DECISION DOCUMENT

Polychrome R&D Lab Site
Brownfield Cleanup Program
Yonkers, Westchester County
Site No. C360099
February 2018

Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

DECLARATION STATEMENT - DECISION DOCUMENT

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Statement of Purpose and Basis

This document presents the remedy for the Polychrome R&D Lab site, a brownfield cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Polychrome R&D Lab site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design/Green Remediation

A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. Design details for the driving of piles where dense non-aqueous phase liquid (DNAPL) exists will be developed and provided to the Department for prior approval. Engineering controls shall be used to mitigate the potential for DNAPL to further migrate horizontally or vertically. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gas and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and

- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation

The existing on-site building(s) will be demolished and materials which can't be beneficially reused on site will be taken off-site for proper disposal in order to implement the remedy.

Excavation and off-site disposal of contaminant source areas in the shallow zone, including:

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- soil exceeding the 6NYCRR Part 371 hazardous criteria for RCRA metals;
- soil containing SVOCs exceeding 500 ppm;
- non-aqueous phase liquids;
- soil with visual waste material or non-aqueous phase liquid;
- soil that create a nuisance condition, as defined in Commissioner Policy (CP) 51, Section G.

Approximately 2,500 cubic yards of contaminated soil will be removed from the Site at depths ranging from approximately 6 to 10 feet, to the extent practicable. Any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination will also be excavated, removed and properly disposed off-site. In-situ solidification (ISS) as explained below in remedy element 4, will proceed from the excavated portion to the remainder of the contaminated areas.

3. Backfill

On-site soil which does not exceed the excavation criteria may be used below the cover system described in remedy element 2 to backfill the excavation.to the design grades at the site

On-site soil which does not exceed the above excavation criteria or the protection of groundwater SCOs for any constituent may be used anywhere beneath the cover system, including below the water table, to backfill the excavation or re-grade the site.

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site.

The site will be re-graded to accommodate installation of a cover system as described in remedial element 5 below.

4. In-Situ Solidification

In-situ solidification (ISS) will be implemented in areas as indicated on Figure 2. The treatment zone will extend from approximately 6 to 10 feet below grade to approximately 25 feet below grade in areas where coal tar is present in significant thicknesses below the groundwater table.

ISS is a process that binds the soil particles in place creating a low permeability mass. The contaminated soil will be mixed in place together with solidifying agents (typically Portland cement) or other binding agents using an excavator or augers. The soil and binding agents are mixed to produce a solidified mass resulting in a low permeability monolith. The solidified mass will then be covered with a cover system as described in element 5 to prevent direct exposure to the solidified mass. The resulting solid matrix reduces or eliminates mobility of contamination and reduces or eliminates the matrix as a source of groundwater contamination and of contaminant migration to the surface water and sediments of the Hudson River.

5. Cover System

A site cover will be required to allow for restricted-residential use of the site in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is to be used, it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, cement, and paved surface parking areas, sidewalks, building foundations and building slabs.

Where the soil cover is required over the ISS treatment area, it will consist of a minimum of four feet of soil meeting the SCOs for restricted residential use. For areas where solidified material underlies the cover, the solidified material itself will serve as the demarcation layer due to the nature of the material.

6. Free Product Recovery

Recovery wells will be installed and operated in areas where product in the form of non-aqueous phase liquid (NAPL) has been identified but which are not subject to in-situ solidification. Recovery wells will be designed to remove potentially mobile free product from the subsurface. The number, depth, type and spacing of the recovery wells will be determined after the shallow soil excavation and the in-situ solidification. The conceptual placement of these wells is shown on Figure 2. Product will be collected periodically from each well; however, if wells are determined by the Department to accumulate large quantities of product over extended time periods, they can be converted to automated collection.

7. Enhanced Bioremediation

In-situ enhanced biodegradation will be employed to treat petroleum contaminants in groundwater in the areas downgradient of the NAPL recovery wells installed in paragraph 6 above. The biological breakdown of contaminants through aerobic respiration will be enhanced by the placement of an oxygen release compound (ORC), or similar material, into the subsurface to promote bioremediation via injection wells screened in the shallow groundwater. If necessary, additional ORC may be added downgradient of NAPL excavations via injection well as well as

ORC soil mixing in excavations in order to promote enhancement of this process Groundwater contamination remaining after active remediation will be addressed with monitored natural attenuation (MNA).

