

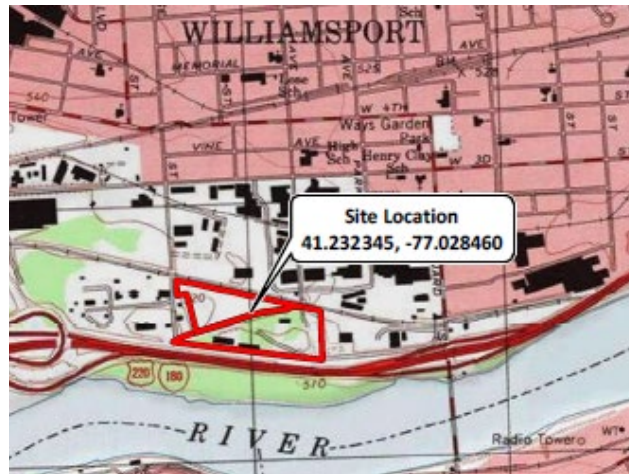


Lycoming County Brownfield Coalition

Analysis of Brownfields Cleanup Alternatives

US Environmental Protection Agency - Brownfields Revolving Loan Fund
Cooperative Agreement No: BF-96360001

DRAFT



**Former Williamsport Landfill
2 Rose Street
Williamsport, Lycoming County, Pennsylvania
eFACTS PF# 846735
eFACTS Activity #60297**

Prepared by BRS, Inc. for the

County of Lycoming
48 West Third Street
Williamsport, Pennsylvania



October 2024

Though this project has been funded wholly or in part, by the United States Environmental Protection Agency (EPA), the contents of this document do not necessarily reflect the views and policies of the EPA.

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1 INTRODUCTION & BACKGROUND

The Site is located at 2 Rose Street in the City of Williamsport, Lycoming County, Pennsylvania (Site). The Site encompasses an areal extent of approximately 28.4 acres and is comprised of two contiguous parcels (Parcel IDs: 66-019-102 and 66-019-200) and is currently unoccupied. The northern parcel is an undeveloped, sparsely wooded, grassy open area, while the southern parcel is a vacant and largely demolished commercial property. The County of Lycoming (County) has made RLF funds available for Williamsport Ballpark, Inc. (WBI) to perform cleanup related-activities on the Site.

The County of Lycoming (County) contracted Brownfield Redevelopment Solutions, Inc. (BRS), to prepare this Analysis of Brownfields Cleanup Alternatives (ABCA) in support of the EPA grant proposal. 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/resiliency;
- 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 County will promote and facilitate community involvement with the environmental cleanup and Site redevelopment project with the activities itemized below.

- The County will perform targeted outreach to notify communities of the availability of this Draft ABCA. This includes fulfillment of the Pennsylvania Department of Environmental Protection community notification requirements of the Land Recycling and Environmental Remediation Standards Act (Act 2). WBI caused to be published the Notification of Intent to Remediate in the local paper on June 21, 2022.
- The County 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 Involvement Plan* to be prepared for the Site.
- The County 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 by WBI. The ABCA and the Decision Memo will be included with the Administrative Record. The Administrative Record repository is located at the offices of The County.

The expected outcome of the project includes an Environmental Covenant and liability protections provided by Pennsylvania's Land Recycling and Environmental Standards Act (Act 2).

