

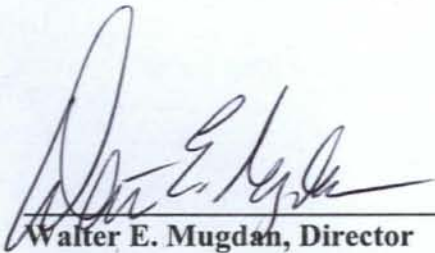


**FIVE-YEAR REVIEW REPORT FOR
SCIENTIFIC CHEMICAL PROCESSING SUPERFUND SITE
BERGEN COUNTY, NEW JERSEY**



Prepared by

**U.S. Environmental Protection Agency
Region 2
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FEB. 28, 2013

Date

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Site Location Map

Chronology of Site Events

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LIST OF ACRONYMS

ARARs	Applicable or relevant and appropriate requirements
BGS	Below ground surface
EPA	Environmental Protection Agency
HDPE	High density polyethylene
NPL	National Priorities List
O&M	Operation and maintenance
OU	Operable unit
PCBs	Polychlorinated biphenyls
PRPs	Potentially responsible parties
RAO	Remedial action objective
RI/FS	Remedial investigation and feasibility study
ROD	Record of Decision
RPM	Remedial project manager
SCP	Scientific Chemical Processing
UAOs	Unilateral administrative orders

EXECUTIVE SUMMARY

A five-year review for the Scientific Chemical Processing (SCP) Superfund site located in the Borough of Carlstadt, Bergen County, New Jersey has been completed. This is the fourth five-year review for the site. The first was completed in September 1998 and was triggered by the implementation of an interim remedy at the site, the second was completed in January 2003 and the third was completed in January 2008. This is a statutory five-year review because contamination remains at the site above levels that allow for unlimited use and unrestricted exposure.

An interim remedy (operable unit (OU) 1) for the soil and shallow groundwater on the SCP property was selected in a September 1990 Record of Decision (ROD) and implementation of the interim remedy was completed in 1992. The remedy included containment of the contaminated soil, extraction of the contaminated shallow groundwater, and installation of a fence around the property. During and after implementation of the interim remedy, evaluation of the site continued and a final remedy for the soil and shallow groundwater on the property was selected in a 2002 ROD (OU2). The final remedy included excavation with off-site disposal of the most contaminated portion of the on-property soil, as well as the installation of a more permanent containment system for the soil and on-property shallow groundwater. Implementation of the final on-property remedy began in 2008 and was completed in October 2011. Finally, a remedy for OU3, which includes groundwater located outside the boundaries of the former SCP property, as well as groundwater beneath the property, but deeper than the limits of the OU2 remedy, was selected in a September 2012 ROD. The OU3 remedy consists of treatment of the affected groundwater using in-situ treatment technologies, monitored natural attenuation and institutional controls. The OU3 remedy has not yet been implemented.

Based upon a review of the RODs, a number of reports prepared by the site remediation contractor and inspections of the site, it has been concluded that the final OU2 remedy at the site is protective of human health and the environment.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site Name: Scientific Chemical Processing		
EPA ID: NJD070565403		
Region: 2	State: NJ	City/County: Carlstadt, Bergen County
SITE STATUS		
NPL Status: Final		
Multiple OUs? Yes	Has the site achieved construction completion? No	
REVIEW STATUS		
Lead agency: EPA If "Other Federal Agency" was selected above, enter Agency name: Click here to enter text.		
Author name (Federal or State Project Manager): Stephanie Vaughn		
Author affiliation: EPA		
Review period: January 2008 – January 2013		
Date of site inspection: 01/14/2013		
Type of review: Statutory		
Review number: 4		
Triggering action date: 1/15/2008		
Due date (five years after triggering action date): 1/15/2013		

Five-Year Review Summary Form (continued)

The table below is for the purpose of the summary form and associated data entry and does not replace the two tables required in Section VIII and IX by the FYR guidance. Instead, data entry in this section should match information in Section VII and IX of the FYR report.

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the Five-Year Review:
02

Issues and Recommendations Identified in the Five-Year Review:				
OU(s): Click here to enter text.	Issue Category: Choose an item.			
	Issue: Click here to enter text.			
	Recommendation: Click here to enter text.			
Affect Current Protectiveness	Affect Future Protectiveness	Implementing Party	Oversight Party	Milestone Date
Choose an item.	Choose an item.	Choose an item.	Choose an item.	Enter date.

