Technical Assistance Services *for* Communities
BoRit Asbestos Superfund Site
Proposed Remedial Action Plan Review
December 2016

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Task Order No.: 18
Technical Directive No.: 1.2 R3 BoRit

BoRit Proposed Remedial Action Plan Review

A. INTRODUCTION

The BoRit Community Advisory Group (CAG) asked the Technical Assistance Services for Communities (TASC) program to review, summarize and comment on the United States Environmental Protection Agency's (EPA's) Proposed Remedial Action Plan (Proposed Plan), for the BoRit Superfund site. Section B discusses the Proposed Plan, its relationship to the Superfund process and how to make comments. Section C is a summary of the Proposed Plan. Section D contains TASC's technical comments.

A previous TASC report summarizes and comments on the BoRit Feasibility Study (FS). It includes a summary of reviews by two asbestos remediation professionals with experience cleaning up asbestos-contaminated sites. Both professionals supported a cap-in-place cleanup methodology, such as EPA's preferred alternative of capping (covering) waste, contaminated soil and reservoir sediment with clean material, and putting operation and maintenance (O&M) requirements and institutional controls (ICs) in place. The reviewers emphasized the importance of robust long-term site maintenance and monitoring to make sure asbestos-containing material (ACM) remains covered.

Institutional Controls (ICs)

Administrative and legal controls that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy.

TASC's review of the FS is online at http://www.boritcag.org/pdf/TASC TO10 R3 TD1 1rev1_BoRit FS Review_05_06_16.pdf. EPA's response to TASC comments on the FS is online at http://www.boritcag.org/pdf/TASC%20Responses.pdf.

B. THE SUPERFUND PROCESS

Superfund is the common name for the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The program's name refers to the "super fund" of money that was set aside to clean up hazardous waste sites when it was established in 1980.

Figure 1 shows the Superfund process. It begins with a preliminary assessment and site inspection (PA/SI) and continues to the National Priorities List (NPL) listing process. The remedial investigation and feasibility study (RI/FS) stage determines the nature and extent of contamination at a site and evaluates treatment technologies. EPA then selects a remedy for sites in a decision document called a Record of Decision (ROD).

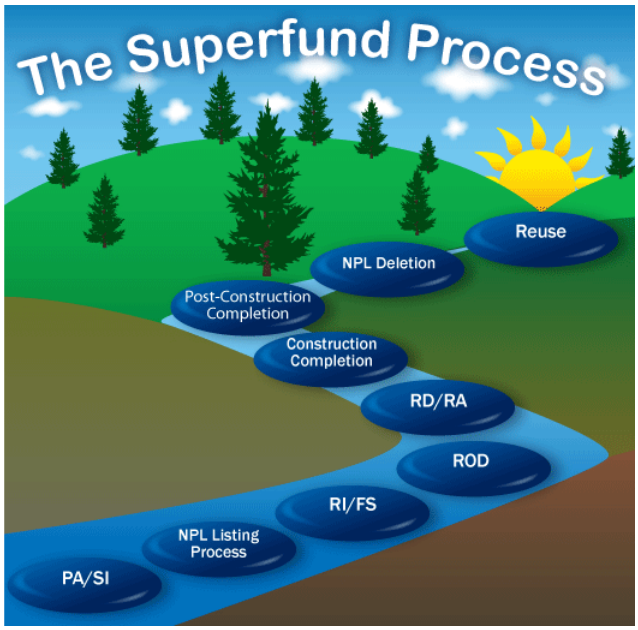

Figure 1. The Superfund Process

Leading up to the ROD, EPA selects a preferred remedy and presents this remedy in a document called the Proposed Plan. Public comments are solicited on the Proposed Plan before the ROD is completed. EPA, in consultation with the Pennsylvania Department of Environmental Protection (PADEP), will select a final remedy. After the ROD, detailed cleanup plans are developed and implemented during the remedial design/remedial action (RD/RA) stage. A site is considered construction complete when the cleanup is in place. Post-construction completion stages often include monitoring of the cleanup.

If contamination is left on the site, EPA requires Five-Year Reviews to make sure the remedy remains protective of human health and the environment. EPA may delete a site from the NPL if it determines that no further response is required to protect human health and the environment. Deleted sites are still subject to Five-Year Reviews if remaining contamination levels prevent unrestricted use and unlimited exposure.

How to Comment on the Proposed Plan

EPA is taking public comments on the Proposed Plan until February 1, 2017. EPA is holding a public meeting to discuss the Proposed Plan on January 10, 2017 at 6:00 p.m. at Ambler Borough Hall. Written

To Send Comments on the Proposed Plan to EPA

Mail to:
U.S. EPA Region III
1650 Arch Street (Mailcode 3HS21)
Philadelphia, PA 19103
Attn: Jill Lowe, Remedial Project Manager
(postmarked by February 1, 2017)

Or

Email to:
R3_Boritcomments@epa.gov

comments can be mailed or emailed to EPA. If you have questions about the Proposed Plan comment process, please call or email EPA Community Involvement Coordinator (CIC) Gina Soscia by phone at (215) 814-5538 or by email at soscia.gina@epa.gov.

