Explanation of Significant Differences

GENZALE PLATING SUPERFUND SITE

Town of Hempstead, Nassau County, New York

EPA Region 2 July 2004

INTRODUCTION

In accordance with Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and Section 300.435(c)(2)(i) of the National Oil and Hazardous Substances Pollution Contingency Plan, if after the Environmental Protection Agency (EPA) selects a remedial action, there are significant changes with respect to that action, an explanation of the significant differences and the reasons for such changes must be published.

This Explanation of Significant Differences (ESD) describes changes to the remedy selected in the March 1991 Record of Decision (ROD) for the Genzale Plating Superfund site (the Site), based on new information which was not known when the 1991 ROD was issued.

EPA has determined that one or more buried tanks adjacent to the former process building are an ongoing source of contamination into the soil, air and groundwater at the Site. Contaminants include volatile organic compounds (VOCs) and heavy metals. EPA has decided to remove this tank(s) and the surrounding contaminated soils in order to allow the presently operating soil vapor extraction (SVE) system to operate more effectively. As part of this additional remediation effort, a temporary portable groundwater extraction and treatment system will be operated in the vicinity of the buried tank(s) to protect the aquifer during the excavation activities.

EPA believes that this effort will enhance the effectiveness of the SVE system in removing VOCs. Once the VOC levels in the soil meet the soil cleanup objectives, EPA will excavate the metal-contaminated soils under and adjacent to the former process building. The removal of tank-related contamination is expected to significantly reduce the amount of contamination that is migrating into the aquifer, and substantially shorten the operating time required for the planned groundwater extraction and treatment system called for in the 1991 ROD.

In addition, approximately 20,000 cubic yards (yd^3) of contaminated building material will be removed. This

SUMMARY OF SITE HISTORY, CONTAMINATION PROBLEMS, AND SELECTED REMEDIES

The 2-acre former Genzale Plating Company facility was formerly a metal-plating facility, which included an attached two- story office building and an undeveloped backyard area which served as a parking lot and storage area. Beginning in 1915 and operating through 2000, the facility electroplated small products such as automobile antennas, parts of ball point pens, and bottle openers, and as a result of these operations wastewater containing heavy metals as well as organic contaminants is known to have been discharged into four sub-surface leaching pits at the rear of the former consists of the remaining basement structure and discharge sumps of the former process building which are highly contaminated from the former plating operations.

This ESD was developed by EPA, as lead agency, with support from the New York State Department of Environmental Conservation (NYSDEC).

This ESD will become part of the Administrative Record file for the Site. The entire Administrative Record for the Site, which includes, among other things, the RODs and other relevant documents, is available for public review at the following location:

Franklin Square Public Library
19 Lincoln Road
Franklin Square, NY 11010
Telephone Number:
(516) 938-0077

Hours: Monday - Friday
9:00 a.m. - 9:00 p.m.
Saturday, 9:30 a.m. - 5:30 p.m.
Sunday, 1:00 p.m. - 9:00 p.m.

The Administrative Record file and other relevant reports and documents also are available for public review at the EPA Region II office at the following location:

U.S. Environmental Protection Agency
290 Broadway, 18th floor
New York, New York 10007
Hours: Monday - Friday
9:00 am - 5:00 pm

The modifications as presented by this ESD are not considered by EPA or NYSDEC to be fundamental alterations of the remedy selected in the 1991 ROD.

facility. Although the facility was connected to the municipal sewer system in 1955, a 1981 Nassau County Department of Health (NCDH) inspection found that industrial wastewater continued to be discharged into the on-site leaching pits. The company was ordered by NCDH to cease the discharge and began, but never completed, the excavation of sludge and contaminated soils from the pits. The NYSDEC conducted an investigation of the Site in 1983 to determine the potential threat to public health posed by potential migration of contaminants into and through the groundwater. As a result of this investigation, the Site was included on the Superfund National Priorities List.

In 1988, EPA initiated the Remedial Investigation to determine the nature and extent of contamination at the Site. The study indicated that groundwater and leaching pits located behind the facility were contaminated with both inorganic and organic contaminants. In March 1991, a remedy was selected for the Site which was documented in the above-mentioned 1991 ROD. The remedy addressed soil and ground water contamination at the Site.

The soils in the rear portion of the facility property were to be addressed by treatment by SVE technology for the VOC contamination, followed by excavation and off-site treatment and disposal of those soils contaminated with metals. EPA entered into an Interagency Agreement with the United States Army Corps of Engineers (USACE) to perform the soil remedy. Construction activities for the soil vapor extraction unit were completed in July 1995. After approximately one year of operation, in May 1996, confirmatory soil sampling established that the soils had reached cleanup levels for the VOCs and the unit was shut down and dismantled. EPA performed comprehensive sampling of the soils following the SVE action in order to delineate the metal contamination. The excavation of soils contaminated with metals was completed in the fall of 1997.

