Response Action Contract
for Remedial Planning and Oversight Activities at Sites
in EPA Region 3

U.S. EPA Contract No. EP-S3-07-06

Final Institutional Controls Implementation and Assurance Plan
for
BoRit Asbestos Superfund Site
Operable Unit 1
Ambler, Pennsylvania

Work Assignment No.: 029-RICO-A3EN

November 13, 2017

Prepared for:
U.S. Environmental Protection Agency
Region 3
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Acronyms

ABS activity-based sampling
ACM asbestos-containing material
CCM concrete cable mats
CDM Smith CDM Federal Programs Corporation
CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS Comprehensive Environmental Response, Compensation, and Liability Information System
COC chemical of concern
cy cubic yard
EPA United States Environmental Protection Agency
f/cc fibers per cubic centimeter
FYR five-year review
IC Institutional Control
ICIAP Institutional Control Implementation and Assurance Plan
ISO International Organization for Standardization
K&M Keasby & Mattison
LTM long-term monitoring
MG million gallons
O&M Operations and Maintenance
PADEP Pennsylvania Department of Environmental Protection
RAC Response Action Contract
ROD Record of Decision
the Site the BoRit Asbestos Superfund Site
WA work assignment
WSS waste, soil, and Reservoir sediment
WWP Wissahiccon Waterfowl Preserve
Section 1

Introduction

The United States Environmental Protection Agency (EPA) Region 3 has contracted CDM Federal Programs Corporation (CDM Smith) to prepare this Institutional Controls Implementation and Assurance Plan (ICIAP) for the BoRit Asbestos Superfund Site in Ambler, Pennsylvania (the Site) (Comprehensive Environmental Response, Compensation, and Liability Information System [CERCLIS] #PAD981034887) under Work Assignment (WA) 029-RICO-A3EN of the EPA Region 3 Response Action Contract (RAC) 2 contract EP-S3-07-06. This ICIAP has been prepared to (a) establish and document the activities associated with implementing and ensuring the long-term stewardship of institutional controls (ICs) identified for the Site; and (b) specify the persons and/or organizations that will be responsible for conducting these activities.

ICs are non-engineered instruments, such as administrative and legal controls, that help to minimize the potential for exposure to contamination and/or protect the integrity of a response action. IC instruments generally are designed to achieve the precise substantive use restrictions articulated in the decision documents that are needed to help achieve the site’s overall cleanup objectives.

The Record of Decision (ROD), issued in July 28, 2017, identified Alternative WSS2 Capping as the Selected Remedy for the Site. Alternative WSS2 Capping, encompasses and essentially completes EPA Removal Program work. Alternative WSS2 includes capping of waste, soil, and Reservoir sediment (WSS) with clean material along with the implementation of ICs, long-term monitoring (LTM), operations and maintenance (O&M) activities, and five-year reviews (FYRs).

An ICIAP is required because ICs are required to prohibit activities that would adversely impact the remedy and compromise the protection of human health and the environment. This ICIAP, which has been prepared in accordance with guidance developed by the EPA Institutional Controls: A Guide to Preparing Institutional Control Implementation and Assurance Plans at Contaminated Sites (EPA 2012), identifies how ICs that are identified in the ROD should be implemented, maintained, enforced, modified, and terminated (if applicable) at the Site. EPA and Pennsylvania Department of Environmental Protection (PADEP) will be responsible for oversight of the ICs that are being implemented as a component of the Selected Remedy specified in the ROD.
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Section 2
Site Details

A brief description of the Site and its history is provided in the subsections that follow.

2.1 Site Location and Background
The Site includes three adjacent parcels near the intersection of West Maple Street and Butler Pike in Ambler Borough, Montgomery County, Pennsylvania:

- The Park parcel (parcel #660004408008), located in Whitpain Township, is 19.02 acres and contains a former asbestos disposal area (now the closed Whitpain Wissahickon Park);
- The Reservoir parcel (comprised of parcel #660004409007 [3.13 acres] and parcel #540011581002 [15.04 acres]), primarily located in Upper Dublin Township, is 18.17 acres and contains a reservoir. The Reservoir was man-made using asbestos waste as fill in some areas and is not used for drinking water supply; and
- The Asbestos Pile parcel (comprised of parcel #010002939003 [6.056 acres] and #540011581209 [0.597 acres]), located in Ambler Borough, is 6.653 acres and contains an asbestos waste pile.

