RECORD OF DECISION

R.Baker & Son Machinery Dismantlers, Inc
State Superfund Project
Staten Island, Richmond County
Site No. 243008
January 2014

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

DECLARATION STATEMENT - RECORD OF DECISION

R.Baker & Son Machinery Dismantlers, Inc
State Superfund Project
Staten Island, Richmond County
Site No. 243008
January 2014

Statement of Purpose and Basis

This document presents the remedy for the R.Baker & Son Machinery Dismantlers, Inc site, a Class 2 inactive hazardous waste disposal 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, and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the R.Baker & Son Machinery Dismantlers, Inc site and the public's input to the proposed remedy presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. 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 gases 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 and Off-Site Disposal

All on-site soils in and beneath upland fill areas to depths of up to 20 feet which exceed industrial SCOs for PCB or protection of groundwater SCOs for 1,4 dichlorobenzene or chlorobenzene, as defined by 6 NYCRR Part 375-6.8, will be excavated and transported off-site for disposal. This includes two areas to be excavated to 1 foot depth and a small area excavated to a depth of 18 feet. The 37 ppm of PCB found at a depth of 25 feet at boring B-2 will be left in place beneath the cover system due to the impracticality of removal. Approximately 240 cubic yards of soil will be removed from the site. Clean fill meeting the SCOs as set forth in 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation and establish the designed grades at the site. The site will be re-graded to accommodate installation of a cover system as described in remedy element 3. Soil derived from the re-grading may be used to backfill the excavation beneath the cover system.

3. Sediment Excavation

Contaminated wetlands sediment surrounding hot spots identified by
sample C-1 (29.0 ppm) and sample WT-1 (36 ppm) will be excavated for off-site disposal. The horizontal extent of the focused remediation will begin at the sample locations, extending until either the estimated 5 ppm contour, the hydrologic surface at the edge of the base of the upland fill, or a tidal channel is reached. The vertical extent of the sediment remediation will be limited to removal of sediment from the existing surface to the base of the peat layer. The boundaries will be determined by field/visual observations. Clean fill consisting of sand and meeting the SCOs as set forth in 6 NYCRR Part 375-6.7(d) for protection of ecological resources will be brought in to complete the backfilling of the excavation and establish the design grades at the site.

4. Soil Cover

A site cover will be required to allow for industrial use of the site. The cover will consist either of the structures such as building slabs, pavement, sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for industrial use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d). No soil cover will be placed in the tidal wetlands other than backfill to the original grade in the areas of excavation. A vegetated buffer planted in topsoil would have to remain around the portions of the property in contact with tidal marsh, the dimensions of which would have to be determined in the Remedial Design.

5. Environmental Easement

Imposition of an institutional control in the form of an environmental easement

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

6. 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 4 above.

Engineering Controls: The soil cover discussed in Paragraph 3 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, including adherence to a Community Air Monitoring Plan;
•descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
•a provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
•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 for vapor intrusion for any buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy for this site is protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

January 6, 2014

Date

Robert W. Schick, P.E., Director
Division of Environmental Remediation

RECORD OF DECISION

R.Baker & Son Machinery Dismantlers, Inc
Staten Island, Richmond County
Site No. 243008
January 2014

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 hazardous wastes 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 hazardous wastes at this site, as more fully described in this document, has contaminated various environmental media. The remedy is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This Record of Decision (ROD) identifies the selected remedy, summarizes the other alternatives considered, and discusses the reasons for selecting the remedy.

The New York State Inactive Hazardous Waste Disposal Site Remedial Program (also known as the State Superfund Program) is an enforcement program, the mission of which is to identify and characterize suspected inactive hazardous waste disposal sites and to investigate and remediate those sites found to pose a significant threat to public health and environment.

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:

Todt Hill-Westerleigh Library
2550 Victory Blvd.
Staten Island, NY 10314
Phone: (718) 494-1642

Science, Industry and Business Library
188 Madison Avenue
New York, NY 10016-4314
Phone: (917) 275-6975

A public meeting was also conducted. At the meeting, the findings of the remedial investigation (RI) and the feasibility study (FS) were presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period was held, during which verbal or written comments were accepted on the proposed remedy.

Comments on the remedy received during the comment period are summarized and addressed in the responsiveness summary section of the ROD.

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: The R. Baker and Son Machinery Dismantlers site, also referred to as 250 South Washington Avenue in site reports, is an industrial property used to store construction equipment located adjacent to and beneath the Goethals Bridge in the northwestern corner of Staten Island. The site is located at the extreme western end of South Washington Avenue, now known as Goethals Road North. The area is primarily light industrial properties such as trucking companies and the New York Container Terminal. Nearby bodies of water include the tidal estuaries Old Place Creek (located approximately 450 feet south and west of the site)and the Arthur Kill (located approximately 1/3 mile to the northwest).

Site Features: The site consists of approximately 3 acres of filled-in wetlands. Except for the access road to Goethals Road North, the site is bounded entirely by marshland and tidal creeks, including Old Place Creek. The site is home to several small warehouse buildings and trailers not intended for continuous occupancy.

Current Zoning and Land Use: The site has been utilized as an industrial property used to store construction equipment since at least the 1970s. The property and surrounding area is zoned manufacturing, which allows manufacturing uses, most commercial uses and some community facility uses.

Past Use of the Site: It is believed the site has been in use as an industrial property used to store

construction equipment ever since it was reclaimed from the surrounding wetlands by filling. In the past, dismantling of obsolete electrical transformers has taken place at the site. The Department first inspected the property in 1977 and waste disposal reportedly dates back to 1972.

Site Geology and Hydrology: The site is located in a filled in tidal wetland. Depth to groundwater ranges from 2 to 7 feet below ground surface at the site. Fill at the site is comprised of various sand, slit, clay, brick, and wood fragments. Groundwater flow is subject to tidal fluctuation but overall trends to the west.

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 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 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 included in the Tables for the media being evaluated in Exhibit A.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The PRPs for the site, documented to date, include:

Walter A. Baker and R. Baker & Son All Industrial Svcs, Inc.

The Department and Walter A. Baker and R. Baker & Son All Industrial Services, Inc. (the PRPs) entered into a Consent Order on August 27, 2009. The Order obligates the PRPs to implement a RI/FS only remedial program. After the remedy is selected, the Department will approach the PRPs to implement the selected remedy. If an agreement cannot be reached with the PRPs, the Department will evaluate the site for further action under the State Superfund. The PRPs are subject to legal actions by the state for recovery of all response costs the state has incurred.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the

nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:

- groundwater
- soil
- sediment

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. The tables found in Exhibit A list the applicable SCGs in the footnotes. 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 hazardous waste 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 in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

POLYCHLORINATED BIPHENYLS (PCB) CHLOROBENZENE
1,4-DICHLOROBENZENE 1,3-DICHLOROBENZENE

As illustrated in Exhibit A, the contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil
- sediment

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 Record of Decision.

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 Fish and Wildlife Resources Impact Analysis (FWRIA) for OU 01, which is included in the RI report, presents a detailed discussion of the existing and potential impacts from the site to fish and wildlife receptors.

Nature and extent of Contamination:

Contamination of soil and groundwater with PCBs and evidence of off-site migration of the PCB to sediments in an adjacent wetlands area has been confirmed during the Remedial Investigation and prior investigations. Exceedances of standards, criteria, and guidance include PCBs for soil, sediment and groundwater.

Soil - In shallow soil of up to 1 foot in depth, PCBs were found above the NYSDEC Industrial Soil Cleanup Objective (SCO) of 25 ppm in an approximately 1/2 acre area in the southeast portion of the site, as well as a small area to the northwest. The maximum concentration of PCBs in shallow soil in both areas was approximately 25 ppm. Deeper soils in a small area in the southeast contain PCB at concentrations of up to 226 ppm at a depth of 17 feet. The deepest PCB contamination was 37 ppm at a depth of 25 feet. Those same small areas in the southeast and northwest also exceeded the Protection of Groundwater SCO of 1.8 ppm for 1,4 dichlorobenzene in shallow soils at concentrations up to 130 ppm. The area to the southeast also exceeded the SCO for 1,4 dichlorobenzene of 1.8 ppm with a concentration of 490 ppm.

Groundwater - PCB contamination was found in one of the four monitoring wells. The impacted well is in the southeast portion of the site, near the area of soil contamination at depth. The

maximum PCB concentrations in groundwater was 4.3 ppb, while the groundwater standard is 0.09 ppb. Turbidity in this well exceeded the prescribed level of 50 NTU in both rounds of groundwater sampling with turbidities of 248 NTU and 318 NTU. Groundwater contamination with various chlorobenzenes was found in a well on the northwestern portion of the site. 1,4 dichlorobenzene, with a groundwater standard of 3 ppb, was found at concentrations up to 490 ppb. Chlorobenzene, with groundwater standard of 5 ppb, was found at concentrations up to 98 ppb. 1,3 dichlorobenzene, with a groundwater standard of 3 ppb, was found at up to 75 ppb. Additionally, the well in the southeast portion of the site contained up to 9.7 ppb of chlorobenzene.