8. Vapor Mitigation

Any on-site buildings will be required to have a sub-slab depressurization system or other acceptable measures, to mitigate the migration of soil vapor into the building.

9. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or Westchester County DOH and
- require compliance with the Department approved Site Management Plan.

10. Site Management Plan

A Site Management Plan is required, which includes the following:

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed in paragraph 7 above.
Engineering Controls: the site cover and product recovery system discussed in paragraphs 5 and 6 above.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
- provisions for the management and inspection of the identified engineering controls;

- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of groundwater to assess the performance and effectiveness of the remedy; and
- a schedule of monitoring and frequency of submittals to the Department.

Declaration

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration Department guidance, as appropriate. The remedy is protective of public health and the environment.

February 5, 2018

Date

George Heitzman, Director
Remedial Bureau C

DECISION DOCUMENT

Polychrome R&D Lab Site
Yonkers, Westchester County
Site No. C360099
February 2018

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, the redevelopment or reuse of which may be complicated by the presence or potential presence of a contaminant.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repositories:

Yonkers Public Library
Attn: John A. Favareau
One Larkin Center
Yonkers, NY 10701
Phone: (914) 375-7940

NYSDEC Region 3
21 S. Putt Corners Road
New Paltz, NY 12561
Phone: (845) 256-3154

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: This Brownfield Cleanup Program (BCP) site is located in an urban area at 137-145 Alexander Street, Yonkers, Westchester County. The site is just off Ashburton Avenue along the Hudson River.

Site Features: The site is currently vacant and contains a large two story office building, parking, sidewalks and rip-rap along the shoreline abutting the Hudson River. This site is approximately 3.08 acres in size.

Current Zoning/Use: The property is zoned for industrial and use and is currently vacant. The anticipated use of the property is planned for restricted residential use.

Past Use of the Site: The site is one of the two former Polychrome Corporation properties on Alexander Street. This site is also referred to as the West or R&D Site. Volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and inorganics derived from the historic use of the site as a laboratory for the Polychrome Research and Development Manufacturing facility. Previous to Polychrome, the site was used as an asphalt plant, lumber and coal yard, fat rendering operations, Westchester Lighting Company, boat construction and machine shop.

Site Geology/Hydrogeology: Site soils consist of fill materials, sand, gravel and clay. Groundwater flow is generally west toward the Hudson River. Depth to groundwater at the site varies from approximately 4.5 to 7.5 feet below ground surface and is likely tidally influenced.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives (or an alternative) that restrict(s) the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the Remedial Investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the RI Report.

SECTION 5: ENFORCEMENT STATUS

The Applicant under the Brownfield Cleanup Agreement is a Volunteer. The Volunteer does not have an obligation to address off-site contamination. The Department has determined that this site poses a significant threat to human health and the environment and there are potential off-site impacts that require further investigation; accordingly, enforcement actions are necessary.

The Department will seek to identify any parties (other than the Volunteer(s)) known or suspected to be responsible for contamination at or emanating from the site, referred to as Potentially Responsible Parties (PRPS). The Department will bring an enforcement action against the PRPs. If an enforcement action cannot be brought, or does not result in the initiation of a remedial program by any PRPs, the Department will evaluate the off-site contamination for action under the State Superfund. The PRPs are subject to legal actions by the State for recovery of all response costs the State incurs or has incurred.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- soil
- sub-slab vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

benzene
ethylbenzene
xylene (mixed)
acenaphthene
benzo(a)anthracene
benzo(a)pyrene
benzo(b)fluoranthene
benzo[k]fluoranthene
chrysene
dibenz[a,h]anthracene
fluoranthene
indeno(1,2,3-CD)pyrene
naphthalene
phenanthrene
pyrene
m-xylene
o-xylene
p-xylene
arsenic
chromium
lead
mercury
1,1,1-trichloroethane
carbon tetrachloride
cis-1,2-dichloroethene
trichloroethene (TCE)
tetrachloroethene (PCE)

The contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil
- soil vapor intrusion

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Decision Document.

There were no IRMs performed at this site during the RI.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

Nature and Extent of Contamination: Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs) and pesticides. Based upon investigations conducted to date, the primary contaminants of concern include VOCs, SVOCs, and inorganics.

