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ANALYSIS OF BROWNFIELD CLEANUP ALTERNATIVES

SPA ROAD PROPERTY
932 AND 937 SPA ROAD
ANNAPOLIS, MARYLAND

Draft

by
Haley & Aldrich, Inc.
Annapolis, Maryland

for
Resilience Authority of Annapolis and Anne Arundel County
Annapolis, Maryland

File No. 0214141-000
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January 7, 2026
File No. 0214141-000

Resilience Authority of Annapolis and Anne Arundel County
44 Calvert Street
Annapolis, Maryland 21401

Attention: Gabe Cohee

Subject: Analysis of Brownfield Cleanup Activities
Spa Road Property
932 and 937 Spa Road
Annapolis, Maryland 21401

Dear Mr. Cohee:

Haley & Aldrich, Inc. (Haley & Aldrich) is pleased to provide the Resilience Authority of Annapolis and Anne Arundel County (RA) with this Analysis of Brownfield Cleanup Alternatives (ABCA) to assess remedial alternatives for the future of the property located at 932 and 937 Spa Road, in Annapolis, Maryland (herein referred to as the "Site").

The objective of this ABCA will assist in the determination of feasible remedial alternatives and compliance actions to be implemented at this Brownfields site to ensure remedial activities properly meet regulatory requirements, reduce risk to human health and the environment, and incorporate public input as part of the Site's request for public funding.

Sincerely yours,
Haley & Aldrich, Inc.

Daniel Hoadley, CHMM
Principal Consultant

Introduction and Background

The RA is applying for a 2026 EPA Brownfields Cleanup grant in the amount of $4,000,000 to support the remediation and redevelopment of the Department of Public Works property located at 932 and 937 Spa Road, in Annapolis, Maryland. The RA has applied to the Maryland Department of the Environment's (MDE's) Voluntary Cleanup Program; the EPA's Brownfield Assessment Grant Implementation (grant implementation) operates under the EPA Office of Brownfields and Land Revitalization Funding Opportunity Number: EPA-I-OLEM-OBLR-25-07.

The property consists of two parcels (358 and 62) located west of Spa Road (932 Spa Road) comprising approximately 3.86-acres and Lot 1 of Parcel 859 located east of Spa Road (937 Spa Road) comprising 2.595-acres, totaling approximately 6.455 acres, as shown on "Vicinity Map", Figure 1. The RA wishes to redevelop the Site for future mixed-use comprising residential and commercial purposes, with multi-family apartment buildings west of Spa Road and City offices to the east of Spa Road.

The City of Annapolis commissioned Haley & Aldrich to conduct a Phase I Environmental Site Assessment (ESA) of the Site to assess potential recognized environmental conditions (RECs) associated with the property. Findings of the Phase I ESA indicated that historic site uses as a former landfill and incinerator facility, in addition to current and historical subject property operations with the potential for petroleum contamination exists in the subsurface of the Site. Subsequently, Haley & Aldrich completed a Phase II ESA at the Site and confirmed that evidence of landfilling and select petroleum constituents, Polynuclear Aromatic Hydrocarbons (PAHs), and metal-impacted soils at elevated concentrations greater than residential screening levels, and metal-impacted and select-VOC impacts to groundwater at elevated concentrations exist below the site greater than Type I and II Standards.

Based on the site's documented contamination, Haley & Aldrich has prepared this Analysis of Brownfield Cleanup Alternatives (ABCA) on behalf of the RA to assess potential remedial action alternatives (RAA) for the Site, and to apply for an EPA Cleanup Grant in 2026 to assist with funding for the selected remedial action objective (RAO). The general Site location, previous Site uses and background, findings, goals and objectives for the Site, regional and Site vulnerabilities, applicable regulations and cleanup standards, and the details of cleanup alternatives are detailed below.