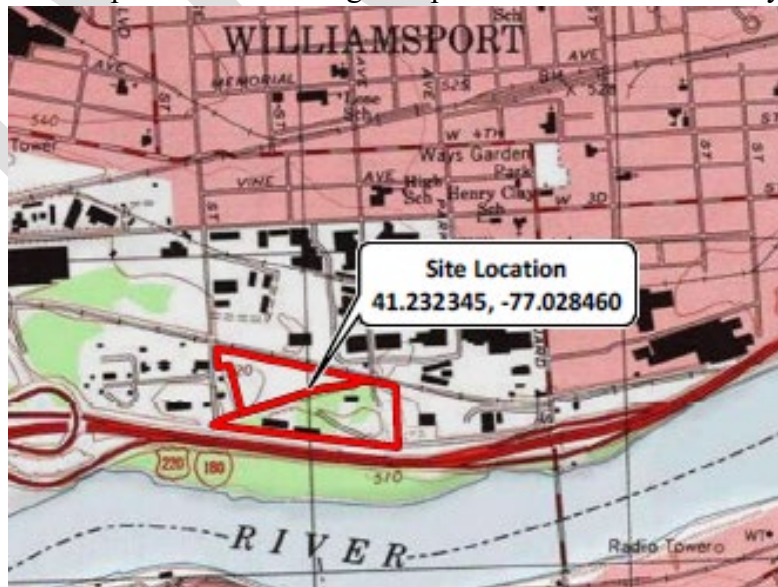
1.1 Site Description and Previous Uses

The Old Williamsport Landfill was utilized for unregulated landfill operations from approximately 1960 to 1978. During its use as a landfill, and for a period of time after, waste oils were used for dust control. After the landfill operations concluded, the site was still used for the minor disposal of tree and roadway wastes through the 1980s, and for the storage of road salt and cinders until the early 2000s. Since that time, the northern portion of the Site, known as the Danneker property has been vacant and is currently vegetated. The southern portion of the Site was utilized by Susquehanna Supply Company, a construction services company specializing in bridge and road construction. Many of the previous property buildings on this parcel have been razed and only concrete slabs and a single building remain on the property.

Wastes that were disposed include: incineration residue, commercial waste, construction and demolition waste, domestic/household waste, industrial waste, park and beach waste, patient care institution waste, septic tank waste, landscaping waste, and hazardous wastes including paint thinner, organic chemicals, and pathological and biological wastes. Previous investigations have confirmed that historic municipal/residual waste exists on the Site. The waste still contains methane; however, the concentrations are relatively low and are being effectively controlled by the existing soil and fill cover material on the Site.

Williamsport Ballpark Inc. (WBI), the property owner and prospective borrower, proposes to redevelop the site into a complex of six turf athletic fields with surrounding outbuildings. WBI acquired the site through direct purchase on December 13, 2019. An Environmental Due Diligence Assessment was completed on November 12, 2019 prior to acquisition. The scope of work proposed for EPA funds will entail site clearing and grading required for the eventual installation of stormwater management systems to manage runoff (e.g., drainage controls to mitigate the threatened release of hazardous substances from landfill waste).

The figure below depicts the two contiguous parcels. The Site boundary is outlined in red.



1.2 Surrounding Land Use

The Site is bordered to the north by the SEDA Council of Governments (SEDACOG) Joint Rail Authority railroad, across from that is the PA College of Technology main campus, and to the south by PA Route 220/ Highway I-180 followed by the Susquehanna River. Active commercial and industrial buildings are located to the west and east.

1.3 Project Goal (Reuse Plan)

The goal of the project is to address contamination in order to facilitate redevelopment for recreational reuse. Work will entail site clearing and grading required for installation of stormwater management systems to manage runoff via drainage controls to limit leaching of contaminants.

This project attained a PA Department of Environmental Protection (DEP) Site-specific Standard for soil impacted by historic landfill operations. The remedial action objective for the Site is to protect human health by eliminating identified exposure pathways with soils impacted by lead, arsenic, benzo(b)fluoranthene, 2,6-dinitrotoluene, hexachloroethane, nitrobenzene, n-nitrosodi-npropylamine, 2-methylnaphthalene, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, and naphthalene, as well as historical waste and landfill gas potentially emanating from the waste. The site-specific standard allows for the use of engineering and institutional controls to eliminate potentially complete pathways by maintaining a three-foot thick layer of the existing soil/fill cover material, and use of impermeable or impervious materials where less than three feet is expected to exist following Site grading and construction activities. Engineered cap components will include asphalt paved areas, concrete areas, building slabs, turf, landscaped areas and other surface features.

