U.S. EPA Superfund Program

Proposed Remedial Action Plan

Shaffer Equipment / Arbuckle Creek Area Superfund Site
Operable Unit 2
Minden, West Virginia

EPA ANNOUNCES PROPOSED PLAN **May 2026**

Dates to Remember

May 21, 2026 to
June 20, 2026
Public Comment Period on EPA's Proposed Plan

Public Meeting
June 2, 2026
6:00 pm to 8:00 pm
The Minden Community Center/New Beginning Apostolic Church
179 McKinney Road
Minden, WV 25901

The United States Environmental Protection Agency ("EPA") is issuing this Proposed Remedial Action Plan ("Proposed Plan") to present EPA's preferred alternative for the soil and sediment portion of Operable Unit 2 ("OU-2") at the Shaffer Equipment / Arbuckle Creek Area Superfund site ("Site"). EPA is the lead agency for the Site and the West Virginia Department of Environmental Protection ("WVDEP") is the support agency. This Proposed Plan summarizes information from the December 2025 Remedial Investigation ("RI") Report and the April 2026 Feasibility Study ("FS") Report. The aforementioned documents are contained in the administrative record for the Site.

The Site is located in Minden, Fayette County, West Virginia. The Shaffer Equipment Company ("SEC") built electrical substations for the coal mining industry from approximately 1970 until 1983. Mismanagement of electrical transformers by the SEC resulted in the release of oils containing polychlorinated biphenyls ("PCBs") to the environment. The Site consists of the former SEC property, contaminated sediments within Arbuckle Creek, and other areas where site-related contamination may be located. The National Superfund Database Identification Number is WVD988768909.

The Site includes several project areas, identified as areas of potential concern, that have been investigated. The location of the Site is shown on Figure 1, and the project areas are shown on Figure 2. Operable Unit 1 ("OU-1") consists of the previously capped material along with the adjacent impacted soils at the former SEC property and was addressed by a July 8, 2024, Record of Decision ("ROD"). The former SEC property is located in the approximate area where the SEC facility operated and where EPA has historically performed removal actions. This Proposed Plan addresses OU-2, which consists of all soil and sediment project areas except the former SEC property. Following the completion of the cleanup of the soil and sediment, EPA will seek

comment on an additional proposed cleanup plan if there is any groundwater contamination remaining at the Site.

Preferred Alternative

EPA's preferred alternative for OU-2 is Alternative 3, which is presented in detail in Section VI of this Proposed Plan and includes the following components:

1. Excavation of contaminated soils and sediment above performance standards
2. Disposal of contaminated soil and sediment at an approved offsite disposal facility
3. Backfill with clean fill, as necessary

EPA has determined that the preferred alternative will be more effective in reducing risk associated with contaminated soil and sediment than the other remedial alternatives.

The purpose of this Proposed Plan is to solicit public comments on the proposed remedy for the remaining soil and sediment project areas that are not included as part of OU-1. This Proposed Plan is being issued as part of EPA's public participation requirements under Section 117 of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA," commonly known as the Superfund law) of 1980, 42 U.S.C. § 9617, as amended, and Section 430(f)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan ("NCP"), 40 C.F.R. § 300.430(f)(2).

Comments should be submitted in writing or emailed to:

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After the close of the public comment period and upon consideration of the public's comments, EPA will announce its selected remedy in a ROD. The public's comments and EPA's responses to those comments will be presented in the responsiveness summary of the ROD. EPA encourages the public to review the documents that make up the administrative record to gain a more comprehensive understanding of the Site and the Superfund activities that have been conducted at the Site.

The administrative record for the Site can be accessed at https://semspub.epa.gov/src/collection/03/AR68069, or at the following locations:

Oak Hill Public Library
611 Main Street
Oak Hill, WV 25901
Hours: Call (304) 469-9890

EPA Administrative Records Room
Administrative Records Coordinator
Four Penn Center
1600 John F. Kennedy Boulevard
Philadelphia, PA 19103
Phone: (215) 814-2396
Hours: Monday - Friday 8:30 am to 4:00 pm
By appointment only

This Proposed Plan includes the following sections:

I. **Site Background** – Provides facts about the Site which provide the context for the subsequent sections of the Proposed Plan
II. **Site Characteristics** – Describes the nature and extent of contamination at the Site
III. **Scope and Role of This Action** – Describes how the response action fits into the overall Site strategy
IV. **Summary of Site Risks** – Summarizes the results of the baseline risk assessment, and the land use and groundwater use assumptions used in the analysis
V. **Remedial Action Objectives** – Describes what the proposed Site cleanup is expected to accomplish
VI. **Summary of Remedial Alternatives** – Describes the options for attaining the identified remedial action objectives
VII. **Evaluation of Alternatives** – Explains the rationale for selecting the preferred alternative
VIII. **EPA's Preferred Alternative** – Describes the preferred alternative and affirms that it is expected to fulfill statutory and regulatory requirements
IX. **Community Participation** – Provides information on how the public can provide input to the remedy selection process

I. SITE BACKGROUND

Site Location and Description

The Site is located in Minden, Fayette County, West Virginia. The SEC built electrical substations for the coal mining industry from approximately 1970 until 1983. Mismanagement of electrical transformers by the SEC resulted in the release of PCB-containing oils to the environment. The SEC conducted operations at a facility located near the western end of Minden. The former SEC property is approximately five acres and is located within the floodplain of Arbuckle Creek, which borders the property to the north. There were various structures at the property that supported former SEC operations; however, all of these structures have been demolished and the transformers have been removed. Presently, much of the former SEC property is overgrown with woody vegetation and an area covered with an engineered impervious cap/barrier. Additionally, a metal sheet piling wall is located along the northern edge of the property, bordering Arbuckle Creek, to prevent erosion of the stream bank.

In addition to the former SEC property, the Site includes several project areas, identified as areas of potential concern, that have been investigated and are the subject of this Proposed Plan. These project areas were investigated due to requests from community members or due to potential contamination from flooding downstream from the former SEC property. These are the project areas being addressed in this Proposed Plan:

- Possible Transformer Storage Area
- Britt Bath House Area
- Berwind Green Hill Mine Dump Area (aka Needles Eye)
- Rocklick Road
- NR&P Supply House (aka Powerhouse)
- Residential Properties (located along Arbuckle Creek)
- Arbuckle Creek and Arbuckle Creek Wetlands
- New River
- Mines

Possible Transformer Storage Area

The Possible Transformer Storage Area is located immediately east of the former SEC property on the southern side of Arbuckle Creek. Historically, transformers may have been stored in this area. Additionally, it was claimed that PCB-contaminated oil was disposed of in a 14-foot-deep pit from 1973 to 1974. In 1993, the location of the suspected pit was identified by a former SEC employee; however, he did not have personal knowledge of any dumping activities in the pit. The former SEC employee located the suspected pit in an area southeast of the SEC building. The suspected pit area identified was approximately 250 feet long and 30 to 40 feet wide.