SITE LOCATION

The Site is currently owned by the City of Annapolis, ownership of the property will be transferred in the future to the RA. The Site is located at 932 and 937 Spa Road in the City of Annapolis, Maryland (Figures 1 and 2). The Site comprises two parcels west of Spa Road (Parcel ID #06-000-90257239 and #06-000-090091503), and one parcel (Lot 1) east of Spa Road (Parcel ID #06-000-01407408) totaling approximately 6.455 acres. The western portion of the Site (932 Spa Road) currently consists of a three-bay automotive garage for Department of Public Works vehicle maintenance, a salt storage dome, office trailers, and a storage yard for DPW materials. The eastern portion of the Site (937 Spa Road) currently consists of the City of Annapolis fueling station, paved parking area, and storage yard for the DPW.

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PREVIOUS SITE USES

The Site is the former location of the Spa Creek Landfill. According to User-provided information, the southwestern corner of the eastern Site parcel was used as a landfill from at least the mid-1910s until 1934. In 1934, an incinerator facility was constructed in the vicinity of the former landfill and was in operation until 1949. The eastern portion of the Site was previously occupied by a maintenance garage, which operated from circa 1980 and included below-grade hydraulic lifts and USTs on the Site until approximately 2018, when the buildings were demolished.

The former Spa Creek Landfill appears on the Maryland Land Restoration Program (LRP) online database as located in the southwestern portion of the parcel east of Spa Road (935 Spa Road) which is now designated at the address of 937 Spa Road, and is suspected as being in the vicinity of the former incinerator and ash disposal area; however, the precise footprint of the former landfill is unknown.

PREVIOUS SITE INVESTIGATIONS

2023 Phase I ESA

Haley & Aldrich completed a Phase I Environmental Site Assessment (ESA). The Phase I ESA was completed in conformance with the scope and limitations of the ASTM International (ASTM) E1527-21 Standard Practice for Environmental Site Assessments.

The following RECs for the Site were noted in the 2023 Phase I ESA:

REC #1: Former Landfill and Incinerator Facility with On-Site Disposal

The Site was previously the location of the Spa Creek Landfill, which included historical dumping on the Site prior to 1934. The incinerator is identified in the MDE LRP database. According to MDE records, the landfill was located on the southwestern portion of the eastern half of the Site. No additional information was provided in the environmental database or in the MDE online records reviewed. An incinerator facility was constructed on the eastern portion of the Site in 1934 and operated until approximately 1949. The ash material from incinerator operations generated at the facility was used as fill material during the construction of the easterly adjoining Weems Whalen Athletic Field, which was completed in 1954.

Previous reports for the Site include subsurface soil investigations, with a specific focus on the athletic field area. The area of the former landfill did not appear to be investigated in previous reports. Analytical results from the soil investigations indicated exceedances of MDE's Residential Soil Cleanup Standards (RCS). Potential impacts from airborne ash generated from incinerator operations were not investigated in previous reports. Because impacts to the soil exceed the RCS, the former use of the Site as a landfill and incinerator facility represented a REC.

REC #2: Historical and Current Site Operations

Current and former use of the Site by the DPW includes automotive maintenance with below-grade hydraulic lifts, former underground storage tanks (USTs), a fueling station with two active USTs, subsurface stormwater structures, including two oil-water separators, and storage yards.

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Oil Control Program (OCP) Cases are associated with the Site and include spills and releases from the former USTs. The eastern portion of the Site was previously occupied by a maintenance garage, which operated from circa 1980 until 2018, and included below-grade hydraulic lifts and USTs. There is no information indicating the below-grade hydraulic lifts were properly closed. The USTs are reported as either removed or closed-in-place in the environmental database report. Former automotive maintenance garages (currently unused) are located on the western portion of the Site.

