Five-Year Review Report

For the

Claremont Polychemical Corporation Superfund Site

Town of Bethpage

Nassau County, New York

PREPARED BY:
U.S. Environmental Protection Agency
Region 2
New York, New York

September 2008

Executive Summary

This is the first five-year review for the Claremont Polychemical Corp., Superfund Site. The site is located in the Town of Bethpage, Nassau County, New York. The implemented remedy for the Claremont Polychemical site protects human health and the environment because current exposure pathways that could result in unacceptable risks are under control. However, in order for the remedy to be protective in the long-term, investigations are needed to assess, and possibly address, any risks associated with the newly identified septic systems.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name *(from WasteLAN)*: **Claremont Polychemical Corp Superfund Site**		
EPA ID *(from WasteLAN)*: NYD		
Region: 2	**State: NY**	**City/County: Nassau**

SITE STATUS	
NPL status: ■ Final ☐ Deleted ☐ Other (specify)	
Remediation status (choose all that apply): ☐ Under Construction ☐ Operating ■ Complete	
Multiple OUs?* ■ YES ☐ NO	**Construction completion date:** September 2003
Are site related properties currently in use? ☐ YES ALL ☐ YES SOME ■ NO NONE ☐	

REVIEW STATUS	
Lead agency: ■ EPA ☐ State ☐ Tribe ☐ Other Federal Agency _____	
Author name: **Maria Jon**	
Author title: Project Manager	**Author affiliation:** USEPA
Review period: April 2003 to September 2008	
Date(s) of site inspection: 5/08/2008	
Type of review: ■ Post-SARA **Statutory** ☐ Pre-SARA or post-SARA **Policy** ☐ NPL-Removal only ☐ Non-NPL Remedial Action Site ☐ Regional Discretion	
Review number: ■ 1 (first) ☐ 2 (second) ☐ 3 (third) ☐ Other (specify) _____	
Triggering action: ☐ Actual RA Onsite Construction or RA Start at OU #____ ☐ Construction Completion ☐ Previous Five-Year Review Report ■ Other	
Triggering action date *(from WasteLAN)*: 4 /14 / 2003	
Does the report include recommendation(s) and follow-up action(s)? ■ yes ☐ no **Does the remedy protect the environment?** ■ yes ☐ no ☐ not yet determined	
Acres in use or suitable for reuse: **restricted:** 9.5 acres **unrestricted:** _____	

* ["OU" refers to operable unit.]

Five-Year Review Summary Form, cont'd.

Issues, Recommendations and Follow-up Actions:

Recently, during the course of the old process building rehabilitation, the current property owner discovered previously unidentified septic systems. EPA is currently working with the property owner to investigate these newly identified septic systems. Please refer to Table 5 for additional issues, recommendations and follow-up actions.

Protectiveness Statement:

The implemented remedy for OU 4 (Claremont on-property groundwater) protects human health and the environment by controlling exposure pathways that could result in unacceptable risks.

The implemented remedy for OU 5 (Claremont off-property groundwater) protects human health and the environment by controlling exposure pathways that could result in unacceptable risks.

The implemented remedy for OU 2 (Treatment of soil under the old building) protects human health and the environment because current exposure pathways that could result in unacceptable risks are under control. However, in order for the remedy to be protective in the long-term, investigations are needed to assess, and possibly address, any risks associated with the newly identified septic systems.

Since OU 2 is short-term protective, the site itself is considered short-term protective of human health and the environment.

Other Comments:

None.

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Five-Year Review Report

I. Introduction

This first five-year review for the Claremont Polychemical Corporation Superfund Site (Site), located in Nassau County, New York, was conducted by the United States Environmental Protection Agency (EPA) Remedial Project Manager Maria Jon. The five-year review was conducted pursuant to Section 121(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, 42 U.S.C. §9601 et seq. and 40 CFR 300.430(f)(4)(ii), and in accordance with the Comprehensive Five-Year Review Guidance, OSWER Directive 9355.7-03B-P (June 2001). The purpose of a five-year review is to assure that implemented remedies protect public health and the environment and function as intended by the decision documents. This report will become part of the Site file.

The Site has two Records of Decision (RODs) and two Explanations of Significant Differences (ESDs). While the RODs provided for unlimited use without restriction, the April 2003 ESD recognized that after implementation of the actions described in the April 2003 ESD, the Site would achieve construction completion, and some contaminants would remain in soil under the old process building. This required the restriction of site use, institutional controls and "statutory" five-year reviews. The 2003 ESD triggered the first five-year review. Below is a description of the operable units and remedial actions completed at the Site.

OU 1

OU 1 consisted of the treatment and removal of wastes in underground storage tanks. Under this action, 14 underground storage tanks and the contents were removed and shipped off-site for treatment and disposal. Upon completion of OU1 remedial action, contaminant levels on-site were reduced to levels that allowed for unlimited use and unrestricted exposure; therefore, the OU 1 remedy is not subject to a statutory review and does not require further evaluation in this report.

OU 2

This remedial action addressed the wastes stabilized during the September 1988 removal action. This action included compatibility testing, bulking/consolidation and treatment/disposal of wastes in deteriorated containers, aboveground tanks, and treatment basins. Upon completion of this remedial action, contaminant levels in on-site areas were reduced to levels that permit unlimited use and unrestricted exposure; therefore, this remedial action is not subject to a statutory review, and does not require further evaluation in this report.

In April 2003, EPA issued an explanation of significant differences (ESD) to include additional remedial actions at the Site and to address contaminated soil under the old process building. These remedial actions are:

- Removal of miscellaneous construction debris.

  This remedial action consisted on the removal of construction and demolition (C&D) debris and decommissioning of treatment basins. All miscellaneous debris, C&D debris and sludge from the treatment basins were removed and transported off-site for disposal. Upon completion of this remedial action, contaminant levels on-site were reduced to levels that permit unlimited use and unrestricted exposure.

- Operation of a soil vapor extraction system (SVE).