Subsurface Soil: Soil contamination is found in the shallow zone at 6 to 10 feet below the ground surface (bgs), at and above the groundwater table, and in a deeper zone 20 to 24 feet bgs on top of the historic Hudson River sediments. Light non-aqueous phase liquid (LNAPL), and dense non-aqueous phase liquid (DNAPL) have been identified on-site in the shallow and deeper zones, respectively. Some of the DNAPL on-site has been characterized as coal tar based on forensic analysis. The LNAPL was found in the shallow subsurface at the water table (about 4 to 7 feet bgs) at several locations on the site. In addition, wells located along the southern the property line contain LNAPL that appears to be coming onto the site from the adjacent Halstead-Quinn/ATI Brownfield Site (Site No. C360090). DNAPL has been found on top of the historic Hudson River sediments just below the anthropogenic fill material (about 20 to 25 feet bgs) in the eastern and central portions of the site. Based on the proximity of both LNAPL and DNAPL to the site shoreline, the potential exists for NAPL impacts to the Hudson River. Soil contains several VOCs at levels exceeding their restricted residential soil cleanup objectives (RRSCOs) including benzene, ethylbenzene and xylene at depths ranging from 20 to 26 feet bgs. Benzene was found at levels up to 6.8 parts per million (ppm), which exceeds the RRSCO of 4.8 ppm. Ethylbenzene was found at levels up to 83 ppm (RRSCOs of 41 ppm). Xylenes were detected at levels up to 120 ppm (RRSCOs of 100 ppm).

SVOC contamination exceeds the RRSCOs in approximately 60 soil samples across the site, at depths ranging from 20 to 25 feet, including benzo[a]anthracene; benzo[a]pyrene; benzo[k]fluoranthene; chrysene; dibenzo[a,h]anthracene; indeno[1,2,3-cd]pyrene, and naphthalene with concentrations ranging from 74 ppm to 610 ppm compared to their RRSCOs ranging from 0.33 to 1 ppm. Also found above their RRSCOs were fluoranthene, phenanthrene, and pyrene, with concentrations ranging from 150 ppm to 1,100 ppm, compared to their RRSCOs of 100 ppm.

Inorganic contaminants exceeded the RRSCOs at various depth intervals ranging from 12 to 30 feet bgs throughout the site. Arsenic was found at 66 ppm (RRSCO of 16 ppm). The maximum lead concentration was noted at 51,000 ppm, with several other samples ranging from 1,800 to 8,300 ppm (RRSCO 400 ppm). Mercury was found ranging from 23 to 110 ppm (RRSCO 0.81 ppm). Chromium was also found in soils in several samples ranging from 150 to 2100 ppm (RRSCOs of 110 ppm). The site is presently covered by the existing building and pavement and rip-rap along the shoreline of the Hudson River. There are no exposed surface soils. The presence of mobile NAPL contamination in the subsurface at the site boundary suggests the potential for off-site migration of contamination.

Groundwater: VOCs found in groundwater include benzene, ethylbenzene and xylene. Benzene exceeded the groundwater standard of 1 ppb, at concentrations ranging from 27 ppb to 140 ppb; ethylbenzene exceeded the groundwater standard of 5 ppb, at concentrations ranging from 58 ppb to 510 ppb; and xylenes exceeded the groundwater standard of 5 ppb, at concentrations ranging from 30 ppb to 183 ppb. SVOCs such as naphthalene ranged from 910 to 8,000 ppb (groundwater standard of 10 ppb). Inorganics such as chromium ranged from 260 to 850 ppb (groundwater standard 50 ppb), lead ranged from 1,900 to 3,700 ppb (groundwater standard of 25 ppb) and mercury ranged from 78 to 720 ppb (groundwater standard of 0.7 ppb). The potential exists for off-site impacts in groundwater to the Hudson River

Sub-slab Vapor: Subslab soil vapor samples were collected at several locations from beneath the unoccupied building. VOCs detected in subslab vapor, included 1,1,1-trichloroethane at levels up to 622 mcg/m3, carbon tetrachloride at levels up to 11.6 mcg/m3, cis-1,2-dichloroethene at levels up to 66.2 mcg/m3, trichloroethene at levels up to 483 mcg/m3, and tetrachloroethene at levels up to 211 mcg/m3. The potential exists for the inhalation of site-related contaminants due to soil vapor intrusion in any future on-site redevelopment and for the migration of soil vapor off-site.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure.*