You can read the Proposed Plan online at https://semspub.epa.gov/src/document/03/2238056 or in person at Wissahickon Valley Library's Ambler Branch, which is located at 209 Race Street in Ambler.

C. PREFERRED PLAN SUMMARY

Introduction

This section explains that EPA's preferred cleanup alternative identified in the Proposed Plan is capping of waste, contaminated soil and reservoir sediment with clean material, and putting O&M requirements and ICs in place. EPA has spent about $25.2 million on cap construction as part of an ongoing removal action at the site. Finalizing the remedial action is anticipated to cost an additional $1.6 million.

EPA Removal Actions

Immediate, short-term responses to protect people from immediate threats posed by hazardous waste sites.

Public Participation

This section describes the purpose of the Proposed Plan and encourages public review and comment. See the text box on page 2 for ways to share your comments with EPA.

Site Background

This section describes the site's location and history, EPA's removal action activities, and public participation prior to the Proposed Plan.

The site includes three adjacent parcels near the intersection of West Maple Street and Butler Pike in Ambler.

- The Park parcel in Whitpain Township – an 11-acre former asbestos disposal area (now the closed Whitpain Wissahickon Park).
- The Asbestos Pile parcel in Ambler – a 6-acre area containing a 3-acre asbestos waste pile in the middle of the property.
- The Reservoir parcel, primarily located in Upper Dublin Township – a 15-acre area containing a reservoir. The reservoir is manmade. It is not used for drinking water supplies.

The site also includes portions of three creeks (Wissahickon Creek, Rose Valley Creek and Tannery Run). The creeks flow next to the three parcels.

Currently, all three parcels have either undergone or are currently undergoing an EPA removal action to cover ACM. These removal action activities have become part of the Proposed Plan.

- All stream banks that border ACM waste disposal areas have been armored. A portion of Tannery Run has been routed through a pipe to prevent further erosion from creek flow.
- Asbestos Pile parcel slopes have been cut back to a stable 3 horizontal to 1 vertical gradient.
- Asbestos Pile and Reservoir parcel berms have been covered with geotextile (a type of plastic fabric), a minimum of 2 feet of clean material and about 6 inches of topsoil to support a vegetative cover.
- Some waste on the Park parcel has been consolidated into two waste cells on the south end of the Park parcel and covered with geotextile, a minimum 2 feet of clean material and about 6 inches of topsoil to support a vegetative cover.
- Other areas of the Park parcel will also be covered with geotextile, 2 feet of clean material and about 6 inches of topsoil. These areas will then be hydroseeded.

Temporary chain-link fences have been extended along the West Maple Street side of the Asbestos Pile parcel and the Reservoir parcel as part of the removal action.

Site Characteristics

This section describes key site characteristics, including topography and drainage, site geology and hydrogeology, reservoir hydraulics, the Temple University floodplain study, and the nature and extent of contamination.

Topography and Drainage

Elevations in the vicinity of the site vary from about 220 feet at the Asbestos Pile parcel to about 170 feet in Wissahickon Creek. Although significant regrading has occurred on site since 2009 due to EPA's removal action activities, the relative topography has not changed significantly. The Asbestos Pile remains the highest point of land on site. The creeks are the lowest.

Site Geology and Hydrogeology

Site geology consists of loose materials, including historical fill and native soil, and overlying bedrock. The historical fill consists of placed soil (not native) containing mixtures of silt, sand, and gravel with minimal clay in some areas and occasional debris (concrete and brick). Historical fill was not present in the Asbestos Pile itself, although it was detected in the northern part of the parcel at the toe of the Asbestos Pile next to Tannery Run. The waste consists of ACM mixed in some locations with sand and silt. In some locations, layers of fill are found inter-layered with waste. The depth to native soil ranges from 1.5 feet to 36 feet below ground surface. Where bedrock was encountered, the depth to bedrock ranges between 14 and 29 feet below ground surface. Depth to bedrock beneath the Reservoir and Asbestos Pile is unknown.

Groundwater in the shallow bedrock flows from northeast to southwest across the Park parcel, which suggests discharge to Wissahickon Creek.

Reservoir Hydraulics

EPA conducted several investigations to better understand the hydraulics of the Reservoir. The U.S. Army Corps of Engineers studied the response of water levels to storm events. It found that all significant water level increases seemed to be directly correlated with rainfall. In July 2014, a temperature study at the Reservoir looked at whether there are locations within the Reservoir where groundwater inflow may be occurring. Results were inconclusive. The only known inflow to the Reservoir, other than rainfall, is a stormwater pipeline that runs along West Maple Street and discharges into the Reservoir. The pipeline transmitted little flow to the Reservoir. Whitpain Township has since plugged the pipeline.

