



## **Analysis of Brownfields Cleanup Alternatives**

**FORMER PORT-A-POT SITE  
Block 1182, Lots 5, 21  
CAMDEN, NJ 08104**

Prepared by BRS, Inc. for the

New Jersey Economic Development Authority  
36 West State Street  
Trenton, New Jersey

on behalf of

The City of Camden  
520 Market Street  
City Hall  
Camden, New Jersey

December 23, 2022

CONTENTS

1 INTRODUCTION & BACKGROUND..... 1

1.1 Site Description and Previous Uses ..... 1

1.2 Surrounding Land Use ..... 2

1.3 Project Goal (Reuse Plan) ..... 2

1.4 Summary of Environmental Conditions ..... 2

1.5 Physical Setting..... 4

1.6 Exposure Pathways ..... 4

2 APPLICABLE LAWS AND CLEANUP STANDARDS..... 5

3 EVALUATION OF CLEANUP ALTERNATIVES..... 5

3.1 Alternative No. 1 - No Action..... 6

3.1.1 Effectiveness..... 6

3.1.2 Sustainability and Resilience..... 6

3.1.3 Implementability..... 6

3.1.4 Operation and Maintenance..... 6

3.1.5 Institutional Controls ..... 6

3.1.6 Cost..... 6

3.2 Alternative No. 2 – UST Removal with Hot Spot Soil Removal (Northern Portion).... 7

3.2.1 Effectiveness..... 7

3.2.2 Sustainability and Resilience..... 8

3.2.3 Implementability..... 8

3.2.4 Operation and Maintenance..... 8

3.2.5 Institutional Controls ..... 8

3.2.6 Cost..... 9

3.3 Alternative No. 3 – Site-wide Soil Removal (Northern Portion of Park) ..... 9

3.3.1 Effectiveness..... 9

3.3.2 Sustainability and Resilience..... 9

3.3.3 Implementability..... 10

3.3.4 Operation and Maintenance..... 10

3.3.5 Institutional Controls ..... 10

3.3.6 Cost..... 10

3.4 Preferred Alternative..... 10

ATTACHMENTS

- A. Site Location Map
- B. Summary of Public Comments and Responses



## 1 INTRODUCTION & BACKGROUND

The former Port-A-Pot site is located near the Marlton neighborhood at the intersection of River Avenue & Federal Street in Camden, New Jersey. The site consists of approximately 3 acres on Block 1182, Lots 5 and 21 with an address of 1601 Federal Street. The property is owned by the City of Camden.

The New Jersey Economic Development Authority (NJEDA) on behalf of the City of Camden Redevelopment Agency (CRA) has contracted Brownfield Redevelopment Solutions, Inc. (BRS), to prepare this Analysis of Brownfields Cleanup Alternatives (ABCA) in support of EPA grant funding. The purpose of the ABCA is to:

- Identify reasonable brownfields cleanup alternatives considered for addressing the contamination identified at the site;
- Analyze the various factors influencing the selection of a preferred cleanup method, including effectiveness, implementability, costs, and sustainability;
- Select the preferred cleanup method, based on the analyses performed; and
- Provide community outreach and solicit public participation and comment on the remedial selection process prior to the final decision.

The CRA on behalf of the City will promote and facilitate community involvement with the environmental cleanup and site redevelopment project with the activities itemized below.

- The CRA will perform targeted outreach to notify communities of the availability of this ABCA. This includes fulfillment of the New Jersey Department of Environmental Protection (NJDEP) community notification requirements (N.J.A.C. 7:26E-1.4). The CRA will publish a notice of availability of the draft ABCA in the local newspapers with general circulation in the target community.
- The CRA will provide an opportunity for members of the public to comment on the ABCA in a public meeting. Additional details regarding the public notification process will be presented in a *Community Relations Plan* for the site.
- The CRA will prepare written responses to the comments received and document any changes made to the cleanup plans and to the ABCA as a result of the comments.