  Soil contaminated with VOCs was discovered during implementation of the OU 6 remedy (old process building decontamination). A SVE system was installed to address the impacted soil and was operating at an extraction rate of approximately 500 - 600 CFM. The latest monitoring data indicate that more than 1,200 lbs of VOCs have been removed by the SVE system. EPA has temporarily suspended operations of the SVE system due to unsafe conditions in the building. Once these unsafe conditions are addressed, EPA will resume operation of the SVE system. Currently, the building concrete floor covering the contaminated soil is intact and undisturbed, and institutional controls required by the April 2003 ESD, which are described in the next paragraph, are in place. This remedy is on-going and subject to this five year review.

- Institutional controls and maintenance of the building concrete floor.

  The 2003 ESD required maintaining the integrity of the Process Building's floor over time to prevent direct human exposure to cadmium-contaminated soil. This action was to be accomplished by establishing institutional controls to ensure that the process building's concrete floor remains undisturbed, and future uses of the property are limited to commercial/light industrial uses. Currently, the concrete floor covering the contaminated soil is intact and undisturbed, institutional controls required by the April 2003 ESD are in place. An Environmental Protection Easement and a Declaration of Covenants and Restrictions were filed with the Nassau County Clerk's office on September 26, 2007.

- Newly discovered septic systems.

  Recently, during the course of the old process building rehabilitation, the current property owner discovered two previously unidentified septic systems. EPA is currently working with the property owner to investigate these newly identified septic systems.

OU 3

OU 3 addressed the treatment of soil contaminated with tetrachloroethene (PCE) located in the former "spill area" via low-temperature enhanced volatilization (LTVE). 8,762 tons of PCE contaminated soil were excavated, treated to health-based standards and backfilled on the Site. The OU 3 remedy achieved soil standards which allow for unrestricted use; therefore, the OU 3 remedy is not subject to a statutory review and does not require further evaluation in this report.

OU 4

OU 4 addressed the contaminated groundwater on the Claremont property. The remedy consists of the extraction and treatment of the contaminated groundwater on the Claremont property via metals precipitation, air stripping and carbon adsorption, and re-injection of the treated water into the ground. This remedy is on-going and subject to this five year review.

OU 5

OU 5 addressed the contaminated groundwater beyond the Claremont property. The remedy consists of the extraction and treatment of the contaminated groundwater that has migrated from the Claremont Polychemical Corp. property boundary via air stripping and re-injection of the treated water into the ground. This remedy is on-going and subject to this five year review.

OU 6

OU 6 addressed the decontamination of the old process building. This remedy consisted of decontamination of the building via vacuuming and dusting of the contaminated surfaces and removing the asbestos insulation for off-site treatment and disposal. All hazardous substances, asbestos containing material, and salvageable material were removed from the building and disposed properly off-site prior to building decontamination. The building walls and interior surfaces were pressure washed using a 3,500 and a 15,000 psi pressure washer and citrus cleaning agent. The OU 6 remedy achieved health based standards which allow for unrestricted use; therefore, the OU 6 remedy is not subject to a statutory review and does not require further evaluation in this report.

II. Site Chronology

Table 1, attached, summarizes the site-related events from discovery to the present.

III. Background

Site Location

The Claremont Polychemical Corporation Superfund Site is located on a 9.5-acre parcel of land in the industrial section of Old Bethpage, Nassau County, New York (Figure 1). The property has one large one-story building, covering approximately 35,000 square feet (the former processing plant) and a smaller water treatment building. The Site lies approximately 800 feet east of the border between Nassau and Suffolk County and is accessed via Winding Road on the property's western border.

Properties adjacent to the Site include: the Bethpage State Park and a golf course to the south and southeast, the State University of New York-Farmingdale Campus to the east, and a commercial and light industrial area to the north. The Oyster Bay Solid Waste Disposal Complex (Old Bethpage Landfill or OBL) is immediately west of the CPC Site, which is a Superfund Site with the Town of Oyster Bay as the responsible party. The Nassau County Fireman's Training Center, which is a New York State Inactive Hazardous Waste Site, is located approximately 500 feet south of the OBL site. The OBL site and Fireman's Training Center have groundwater extraction and treatment systems in operation. The golf course also has a number of pump/irrigation wells, which are used for watering its fairways. The closest residences are approximately one-half mile from the Site immediately west of the OBL. The nearest public supply well is located 3,500 feet northwest of the Site and nearly 47,000 people are drawing water from private-use wells located within three miles of the Site.

Site Geology/Hydrology

Historical investigations in the immediate area surrounding the Site have encountered four main geologic units, which are in descending order as follows: approximately 20 feet of Upper Glacial/Manetto Gravel deposits (Tertiary System), approximately 750 feet of the Magothy Formation (Tertiary System), 150 feet of the Rarian Clay member (Upper Cretaceous Series), and approximately 250 feet of Loyd Sand member (Upper Cretaceous Series).

At the Site, the Upper Glacial/Manetto Gravel is absent and the Magothy Formation is the uppermost geologic unit and aquifer of concern. Fill material overly the Magothy Formation in a sporadic pattern across the north and east portions of the site and when present measure approximately 2 to 6 feet in thickness. Local water supply wells in the Magothy Formation are typically screened within the intermediate and lower portions of the aquifer to intercept the coarse, gravel-rich intervals.

Site-specific subsurface investigations from a variety of soil borings and monitoring/injection/extraction well installations to a maximum depth of 250 feet below ground surface have identified "well-stratified fine to medium sand with silt lenses, abundant peat laminae, and discontinuous sand layers" (Ebasco, 1990). Borings in the northern portion of the Site also encountered numerous interbedded silt and clay horizons. A comparison of Site logs with municipal supply well logs to the north suggest that the Site is located within a transitional area between the predominately sandy southern portion of the Magothy Formation and an interbedded clayey-sand portion to the north. As stated previously, the Magothy Formation is the uppermost water bearing unit and the sole source aquifer supplying potable drinking water to the majority of Long Island. It is an unconfined aquifer and the water table is typically encountered between 65 to 95 feet below ground surface. Previous investigations have shown that while the Magothy Aquifer has bodies of silt and clay within it, they are lenticular and discontinuous. Since vertical hydraulic barriers are not present locally, unit saturated thickness is assumed to be 650 to 700 ft. Groundwater flow is generally to the south-southeast.