Temple University Floodplain Study

The Federal Emergency Management Agency (FEMA) identifies geographic areas prone to flood risks or flood hazard zones. Temple University's Center for Sustainable Communities (CSC) recently prepared a draft Stormwater Management Plan for urban watersheds in southeastern Pennsylvania. It presents the results of watershed studies conducted to update 1996 FEMA flood hazard zones at the site, and specifically the 100-year and 500-year floodplains. CSC's floodplain maps delineate the 100-year flood zone as an area surrounding the three creeks – Wissahickon Creek, Rose Valley Creek and Tannery Run – that run adjacent to and intersect the site. The northern area of the Asbestos Pile parcel extends into the 100-year floodplain.

Nature and Extent of Contamination

The Proposed Plan summarizes key findings of the site's RI and post-RI activities. Most samples collected as part of RI and post-RI field efforts were collected prior to, or were not directly impacted by, ongoing removal action work. Therefore, the results summarized in the Proposed Plan represent pre-removal conditions or unremediated conditions.

The RI determined that asbestos is the primary source of environmental concern at the site. Other contaminants detected in the ACM waste based on pre-removal conditions include volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides and metals.

Scope and Role of Response Action

This section states that EPA's preferred cleanup alternative, as presented in the Proposed Plan, addresses waste and soil at the Asbestos Pile and Park parcels and sediment in the Reservoir at the site. The Proposed Plan will be the final cleanup action for the site. Asbestos is the principal threat to human health and the environment. EPA's preferred alternative will physically contain the asbestos to prevent off-site migration and exposure to human and animals. Figure 2 (from Figure 6 of the Proposed Plan) highlights the four remediation zones – the Stream Banks, the

Park Remediation Zone, the Asbestos Pile Remediation Zone and the Reservoir Remediation Zone (Berm and Bottom subzones).

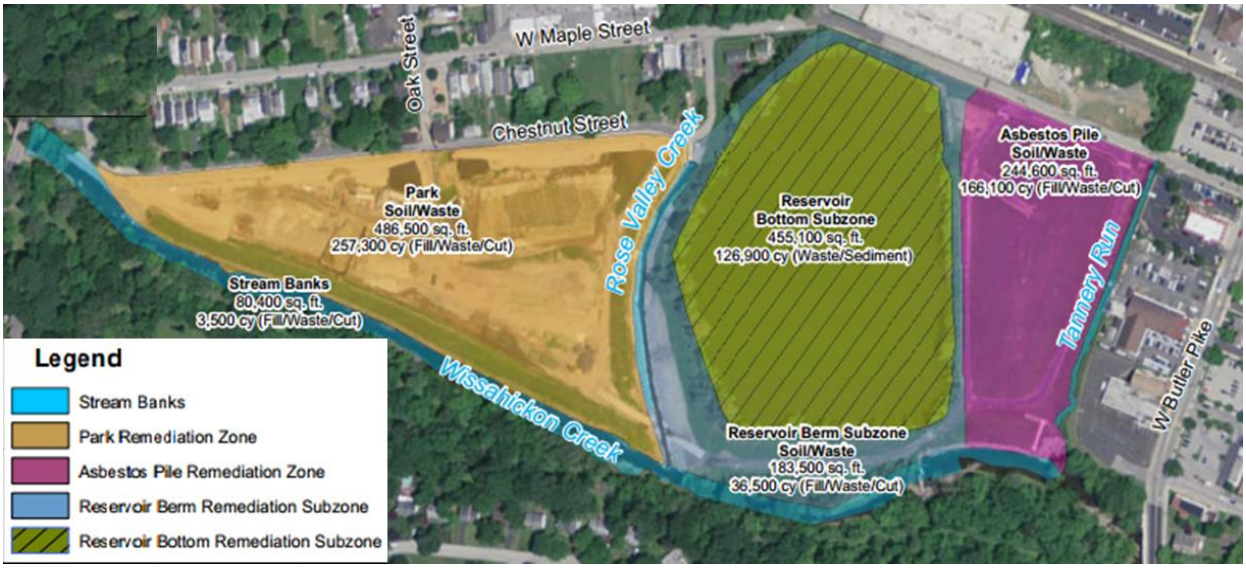

Figure 2. BoRit Superfund Site Remediation Zones

Summary of Site Risks

This section explains that site risks are evaluated in a human health risk assessment and a screening-level ecological assessment.

<u>Human Health Risk Assessment</u>
A Superfund human health risk assessment is an estimate of the likelihood of health problems occurring if no cleanup action is taken at a site. EPA uses a four-step process to estimate baseline risk:

Step 1: Analyze Contamination
Step 2: Estimate Exposure
Step 3: Assess Potential Health Dangers
Step 4: Characterize Site Risk

The site's human health risk assessment concluded that risk based on asbestos in air during soil disturbance activities for the Asbestos Pile and Park parcels exceeded a cancer risk of 1 in 10,000 for maintenance workers. EPA also concluded that cancer risks from asbestos in air are within the acceptable target risk range of 1 in a million to 1 in 10,000 for all other exposure areas and receptors. Other receptors are on-site recreational visitors, commercial workers, off-site residents and recreational visitors.