A Brownfields Cleanup Decision Memo will be prepared at the end of the public comment process, which will describe the cleanup options selected for the site. The ABCA and the Decision Memo will be included with the Administrative Record. The Administrative Record repository is available on the CRA website (<http://camdenredevelopment.org>).

The expected outcome of the site is Restricted Use.

### 1.1 Site Description and Previous Uses

The site is currently an active case with the NJDEP Site Remediation Program (SRP) with Program Interest (PI) No. G000027674 and site address listed as E River Rd & N E Federal



St. The current owner of the site is the City of Camden having acquired the site via tax foreclosure. According to NJDEP case files no Licensed Site Remediation Professional (LSRP) has been retained on this site and the former site investigation activities were conducted using public funds.

In 1906 the site was used as R.F. Smith and Son Lumber & Coal Company to store lumber and boards. At this time, Standard Oil Company was located across River Avenue from the site and adjacent to the coal pile portion of the R.F. Smith and Son Lumber & Coal Company. During this time, the lumberyard also operated on what is now Lots 5 and 20. Lot 20 is an access road from Federal Street that leads to Lot 5 and is not included in this cleanup analysis.

Between 1907 and 1926 the Standard Oil Company began to expand operations onto what is now lot 21. Between 1926 and 1950, lots 5 and 20 were utilized as a contractor storage yard with a machine shop on the central portion of lot 5 and then by a drum storage company (Hollingshead Chemical Corporation) on lots 5 and 20. During this time Standard Oil further expanded their operations on lot 21 with installation of three underground storage tanks along Federal Street and two large tank fields. A drum storage area was noted along the eastern portion of lot 21 belonging to a drum storage company on lots 5 and 20. By 1977 all of Standard Oil's onsite operations ceased and the site was used as a contractor's storage yard, with the exception of a filling station shown on the eastern side of the building of lot 21. Wood pallets were then stored onsite in the late 1990s. The site was abandoned sometime circa 2000.

## 1.2 Surrounding Land Use

The site is located in an area that includes industrial uses and some residential housing within the city of Camden, New Jersey. Federal Street is located to the south, railroad tracks are located to the north, River Avenue is located to the west, with a vacant lot to the east.

## 1.3 Project Goal (Reuse Plan)

The redevelopment activities for the property will include removal of impacted soils and replacement with clean fill material, allowing for restricted future use as commercial/industrial use.

Before any site work can be done, an LSRP will need to be retained for the site.

## 1.4 Summary of Environmental Conditions

A Preliminary Assessment Report (PA) was prepared by Remington & Vernick Engineers (R&V) in March 2001 and a Site Investigation Report (SI) was prepared in February 2003. Ten Areas of Concern (AOCs) were evaluated in the PA and nine AOCs were investigated during the SI.



Table 1. Former Port-A-Pot AOCs

DESIGNATION	AREA OF CONCERN
A1	Above Ground Storage Tanks
B1	Underground Storage Tanks-Small
B2	Underground Storage Tanks-Large
B3	Underground Storage Tank-Heating Oil
C1	Rail Spur Lot 21
C2	Rail Spur Lot 5
D1	Drum Storage Area Lot 5
D2	Drum Storage Area Lot 21
E	Asbestos – not evaluated beyond PA
F	Waste Pile Lot 21

On August 21, 2002, one unregulated 500 gallon heating oil underground storage tank (UST) was excavated and removed from the Former Port-a-Pot Site (AOC-B3). This tank was not previously known and was encountered during SI activities. Soils in the bottom of the excavation appeared impacted by petroleum product as strong odors, staining and elevated field readings were noted. Soil excavation of impacted soils was not performed. The tank excavation was backfilled with certified clean fill. Despite the evidence of a release, the analytical results of the post-excavation sampling indicate that no contamination was present in the UST field. No further action was recommended for AOC-B3.

Three shallow groundwater monitoring wells were installed on Lot 21 only. According to the reports, groundwater is less than 10 feet below grade and is considered influenced by tidal fluctuations given the proximity to the tidal Cooper River and Delaware River.