To add additional issues/recommendations here, copy and paste the above table as many times as necessary to document all issues/recommendations identified in the FYR report.

Protectiveness Statement(s)		
<i>Include each individual OU protectiveness determination and statement. If you need to add more protectiveness determinations and statements for additional OUs, copy and paste the table below as many times as necessary to complete for each OU evaluated in the FYR report.</i>		
<i>Operable Unit:</i> OU2	<i>Protectiveness Determination:</i> Protective	<i>Addendum Due Date (if applicable):</i> Click here to enter date.
<i>Protectiveness Statement:</i> The OU2 remedy for soil and shallow groundwater on the property is protective of human health and the environment.		

Sitewide Protectiveness Statement (if applicable)	
<i>For sites that have achieved construction completion, enter a sitewide protectiveness determination and statement.</i>	
<i>Protectiveness Determination:</i> Choose an item.	<i>Addendum Due Date (if applicable):</i> Click here to enter date.
<i>Protectiveness Statement:</i> Click here to enter text.	

**Scientific Chemical Processing Superfund Site
Borough of Carlstadt, New Jersey
Fourth Five-Year Review**

I. Introduction

This fourth five-year review for the SCP site, located in the Borough of Carlstadt, Bergen County, New Jersey, was conducted by the United States Environmental Protection Agency's (EPA's) remedial project manager (RPM), Stephanie Vaughn. This statutory five-year review was conducted in accordance with the Comprehensive Five-Year Review Guidance, OSWER Directive 9355.7-03B-P (June 2001).

The purpose of five-year reviews is to ensure that implemented remedies are protective of human health and the environment and that they function as designed. It is required by statute that EPA conduct five-year reviews at sites where, upon completion, the remedial action will leave hazardous substances, pollutants or contaminants on-site above levels that allow for unlimited use and unrestricted exposure. This document will become part of the site file.

The remedial action for the site has been divided into three separate operable units (OUs). OU1 involved implementation of an interim remedy at the site to prevent exposure to soil and shallow groundwater on the former SCP facility property, and prevent further migration of the contamination off-property while a more permanent solution was evaluated. OU2 involves implementing the permanent on-property remedy, and OU3 addresses off-property and deep groundwater contamination.

The interim soil remedy for soil and shallow groundwater on the property was completed in 1992. Construction of the OU2 remedy, which replaced the OU1 interim remedy, was completed in October 2011. The OU3 investigation was completed in August 2012 and a remedy for OU3 was selected in a September 2012 ROD. The trigger for this five-year review was the third five-year review, which was signed by EPA on January 15, 2008. This five-year review will evaluate the final remedy for the SCP property (OU2).

II. Site Chronology

See Table 1 for the site chronology.

III. Background

Physical Characteristics

The SCP site lies at the corner of Paterson Plank Road (Route 120) and Gotham Parkway in Carlstadt, New Jersey. Peach Island Creek, a tributary to Berry's Creek, forms the site's northeastern border and a trucking company forms the site's southeastern border (see Figure 1).

The site stratigraphy consists of the following units, in descending order with depth: earthen fill material (average thickness of approximately 8.4 feet across the site); peat (thickness ranging from 0 to approximately 1.8 feet across the site); gray silt (average thickness ranging from 0 to 19 feet across the site); till (consisting of sand, clay and gravel, average thickness of approximately 20 feet across the site); and bedrock.

The site is underlain by three groundwater units, which are described as the "shallow aquifer," the "till aquifer" and the "bedrock aquifer" in descending order with depth. The natural water table is found in the shallow aquifer at a depth of approximately two feet below the land surface. The till aquifer consists of the water-bearing unit between clay and the bedrock. The bedrock aquifer is the most prolific of the three aquifers and is used regionally for potable and industrial purposes. Results of hydrogeologic tests conducted during the RI indicate that the three aquifers are hydraulically connected. Chemical analyses of groundwater from the three aquifers provide further support to this finding.

Land and Resource Use

The land use at the site and in the vicinity of the site is classified as light industrial by the Borough of Carlstadt. The establishments in the immediate vicinity of the site include a bank, horse stables, warehouses, freight carriers and service sector industries. There is a residential area located approximately 1.2 miles northwest of the site.

History of Contamination

The land on which the SCP site is located was purchased in 1941 by Patrick Marrone who used the land for solvent refining and solvent recovery. Mr. Marrone eventually sold the land to a predecessor of Inmar Associates, Inc. Aerial photographs from the 1950s, 1960s and 1970s indicate that drummed materials were stored on the site. On October 31, 1970, the SCP Company leased the site from Inmar Associates. SCP used the site for processing industrial wastes from 1971 until the company was shut down by court order in 1980.