People who enter the site could contact contaminants in soil by digging below the ground surface. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in soil vapor (air spaces within the soil) may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of the buildings is referred to as soil vapor intrusion. Because the site is vacant, the inhalation of site-related contaminants due to soil vapor intrusion does not represent a current concern. The potential exists for the inhalation of site-related contaminants due to soil vapor intrusion in any future on-site redevelopment or re-occupancy of the existing building. Additional investigations are needed to determine if soil vapor intrusion is a concern for off-site buildings.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Prevent the discharge of contaminants to surface water.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Alternative Analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375.

The selected remedy is a Track 4: Restricted use with site-specific soil cleanup objectives remedy.

The selected remedy is referred to as the Excavation, ISS, NAPL Recovery, Enhanced Bioremediation & Site Management remedy.

The elements of the selected remedy, as shown in Figure 2, are as follows:

1. Remedial Design/Green Remediation

A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. Design details for the driving of piles where dense non-aqueous phase liquid (DNAPL) exists will be developed and provided to the Department for prior approval. Engineering controls shall be used to mitigate the potential for DNAPL to further migrate horizontally or vertically. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

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- Maximizing habitat value and creating habitat when possible;
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- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

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Excavation and off-site disposal of contaminant source areas in the shallow zone, including:

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- soil exceeding the 6NYCRR Part 371 hazardous criteria for RCRA metals;
- soil containing SVOCs exceeding 500 ppm;
- non-aqueous phase liquids;
- soil with visual waste material or non-aqueous phase liquid;
- soil that create a nuisance condition, as defined in Commissioner Policy (CP) 51, Section G.

Approximately 2,500 cubic yards of contaminated soil will be removed from the Site at depths ranging from approximately 6 to 10 feet, to the extent practicable. Any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination will also be excavated, removed and properly disposed off-site. In-situ solidification (ISS) as explained below in remedy element 4, will proceed from the excavated portion to the remainder of the contaminated areas.

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component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, cement, and paved surface parking areas, sidewalks, building foundations and building slabs.

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9. Institutional Control

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- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);

- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or Westchester County DOH and
- require compliance with the Department approved Site Management Plan.

10. Site Management Plan

A Site Management Plan is required, which includes the following:

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

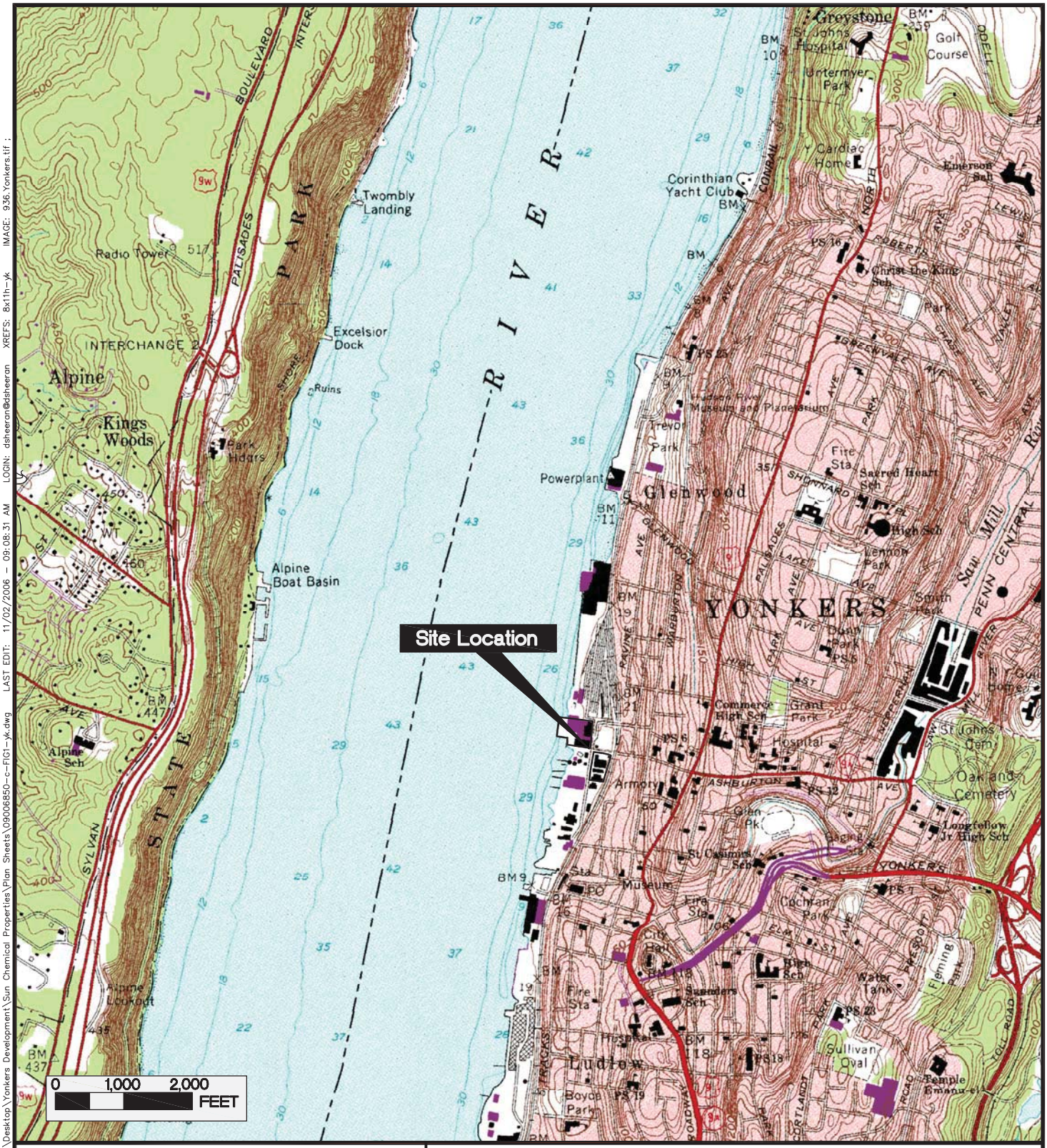
Institutional Controls: The Environmental Easement discussed in paragraph 7 above.
Engineering Controls: the site cover and product recovery system discussed in paragraphs 5 and 6 above.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of groundwater to assess the performance and effectiveness of the remedy; and
- a schedule of monitoring and frequency of submittals to the Department.