The results of the SI indicated that several AOCs including groundwater indicate the presence of contamination at the site. Impacts from the aboveground storage tanks (ASTs) were confirmed at AOC-A. Impacts from the USTs were confirmed at AOC-B1 and AOC-B2. Historic fill was attributed to soil exceedances observed at AOCs -C1 and -C2, -D1 and -D2, and AOC-F. A filling station shown on the 1977 Sanborn map has not been assessed to date.

Groundwater contamination at the site was identified with relatively low concentrations of volatile organic compounds, lead and arsenic. The presence of petroleum contamination in site groundwater may pose elevated risks to potential users of the site. A NJDEP internal memorandum in response to the NJDEP review of the PA/SI noted that a Vapor Intrusion Investigation and Receptor Evaluation were required related to groundwater contamination identified at the site.

The next step in the process for this site will involve delineation of impacts to soil and groundwater, followed by remediation of the impacted materials and associated contaminants through installation of engineering and institutional controls and/or the excavation of the impacted fill material, as discussed in the remaining sections of this document.





## 1.5 Physical Setting

The site is flat. The elevation at the subject property is approximately 16 feet above mean sea level, according to the United States Geological Survey (USGS) 2014 Camden, NJ 7.5 Minute topographic quadrangle map. Soils at the subject site are identified as urban land. The parent material for soils at the subject site consist of surface covered by pavement, concrete, buildings and other structures underlain by disturbed and natural soil material.

The site is located within the Coastal Plain physiographic province of New Jersey. The dominant formation in this province is the Potomac Formation, which consists of fine to coarse grained sand, interbedded with white, red or yellow clay. According to NJ-GeoWeb, surficial geology consists of salt-marsh and estuarine deposits, as well as Cape May formation. Surficial geology generally consists of sand, silt, peat clay cobble gravel and pebble gravel.

NJ-GeoWeb identifies the subject property as underlain by the Potomac-Raritan-Magothy aquifer system. Groundwater is expected to be tidally influenced and flow towards the Cooper River.

## 1.6 Exposure Pathways

In order for contaminants from a site to pose a human health or environmental risk, one or more completed exposure pathways must link the contaminant to a receptor (human or ecological). A completed exposure pathway consists of four elements:

- A source and mechanism of substance release;
- A transport medium;
- A point of potential human or ecological contact with the substance (“exposure point”); and
- An “exposure route”, such as dermal contact, ingestion, etc.

Preliminary evaluation indicates the following potentially completed exposure pathways related to the site in its current condition (i.e., pre-remediation):

- **Direct contact with Soil.** Soil might be handled by children, nearby residents, occasional on-site construction workers or trespassers. This exposure pathway will be mitigated immediately by implementation of the proposed cleanup activities, which include excavation and offsite disposal of certain contaminated soils. Residual risk related to this pathway will be eliminated with engineering and institutional controls.
- **Direct contact with surface water.** There is no surface water at the Site.
- **Direct Contact with, or Ingestion of, Groundwater.** According to prior reports, groundwater is less than 10 feet below grade and is considered influenced by tidal fluctuations given the proximity to the tidal Cooper River and Delaware River. Groundwater contamination at the site was identified with relatively low



concentrations of volatile organic compounds, lead and arsenic. There are no current or anticipated future uses of onsite groundwater.

- **Vapor intrusion risk.** Vapor intrusion risk is possible given the area of the observed LNAPL. The NJDEP review of the PA/SI noted that a Vapor Intrusion Investigation and Receptor Evaluation were required related to groundwater contamination identified at the site. Further investigation is required to determine the level of risk and associated mitigation requirements based on the proposed site reuse.

