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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II

DATE: SEP 12 2000

SUBJECT: Approval of the *Remedial Action Report* for the Claremont Polychemical Corporation Superfund Site Operable Unit IV (OU IV) On-Site Contaminated Groundwater

FROM: Doug Garbarini, Chief
Eastern New York Remediation Section

TO: John E. La Padula, P.E., Chief
New York Remediation Branch

Attached for your approval is a *Remedial Action Report*, documenting the completion of the OU IV on-Site groundwater remedial action at the Claremont Polychemical Corporation Superfund site.

Please denote your approval of the subject document by signing below.

Attachment

Approved: John E. La Padula 9/15/00

John E. La Padula, P.E., Chief
New York Remediation Branch

Date

CLAREMONT POLYCHEMICAL CORPORATION SUPERFUND SITE
OLD BETHPAGE, NASSAU COUNTY, NEW YORK

REMEDIAL ACTION REPORT

ON-SITE CONTAMINATED GROUNDWATER
(OPERABLE UNIT IV)

September 2000

I. INTRODUCTION

This document presents the Remedial Action Report (RAR) for the On-site Contaminated Groundwater, Operable Unit IV (OU IV), at the Claremont Polychemical Corporation Superfund site (the Site) in Old Bethpage, New York. This report is consistent with the requirements of the U.S. Environmental Protection Agency (EPA) guidance documents entitled, "Remedial Action Report Documentation for Operable Unit Completion (June 1992)," and "Closeout Procedures for National Priorities List Sites (OSWER Directive 9320.2-09A-P, PB98-963223, January 2000)."

The RAR is based on the remedial action work completed at the Site by Dow Environmental, Inc. (Dow) pursuant to the EPA and U.S. Army Corps of Engineers (USACE)- approved final remedial design (RD) for the on-Site contaminated groundwater. The RD, which was performed by Rust Environmental & Structure (Rust, August 1994), is consistent with EPA's September 1990 Record of Decision (ROD) for the Site.

Dow was retained by the USACE to implement construction activities. During this time, Dow was taken over by Radian International LLC (Radian), and Radian was subsequently taken over by URS Consultants, Inc.

This RAR was developed by EPA in consultation with the New York State Department of Environmental Conservation (NYSDEC). NYSDEC's input and comments on the draft RAR are reflected in this final document. NYSDEC has concurred with the RAR.

Site Description

The Site is located in the industrial section of Old Bethpage in Nassau County, New York. The Site property consists of a 1-story building, covering 40,000 square feet, which is situated on approximately 9.5 acres of land. About 47,000 people within three miles of the Site depend on groundwater as their water supply. The nearest public supply well is 3,500 feet northwest of the Site.

Site History

Claremont Polychemical Corporation produced pigment for the coloring of plastics and inks, coated metallic flakes, and vinyl stabilizers from August 1966 through October 1980. The Claremont Polychemical Corporation operated the plant and performed the activities which resulted in the contamination of the property. By mortgages and agreements in 1969 and 1973, the Claremont Polychemical Corporation granted and released ownership of its real and capital properties to Winding Road Estates (land) and Winding Road Properties (land, building and contents). Claremont Polychemical Corporation and its affiliated companies, Winding Road Estates and Winding Road Properties, entered into receivership in 1980. These three corporations have no assets other than the Claremont property and have substantial liabilities.

The Site was proposed for inclusion on the National Priorities List (NPL) in October 1984 and was added to the NPL in June 1986.

In September 1988, the EPA Region II Response and Prevention Branch stabilized deteriorated containers of chemical hazardous waste and removed several aboveground tanks. The remedial investigation and feasibility study (RI/FS) dealing with the ultimate disposal of the above-mentioned hazardous wastes, was completed by EPA in July 1989 and a ROD was signed on September 22, 1989. The remedy, designated as OU II, called for compatibility testing, bulking/consolidation, and treatment/disposal of the wastes at off-Site Resource Conservation and Recovery Act (RCRA)-permitted facilities. The Removal Action Branch implemented the remedial action in 1990.

A comprehensive RI/FS was initiated in March 1988. Under this RI/FS, EPA sampled the surface and subsurface soil, the groundwater, underground storage tanks, and the process building. The RI/FS reports were released to the public in August 1990. The RI/FS 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 containing several organic compounds were present at the Site. Contents of the tanks were mainly volatile organic compounds (VOCs), namely, 2-butanone, toluene and xylenes. Heavy metals (e.g., copper, zinc, etc.) were present in dust accumulated throughout the process building. In addition, the shallow groundwater was found to be contaminated in excess of federal Maximum Contaminant Levels (MCLs) and/or New York State Drinking Water Standards with PCE, trans-1,2-dichloroethene, trichloroethene, 1,1,1-trichloroethane, ethylbenzene, acetone, benzene, 1,1-dichloroethane, methylene chloride, xylenes and vinyl chloride; heavy metals detected in excess of federal and state standards included arsenic, chromium, lead and manganese.