There are several other chemicals at the site that are above levels that may have adverse human health effects. Polycyclic aromatic hydrocarbons (PAHs) in Wissahickon Creek could affect the health of people swimming in the creek. PAHs, pesticides, polychlorinated biphenyls (PCBs) and metals in Wissahickon Creek sediment could affect the health of people exposed to contaminated sediment during swimming or fishing. The Proposed Plan indicates that these chemicals are not

likely to be site related. The PAHs and pesticides were found upstream of the site in similar concentrations. Only one PCB sample, near former electrical transformers, exceeded EPA's screening level.

VOCs, SVOCs and metals (arsenic and chromium) in shallow groundwater pose an unacceptable risk to a future resident who could use the shallow groundwater for drinking. However, no action is planned for groundwater at the site. This is because:

Upgradient

A term indicating how groundwater flows; like upstream for surface water

1. The VOCs listed (carbon tetrachloride, chloroform, trichloroethene and tetrachloroethene) were detected at lower concentrations than in an upgradient monitoring well.
2. Only one SVOC – bis(2-ethylhexyl)phthalate – was detected above its screening level in some monitoring wells, and only in the first round of sampling.
3. Manganese (a metal) was detected above its risk-based cleanup level in filtered samples in only two monitoring wells, indicating there is no manganese plume in the groundwater. The risk-based cleanup level for manganese is not enforceable because it is a secondary drinking water contaminant based on taste, color and odor. Manganese also does not appear to be related to historical activities at the site.

Screening-Level Ecological Risk Assessment

EPA conducted a screening-level ecological risk assessment based on pre-removal conditions to evaluate the potential for ecological risks from asbestos and chemicals present in the study area at the site. No listed or sensitive environments or threatened or endangered animals or plants of concern were found on site. The Pennsylvania Fish and Boat Commission reported that the a threatened species, the red-bellied turtle, is known to live nearby and may inhabit site aquatic environments. However, no red-bellied turtles were observed during the habitat evaluation.

The assessment's results indicated that several chemicals and asbestos detected in site media (soil, sediment and surface water) are at levels that may cause adverse effects to ecological receptors. Most risks were related to direct exposure to contaminants. Risks from dietary exposure were limited.

Site-related Contaminants of Concern (COCs)

The Proposed Plan identifies asbestos in waste/soil as a COC for human health protection. It identifies asbestos, bis(2-ethylhexyl)phthalate, dioxins and furans, chromium, nickel, and zinc in waste/soil and asbestos, and carbon disulfide in Reservoir sediment, as COCs for ecological protection.

Basis for Action

EPA has determined that active measures that address asbestos in contaminated soil/waste, Reservoir sediment and air across the entire site are necessary to protect public health, welfare and the environment based on the results of the human health risk assessment and the screening-level ecological risk assessment. Active measures are not proposed for Reservoir surface water, Reservoir seep water, creek surface water, creek sediment or groundwater.

Remedial Action Objectives

Remedial action objectives for waste/soil are:

- Protection of human health by minimize the inhalation of asbestos associated with waste/soil disturbances, such that related cancer risks from airborne asbestos fibers are within or below EPA's acceptable cancer risk range of 1 in a million to 1 in 10,000.
- Protection of the environment by preventing direct contact (i.e., inhalation, incidental ingestion and dermal absorption) by animals to contaminated waste and soil containing ecological COC concentrations exceeding the respective preliminary remediation goals. Ecological COCs are asbestos, bis(2-ethyhexyl)phthalate, dioxins and furans, chromium, nickel, and zinc.

Remedial action objectives for Reservoir sediment are:

- Protection of the environment by preventing direct exposure of animals to contaminated sediment containing concentrations of carbon disulfide exceeding the ecological screening level of 4.1 micrograms per kilogram.
- Protection of the environment by minimizing migration of asbestos from sediment to surface water to prevent surface water concentrations of asbestos exceeding the surface water screening level of 0.0001 million fibers per liter.

Summary of Remedial Alternatives

This section presents the cleanup alternatives considered. Superfund law requires that the following criteria must be considered when developing and evaluating remedial alternatives.

- The alternative must protect human health and the environment and meet the requirements of environmental regulations, known as Applicable and/or Relevant and Appropriate Requirements (ARARs).
- Remedial actions that involve treatment that permanently and significantly reduces toxicity, mobility, and volume of the hazardous substances are preferred over remedial actions not involving such treatment.
- Emphasis is also placed on treating the wastes at a site, whenever possible, and on assessing innovative technologies to clean up contaminants.

EPA's preferred alternative presented in the Proposed Plan does not use treatment of principal threat wastes as a principal element of the remedy. This is primarily because the volume of asbestos waste/soil and complexity of site conditions make treatment impracticable.