While in operation, SCP received liquid by-product streams from chemical and industrial manufacturing firms, and then processed the materials to reclaim marketable products which were sold to the originating companies. In addition, liquid hydrocarbons were processed to some extent, and then blended with fuel oil. The mixtures were typically sold back to the originating companies, or to cement and aggregate kilns as fuel. SCP also received other wastes, including paint sludge, acids and other unknown chemical wastes.

Initial Response

In 1983, the site was placed on the National Priorities List (NPL). Between 1983 and 1985, the New Jersey Department of Environmental Protection required the site owner to remove approximately 250,000 gallons of wastes stored in tanks, which had been abandoned at the site.

In May 1985, EPA assumed the lead role in the response actions, and issued notice letters to over 140 potentially responsible parties (PRPs). EPA offered the PRPs an opportunity to perform a remedial investigation and feasibility study (RI/FS) for the site, and in September 1985, EPA issued administrative orders on consent to the 108 PRPs who had agreed to conduct the RI/FS. Subsequently, in October 1985, EPA issued a unilateral order to 31 PRPs who failed to sign the consent order. The unilateral order required the 31 PRPs to cooperate with the 108 consenting PRPs on the RI/FS.

In the fall of 1985, EPA also issued an administrative order to Inmar Associates, one of the PRPs at the site, requiring the company to remove and properly dispose of the contents of five tanks containing wastes contaminated with polychlorinated biphenyls (PCBs) and numerous other hazardous substances.

Inmar removed four of the five tanks in 1986. The fifth tank was not removed at the time due to the high levels of PCBs and other contaminants found in that specific tank, and the unavailability of disposal facilities capable of handling those wastes. The fifth tank and its contents were subsequently removed and disposed of by the PRPs in February 1998.

Basis for Taking Action

An RI/FS of the site was initiated by the PRPs in 1987 and completed in 1990. The RI focused on the most heavily contaminated zone at the site, which included the contaminated soil, sludge and shallow groundwater (down to the clay layer) on the SCP property itself (hereinafter referred to as the Fill Area). Data from the deeper groundwater, both on and off of the property, as well as from Peach Island Creek, which runs adjacent to the property, were also collected. Overall, the RI found that the Fill Area, the deeper groundwater both on- and off-property, and the water and sediment from Peach Island Creek were all contaminated with site-related contaminants. The contaminants found in the soil and groundwater at the site includes volatile organic compounds (VOCs), semi-volatile organic compounds, polychlorinated biphenyls (PCBs), pesticides and metals. The baseline risk assessment identified pathways through which humans may be exposed to site contaminants. The potential human exposure pathways include direct contact with surface soil, inhalation of volatile organics, inhalation of suspended solids and ingestion of groundwater and surface water.

The results of the FS indicated that, although there seemed to be several potential methods or combinations of methods to remedy the Fill Area, there were uncertainties regarding the relative effectiveness of the various technologies. Consequently, EPA made a decision that treatment alternatives needed further assessment, but that interim measures were necessary to contain and prevent exposure to the site contaminants.

IV. Remedial Actions

Remedy Selection

Based on the findings of the RI and FS, a ROD for an interim remedy for the Fill Area (OU1) was issued by EPA in September 1990. The goal of this interim remedy was to reduce contaminant migration from the site and prevent exposure to contamination at the site until a permanent remedy was implemented.

Interim measures included:

- a vertical containment wall comprised of a soil-bentonite slurry with an integral high density polyethylene (HDPE) vertical membrane surrounding the Fill Area and keyed into an underground clay layer;
- a sheet pile retaining wall along Peach Island Creek;
- an HDPE horizontal infiltration barrier covering the property;
- an extraction system for shallow groundwater within the containment area with discharge to an aboveground storage tank for off-site disposal;
- a chain-link fence around the property to restrict access; and
- regularly scheduled groundwater sampling, plus monitoring of the interim remedy to assure it remained effective until a final remedy was implemented.

While implementing the OU1 remedy, EPA continued to oversee additional RI/FS work which would provide information to select a final remedy for the Fill Area, as well as a remedy for the deep and off-property groundwater. A ROD selecting the final remedy for the Fill Area (OU2) was signed in August 2002.