Current USTs on the eastern portion of the Site were installed over 35 years ago and the conditions of the current USTs are unknown. Spills, releases, and OCP Cases have been reported for the Site indicating releases to the property; however, the location and cleanup status of these releases is unknown and there is a potential for the spills to have impacted soil, groundwater, and soil vapor through direct contact or by entering into subsurface stormwater structures located on the eastern and western portions of the Site. Additionally, the integrity of these subsurface stormwater structures is unknown. Two storage yards are located on the Site, one in the eastern portion and one in the western portion. At the time of the Phase I ESA Site visit, the storage yards were observed with piles of used tires, scrap metal, appliances, masonry, and empty 55-gallon drums labeled “engine oil.” In addition, anecdotal information provided by Site personnel indicates historical dumping in the ravine along the western boundary of the Site.

Previous investigations at the Site report that the concentration of total petroleum hydrocarbons diesel-range organics (TPH-DRO) detected in one soil sample was greater than the MDE RCS. Because the closure status and integrity of below-grade structures previously containing petroleum products is unknown and there have been confirmed spills and releases on the Site with chemicals of concern related to petroleum products, the historical and current Site operations were considered a REC.

2024 Phase II ESA

During October and November 2024, Haley & Aldrich conducted a Phase II ESA to confirm the presence or absence of contamination in the soil, groundwater, and sediment at the Site and in the surface waters of the southern-adjoining Spa Creek associated with recognized environmental conditions (RECs) identified in the Phase I Environmental Site Assessment investigation of the Site.

- Haley & Aldrich collected soil samples using a track-mounted Geoprobe drill rig to advance samples to depths ranging from 20-to-35 feet below ground surface (bgs). Observed fill material consisting of sandy-gravels, clayey sands, and sandy-clays containing fragments of brick, glass, wood, concrete, rubber, plastic, and ash and native deposits (consisting of clayey sands and lean clays) were encountered. Soil samples were submitted for laboratory analysis based on specific constituents of concern in relation to the area of sample collection, including but not limited to VOCs, SVOCs, Metals, PAHS, PCBS, DRO, GRO, Herbicides and Pesticides, and Dioxins/Furans.
- Groundwater samples were additionally collected from 13 monitoring wells and were submitted for laboratory analysis of VOCs, SVOCs, Metals, PCBs, and PAHS

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- In addition to the on-Site investigation, off site sampling of sediment and surface water along the southerly adjoining Spa Creek was conducted. Sediment samples were analyzed for the pH, Metals, SVOCs, PCBs, and TOC. Surface water samples were analyzed for Metals, VOCs, SVOCs, and TOC.

Soil sampling in the vicinity of the historical landfill and incinerator contained exceedances of RCS for select metals and two semi-volatile organic compounds (SVOCs). The western portion of the Site (932 Spa Road) contained exceedances of RCS for select metals and five SVOCs. The vicinity of the current and former USTs and below-grade lift areas contained exceedances of RCS for total petroleum hydrocarbons (TPH-DRO/GRO) and two VOCs.

Results from groundwater sampling yielded exceedances of the MDE Type I and Type II Standard for select metals in total concentrations and manganese in dissolved concentrations. Both sediment and surface water samples contained exceedances of Ecological Screening Levels for metals and SVOCs.

PROJECT GOAL

The project goal is to create spaces the community can enjoy, which may include residential, municipal offices, and recreational facilities. The current plan is to redevelop the remaining areas of the Site for residential purposes, a corner park, a playground, and the installation of new stormwater features to prevent excessive runoff and pollutants to Spa Creek. Improvements to the Spa Creek Trail will also be implemented with the development of new trail connections. The plan will help to link communities within Annapolis, become a catalyst for enhancing property values, and spur re-investment into the community. The plan would also allow for enhanced stormwater management for Spa Creek (a tributary of the Chesapeake Bay) through redevelopment and elimination of the salt dome on the Site.

Haley & Aldrich prepared this ABCA as an objective to achieve the project goal in accordance with the requirements of the EPA's Brownfield Cleanup Grants program. The regional and Site vulnerabilities, applicable regulatory requirements, and evaluation of cleanup alternatives are summarized in the following sections.