## 2 APPLICABLE LAWS AND CLEANUP STANDARDS

All site remediation to be performed under this grant would be conducted in accordance with the New Jersey Site Remediation Reform Act, N.J.S.A. 58:10C-1 et seq.; the Brownfield and Contaminated Site Remediation Act, N.J.S.A. 58:10B-12 and implementing regulations in the Administrative Requirements for the Remediation of Contaminated Sites, N.J.A.C. 7:26C; and the Technical Requirements for Site Remediation, N.J.A.C. 7:26E. The most current versions of the NJDEP Technical Guidance documents will be referenced, including:

- *Soil SI/RI/RA*
- *Ground Water SI/RI/RA*
- *Capping of Sites Undergoing Remediation*

The reference remediation standards for soil will be NJDEP's published numeric values for NJDEP's Residential Ingestion/Dermal Soil Remedial Standard (RIDSRS), Non-Residential Ingestion/Dermal Soil Remedial Standard (NRIDSRS), Residential Inhalation Soil Remediation Standards (RISRS), Non-Residential Inhalation Soil Remediation Standards (NRISRS), and Migration to Groundwater Soil Remediation Standard (MGWSRS).

The reference remediation standards for groundwater will be the current version of Class II-A Groundwater Quality Criteria (GWQC) published in *Groundwater Quality Standards* (N.J.A.C 7:9C), should future assessment activities indicate the need for groundwater cleanup.

The effective implementation of the applicable laws and guidance will be managed and overseen by an LSRP to be retained for the site. Any Response Action Outcome (RAO, i.e., NFA-equivalent) for the site will be issued by the LSRP. Project reports, RAOs, etc. will be submitted on behalf of the City to the NJDEP, which retains the authority to audit the project and/or review and potentially reject any documents submitted.

## 3 EVALUATION OF CLEANUP ALTERNATIVES

This section identifies various reasonable remediation alternatives that were considered in response to the environmental contamination issues at the site. The following potential remedial alternatives were considered:

- Alternative No. 1) No action



Alternative No. 2) Historic Fill Material Removal with Hot Spot Soil Removal

Alternative No. 3) Site-wide Soil Removal

The following evaluation criteria were considered in comparing the remedial alternatives.

- A. Effectiveness in providing compliance with NJDEP regulations and increased protectiveness to public health and the environment;
- B. Implementability of the considered alternative;
- C. Cost of the considered alternative; and
- D. Sustainability and resilience considerations.

### 3.1 Alternative No. 1 - No Action

If no environmental cleanup remedy were performed at this site:

- The site would remain out of compliance with NJDEP's regulations;
- The intended reuse of the site as open space and commercial/industrial use would not be possible.

#### 3.1.1 Effectiveness

The “no action” alternative is not effective in that it does not provide for compliance with NJDEP regulations and it fails to provide for the beneficial reuse of the site.

#### 3.1.2 Sustainability and Resilience

The “no action” approach would not meet project remediation goals because the contamination would remain in place, untreated, and without a barrier. As such, the “no action” approach would present a continuing risk to the public. Based on this, evaluation of the approach with regards to other sustainability criteria is not relevant.

#### 3.1.3 Implementability

The “no action” alternative is technically feasible, although the presence of untreated soil and groundwater contaminants would not be in compliance with NJDEP regulations.

#### 3.1.4 Operation and Maintenance

Because there is no remedy implemented, there would also be no operation and maintenance requirements at the site.

#### 3.1.5 Institutional Controls

As no action is taking place under this alternative, no institutional controls are proposed.

#### 3.1.6 Cost

There would be no costs associated with this alternative.





### 3.2 Alternative No. 2 – Historic Fill Material Removal with Hot Spot Soil Removal

Prior to performing the remedial action, the City must perform a Remedial Investigation of AOCs related to the AST, USTs, rail spur, drum storage area (AOCs A-D respectively), historic fill, and groundwater. After completion of the Remedial Investigation, remediation of observed soil and groundwater contamination will be necessary. The remedial investigation will delineate the hot spot soil areas and historic fill as well as assess site groundwater, likely impacted from the former bulk petroleum storage and drum recycling activities.