Land and Resource Use

The Claremont Polychemical property is currently zoned exclusively for light industrial/commercial land use. Land uses within one mile of the Site are: recreational (Bethpage State park to the south and southwest); institutional (State University Agricultural and Technical Institute to the east, Nassau County Firemen Training Center to the southwest, restored Old Bethpage Village to the north); commercial and industrial (to the north); residential (to the west and northwest); and solid waste disposal (to the west). The property was recently sold and the new owner is looking at redeveloping the property.

History of Contamination

The Claremont Polychemical Corporation (CPC) is a former manufacturer of pigments for plastics and inks, coated metal flakes, and vinyl stabilizers that operated from 1966 to 1980. During its operation, Claremont disposed of liquid waste in three leaching basins and deposited solid wastes and treatment sludges in drums or in old, aboveground metal tanks. The principal wastes generated were organic solvents, resins and wash wastes (mineral spirits). The Site occupies approximately 9.5 acres on which a 35,000 square-foot one-story, concrete building (Process Building) is located in the center of the property. Located inside the Process Building were a solvent recovery system (steam distillation), two pigment dust collectors and a sump. To the west of the building, there were five concrete treatment basins, each with a capacity of 5,000 gallons, which contained sediments and water. Six aboveground tanks, three of which contained wastes, were located east of the Process Building. Other features included an underground tank farm, construction and demolition debris, dry wells and a water supply well.

Initial Response

In 1979, the Nassau County Department of Health (NCDH) found 2,000-3,000 drums of inks, resins, and organic solvents throughout the Site during a series of inspections. Inspectors identified releases associated with damaged or mishandled drums in several areas including one larger release located east of the plant building (referred to as the "spill area"). Claremont sorted and removed the drums in 1980.

In 1980, NCDH directed Claremont to install groundwater monitoring wells but the facility declared bankruptcy later that year. Ownership and site management was transferred to the New York Bankruptcy Court. However, in 1997 the Court dismissed Claremont's bankruptcy petition and ownership of the property shifted back to Claremont.

Basis for Taking Action

The Site was proposed for inclusion on the National Priorities List (NPL) in October 1984 and was added to the NPL in June 1986. A remedial investigation and feasibility study (RI/FS) was initiated in March 1988 to characterize the contamination present at the Site, as well as evaluate alternatives designed to address this contamination. EPA sampled surface and subsurface soil, groundwater, underground storage tanks, and the Process Building. The RI report was released to the public in August 1990. The RI findings indicated that on-Site soils contaminated with tetrachloroethene (PCE) located in the former "spill area," constituted a potential threat to groundwater resources. Fifteen underground tanks holding liquid and sludge wastes were also identified at the Site. Contents of the tanks were mainly VOCs, namely, 2-butanone, toluene and xylenes. Heavy metals (e.g., copper, zinc, etc.) were found to be present in dust accumulated throughout the Process Building. In addition, the shallow groundwater was found to be contaminated with PCE, trans-1,2-dichloroethene, trichloroethene, 1,1,1-trichloroethane, ethylbenzene, benzene, 1,1-dichloroethane, methylene chloride, xylenes and vinyl chloride in excess of federal Maximum Contaminant Levels (MCLs) and/or New York State Drinking Water Standards.

IV. Remedial Actions

Removal Action

In September 1988, EPA's Response and Prevention Branch initiated a removal action to stabilize and isolate the leaking containers in the buildings and all other hazardous materials at the Site. This was completed in January 1989. Due to funding constraints, the removal action was limited to site stabilization measures. Disposal of these materials was called for in the 1989 ROD. This effort was designated as the second operable unit (OU 2) of remedial action and is described below.

Remedy Selection

EPA issued two RODs and two ESDs for the Site. The first ROD was signed on September 22, 1989. This remedial action addressed the wastes stabilized during the September 1988 removal action, and included compatibility testing, bulking/ consolidation and treatment/disposal of wastes in deteriorated containers, aboveground tanks, and treatment basins.

The second ROD, signed on September 28, 1990, addressed the comprehensive remedy for the remainder of the Site. The remedial measures addressed by this ROD and the corresponding operable unit designations are:

OU 1 - Treatment and removal of wastes in underground storage tanks
OU 3 - Treatment of PCE-contaminated soils via low-temperature enhanced volatilization
OU 4 - Treatment of the CPC on-Property contaminated groundwater
OU 5 - Treatment of the CPC off-Property contaminated groundwater
OU 6 - Decontamination of the former Process Building

After it was learned that three of the groundwater recovery wells which are part of the Old Bethpage Landfill Superfund site (OBL) groundwater extraction and treatment system were capturing the CPC off-Property groundwater plume, EPA decided to modify the selected remedy for OU 5. On September 29, 2000, EPA issued an ESD that indicated that the OBL Superfund site groundwater treatment facility would be used to remediate the CPC off-Property groundwater plume, in lieu of constructing a new treatment system. The OBL Superfund site groundwater treatment system is operated by the Town of Oyster Bay.

In October 2000, after removing debris and decontaminating the interior of the former Process Building, EPA and the U.S. Army Corps of Engineers (USACE) discovered a pit, approximately 20 inches in diameter and two feet deep in the floor. The pit was sampled and found to be contaminated with VOCs (PCE, trichloroethene, toluene and xylene) and cadmium. Three sampling events were conducted to characterize the soil contamination around the pit and under the Process Building. In August 2002, EPA initiated a pilot study to address the VOCs in the soil underneath the Process Building using a soil vapor extraction (SVE) system.