Regional and Site Vulnerabilities

Regional vulnerabilities might include hydrologic downgradient receptors. The Spa Creek is situated along the southern property boundary, which is a tributary of the Severn River and drains into the Chesapeake Bay. Under current Site conditions, the presence of contamination beneath the Site may impact groundwater that infiltrates into Spa Creek, ecological receptors within the creek, and/or human receptors with shallow residential wells that exist hydrologically downgradient of the Site. Based on current data, it is unknown if this pathway from the Site to downgradient receptors exists under current Site conditions. A screening level ecological risk assessment (SLERA) will be complete as part of the VCP remedial action plan (RAP).

Site vulnerabilities might include current Site users, future construction workers (during redevelopment) and future building occupants/patrons of the future residential and commercial buildings.

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PROJECT'S RESILIENCE TO EXTREME WEATHER

Based on EPA grant funding requirements, the EPA requires a discussion of whether the preferred brownfield cleanup alternative could be impacted by changing climate and/or extreme weather events.

Forecasted climate conditions according to the US Global Change Research Program (USGCRP), climate trends for the Mid-Atlantic region of the United States include increased temperatures, increased precipitation with greater variability, increased extreme precipitation events, and rises in sea level. Some of these factors, most specifically increased precipitation that may affect flood waters and sea level rise, are most applicable to the cleanup of the site.

According to FEMA Flood Zone Map 24003C0232F, the Site is located within Zone AE (100-year floodplain) of the Spa Creek in addition to Zone X (see Attachment B), where minimal flooding is expected. However, greater storm frequency and intensity in a changing climate may result in more frequent and more powerful flood waters within the Spa Creek, which is a tributary of the Severn River of the Chesapeake Bay, which may result in changes to the flood zone and increased risk of flooding of the Site.

Stormwater discharge on the site drains into catch basins which relinquish into a sewer lift station, however, under current site conditions, increased precipitation and extreme weather could result in additional stormwater runoff and potential erosion to the Site from the mostly impermeable areas that overlay historical locations of landfilling and fly ash burial.

Based on the nature of the Site and its proposed reuse, changing temperature, rising sea levels, wildfires, changing dates of ground thaw/freezing, changing ecological zone, saltwater intrusion and changing groundwater table are not likely to significantly affect the Site.

Applicable Regulations and Cleanup Standards

Haley & Aldrich, Inc. will provide environmental guidance to the RA and work with the Maryland Department of the Environment to oversee cleanup and redevelopment of the Site.

CLEANUP OVERSIGHT RESPONSIBILITY

The cleanup will be overseen by the MDE VCP. The VCP will require the implementation of an approved RAP prior to issuing a Certificate of Completion (COC).

CLEANUP STANDARDS FOR MAJOR CONTAMINANTS

The RA anticipates that cleanup criteria for on-site contaminants will need to meet thresholds set by the MDE Generic Cleanup Standards which define concentration limits for hazardous substances in soil and groundwater under VCP oversight. Specifically, the Site will need to meet the most conservative criteria established for the MDE's Residential Cleanup Standard (RCS), as the Site will contain future residential use.

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LAWS & REGULATIONS APPLICABLE TO THE CLEANUP

Laws and regulations that are applicable to this cleanup include the Brownfields Revitalization Act, and State environmental law. Specifically, The Maryland Department of the Environment Voluntary Cleanup Program is governed under Code of Maryland Regulations (COMAR) Title 26, Subtitle 14, Chapter 03 (COMAR 26.14.03).

Evaluation of Cleanup Alternatives

Haley & Aldrich assessed various Site-specific characteristics when evaluating feasible remedial alternatives for the Site. The characteristics reviewed generally include Site geologic and hydrogeologic characteristics (subsurface conditions), remedial alternatives feasible for subsurface conditions, and remedial alternative criteria (i.e., risk reduction, implementability, and cost (including climate change considerations); see "Summary of Alternative Comparison", Table 1).