Britt Bath House Area

The Britt Bath House area is approximately three acres of land located immediately north of the former SEC property on the northern bank of Arbuckle Creek. The Britt Bath House consisted of a large brick building, which was the former bath house, and a small brick building south of the main building. The bath house was used by miners employed at the nearby former NR&P Minden Mine. The bath house was in operation from the 1920s to the late 1950s or early 1960s. The bath house building was used by SEC for storage of miscellaneous equipment, including switch gear, cabinets, and floodlights, among other things, until the late 1970s. In the late 1980s to early 1990s, the former bath house was used by a previous property owner as a garage for repair of cars and trucks, and the small building was used as a repair shop for televisions. The previous owner also used the property to repair mining equipment and infrequently refurbished transformers. In 1990, a transformer was observed in the northwestern portion of the property. The transformer was open and there were no signs of stained soil or stressed vegetation.

Berwind Green Hill Mine Dump Area (aka Needles Eye)

The Berwind Green Hill Mine Dump was historically an open coal mine dump operated by NR&P. Mine dump debris is a mixture of coal, slate, sandstone, and shale material. The area was abandoned at an unknown date. Concerned Citizens to Save Fayette County provided anecdotal evidence that several truckloads of sediment from Arbuckle Creek may have been placed at the mine dump area as part of a flood control effort in 1984. Around 1987, the abandoned dump was covered with soil and revegetated. The area is located on the southern slope of a hillside and is bordered to the north, east, and west by woodland. The southern foot of the slope is bordered by residential homes approximately 500 feet downslope of the mine dump area.

Rocklick Road

In 1990 Rocklick Road was identified by the Concerned Citizens to Save Fayette County as an area that received sediment from Arbuckle Creek in 1984 as part of a road fill and surfacing project. The portion of Rocklick Road that reportedly received dredged sediment from Arbuckle Creek is approximately 1,000 square feet and is located on an unpaved portion of the road. Several residential dwellings are located near the area, which is immediately adjacent to Rocklick Creek. There have also been statements by community members that PCB-containing oil may have been sprayed on the unpaved portion of the road for dust control.

NR&P Supply House (aka Powerhouse)

The NR&P Supply House is located in the southern portion of Minden. The NR&P Supply House was a building that contained six abandoned transformers in the basement. The transformers were removed from the basement and disposed of in 1992. The aboveground portion of the NR&P Supply House was reportedly demolished in 1996. This area is now overgrown with bushes and trees. There is a small opening to the basement. Several residences are located near the NR&P Supply House.

Mines

Historically, the town of Minden was a coal mining town dating back to the late 1800s. During that time, several mine shafts were in operation. Coal mining was conducted in Minden until the 1950s when operations ceased, and mines were abandoned. Approximately 200 feet southeast from the former SEC property is a closed abandoned entrance to the Minden Mine. In 1990, it had been reported by the Concerned Citizens to Save Fayette County that PCBs were dumped directly into the Minden Mine.

Residential Properties (located along Arbuckle Creek)

Residential properties are located within the floodplain of Arbuckle Creek downstream of the former SEC property. In 1984, sediment from the creek was allegedly placed on residential properties in the form of berms for flood control and as backfill to restore yards to grade. Residents are located west of the former SEC property and downstream from the property to the east. The closest residential property downstream of the former SEC property is located approximately 0.25 miles to the northeast. Residents are connected to a public water supply and do not have private wells.

Arbuckle Creek and Arbuckle Creek Wetlands

Arbuckle Creek flows east for approximately one mile past the former SEC property and southeast for approximately two additional miles through the New River Gorge National Park and Preserve to its confluence with the New River. The approximately one-mile stretch of the creek immediately downstream of the former SEC property flows past residential properties and wetlands.

New River

The New River is approximately 360 miles long and flows through North Carolina, Virginia, and West Virginia before joining with the Gauley River to form the Kanawha River in Gauley Bridge, West Virginia. Arbuckle Creek joins the New River approximately three miles downstream of the former SEC Property. At the junction of Arbuckle Creek and the New River, the New River flows to the north/northeast.

Previous Environmental Investigations at the Site

Former SEC Property

In September 1984, the West Virginia Department of Natural Resources, of which part is now incorporated within the WVDEP, inspected the former SEC property. EPA initially inspected the Site in October 1984. During these initial inspections, hundreds of transformers and capacitors were observed across the former SEC property. Several of the transformers and capacitors were broken open with oil spillage evident on the ground surface. Samples were collected during these inspections and the analytical results revealed very high (up to 260,000 milligrams per kilogram ("mg/kg")) levels of PCBs. Additional sampling was completed between November 1984 and February 1985 to better characterize the impacts.

Between December 1984 and December 1987, EPA conducted a removal action in response to the high levels of PCBs and the evidence of offsite contamination migration. The removal action included the removal and disposal of capacitors, transformers, drummed solids and liquids, and approximately 4,735 tons of PCB-contaminated soil. The western end of the property was excavated to a depth of six inches while an area just west of the SEC building was excavated to a depth of two feet. The removal action included an attempt to treat the 4,735 tons of excavated soil onsite via solvent extraction, which proved unsuccessful.

EPA returned to Minden in 1990 and conducted sampling at the former SEC property. Surface soil, subsurface soil, surface water, sediment, and the public water supply were sampled. The sample analyses indicated that the public water supply was not impacted. Due to elevated PCB concentrations at the former SEC property, another removal action was conducted between November 1990 and January 1991. This removal action consisted of the excavation of six areas around the SEC building. All excavated soil was disposed of offsite. All excavated areas were backfilled with soil from an area south of the former SEC property.

In 1993, additional soil sampling was performed at the former SEC property by EPA with split sampling performed by the property owner and WVDEP. The highest PCB result from this sampling event was over 1,200 mg/kg.

Following a fire at the SEC building, EPA performed a third removal action from 2000 to 2001 due to PCBs remaining in the soil at levels as high as 1,200 mg/kg at the former SEC property. This removal action consisted of the installation of an impervious cap/barrier over PCB contamination and the foundation of the SEC building. The impervious cap/barrier covers approximately one acre. The impervious cap is an 18-inch compacted low permeability clay layer overlaid with 40-millimeter thick, high-density polyethylene liner. On top of the impervious layer is 12 inches of clean soil then 6 inches of topsoil. The impervious cap includes a sheet pile cutoff wall along Arbuckle Creek to prevent erosion of the creek bank. There are also surface diversions and drainage ditches to direct stormwater away from the impervious cap/barrier. Four monitoring wells were installed in the capped area.