Sediment - Concentrations of PCB were found in sediments from the tidal wetland surrounding the site. 13 of 23 sediment samples exceeded 1 ppm PCB but only 5 samples exceeded 5 ppm. The highest concentrations were found immediately adjacent to the backfilled portions of the site, with concentration dropping off quickly with increased distance. Maximum sediment concentrations were 36 ppm at the southwest limit of the backfill and 29 ppm at the southeast limit.

Special Resources Impacted/Threatened:

Fish and Wildlife Impact Analysis (FWIA) - A FWIA conducted at the site included a shellfish evaluation. Only one of eight shellfish samples contained PCB. This sample contained 0.173 ppm of PCB. The FDA safety level for PCB in shellfish is 2 ppm. Field observations identified characteristics of a healthy tidal marsh community, including the area with the highest reported PCB concentrations.

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.*

Based on the location of the site in an industrial area and under the Goethals Bridge, it is unlikely that unauthorized persons could enter the site and come in contact with contaminants present in the soil or in wetland sediments adjacent to the site. However, any bridge related maintenance/construction activities which include excavation would increase the potential for exposure to contaminants present in site soil and sediments. Exposure to site-related contaminants in groundwater is not a concern since the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds (VOCs) in the groundwater may move into the soil vapor (air spaces within the soil), which in turn 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 buildings, is referred to as soil vapor intrusion. The potential exists for exposure to VOCs through soil vapor intrusion for occupants of buildings constructed on or adjacent to this site. However, based on the location of the site under the Goethals bridge and planned construction for a replacement bridge, any future building construction near or at the site is unlikely.

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.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

Sediment

RAOs for Public Health Protection

- Prevent direct contact with contaminated sediments.
- Prevent surface water contamination which may result in fish advisories.

RAOs for Environmental Protection

- Prevent impacts to biota from ingestion/direct contact with sediments causing toxicity or impacts from bioaccumulation through the marine or aquatic food chain.

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: SUMMARY OF THE SELECTED REMEDY

To be selected the remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. The remedy must also attain the remedial action objectives identified for the site, which are presented in

Section 6.5. Potential remedial alternatives for the Site were identified, screened and evaluated in the feasibility study (FS) report.

A summary of the remedial alternatives that were considered for this site is presented in Exhibit B. Cost information is presented in the form of present worth, which represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved. A summary of the Remedial Alternatives Costs is included as Exhibit C.

The basis for the Department's remedy is set forth at Exhibit D.

The selected remedy is referred to as Alternative 3: Excavation and Off-site Soil Disposal with Soil Cover and Hot Spot Sediment Excavation with Off-site Disposal.

The estimated present worth cost to implement the remedy is $551,000. The cost to construct the remedy is estimated to be $528,000 and the estimated average annual cost is $1,500.

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

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. 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 gases 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 and Off-Site Disposal

All on-site soils in and beneath upland fill areas to depths of up to 20 feet which exceed industrial SCOs for PCB or protection of groundwater SCOs for 1,4 dichlorobenzene or chlorobenzene, as defined by 6 NYCRR Part 375-6.8, will be excavated and transported off-site for disposal. This includes two areas to be excavated to 1 foot depth and a small area excavated to a depth of 18 feet. The 37 ppm of PCB found at a depth of 25 feet at boring B-2 will be left in place beneath the cover system due to the impracticality of removal. Approximately 240 cubic yards of soil will be removed from the site. Clean fill meeting the SCOs as set forth in 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation and establish the designed grades at the site. The site will be re-graded to accommodate installation of a cover system as described in remedy element 3. Soil derived from the re-grading may be used to backfill the excavation beneath the cover system.

3. Sediment Excavation

Contaminated wetlands sediment surrounding hot spots identified by
sample C-1 (29.0 ppm) and sample WT-1 (36 ppm) will be excavated for off-site disposal. The horizontal extent of the focused remediation will begin at the sample locations, extending until either the estimated 5 ppm contour, the hydrologic surface at the edge of the base of the upland fill, or a tidal channel is reached. The vertical extent of the sediment remediation will be limited to removal of sediment from the existing surface to the base of the peat layer. The boundaries will be determined by field/visual observations. Clean fill consisting of sand and meeting the SCOs as set forth in 6 NYCRR Part 375-6.7(d) for protection of ecological resources will be brought in to complete the backfilling of the excavation and establish the design grades at the site.

4. Soil Cover

A site cover will be required to allow for industrial use of the site. The cover will consist either of the structures such as building slabs, pavement, sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for industrial use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d). No soil cover will be placed in the tidal wetlands other than backfill to the original grade in the areas of excavation. A vegetated buffer planted in topsoil would have to remain around the portions of the property in contact with tidal marsh, the dimensions of which would have to be determined in the Remedial Design.

5. Environmental Easement

Imposition of an institutional control in the form of an environmental easement

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

6. 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 4 above.

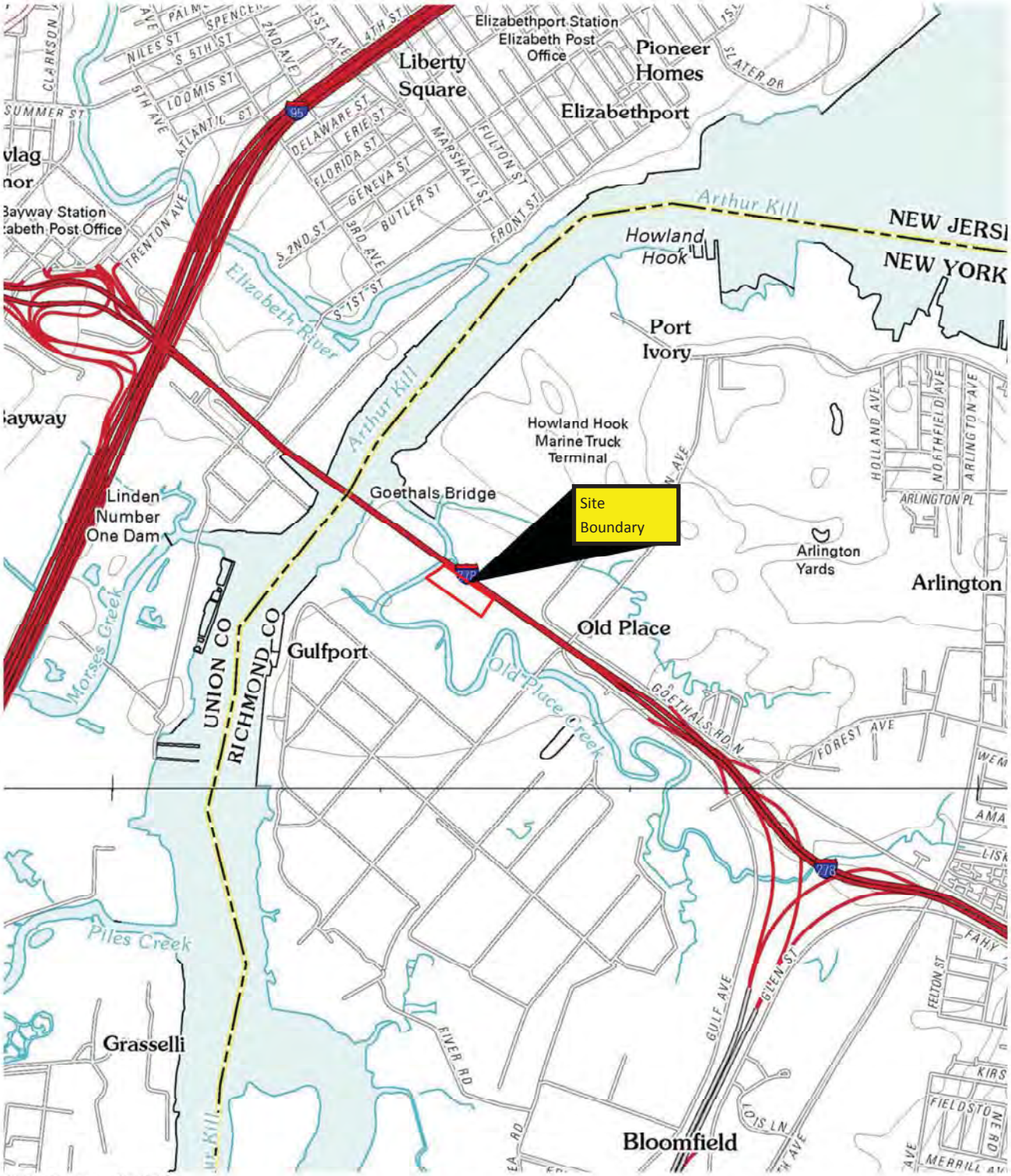
Engineering Controls: The soil cover discussed in Paragraph 3 above.