To address contamination at the Site, several alternatives are being considered including select soil excavation and off-site disposal, mass soil excavation and off-site disposal, capping, and implementation of vapor barriers beneath future site buildings.

The remedial action objectives and alternatives considered are detailed below.

REMEDIAL ALTERNATIVES CONSIDERED

The remedial action objectives (RAOs) for the Site include:

- RAO 1 - Reduce the risk of exposing hydrological downgradient receptors such as ecological receptors at Spa Creek and human receptors that might be exposed through water supply wells;
- RAO 2 - Reduce the potential risk of exposure to construction workers during redevelopment of the Site;
- RAO 3 – Reduce the potential risk to future residents and commercial occupants of City office building; and
- RAO 4 - Reduce the risk of vapor intrusion exposure from COCs in soil and/groundwater.

The remedial action alternatives (RAAs) that will be assessed to achieve the RAO are detailed below.

RAA-1: No Action

Alternative RAA-1 requires no additional remedial assessments or alternatives; and therefore, the Site will remain under current conditions.

RAA-2: Select Soil Excavation and Disposal, Capping, and Vapor Barrier Installation

Alternative RAA-2 will consist of sitewide remedial efforts to address documented environmental concerns on the subject property. Such remedial efforts consist of development and implementation of

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a soil management plan, select soil excavation and off-site disposal of contaminated soil, placement of capping media atop non-buildable portions of the site to protect against human exposure and stormwater infiltration, and the placement of a vapor barrier beneath all future buildings. A detailed approach for each remedial step is listed below.

- *Soil Management Plan (SMP)*

The RA will implement a Soil Management Plan (SMP) to serve as a guidance document to mitigate exposure risks to contaminated media, detail proper disturbance countermeasures (i.e. dust suppression), outline transportation and disposal requirements, and provide the facility management with contact information for the Site's environmental consultant and agency representatives from the MDE.

- *Soil Excavation*

The RA will conduct remedial excavations of contaminated soils in select areas where contaminant concentrations exceed applicable cleanup criteria located beneath the proposed building footprints is proposed. The excavated soil will be transported to an off-site 'Subtitle D' disposal facility. Under this approach, Haley & Aldrich anticipates that the excavation volume beneath the buildings will approximate 17,750 tons. Following remedial excavations, the RA's environmental consultant will collect post-excavation confirmation samples from the base and sidewalls of the excavation to confirm the remaining in-situ soils beneath the buildings are below MDE residential criteria.

- *Capping*

In non-buildable portions of the Site where construction of structures are not proposed, and therefore will consist of recreational and/or landscaped areas, and paved asphalt parking and/or drive lanes, soil removal is not necessary and the RAA2 cleanup plan will include the placement of an environmental cap. Capping media will consist of an approximate 2-foot-thick layer of certified clean soil placed atop a geotextile marker fabric designed for recreational and landscaped areas; for asphalt parking and drive lanes, the capping detail will consist of a 4-inch-thick layer of paved asphalt atop a gravel subbase. Implementation of the environmental capping media will reduce contamination pathways to human exposure and minimize stormwater infiltration into landfilled/buried media and therefore reduce contaminate loading into the groundwater and Spa Creek.

- *Vapor barrier beneath all future occupied buildings*

To address potential vapor intrusion concerns associated with subsurface contamination, a vapor barrier system will be installed beneath proposed building footprints. The vapor barrier will be designed and installed to prevent the migration of vapors into future structures. The vapor mitigation system will be integrated with building foundations as part of redevelopment construction. The vapor barrier must be placed in accordance with applicable manufacturer specifications. To reduce the risk of vapor intrusion, a sub-slab depressurization system (SSDS) will be installed with a network of piping placed beneath the foundation which extends onto rooftop vents to provide a vapor pathway outside of the building.