1.4 Summary of Environmental Conditions

Many environmental assessment and investigation activities have been undertaken at the Site and surrounding area since 1973. In the late 1960s, the City of Williamsport began the process of permitting the landfill with the Pennsylvania Department of Environmental Resources (PA DER), which is now recognized as the Pennsylvania Department of Environmental Protection (PA DEP), in order to bring the landfill into compliance with Pennsylvania Solid Waste Regulations. The permit for the landfill was eventually denied. On October 5, 1971, the landfill was expanded on the northern portion of the Site. The landfill was further expanded west to Rose Street on October 24, 1972. The landfill, at this point, would encompass the entire northern area of the Site and portions of the southern area.

The first investigation on the northern portion of the Site, occurred in September 1998 and was conducted by the Environmental Protection Agency (EPA). This report identified low levels of organic and inorganic contaminants at the landfill but that they were “a hazard to human health”. In 2005, a Phase II ESA was performed to assess historical landfill operations conducted at the northern property and the use of waste oils for dust control. Landfill materials were encountered from 2 to 36 feet below ground surface. Phase II results

confirmed impacts to both soil and groundwater by historical landfill activities with contamination concentrations exceeding State Act 2 Statewide Health Standards (SHS) Medium Specific Concentrations (MSCs), and that fill materials were generating landfill gas. In 2016, a Phase I ESA was conducted at the northern property. Phase I results concluded that Recognized Environmental Conditions (RECs) existed for the historical landfill activities. A vapor intrusion investigation was also recommended for any proposed inhabitable structures.

On January 8, 1997, four underground storage tanks (USTs) were closed on the southern portion of the Site. The USTs included a 4,000-gallon unleaded gasoline UST, a 6,000-gallon diesel fuel UST, a 3,000-gallon diesel fuel (off-road) UST, and a 6,000-gallon UST previously containing on-road diesel. It was noted during the removal that possible soil and groundwater impacts were noticed. The closure report apparently indicated samples contained “high levels” of naphthalene but did not indicate actual concentrations or whether these samples were of soil or groundwater. On April 28, 1999, PA DEP indicated in a letter that a tank closure report adequately demonstrated attainment of Act 2 SSS, that no further action for the cleanup was required, and granted SSC liability protection for soil and groundwater impacts associated with the historical UST operation.

In 2019, Environmental Due Diligence Assessment (Phase I ESA) and Hazardous Material Survey were completed for WPI. The hazardous materials survey identified limited areas of Asbestos Containing Materials (ACM) and Lead-based Paint (LBP) contained in the former landfill. The assessment concluded that there was a potential for encountering impacted media during redevelopment activities. It was recommended that a waste management plan be developed to maintain worker safety and appropriately manage wastes generated during construction activities.

The 2024 Act 2 Remedial Investigation Report/Cleanup Plan (BAI Group, August 2024) notes that the depth to waste encountered in the borings varies across the Site from as little as 1-foot bgs along the southern portion of the Site to as much as 18 feet bgs in the western portion of the Site. The minimum depth to the bottom of the waste was 4.5 feet, and the maximum depth to the bottom of waste (where borings were able to be advanced to the bottom of the waste mass) was 37 feet bgs. Drill cutting recovery from within the sampled waste was generally poor. Types of wastes encountered consisted of plastic and paper debris, cloth, metal fragments, wire, black cinders and ash, glass, electrical ceramics, rubber, wood/mulch debris, and construction/demolition debris (plastic foam, carpet, plaster, brick, vinyl sheeting, concrete).

1.5 Physical Setting

The Site is located within the Susquehanna Lowland Section of the Ridge and Valley Province, which consists of low to moderately high, linear ridges and valleys. The primary bedrock found beneath the Site are the white to medium-gray sandstones of the Old Port Formation. The Old Port Formation is approximately 100 feet thick. Medium-dark to dark gray shales of the Onondaga and Marcellus formations are also found on portions of the property.