Due to community concerns of potential migration of contamination from the former SEC property, EPA returned in 2017 to perform additional sampling at the former SEC property and the surrounding areas as part an expanded site inspection (“ESI”). The Site was listed on the National Priorities List (“NPL”) in May 2019.

Sampling in 2017 identified elevated PCBs in soil as high as 54 mg/kg in the adjacent area south of the capped area. A fourth removal action was conducted in this area from October 2019 to February 2020 to excavate approximately 1,100 tons of PCB-contaminated soil. The excavated soil was disposed offsite at approved disposal facilities. During this removal action, the east section of the cap wall was repaired and reinforced. Also, the swale on the south side of the capped area was cleared and repaired.

EPA issued the Proposed Plan for OU-1 on March 9, 2023, and held a public comment period from March 13, 2023, to April 12, 2023. A public meeting to present the Proposed Plan was held on March 21, 2023. Following consideration of comments, EPA issued the ROD selecting a remedy for OU-1 on July 8, 2024. The 2024 OU-1 ROD includes the removal of the impervious cap/barrier, excavation of all PCB-contaminated soil above 1 mg/kg, disposal of excavated PCB-contaminatated soil and the impervious cap/barrier at an approved offsite disposal facility, and backfill with clean fill, as necessary.

Possible Transformer Storage Area

In 1993, following the identification of the suspected pit location by a former SEC employee, soil samples were collected, and no PCBs were detected. In 1994, additional investigation work was conducted at the suspected pit. A geophysical investigation was performed to determine the location and extent of the suspected pit location but all that was identified was one potential object buried 12 to 15 feet below the ground surface. Additionally, two soil borings were installed in the suspected pit, and no PCBs were detected from the soil samples collected from the soil borings.

In 1997, EPA dug test pits in the suspected pit area. One of the test pits contained the remnants of a transformer. The soil samples from the test pits were analyzed for PCBs with the highest result being 1.8 mg/kg.

Britt Bath House Area

In 1990, EPA conducted sampling at the Britt Bath House. Ten surface soil samples were collected. PCBs were detected at two of the samples with the highest concentration of 2.6 mg/kg.

Berwind Green Hill Mine Dump Area (aka Needles Eye)

In 1990, EPA conducted sampling at the Berwind Green Hill Mine Dump Area. Eight surface soil samples were collected, and PCBs were not detected. In June 2018 as part of the ESI, 18 surface soil samples were collected, and PCBs were not detected in any of the samples.

Rocklick Road

In 1990, EPA conducted soil, sediment, and surface water sampling at Rocklick Road. PCBs were not detected in any of the samples.

NR&P Supply House (aka Powerhouse)

In 1989, a representative from General Electric inspected the transformers and collected samples from the basement. PCBs were not detected in the samples. In 1990, EPA conducted soil and sediment sampling at the NR&P Supply House. Surface soil samples were collected around the building and sediment samples were collected in drainage ditches near the building and downstream from the building. PCBs were not detected in any of the soil or sediment samples. In 1992, following the removal of the transformers from the basement of the NR&P Supply House, wipe samples were collected, and no PCBs were detected. In 2018, EPA collected

two sediment samples immediately downgradient of the NR&P Supply House, and no PCBs were detected.

Mines
In June 2017, water samples were collected from three mine outfalls southeast of the former SEC property. These samples were analyzed for PCB congeners and dioxins/furans. The water samples ranged from 0.000041 micrograms per liter ("µg/L") to 0.00019 µg/L for total PCB congeners. In June 2018, 13 sediment samples were collected from various mine outfalls, and one sediment sample was collected from the bottom of a mine shaft adjacent to the former SEC property, where a hole was exposed. Two soil samples were also collected around this mine hole, and two water samples were collected from within the mineshaft. Two soil samples were also collected near a mine discharge pipe. PCBs were not detected in any of the samples collected in 2018.

Residential Properties (located along Arbuckle Creek)
In January and February 1985, soil samples were collected from residential yards downstream of the former SEC property. PCB concentrations ranged from non-detect to 15 mg/kg in the January samples and non-detect to 7 mg/kg in the February samples.

In 1990, 13 surface soil samples were collected from residential properties. PCB concentrations ranged from non-detect to 5.1 mg/kg. During the ESI, soil sampling was conducted on residential properties within the floodplain and other residential properties in Minden. The highest PCB concentration observed during this sampling event was 1.3 mg/kg.

Arbuckle Creek and Arbuckle Creek Wetlands
In 1990, surface water and sediment samples were collected from Arbuckle Creek. No PCBs were detected in the surface water samples and PCB concentrations in the sediment samples ranged from non-detect to 0.64 mg/kg. As part of the ESI, sediment sampling was performed over five sampling events with surface water sampling during the first of these events. PCB concentrations in sediment ranged from non-detect to 50 mg/kg. The concentrations for total PCB congeners in surface water ranged from 0.00043 µg/L to 0.018 µg/L.

New River
Prior to the Site being listed on the NPL, no environmental investigations were performed in the New River in relation to the releases from the former SEC operations.

II. SITE CHARACTERISTICS

Physical Setting

Minden is situated in the Appalachian Plateau Physiographic Province. Topographically, the Appalachian Plateau Physiographic Province is characterized by a series of uplifted, dissected plateaus. The major tributaries have eroded broad, deep, steep-sided valleys; local relief along

the valleys may exceed 1,000 feet. Minden is located within one of these valleys with a localized relief of approximately 400 feet.

In the vicinity of Minden, there are several coal seams that contained economically viable thicknesses of coal for mining. These seams were mined as early as the late 1800s and continued to be mined until at least the late 1960s. Shallow coal seams were mined by stripping the land to reach the coal, but most mining occurred through the use of underground mining using room and pillar mining methods. A closed abandoned mine entrance is located to the southeast of the former SEC property.

The floodplain of Arbuckle Creek is a Federal Emergency Management Agency designated Zone A Flood Hazard Area (Figure 3), indicating that the area is subject to inundation by the 1-percent-annual-chance flood event (100-year floodplain). Palustrine and riverine wetlands are located downgradient of the former SEC Property and are hydraulically connected to the creek and can be inundated during flooding of Arbuckle Creek. Recent flooding events have occurred in Minden in June 2016, June 2017, June 2020, and July 2022. A July 2001 flood engulfed the town in several feet of water.