In April 2003, EPA issued a second ESD to document further modifications to the 1990 ROD. This ESD included actions to treat the VOCs in the soil under the former Process Building by operating an SVE system and maintaining the integrity of the Process Building's floor over time to prevent direct human exposure to cadmium-contaminated soil. The latter action was to be accomplished by establishing institutional controls to ensure that the Process Building's concrete floor remains undisturbed, and future uses of the Property are limited to commercial/light industrial uses. In addition, the ESD also

required the removal of approximately 30,000 yd^3 of industrial/commercial demolition and construction debris located on the northern portion of the property and the decommissioning of five concrete-lined pits, which served as former wastewater treatment basins.

Remedial Action Implementation

OU 1 and OU 2 actions were implemented by EPA's Removal Action Branch in August 1991 and September 1989, respectively. During implementation of the OU 1 action, 14 underground storage tanks were removed and 12,644 gallons of liquid waste and approximately 1,400 gallons of flammable liquid were shipped off-site for treatment and disposal. During the OU 2 action, the contents of approximately 547 drums containing flammable liquids were consolidated into 123 drums and shipped off-site for incineration; 16,200 gallons of wastewater from the aboveground tanks were transported off-site for disposal; 10,050 gallons of copper/zinc sludge from the treatment basins were shipped off-site to a metals reclamation facility; and 371 empty fiber steel drums were shipped to a recycling facility.

In September 1990, EPA entered into an Interagency Agreement (IAG) with the USACE to perform the designs of the OU 3 LTEV soils treatment system, the OU 4 CPC on-Property groundwater treatment system, and the OU 6 building decontamination. The design work for these remedial components was completed in February 1995. In September 1993, EPA entered into a second IAG with the USACE for oversight of the construction activities at the Site. The USACE awarded a contract to URS Corp. in September 1995 for the implementation of these remedial actions.

The soil excavation and treatment work (OU3) was completed in December 1996. 8,762 tons of PCE contaminated soil were excavated, treated and backfilled on the Site.

The groundwater portion of the remedy was implemented in two phases. For the first phase, three extraction wells were installed on the property boundary to capture the on-site groundwater plume (OU 4) or the most contaminated groundwater. Construction began in 1997 and the system went into full-scale operation in February 2000. The second phase (OU 5) was designed to address the groundwater contamination that has migrated beyond the Claremont property boundary. This phase is being addressed by NYSDEC through a municipal agreement with the Town of Oyster Bay. An ongoing groundwater remediation program at the Old Bethpage Landfill Superfund Site, which is nearby the Claremont Polychemical Site, is capturing this plume. The responsibility for the remediation of this plume was transferred from EPA to NYSDEC in December 2007.

The OU 6 building decontamination work began in July 1998 and was completed in December 1998. The decontamination consisted of power washing walls and interior building structures to remove heavy metal contamination. All hazardous substances, asbestos containing material, and salvageable material were removed from the building prior to building decontamination. Approximately 32 tons of mixed debris, 2,000 linear

ft of asbestos material and 187 ft^3 of asbestos tank coatings were transported off-site to approved disposal facilities. In addition, 90 $yards^3$ of steel piping went to a recycling facility.

During the building decontamination, a hole was discovered in the building's concrete slab, and ultimately a new source of organic (PCE) contamination in the soil and groundwater beneath the building was revealed. EPA determined that the best way to address the soil contamination would be an SVE system. The SVE pilot system was designed in September of 2001, and was implemented by EPA's Removal Action Branch in August 2002. The SVE system was operating at an extraction rate of approximately 500 - 600 CFM. The latest monitoring data indicate that more than 1,200 lbs of VOCs were removed by the SVE system. The former Process Building has been vacant for several years and is in extremely poor condition. Substantial roof leaks have led to severe ponding and water damage. Portions of the roof have collapsed and complete replacement is required. The current unsafe conditions have caused EPA to temporarily suspend operating the SVE system. This property was recently sold and EPA is waiting for the new owner to remedy the unsafe conditions. Once the building is safe to enter, EPA will continue the operation of the SVE system until the cleanup levels specified in the April 2003 ESD are met. Recently, during the course of building rehabilitation, the current property owner discovered two previously unidentified septic systems. EPA is currently working with the property owner to investigate these newly identified two septic systems.

The removal of construction debris and decommissioning of treatment basins were completed in September 2003, by SAIC under a contract with the USACE. Approximately 300 tires were segregated from the debris and disposed off-site; 20,654 cubic yards of soil were processed and screened, stockpiled on-site during the debris excavation, and re-graded onto the excavated area following the debris removal; 390 tons of miscellaneous debris were removed and transported to a solid waste disposal facility; 7,000 tons of concrete and 170 tons of scrap metal were transported to a recycling facility; and 454 tons of cadmium hazardous soil and 128 tons of cadmium hazardous debris were disposed of at a permitted hazardous waste facility. In addition, two drums of sludge were removed from the wastewater treatment basins and transported off-site for disposal.

Institutional Controls Implementation

On September 26, 2007, as required in the April 2003 ESD, an Environmental Protection Easement and a Declaration of Covenants and Restrictions were filed with the Nassau County Clerk's office covering the Claremont Polychemical property. Both the Easement and Declaration of Covenants and Restrictions limit the use of the Claremont property to light industrial or commercial purposes; grant EPA a permanent easement and covenant to provide a right access over the property for purposes of implementing, monitoring and facilitating the response action; prohibit the residential use of this property as long as hazardous substances remain on the property; restrict the extraction

consumption, exposure, and use of the groundwater (except as approved by EPA); prohibit the installation of groundwater wells (except as approved by EPA); and prohibit the disturbance of the concrete slab underneath the former Process Building and maintain its integrity. These items complete the institutional controls requirement of the April 2003 ESD.