A comprehensive remedy for the Site was documented in a September 1990 ROD and included: treatment of the underground storage tanks (OU I) (implemented by the EPA Region II Removal Action Branch in August 1991); treatment of PCE-contaminated soils via low-temperature enhanced volatilization (LTEV) (OU III); treatment of the "on-Site" VOC-contaminated groundwater via air stripping/carbon adsorption (OU IV); treatment of the "off-Site" VOC-contaminated groundwater via air stripping/carbon adsorption (OU V), and decontamination of the metals-contaminated building structure (OU VI).

In September 1990, EPA entered into an interagency agreement (IAG) with the USACE to perform the design of OU III, OU IV and OU VI. The design work for these remedial components was completed in February 1995. In September 1993, EPA entered into another IAG with the USACE for oversight of the OU III, OU IV and OU VI. The USACE awarded a contract to Dow in September 1995 for the implementation of these remedies.

II. OPERABLE UNIT BACKGROUND

This remedial action report documents the completion of the OU IV remedy, that is, the extraction and treatment of the on-Site contaminated groundwater via metals precipitation, air stripping and carbon adsorption, and re-injection of the treated water into the ground.

The foremost objective of the groundwater remedial program is to capture the most contaminated portion of the Site groundwater and the prevention of its further migration. This goal has been accomplished by the installation of extraction wells at the Claremont property boundary. After capturing the contaminated groundwater, the flow is treated by an on-Site system using metals precipitation, air stripping and carbon adsorption technologies to levels that are less than the MCLs for the contaminants of concern. The effluent from this system is returned to the aquifer through re-injection wells. It is anticipated that the off-Site contaminated groundwater or OU V remedy will be addressed by the continued operation of an ongoing groundwater remediation system at the adjacent Old Bethpage Landfill Site which is capturing the Claremont off-Site plume. EPA, NYSDEC and the Town of Oyster Bay are currently integrating the remedy for the Claremont off-Site plume into the Old Bethpage groundwater recovery and treatment facility.

III. CONSTRUCTION ACTIVITIES

Site preparation activities began in May 1997. Major construction activities included clearing, grubbing and grading the land where the treatment plant was to be constructed; construction of the groundwater treatment plant; and the installation of three extraction wells and four re-injection wells.

The groundwater treatment plant includes physical/chemical processes consisting of a gravity settler, a sand filter, chemical storage tanks, a polymer addition system, and an air stripper for VOC removal. Vapor-phase effluent from the air stripper is treated using a carbon adsorption unit.

Following the clearing, grubbing and grading activities, a concrete foundation was raised. Above the foundation, a 60-foot by 100-foot metal building was built to house the groundwater treatment plant. Following completion of the treatment building, the major plant components and skids were delivered to the Site by a local rigging subcontractor. The rigger unloaded the equipment and positioned the skids according to a chalked out floor plan. After securing all plant components to the concrete floor, electrical and plumbing contractors were mobilized for plant construction. During the treatment plant construction, new gas and electric services were brought on-site by LILCO. A 700-foot gas line was installed to the building for heating purposes.

Concurrently with the construction of the treatment plant, an initial Site survey was performed prior to initiating the well installation program. The coordinates for each well location presented in the 100% Design drawings were field located and flagged. The flagging was color coded

according to the service to be installed, and marked with the well location ID number. Three extraction wells were installed to approximately 165-feet in depth and four re-injection wells were installed to approximately at 200 feet depth.

System startup began on December 7, 1998. Preliminary testing of the equipment and a 120-hour system demonstration was conducted during the week of April 5, 1999. Radian optimized the operation of the treatment system. Adjustments were made to the air stripper and sand filter to optimize system performance, and to reach the design capacity of 420 gpm. Full-scale operation of the groundwater remedial system began in February 2000. The groundwater treatment system is operational and functional and is operating at steady-state.

IV. CHRONOLOGY OF EVENTS

Date	Event
September 28, 1990	The ROD for comprehensive cleanup of the Site, including OU IV, signed.
September 28, 1990	IAG with the USACE for the remedial design of the comprehensive site remedy (OU III, OU IV, and OU VI) executed.
September 30, 1993	USACE tasked as EPA's authorized representative to oversee the construction activities at the Site.
September 29, 1995	USACE awarded the remedial action contract for the implementation of the OU III, OU IV, and OU VI remedies to Dow Environmental, Inc.
May 1997	Mobilization and construction activities relating to the OU IV on-Site contaminated groundwater commenced.
December 7, 1998	Groundwater extraction and treatment system startup
April 1999	Preliminary testing of the equipment and 120-hour system demonstration conducted.
September 7, 2000	Final construction inspection conducted by the USACE and EPA. (Note: the NYSDEC and USACE inspected the Site on August 22, 2000).

V. PERFORMANCE STANDARDS AND CONSTRUCTION QUALITY CONTROL

In accordance with the final RD, Dow submitted the Phase I Remedial Action Sampling and Analysis Plan on June 28, 1996. Both the final RD and the Phase I Remedial Action Sampling and Analysis Plan described the performance standards and construction quality control requirements.

During the plant construction and all of the subsurface installations, the USACE full-time field representative maintained a daily presence at the Site. Monthly reports were issued to document progress, identify any areas of concern, and update the project schedule. Field conditions that warranted changes to the approved design were dealt with in regularly scheduled meetings between the USACE representative and Radian's project manager.