EPA screened seven remedial alternatives:

1. Alternative WSS1 – No Action
2. Alternative WSS2 – Capping
3. Alternative WSS3 – Excavation and Off-Site Disposal
4. Alternative WSS4 – In Situ Joule Heating (heating with electrodes)
5. Alternative WSS5 – Excavation, On-Site Ex Situ (removed or not in place) Plasma Arc Furnace and On-Site Disposal
6. Alternative WSS6 – Excavation, On-Site Ex Situ Thermo-Chemical Conversion Treatment (TCCT) and On-Site Disposal
7. Alternative WSS7 – Excavation, Off-Site Ex Situ TCCT and Off-Site Disposal

The first five listed alternatives were retained for further evaluation. Alternative WSS2 Capping is EPA's preferred alternative.

Evaluation of Alternatives

EPA evaluates each of the five retained alternatives using these nine evaluation criteria:

Threshold Criteria (must be met for alternative to be acceptable)

1. Overall protection of human health and the environment
2. Compliance with ARARs

Balancing Criteria (used to compare alternatives; no balancing criterion is given priority)

3. Long-term effectiveness and permanence
4. Reduction of toxicity, mobility or volume through treatment
5. Short-term effectiveness
6. Implementability
7. Cost

Modifying Criteria (to be considered after comments on the Proposed Plan are received)

8. State (support agency) acceptance
9. Community acceptance

Table 1 (from Table 6 of the Proposed Plan) summarizes EPA's evaluation of alternatives for the first seven criteria.

Table 1. Summary of Detailed Analysis of Retained Alternatives

Alternative	1. Overall Protection	2. ARARs	3. Long-term Effectiveness	4. Reduction of Toxicity, Mobility, Volume	5. Short-term Effectiveness	6. Implementability	7. Cost (million $)
WSS1	No	No	0	0	0	5	0.165
WSS2	Yes	Yes	4	0	4	4	27.1
WSS3	Yes	Yes	5	0	2	2	269
WSS4	Yes	Yes	4	4	3	1	257
WSS5	Yes	Yes	5	5	2	1	267

Note: Balancing criteria were given a score of 0 to 5 to indicate how well the alternative met each criterion. The scores are not quantitative and are not added together for an overall score.

Green and Sustainable Remediation Assessment

EPA also evaluated the alternatives for sustainability. Results from this assessment indicated that EPA's preferred alternative will have the least overall impact on the triple bottom line (i.e., economic, social and environmental concerns).

Preferred Alternative

This section presents EPA's preferred alternative. The Commonwealth of Pennsylvania tentatively supports EPA's preferred alternative. EPA will seek formal State concurrence after EPA and the State consider comments received on the Proposed Plan. The preferred alternative can change in response to comments or if new information becomes available before the final cleanup action is selected in the site's ROD.

The Proposed Plan states that Alternative WSS2, the preferred alternative, will eliminate exposure to source materials by eliminating the exposure pathway associated with disturbance of the source materials. The alternative focuses on in-place containment (capping to contain waste, contaminated soil and Reservoir sediment). ICs will provide assurance that the integrity of the remedy will remain protected over time.

Site-wide ICs include prohibition of activities or modifications that could disturb the soil cover on capped areas of the site, construction activities without EPA approval, and modification to drainage patterns without EPA and PADEP concurrence. They also restrict public access after major storm events and any uses of the parcels except by maintenance workers, recreational visitors and commercial workers. Additional parcel-specific ICs are also required. These include prohibition of construction of structures or habitat enhancements that could undermine the slope stability of the Asbestos Pile parcel, prohibition of trees on the Asbestos Pile and Reservoir parcels and on steep creek slopes, and maintenance of vegetation on the Reservoir parcel and stream banks.

Community Involvement

This section explains how the community can provide comments to EPA on the Proposed Plan. It also explains the role of the BoRit Community Advisory Group (CAG).

EPA is taking public comments on the Proposed Plan until February 1, 2017. EPA is also holding a public meeting to discuss the Proposed Plan on January 10, 2017 at 6:00 p.m. at Ambler Borough Hall. During the comment period, you are invited to participate in the following ways: 1) by letter to EPA Remedial Project Manager (RPM) Jill Lowe; 2) by email to RPM Jill Lowe at lowe.jill@epa.gov; and 3) in person at the public meeting. If you have any questions about the public meeting, please contact EPA RPM Jill Lowe at (215) 814-3123 or EPA CIC Gina Soscia at (215) 814-5538. The mailing address is: U.S. EPA, 1650 Arch Street, Philadelphia, PA 19103-2029.

The CAG is made up of members of the community. It is designed to serve as the focal point for the exchange of information among the community and EPA, the state regulatory agency, and other federal agencies involved in the cleanup. To learn more about the BoRit CAG, please contact EPA CIC Gina Soscia at (215) 814-5538 or soscia.gina@epa.gov. Additional information about the CAG is available at http://www.boritcag.org. To contact the CAG, please email the group at info@BoRitCAG.org.