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, including adherence to a Community Air Monitoring Plan;
•descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
•a provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
•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 for vapor intrusion for any buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.



0′ 1000′ 2000′

SCALE: 1"=2000′

BRINKERHOFF
ENVIRONMENTAL SERVICES, INC.

FIGURE 1 – SITE LOCATION MAP
U.S.G.S. TOPOGRAPHIC ARTHUR KILL & ELIZABETH, NJ QUADS
250 SOUTH WASHINGTON AVENUE
BLOCK 1885, LOT 35
STATEN ISLAND, NEW YORK

DATE: 7/9/13	JOB NO.: 08BR049	SCALE: 1" = 2000′

Figure 2 R. Baker & Son Machinery Dismantlers, Site #243008: Alternative 4 Soil and Sediment Excavation Areas

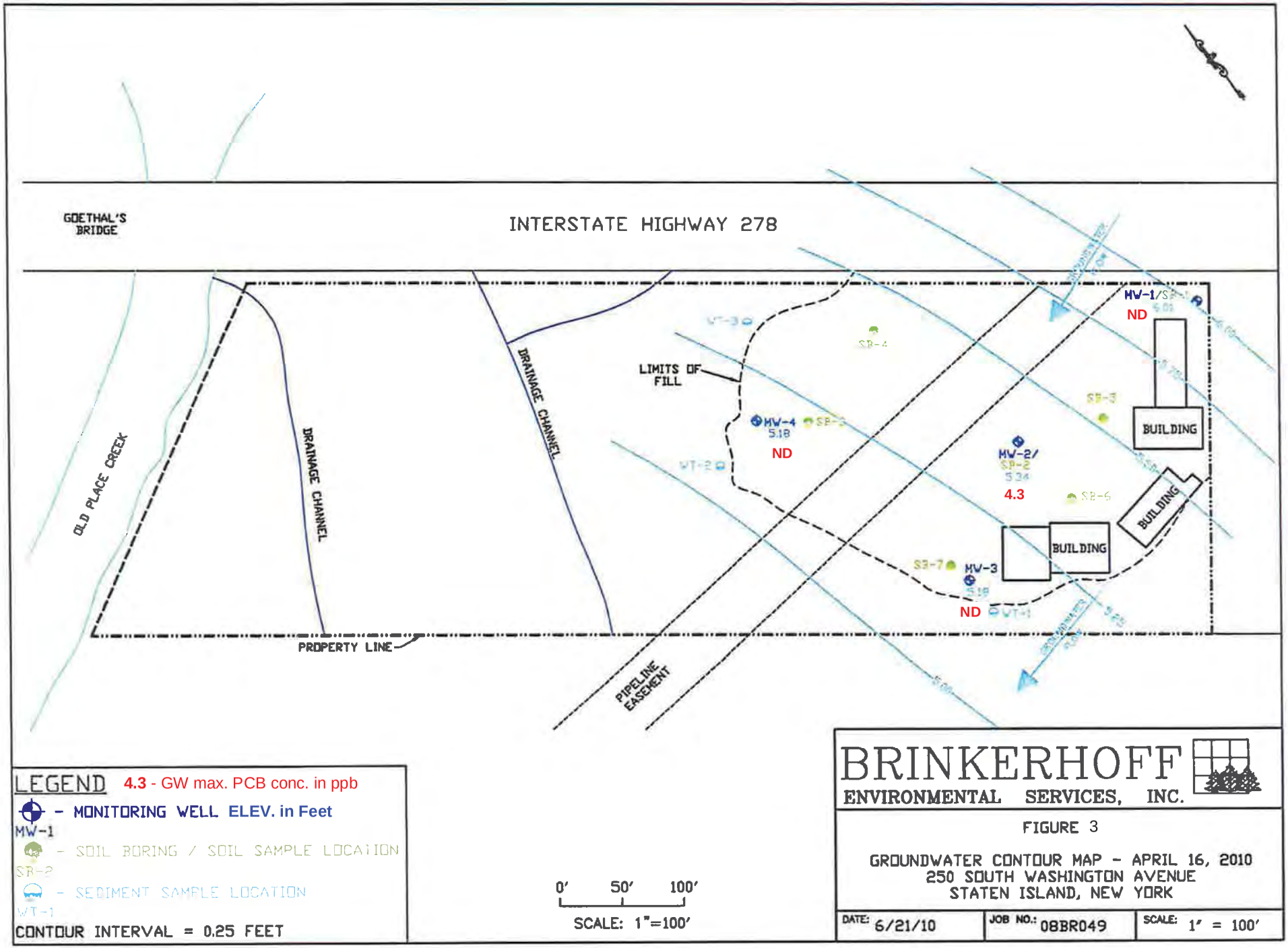
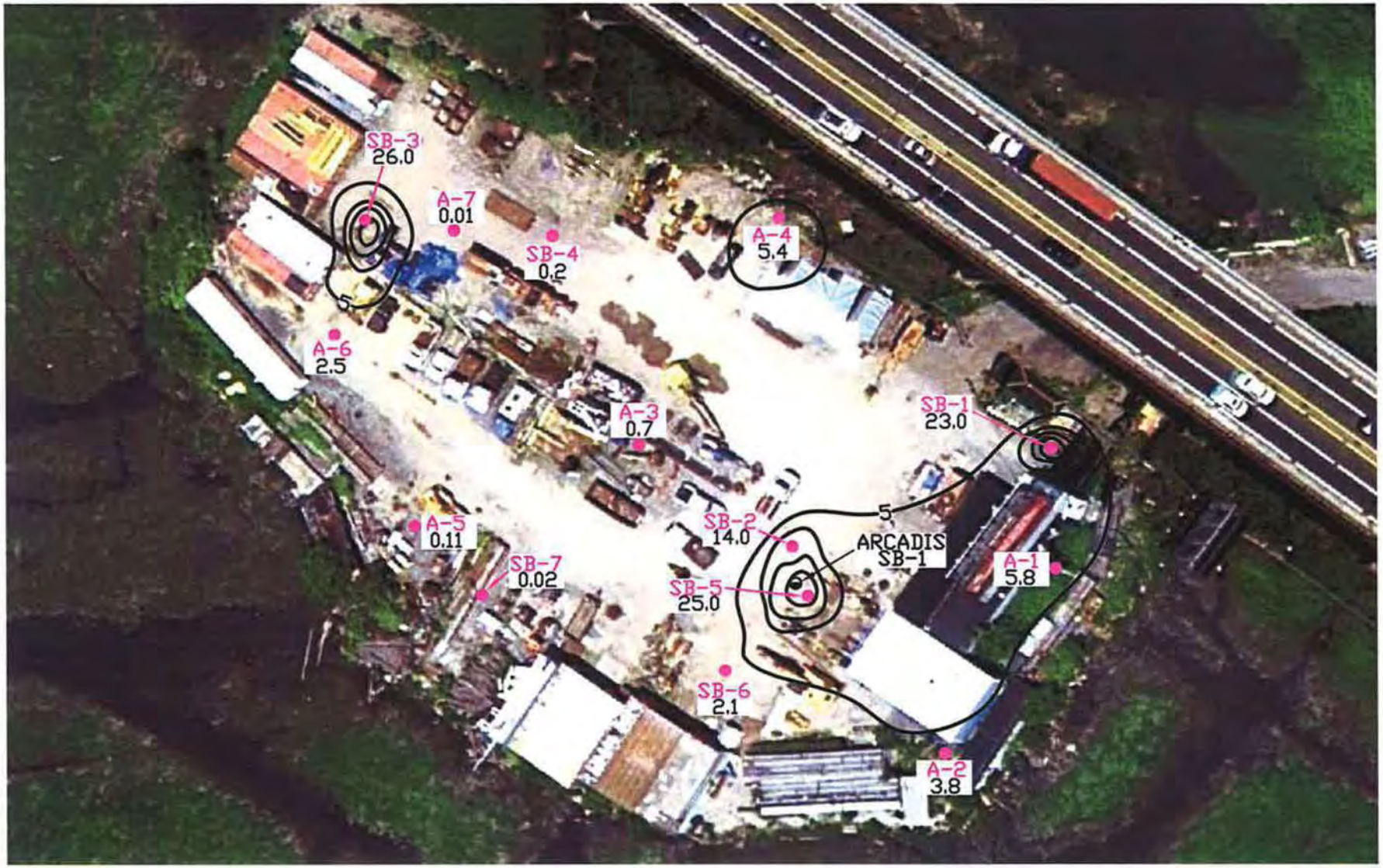


Figure 3 : R. Baker & Son Machinery Dismantlers (Site# 243008) - Groundwater Sampling Results (April 2010 & March 2011)



LEGEND

Results in ppm of PCB

● - BRINKERHOFF SOIL BORING/SAMPLE LOCATION
SB-1

◒ - ARCADIS SOIL BORING/SAMPLE LOCATION
SB-1

CONTOUR INTERVAL = 5ppm PCBs

0′ 30′ 60′

SCALE: 1"=60′

BRINKERHOFF
ENVIRONMENTAL SERVICES, INC.