The Remedial Action Objectives for the OU2 Fill Area are to:

- mitigate the direct contact risk and leaching of contaminants from soil, fill material and sludge into the groundwater;
- reduce the toxicity and mobility of the Hot Spot contaminants via treatment;
- provide hydraulic control of the shallow aquifer by maintaining an inward groundwater gradient; and
- perform remediation in such a manner that may allow site re-use for certain limited commercial purposes.

The major elements of the selected remedy include:

- air stripping of the Hot Spot area until levels of VOCs are reduced to whichever is more stringent: the average VOC levels in Fill Area outside the Hot Spot, or to a level where interference with stabilization will not occur. VOCs released during treatment will be collected and treated on site, or adsorbed to assure no negative impacts to the surrounding community.
- soil stabilization of the Hot Spot using cement and lime, so that the Hot Spot is solidified to performance standards to be developed during the design phase of the remedy. The solidification and stabilization will effect containment of PCBs and other nonvolatile or semi-volatile contaminants.
- installation of a landfill cap over the entire Fill Area. The cap will consist of a two-foot thick “double containment” cover system which will be constructed over the entire area currently circumscribed by the existing slurry wall.
- improvement of the existing, interim groundwater recovery system, which consists of aboveground piping, and recovery wells screened, in the Fill Area. The improvements will include the installation of new extraction wells along the perimeter of the site, construction of underground clean utility corridors for the wells, and piping and electrical system to allow more flexibility for future uses of the site. The extracted groundwater will either be collected in the existing aboveground tank for disposal, or pumped, via sewer connection, to the Bergen County publicly owned treatment works (POTW) for treatment.
- the existing sheet pile wall along Peach Island Creek, which protects the slurry wall along the riparian side of the Fill Area, will be improved and upgraded.
- institutional controls restricting use of the property.

While EPA believed the Hot Spot treatment portion of the selected remedy would be effective, the ROD specified that if appropriate performance standards for treatment, solidification and containment were not met, then removal of the Hot Spot, as described in ROD Alternative SC-3 (excavation and off-site for treatment and disposal), would be performed.

OU3 includes groundwater located outside of the boundaries of the former SCP property, as well as groundwater beneath the property, but deeper than the limits of the OU2 remedy.

Investigation of OU3 groundwater was ongoing since the initiation of the RI for the site in 1987. An Interim Data Report was submitted by the PRPs in May 2003. Based on comments from EPA, additional investigations were conducted and the final RI report was submitted in July 2009. Bench- and pilot-scale studies were then conducted to support selection of a remedy for OU3. The FS was completed in July 2012 and the ROD was signed on September 27, 2012.

The remedial action objectives for OU3 are to:

- prevent exposure to contaminated groundwater above acceptable risk levels;
- prevent or minimize future migration of contaminants of concern in the groundwater; and
- restore groundwater quality to the lower of the federal drinking water standards or the New Jersey Groundwater Quality Standards (NJGWQSs).

The major elements of the selected remedy include:

- treatment of contaminated off-property and deep groundwater using in-situ treatment technologies, through the injection of a substance or substances into the groundwater to cause or enhance the breakdown of the contaminants of concern to less toxic forms;
- monitored natural attenuation both during and after active treatment; and
- institutional controls to assure that the remedy remains protective until cleanup goals are achieved.

Remedy Implementation

The interim remedy was constructed from August 1991 through June 1992 by the PRPs for the site pursuant to a unilateral administrative order dated September 28, 1990. Since its implementation in 1992, based on monthly inspections and water level measurements taken as part of the OU1 Operations and Maintenance (O&M) Plan the interim remedy effectively mitigated the risks from direct contact with Fill Area contamination and the spread of Fill Area contamination to deeper groundwater and Peach Island Creek.

Design of the OU2 remedy began in June 2004 and was completed in June 2007. The OU2 remedy was implemented by the PRPs, with EPA oversight, pursuant to a Consent Decree entered in September 2004. Design of the remedy was completed in June 2007 and construction of the remedy was initiated in April 2008.

Construction of the final cover system required the removal and disposal of the temporary cap which was put in place as part of the interim remedy. The final cover system consists of a five- to six-inch grading layer, a geosynthetic clay layer, a geomembrane layer, a drainage layer, an 18-inch thick (minimum) cover layer and finally a vegetative support layer on top. Treatment and stabilization activities for the Hot Spot area of contamination were initiated once the cap on the first half of the property was completed. However, performance standards for the treatment and stabilization were not met. As such, and as per the terms of the ROD, the Hot Spot area was excavated and disposed of at an EPA-approved off-site disposal facility. A total of about 3,400 tons of sludge and soil were excavated from this area, after which the cap over the entire property was completed. Access roads and a drainage ditch surround the perimeter of the capped area to allow for maintenance of the cap and drainage of water during storm events.