D. TASC TECHNICAL COMMENTS

The following comments address potential concerns identified during TASC's review of the Proposed Plan and the preferred alternative. TASC does not submit comments to EPA independently or on behalf of the community. The comments below are presented for the use of the CAG and the community when they provide their comments to EPA.

General Comments

1. ***The CAG may want to ask EPA to clarify the potential impacts of flooding on the capped waste disposal areas.*** Recently updated floodplain maps (finalized in August 2016) delineate the 100-year flood zone as an area surrounding the three creeks – Wissahickon Creek, Rose Valley Creek and Tannery Run – that run adjacent to and intersect the site. The northern area of the Asbestos Pile parcel also extends into the 100-year floodplain. All of these areas were included in the removal action work done at the site.

   The movement of water caused by flooding has the potential to erode stream banks and soil cover, redistribute sediment, undermine structural stability, and potentially expose waste or redistribute it, if not properly addressed. The Proposed Plan notes that streambank stabilization measures were implemented along the three creeks as part of the removal action. It is less clear whether the potential for flooding was properly considered during the evaluation of the preferred alternative for the Asbestos Pile parcel (capping). Questions that remain include:

   - During a 100-year flood, what is the estimated level of water that could occur at the Asbestos Pile parcel?

- Can the Asbestos Pile and associated cap withstand flood-related forces (e.g., hydrodynamic forces, debris impact, hydrostatic forces)?[1, 2]
- If not, can improvements be made to the cap's design? Can other methods of flood control be used to limit potential impacts to the Asbestos Pile?
- Could flooding impact other remedial components in a manner that could affect their integrity and therefore the protectiveness of the remedy?

The CAG may want to ask EPA to consider answering these questions prior to selecting the final remedy for the Asbestos Pile parcel to help ensure the area's long-term stability and protectiveness.

2. In addition to potential impacts on waste disposal areas caused by flooding, the impacts of the waste disposal areas on the floodplain is important in evaluating potential remedies for the site. The Proposed Plan does not include the results of a floodplain evaluation for the preferred alternative or most of the other evaluated alternatives.

   EPA OSWER Directive 9280.0 (https://www3.epa.gov/region1/superfund/sites/newbedford/509450.pdf) clarifies EPA policy on floodplains and wetland assessments for CERCLA actions. It states that Superfund actions must meet the substantive requirements of Floodplain Management Executive Order 11988. The directive further states that "if the site is located within a floodplain/wetland or if the proposed remedial action would affect a floodplain/wetland, the [RPM] or the lead agency must conduct a floodplain/wetland assessment which will be integrated into the feasibility study. Floodplain/Wetland assessments shall consist of a description of the proposed action, a discussion of its effect on the floodplain/wetlands, a description of the alternatives considered and their effects on the floodplains and wetlands, and measures to minimize potential harm to the floodplain/wetland if there is no practicable alternative to locating in or affecting floodplain/wetlands."

   In the Evaluation of Alternatives on page 42, the Proposed Plan briefly addresses the potential that remedial alternatives WSS4 (In Situ Joule Heating) and WSS5 (Excavation, On-Site Ex Situ TCCT and On-Site Disposal) may have difficulty meeting location-specific ARARs related to floodplain management. Changes to infiltration capacities could have significant impacts on floodplain hydraulics and could influence the extent of the 100-year floodplain. The Proposed Plan does not include any information related to floodplain management for the other alternatives, including the preferred capping alternative for the Asbestos Pile parcel or other areas.

   The CAG may want to ask EPA to consider evaluating the impacts of the waste disposal areas on the floodplain prior to selection of the site's final remedy to make sure it adequately addresses floodplain management.

[1] Hydrodynamic forces are imposed on an object by water flowing against and around it. Among the forces are positive frontal pressure against the object, drag effect along the sides and negative pressure in the downstream side (https://www.fema.gov/hydrodynamic-forces).
[2] Hydrostatic force is force due to the pressure of a fluid at rest.

3. The Proposed Plan (page 26) indicates that active remedial measures are not proposed for several environmental media, including Reservoir surface water and creek surface water/sediment even though pre-removal concentrations of contaminants may have resulted in unacceptable risks to humans or ecological receptors. Active remedial measures are not being proposed based on the assumption that removal action efforts successfully reduced risks in these media. However, selection of a remedy based on assumptions and prior to confirmation sampling to assess the effectiveness of these efforts is premature. It may result in remedy changes or modifications at a later time and incur additional costs. ***The CAG may want to ask EPA to reconsider the need for active measures for Reservoir surface water and creek surface water/sediment.***

4. Much of the removal action work has already been completed. However, the Proposed Plan does not include a figure that delineates the capped areas. To aid in understanding of current site conditions, ***the CAG may want to ask EPA to include a figure that identifies the existing capped areas of the site in the Proposed Plan.***

Specific Comments

5. **Operations and Maintenance (O&M), Page 1:** The FS indicates that O&M and periodic costs for the preferred alternative include:
    - Annual inspections for 30 years
    - Cap maintenance (mowing, repairs, reseeding) for 30 years
    - Annual sampling for the first four years after the cap's completion
    - Sampling in years 10, 15, 20 25 and 30 after the cap's completion
    - Six Five-Year Reviews

    The EPA projects O&M costs for 30 years, so that the costs for the alternatives can be compared on an equal basis. O&M will be needed indefinitely, as the asbestos will remain capped and would still present a risk to the community if it becomes exposed. The CAG may want more information about how O&M will be managed and paid for beyond the 30-year projected timeframe.