FIGURE 4 a
SAMPLE LOCATION MAP
250 SOUTH WASHINGTON AVENUE
BLOCK 1885, LOT 35
STATEN ISLAND, NEW YORK

DATE: 12/4/12	JOB NO.: 08BR049	SCALE: 1" = 60′

Figure 4a: R. Baker & Son Machinery Dismantlers (Site# 243008) - Shallow 0.5' to 1.5' PCB Soil Sampling Results

BRINKERHOFF
ENVIRONMENTAL SERVICES, INC.

FIGURE 4h
PCBs IN INTERMEDIATE SOILS 12 - 16 FEET
250 SOUTH WASHINGTON AVENUE
BLOCK 1885, LOT 35
STATEN ISLAND, NEW YORK

DATE: 8/15/11	JOB NO.: 08BR049	SCALE: 1' = 60'

LEGEND
Results in ppm
⊕ - SOIL BORING/SAMPLE LOCATION
SB-1
ND - NON DETECT
CONTOUR INTERVAL = 5ppm PCBs

0' 30' 60'
SCALE: 1"=60'

Figure 4b: R. Baker & Son Machinery Dismantlers (Site# 243008) - Intermediate 12' to 16' PCB Soil Sampling Results

Figure 4c: R. Baker & Son Machinery Dismantlers (Site# 243008) - Deeper 16' to 20' PCB Soil Sampling Results

LEGEND

● - SOIL BORING/SAMPLE LOCATION
SB-1
ND - NON DETECT
RESULTS IN ppm

0' 30' 60'
SCALE: 1"=60'

BRINKERHOFF
ENVIRONMENTAL SERVICES, INC.

FIGURE 4d
PCBs IN DEEPER SEDIMENTS BELOW 25 FEET
250 SOUTH WASHINGTON AVENUE
BLOCK 1885, LOT 35
STATEN ISLAND, NEW YORK

DATE:	JOB NO.:	SCALE:
8/15/11	08BR049	1" = 60'

Figure 4d: R. Baker & Son Machinery Dismantlers (Site# 243008) - Deeper Below 25' PCB Soil Sampling Results

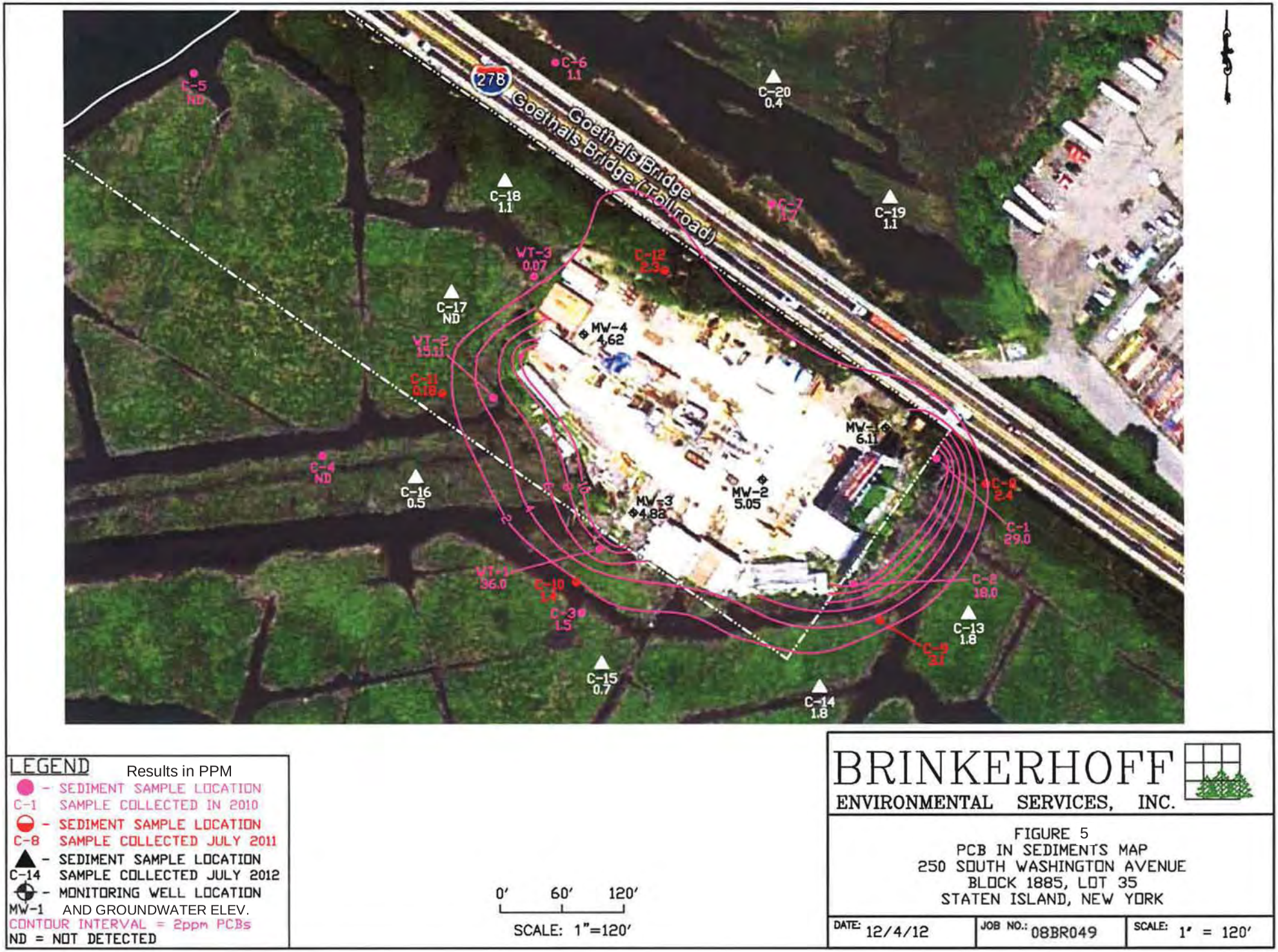


Figure 5 R. Baker & Son Machinery Dismantlers (Site #243008) PCB Results in Wetlands Sediments

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the Remedial Investigation for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium for which contamination was identified, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. The contaminants are arranged into four categories; volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides/ polychlorinated biphenyls (PCBs), and inorganics (metals and cyanide). For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 4 and Section 6.1.1 are also presented.

Groundwater

Groundwater samples were collected from four shallow overburden monitoring wells located in the upland fill portion of the site to assess groundwater conditions, as shown in Figure 3. The results indicate that contamination in shallow groundwater at the site exceeds the SCGs for PCBs and volatile organic compounds. Turbidity slightly exceeded prescribed levels in the PCB impacted samples.

Table 1 - Groundwater

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
VOCs			
1,4 dichlorobenzene	ND – 490	3	2 of 8
1,3 dichlorobenzene	ND – 75	3	2 of 8
chlorobenzene	ND – 98	5	4 of 8
Pesticides/PCBs			
PCB	ND - 4.3	0.09	2 of 8

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

PCB contamination of groundwater in an area of PCB soil contamination is thought to be due to turbidity in the groundwater sample. Contamination from the three types of chlorobenzene appears to be related to site contamination.

Based on the findings of the RI, the presence of 1,4 dichlorobenzene, chlorobenzene, and 1,3 dichlorobenzene has resulted in the contamination of groundwater. The site contaminants that are considered to be the primary

contaminants of concern which will drive the remediation of groundwater to be addressed by the remedy selection process are 1,4 dichlorobenzene, chlorobenzene, and 1,3 dichlorobenzene.

Soil

Soil samples were collected from depths ranging from 6 inches to 31 feet. As shown on Figures 4a through 4d, the results indicate the soils exceed the unrestricted SCG for PCBs, volatiles, semi-volatiles, and metals and the industrial SCG for PCBs, semi-volatiles, and metals.