Under this alternative, the remedial action will include remediation of petroleum impacted and other contaminated soils (hot spots) and the removal of the top two feet of soil and replacement with Clean Fill as defined by NJDEP SRP guidance.

This remediation will include soil excavation, emplacement of clean fill, engineering/institutional controls, and recording of a deed notice. A virtual groundwater classification exemption area (CEA) as institutional controls may be conducted under the remediation (to be determined).

The remedy will prevent exposure to shallow site contaminants. Further details of the remediation plan would include:

- Site preparation and clearing.
- Concrete demolition, characterization, crushing, stockpiling and subsequent removal of approximately 1,750 tons of concrete from concrete slabs of former structures.
- Approximately 14,798 tons of contaminated soil will be removed and disposed of off-site.
- Excavated soils will be sampled and characterized in accordance with the requirements of the designated disposal facility. The tasks will also include post-excavation sampling and analysis, and the emplacement of clean backfill (a soil cap).
- Restore site with topsoil and seed.
- In addition, an indefinite duration groundwater Classification Exception Area (CEA) may be established to prohibit groundwater use on the site (to be determined).

Selection of this alternative will result, upon completion of the remediation activities, in restricted future use of the site.

#### 3.2.1 Effectiveness

The Institutional and Engineering Controls approach does not physically remove all site soil and groundwater contaminants. However, this alternative would effectively achieve project remediation goals by:



- Achieving technical and administrative compliance with the NJDEP site remediation regulations.
- Disruption of the pathway of contaminated material to the outside environment. Although the contamination still exists, the cap and CEA will significantly reduce the potential of human exposure.
- Providing notice of site environmental conditions to future site owners, occupants, and the general public by means of the Deed Notice.

### 3.2.2 Sustainability and Resilience

This criterion evaluates the degree to which the remedial alternative may reduce greenhouse gas discharges, reduce energy use, employ alternative energy sources, reduce volume of wastewater to be disposed, reduce volume of materials to be taken to a landfill, and/or allow for the reuse or recycling of materials during cleanup is considered, where applicable.

This alternative limits the excavation of site soil and transport by truck to offsite disposal facilities, thereby reducing the fossil fuel energy use, and associated greenhouse gas discharges associated with that task.

### 3.2.3 Implementability

Removal of impacted soil is a conventional means of addressing this type of contaminant. Cap placement as a type of remedy is a widely used and accepted practice for remediating the remaining fill impacted contaminated soils.

The City and/or its consultant will retain a contractor that is licensed, qualified, and OSHA-certified to perform work on hazardous materials sites. The deed notice and CEA, prepared in accordance with NJDEP guidance and template, are relatively routine administrative submissions.

### 3.2.4 Operation and Maintenance

Operation and Maintenance on the installed soil cap should include the following:

- Routine inspections;
- Vegetation maintenance (grass mowing and weed control); and
- Written O&M Plan that includes a discussion including but, not limited to; soil cover maintenance, reporting, maintenance agreement, a utility plan should future utilities or building be proposed at the Site, and fence maintenance (if applicable).

### 3.2.5 Institutional Controls

This alternative will require the following Institutional Controls:

- A Deed Notice as part of remediation efforts is required because contaminants above the applicable standards are expected to remain below the soil cap. A Deed Notice is



required to document the extent of contamination and the engineering controls and will be issued pursuant to N.J.A.C 7:26E-6.1(B).

- All required NJDEP permits, reporting, and inspection requirements.
- A CEA for groundwater, if deemed to be required upon completion of a groundwater investigation.

### 3.2.6 Cost

The costs for completing remediation under this approach were estimated using the following elements and assumptions:

- 1) Retain environmental engineering firm and LSRP, and LSRP review of previous reporting;
- 2) Project and Grant Management tasks, including public notification;
- 3) Prepare project specifications and bid documents;
- 4) Conduct procurement process;
- 5) Removal of approximately 14,798 tons of impacted soil and 1,750 tons of concrete;
- 6) Procurement and testing of clean fill cap materials;
- 7) Site restoration, including vegetative cover;
- 8) Prepare Soil Remediation Permit;
- 9) Prepare Remedial Action Report and other regulatory reporting requirements;
- 10) Prepare Quality Assurance, and Health and Safety deliverables.