The Site is located within the flood plain of the West Branch of the Susquehanna River, which lies approximately 650 feet south of the southern property boundary. The Site has relatively low relief due to the historic placement of fill and waste on the Site, but topography is gently sloping to the south through much of the Site and moderately sloping to the west along the western boundary of the Site. No surface water bodies are present on the Site¹.

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):

1. **Direct contact with Soil.** Soil might be handled, inhaled or ingested by occasional on-Site construction workers or trespassers. This exposure pathway will be mitigated by implementation of the proposed cleanup activities, which includes site grading and eventual capping of contaminated soils. Residual risk related to this pathway will be eliminated with engineering and institutional controls.
2. **Direct Contact with, or Ingestion of, Groundwater.** Although there are no current or anticipated future uses of on-Site groundwater, an institutional control will be implemented to prevent future groundwater use. This exposure pathway will be mitigated by implementation of the proposed cleanup activities, which includes site clearing and grading required for installation of stormwater management systems to manage runoff via drainage controls to limit leaching of contaminants.
3. **Direct Contact with Surface Water.** Although there are no surface waters on-Site, an engineering control will be implemented to prevent future impacts to nearby surface waters from the unlined landfill. This exposure pathway will be mitigated by implementation of the proposed cleanup activities, which includes site clearing and grading required for installation of stormwater management systems to manage runoff via drainage controls to limit contact with capped contaminated soil and landfill refuse material.
4. **Inhalation of Volatile Organic Compounds due to Vapor Intrusion.** Though the groundwater beneath the Site is not grossly impacted by volatile organic

¹ Act 2 Remedial Investigation Report/Cleanup Plan, BAI Group, August 2024.

compounds, the landfill refuse material is currently generating landfill gas. The potential exists for compounds to volatilize from the groundwater, travel through the soil column, and enter structures on Site. Although the existing data indicates that the vapor intrusion pathway is incomplete, vapor mitigation measures will be used on occupied structures on the Site as a proactive measure due to the unknown and heterogeneous nature of the soil and waste materials underlying the Site to ensure that the vapor intrusion pathway remains incomplete for the proposed future use of the Site.

2 APPLICABLE LAWS AND CLEANUP STANDARDS

All Site remediation to be performed under this grant would be conducted in accordance with Pennsylvania's Land Recycling and Environmental Standards Act (Act 2) and the corresponding regulations codified in Title 25 of the Pennsylvania Code, Chapter 250 (25 Pa Code Ch. 250), and Pennsylvania Statutes Title 25 P.S. Health and Safety, Paragraph 6026.304 as implemented by the Pennsylvania Department of Environmental Protection (PADEP), including PADEP Technical Guidance Manual (TGM) 261-0300-101, January 2019.

The reference remediation standards for soil will be PADEP's published numeric values for residential medium specific concentrations (MSCs), including residential direct contact MSC and the soil-to groundwater MSC, and PADEP Statewide Health Standards (SHS).

The effective implementation of the applicable laws and guidance will be managed and overseen by a Pennsylvania-licensed Professional Geologist or Professional Engineer, to be retained for the Site by WBI. Project reports, Final reports, etc. will be submitted on behalf of WBI to the PADEP, which retains the authority to audit the project and/or review and potentially reject any documents submitted under §250.411 and Section II of the Land Recycling Program TGD.

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) Removal of Soil and Enactment of Engineering and Institutional Controls
- Alternative No. 2) Removal of all impacted media.
- Alternative No. 3) No action.

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

- A. Effectiveness in providing compliance with Act 2 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 - Removal of Soil/Landfill Waste and Enactment of Engineering and Institutional Controls

A combination of excavation and offsite disposal and use of engineering and institutional controls are proposed for soils. Under this alternative, the work will include site clearing and grading required for installation of stormwater management systems to manage runoff via drainage controls to limit leaching of contaminants.