Table 2 - Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCO	Restricted Use SCG[c] (ppm)	Frequency Exceeding Industrial SCO
VOCs					
benzene	ND – 8.7	0.06	4 of 11	89	0 of 11
acetone	ND - 0.66	0.5	1 of 11	1000	0 of 11
chlorobenzene	ND – 130	1.1	4 of 11	1000	0 of 11
1,4-dichlorobenzene	ND – 3.5	1.8	1 of 11	560	0 of 11
SVOCs					
benzo(a)anthracene	0.12 - 6	1	4 of 10	11	0 of 10
chrysene	0.12 – 5.4	1	5 of 10	110	0 of 10
benzo(b)fluoranthene	0.24 – 6.4	1	5 of 10	11	0 of 10
benzo(k)fluoranthene	0.17 – 5.5	0.8	5 of 10	110	0 of 10
benzo(a)pyrene	0.21 – 4.9	1	4 of 10	1.1	4 of 10
ideno(1,2,3-cd)pyrene	.07 – 1.2	0.5	2 of 10	11	0 of 10
dibenz(a,h)anthracene	ND – 0.51	0.33	1 of 10	1.1	0 of 10
Inorganics					
arsenic	ND – 48.4	13	1 of 10	16	1 of 10
barium	29.6 - 1900	350	3 of 10	10,000	0 of 10
beryllium	ND – 60.9	7.2	4 of 10	2,700	0 of 10
cadmium	0.57 – 4.9	2.5	4 of 10	60	0 of 10
chromium, trivalent	18.1 - 1120	30	6 of 10	6800	0 of 10
copper	195 - 8830	50	10 of 10	10,000	0 of 10
lead	56.2 - 4360	63	9 of 10	3900	1 of 10

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCO	Restricted Use SCG[c] (ppm)	Frequency Exceeding Industrial SCO
manganese	45.2 - 2890	1600	2 of 10	10,000	0 of 10
mercury	ND – 2.04	0.18	3 of 10	5.7	0 of 10
nickel	7.81 - 3640	30	8 of 10	10,000	0 of 10
selenium	ND – 14.6	3.9	3 of 10	6800	0 of 10
silver	ND – 7.25	2	3 of 10	6800	0 of 10
zinc	27.8 – 20,600	109	8 of 10	10,000	2 of 10
Pesticides/PCBs					
PCB	ND - 226	0.1	30 of 50	25	6 of 50
4,4'-DDE	ND - 0.011	0.0033	3 of 13	120	0 of 13
4,4'-DDD	ND - 0.006	0.0033	2 of 13	180	0 of 13
dieldrin	ND – 0.18	0.005	3 of 13	2.8	0 of 13

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.
c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Industrial Use, unless otherwise noted.
d - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Groundwater.

The contaminants of concern are PCBs, 1,4 dichlorobenzene and chlorobenzene. Contamination is thought to have resulted from sloppy handling of solvents and salvaged electrical equipment containing PCBs.

SVOC and inorganic contamination is typical of urban fill and generally below industrial use SCGs. Therefore, SVOCs and inorganics are not considered a site specific contaminant of concern.

Based on the findings of the Remedial Investigation, the past disposal of hazardous waste has resulted in the contamination of soil. The site contaminant identified in soil which is considered to be the primary contaminants of concern, to be addressed by the remedy selection process are PCBs and chlorobenzenes.

Neither Walter Baker nor R. Baker & Son All Industrial Services Inc. admit to the DEC's statements concerning the source or cause of the contamination.

Sediments

Sediment samples were collected from the salt water marsh surrounding the upland portion of the site during the RI. The samples were collected to assess the potential for impacts to wetland sediment from the site. The results indicate that sediment in the on-site wetland exceed the Department=s SCGs for sediments for PCB, as well as dichlorobenzenes, several SVOCs, and a number of inorganics.

Table 3 - Sediment

Detected Constituents	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)	Frequency Exceeding SCG
VOCs			
dichlorobenzenes	3.8	0.18 [d]	1 of 1
SVOCs			
benzo(a)anthracene	0.23	0.0021 [c]	1 of 1
benzo(b)flouranthene	0.35	0.0021 [c]	1 of 1
benzo(k)flouranthene	0.29	0.0021 [c]	1 of 1
chrysene	1.0	0.0021 [c]	1 of 1
Inorganics			
antimony	6.9	LEL 2.0	1 of 1
		SEL 25	0 of 1
arsenic	41.6	LEL 6.0	1 of 1
		SEL 33	1 of 1
cadmium	2.56	LEL 0.6	1 of 1
		SEL 9.0	0 of 1
chromium	255	LEL 26	1 of 1
		SEL 110	1 of 1
copper	1160	LEL 16	1 of 1
		SEL 110	1 of 1
iron	98,700	LEL 20,000	1 of 1
		SEL 40,000	1 of 1
lead	601	LEL 31	1 of 1
		SEL 110	1 of 1
manganese	701	LEL 460	1 of 1
		SEL 1100	0 of 1
mercury	2.08	LEL 0.15	1 of 1
		SEL 1.3	1 of 1
nickel	315	LEL 16	1 of 1
		SEL 50	1 of 1
silver	2.72	LEL 1.0	1 of 1
		SEL 2.2	1 of 1
Pesticides/PCBs			
PCB	ND – 36.1	0.00012 [c]	21 of 23

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in sediment;

b - SCG: The Department's "Technical Guidance for Screening Contaminated Sediments." Based on average Total Organic Carbon content of 15% in 8 samples tested.
c – Value is based on Human Health Bioaccumulation
d - Value is based on Benthic Aquatic Life Chronic Toxicity
LEL = Lowest Effects Level and SEL = Severe Effects Level. A sediment is considered contaminated if either of these criteria is exceeded. If the SEL criteria are exceeded, the sediment is severely impacted. If only the LEL is impacted, the impact is considered moderate.

The sediment contaminants of primary concern are PCBs. As shown on Figure 5, PCB concentrations are highest immediately adjacent to the upland fill portion of the site and drop of rapidly further from the fill. The Fish and Wildlife Impact Analysis indicated the wetlands portion of the site, including those areas with the highest PCB contamination, appeared generally healthy. Additionally, sampling of shellfish (rib mussels) in the vicinity of the site showed only 1 of 5 samples with a detection of PCBs at 173 ppb. Finally, there is little or no opportunity of the public coming in contact with these sediments from recreational use. Therefore a remedial action requiring extensive wetland excavation is considered counter-productive. Instead, sediment remedial efforts will be focused on the limited areas with the highest PCB concentrations.

Based on the findings of the Remedial Investigation, the presence of PCB has resulted in the contamination of sediment. The site contaminants that are considered to be the primary contaminant of concern which will drive the remediation of sediment to be addressed by the remedy selection process is PCBs.

Exhibit B

Description of Remedial Alternatives

The following alternatives were considered based on the remedial action objectives (see Section 6.5) to address the contaminated media identified at the site as described in Exhibit A.

Alternative 1: No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. This alternative leaves the site in its present condition and does not provide any additional protection to public health and the environment.

Alternative 2: Site Management

The Site Management Alternative requires only institutional controls for the site. This alternative includes institutional controls, in the form of an environmental easement and a site management plan, necessary to protect public health and the environment from any contamination identified at the site. The easement requires the remedial party or site owner to complete a periodic certification that institutional and engineering controls remain in place, allows industrial use of the property subject to local zoning laws, restricts the use of groundwater as a source of potable or process water, and requires compliance with the Department approved Site Management Plan. The Site Management Plan requires a provision for evaluating the potential for soil vapor intrusion for any buildings developed on the site, as well as a monitoring plan to monitor for soil vapor intrusion in such buildings.

Alternative 3: Excavation and Off-site Soil Disposal with Soil Cover and Hot Spot Sediment Excavation with Off-site Disposal

To the extent feasible all on-site soils in and beneath upland fill areas at depths of up to 20 feet which exceed industrial SCOs for PCB or protection of groundwater SCOs for 1,4 dichlorobenzene or chlorobenzene, as defined by 6 NYCRR Part 375-6.8, will be excavated. Excavated soils will be transported off-site for disposal. As shown in Figure 2 this includes two areas excavated to 1 foot depth and a small area excavated to a depth of 18 feet. The 37 ppm of PCB found at a depth of 25 feet at boring B-2 would be left in place beneath the cover system due to its impracticality of removal. Approximately 240 cubic yards of soil will be removed from the site. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation and establish the designed grades at the site. The upland fill portion of the site will be re-graded to accommodate installation of a cover system as described in remedy element 3. Soil derived from the re-grading may be used to backfill the excavation beneath the cover system.

A site cover will be required to allow for industrial use of the site. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for industrial use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d). A vegetated

buffer planted in topsoil would have to remain around the portions of the property in contact with tidal marsh, the dimensions of which would have to be determined in the Remedial Design.