Operation, Maintenance and Monitoring (O, M &M)

The Claremont Polychemical Site pump-and-treat system for OU 4 consists of an extraction system, above-ground treatment, and a reinjection system. Full-scale operation of the OU 4 groundwater remedial system began in February 2000, pumping 470 gallons per day. A long-term response action (LTRA) subcontractor, SAIC Inc., was retained to operate and maintain the treatment facility. The facility has been monitored on a regular basis by SAIC. Monitoring points consist of the three extraction wells, four re-injection wells, 43 monitoring wells (21 wells on the Claremont property and 22 wells off the Claremont property), influent and effluent stream to the air stripper. The effluent from the air stripper is sampled monthly and the extraction wells, re-injection wells and monitoring wells are sampled on a quarterly basis. Sampling parameters include PCE, trans-1,2-dichloroethene, trichloroethene, ethylbenzene, xylenes, vinyl chloride, arsenic, chromium, lead, manganese, chlorides, iron, TDS, TSS, pH and alkalinity.

The OU 5 groundwater pump and treat system addresses the contaminated groundwater migrating beyond the Claremont property boundary. This groundwater plume is being captured and treated by the Town of Oyster Bay landfill groundwater extraction and treatment system. A system of five (5) recovery wells are pumping approximately 1.5 million gallons per day. This remediation system began operating on April 1, 1992. Contaminated groundwater is treated through one air stripper. The treated water is discharged into a series of Town-owned recharge basins in accordance with the State Pollution Discharge Elimination System (SPDES) requirements. The groundwater monitoring network for the Claremont OU 5 currently consists of eight (8) monitoring wells three (3) extraction wells and one (1) discharge basin operated by the Town of Oyster Bay. Monthly and quarterly water-level measurements and groundwater quality sampling are conducted on the monitoring wells. The groundwater samples are analyzed for VOCs, and metals. Also, monthly SPDES monitoring of the groundwater treatment plant discharges and the air stripper influent/effluent sample pairs are collected and analyzed for VOCs.

Both the treatment plants designs and the initial operating conditions are based on continuous 24 hours per day, seven days per week operation.

Progress Since the Last Review

This is the first five-year review for this Site.

VI. Five-Year Review Process

Administrative Components

The five-year review team consisted of, Charles Nace, Risk Assessor, Edward Modica, Site Hydrogeologist, and Maria Jon, Remedial Project Manager (RPM).

Community Notification and Involvement

The EPA Community Involvement Coordinator for this site, Cecilia Echols, arranged for a notice to be published in a local newspaper, the Plainview Herald, on March 13, 2008. This notice indicated that a five-year review is underway and comments on the remedy or the Site were welcome. The notice also identified the local information repositories.

Document Review

See attached Table 2.

Data Review

Review of the available quarterly monitoring data indicates that PCE and TCE were detected at the greatest frequency and with the highest concentrations. Other VOCs of interest were detected at varying frequencies and concentrations.

Since the groundwater monitoring began in May 2000, PCE has been detected in 480 of 672 site groundwater samples. The highest historical detection of PCE in the groundwater was in the shallow monitoring well SW-1 at 7,100 µg/L in August 2001. During the past five years the range of maximum PCE concentrations measured at monitoring wells was 110 -180 µg/L. PCE concentrations in monitoring wells have been decreasing since October 2004. Extraction well samples had a concentration range of 13.0 to 170 µg/L.

TCE has been detected in 432 of 672 site groundwater samples. The highest historical detection of TCE in a sample from a monitoring well was 4,200 µg/L in February 2001, in intermediate monitoring well EW-4C (155 ft bgs). During the past five years the range of maximum TCE concentrations measured at monitoring wells was 890 to 1,000 µg/L. TCE was detected in extraction well samples at a concentration range of 1.0 to1,300 µg/L.

Review of the groundwater data regarding the distribution of VOCs in the groundwater indicates that high concentrations of TCE were detected upgradient and on the east side of the plume. Specifically, TCE at a concentration range of 1,100 - 1,400 µg/L was detected in deep upgradient well EW-7C (185 ft bgs). A groundwater flow model was used to assess the direction where this TCE source might have originated, and EPA's Pre-

Remedial Section was tasked with assessing potential sources upgradient of Claremont. Field investigations at two suspected sources have been conducted with drilling exploratory wells and sampling completed. Initial results confirmed the existence of off-site contaminant sources unrelated to Claremont contamination, which have impacted a portion of the Claremont Site. We notified NYSDEC about these potential facilities/sources upgradient of Claremont that could be contributing to groundwater contamination, and NYSDEC indicated that it will pursue voluntary cleanup or listing under the state program.

Monitoring data indicates that site contaminants are contained by the on and off-Claremont property extraction and treatment facilities. Although PCE and TCE, and other VOCs continue to be detected in the influent at high frequency and concentrations, there has been a downward trend in influent concentrations since commencement of operations. The following table presents historical data of PCE and TCE in monitoring wells SW-1 and EW-4C located on the Claremont property.

Shallow well SW-1 (ug/l)								
	8/2001	**2002/2003**	**1/2004**	**10/2004**	**2/2005**	**2/2006**	**7/2007**	**1/2008**
PCE	7,100	dry	3,600	1,300	970	110	45	45
TCE	100	dry	48	17	38	2.6	5	2
Intermediate well EW-4C (ug/l)								
	2/2001	**5/2002**	**1/2004**	**10/2004**	**2/2005**	**2/2006**	**7/2007**	**1/2008**
PCE	120	19	20	45	23	44	34	34
TCE	4,200	1,100	520	1,000	490	780	540	310

Site Inspection

The Site was inspected by EPA's Remedial Project Manager, Maria Jon, Edward Modica (Hydrogeologist) and Charles Nace (Human Health Risk Assessor) on May 8, 2008. In attendance were Payson Long with the NYSDEC, Joe Swinick and Patrick Slawin with the Town of Oyster Bay, Ed Grass with LKB, Inc., Shewen Bian with the USACE, Richard Cronce, Peter Takach and James Jacson with SAIC. During the site inspection, no problems or issues with ongoing remedial activities were noted.