All treatment system equipment was furnished by reputable manufacturers-suppliers. Radian's representatives supervised the installation of the equipment. The equipment was tested according to the manufacturer's specifications.

Due to the nature of the project and to avoid the possibility of extracting contaminated groundwater and running it through an inoperable treatment system, all equipment used in the treatment system was tested and started using fresh water. Once it had been determined that the facility was prepared to receive the contaminated groundwater, startup procedures for the extraction wells commenced.

The groundwater extraction wells and treatment system were monitored during startup. Water quality data were collected to evaluate the effectiveness of the treatment system to ensure that the quality of the influent was similar to that which was anticipated, and to monitor the effects of pumping groundwater. The water levels in various wells were also measured daily to monitor the decline in water levels imposed by the pumping. Sampling was also performed in extraction wells, treatment system effluent, re-injection wells, and monitoring wells. Samples of treatment system influent and effluent were tested for VOCs and general chemistry parameters including manganese, iron, TDS, TSS, TOC, pH and alkalinity. The results indicate that effluent quality meets discharge requirements.

Quality control measures are part of the ongoing sampling and monitoring activities. Groundwater monitoring at the Site has provided information to evaluate the effects of the Site operations since the RI/FS began. Monitoring points consist of the three extraction wells, four re-injection wells, selected monitoring wells and the air stripper. Monitoring at these locations is necessary to ensure that contaminants in the groundwater meet the NYSDEC drinking water standards and the Federal MCLs established in the ROD. 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.

VI. FINAL INSPECTION AND CERTIFICATION THAT REMEDY IS OPERATIONAL AND FUNCTIONAL

During remedial action activities, field observations were conducted by EPA, NYSDEC and USACE full-time field representatives. A final inspection of the on-Site groundwater recovery and treatment system, OU IV, was conducted by EPA and USACE full-time field representative

on September 7, 2000. The NYSDEC and the USACE conducted a Site inspection on August 22, 2000.

Based on the field observations associated with the USACE's full-time representative, the pre-final construction inspection and the final construction inspection conducted by the USACE, NYSDEC and EPA, it has been determined that construction of the on-Site groundwater recovery and treatment system, OU IV, has been completed and that the construction activities were performed consistent with the final RD and conform with the remedy selected in the September 1990 ROD.

VII. OPERATION & MAINTENANCE

Groundwater monitoring and treatment system effluent monitoring are ongoing activities at the Site. This sampling provides information to evaluate the operation of the system. Samples of treatment system influent and effluent are collected regularly and submitted for analysis of VOCs, metals and general chemistry parameters including chlorides, manganese, iron, BOD_5, TSS, pH and alkalinity. These data will aid in assessing the treatment system's performance over time.

Monitoring points consist of the three extraction wells, four re-injection wells, selected monitoring wells and 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, 1,1,1-trichloroethane, ethylbenzene, acetone, benzene, 1,1-dichloroethane, methylene chloride, xylenes, vinyl chloride, arsenic, chromium, lead, manganese, chlorides, iron, TDS, TSS, pH and alkalinity.

Periodic checks of well pump operation and recorded measurements of output and the volume of water pumped from the extraction wells are required during system operation. Pumpage data are recorded on log sheets and are maintained at the Site.

Modifications to the draft Operation and Maintenance Manual are due to be submitted to EPA in the Fall of 2000.

VIII. SUMMARY OF PROJECT COSTS

The original capital cost estimate to implement the remedial action described in the ROD was $4,936,000. The actual construction cost is approximately $4,616,175, slightly below the ROD estimate. The ROD estimated an annual operational and maintenance cost of $1,100,000 for the first year and $701,900/year, thereafter. The actual annual cost of operation and maintenance is reported to be approximately $1,000,000 for the first year and $699,000/year, thereafter, well within the accuracy of the ROD estimate.

XI. OBSERVATIONS AND LESSONS LEARNED

Through process optimization, the groundwater treatment system is and has reached steady-state conditions.

During system startup, the re-injection wells lacked the ability to take water; the wells were plugged with iron bacteria buildup. The wells were re-developed and are currently operating at their design capacity.

X. OPERABLE UNIT CONTACT INFORMATION

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REFERENCES

1. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, 2000. Closeout Procedures for National Priorities List Sites (OSWER Directive 9320.2-09A-P, PB98-963223), January 2000.

2. U.S. Environmental Protection Agency, Region II, 1990. *Record of Decision for the Claremont Polychemical Corporation Site, Old Bethpage, New York,* September 28, 1990.

3. Rust Environmental & Structure, August 1994. *Final 100% Remedial Design for the Claremont Polychemical Corporation Site, Old Bethpage, New York*, August 30, 1994.

4. Dow Environmental, Inc., 1996. *Phase I Remedial Design Sampling and Analysis Plan for the Claremont Polychemical Corporation Site, Old Bethpage, New York,* June 28, 1996.

Approved:

John E. La Padula, P.E., Chief
New York Remediation Branch

Date

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