Contaminated wetlands sediment surrounding hot spots identified by sample C-1 (29.0 ppm) and sample WT-1 (36 ppm) will be excavated for off-site disposal. The horizontal extent of the focused remediation would begin at the sample location, extending until either the estimated 5 ppm contour, the hydrologic surface at the edge of the base of the upland fill, or the edge of a tidal channel is reached. The vertical extent of the sediment remediation would consist of the removal of sediment from the existing surface to the base of the peat layer. The boundaries would be determined by field/visual observations. Approximately 240 cubic yards of sediment will be removed from the site. Clean fill consisting of sand and meeting the SCOs as set forth in 6 NYCRR Part 375-6.7(d) for protection of ecological resources will be brought in to complete the backfilling of the excavation and establish the design grades at the site.

No action is contemplated for groundwater under this alternative.

This alternative includes institutional controls, in the form of an environmental easement and a site management plan, necessary to protect public health and the environment from any contamination identified at the site. The easement requires the remedial party or site owner to complete a periodic certification that institutional and engineering controls remain in place, allows industrial use of the property subject to local zoning laws, restricts the use of groundwater as a source of potable or process water, and requires compliance with the Department approved Site Management Plan. The Site Management Plan requires a provision for evaluating the potential for soil vapor intrusion for any buildings developed on the site, as well as a monitoring plan to monitor for soil vapor intrusion in such buildings.

Present Worth: *$551,000*
Capital Cost: *$528,000*
Annual Costs: *$1500*

Alternative 4: Excavation and Off-site Soil Disposal with Soil Cover and Sediment Excavation to 5 ppm with Off-site Disposal

This alternative is similar to Alternative 3, with the exception that all sediments within the 5ppm PCB contour line will be excavated and disposed of off-site. To the extent feasible all on-site soils in and beneath upland fill areas at depths of up to 20 feet which exceed industrial SCOs for PCB or protection of groundwater SCOs for 1,4 dichlorobenzene or chlorobenzene, as defined by 6 NYCRR Part 375-6.8, will be excavated. Excavated soils will be transported off-site for disposal. As shown in Figure 2 this includes two areas excavated to 1 foot depth and a small area excavated to a depth of 18 feet. The 37 ppm of PCB found at a depth of 25 feet at boring B-2 would be left in place beneath the cover system due to its impracticality of removal. Approximately 240 cubic yards of soil will be removed from the site. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation and establish the designed grades at the site. The site will be re-graded to accommodate installation of a cover system as described in remedy element 3. Soil derived from the re-grading may be used to backfill the excavation beneath the cover system.

A site cover will be required to allow for industrial use of the site. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for industrial use. The soil cover will be placed over a demarcation layer, with the

upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d). A vegetated buffer planted in topsoil would have to remain around the portions of the property in contact with tidal marsh, the dimensions of which would have to be determined in the Remedial Design.

Contaminated wetlands sediment exceeding 5 ppm, as defined by the 5ppm contour line in Figure 2, will be excavated for off-site disposal. The vertical extent of the sediment remediation would consist of the removal of sediment from the existing surface to the base of the peat layer. Approximately 2400 cubic yards of sediment will be removed from the site. Clean fill with similar quality as the removed sediments will be brought in to complete the backfilling of the excavation and establish the designed grades at the site.

No action is contemplated for groundwater under this alternative.

This alternative includes institutional controls, in the form of an environmental easement and a site management plan, necessary to protect public health and the environment from any contamination identified at the site. The easement requires the remedial party or site owner to complete a periodic certification that institutional and engineering controls remain in place, allows industrial use of the property subject to local zoning laws, restricts the use of groundwater as a source of potable or process water, and requires compliance with the Department approved Site Management Plan. The Site Management Plan requires a provision for evaluating the potential for soil vapor intrusion for any buildings developed on the site, as well as a monitoring plan to monitor for soil vapor intrusion in such buildings.

Present Worth: *$1,560,000*
Capital Cost: *$1,540,000*
Annual Costs: *$1500*

Alternative 5: Restoration to Pre-Disposal or Unrestricted Conditions

This alternative achieves all of the SCGs discussed in Section 6.1.1 and Exhibit A. This alternative would include: Groundwater extraction and treatment to address all contaminants above SCGs in groundwater. The groundwater extraction system will be designed and installed so that the capture zone is sufficient to cover the areal and vertical extent of the area of concern. The extraction system will create a depression of the water table so that contaminated groundwater is directed toward the extraction wells within the plume area. Groundwater will be extracted from the subsurface over an approximately 400-square foot area located in the western portion of the upland segment of the site where VOCs elevated in groundwater, and another approximately 400-square foot area in the east center portion of the upland site where both VOCs and PCBs were found above SCGs. Further details of the extraction system will be determined during the remedial design.

The extracted groundwater will be treated with liquid phase absorption using activated granular activated carbon (GAC). GAC will be used to remove dissolved contaminants from extracted groundwater by adsorption. The GAC system will consist of one or more vessels filled with carbon connected in series and/or parallel.

The entire upland fill portion of the site of approximately 28,000 c.y. will be excavated back to the original wetlands elevation and transported off-site for disposal.

Wetland sediments would also be excavated and disposed of off-site. The volume of wetlands sediment which would have to be excavated is unknown, since the investigation did not delineate PCB contamination in sediments down to the PCB sediment SCG of 0.000012 ppm. It is likely background PCB concentrations in a

major metropolitan area with a long history of industrial activity such as New York City may exceed the sediment SCG, so defining the limits of contamination exceeding this SCG would be problematic. At a minimum, sediment volumes are expected to be at least 50,000 c.y. under this alternative.

Present Worth: ..... *In excess of $25,000,000*
Capital Cost: ..... *In excess of $25,000,000*
Annual Costs: *$0*

Exhibit C

Remedial Alternative Costs

Remedial Alternative	Capital Cost	Annual Costs	Total Present Worth
1. No Action	$0	$0	$0
2. Site Management	$0	$0	$0
3. Excavation and Off-site Soil Disposal with Soil Cover, Hot Spot Sediment Removal	$528,000	$1500	$551,000
4. Excavation and Off-site Soil Disposal with Soil Cover, 5 ppm Sediment Removal	$1,540,000	$1500	$1,560,000
5. Restoration to Pre-Disposal or Unrestricted Conditions	>$25,000,000	$0	>$25,000,000

Exhibit D

SUMMARY OF THE PROPOSED REMEDY

The Department is proposing Alternative No. 3, Excavation and Off-site Soil Disposal with Soil Cover and Hot Spot Sediment Excavation with Off-site Disposal as the remedy for this site. Alternative 3 would achieve the remediation goals for the site by removing 240 c.y. of contaminated soils from the site, replacing with clean fill and a 1 foot soil cover, and removal of an additional 240 c.y. of contaminated sediments and restoring to original grade with clean fill of similar quality as the removed sediments. The elements of this remedy are described in Section 7. The proposed remedy is depicted in Figure 2.

Basis for Selection

The proposed remedy is based on the results of the RI and the evaluation of alternatives. The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. A detailed discussion of the evaluation criteria and comparative analysis is included in the FS report.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

The proposed remedy, Alternative 3 would satisfy this criterion by removing the soil containing PCB in excess of industrial SCGs for soils at depth of up to 20 feet and covering any remaining lesser contaminated soils not covered by a building slab, pavement, or asphalt with a one foot soil cover. The most significant threat to the environment is presented by PCB contamination in tidal wetlands. As the Fish and Wildlife Impact Analysis identified a healthy tidal salt marsh with no PCB impacts to ribbed mussels above EPA tolerance levels, only excavation and removal of the highest concentration “hot spots’ is proposed to minimize disturbance to the wetlands while reducing the chance of future impacts. Alternative 1 (No Action) does not provide any additional protection to public health and the environment and will not be evaluated further. Alternative 2 is protective of human health and the environment through the implementation of Institutional and Engineering Controls. Alternatives 3 and 4 are protective of human health and the environment through the removal of the greatest concentrations of soil and sediment contamination, a one foot soil cover over upland portions of the site, and implementation of Institutional and Engineering Controls. Alternative 5 would be protective of human health and the environment without Institutional and Engineering Controls by restoring the site to pre-disposal conditions.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

Alternative 3 complies with SCGs to the extent practicable. It addresses source areas of contamination and complies with the restricted use soil cleanup objectives at the surface through construction of a cover system. Alternatives 2 also complies with this criterion, but to a lesser degree or with lower certainty. Alternatives 4 and 5 also satisfy the threshold criteria. Therefore, the remaining criteria are particularly important in selecting a final remedy for the site.