The remedy selected for the ground water in the vicinity of the former facility was to construct a ground water extraction and treatment system. After the design was initiated, EPA determined that additional information was necessary to determine if the soil remediation had changed the configuration of the groundwater plume by improving groundwater quality.

The impact of the soil remediation on the groundwater downgradient of the former facility property was studied. Based on this study EPA determined that no remediation of the groundwater downgradient of the Genzale property was necessary. The study also confirmed that a groundwater extraction and treatment system on the Genzale property was required to address the groundwater contamination underlying the property. EPA issued a second ROD in 1995 documenting this decision.

In May 2000, the Genzale plant ceased operations. The facility set aside funds for the decommissioning of the operational part of the Site and the removal of the wastes generated during the decommissioning. The wastes were sent off-site for disposal. Decommissioning activities were completed in June 2000.

The operational portion of the former Genzale facility, which was situated along the western portion of the Site, was largely comprised of a 140 X 100 feet building which fronted on New Hyde Park Road. This area is found to be topographically approximately 6 feet higher in grade than the eastern portion of the property, which occupied an area approximately 140 X 90 feet in size, is undeveloped, and which served as an outdoor storage yard and parking lot.

Following the cessation of operations at the facility, EPA performed limited sampling of the soil and groundwater underlying the vacated plant building[1]. Sampling results indicated soil concentrations for total chromium up to 82,000 milligrams per kilogram (mg/kg), hexavalent chromium up to 28,100 mg/kg, and tetrachloroethylene (PCE) up to 16 mg/kg. Groundwater samples indicated concentrations of hexavalent chromium up to 6,790 micrograms per liter (µg/l) and total chromium up to 9,300 µg/l. These elevated concentrations coincided with the location of the former facility=s plating operation discharge sumps.

Based on the additional contamination found underneath the former plant building, EPA performed air monitoring in surrounding residential structures. Indoor air sampling results of homes located immediately adjacent to the former plant found elevated levels of trichloroethylene (TCE), PCE and 1,1,1-trichloroethane (1,1,1-TCA). Three homes immediately adjacent to the former facility had observed levels of TCE vapors above acceptable health-based levels. As described below, EPA took mitigation actions in these homes to reduce the unacceptable levels to health-protective concentrations.

In September 2002, a time-critical removal action was approved which included the installation of an SVE system to reduce the concentrations of VOCs within the soils in areas with high concentrations and in areas adjacent to nearby homes.

Because of the instability of the Genzale facility structures as it related to, among other things, the installation of the SVE extraction wells (i.e., limited ceiling height) and the need to further delineate the extent of contamination below the former facility structure, demolition of the buildings was performed to the existing grade, leaving the process building=s basement and footings in place.

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[1] Prior to this, the ongoing operations at the facility prevented EPA from sampling within and beneath the plant building.

To provide interim mitigation measures for the affected homes adjacent to the former Genzale facility prior to the startup and implementation of the SVE system, provisions were made to inspect and seal soil gas entry points into these homes. It was determined that the installation of temporary granular activated carbon air filtration systems in these homes would provide the most expedited response to elevated indoor air levels and reduce these levels to meet health-protective concentrations.

In March 2003, prior to the facility building demolition, EPA performed a soil-gas study to delineate and characterize the locations for the SVE extraction and monitoring wells and to optimize VOC recovery operations. Soil-gas values obtained from areas below the building indicated areas of elevated VOC readings coinciding with the facility=s former process area=s discharge sumps, and the suspected buried tank or tanks. These soil-gas readings ranged up to 39,000 micrograms per cubic meter ($\mu g/m^3$) for TCE, 160,000 $\mu g/m^3$ for PCE and 11,000 $\mu g/m^3$ for 1,1,1-TCA.

In June 2003, based upon the soil-gas sampling results, EPA began the immediate installation of the SVE extraction and monitoring wells. As part of this installation, EPA took soil borings to depths of 25 - 30 feet to further characterize both VOC and inorganic contaminant distribution in the subsurface of the former processing area=s discharge sumps and the area of the suspected buried tank(s). Results of this soil boring program indicated elevated values of TCE up to 11 mg/kg, PCE up to 760 mg/kg, total chromium up to 1,090 mg/kg, hexavalent chromium up to 34 mg/kg and nickel up to 236 mg/kg.