Future phases of construction for the redevelopment of the site into a complex of turf athletic fields and surrounding outbuildings will include completion of an engineered cap over the existing soil/fill cover material, and use of impermeable or impervious capping materials where less than three feet is expected to exist following Site grading and construction activities. Engineered cap components will include asphalt paved areas, concrete areas, building slabs, turf, landscaped areas and other surface features. Upon completion of the redevelopment, a deed notice for restriction of soils use will be recorded as Institutional Controls.

This combination of remedies will prevent exposure to residual Site contaminants. Further details of the remediation plan would include:

- Development of a waste management plan to maintain worker safety and appropriately manage wastes generated during construction activities.
- Installation of erosion control measures including 5,180 linear feet of 12-inch silt socks and 16,820 square yards of erosion control blanket on slopes with seed.
- Removal of former concrete structures and crush on-site for use as subbase.
- Site clearing and grading to prepare site for Phase 2 redevelopment activities including stormwater management systems and capping.
- Excavation and disposal of approximately 13,400 cubic yards of impacted soil and landfill waste.
- Following disposal characterization of soil and landfill waste, transportation and disposal of soils at a licensed/permitted disposal facility.
- The ongoing protectiveness of engineering controls installed during Phase 2 of the redevelopment will be ensured by development of, and adherence to, an Operation and Maintenance Plan. Ongoing operation and maintenance of the cap will be performed.

- The Institutional Controls will consist of a deed notice attached to the deed in perpetuity. The deed notice will provide notice of the contaminants and the concentrations that were left in place, and controlled by the Cap.

Selection of this alternative will result, upon completion of all redevelopment phases, in restricted future use of the Site.

3.1.1 Effectiveness

Although some residual contamination may still exist, institutional and engineering controls would effectively achieve project remediation goals by:

- Removing shallow waste materials from the Site;
- Achieving technical and administrative compliance with Act 2 regulations;
- Disruption of the pathway of contaminated material to the outside environment. Although the contamination still exists, the engineered cap will significantly reduce the potential for human exposure.
- Provide notice of Site environmental conditions to future Site owners, occupants, and the general public by means of the Deed Notice.

3.1.2 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 excavation and truck transportation of contaminated media to shallow depths, thereby reducing the fossil fuel energy use, and associated greenhouse gas discharges associated with that task.

In 1972 Hurricane Agnes hit the region causing significant flooding and devastation in the area. With climate change conditions forecasted for the area, including increased temperatures and precipitation, the likelihood of extreme weather events such as Hurricane Agnes (e.g., storms of unusual intensity, increased frequency and intensity of localized flooding events) also increases. Changing flood zones and higher groundwater tables may impact the effectiveness of this alternative, as increased flooding of a site could compromise an engineered cap.

3.1.3 Implementability

Site drainage, soil excavation and cap placement is easily and rapidly implementable because it involves relatively simple technology and equipment. This type of remedy is a widely used and readily accepted approach for remediating and encapsulating contaminated materials. WBI 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, prepared in accordance with PADEP guidance, are relatively routine administrative submissions.

3.1.4 Operation and Maintenance

Operation and Maintenance on any installed impervious cap should include the following:

- Routine inspections of cap and drainage controls
- Vegetation maintenance (grass mowing and weed control)
- 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).

3.1.5 Institutional Controls

This alternative will require the following Institutional Controls:

- A Deed Notice is required because contaminant concentrations above the residential medium specific concentrations (MSCs), including residential direct contact MSC and the soil-to groundwater MSC are expected to remain below the engineered cap. A Deed Notice is required to document the extent of contamination and the engineering controls and will be issued pursuant to ACT 2 requirements.
- All required PADEP permits, reporting, and inspection requirements.