The next six "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

Long-term effectiveness is best accomplished by those alternatives involving excavation of the contaminated overburden soils (Alternatives 3, 4, and 5). Since most of the contamination is in the western yard and the upper six feet of the east yard, Alternative 3 results in removal of almost all of the PCB contamination exceeding the SCG for the intended industrial future use and is therefore effective in the long-term and permanent. Alternative 4 removes even more of the contaminated sediments and Alternative 5 removes both more contaminated soils and more contaminated sediments, so both alternatives are effective in the long term and permanent. For Alternative 2, site management remains effective, but it will not be as desirable in the long term. Alternative 5 is the only alternative which would not require a groundwater use restriction, though the groundwater at this site is not a significant resource.

4. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Alternative 2 would control potential exposures with institutional controls only and will not reduce the toxicity, mobility or volume of contaminants remaining. Alternatives 3, 4, and 5 which each include excavation and off-site disposal, reduce the toxicity and mobility of on-site waste by transferring the material to an approved off-site location. However, depending on the disposal facility, the volume of the material would not be reduced.

5. Short-term Impacts and Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

Alternative 2 has no additional short term impacts. Alternatives 3 and 4 have short-term impacts, however, Alternative 3 would have the lesser impact. These short term impacts will be minimized by use of engineering controls. Alternative 5 would have a major short-term impact due to the large area of salt march which would need to be excavated. Under Alternatives 3, 4, and 5, the amount of time required for the excavated areas in the salt marsh to naturally return to their current healthy state could be extensive. The area of the marsh disturbed would be smallest under Alternative 3, considerably greater under Alternative 4, and vastly greater under Alternative 5. The time needed to achieve the remediation goals is the shortest for Alternative 2 and longest for Alternative 5.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

Alternatives 2 and 3 are favorable in that they are readily implementable. Alternative 4 is also implementable, but the volume of soil excavated under this alternative makes it slightly more difficult. Due to the large area of sediments to be removed under Alternative 5, implementation would be very difficult.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

Alternative 2 has low cost, but the contaminated soil would not be addressed other than by institutional controls. Alternatives 3 and 4 both meet threshold criteria but Alternative 4 costs roughly three times as much due to its greater volume of wetlands sediment to be removed, making it less cost-effective. With its exceptionally large volume of soil and sediment to be removed, Alternative 5 would have the highest present work cost by a wide margin.

8. Land Use. When cleanup to pre-disposal conditions is determined to be infeasible, the Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the selection of the soil remedy.

Since the anticipated use of the site is industrial, Alternative 2 would be less desirable because shallow soils with PCB contamination above industrial SCGs would remain on the property. Alternative 3, 4, and 5 would remove contaminated soil permanently. However, the residual contamination would remain with Alternative 3 and 4 and would be controlled by a soil cover which would be inspected annually under a Site Management Plan. With Alternative 5 all contaminated soils and sediments would be removed and restrictions on the site use would not be necessary.

The final criterion, Community Acceptance, is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

9. Community Acceptance. Concerns of the community regarding the investigation, the evaluation of alternatives, and the PRAP are evaluated. A responsiveness summary will be prepared that describes public comments received and the manner in which the Department will address the concerns raised. If the selected remedy differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

Alternative No. 3 is being proposed because, as described above, it satisfies the threshold criteria and provides the best balance of the balancing criterion.

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

R. Baker & Son Machinery Dismantlers, Inc.
State Superfund Project
Staten Island, Richmond County, New York
Site No. 243008

The Proposed Remedial Action Plan (PRAP) for the R. Baker & Son Machinery Dismantlers, Inc. site was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on October 17, 2013. The PRAP outlined the remedial measure proposed for the contaminated soil, sediment, surface water, groundwater at the R. Baker & Son Machinery Dismantlers site.

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on October 23, 2013, which included a presentation of the remedial investigation feasibility study (RI/FS) for the R. Baker & Son Machinery Dismantlers site as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on November 16, 2013.

This responsiveness summary responds to all questions and comments raised during the public comment period. The following are the comments received, with the Department's responses:

The public meeting was attended by only the responsible party and their representatives, and no comments were generated.

Beryl A. Thurman, Executive Director/President of the North Shore Waterfront Conservancy of Staten Island, Inc., submitted an e-mail dated October 17, 2013, which included the following comments:

COMMENT 1: Based on the Fact Sheet the site seems to be abandoned? Or is it being used as a open industrial storage area?

RESPONSE 1: The site continues to be used for equipment storage by R. Baker & Son All Industrial Services.

COMMENT 2: If it is abandoned then has it defaulted to the City of New York and is now City owned property and under which agency's jurisdiction?

RESPONSE 2: Walter Baker is the current owner of the site.

COMMENT 3: I do not recall there being residential homes in direct proximity of this site. So the hazard that this remediation must be mitigating must be in relationship to the tidal wetlands that surround it.

RESPONSE 3: There are no known residences within 1/2 mile of the site. Sediment in the adjacent wetland areas will be addressed by the remedy. A summary of the remediation goals can be found in Section 6.5 of the Record of Decision.

COMMENT 4: Since the property has been contaminated since the early 1970s what was the catalyst that prompted this remediation to finally happen?

RESPONSE 4: Though several limited investigations had been overseen by the Department during the intervening years, it wasn't until August 2009 that the Department was able to reach an agreement with the property owner to conduct a remedial investigation and feasibility study.

COMMENT 5: Once the site is remediated how will it be used in the future?

RESPONSE 5: An environmental easement will be imposed limiting future use of the site to industrial uses, subject to local zoning laws.

COMMENT 6: Lastly is there any way that this project's documents can also be housed at the following public library?

The Port Richmond Public Library, 75 Bennett Street, Staten Island, NY 10302

RESPONSE 6: Document repositories have been established at the Todt Hill-Westerleigh Library in Staten Island and the Science, Industry and Business Library in Manhattan. No additional repositories are envisioned at this time.

Beryl A. Thurman, Executive Director/President of the North Shore Waterfront Conservancy of Staten Island, Inc., submitted a letter dated October 26, 2013, which included the following additional comments:

COMMENT 7: It appears that the immediate concern for this property has to do with the upcoming twinning and raising of the Goethals Bridge and the workers and contractors who would come into contact with this property and its contaminants during this project.

RESPONSE 7: At the current time the Department is unaware of any agreement having been reached for the Port Authority of New York and New Jersey to acquire or develop the site. The

selected remedy allows for future industrial use of the property, subject to local zoning laws. Once the remedy is completed it will be available for reuse, subject to compliance with the Site Management Plan.

COMMENT 8: The secondary concern appears to be the affect of the contaminants (PCBs, dichlorobenzene, chlorobenzene, VOCs) on the environment. It seems to be secondary because this site has been contaminated since the 1970s and no action was taken from that period of time until now to pursue the remediation of this property.

RESPONSE 8: As required, the selected remedy is protective of human health and the environment. Also see Response 3.

COMMENT 9: What the Department is proposing in Alternative 3 is a partial remediation of the site. For the record NSWC does not believe in partial remediations when it comes to wetlands and or waterfront properties.

This is of great concern to NSWC as we have residents that frequently fish for shellfish and fish from the West and North Shores waters and consume their catch as a means of adding affordable protein to their families' diet.

We also don't believe in partial remediation of wetlands because of knowing that even though properties may be assumed to not have direct people contact, Staten Islanders have historically paid no attention to barriers of any kind, nor no trespassing signs. People have and probably will continue to frequent this site and others long after the partial remediation is complete.

Because of these known behaviors we have always sought and advocated for full remediations of contaminated sites in order to prevent any future concerns regarding contamination exposures to residents or the environment that sustains them. This property is no exception to this concern.

Therefore on behalf of Staten Island's Environmental Justice communities, we are requesting the New York State Department of Environmental Conservation and the New York State Department of Health seek to have this site completely remediated by using Alternative 5.

RESPONSE 9: The Department and NYSDOH share the NSWC's preference for remedial measures which restore sites to pre-release conditions. In many cases, such as this one, difficulty with the implementation of such remedies makes them technically impracticable or the extent of the impact to the surrounding area makes them less desirable. The Fish and Wildlife Impact Analysis conducted at the site indicated a healthy tidal salt marsh, with little impact on local biota. The fish and wildlife staff believe that excavation of large areas of the tidal salt marsh would be more destructive to the marsh ecosystem, far outweighing any benefit obtained by the removal of additional residual PCB contamination.

NYSDOH concurs with this remedy and has issued extensive advisories on eating fish from the Arthur Kill and Kill Van Kull, based on PCB and dioxin contamination in finfish; and PCB, dioxin and cadmium contamination in crabs. These advisories can be found at the following web address:

http://www.health.ny.gov/environmental/outdoors/fish/health_advisories/regional/new_york_city.htm

or, alternatively, people may contact the NYSDOH at 518-402-7800 or (toll-free) at 1-800-458-1158 to receive a print copy of the NYSDOH fish advisories. Additionally, Department staff have determined that the residual PCB contamination in the wetlands should not result in any substantive increases in Arthur Kill and Kill Van Kull fish and shellfish PCB levels. However, we recommend that people follow the NYSDOH advisories on eating fish and crabs from these waters.