Institutional Controls Verification and Effectiveness

The September 26, 2007, Environmental Protection Easement and a Declaration of Covenants and Restrictions remain in force and are on file at EPA and the Nassau County Clerk's office, respectively. No further verification or review of institutional controls effectiveness was considered necessary at this time.

VII. Technical Assessment

Question A: Is the remedy functioning as intended by the decision documents?

All components of the remedy are functioning as intended by the decision documents. The remedy, as described in the 1989 and 1990 RODs, calls for removal of hazardous material, building decontamination, soil excavation and treatment, and groundwater extraction and treatment. By 1990, 13,000 gallons of hazardous liquid waste in drums, above ground storage tanks and treatment basins were removed. In 1996, 8,762 tons contaminated soil were treated by low-temperature enhanced volatilization and replaced in excavated areas. In 1998, building decontamination by vacuuming and pressure washing was completed. The building decontamination activities lead to the detection of a new source of contaminated soil beneath the building. Consequently, an ESD was issued in April 2003 to the 1990 ROD to include a VOC treatment of soil by SVE system. The system has operated at 500-600 cfm and has removed more than 1,200 lbs of VOCs.

The groundwater component of the remedy was implemented in two phases. The first phase involved installation of three extraction wells to capture onsite contaminated groundwater, treatment of groundwater by air stripping and carbon adsorption, and reinjection of treated groundwater to the ground upgradient using four injection wells. This system has been fully operational since 2000. The second phase involved extraction and treatment of contaminated groundwater that migrates off property. This phase was addressed in a September 2000 ESD, which allowed for three extraction wells associated with the nearby Old Bethpage Landfill Superfund Site, to capture the groundwater plume emanating from the Claremont property.

Currently, forty-three monitoring wells are used to evaluate water level and water quality data. In general, the data indicate that site contaminants are contained by the on and off-Claremont property extraction and treatment facilities. Although PCE, TCE, and 1,1,1-TCA continue to be detected in the influent at high frequency and concentrations, there has been a downward trend in influent concentrations since commencement of operations. The treatment system continues to meet discharge standards. The groundwater treatment system, which is designed to treat groundwater at a maximum flow rate of 500 gpm, is maintained at about 340 gpm. Extraction wells do not show signs of deteriorating performance. The system appears to be well maintained. The condition of GAC is routinely monitored and changed out when necessary. The fence on the periphery appears to be in good repair. Locks on wells and doors to well vaults are in good repair.

Question B: Are the (a) exposure assumptions, (b) toxicity data (c) cleanup levels and (d) remedial action objectives used at the time of the remedy still valid?

Human Health – (a) The exposure pathways identified in Table 8 of the 1990 ROD are still valid. The exposure assumptions used for the endangerment assessment are similar to the exposure assumptions that would currently be used and are still valid. (b) The

toxicity data that was used in the endangerment assessment is identified in Table 9 of the 1990 ROD and the toxicity values that were used at the time were valid. Although some of the toxicity values have been updated since the endangerment assessment was completed, the use of current toxicity values are not needed because the cleanup goals are based upon Federal and State Drinking Water Standards. Any changes in toxicity values would not impact the remedial decision nor cleanup goals. (c) There are two media, soil and groundwater, for which cleanup values have been used. The soil cleanup values were based upon action-specific ARARs and health-based levels for both the soil treatment via low-temperature enhanced volatilization (1990 ROD) and an SVE system (2003 ESD). The soil cleanup value that were used are still valid and fall within USEPA's acceptable risk range of 10^{-6} to 10^{-4} and a hazard index of 1. The groundwater cleanup values were identified as "all related ARARs including NY Groundwater Quality Standards and Federal Maximum Contaminant Levels (MCLs)". The process of applying the current Federal and State Drinking Water Standards and groundwater standards as cleanup values for the groundwater remain valid. (d) The remedial action objectives (RAOs) were identified as achieving substantial risk reduction through a combination of source control with active restoration of the groundwater and building. These RAOs are still valid.

Although vapor intrusion was not specifically evaluated in the previous decision documents, a soil vapor extraction system was installed to remediate VOCs under the facility old building. It is regional policy to evaluate the vapor intrusion pathway for sites that have volatile organic compounds in the groundwater. The initial evaluation of this pathway utilizes the USEPA guidance document "Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils".

The first step in this guidance document asks if volatile organic compounds are present in the groundwater at elevated concentrations. The answer to this question is yes, which leads to step two in the guidance document. Step two asks if there are currently (or potentially) inhabited buildings within 100 feet of the groundwater plume. The answer to this question is also yes, as there are several businesses and a small residential area located over the plume. The third step of the process compares groundwater concentrations to groundwater criteria that are based upon inhalation of vapors in indoor air. The most recent monitoring data from April, July, and October 2006 were compared to the values listed in Table 2c in the document listed above. Note that the values for several compounds are based upon the MCL and these values were replaced with health-based values that represent a cancer risk of 10^{-6} or a hazard index of 1. Several of the compounds associated with the site exceeded the groundwater screening criteria which indicate that the vapor intrusion pathway may be an issue. The next step is to determine if the elevated concentrations exceed the screening criteria by greater than 50 times. There are three compounds that exceed the criteria by 50 times, PCE, TCE, and chloroform.

Table 4. Comparison of the maximum detected concentration from the 2006 sampling data to screening criteria from USEPA's "Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils"

Compound	Groundwater Concentration (µg/L)	Groundwater Screening Criteria (µg/L)	Exceed? (Yes or No)	Exceed >50 times?
PCE	7100	1.1	**Yes**	**Yes**
TCE	4200	0.053	**Yes**	**Yes**
trans-1,2-DCE	16	210	No	No
Cis-1,2-DCE	210	210	No	No
Vinyl chloride	4.5	0.25	**Yes**	No
1,1,1-TCA	260	3,100	No	No
1,1-DCA	17	2,200	No	No
1,1-DCE	170	190	No	No
Chloroform	6.4	0.11	**Yes**	**Yes**

Based upon this step, three contaminants (PCE, TCE, and chloroform) have been identified as being at concentrations in the groundwater that may have the potential to lead to vapor intrusion into homes that lie over the plume. The next step is to determine if the vapor intrusion pathway is complete by conducting a more detailed evaluation of the wells that are near the residential area and businesses to determine the depth to contaminated groundwater and contaminant concentrations in those wells. This step was completed in conjunction with several hydrogeologists that are familiar with the Site.