The Site also includes portions of Wissahickon Creek, Rose Valley Creek, and Tannery Run which flow adjacent to the three Site parcels. The Site map is shown in Figure 2-1.

The Site is a result of disposal operations by the former Keasby & Mattison (K&M) Company. K&M produced asbestos products (including paper, millboard, electrical insulation, brake linings, piping, conveyor belts, high pressure packings, roofing shingles, and cement siding) from 1897 to 1962 at their Ambler, Pennsylvania facility. K&M ceased operations in 1962.

EPA Removal Program activities, which occurred from December 2008 through August 2017 mitigated exposure to contamination across the Site through the removal of surface soils and capping of WSS. The Selected Remedy for the Site, Alternative WSS2 Capping, encompasses and enhances the EPA Removal Program work. The Selected Remedy includes the following major components:

**EPA Removal Program**
- Stream bank stabilization at Rose Valley Creek, Tannery Run, and Wissahickon Creek
- Installation of cover at Asbestos Pile
- Installation of cover at Park
- Dewatering of Reservoir with treatment of surface water prior to discharge
- Re-grading and lining of Reservoir berm interior slopes
- Installation of a cover on the Reservoir bottom
- Refilling of the Reservoir
- Activity-based sampling (ABS) at residences adjacent to the Site
Section 2 • Site Details

EPA Remedial Program
- Implementation of ICs
- Confirmation Sampling
- LTM for Site-related contaminants of concern (COCs)
- O&M (inspection and maintenance of covers, liners, and stabilized areas)
- FYRs

2.1.1 Park Parcel

Historical Information
Starting as early as 1937, K&M disposed of an estimated 195,000 cubic yards (cy) of out-of-specification asbestos manufacturing products and other solid wastes on the Park parcel. Although used as a public park from at least 1973, the Park parcel was officially closed to the public in September 1984.

EPA Removal Program
The major components of Park parcel work completed by the EPA Removal Program include:

- Clearing Activities – The storage structure north of the Oak Street entrance was demolished, the far northern portion of the Park area along Wissahickon Creek was cleared and grubbed, and asphalt from the tennis courts was disposed of off-Site.
- Excavation Activities – Excavation was undertaken to prepare for curb installation. Excavated areas were lined with geotextile fabric and pinned in place. Asbestos-containing material (ACM) waste was relocated within the Park parcel.
- Cover Installation – Backfill was installed in the slope and curb areas. Geotextile fabric and clean fill were placed in areas at the north end of the Site. Cover elements followed the same design as the Asbestos Pile, i.e., with geotextile fabric, a minimum of two feet of clean material, and approximately six inches of topsoil to support a vegetative cover.

In December 2013, the EPA Removal Program stabilization work at the Park parcel was temporarily postponed as the EPA Removal Program’s efforts focused on addressing the Reservoir parcel. Work on the Park parcel resumed in October 2015 and was completed in August 2017.

Future Use
Whitpain Township maintains ownership of the Park parcel and oversees the administration of the public park. Future use plans for the Park parcel include a public park and open space. Currently, Whitpain Township’s future use plans for the Park parcel include the construction of a Boys and Girls club facility.

2.1.2 Reservoir Parcel

Historical Information
The Reservoir parcel was used to provide process water for K&M facility operations. The Reservoir appears in 1921 and 1930 Sanborn Fire Insurance maps and a 1937 aerial photograph. The berm around the Reservoir was constructed of asbestos shingles, millboard, and soil. Asbestos product waste, particularly water pipe and tiles, were observed in the berm surrounding the Reservoir and the stream banks.
EPA Removal Program
Work at the Reservoir parcel conducted by the EPA Removal Program addressed the Reservoir interior berms, the Reservoir bottom, and surface water and included the following major components:

- **Clearing and Initial Earthwork Activities** – Activities included tree removal, placement of clean fill to widen the West Maple Street side of the Reservoir to stabilize and widen the area for brush clearing operations. A platform was constructed on the Wissahickon Creek side of the Reservoir (using clean fill) for placement of a pump and treat system needed to dewater the Reservoir.