3.1.6 Cost

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

- 1) Site preparation including
 - a) bid document generation,
 - b) a survey of areas to be excavated.
- 2) Project and Grant Management tasks, including public notification;
- 3) Conduct procurement process;
- 4) Prepare Health and Safety deliverables,
- 5) Soil erosion sand sediment controls, and
- 6) Demolition and chipping of the former concrete structures.
- 7) Excavation and disposal of 13,400 cubic yards of contaminated soil and landfill waste;
- 8) Site clearing and grading to facilitate stormwater drainage elements.

The estimated cost for this cleanup alternative is approximately \$874,217.00. The USEPA cleanup grant loan would be \$670,000, the match to be provided by WBI is \$160,000, and the balance will be in the form of leveraged funding provided by WBI

3.2 Alternative No. 2 - Removal of Impacted Soil and Landfill Waste Sitewide

Under this alternative, the remedial action will consist of removal of all contaminated soil and landfill waste down to native materials, estimated to be at a maximum depth of 37 feet in places across the site, and replacement with clean soil fill. 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. No Institutional Controls would be needed as removal of impacted soil is expected to remediate soil and groundwater.

3.2.1 Effectiveness

This alternative would be immediately effective by removal of the potential continuing contaminant sources associated with the presence of impacted soil and landfill waste. The remedial action should result in unrestricted use of all areas of the Site.

3.2.2 Sustainability and Resilience

This approach would result in increased energy use, greenhouse gas emissions, and landfill disposal volume. However, this remedy fares favorably to Alternatives 1 and 3 in resilience metrics, such as the continuing protectiveness of the remedy in light of reasonably foreseeable changing climate conditions such as intense storms and increased flooding.

3.2.3 Implementability

This alternative is feasible and could be implemented. This approach will involve the work elements described in Section 3.1, with the exception of the emplacement of a cap and deed notice, plus additional volumes of excavated soil and landfill waste and clean backfill. Pile sheeting and sloping of excavations would be required to excavate to native soils, at depths up to 37 feet bgs, across the 28+ acre site.

3.2.4 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.

3.2.5 Institutional Controls

This approach, upon successful implementation, would provide for the removal of all contaminated soil from the Site. No Deed Notice is required.

3.2.6 Cost

To implement this strategy, all contaminated soil and landfill waste would be excavated, disposed, and replaced with clean fill. Total project costs for this alternative are estimated at \$401,393,096.

3.3 Alternative No. 3 - No Action

If no environmental cleanup remedy were performed at this Site:

- The Site will need to maintain a three-foot-thick layer of the existing soil/fill cover material (some areas do not currently meet this requirement);
- Stormwater will remain uncontrolled; and
- The potential for exposure to contaminated soil and water by human and ecological receptors would remain.

3.3.1 Effectiveness

The “no action” alternative is not effective in that it does not provide for compliance with Act 2 regulations and it fails to provide for the beneficial reuse of the Site.

3.3.2 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.

3.3.3 Implementability

The “no action” alternative is technically feasible, although the presence of untreated soil, landfill waste and groundwater contaminants would not be in compliance with Act 2 regulations.

3.3.4 Operation and Maintenance

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

3.3.5 Institutional Controls

Because there is no remedy implemented, there would be not institutional controls at the Site.

3.3.6 Cost

There are no costs associated with this remedial alternative.

3.4 Preferred Alternative

The preferred alternative is Alternative No. 1 – “Removal of Soil/Landfill Waste and Enactment of Engineering and Institutional Controls”. Soil and landfill waste excavation is a proven method, easily and quickly implementable, environmentally effective, and cost-effective. Excavation equipment is readily available. Soil and landfill waste excavation, drainage controls, and emplacement of a cap is accepted by the PADEP as a remedy for unpermitted and unregulated landfills. This remedy can be readily completed within the timeframe of the USEPA Brownfields funding.

Attachment A
Site Location Map



Attachment B
Summary of Public Comments and Responses