Site Geology

Overburden Composition

The area around Arbuckle Creek is mostly underlain by Dekalb and Gilpin, very stony soils. The Dekalb Series consists of moderately deep, well-drained soils found on ridge tops, hillsides, and mountainsides and formed in acid material weathered from sandstone. The Gilpin Series consists of moderately deep, well-drained soils found on rolling shale ridges and mountainsides and formed in acid material weathered from sandstone, siltstone, and shale.

Many of the soil borings completed across all the project areas indicated that the overburden consists of fill material composed of “red dog” (combustion product of coal waste), gravel, coal, and other debris such as concrete and brick above sand and silt. Where fill is not encountered, the soil is silty sand to sandy silt with gravel alluvial material of Arbuckle Creek.

Bedrock Composition

Bedrock was encountered approximately 4 to 33 feet below ground surface. The former SEC property and most of the surrounding area along Arbuckle Creek are underlain by the Pennsylvanian New River Formation (Pottsville Group). The New River Formation ranges in stratigraphic thickness from 0 to 730 feet in the Fayette County area and consists predominantly of sandstone, with some shale, siltstone, and coal. Minor amounts of conglomeratic sandstone may be present.

Hydrogeology

Groundwater is encountered at depths generally between 4 to 12 feet below ground surface in overburden and 5 to 46 feet below ground surface in bedrock. At the former SEC property,

overburden groundwater generally flows parallel to the creek towards the northeast, most likely a result of the sheet piling wall constructed between contaminated soil and Arbuckle Creek. Because the overburden monitoring well locations are limited to the vicinity of the impervious cap/barrier, it is unknown if overburden groundwater is hydraulically connected to Arbuckle Creek outside of the former SEC property. However, based on the average depth to groundwater in the overburden wells and wet soil observed as shallow as 4 feet below ground surface in the borings along Arbuckle Creek, there is likely a connection between overburden groundwater and Arbuckle Creek. At the former SEC property, the Britt Bath House Area, and the Possible Transformer Storage Area, the bedrock groundwater flows to the east and southeast.

Nature and Extent of Contamination

The RI sampling for the Site started in November 2019 and was completed in 2022. The work was conducted in two phases. Soil, sediment, surface water, wipe and groundwater samples were collected for chemical analysis. Often sampling locations had soil or sediment samples collected at multiple depths. The samples were analyzed by a fixed-base laboratory for a suite of analyses, including volatile organic compounds ("VOCs"), semivolatile organic compounds ("SVOCs"), pesticides, PCB congeners, PCB Aroclors, dioxins/furans, metals, and cyanide. Additionally, some samples were analyzed by a mobile laboratory for PCB Aroclors.

PCBs are a group of man-made organic chemicals consisting of carbon, hydrogen, and chlorine atoms. A PCB congener is any single, unique chemical compound in the PCB category. There are a total of 209 unique PCB congeners. Aroclor is a PCB mixture and one of the most commonly known trade names for PCB mixtures. There are many types of Aroclors, and each has a distinguishing suffix that indicates the amount of chlorine in the mixture.

Dioxins and furans are a group of compounds that share distinct chemical structures and characteristics. The origin of this group of compounds is as a byproduct of manufacturing other products or the chemical reaction or combustion of organic compounds in the presence of chlorine. The term dioxin commonly refers to the compound in this group considered most toxic: 2,3,7,8- tetrachlorodibenzo-p-dioxin. In order to evaluate all dioxins and furans, a toxicity equivalency factor was applied to adjust a concentration to a dioxin toxicity equivalent ("TEQ") concentration.

In the RI report the analytical results were compared to project screening levels ("PSLs"). These PSLs were selected from EPA regional screening levels, the West Virginia Residential De Minimis Standards under the WVDEP Voluntary Remediation Program, or ecological PSLs. The PSLs are not cleanup standards but were used to help identify contaminants that may require additional evaluation. For the areas listed below, total PCB concentrations were compared to the 1 mg/kg cleanup level set for the soil at the former SEC property in the 2024 OU-1 ROD.

Former SEC Property
During the RI, soil borings were advanced on the three sides of the impervious cap/barrier. Soil borings could not be advanced between the impervious cap/barrier and Arbuckle Creek, nor through the impervious cap/barrier itself. The soil borings were also advanced in areas where past excavation activities were completed.

Total Aroclor concentrations ranged from non-detect to 24 mg/kg and total PCB congener concentrations ranged from 0.000002 mg/kg to 49.7 mg/kg. While no soil samples were collected under the impervious cap/barrier during the RI sampling, a review of historical results indicate that the highest PCB result found is 1,208.8 mg/kg below the cap.

The VOC results were not detected above PSLs in any of the samples. Of the 90 samples analyzed for SVOCs, 25 samples had at least one SVOC above a PSL. Only one of 90 samples analyzed for pesticides had a concentration above the PSLs. Dioxin TEQ exceeded a PSL in 62 of the samples. Aluminum, antimony, arsenic, cadmium, chromium, cobalt, iron, lead, manganese, and thallium were the metals detected above PSLs. Cyanide was not detected above a PSL in any of the samples.

Possible Transformer Storage Area
None of the soil samples collected from the Possible Transformer Storage Area exceeded 1 mg/kg for total PCB congeners. One sample location had a concentration of 6.69 mg/kg for total Aroclors. This location was delineated with four soil borings that were all non-detect for PCBs, which indicates the 6.69 mg/kg concentration is localized.

There were no VOCs above the PSLs, four samples had at least one SVOC PSL exceedance, 11 samples had at least one pesticide PSL exceedance, 26 samples had dioxin TEQ that exceeded a PSL, all samples had concentrations of one or more metals exceeding the PSLs, and 10 samples exceeded a PSL for cyanide.

Britt Bath House
Out of all the samples collected at Britt Bath House, only one sample was in exceedance of 1 mg/kg for total PCB congeners.

There were no VOCs above the PSLs, 10 samples had at least one SVOC exceedance of the PSLs, 10 samples had at least one pesticide exceedance of the PSLs, 21 samples had dioxin TEQ exceeding a PSL, all samples had concentrations of one or more metals exceeding the PSLs, and 15 samples exceeded a PSL for cyanide.

Berwind Green Hill Mine Dump Area (aka Needles Eye)
For the soil samples collected at the Berwind Green Hill Mine Dump there were no exceedances of the 1 mg/kg PSL for total PCB congeners or total PCB Aroclors.

Of the samples analyzed, there were no VOCs above the PSLs, no samples had any SVOC exceedance of the PSLs, 11 samples had pesticide exceedances of the PSLs, 13 samples had

dioxins TEQ above a PSL, and all samples had concentrations of one or more metals exceed the PSLs.