Implementation of the OU2 remedy included the installation of a new sheet pile wall adjacent to Peach Island Creek. The new wall was installed between the existing slurry wall and the old sheet pile wall, and was driven deeper than the original wall. The original wall was then partially removed (i.e., cut to the low water level). The OU2 remedy also included installation of an enhanced groundwater recovery system, which consists of ten one-foot diameter wells equipped with pneumatic operated submersible pumps, a water conveyance and storage system, and a monitoring system. The groundwater collected from the conveyance system is shipped off-site for disposal on a periodic basis.

Implementation of the OU2 remedy was completed in October 2011. Implementation of the OU3 remedy has not yet begun and is not part of this review.

System Operations/Operation and Maintenance

The O&M Plan for OU2 includes, but is not limited to, the following major elements:

- monthly water level measurements from seven exterior (i.e., outside of the slurry wall) and 12 interior piezometers, to assure that inward gradients in the shallow groundwater are maintained. Figure 1 shows the locations of the piezometers as well as the shallow groundwater wells.
- annual sampling and analysis of four shallow groundwater wells for volatile and semi-volatile organic compounds, pesticides, PCBs, and metals. Note that shallow groundwater outside the slurry wall was tested on a quarterly basis from 1992 to 1999, and since then has been tested on an annual basis.
- monthly inspections of the general site conditions, including the access roads, sheet pile wall and fence, with additional inspections following any significant storm event and repairs as needed.
- monthly inspection of the shallow groundwater collection system, with repair as needed. To date, approximately 881,500 gallons of groundwater have been extracted and shipped off-site since the OU2 remedy has been operating.
- quarterly inspections of the cover and surface water collection system, with additional inspections after significant storm events and repairs as needed.

All work is being conducted by the PRPs for the site through their contractor, Golder Associates, with EPA oversight. Golder submits O&M reports. The site is currently vacant and a fence surrounding the property remains in place.

In addition, surface water in Peach Island Creek has been tested at least annually since 1992. The data clearly indicate that the sheet pile wall is effectively preventing contamination from migrating from the Fill Area to the creek. As such, surface water monitoring as part of the SCP site has been discontinued. Note that Peach Island Creek is tidally connected to Berry's Creek,

and is currently part of the ongoing investigation being conducted at that site. As was documented in the previous five-year review, contamination in Peach Island Creek will be addressed as part of the Berry's Creek Superfund site.

Institutional Controls

Institutional controls to restrict the use of the property and otherwise ensure the effectiveness of the remedy were instituted as part of the OU2 remedy. The PRPs placed a deed notice on the property upon completion of the remedial action and will assure the perimeter site fencing remains in place. In addition, a Classification Exception Area for the groundwater needs to be established. These groundwater institutional controls were included in the OU3 ROD and will be implemented as part of that remedial action.

V. Progress Since the Last Five-Year Review

The third five-year review for the site was completed in January 2008. The 2008 five-year review found the OU1 remedy to be protective of human health and the environment and did not identify any issues or recommendations. This is the fourth five-year review for the site.

As described above, the OU2 remedy has since replaced the OU1 remedy as the final remedy for the soil and shallow groundwater on the property. It is operating as designed and undergoes regular maintenance.

In addition, the RI/FS for OU3 was completed since the last five-year review, and a remedy for OU3 was selected in a September 2012 ROD.

VI. Five-Year Review Process

Administrative Components

The five-year review team included Stephanie Vaughn (EPA-RPM), Michael Scorca (EPA-Hydrologist), Marian Olsen (EPA-Human Health Risk Assessor), and Pat Seppi (EPA-Community Involvement Coordinator). This is a PRP-lead site.

Community Involvement

Once the five-year review is completed, the results will be made available at the local site repository, which is the William E. Demody Free Public Library at 420 Hackensack Street in Carlstadt, New Jersey. In addition, efforts will be made to reach out to local public officials to inform them of the results.

Document Review

The documents, data and information which were reviewed in completing the five-year review are summarized in Section XI at the end of this document.