- **Dewatering** – In order to allow sufficient access to the Reservoir bottom and interior of the berms, it was necessary to completely dewater the Reservoir. Approximately 31 million gallons (MG) of water were pumped out of the Reservoir, treated, and discharged to Wissahickon Creek. Dewatering operations were completed at the beginning of August 2014. Thereafter, until the Reservoir was refilled, water was pumped intermittently to remove collected storm water runoff. Throughout EPA Removal Action work, more than 37 MG of water was treated.

- **Cover Installation** – The Reservoir berms were covered with a geotextile fabric, a minimum of 2 feet of clean material, and a 6-inch layer of topsoil to support a vegetative cover (on the berms). Certain areas of the Reservoir berm were covered with up to ten feet of clean material. Cover installation on the Reservoir bottom was completed in October 2015 and included a geotextile fabric and a minimum of 2 feet of clean material.

- **Refilling of Reservoir** – After construction activities were completed at the Reservoir parcel in October 2015, EPA Removal Program re-filled the Reservoir by pumping water from Wissahickon Creek.

Future Use
The Wissahickon Waterfowl Preserve (WWP) currently maintains ownership of the Reservoir parcel and continues to use the property as a waterfowl preserve. The WWP installed amenities along West Maple Street to promote bird watching and improve the aesthetic value of the area.

2.1.3 Asbestos Pile Parcel

Historical Information
Based on observations from a 1930s historical aerial photograph, K&M began disposing a slurry of spent magnesium and calcium, as well as waste asbestos products, in a former reservoir located in what is now known as the Asbestos Pile parcel. Prior to the EPA Removal Action, the elevation of the waste in the Asbestos Pile parcel was approximately 20 to 30 feet above the surrounding land. By 1965, the Asbestos Pile parcel was vegetated. The property reportedly was first fenced in approximately 1986. For short periods of time in the 1980s and 1990s, portions of the Asbestos Pile parcel were used as a trash transfer station or trash storage location (including slag disposal) and for local fire department training.

EPA Removal Program
The EPA Removal Program’s design for the Asbestos Pile parcel involved regrading the slopes back to a stable 3 horizontal: 1 vertical gradient, placement of a geotextile fabric, placement of a minimum of 2 feet of clean material, and approximately 6 inches of topsoil to support a vegetative cover. The Major components of the work performed at the Asbestos Pile parcel by EPA’s Removal Program included the following:
Clearing Activities - The area was cleared of trees and ACM material, and access roads were constructed.

Excavation Activities - ACM waste was re-located to different areas on the Asbestos Pile to create the desired subgrade prior to the placement of geotextile, clean fill, and topsoil. All areas with exposed ACM were covered at the end of each day with clean material, straw mats, or geotextile fabric.

Cover Installation – Waste cells were graded, covered with geotextile fabric, covered with lifts of compacted clean fill to a minimum depth of 2 feet to meet the grade of the rest of the Asbestos Pile. The cover installation across the Asbestos Pile was completed with 6 inches of topsoil and hydroyseeded. The topsoil layer was covered with straw mats for erosion control.

Future Use
Future use of the Asbestos Pile parcel is unknown at this time. Currently, Kane Core, Inc. owns the Asbestos Pile parcel.

2.1.4 Stream Banks
Portions of Wissahickon Creek, Rose Valley Creek, and Tannery Run stream banks were stabilized as part of the EPA Removal Program’s work at the Site in order to prevent and minimize future contamination of creek surface water and sediment. Stream bank stabilization work was completed in phases and a summary of the work completed by the EPA Removal Program follows.

- Phase 1 - (December 2008 to June 2009): Addressed approximately 1,350 linear feet of Wissahickon Creek from the north end of the Park parcel to the confluence of Rose Valley Creek and Wissahickon Creek. After approximately 475 tons of ACM waste was removed and properly disposed in an off-Site landfill, the east bank of Wissahickon Creek was cleared and stabilized from the water’s edge to the 100-year floodplain elevation using 10 to 15 inches clean fill, geotextile fabric, geo-cells, and rip-rap followed by hydroyseeding.