6. **Removal Action, Page 4:** The second paragraph states that "the cap on the stream bank portions of the Site includes the placement of 10 to 15 inches of clean fill and a layer of topsoil and vegetation as well as the placement of cable concrete mats (CCM), geocells, and erosion control mats, where warranted." The description of Alternative WSS2: Capping, on pages 31 and 32, identifies streambank areas where 10 to 15 inches of fill was used. ***The CAG may want to ask EPA to clarify why 10 to 15 inches of clean fill and topsoil is acceptable in these locations whereas 2 feet of clean material was required in other areas. Given that the stream banks are subject to erosion and some sections have been armored to prevent flood damage, the CAG may want to ask EPA to explain why these stream bank areas do not require erosion control measures.***

7. **Human Health, Page 8:** The first bulleted item indicates that contaminants in soil, sediment, groundwater and surface water analytical data were screened against EPA Region 3 Regional Screening Levels (RSLs). EPA has developed multiple RSL categories based on various

exposure scenarios and target risk or hazard levels. It would be helpful if the Proposed Plan clarified the specific RSLs used (i.e., residential or industrial) and the target cancer risk and hazard levels in those RSLs. Additionally, it would be helpful if the Proposed Plan clarified whether soil samples were screened against the protection of groundwater soil screening levels to determine migration potential to groundwater. This will also provide a frame of reference for the discussion of the site-specific screening levels established for asbestos, as noted on page 9 of the Proposed Plan. ***The CAG may want to ask EPA for these clarifications.***

8. **Summary of Park Parcel Contamination – Waste, Soil, and Air, Page 11:** The first paragraph notes that inorganics (metals) exceeding soil screening levels at the Park parcel include aluminum, arsenic, cobalt, iron, lead, manganese, mercury, nickel and vanadium. The soil screening levels used are not identified so it is unclear if any of the metals were detected at significant enough concentrations to potentially impact groundwater. Since the preferred alternative (capping) includes a permeable geotextile that will allow infiltration of water through the waste, ***the CAG may want to ask EPA to further explore the potential for leaching and clarify this in the Proposed Plan.***

9. **Conceptual Site Model, Page 16:** This section states that the most conservative exposure receptor at all three on-site parcels is the maintenance worker. Howver, the rationale for this assertion is not provided. Figure 5, Conceptual Site Model for Development of Remedial Alternatives, shows that the current/future maintenance worker was the only receptor evaluated for both asbestos and chemical exposure under the inhalation of air exposure route. ***The CAG may want to ask EPA to clarify why the maintenance worker is considered the most conservative exposure receptor,*** particularly in comparison to a child recreational user who, according to Figure 5, was not evaluated for both asbestos and chemical exposure for the inhalation exposure route.

10. **VOCs, SVOCs and Metals in the Shallow Bedrock Aquifer, Page 23**: This section outlines three reasons why site groundwater does not require remedial action. Items 1 and 2 address VOCs and SVOCs. The third item only explains why one metal – manganese – should not be an issue of concern at the site. ***The CAG may want to ask EPA to clarify this section*** by explaining why the other metals identified as risk drivers (arsenic and chromium) or chemicals resulting in noncarcinogenic hazard (aluminum, arsenic, chromium, thallium and vanadium) should also be excluded from further action.

11. **Remedial Action Objectives, Page 27:** The remedial action objectives do not address one of the main objectives of the streambank stabilization work – preventing or minimizing future contamination of surface water and sediment in the creeks and floodplain soils. In the future, when it comes time to evaluate the effectiveness of the remedy and its long-term protectiveness, the success of the streambank stabilization (and its maintenance) is an integral component of the site's long-term remedy. ***The CAG may want to ask EPA to consider adding a remedial action objective to address creek surface water and sediment.***

12. **Cost Components, Page 30:** The first paragraph notes that a 7% discount rate was applied in preparing the cost estimates "as recommended in EPA guidance for developing [feasibility

study] cost estimates." However, this discount rate may not be the most up-to-date value to use in cost estimates. EPA's Guide to Developing and Documenting Cost Estimates During the Feasibility Study, dated July 2000, notes that the "7% discount rate was established through an economic analysis performed by the Office of Management and Budget (OMB). EPA's policy regarding the use of discount rates in present value calculations performed during the FS will be reevaluated periodically or when OMB updates Circular A-94.3."[3] Appendix C of OMB Circular A-94, which contains discount rates that may be applicable to federal facility sites, is updated annually in January/February. The 2016 update to Appendix C of OMB Circular A-94, available at https://www.whitehouse.gov/sites/default/files/omb/memoranda/2016/m-16-05_0.pdf, recommends a 1.5% discount rate for use in cost-effectiveness analysis. ***The CAG may want to ask EPA to consider revising the cost estimates to use the most current discount rate.***