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RAA-3: Full Site Excavation and Disposal

Alternative RAA-3 includes the RA contracting an earthwork subcontractor to excavate the areas described in RAA-2 and excavate to deeper depths in addition to other areas where previously identified impacted soil and landfilled material were documented. During excavation, the RA's selected subcontractor will transport the excavated material to an appropriate disposal facility. Following remedial excavations, the RA's environmental consultant will collect post-excavation confirmation samples from the base and sidewalls of the excavation to confirm the remaining in-situ soils are below MDE residential criteria. After excavation is complete, the subcontractor will then backfill the excavated area with imported backfill to the approximate surrounding ground surface elevation until redevelopment of the Site occurs.

Based on RAA-3, Haley & Aldrich anticipates excavation up to approximately 33,680 tons of material for disposal to a 'Subtitle D' landfill, and another 135,000 tons for disposal to a municipal landfill for use as daily cover.

EVALUATION OF RAAS

Haley & Aldrich evaluated the RAAs based on the following criteria: effectiveness of risk reduction, implementability of the remedial action, and associated costs with implementing the remedy. These criteria are detailed below.

Effectiveness of Risk Reduction

RAA-1: No action will result in the omission of remedial actions and therefore a quantifiable risk reduction cannot be calculated.

RAA-2: The remedial approach considered within RAA-2 will remove the areas of greatest health risk to potential human and ecological receptors, however this approach will allow for potentially impacted medial and landfilling waste to remain on Site beneath a capping and/or vapor barrier detail. However, documented impacts have shown contaminated media are mainly situated amongst surficial and shallow sub-surface soils (0 to 3-feet below surface) with minimal impacts detected deeper. The targeted depths of excavation for this remedial alternative with be advanced to remove the impacted surficial and shallow sub-surface soils. Additionally, pre-characterization of soils would be completed in areas of deep excavation and collection of post-excavation confirmation samples from the base and sidewalls of the excavation will be collected from below proposed building locations. The Proper handling of waste generated would be followed under the SMP, with protections implemented with respect to site worker safety. Additionally, the capping detail will greatly reduce risk to potential receptors but will allow a potential vapor pathway should the capping detail be compromised or damaged. In such cases, human health would be protected via vapor barriers installed beneath all site buildings, thus reducing risk.

RAA-3: The remedial approach under RAA-3 will include mass excavation and disposal of impacted soil and buried landfill materials below the eternity of the proposed building footprints and non-buildable areas. Mass excavation is an effective remedial alternative for removing potential health risks from the

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Site and potential risks to downgradient receptors. This is because the RAA-3 option removes both the soil with the greatest concentrations of contaminants, and material that is below screening levels but potentially pose as soil to vapor pathway risk during redevelopment. This method will entirely remove health risks to potential receptors. Given this, it should be noted again that the primary source of on-site impacted soil and materials exist within surface and shallow sub-surface soils which would be targeted within the scope of RAA-2.

Implementability

Haley & Aldrich concluded that each RAA is implementable. We selected that RAA-1 as the most implementable following RAA-2 and RAA-3, respectively. RAA-1 is implementable because it is a "no action" alternative. RAA-2 is implementable but requires multiple remediation efforts to remediate the site of COC concentrations that exceed screening levels. RAA-3 is implementable but requires a greater amount of remedial effort and due to the volume of soil required for disposal. Therefore, RAA-3 is the least implementable because of the complex remedial effort.

Cost

Cost breakdown for each RAA activity is as follows

RAA-1: There are no cost associated with this remedial alternative.

RAA-2: Based upon the cost detail below, in order to implement RAA-2 an approximate **$2,253,385** is required.