SITE LOCATION

USGS TOPOGRAPHIC MAP
7.5 MINUTE SERIES
YONKERS QUADRANGLE
UTM NAD 83 ZONE 18N COORDINATES

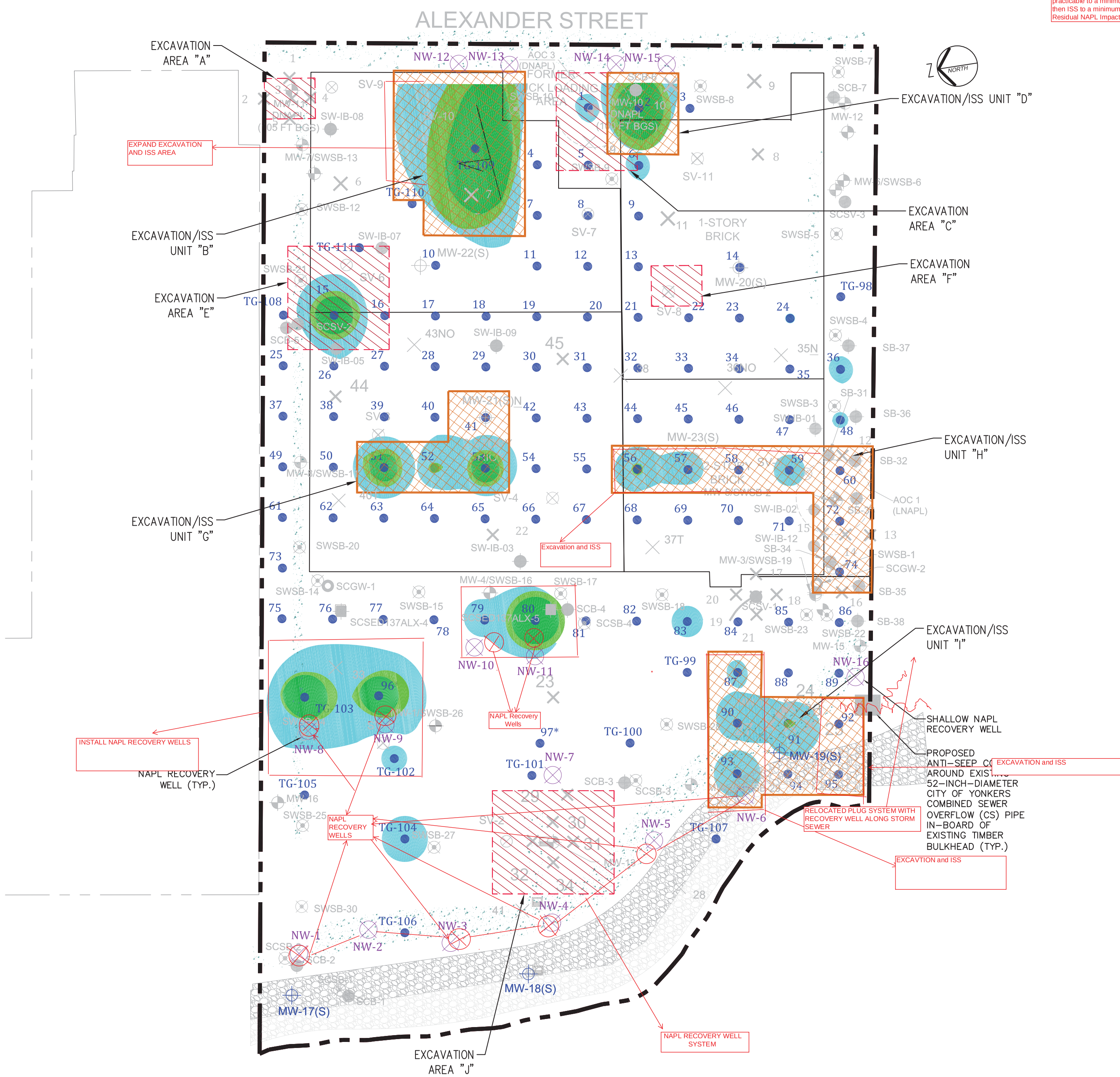
VICINITY LOCATION MAP
ALEXANDER STREET
YONKERS, NEW YORK

PAULUS SOKOLOWSKI and SARTOR
CONSULTING ENGINEERS

DATE: 11/1/06	DRN. BY: DS	PROJ. NO.: 03113.007
SCALE: 1" = 2,000'	CK'D BY: HN	FIGURE 1

FILE NAME: C:\Documents and Settings\dsheeran\Desktop\Yonkers Development\Sun Chemical Properties\Plan Sheets\09006850-c-FIG1-yk.dwg LAST EDIT: 11/02/2006 - 09:08:31 AM LOGIN: dsheeran@dsheeran XREFS: 8x11h-yk IMAGE: 936.Yonkers.tif ;

Note: Excavation must proceed to the extent practicable to a minimum of at least to ten feet and then ISS to a minimum of 25 feet to capture Residual NAPL Impacts



REFERENCE NOTES:

1. 1. BASEMAP DATA FROM CITY OF YONKERS PROPERTY RECORDS, SURVEY DATED 11/14/66, REVISED 11/14/85.
2. BOUNDARY & FIELD LOCATED TOPOGRAPHIC INFORMATION SHOWN HEREON WAS PREPARED BY PAULUS SOKOLOWSKI & SARTOR, LLC DURING MARCH, 2016.
3. AERIAL MAPPINNG WAS PREPARED BY ATLANTIS AERIAL SURVEY CO. (PROJECT #1603–0410) AND IS BASED ON PHOTOGRAPHY DATED 4–29–2004, AND REVISED NOVEMBER 2006.
4. HORIZONTAL POSITIONS WERE ESTABLISHED USING GPS SURVEYS TECHNIQUES. HORIZONTAL POSITIONS ARE BASED ON THE NEW YORK STATE PLANE COORDINATE SYSTEM (NAD 83 EAST ZONE) USING NATIONAL GEODETIC SURVEY (NGS) MONUMENT K40 (PID KU1618) AS THE SOURCE OF HORIZONTAL CONTROL.
5. VERTICAL POSITIONS WERE ESTABLISHED USING GPS SURVEY TECHNIQUES AND ARE BASED ON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88).
6. MEAN HIGH WATER LINE WAS ESTABLISHED BY USING TIDAL BENCHMARK 'ALPINE". HUDSON RIVER, NEW JERSEY, (STATION ID 8530095). PUBLISHED MHW 1.85' (NAVD 88) CALCULATED 2.87' (NGVD 29).
7. SITE IS LOCATED IN FEMA ZONE AE.
8. THE PROPOSED BUILDING 2 FOOTPRINT IS AS SHOWN ON SHEET C–4.0, ALIGNMENT PLAN, PREPARED BY PS&S AND DATED AUGUST 23, 2017 (REVISION #12).