- Phase 2 - (July 2009 to May 2010): Addressed banks of Rose Valley Creek as well as the adjacent Reservoir berm exterior and floodplain. A 104-foot-long stone wall was constructed on the left side of the headwall and a 6-foot-high reinforced concrete retaining wall was constructed on the right side of the headwall. The Park-side slope was cleared of large pieces of ACM material and covered with 10 to 12 inches of clean fill followed by a 2 to 3-inch layer of topsoil and hydroyseeded. The slope was further stabilized with erosion control matting. The Reservoir-side slope was cleared of ACM material, covered with 10 to 12 inches of clean fill and a layer of topsoil, and hydroyseeded for erosion control. Rose Valley Creek from Chestnut Avenue to the confluence of Wissahickon Creek was cleared of ACM and re-graded at a uniform slope. Concrete cable mats (CCMs) were installed and infilled with concrete at the four stream bend locations. Approximately 1,073 tons of ACM material were removed and properly disposed in an off-Site landfill during Phase 2.

- Phase 3 - (March 2010 to June 2010): Addressed a 600-foot section along the Reservoir berm parallel to Wissahickon Creek. Material excavated during Phase 2 activities was placed on the berm slope and covered with 12 to 15 inches of clean fill and 6 inches of topsoil. No ACM material was collected or disposed during this phase.

- Phase 4 - (2010 to 2011): Addressed a 720-foot section of Tannery Run. Approximately 290 linear feet of stream bed downstream of Maple Street were re-graded at a constant gradient and stabilized with CCM along the stream bed and banks. The remaining section of Tannery Run, approximately 380 linear feet, was enclosed in an 8-foot diameter pipe that terminates at the confluence of Wissahickon Creek. During the preparation stages of the slope, the bulk
pieces of ACM debris and stumps was removed and collected into roll-off containers and sent to an off-Site landfill for proper disposal.

- Phase 5 - (June 2011 to September 2011): Addressed 297 linear feet of Wissahickon Creek between the old dam and the confluence with Tannery Run. The first 65 linear feet of slope along the banks was graded with 2RC stone, and then topsoil was added, hydroseeded, and covered with heavy duty erosion control mats. Geotextile fabric was placed over the remaining slopes and overlaid with geocells, which were in-filled with stone and/or soil. A final layer, consisting of 4 inches of topsoil, was placed on top, hydroseeded, and covered with straw mats for erosion control. Numerous pieces of ACM (e.g., pipes, shingles, and tiles) were found along the Phase 5 area. During the preparation stages of the slope, the bulk pieces of the ACM debris and stumps was removed and collected into roll-off containers and sent to an off-Site landfill for proper disposal.

### 2.1.5 Residences Adjacent to the Site

ABS was conducted by the EPA Removal Program in September 2016 at ten residential yards located adjacent to the Site (LMC 2017). The purpose of the ABS sampling was to confirm that no ACM migrated off-Site as a result of the Removal Action. The ABS simulated a raking scenario that was conducted for approximately two hours per yard. Both adult-height and child-height sampling cassette pumps were worn by sampling personnel, with high-flow and low-flow samples collected for each height. For each yard, the ABS also included three perimeter samples collected at the edge of the raking area, plus one background sample.

As with previous ABS events, all samples were analyzed in accordance with International Organization for Standardization (ISO) Method 10312. None of the samples revealed asbestos concentrations in excess of the risk-based triggers for ABS (0.04 fibers per cubic centimeter [f/cc]) or ambient perimeter air (0.001 f/cc). The maximum observed concentrations for ABS and ambient perimeter air were 0 (non-detect) and 0.0006 f/cc, respectively. Based on these results, no threats associated with airborne asbestos are expected under a residential exposure scenario.

### 2.2 Current Ownership Information

As mentioned above, Whitpain Township currently maintains ownership of the Park parcel and oversees the administration of the public park. WWP currently maintains ownership of the Reservoir parcel and continues to use the property as a waterfowl preserve.

The parcel ownership information listed below was obtained from the Montgomery County website at the following web address: [http://propertyrecords.montcopa.org](http://propertyrecords.montcopa.org).