13. **Common Elements, Page 30:** Confirmation sampling is a common element of all of the remedial alternatives evaluated (with the exception of the "no action" alternative). The Proposed Plan notes that confirmation sampling may include conducting activity-based sampling (ABS), surface soil sampling, ambient air monitoring, sediment sampling and surface water sampling, when applicable. With the preferred alternative, consideration of groundwater sampling could also be important due to the presence of waste left in place. While asbestos does not move easily from soil into groundwater, some migration is possible, as evidenced by the detection of asbestos in groundwater in site wells, albeit at concentrations below its maximum contaminant level (MCL). Because significant waste and earth-moving activities have occurred at the site as part of the removal action, potentially altering subsurface conditions, ***the CAG may want to ask EPA to consider confirmation sampling of groundwater.***

14. **Alternative WSS2: Capping, Pages 30 and 31:** The description of the preferred alternative does not indicate how runoff will be managed at the site. For example, are there channels or other drainage paths to direct runoff away from the pile. ***The CAG may want to ask EPA to clarify how surface runoff will be managed.***

15. **Alternative WSS2: Capping, Page 30 and 31:** One of the ICs to be placed on the site includes a restriction on public access after major storm events until the site has been inspected for signs of damage or erosion. ***The CAG may want to ask EPA to clarify how this IC will be managed and enforced, particularly if the Park parcel is redeveloped as a public park.***

16. **Alternative WSS2: Capping, Page 34:** The parcel-specific ICs section identifies two additional ICs for the Asbestos Pile parcel: a restriction on construction that could undermine the slope stability of the parcel and a restriction on trees on parcel slopes. An additional IC – maintaining suitable vegetation on the capped areas – could also be considered, as was noted for the Reservoir parcel and stream banks. A vegetative cover on the Asbestos Pile parcel would also help prevent erosion. ***The CAG may want to ask EPA to consider adding this additional IC for the Asbestos Pile parcel.***

[3] EPA's guidance is available at https://www.epa.gov/sites/production/files/2015-02/documents/a_guide_to_developing_and_documenting_cost_estimates_during_the_feasibility_study.pdf.

17. **Alternative WSS2: Capping, Page 34:** None of the proposed ICs restrict use of site groundwater. However, the human health risk assessment identified potentially unacceptable risks if site groundwater is used for drinking water. While a definable plume was not identified, isolated areas exhibit concentrations of contaminants above risk-based levels. ***The CAG may want to ask EPA to consider including ICs to restrict use of groundwater for potable use at the site to ensure the long-term protectiveness of the remedy.***

18. **Figure 1, Site Map:** This figure identifies the Ambler Asbestos Piles Site. However, the Proposed Plan does not explain the relevance of this feature. ***The CAG may want to ask EPA why the Ambler Asbestos Piles Site is identified in Figure 1.***

19. **Table 7, Alternative Specific ARARs for Retained Alternatives:** None of the ARARs listed includes regulations related to floodplains. Because portions of the site are located in the 100-year floodplain, federal and/or state location-specific floodplain management regulations or orders such as Floodplain Management Executive Order 11988 may be considered potential ARARs. ***The CAG may want to ask EPA for clarification of Table 7 and whether ARARs related to floodplains are applicable.***

Acronyms

ACM	asbestos-containing material
ARAR	Applicable and/or Relevant and Appropriate Requirement
CAG	Community Advisory Group
CIC	Community Involvement Coordinator
CCM	cable concrete mats
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	Contaminant of Concern
CSC	Center for Sustainable Communities
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FS	Feasibility Study
IC	Institutional Control
MCL	Maximum Contaminant Level
NPL	National Priority List
O&M	operation and maintenance
OMB	Office of Management and Budget
PADEP	Pennsylvania Department of Environmental Protection
PAH	polycyclic aromatic hydrocarbon
PA/SI	Preliminary Assessment/Site Investigation
PCB	polychlorinated biphenyl
RAO	Remedial Action Objective
RD/RA	Remedial Design/Remedial Action
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision

RPM	Remedial Project Manager
RSL	Regional Screening Level
SVOC	semi-volatile organic compound
TASC	Technical Assistance Services for Communities
TCCT	Thermo-Chemical Conversion Treatment
VOC	volatile organic compound
WSS	waste, soil and reservoir sediment

This report is provided by EPA's TASC program, which is implemented by independent technical and environmental consultants. TASC comments in this report do not necessarily reflect EPA's opinion or policy.

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