Data Review

As described above, the O&M Plan dated February 12, 2012 for OU2 requires ongoing monitoring of the groundwater conditions at the site to assure the slurry wall is performing properly. Groundwater levels inside and outside of the slurry wall are measured monthly to verify that inward gradients are generally being maintained, and groundwater outside the slurry wall is sampled annually for chemical constituents. This or similar testing has been ongoing since 1992.

The OU2 groundwater extraction system began operating on May 18, 2009. The total volume of groundwater removed in calendar year 2009, which included two shutdown periods, was approximately 401,500 gallons. Groundwater levels at the piezometers inside the slurry wall during this time declined by about two to three feet, and remained lowered, with some minor variability, through 2010. These water levels generally remained lower than water levels outside the wall indicating that the wall and extraction system were preventing migration of groundwater off-site. During 2010, the total extracted groundwater was 286,390 gallons.

The extraction system performed less efficiently in 2011 and interior groundwater levels rose slowly in the spring and summer. Also during this time, construction of the OU2 remedy was ongoing. This involved the removal and reconstruction of the cap over the fill area, thus allowing for increased infiltration during this period. The extraction system was shutdown and repair of equipment was conducted. Following the completion of the OU2 remedy, and the restart of the upgraded system in July 2011, interior water levels in the piezometers declined consistently, and water levels inside the slurry wall generally remain lower than water levels outside the wall. The total extracted groundwater in 2011 was 158,390 gallons. Water levels in 2012 were fairly stable and were consistently two to three feet below the initial levels observed before the 2009 system startup. Groundwater extracted in 2012 totaled about 40,000 gallons.

In summary, the OU2 remedy has been operational since July 2011 and the data indicate that inward gradients are generally being maintained. Periodic fluctuations do occur, but with the fairly stable water levels observed within the slurry wall, most of the variability results from fluctuations in local groundwater levels outside the wall. In addition, the shallow groundwater results continue to indicate that the remedy is effective. Groundwater is sampled at four shallow wells outside the property: MW-8S, MW-9S, MW-11S, and MW-12S, and no VOCs have been detected above NJDEP Ground Water Quality Criteria since 2006.

Overall, the results indicate that the OU2 remedy is working as designed. It has reduced the amount of contamination leaving the Fill Area and the slurry wall remains effective. The OU2 O&M procedures will continue.

Site Inspection

The RPM conducts periodic visits to the site, as recently as January 14, 2013 with a representative from the PRPs' contractor, Golder. Conditions observed indicate that the site is

being properly operated and maintained. Further, the PRP contractor is at the site on at least a monthly basis.

Interviews

No interviews were conducted as part of this five-year review.

VII. Technical Assessment

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

Yes, the remedy is functioning as intended by the OU2 ROD.

The OU2 remedy consists of containment of the site's Fill Area using a soil-bentonite slurry wall, a polyethylene infiltration barrier, an extraction system for shallow groundwater, and a chain link fence surrounding the property. The remedy also included excavation of the most contaminated portion of the site, with off-site disposal of the excavated material. Contaminant data collected from the off-property groundwater monitoring wells and water levels measurements indicate that the slurry wall and groundwater extraction and treatment system are effectively preventing off-site migration of contamination. Excavation of hot spot soils and infiltration barrier prevent continued release of source material into the groundwater. Therefore, it is concluded that the remedy continues to prevent direct contact with the contaminated groundwater and soils and inhibit the spread of contamination through the groundwater.

Furthermore, institutional controls in the form of a deed notice were placed on the property by the PRPs. The PRPs also continue to maintain fencing around the site to ensure no trespassing.

Question B: Are the exposure assumptions, toxicity data, cleanup levels and remedial action objectives used at the time of the remedy selection still valid?

- **Are the exposure assumptions and toxicity data used at the time of the remedy selection still valid?**

a. Soil. The exposure assumptions and toxicity values that were used to estimate the potential cancer risks and noncancer hazards in the risk assessment supporting the 2002 ROD for human health followed the Risk Assessment Guidance for Superfund used by EPA. The process that was used in the human health risk assessment is still valid. In addition, given that soils are covered with a cap, the human exposure pathways have been interrupted.

b. Groundwater. Currently, the three aquifers underlying the site are identified as Class GW-2 waters, potable aquifers. Residents in the area primarily receive their drinking water from a municipal supply. The OU2 remedy is effectively controlling contamination concentrations in the shallow aquifer. The OU3 remedy, which was selected in a September 2012 ROD, will address groundwater contamination both outside of the OU2 remedy containment area. It has not yet been implemented.