**Park Parcel**

- Owner: Whitpain Township (Parks and Recreation)
- 960 Wentz Road
- Blue Bell, Pennsylvania 19422

**Reservoir Parcel**

- Owner: WWP
- 12 Morris Road
- Ambler, Pennsylvania 19002
Asbestos Pile Parcel

Owner: Kane Core, Inc.
168 W Ridge Pike, Suite 306B
Royersford, PA 19468
Section 3

Identification, Implementation, and Maintenance of Institutional Controls

The Selected Remedy includes the implementation of ICs to restrict future use of the Site parcels to protect the engineered remedy. Specifically, the ICs will prohibit activities at the Site that may adversely impact the remedy and compromise the protection of human health and the environment. ICs that will be implemented as part of the Selected Remedy are listed below and shown in Figure 3-1. ICs may be implemented and enforced via a number of different mechanisms, including, but not limited to, consent decrees, deed restrictions, environmental covenants and/or administrative orders. Table 3-1 provides a matrix listing of the properties of each IC identified for the Site, including anticipated IC instrument and maintenance responsibilities, to help ensure that the use restrictions appropriately meet the overall cleanup objectives for the response action.

3.1 Institutional Control Elements

The following ICs have been developed for the Site:

Site-Wide ICs:

1. Activities or modifications that could disturb or otherwise adversely impact the two-foot soil cover on the capped areas are prohibited unless prior written approval from EPA, in consultation with PADEP, is obtained authorizing the specific activity. Any proposed future use of the Site shall be reviewed by EPA, in consultation with PADEP, to ensure that such activity will not adversely impact the Selected Remedy or compromise the protection of human health and the environment.

2. Construction activities are prohibited unless prior written approval from EPA, in consultation with PADEP, is obtained authorizing the specific activity. Prohibited construction activities include, but are not limited to, piling installation, dredging, drilling, digging, excavation, or use of heavy equipment in the capped areas.

3. Any modifications to the drainage pattern on-Site are prohibited unless EPA, in consultation with PADEP, determines that such activity will not adversely impact the Selected Remedy.

4. Public access shall be restricted after significant weather events until the property has been inspected for any signs of damage or erosion, especially in the 100-year floodplain.

5. The Selected Remedy will be protective for maintenance workers, recreational visitors, and commercial workers. Any other use of the parcels shall require further investigations and plans, which shall be reviewed and approved by EPA, in consultation with PADEP.


Parcel Specific ICs:

Asbestos Pile Parcel:

7. Construction of structures that may undermine the slope stability of the Asbestos Pile parcel shall be prohibited unless prior written approval from EPA, in consultation with PADEP, is obtained authorizing the specific activity.

8. Trees are prohibited on the Asbestos Pile parcel slopes.
9. Trees are prohibited on the stream banks adjacent to Tannery Run, where CCM is present to stabilize the slope.

Reservoir Parcel:
10. Maintain suitable vegetation and/or water levels on the capped areas of the Reservoir parcel (berms and Reservoir floor) to ensure protection from erosion.
11. Trees are prohibited along the berm of the Reservoir adjacent to Wissahickon Creek.

Park Parcel:
12. Trees are prohibited along the stream banks of Wissahickon Creek (where geocells were utilized to stabilize the slope), and on the stream banks of Rose Valley Creek and Tannery Run (where CCM is present to stabilize the slope).

Mechanisms for implementing the Site-wide and parcel-specific ICs are included in Table 3-1.

3.2 Institutional Control Maintenance
Assurance monitoring of ICs will be conducted by the parties responsible for IC enforcement – PADEP, and EPA. Monitoring may include visual inspection of parcels subject to proprietary controls for any evidence of non-conformance with use restrictions.

IC maintenance activities may also include periodic record reviews to determine if property use is adversely impacting or may adversely impact the Selected Remedy at the Site. Records to be reviewed include: zoning variance requests, zoning ordinances, building permits, special-use permits, utility requests, property records, well permits, and notifications of use restrictions.

Maintenance activities and responsibilities are included in Table 3-1.

3.3 Institutional Control Enforcement
IC mechanisms may include governmental and proprietary controls.

3.3.1 Governmental Controls
Ambler Borough, Whitpain Township, and Upper Dublin Township are responsible for enforcing the zoning regulations applicable to the Site parcels.