Rocklick Road
None of the Rocklick Road soil samples exceeded 1 mg/kg for total PCB congeners or total PCB Aroclors.

Of the samples analyzed, there were two samples with VOCs above the PSLs, 10 had at least one SVOC exceedance of the PSLs, 12 samples had at least one pesticide exceedance of the PSLs, 18 samples had dioxin TEQ above a PSL, all samples had concentrations of one or more metals exceeding the PSLs, and four samples exceeded a PSL for cyanide.

NR&P Supply House (aka Powerhouse)
None of the soil samples collected at the NR&P Supply House exceeded 1 mg/kg for total PCB congeners or total PCB Aroclors.

Of the samples analyzed, there were no VOCs above the PSLs, four had at least one SVOC exceedance of the PSLs, no samples had any pesticide exceedance of the PSLs, nine samples had dioxin TEQ above a PSL, all samples had concentrations of one or more metals exceed the PSLs, and two samples exceeded the ecological PSL for cyanide.

Residential Properties
For the residential soil samples, 13 samples exceeded 1 mg/kg for total PCB congeners or total PCB Aroclors.

Of the samples analyzed, there were no VOCs above the PSLs, 27 samples had at least one SVOC exceedance of the PSLs, 25 samples had pesticide exceedance of the PSLs, 94 samples had dioxin TEQ above a PSL, 112 samples had concentrations of one or more metals exceeding the PSLs, and 18 samples exceeded a PSL for cyanide.

Arbuckle Creek and Arbuckle Creek Wetlands
For the soil samples collected in the floodplain of Arbuckle Creek, 15 samples exceeded 1 mg/kg for total PCB congeners or total PCB Aroclors.

Of the samples analyzed, there were seven samples that had VOCs above PSLs, there are 71 samples that had at least one SVOC exceedance of the PSL, 71 samples had pesticide exceedance of the PSLs, 127 samples had dioxin TEQ above a PSL, all samples had concentrations of one or more metals exceeding the PSLs, and 37 samples exceeded a PSL for cyanide.

Current and Future Potential Land Use

Land use in Minden is primarily residential. The Site covers many land parcels. According to the City of Oak Hill website, the parcels are almost all zoned as either residential or land

conservation, with a few parcels that are zoned commercial. The parcels zoned for commercial use are not being used for commercial businesses. Many of the residential parcels are vacant. Due to frequent flooding of Arbuckle Creek and the location of the mapped floodplain, development and future use within the floodplain is unlikely. Outside the floodplain, the parcels are likely to continue to be used as residential properties or for land conservation.

III. SCOPE AND ROLE OF THIS ACTION

OU-1 consists of the previously capped material along with the adjacent impacted soils at the former SEC property and was addressed by the July 8, 2024 ROD. This Proposed Plan consists of a proposed action for OU-2. OU-2 consists of all the soil and sediment project areas except the former SEC property. Following the completion of the cleanup at OU-1 and OU-2, EPA will seek comments on an additional proposed cleanup plan if there is any groundwater contamination remaining at the Site.

The preferred alternative proposed herein will prevent current and potential future exposure to contaminated soil and sediment through the removal and offsite disposal of PCB- and dioxin-contaminated soil and sediment.

IV. SUMMARY OF SITE RISKS

Human Health Risk Assessment

The Human Health Risk Assessment ("HHRA") was conducted to characterize and quantify the current and potential future human health risks that would occur if no remedial action were taken to address contaminated media at the Site. The HHRA identifies the potential exposure pathways in which people may be exposed to Site contaminants, the toxicity of the contaminants present, and the potential for carcinogenic and non-carcinogenic effects to occur from exposure to the contaminants. Receptor populations evaluated in the HHRA included future adult/child residents, current/future recreators, current/future trespassers, potential future industrial workers, and potential future construction workers.

Unacceptable human health risks from exposure to site-related PCBs and/or dioxins/furans were present for the Possible Transformer Storage Area, the Britt Bath House Area, Arbuckle Creek and Arbuckle Creek Wetlands, and residential properties R5, R6, R7, R8, and R9; remedial action will be conducted at these properties. The human health risks for the Berwind Green Hill Mine Dump Area, Rocklick Road, the NR&P Supply House, the mines, the New River, and residential properties R3, R4, R10, and R11 were within the CERCLA acceptable risk range for exposure to site-related PCBs and/or dioxins/furans; no remedial action will be taken.

Ecological Risk Assessment

The Screening Level Ecological Risk Assessment ("SLERA") indicated potential risks to aquatic and terrestrial receptors from direct exposure to a variety of chemicals in surface soils, including SVOCs, pesticides, PCBs, dioxins and furans, and metals.

Potential risks were indicated through food web exposure to terrestrial and semiaquatic upper trophic-level receptors from exposure to PCBs, dioxins and furans, and metals above the no-observed-adverse-effect level ("NOAEL"). Potential risks were also indicated based on food web exposures above the lowest-observed-adverse-effect-level ("LOAEL") for aquatic habitats (Arbuckle Creek and Arbuckle Creek Wetlands, and New River) and terrestrial habitats (Berwind Green Hill Mine Dump Area, Britt Bathhouse, Possible Transformer Storage Area, Rocklick Road, and the former SEC Property). The contaminants of potential ecological concern ("COPECs") for aquatic habitats are copper for Arbuckle Creek and Arbuckle Creek Wetlands, and New River, and mercury for Arbuckle Creek and Arbuckle Creek Wetlands. The COPECs for terrestrial habitats are PCBs (NR&P Supply House and former SEC property), mercury (Britt Bath House and Possible Transformer Storage Area), and nickel (Berwind Green Hill Mine Dump Area, NR&P Supply House, Rocklick Road, and former SEC property). Site-wide exposure to constituents across all aquatic habitats showed no risks posed by any of the contaminants of potential ecological concern. Site-wide exposure scenarios across all terrestrial habitats showed risks to the short-tailed shrew due to nickel.

The concentrations of SVOCs, pesticides, and metals were consistent with background levels and/or not associated with the releases from the former SEC activities.

To address ecological risk from PCBs based on the food web exposures above a LOAEL hazard quotient of 1 a preliminary remediation goal ("PRG") for total PCBs of 1 mg/kg based on the former SEC property soil cleanup level will be used.