- *Soil Excavation and Disposal:* Soil T&D to 'Subtitle D' Landfill (17,750 tons x $80.00 per ton = $1,420,000);
- *Installation of Vapor Barrier:* Vapor Barrier (32 rolls x $550 per roll = $17,600);
- *Capping:* Geotextile marker fabric for capping detail (40 rolls x $1,054 per roll = $42,160); Placement of 2-foot clean soil cap (11,164 tons x $20 per ton = $223,280); Removal of existing asphalt cover (2,682 tons x $14 per ton = $37,548); Removal of Asphalt subbase (1,341 tons x $17 per ton = $22,797); Asphalt cap (49,000 sqft x $10 per sqft = $490,000).

RAA-3: Based upon the cost detail below, in order to implement RAA-3, at the most conservative estimate for soil volume removal, an approximate **$10,104,167** is required.

- *Soil Excavation and Disposal:* Soil T&D to 'Subtitle D' Landfill (33,680 tons x $80.00 per ton = $2,694,444); Soil T&D to a landfill (134,722 tons x $55.00 per ton = $7,409,722).

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Public Participation

The RAAs listed in this ABCA will be available to the public for comments and the comments will be addressed during the selection of the feasible RAA. Haley & Aldrich will include this ABCA in the RA's EPA grant application, which will be available for public review and comment during January 2026.

Recommended Cleanup Alternative

RAA-1 was excluded as the preferred cleanup alternative. As the Site contains documented risks to human and downgradient receptors. The COCs in the subsurface to pose a risk to current onsite uses. Since the Site will be redeveloped, it is likely that the subsurface soil will require reworking (installation of building foundations, excavation for sub-surface parking garages, etc.), which will likely cause disturbance of the soils impacted by the COCs which might promote the mobility of the contaminants below the Site; therefore, increasing the potential risk for receptors. Based on this, RAA-1, "no action", is not the preferred cleanup alternative.

RAA-3, "Full site excavation and disposal", was excluded as the preferred cleanup alternative. This remedial alternative would require a volume of soil that is not feasible to be removed in a timely manner with respect to the construction timeframe, in addition to the expenditure of unnecessary funds which would far exceed the amount requested in the Cleanup Grant.

RAA-2, "Select soil excavation and disposal, capping, and vapor barrier installation", is the preferred cleanup alternative. This remedial approach was selected because it is the most feasible option to reduce risk to potential receptors by removing soil containing COCs greater than the MDE residential screening levels beneath the future proposed buildings and implementing a capping detail atop all other land areas to prevent future exposure to COCs. Additionally, the potential for vapor intrusion into future buildings will be further mitigated with the installation of a sub-slab vapor barrier beneath all on Site buildings. Although a complete removal of soil as stated in RAA-3 would entirely remove the potential for COCs to impact risk receptors, by implementing the above-mentioned engineering controls to remove vapor pathway intrusion and contact with soils containing COCs, identical risk protection would be met without the excessive associated costs with removing the volume of soil stipulated in RAA-3. Based on this, RAA-3 "Full Site excavation and disposal", is not the preferred cleanup alternative. RAA-2, "Select soil excavation and disposal, capping, and vapor barrier installation" is the preferred cleanup alternative.

Limitations

Haley & Aldrich prepared this ABCA in accordance with our 3 June 2024 service agreement and in accordance with the Port's EPA Brownfield Community-Wide Assessment Grant Implementation (EPA Cooperative Agreement Number BF-02J49301-0). Haley & Aldrich also prepared this report in accordance with generally accepted professional consulting services. The findings, opinions, conclusions, and information contained in this report are limited to, and solely based upon, information reasonable

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ascertainable by Haley & Aldrich at the time the ABCA was prepared. This report is solely for the use and information of the client and any reliance on this report by a third party is the sole risk of the third party

Sincerely yours,
HALEY & ALDRICH, INC.

Sarah Sieloff
Program Manager

Daniel L. Hoadley, CHMM
Principal

Attachments:
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https://haleyaldrich.sharepoint.com/sites/CityofAnnapolis/Shared Documents/0214141.Annapolis EPA Cleanup Grant/ABCA/2026-0107_SpaRoadABCA_draft.docx

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