3.3.2 Proprietary Controls
PADEP and EPA will be granted enforcement rights for the proprietary controls established per Table 3-1 of this ICIAP.

3.4 Institutional Control Modification and Termination
At the Site, modification of ICs may be required in the event of a change in land use or ownership. If an event occurs that could lead to a modification, ICs should be reviewed and revised accordingly to ensure the ICs at the Site continue to provide adequate protection. Although not anticipated for the Site, termination of ICs may occur if all remaining contamination at the Site is removed to a level below that which poses a risk to human health and the environment. EPA is responsible for determining the need for and completing the modification of this document. An evaluation of the ICs protectiveness will also be completed as part of the recurring Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) FYRs to be conducted for the Site.
Section 4

References


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Notes:

Legend
- Site Boundary
- Direction of Streamflow

BoRit Asbestos Superfund Site
Ambler, Pennsylvania

Figure 2-1
Site Map
Site-wide Land Use Controls
1. Land use is restricted to Recreational/Open Space.
2. Activities that disturb the soil cap are prohibited without prior written approval from EPA, in consultation with PADEP.
3. Public access is restricted after major storm events until the Site is evaluated for damage. Please refer to Section 3.1 and Table 3-1 of the IC Plan for a detailed description of ICs, including Site-wide ICs.

Notes:
CCM = concrete cable mats
EPA = U.S. Environmental Protection Agency
PADEP = Pennsylvania Department of Environmental Protection
ICs = institutional controls
Source: Google Earth, SPOT Image, 2016.

Legend
- Site Boundary
Table 3-1
Institutional Control Elements, Maintenance, and Enforcement
BoRit Asbestos Superfund Site
Ambler, Pennsylvania