To evaluate whether a cleanup driven by human health risk or by exceedances of the federal residential cleanup standard for PCBs would also address the potential risks from direct exposure and food web exposure above the NOAEL for dioxin, a surface-weighted average-concentration evaluation ("SWAC") was performed. The SWAC evaluation indicated that, if the PCBs above a PRG of 1 mg/kg and the co-located dioxin TEQ are remediated, then the surface-weighted averages for dioxin TEQ for each exposure area will fall below background concentrations and be protective of ecological receptors. Therefore, no action is warranted for dioxin TEQ to address ecological risk.

Risk Assessment Summary

The HHRA and SLERA demonstrated that Site conditions at specific areas pose unacceptable potential risks to human health and the environment and that remedial actions are necessary to reduce the risks to EPA's acceptable levels. Therefore, EPA has determined that response actions are necessary to protect public health or welfare or the environment from actual or

threatened releases of hazardous substances into the environment. The project areas that EPA has determined require response actions are the Possible Transformer Area (Figure 4), Britt Bath House (Figure 5), Arbuckle Creek and Arbuckle Creek Wetlands (Figures 6 and 7), and residential properties R5, R6, R7, R8, and R9.

Principal Threat Waste

The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a Site wherever practicable (40 C.F.R. § 300.430(a)(1)(iii)(A)). The principal threat concept is applied to the characterization of source materials at a Superfund site. A source material is material that includes or contains hazardous substances, pollutants or contaminants that act as a reservoir for migration of contamination, for example, to groundwater. Principal threat wastes are those source materials considered to be highly toxic or highly mobile, which would present a significant risk to human health or the environment should exposure occur.

Based on the 1990 EPA *Guidance on Remedial Actions for Superfund Sites with PCB Contamination*, PCB-contaminated soil is generally considered a principal threat waste at concentrations exceeding 100 mg/kg (residential) or 500 mg/kg (industrial land use). Treatment of principal threat waste to the maximum extent practicable was therefore considered during this remedy selection process. The 100 mg/kg PCB value was used to determine whether there is principal threat waste present at OU-2 during this remedy selection process due to the close proximity of the residential properties.

During the RI, the highest PCB concentrations found in soil was 55 mg/kg. No historic samples collected outside the former SEC property have had concentrations above the 100 mg/kg PCB value. Therefore, no principal threat waste was identified in these areas, and treatment of principal threat waste was deemed unnecessary.

V. REMEDIAL ACTION OBJECTIVES

Remedial action objectives (“RAOs”) are specific goals to protect human health and the environment. These objectives are based on available information and standards, such as applicable or relevant and appropriate requirements (“ARARs”), to-be-considered (“TBC”) guidance, and site-specific risk-based levels. To protect human health and the environment from current and potential future risk, the RAOs for the Possible Transformer Area, Britt Bath House, Arbuckle Creek and Arbuckle Creek Wetlands, and residential properties R5, R6, R7, R8, and R9 are as follows:

1. Prevent exposure of ecological receptors to PCBs in soil and sediment that present an unacceptable ecological risk.
2. Prevent direct exposure (inhalation, dermal contact, or ingestion) to PCBs and dioxin (represented as dioxin TEQ) in soil exceeding preliminary cleanup levels.

The action presented in this Proposed Plan is expected to reduce the potential for future carcinogenic risk from exposure to contaminated soil at the project areas to within EPA's acceptable risk range of 10^{-4} to 10^{-6} and reduce excess non-carcinogenic risk to a Hazard Index of less than or equal to 1.

Performance Standards

The preliminary cleanup levels proposed are 1 mg/kg of total PCBs in soil and sediment and 0.000048 mg/kg (48 ng/kg) of total dioxins (represented as dioxin TEQs) in soil. EPA is proposing to remove contaminated material until concentrations of site-related contaminants of concern (COCs) are statistically less than the cleanup level.

VI. SUMMARY OF REMEDIAL ALTERNATIVES

The following Remedial Alternatives were evaluated to address the soil and sediment posing unacceptable risk at the Possible Transformer Area, Britt Bath House, Arbuckle Creek and Arbuckle Creek Wetlands, and Residential Properties R5, R6, R7, R8, and R9:

- Alternative 1: No Action
- Alternative 2: Low Permeability Cap
- Alternative 3: Removal with Off-Site Disposal
- Alternative 4: In-Situ Treatment

Alternative 1: No Action
Estimated Capital Costs: $0
Estimated Annual Operation and Maintenance ("O&M") Cost: $0
Estimated Present Worth Cost: $0
Estimated Construction Timeframe: Not applicable

The NCP requires that a "no action" alternative be developed and retained as a baseline scenario to which the other alternatives may be compared. Under this "no action" alternative, EPA assumes that no additional remedial activities will be conducted at the Site, providing an environmental baseline against which impacts of the various remedial alternatives can be compared. With this alternative, there would be no change in the concentrations of COCs in the media because no treatment, containment, or removal of source material would occur.

Alternative 2: Low Permeability Cap
Estimated Capital Cost: $3,847,000
Estimated Annual O&M Cost: $39,986
Estimated Present Worth Cost: $4,472,000
Estimated Construction Timeframe: 8 months

This alternative includes installation of a low permeability cap to contain PCB- and dioxin-contaminated soil and sediment with concentrations greater than the PRGs. Low-permeability caps would be constructed over in-place contaminated soil and sediment. Because significant portions of the contamination present are located within the 100-year floodplain, Alternative 2 includes consolidation of contaminated soil and sediment at one location outside of the floodplain (e.g., Possible Transformer Storage Area). This consolidation would support compliance with ARARs as any excavated areas within the floodplain would be restored to preexisting elevations and flood storage capacity would remain unaltered.

Waste would remain on-site. For caps over soil, proper construction and maintenance of the cap would prevent erosion and surface water infiltration and the potential for direct contact with subsurface soil. This alternative would include a soil and sediment sampling pre-design investigation ("PDI") to refine the extent of PCB and dioxin concentrations greater than the PRGs.

The design of the cap to prevent direct contact with contaminated material and control erosion and infiltration depends on Site conditions. The thickness of the cap would be designed to sufficiently account for the various processes that could adversely affect performance and cap integrity. A low permeability cap generally includes a barrier layer of low permeable soil (e.g., clay) or a geosynthetic clay liner, drainage layer (e.g., sand/gravel, geomembrane liner), and a layer of topsoil. The placement of a cap would result in elevation increases of ground surface. The cap would also reduce the permeability of the capped area, significantly impacting hydrology. Remedial areas would be restored to pre-remedial conditions and revegetated with native vegetation. Vegetation clearing to construct the cap would be conducted, as needed. Surface water and erosion controls would be installed, as needed. An O&M plan would be required to maintain the integrity of the cap.