EPA also performed toxic characteristic leaching procedure (TCLP) analyses to determine appropriate disposal options on a representative number of cement slab and soil samples to further characterize the material. The data results consistently exceeded the TCLP regulatory level for chromium (5,000 µg/l) ranging from 5,610 µg/l to 49,000 µg/l for the cement slab samples. TCLP soil analyses indicated chromium contamination in shallow areas just below the cement slab and adjacent to drainage sumps at levels ranging from 9,870 µg/l to 10,800 µg/l.

INVESTIGATION SUMMARY FOR CONTAMINATION REMAINING AT THE SITE

Evaluation of the SVE system=s operations has shown that it has been effective in reducing VOCs from contaminated soil and in protecting the nearby residents from exposure to VOC contamination migrating into their homes. Operational data have indicated a steady decline of soil VOC concentration levels across the Site except in the area in the southeastern portion of the former facility where the buried tank or tanks are located.

This area in the southeastern portion of the process building continues to show the highest levels of VOC contamination at the Site. This may be as a result of short-circuiting of the extracted air around the buried tank(s), and/or an insufficient number of SVE extraction wells. Because of the safety concerns associated with drilling near a buried and undefined structure, a minimal number of wells were installed in the area during the time-critical removal action. Even though most of the Site has shown a significant decline in the VOC concentrations in the extracted soil gas, the area at the southeastern corner of the process building continues to show high concentrations of VOCs in the extracted soil gas.

During the demolition of the facility=s processing building, it was determined that one or more tanks remained buried in the southeastern corner of the process building, adjacent to the Asump@ area of the basement. Hand-held instrumentation was used to determine that this tank(s) contains VOCs. It is believed that this tank(s) received wastes from the plating operation because of the presence of a mixing assembly at the surface. As described in the next section of this document, EPA will remove this tank(s) and its contents and associated contaminated soils.

During the installation of the SVE extraction and monitoring wells, soil samples were collected from 18 soil borings. Samples taken as part of the remedial design of the groundwater remedy in the vicinity of the buried tank(s) consistently revealed the highest levels of metals contamination throughout the soil column, with concentrations ranging from 269 mg/kg to 4,010 mg/kg of chromium, 236 mg/kg to 2,230 mg/kg of nickel, and up to 34 mg/kg of hexavalent chromium.

In an effort to establish a current characterization of the groundwater contamination for the site-related groundwater plume, the United States Army Corps of Engineers (USACE) installed eight groundwater monitoring wells on the former facility property and six monitoring wells downgradient of the property.

Two rounds of groundwater sampling were conducted in July 2002 and July 2003 by the USACE. As part of this effort, the USACE also obtained approximately 100 relatively shallow (up to 60 foot in depth) grab samples of the groundwater in the vicinity. The monitoring wells were also sampled by EPA in November 2003.

The groundwater data from these sampling events, in general, showed low levels of site-related contamination in the wells and sampling locations located off of the Genzale property in the down gradient direction. The highest contaminant levels in the groundwater outside of the Genzale Property were observed in MW17S, located approximately 100 feet downgradient from the property, which showed concentrations up to 68 µg/l of 1,1,1-TCA, 65 µg/l of TCE, 8.2 µg/l of PCE, and 1,620 µg/l of hexavalent chromium. Again, the highest groundwater contamination was found on the Genzale property in MW-2S, which is

adjacent to the buried tank(s). Concentrations up to 420 µg/l of 1,1,1-TCA, 270 µg/l of TCE, 44 µg/l of PCE, 6,100 µg/l of hexavalent chromium, and 4,940 µg/l of nickel were measured in this well.

This sampling effort verified the findings that led to the No Further Action decision made for the 1995 OU2 ROD for the off-property groundwater plume and further verified the need to complete the actions set forth in the 1991 ROD for mitigating the on-property contamination. 2

The SVE system has reduced VOCs in the soil-gas to minimal levels across the Site, with the exception of the area at the southwestern corner of the process building. This also is the area which has shown the highest levels of heavy metal contamination in the soil, as well as the highest concentrations of Site-related VOCs and metals in the groundwater.

REMEDIAL APPROACH

Based on a review of all of the data collected at the Site to date, it appears that the buried tank or tanks at the southeastern corner of the building and the former process sumps are the likely major sources for the VOCs and metals contamination remaining at the Site. It is also likely that they are the major contributors to the groundwater contamination plume emanating from the Genzale property. Based on these findings, EPA has decided to remove the buried tank(s) and the associated contaminated soils and sumps. This will enhance the effectiveness of the SVE system, will remove a major source of Site-related groundwater contamination and will continue to prevent vapors from impacting indoor air in adjacent homes.

Once this SVE system has reduced the VOC concentrations to levels that meet soil cleanup objectives, the remainder of the building will be removed and the metals-contaminated soils will be excavated and disposed of off-site.