The estimated cost for this cleanup alternative is \$1,997,154.

### 3.3 Alternative No. 3 – Site-wide Soil Removal

Under this alternative, the remedial activities will include removal of contaminated soils to the assumed depth to groundwater, at or around 10 feet below grade. Approximately 73,988 tons of impacted soils will be removed, disposed of off-site and replaced with clean fill. Groundwater encountered during soil removal will be pumped from the excavation cavity to an onsite holding tank for characterization analysis and disposal off-site.

Selection of this alternative is expected to result, upon completion, in unrestricted future use of the site. No engineered cap would be installed, as no contaminated materials would remain on site.

#### 3.3.1 Effectiveness

This alternative would be immediately effective by removal of all contaminated soils. The remedial action should result in unrestricted future use of the site.

#### 3.3.2 Sustainability and Resilience

The site-wide remediation alternative compares unfavorably to Alternative 2 (described in Section 3.2) with regard to sustainability metrics. The approach would result in increased energy use, greenhouse gas emissions, and landfill disposal volume.



This approach compares favorably to Alternatives 1 and 2 in resilience metrics, such as the continuing protectiveness of the remedy in light of reasonably foreseeable changing climate conditions and allows for no restrictions on future land use. This alternative would be ideal in that there would be unrestricted use of the site.

### **3.3.3 Implementability**

This alternative is feasible and implementable. This approach will involve the work elements described in Section 3.2, with the exception of the emplacement of a clean soil cap, deed notice, and CEA. In addition, dewatering may be required and all excavated areas will be backfilled with clean soil.

### **3.3.4 Operation and Maintenance**

This approach, upon successful implementation, would allow for unrestricted use of the site. No ongoing operation and maintenance of remedial systems would be required.

### **3.3.5 Institutional Controls**

This approach, upon successful implementation, would provide for the removal of all contaminated soil from the site. No Deed Notice is required. If a CEA is deemed to be required upon completion of a groundwater investigation, then a groundwater CEA may still be required, as noted under other scenario.

### **3.3.6 Cost**

To implement this strategy, a total of approximately 73,988 tons of soil would be excavated, disposed, and replaced with clean fill. Total project costs for this alternative are estimated at \$7,568,274.

## **3.4 Preferred Alternative**

The preferred alternative is Alternative No. 2 – Historic Fill Material Removal with Hot Spot Soil Removal. Soil excavation is a proven method, environmentally effective and productive for long term, community-wide use. Excavation equipment is readily available. Soil excavation as proposed eliminates direct contact with contaminants and removes the source of any impacted groundwater. Although limited contamination may still exist, the eventual cap and CEA (if determined to be required) will significantly reduce the potential of human exposure. Future site owners, occupants, and the general public will be provided notice of site environmental conditions by means of the Deed Notice.



**Attachment A**  
**Site Location Map**





**Notes:**

- 1) Aerial sourced from Google Earth Pro (8/23/2022)
- 2) Parcels Included: Block 116, Lot 15; Block 1181 Lot 1; Block 1182, Lots 5 & 21; Block 1186, Lot 25
- 3) NJEDA - New Jersey Economic Development Authority

**Legend**

- Action Port a Pot
- Federal Street Parcels

Scale	0    125    250    500		
1:3,000	Feet		
Figure Title	<b>Action Port a Pot</b>		
Client	<b>NJEDA</b>		Figure No.
Address	Federal Street Block 1182 Lots 5, 21 Camden, New Jersey		<b>2</b>
			Print Date 10/31/2022

DRAFT

**ATTACHMENT B**  
**Summary of Public Comments and Responses**