Contaminated material removed from the project areas and consolidated under one cap located outside of the floodplain would require dewatering during excavation activities as needed in some of the excavation areas. Based on recent RI activities and prior removal actions that generated waste within the former SEC Property, it is anticipated that water generated during excavation and consolidation would be non-hazardous/non-Toxic Substances Control Act ("TSCA") waste, which would be transported offsite for disposal. Alternatively, water generated during excavation and consolidation could be treated on-site prior to discharge to the Oak Hill Wastewater Treatment Plant if the wastewater treatment influent requirements are met. Another option is the water could be treated on-site prior to discharge to Arbuckle Creek if the substantive requirements of the Clean Water Act ("CWA") are met for effluent standards and the prevention of degradation of surface water.

Impacts to the creek, riparian corridor and all associated wetlands that may be adversely impacted by this alternative must be considered and controlled or mitigated during and after implementation of the alternative.

During material handling activities, fugitive dust emissions would be monitored and managed. Erosion and sedimentation controls would be put in-place during the construction phase and turbidity within the water body would be monitored and managed as needed. Due to the risk of flooding during cap construction, precautions would need to be taken to mitigate the risk that contaminated soil or sediment could be released and potentially transported downstream within the creek and adjacent floodplains.

Access restrictions and institutional controls ("ICs") would be required because contamination would be left in-place above levels that do not allow for unlimited use and unrestricted exposure. Access restrictions would include fencing with signage to restrict access to the capped area. ICs would include establishing land use restrictions prohibiting disturbance of the capped area. Periodic evaluation would be required to assess the effectiveness of the access restrictions and ICs.

Five-year reviews ("FYRs") would be required to determine whether the remedy at the Site is protective of human health and the environment. Typically, 30 years of these post-implementation activities are assumed for costing purposes, however, with waste left in place under a cap, long term monitoring ("LTM"), O&M, and FYRs would continue in perpetuity.

Alternative 3: Removal with Off-Site Disposal
Estimated Capital Cost: $4,449,000
Estimated Annual O&M Cost: $0
Estimated Present Worth Cost: $4,449,000
Estimated Construction Timeframe: 6 months

This alternative would include removal of PCB- and dioxin-contaminated soil and sediment with concentrations greater than the PRGs. The removed material would be replaced with clean backfill, as necessary, followed by restoration activities. Based on historical sample results, the depth of soil and sediment excavations ranges from approximately 1 to 10 feet below ground surface. The Possible Storage Transformer Area would require the deepest excavation depth of approximately 10 feet. Confirmation sampling would be required to verify that remaining concentrations are at or below PRGs. Excavated material would be transported offsite for disposal at an approved, licensed facility. Sediment from Arbuckle Creek and Arbuckle Creek Wetlands would require dewatering prior to disposal.

This alternative would include a soil and sediment sampling PDI to refine the extent of PCB and dioxin concentrations greater than the PRGs.

It is estimated that approximately 8,902 cubic yards of contaminated material would require removal; this volume estimate includes a 10% contingency. Both TSCA waste and non-TSCA waste are expected to be generated and require offsite disposal. The TSCA waste, excavated soil and sediment with total PCB concentrations ≥ 50 mg/kg, would be required to be disposed of at a TSCA-approved landfill, TSCA-approved incinerator, or a RCRA Subtitle-C landfill permitted to accept PCB waste with concentrations ≥ 50 mg/kg. The non-TSCA waste,

excavated soil and sediment with total PCB concentrations greater than 1 mg/kg and less than 50 mg/kg, would be required to be disposed of in a RCRA Subtitle-D landfill. Note that only one soil sample that was collected adjacent to Arbuckle Creek was detected with concentrations of PCBs greater than 50 mg/kg. Therefore, it is assumed that approximately six cubic yards of soil with PCB concentrations ≥ 50 mg/kg from would require off-site disposal as TSCA waste.

Dewatering would be required during excavation activities as needed in some of the excavation areas. Based on recent RI activities and prior removal actions that generated investigation derived waste within the former SEC Property, it is anticipated that water generated during excavation and stockpile dewatering would be non-hazardous/non-TSCA waste, which would be transported offsite for disposal. Alternatively, water generated through excavation and stockpile dewatering could be treated on-site prior to discharge to the Oak Hill Wastewater Treatment Plant if the wastewater treatment influent requirements are met or could be treated on-site prior to discharge to Arbuckle Creek if the substantive requirements of the CWA are met for effluent standards and the prevention of degradation of surface water.

Impacts to the creek, riparian corridor and associated wetlands that may be adversely impacted by this alternative must be considered and controlled/mitigated during and after implementation of the alternative. Excavated areas would be restored to pre-remedial conditions and revegetated with native vegetation.

During excavation and material handling activities, fugitive dust emissions would be monitored and managed. Erosion and sedimentation controls would be put in-place during construction. Due to the risk of flooding, during excavation activities, precautions would need to be taken to mitigate the risk that contaminated soil or sediment could be released and potentially transported downstream within the creek and adjacent floodplains.

Because the excavated material would be permanently removed, no access restrictions or ICs would be required. LTM, O&M, and FYRs would also not be required.

Alternative 4: In-Situ Treatment
Estimated Capital Cost: $4,244,000
Estimated Annual O&M Cost: $41,302
Estimated Present Worth Cost: $4,954,000
Estimated Construction Timeframe: 4 months

This alternative includes in-situ treatment via solidification/stabilization to treat PCB- and dioxin-contaminated soil and sediment with concentrations greater than the PRGs. In-situ treatment would be used to immobilize the contaminants in the soil and sediment; no materials would be removed. Soil and sediment treated by solidification/stabilization are vulnerable to weathering processes; therefore, dermal exposure pathways are not necessarily broken by solidification/stabilization. For this reason, the in-situ treatment of soil includes the placement of a warning layer and clean soil over the treated soil. Treatment of sediment includes placement of a clean habitat layer of 2 to 3 inches of soil or sand over the treated sediment.

This alternative would include a soil and sediment sampling PDI to refine the extent of PCB and dioxin concentrations greater than the PRGs.

Solidification/stabilization involves injecting or mixing (passively or mechanically) reagents into contaminated media to decrease the mobility of contaminants physically and/or chemically. Solidification uses a reagent to bind and encapsulate the contaminated media, decreasing permeability and increasing compressive strength. Stabilization involves processes that cause a chemical reaction to reduce leachability/mobility and toxicity of contaminants. Solidification/stabilization reagents include cement, pozzolanic material, thermoplastics, polymers, asphalt, activated carbon and clays. The performance of solidification/stabilization is dependent on the type of reagent used to immobilize the contaminants. It is likely that treatment would increase the in-place volume of soil/sediment. The increase in treated soil/sediment volume and the placement of clean soil/habitat layers would result in elevation increases of Site ground surface, and treatment would also reduce the permeability of the treated soil/sediment, significantly impacting hydrology.