The contaminated groundwater plume associated with the Claremont Polychemical Site can be described as a "sinking" plume. The contamination at the Site is associated with groundwater depths 80-100 feet below ground surface. As the plume migrates away from the Site, the contamination is found at depths greater than 150-200 feet below ground surface with uncontaminated groundwater in the shallower areas. This is confirmed by the data collected from monitoring well EW-14D, which is upgradient to the residential area. During the installation of the well, the pilot borehole was sampled during the drilling process, and analytical results for PCE and TCE were non-detect in 4 separate samples to a depth of 105 feet below ground surface. TCE was first detected at 17 ug/l in the sample from 130 to 135 feet bgs, and PCE was first detected at 2.4 ug/l in the sample from 150-155 bgs. This confirmed that contamination was limited to only the deeper portion of the groundwater aquifer systems in this area and that uncontaminated groundwater lies above the plume. In addition, analysis of groundwater samples from monitoring well BP-3A, immediately downgradient of the residential area, have also been reported as consistently non-detect for PCE and TCE. This supports the site conceptual model that the groundwater contamination off-site is in the deeper portions of the aquifer system and is overlain by clean, un-impacted water in the shallow aquifer. Chloroform was only detected in elevated concentrations in one well, EW-7C, on the Claremont property. Based on these considerations, the vapor intrusion pathway associated with the

groundwater plume that is near the residential areas can be considered to be incomplete and therefore vapor intrusion is not an issue for both OU 4 and OU 5 remedies. Future five-year reviews should continue to monitor this pathway to ensure that there is not a change in the depth or concentrations of the contaminated groundwater near the residential areas.

Ecological – An endangerment assessment was conducted to evaluate potential risks to the environment. The endangerment assessment did not identify any completed pathways for ecological receptors, although it appears that the endangerment assessment only focused on human health. Based on the contamination associated with the Claremont Polychemical site, the primary exposure pathway for ecological receptors would be through exposure to groundwater. However, the contaminated groundwater associated with the site does not discharge to any local surface water bodies. Therefore based upon review of the past and current data, combined with the site visit, the previous conclusion that there are no completed exposure pathways for ecological receptors is still valid. The remedial actions objectives used at the time of the remedy selection are still valid and protective of the environment.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

No human health or ecological risks have been identified, and no weather–related events have affected the protectiveness of the remedy. However, it was noted during the site visit that the loading dock door was not closed and it was reported that some of the other doors to the old facility were not locked. The ability for trespassers to access the building could pose a safety hazard and there were signs (graffiti on the walls) that the Site is visited by non-site workers. The new owner of the property and his contractors are currently working around the old building. The owner has plans to demolish the building and is in the process of obtaining a demolition permit from the Nassau County Health Department. EPA has requested that the building contractors lock and secure all doors after the work is done everyday.

Technical Assessment Summary

Based upon the results of this Five-Year Review process, it has been concluded that the remedy is functioning as intended by the Site's remedial decision documents. The specific points are as follows:

- The treatment system continues to meet discharge standards
- Extraction wells demonstrate a high specific capacity and show no signs of deteriorating performance. The system appears to be well maintained
- GAC is routinely monitored and changed out when necessary.
- The fence on the periphery is intact and in good repair
- Locks on monitoring wells and doors to extraction well vaults are in good repair and functional.

VIII. Issues, Recommendations and Follow-up Actions

Recently, during the course of the old process building rehabilitation, the current property owner discovered two previously unidentified septic systems. EPA is currently working with the property owner to investigate these newly identified septic systems. Please refer to Table 5 for recommendations and follow-up actions.

IX. Protectiveness Statement

The implemented remedy for OU 5 (Claremont off-property groundwater) protects human health and the environment. There are no exposure pathways that could result in unacceptable risks and none expected as long as the Site use remains consistent with the Site's engineered, access and institutional controls and those controls are properly operated, monitored and maintained.

The implemented remedy for OU 4 (Claremont on-property groundwater) protects human health and the environment. There are no exposure pathways that could result in unacceptable risks and none expected as long as the Site use remains consistent with the Site's engineered, access and institutional controls and those controls are properly operated, monitored and maintained

The implemented remedy for OU 2 for the actions described in the April 2003 ESD protects human health and the environment in the short term. However, septic systems were recently uncovered, and in order for OU 2 to be protective in the long-term, investigations are needed to assess, and possibly address, any risks associated with the newly identified septic systems.

Treatment of soil under the process building via the SVE system protects human health and the environment because current exposure pathways that could result in unacceptable risks are under control. Institutional controls are in place and the concrete floor covering the contaminated soil is intact and undisturbed.

Sections of the old building are in poor condition and deteriorating. The new owner's plan to demolish the building will eliminate potential safety concerns for trespassers and unsafe conditions in the building.

Since OU 2 is short-term protective, the Site itself is considered short-term protective of human health and the environment.

X. Next Review

The next five-year review for the Claremont Polychemical Corp., Superfund Site should be completed before September 2013, or within five years from this report's approval date.