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.

DRAFT

REV./ ISSUE	DATE	DESCRIPTION

LEGEND

- SITE BOUNDARY
- HISTORICAL GROUNDWATER MONITORING WELL LOCATION
- 2017 SHALLOW SRI BORINGS
- HISTORICAL GEOPROBE SOIL BORING AND GROUNDWATER SAMPLE LOCATION
- 2017 SRI SOIL VAPOR INVESTIGATION POINT AND SHALLOW SOIL BORING PER NYSDEC REQUEST
- 2017 SHALLOW SRI MONITORING WELL AND SHALLOW SRI BORING PER NYSDEC REQUEST
- HISTORICAL SOIL BORING LOCATION
- PDI LIF BORING
- 2017 SENTINEL WELLS
- 96* CONFIRMATORY LIF SITE CHARACTERIZATION BORINGS OUTSIDE OBSERVED NAPL AREA
- PROPOSED NAPL MONITORING WELL
- REMEDIAL ACTION EXCAVATION AREAS
- 120% RE RESPONSE
- 100% RE RESPONSE
- 60% RE RESPONSE
- EXCAVATION OR ISS UNIT FOOTPRINT

ORIENTATION / KEY PLAN

CLIENT

AVALON YONKERS SUN SITES, LLC.

PAULUS, SOKOLOWSKI AND SARTOR, LLC.
67A MOUNTAIN BLVD EXT.
P.O. BOX 4039
WARREN, NJ 07059
PHONE: (732) 560-9700
CERTIFICATE OF AUTHORIZATION NO. 24GA28032700

ALL DIMENSIONS MUST BE VERIFIED BY THE CONTRACTOR. NOTIFY PAULUS, SOKOLOWSKI AND SARTOR, LLC. OF ANY CONFLICTS, ERRORS, AMBIGUITIES OR DISCREPANCIES IN THE CONTRACT DRAWINGS OR SPECIFICATIONS BEFORE PROCEEDING WITH CONSTRUCTION.

ALL DIMENSIONS SHALL BE AS NOTED IN WORDS OR NUMBERS ON THE CONTRACT DRAWINGS. DO NOT SCALE THE DRAWINGS TO DETERMINE DIMENSIONS.

THESE CONTRACT DRAWINGS CONTAIN DATA INTENDED SPECIFICALLY FOR THE NOTED PROJECT AND CLIENT. THEY ARE NOT INTENDED FOR USE ON EXTENSIONS OF THIS PROJECT OR FOR REUSE ON ANY OTHER PROJECT.

UNLESS THESE DRAWINGS ARE SPECIFICALLY DESIGNATED AS "CONSTRUCTION ISSUE", THESE DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION OR IMPROVEMENTS DEPICTED HEREIN, CONTRACTORS SHALL NOTIFY THE DESIGN ENGINEER TO OBTAIN CONSTRUCTION DOCUMENTS.

PROJECT

POLYCHROME WEST MANUFACTURING
BCP SITE NUMBER
C360099
CITY OF YONKERS, WESTCHESTER COUNTY, NEW YORK

SHEET TITLE

POLYCHROME WEST REMEDIAL ACTION SITE PLAN

PROJECT NO.: 03102-0006 | DRAWN BY: ES
SCALE: 1"=20' | CHECKED BY: JMS
DATE: 11-10-2017 | SHEET OF
SHEET NO.

PW RA-01