c. Vapor Intrusion. There are currently no buildings located on the site. The vapor intrusion pathway was evaluated based on the concentrations of volatile contaminants detected at the site, including trichloroethylene and tetrachloroethylene in the shallow and deep wells. While concentrations of VOCs in the deeper wells were above vapor intrusion screening guideline values, concentrations in the shallow wells were not. Consequently, it was concluded that the relatively clean shallow groundwater (5 to 10 feet below ground surface (bgs)) would effectively block the potential migration of volatile contaminants from the deeper groundwater (more than 30 feet bgs) to the surface. As such, it was concluded that further analysis of the vapor intrusion pathway was not necessary at this time.

- **Are the Cleanup Values Selected in the ROD Still Valid?**

a. Soil. The selected remedy for both OU1 and OU2 was designed to prevent exposure to contaminated soil and reduce the migration of hazardous substances, pollutants and contamination from the soil to the surrounding soil or groundwater. Cleanup criteria for the hot-spot excavation were based on mass removal of sludge and overburden materials contained within the Hot Spot limits. As such, specific applicable or relevant and appropriate requirements (ARARs) were not established for the soils at the site and no soil cleanup numbers specified in the ROD.

b. Groundwater. No cleanup values for groundwater were specified in the OU2 ROD. The New Jersey Groundwater Quality Standards were selected as ARARs for the OU3 remedy. These standards remain valid.

- **Are the remedial action objectives (RAOs) still valid?**

The RAOs for OU2 were:

- mitigate the direct contact risk and leaching of contaminants from soil, fill material and sludge into the groundwater;
- reduce the toxicity and mobility of the Hot Spot contaminants via treatment;
- provide hydraulic control of the shallow aquifer by maintaining an inward groundwater gradient; and
- perform remediation in such a manner that may allow site re-use for certain limited commercial purposes.

These RAOs are still valid given the current and future land uses envisioned for the site.

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

Based on the evaluation of the potential human exposures at the site, there is no new information that has been developed that could call into question the protectiveness of this remedy.

Technical Assessment Summary

According to the data reviewed and the site inspection, the OU2 soil and shallow groundwater remedy is functioning as intended by the ROD. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. There have been no changes in the toxicity factors of the contaminants of concern or in the risk assessment procedures that would affect the protectiveness of the remedy.

Construction of the OU2 remedy was completed in 2011. A remedy for the deep and off-property groundwater portion of the site was selected in September 2012.

VIII. Recommendations and Follow-up Actions

There are no recommendations or follow-up actions stemming from this five-year review, other than the ongoing implementation of the OU2 O&M plan, and the design and implementation of the OU3 remedy.

