5U	5U	5U	5U
Ethylbenzene	ug/L	5U	5U	5U	5U	5U
Xylene (total)	ug/L	5U	5U	5U	5U	5U
Total TVOICs(1)		0	0	0	12	0
Non-TVOICs						
Acetone	ug/L	5U	5U	5U	5U	5U
Trichloroethene	ug/L	5U	5U	5U	58	5U
Benzene	ug/L	0.7U	0.7U	0.7U	0.7U	0.7U
Tetrachloroethene	ug/L	5U	5U	4J	170	2J
Total Non-TVOICs(1)	ug/L	0	0	4J	228	2J
Total Volatiles	ug/L	0	0	4J	240	2J

Notes:

(1)	"U" values counted as zero in total.
J	Estimated.
TVOICs	Total Volatile Organic Index Compounds.
U	Non-detect at associated value.

TABLE 5

ANALYTICAL RESULTS SUMMARY
PASLEY SOLVENTS
HEMPSTEAD, NEW YORK
AUGUST 2005

	Sample Location:	MW-2S	MW-2S	MW-2S
	Sample Date:	8/19/2005	8/19/2005	8/19/2005
Parameter	*Units*			
TVIOCs				
1,1-Dichloroethene	ug/L	5U	5U	5U
1,1-Dichloroethane	ug/L	2J	2J	2J
Trans-1,2-Dichloroethene	ug/L	5U	5U	5U
Chloroform (Trichloromethane)	ug/L	5U	5U	5U
1,1,1-Trichloroethane	ug/L	2J	2J	2J
Toluene	ug/L	5U	5U	5U
Chlorobenzene	ug/L	5U	5U	5U
Ethylbenzene	ug/L	5U	5U	5U
Xylene (total)	ug/L	5U	5U	5U
Non-TVOICs				
Acetone	ug/L	5	6	7
Trichloroethene	ug/L	12	7	7
Benzene	ug/L	0.7U	0.7U	0.7U
Tetrachloroethene	ug/L	55	29	22

Notes:

U	Not present at or above the associated value.
J	Estimated concentration.
TVOICs	Total Volatile Organic Index Compounds