Access to the site will be restricted and the intended re-use of the site is for industrial use. However, if trespassers enter the site after remediation is complete, exposure to residual contamination is not expected unless they dig below the one foot thick soil cover system. In addition, a site management plan (SMP) will be implemented that addresses future site uses and actions to prevent any potential for future exposures. Part of the SMP will be a soil management plan to address any excavations beneath the site soil cover system in the event that future excavations or construction activities are conducted.

COMMENT 10: In addition in looking at Alternatives 3 through 4 we do not believe that the Annual Cost are reasonable, or reflective of the increases that come about through inflation. And that at some point New York State Department of Environmental Conservation will not be able to appropriately monitor this site and its remaining contaminants along with any changes that are taking place - be they natural or manmade.

RESPONSE 10: The present worth cost estimate in Exhibit C includes the annual costs with their value adjusted for time. However, should monitoring and maintenance costs exceed the current cost estimate over the long term, it would in no way eliminate the obligation for that work to be completed as required in the Site Management Plan.

Donald J. Camerson II of Bressler, Amery, & Ross, the law firm representing Walter Baker, submitted a letter dated November 15, 2013, which included the following comments in their entirety:

COMMENT 11: In Section 3, page 3, the PRAP includes the following descriptions of the Property:

• "The R. Baker and Son Machinery Dismantlers site, also referred to as 250 South Washington Avenue in site reports, is a salvage yard located adjacent and beneath the Goethals Bridge in the northwestern corner of Staten Island."
• "The site has been used as a salvage yard since at least the 1970s."

• "It is believed that the site has been used as a salvage yard ever since it was reclaimed from the surrounding wetlands by filling."

As discussed at the public meeting, the “salvage yard" references do not accurately describe Mr. Baker's use of the property. As described in the March 4, 2008 response to DEC's Request for Information ("RFI Response"), the Property has been used to store construction equipment by various companies, including R. Baker & Son Machinery Dismantlers, Inc., which company no longer exists. From approximately 1967 to 1977, demolition equipment was stored on the Property. For a very limited time prior to 1977, R. Baker & Son Machinery Dismantlers, Inc. purchased obsolete transformers at auction from public and/or private entities including, but not limited to, Con Edison, Port Authority of New York and New Jersey, the New York Transit Authority, Long Island Railroad, General Electric, the United States Navy, PSE&G, Exxon, etc. These purchases of transformers were not frequent or numerous. A few of the transformers purchased from the private and/or public entities at auction may have been taken back to the Property for dismantling. Given the above, the Property is not a salvage yard but rather an industrial property used to store construction equipment.

RESPONSE 11: The text of the ROD has been modified from the PRAP to change the above noted references to the site as a salvage yard to “an industrial property used to store construction equipment”.

COMMENT 12: In Section 3, page 3, in the paragraph titled, "Site Features," the PRAP includes the statement "[t]he site consists of approximately 3 acres of filled-in wetlands." As provided in the RFI Response, the 3 acres of filled-in wetlands were filled pursuant to and with the approval of the applicable state and/or regulatory agencies.

RESPONSE 12: The assertion that the wetlands were filled in with the approval of applicable agencies is noted. However, the statement that the wetlands were filled-in is accurate as written and makes no implication as to whether that action was authorized or unauthorized.

COMMENT 13: On two occasions in Section 5, page 4, the PRAP incorrectly refers to the PRPs as "Walter A. Baker & Son All Industrial Services Inc." The signatories to the August 28, 2009 Consent Order are Walter Baker and R. Baker & Son All Industrial Services, Inc.

RESPONSE 13: The correction has been made in the ROD.

COMMENT 14: In paragraph 3 of Section 7 of the PRAP (entitled *Sediment Excavation)* and in Exhibit B (under the selected Alternative 3), the DEC incorrectly provides "The vertical extent of sediment remediation will consist of the removal of sediment found within the limits of the tidal channels, from the existing surface to the base of the peat layer." This is not an accurate statement of the vertical extent of the excavation and this sentence should be deleted from the above cited paragraph.

RESPONSE 14: The text has been modified to read “The vertical extent of the sediment remediation will be limited to the removal of sediment from the existing surface to the base of the peat layer.”

COMMENT 15: In paragraph 4 of Section 7 of the PRAP (entitled *Soil Cap)* and in Exhibit B (under the selected Alternative 3), the DEC refers to a "soil cover" for use in those areas not covered by structures. As discussed at the Public Meeting, a "soil cover" may be susceptible to, among other things, erosion and runoff into ecological receptors, and may not withstand heavy equipment traffic. As such and as further discussed at the Public Meeting and agreed to by the DEC, the selected remedy should not and will not be limited to the use of "soil cover" but will include the use of other acceptable cover material suitable to an industrial/heavy construction yard such as recycled concrete aggregate, gravel, and the like.

RESPONSE 15: The term “soil cover” refers to a cover for the soil. The material actually used as a cover may or may not be soil. The referenced paragraph does specifically allow for pavement and other structures, which would withstand heavy equipment traffic. Additionally, under 6 NYCRR Part 375-6.7(d)(3) the Department may make site specific exemptions based on site conditions such as the use of the site. Under that provision, the use of materials such as those suggested as cover could be evaluated. Paving would not be acceptable in the upland buffer area, nor would the use of recycled concrete aggregate due to the pH of such material. A vegetated buffer planted in topsoil would have to remain around the portions of the property in contact with tidal marsh, the dimensions of which would have to be determined in the Remedial Design. The determination of the appropriate cover material will be made during the Remedial Design.

COMMENT 16: In paragraph 6 of Section 7 of the PRAP (entitled *Site Management Plan)* and in Exhibit B (under the selected Alternative 3), the DEC refers to the need to address vapor concerns in the Site Management Plan (evaluation) and Monitoring Plan (monitoring). However, vapor intrusion is not a remedial concern at the site based on the concentrations of volatile organic compounds detected in the sampling performed at the site. As such, Baker does not anticipate the need for a Monitoring Plan within the Site Management Plan to be developed for the site.

RESPONSE 16: One of the Remediation Objectives for the site, as defined in Section 6.5, is to mitigate impacts to the public health for existing or potential soil vapor intrusion. Note that in this case the provision for evaluation of the potential for soil vapor intrusion would only come into effect in the event of the development of buildings intended for occupancy on the site.

COMMENT 17: The PRAP provides the following on page 3 of Exhibit A:
• "Contamination is thought to have resulted from sloppy handling of solvents and salvaged electrical equipment containing PCBs."
• "Based on the findings of the Remedial Investigation, the past disposal of hazardous waste has resulted in the contamination of soil."

Baker does not admit and expressly disputes the above statements. To address this comment, either the statements have to be qualified as allegations by the DEC, or a sentence must be added that "Neither Walter Baker nor R. Baker & Son All Industrial Services Inc. admit to the DEC's statements concerning the source or cause of the contract." (It is assumed the writer meant to use the word “contamination” not “contract” in this context.)

RESPONSE 17: The comment is noted.

APPENDIX B

Administrative Record

Administrative Record

R. Baker & Son Machinery Dismantlers, Inc
State Superfund Project
Staten Island, Richmond County} New York
Site No. 243008

1. Proposed Remedial Action Plan for the R. Baker & Son Machinery Dismantlers, Inc site, dated October 2013, prepared by the Department.

2. Order on Consent, Index No. A2-0607-0608, between the Department and R. Baker & Son All Industrial Services. Inc. and Walter Baker, executed on August 27, 2009.

3. "Revised Supplemental Investigation Workplan – 250 South Washington Avenue", December 2009, prepared by Brinkerhoff Environmental Services

4. "Site Investigation Report - 250 South Washington Avenue", November 2010, prepared by Brinkerhoff Environmental Services

5. "Supplemental Remedial Investigation Report - 250 South Washington Avenue", September 2011, prepared by Brinkerhoff Environmental Services

6. "Remedial Site Investigation Report and Supplemental Work Plan" – April 2012, prepared by Brinkerhoff Environmental Services

7. "Remedial Investigation Report - 250 South Washington Avenue", January 2013, prepared by Brinkerhoff Environmental Services

8. "Feasibility Report - 250 South Washington Avenue", August 2013, prepared by Brinkerhoff Environmental Services

9. E-mail dated October 17, 2013 from Beryl A. Thurman of the North Shore Waterfront Conservancy of Staten Island, Inc.

10. Letter dated October 26, 2013 from Beryl A. Thurman of the North Shore Waterfront Conservancy of Staten Island, Inc.

11. Letter dated November 15, 2013 from Donald J. Camerson II of Bressler, Amery, and Ross