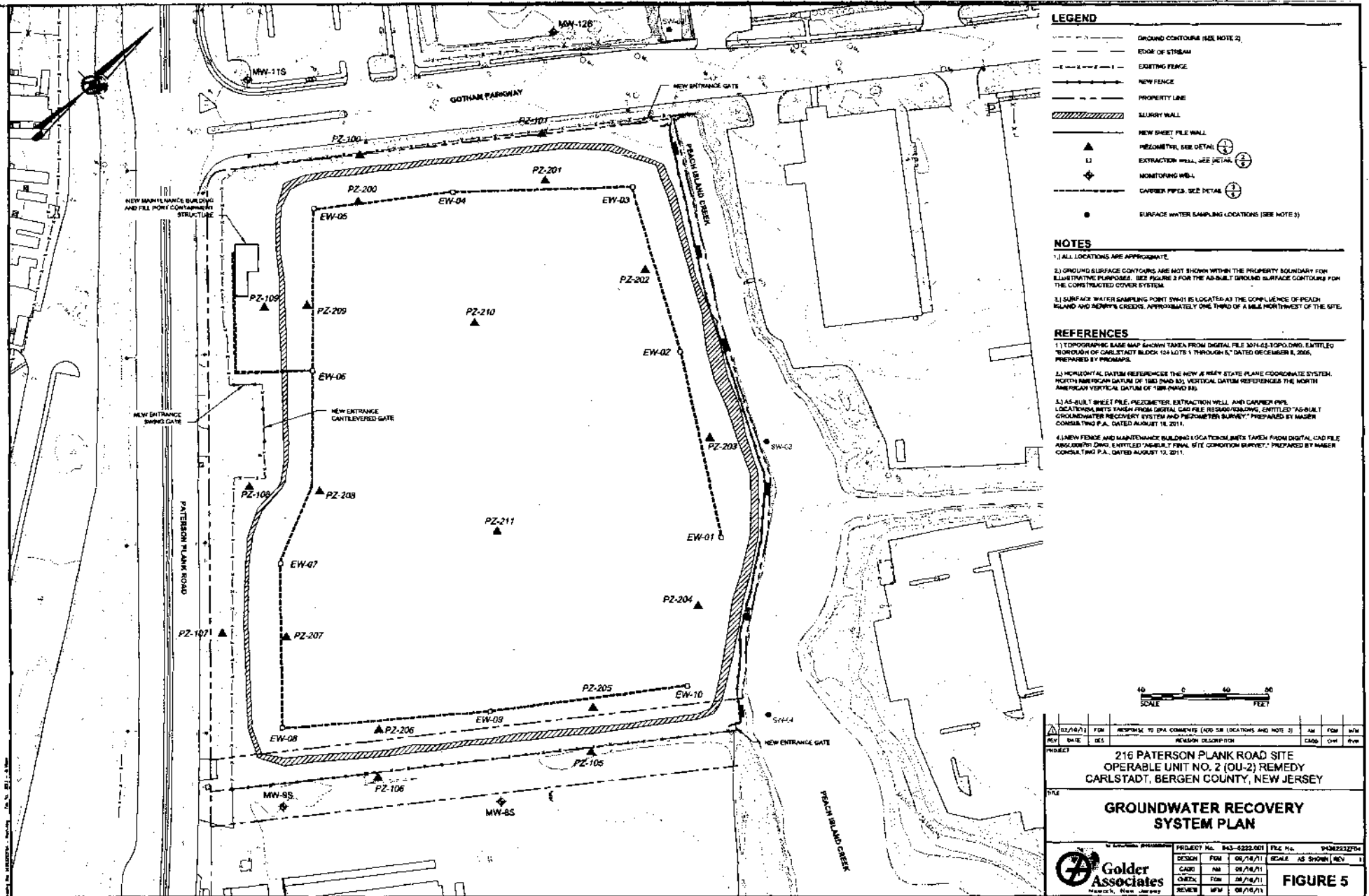
IX. Protectiveness Statement

The OU2 remedy for soil and shallow groundwater on the property is protective of human health and the environment.

X. Next Review

EPA will conduct another five-year review within five years of this report.

Site Location Map



Chronology of Site Events

Event	Date(s)
The land now known as the SCP site was used for solvent refining, industrial waste processing, storage, and disposal.	1941 to 1980
The SCP company was shut down by court order.	1980
The SCP site was listed on National Priorities List.	1983
EPA issued Administrative Orders on Consent to 108 PRPs who agreed to conduct the RI/FS and a Unilateral Administrative Orders (UAOs) to 31 PRPs who refused to cooperate with the 108 consenting PRPs.	1985
With EPA oversight, the PRPs conducted a remedial investigation and feasibility study for OU1 of the site (interim remedy for on-site soil and groundwater).	1987 to 1989
The OU1 ROD was signed.	1989
The OU1 remedy was implemented by the PRP group pursuant to a UAO.	1991 to 1992
The PRPs complete treatability testing for OU2 of the site (final remedy for on-site soil and groundwater).	2000
The OU2 ROD was signed.	2002
The OU2 remedial design was approved by EPA.	2007
Construction of the OU2 remedy was initiated.	2008
Final OU3 RI report submitted.	2009
Excavation of the OU2 Hot Spot area completed.	2010
Construction of the OU2 remedy completed.	2011
OU3 RI/FS approved by EPA.	2012
OU3 ROD signed.	2012

List of Documents Reviewed

- Record of Decision, EPA, September 1990
- Record of Decision, EPA, August 2002
- Record of Decision, EPA, September 2012
- Five-Year Review Report, EPA, January 2007
- Remedial Action Report, Operable Unit 2, prepared by Golder Associates, October 2011
- Final Operations and Maintenance Plan for Operable Unit 2, prepared by Golder Associates, February 2012
- Monthly progress reports prepared by Golder Associates, on behalf of the PRPs, regarding OU1 and OU2 O&M
- Groundwater summary data prepared by Golder Associates as part of the OU1 and OU2 O&M Plans, on behalf of the PRPs
- Comprehensive Five-Year Review Guidance, EPA Office of Emergency and Remedial Response, EPA 540-R-01-007, OSWER No. 9355.7-03B-P, June 2001