<table>
<thead>
<tr>
<th>Parcel Name</th>
<th>Area of Interest</th>
<th>Contaminants Remaining</th>
<th>Contaminated Media</th>
<th>ECs</th>
<th>Remedy Objective</th>
<th>Use Restriction/IC Objective</th>
<th>Planned IC Types and Instruments</th>
<th>Conditions for Termination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site-wide</td>
<td>Site-wide</td>
<td>Asbestos, Bis(2-ethylhexyl)phthalate (ecological), dioxins and furans (ecological), chromium (ecological), nickel (ecological), and zinc (ecological)</td>
<td>Sol/waste</td>
<td>Cover, fencing, drainage components</td>
<td>Maintain integrity of remedy components and current use designations so that protective ness of remedy is maintained.</td>
<td>Construction activities are prohibited unless prior written approval from EPA, in consultation with PADEP, is obtained authorizing the specific activity. Prohibited construction activities include, but are not limited to, piling installation, dredging, drilling, digging, excavation, or use of heavy equipment in the capped areas.</td>
<td>IC Type: Proprietary IC Instrument: Environmental Covenant Entity to Implement Control: EPA and PADEP Planned Implementation Date: 2018 Objective: Restrict future use of the Site parcels that may adversely impact the Selected Remedy and compromise the protection of human health and the environment and ensure that future owners of the affected land are bound by these restrictions. Covenant Grantor: Parcel Owners; see Section 2.2 Covenant Grantee: EPA</td>
<td>ICs needed in perpetuity in order to maintain the integrity and protective ness of the remedy.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Any modifications to the drainage pattern on Site are prohibited unless EPA, in consultation with PADEP, determines that such activity will not adversely impact the Selected Remedy.</td>
<td>The Selected Remedy will be protective for maintenance workers, recreational visitors, and commercial workers. Any other use of the parcels shall require further investigations and plans, which shall be reviewed and approved by EPA, in consultation with PADEP.</td>
<td>IC Type: Government IC Instrument: Zoning Ordinance Entity to Implement Control: Ambler Borough, Whitpain Township, Upper Dublin Township Planned Implementation Date: Already in place Objective: Limit uses to those which are protected by the Selected Remedy Enforcement Department: PADEP and EPA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Public access shall be restricted after significant weather events until the property has been inspected for any signs of damage or erosion, especially in the 100-year floodplain.</td>
<td>IC Type: Information Device IC Instrument: Advisories to local community (various) Entity to Implement Control: PADEP Planned Implementation Date: 2017 Objective: Provide a public information mechanism to warn the public of the type of hazards associated with these parcels. Enforcement Department: EPA and PADEP</td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Activities or modifications that could disturb or otherwise adversely impact the two-foot soil cover on the capped areas are prohibited unless prior written approval from EPA, in consultation with PADEP, is obtained authorizing the specific activity. Any proposed future use of the Site shall be reviewed by EPA, in consultation with PADEP, to ensure that such activity will not adversely impact the Selected Remedy or compromise the protection of human health and the environment.</td>
<td>IC Type: Proprietary IC Instrument: Environmental Covenant Entity to Implement Control: EPA and PADEP Planned Implementation Date: 2017 2018 Objective: Restrict future use of the Site parcels that may adversely impact the Selected Remedy and compromise the protection of human health and the environment and ensure that future owners of the affected land are bound by these restrictions. Covenant Grantor: Parcel Owners; see Section 2.2 Covenant Grantee: EPA</td>
<td>ICs needed in perpetuity in order to maintain the integrity and protective ness of the remedy.</td>
</tr>
<tr>
<td>Capped areas</td>
<td></td>
<td>Asbestos, Bis(2-ethylhexyl)phthalate (ecological), dioxins and furans (ecological), chromium (ecological), nickel (ecological), and zinc (ecological)</td>
<td>Sol/waste</td>
<td>Cover</td>
<td>Maintain integrity of cover.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CDM Smith
Final IC Plan
<table>
<thead>
<tr>
<th>Parcel Name</th>
<th>Area of Interest</th>
<th>Contaminants Remaining</th>
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<th>ECs</th>
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<th>Use Restriction/IC Objective</th>
<th>Planned IC Types and Instruments</th>
<th>Conditions for Termination</th>
</tr>
</thead>
</table>
| Site-wide (continued) | Stabilized Stream Banks | Asbestos | Soil/sediment | Cover | Maintain integrity of cover. | Maintain vegetation at stabilized stream banks. | IC Type: Proprietary  
IC Instrument: Environmental Covenant  
Entity to Implement Control: EPA and PADEP  
Planned Implementation Date: 2017-2018  
Objective: Restrict future use of the Site parcels that may adversely impact the Selected Remedy and compromise the protection of human health and the environment and ensure that future owners of the affected land are bound by these restrictions.  
Covenant Grantor: Parcel Owners; see Section 2.2  
Covenant Grantee: EPA | ICS needed in perpetuity in order to maintain the integrity and protectiveiveness of the remedy. |

<table>
<thead>
<tr>
<th>Parcel Name</th>
<th>Area of Interest</th>
<th>Contaminants Remaining</th>
<th>Contaminated Media</th>
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<th>Planned IC Types and Instruments</th>
<th>Conditions for Termination</th>
</tr>
</thead>
</table>
| Asbestos Pile | Parcel slopes | Asbestos, Bis(2-ethylhexyl)phthalate (ecological), dioxins and furans (ecological), chromium (ecological), nickel (ecological), and zinc (ecological) | Soil/waste | Cover | Maintain slope stability. | Trees are prohibited on the Asbestos Pile parcel.  
Construction of structures that may undermine the slope stability of the Asbestos Pile parcel shall be prohibited unless prior written approval from EPA, in consultation with PADEP, is obtained authorizing the specific activity. | IC Type: Proprietary  
IC Instrument: Environmental Covenant  
Entity to Implement Control: EPA and PADEP  
Planned Implementation Date: 2017-2018  
Objective: Restrict future use of the Site parcels that may adversely impact the Selected Remedy and compromise the protection of human health and the environment and ensure that future owners of the affected land are bound by these restrictions.  
Covenant Grantor: Parcel Owners; see Section 2.2  
Covenant Grantee: EPA | ICS needed in perpetuity in order to maintain the integrity and protectiveiveness of the remedy. |