Approved by:

Raymond Basso

George Pavlou, Acting Director
Emergency and Remedial Response Division

Date:

9/25/08

Attachments:

List of Acronyms

BGS	Below Ground Surface
COC	Contaminant of Concern
EPA	United States of Environmental Protection Agency
FS	Feasibility Study
MCL	Maximum Contaminant Level
NPL	National Priorities List
NYDOH	New York State Department of Health
NYSDEC	New York Department of Environmental Conservation
O&M	Operation and Maintenance
OU	Operable Unit
ppb	Parts per Billion
PRP	Potentially Responsible Party
RA	Remedial Action
RD	Remedial Design
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RPM	Remedial Project Manager
VOC	Volatile Organic Compound

Site Map

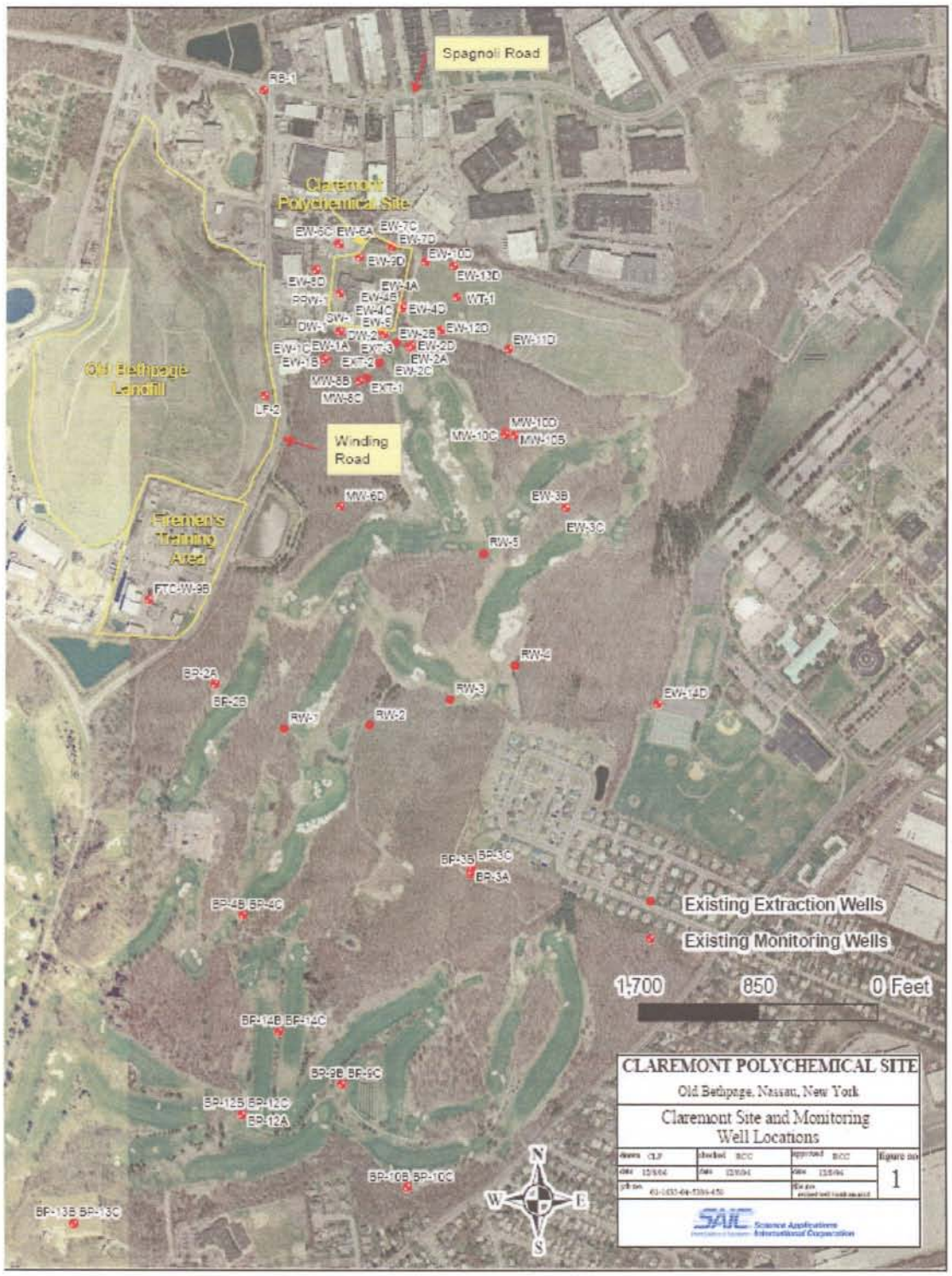

Figure 1

Table 1: Chronology of Site Events Event	Date
Initial Discovery of Contamination	1979
NPL Listing	1990
EPA Removal Action	1988
Remedial Investigation/Feasibility Study Completed	1990
ROD Signature for OU 2	1989
ROD Signature for OUs 1, and 3-6	1990
ESD for Changes to Groundwater Component of the Remedy Described in the 1990 ROD	2001
ESD for Changes to the 1989 ROD	2003
Remedial Design Complete for OUs 3-6	1995
Remedial Action Construction Initiated for OUs 3-6	1996
Construction Complete	2003

Table 2: Annual System Operations/O&M Costs

	OU 4	OU 5
2004	$758,717	$ 1,050,211
2005	$625,056	$ 1,096,205
2006	$712,642	N/A
2007	$609,140	N/A
2008	N/A	N/A

Table 3: Documents, Data, and Information Reviewed in Completing the Five-Year Review

Document Title, Author	Submittal Date
Remedial Investigation/Feasibility Study, Army Corps of Engineers, Kansas City District, Kansas City, Missouri.	1987
Record of Decision, EPA	1990
Final Remedial Design Report , EPA	1999
ESDs, EPA	2001 and 2003
Preliminary Close-Out Report, EPA	2003
Claremont Polychemical Superfund Site, Long-term Groundwater Monitoring, Old Bethpage, New York, U.S. Army Corps of Engineers, Kansas City District, Kansas City, Missouri.	2001- 2008
Organic Analysis Report, Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility, Lockwood Kessler & Bartlett, Inc.	March 2008

Table 5 - Recommendations and Follow-up Actions

Issue	Recommendations and Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness (Y/N)	
					Current	Future
Building safety and security	Property owner is seeking permit to demolish the building	Owner	EPA	7/2011	N	Y
Newly discovered septic system	EPA will continue to investigate with the property owner the septic system.	EPA/Owner	EPA	7/2012	N	Y