Excavation and off-site disposal of these materials was deemed to be the only viable remedial option. Because of the difference in elevation between the front and rear of the property, most of the basement structure is exposed in the back and would preclude the capping of this area.

EPA has performed structural analyses of the adjacent buildings and will be taking these under consideration when determining the most appropriate final resolution as to how to decommission the process building basement.

DESCRIPTION OF SIGNIFICANT DIFFERENCES AND THE REASONS FOR THOSE DIFFERENCES

EPA, in consultation with NYSDEC, is by this notice documenting modifications to the March 1991 ROD by incorporating the following actions to protect public health.

- $ Continued operation of the existing SVE system to remove VOC contamination in the vicinity of the former process building and to continue to prevent vapors from impacting indoor air of adjacent homes. Table 1, below, lists the soil cleanup goals for the primary VOCs. (Estimated Cost: $400,000)

- $ Excavation and removal of the underground storage tank(s) and related contaminated soil located adjacent to the former process building. This action will enhance the effectiveness of the currently operating SVE system and likely reduce or eliminate Site-related contamination from migrating into the aquifer. (Estimated Cost: $500,000)

- $ Prior to the excavation of the buried tank(s) and related contaminated soils, installation of a temporary groundwater extraction and treatment system as a containment measure to ensure that the tank-excavation activities do not adversely affect the aquifer below the Site. (Estimated Cost: $300,000)

- $ Demolition of the remaining portion of the process building and excavation of metals contaminated soils with proper disposal of contaminated materials at an approved off-site facility. Portions of the foundation may need to remain in place in order to maintain the structural integrity of the adjacent homes. If so, deed restrictions and/or other institutional controls may need to be established to ensure that soil contamination left at the Site, if any remains, is undisturbed and inaccessible.3 Periodic review of the institutional controls would be required. (Estimated Cost: $1,500,000)

In addition to the above actions, the groundwater extraction and treatment system that was selected in the 1991 ROD will also be installed. The estimated cost of constructing the groundwater extraction system is $1,300,000. The estimated total cost for all of the above actions is $4,000.000.

SUPPORT AGENCY COMMENTS

2Because MW-17S is located in close proximity of the Genzale property, the groundwater contamination in the vicinity of MW-17S will be addressed by the on-property extraction and treatment system. This action will contribute to the cleanup of the downgradient groundwater by extracting and treating the highest concentrations observed in the aquifer and is expected to allow natural attenuation to remediate the downgradient groundwater to drinking water standards.

3 If feasible, EPA will attempt to stabilize any residual contamination that cannot be excavated.

NYSDEC supports the changes to the March 1991 ROD.

AFFIRMATION OF STATUTORY DETERMINATIONS

EPA and NYSDEC believe that the above-described remedial activities are protective of human health and the environment, are cost-effective, and comply with applicable or relevant and appropriate Federal and State requirements. In addition, these measures continue to utilize permanent solutions and alternative treatment technologies to the maximum extent practicable for this Site.

PUBLIC PARTICIPATION ACTIVITIES

EPA and NYSDEC are making this ESD available to the public to update them on the progress made at the Site, as well as to inform them of the changes made to the remedies specified in the March 1991 ROD. Additional information regarding the Site is available to the public at the Franklin Square Public Library and at EPA>s New York City offices (addresses listed on page 1).

EPA and NYSDEC invite comments or questions related to this ESD. Comments should be transmitted to:

Kevin Willis
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Eastern New York Remediation Section
U.S. Environmental Protection Agency
290 Broadway, 20th Floor
New York, New York 10007-1866
Telephone: (212) 637-4252
Facsimile: (212) 637-3966

Table 1: Soil Cleanup Goals for VOCs at the Site

Contaminants	Cleanup Goals (mg/kg)	TAGM Values (mg/kg)
1,1,1-Trichloroethane (TCA)	17.7	0.8
Trichloroethylene (TCE)	0.036	0.7
Tetrachloroethylene (PCE)	1.7	1.4

The soil clean-up levels incorporate potential direct contact with the contaminated soils, migration to groundwater, and the potential migration of contaminated soil gas from the shallow soils into the indoor air of the adjacent homes. The chemicals for which soil cleanup goals were developed were those chemicals detected most frequently in the on-site soil gas samples and which were detected at the highest concentrations. Based upon the co-location of these chemicals, EPA and NYSDEC expect that, in pursuit of achieving the cleanup goal of 0.036 mg/kg of trichloroethylene, all of the NYSDEC=s Technical and Administrative Guidance Memorandum (TAGM) No. 94-HWR-4046 soil cleanup objectives to protect groundwater quality will be achieved.