<table>
<thead>
<tr>
<th>Parcel Name</th>
<th>Area of Interest</th>
<th>Contaminants Remaining</th>
<th>Contaminated Media</th>
<th>ECs</th>
<th>Remedy Objective</th>
<th>Use Restriction/IC Objective</th>
<th>Planned IC Types and Instruments</th>
<th>Conditions for Termination</th>
</tr>
</thead>
</table>
| Stream banks adjacent to Tannery Run (where CCM is present) | Soil/sediment | Asbestos, Bis(2-ethylhexyl)phthalate (ecological), dioxins and furans (ecological), chromium (ecological), nickel (ecological), and zinc (ecological) | Soil/sediment | Cover | Maintain integrity of cover. | Trees are prohibited on the stream banks adjacent to Tannery Run, where CCM is present to stabilize the slope. | IC Type: Government  
IC Instrument: Zoning Ordinance  
Entity to Implement Control: Ambler Borough  
Planned Implementation Date: Already in place  
Ordinance Citation: Borough of Ambler Code of Ordinances, Chapter 27  
Objective: Limit uses to those which are protected by the Selected Remedy.  
Enforcement Department: PADEP and EPA | |
<table>
<thead>
<tr>
<th>Parcel Name</th>
<th>Area of Interest</th>
<th>Contaminants Remaining</th>
<th>Contaminated Media</th>
<th>ECs</th>
<th>Remedy Objective</th>
<th>Use Restriction/IC Objective</th>
<th>Planned IC Types and Instruments</th>
<th>Conditions for Termination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reservoir Parcel</td>
<td>Capped areas</td>
<td>Asbestos, carbon disulfide</td>
<td>Soil/sediment</td>
<td>Cover</td>
<td>Maintain integrity of cover</td>
<td>Maintain suitable vegetation and/or water levels on the capped areas of the Reservoir parcel (berms and Reservoir floor) to ensure protection from erosion.</td>
<td>IC Type: Proprietary IC Instrument: Environmental Covenant Entity to Implement Control: Wissahickon Waterfowl Preserve Planned Implementation Date: 2017-2018 Objective: Restrict future use of the Site parcels that may adversely impact the Selected Remedy and compromise the protection of human health and the environment and ensure that future owners of the affected land are bound by these restrictions. Covenant Grantor: Parcel Owners; see Section 2.2 Covenant Grantee: EPA</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Asbestos, carbon disulfide</td>
<td>Soil/waste</td>
<td></td>
<td>Trees are prohibited along the berm of the Reservoir</td>
<td>Trees are prohibited along the berm of the Reservoir adjacent to Wissahickon Creek.</td>
<td>IC Type: Government IC Instrument: Zoning Ordinance Entity to Implement Control: Ambler Borough, Whitpain Township, Upper Dublin Township Planned Implementation Date: Already in place Ordinance Citation: Upper Dublin Township Code of Ordinances, Chapter 255 Objective: Limit uses to those which are protected by the Selected Remedy Enforcement Department: PADEP and EPA</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Asbestos, Bis(2-ethylhexyl)phthalate (ecological), dioxins and furans (ecological), chromium (ecological), nickel (ecological), and zinc (ecological)</td>
<td>Soil/sediment</td>
<td>Cover</td>
<td>Maintain integrity of cover</td>
<td>Trees are prohibited along the stream banks of Wissahickon Creek (where geocells were utilized to stabilize the slope), and on the stream banks of Rose Valley Creek and Tannery Run (where CCM is present to stabilize the slope).</td>
<td>IC Type: Proprietary IC Instrument: Environmental Covenant Entity to Implement Control: EPA and PADEP Planned Implementation Date: 2017-2018 Objective: Restrict future use of the Site parcels that may adversely impact the Selected Remedy and compromise the protection of human health and the environment and ensure that future owners of the affected land are bound by these restrictions. Covenant Grantor: Parcel Owners; see Section 2.2 Covenant Grantee: EPA</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- CCM - concrete cable mats
- EPA - U.S. Environmental Protection Agency
- EC - Engineering Control
- IC - Institutional Control
- PADEP - Pennsylvania Department of Environmental Protection
- TBD = to be determined

**Table 3-1**

Institutional Control Elements, Maintenance, and Enforcement

BoRit Asbestos Superfund Site

Ambler, Pennsylvania