A treatment PDI would be required to determine the appropriate reagent to use for soil and sediment. In-situ treatment of sediments would likely use an activated carbon reagent. Delivery methods for treatment agents are minimally intrusive. PCBs would be effectively removed from the bioavailable fraction of sediment, reducing the mobility, bioaccumulation, and associated ecological risk. Activated carbon, typically pelletized in nature, naturally mixes into the upper bioactive zone and regeneration of a clean habitat layer would occur over time with natural re-sedimentation processes or can be expedited via construction of a clean habitat layer after applying activated carbon. Note that storm events and flooding may hinder the re-sedimentation process due to scour. An O&M plan would be required to maintain the integrity of the treatment area. An LTM plan would be required to evaluate that the treatment is functioning as designed.

Any loss of wetlands or floodplain storage capacity based on the treatment must be mitigated. Impacts to the creek, riparian corridor and all associated wetlands that may be adversely impacted by this alternative must be considered and controlled/mitigated during and after implementation of the alternative.

During treatment and material handling activities, fugitive dust emissions would be monitored and managed. Erosion and sedimentation controls would be put in-place during implementation and turbidity within the water body would be monitored and managed. Due to the long-term risk of flooding, precautions would need to be taken during treatment to mitigate the risk that contaminated soil or sediment would be released and potentially transported downstream within the creek and adjacent floodplains.

Access restrictions and ICs would be required because contamination would be left in-place above levels that do not allow for unlimited use and unrestricted exposure. Access restrictions would include fencing with signage to restrict access to treated areas. ICs would include

establishing land use restrictions prohibiting disturbance of the treated areas. Periodic evaluation would be required to assess the effectiveness of the access restrictions and ICs, and identify any needed repairs (e.g., fencing repair, signage replacement, revegetation/repair of restored wetlands/habitat layer).

LTM would include evaluation of surface water and sediment quality, the condition of the treatment area and associated controls, and whether biota has re-established on and around the treatment area. Treatment area O&M activities would consist of annual inspections with as needed inspections when a significant storm event occurs. Repairs would be performed as needed based on inspection results. The inspection and LTM activities would be documented in annual reports, and the ICs would be reviewed annually. LTM is presumed to be conducted annually for the first five years and a minimum of every five years after that. In addition, FYRs would be required to determine whether the remedy at the Site is protective of human health and the environment. Typically, 30 years of these post-implementation activities are assumed for costing purposes, however, with waste left in place, LTM, O&M, and FYRs would continue in perpetuity.

VII. EVALUATION OF ALTERNATIVES

The remedial alternatives summarized above are compared to each other using the nine criteria set forth in 40 C.F.R. § 300.430(e)(9)(iii). This section of the Proposed Plan explains the relative performance of each alternative against the evaluation criteria, noting how each compares to the other options under consideration. The Possible Transformer Area, Britt Bath House Area, Arbuckle Creek and Arbuckle Creek Wetlands, and residential properties R5, R6, R7, R8, and R9 were considered together when evaluating the alternatives using the nine criteria.

Evaluation Criteria for Superfund Remedial Alternatives
Threshold criteria: Must be satisfied in order for a remedy to be eligible for selection.
1. Overall Protection of Human Health and the Environment determines whether an alternative eliminates, reduces, or controls threats to public health and the environment through ICs, engineering controls, or treatment.
2. Compliance with ARARs evaluates whether the alternative will meet all applicable or relevant and appropriate requirements (ARARs) of Federal and State environmental statutes, regulations, and other requirements that pertain to the site, and/or justifies a waiver.
Primary balancing criteria: Used to weigh major tradeoffs between remedial alternatives.
3. Long-term Effectiveness and Permanence considers the expected residual risk and the ability of an alternative to maintain protection of human health and the environment over time.
4. Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment evaluates the anticipated performance of an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.
5. Short-term Effectiveness considers the length of time needed to implement an alternative and the risks the alternative poses to workers, residents, and the environment during the construction and implementation period, until the cleanup goals are achieved.
6. Implementability considers the technical and administrative feasibility of implementing an alternative, including the availability of goods and services needed to implement a particular option.
7. Cost includes estimated capital and annual operations and maintenance costs; compared as present worth cost.
Modifying criteria: Considered by EPA after public comment is received on the Proposed Plan.
8. State/ Support Agency Acceptance addresses whether the State concurs or has comments on the preferred alternative, as described in the Proposed Plan.
9. Community Acceptance considers whether the local community agrees with EPA's analysis of the preferred alternative, as described in the Proposed Plan.

Detailed Analysis of Proposed Remedial Alternatives

1. Overall Protection of Human Health and the Environment

A No Action alternative (Alternative 1) must be evaluated in accordance with CERCLA and the NCP to serve as a basis for comparison with the other alternatives. Alternative 1 is not protective of human health and the environment because it does not address the unacceptable risk posed by exposures to contaminated soil and sediment described above in Section IV. Alternative 1 fails to meet the threshold criterion of protectiveness and, therefore, will not be considered further.

Alternatives 2, 3, and 4 meet this threshold criteria and would provide protection of human health and the environment. Alternative 3 is considered the most protective because the PCB-contaminated soil and sediment would be permanently removed from the Site and no access restrictions, ICs, periodic evaluations, or LTM would be required in the future. For Alternatives 2 and 4, contaminated soil and sediment would remain on-site. Alternative 4 is more protective than Alternative 2 because, after treatment, the adsorbed/stabilized contaminants would no longer be bioavailable (reduced toxicity) and would be less mobile. Both Alternatives 2 and 4 would require access restrictions, ICs, and periodic O&M to verify the integrity and effectiveness of the remedial areas.

2. Compliance with ARARs

Section 121(d) of CERCLA, 42 U.S.C. § 9621(d), and the NCP at 40 C.F.R. § 300.430(f)(1)(ii)(B), require that remedial actions at CERCLA sites at least attain legally applicable or relevant and appropriate Federal and State requirements, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law, which are collectively referred to as "ARARs," unless such ARARs are waived under Section 121(d)(4) of CERCLA, 42 U.S.C. § 9621(d)(4), and the NCP at 40 C.F.R. § 300.430(f)(1)(ii)(C).

"Applicable" requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal environmental or State environmental or facility-siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site. Only those State standards that are identified by a State in a timely manner and that are more stringent than Federal requirements may be applicable.

"Relevant and appropriate" requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal environmental or State environmental or facility-siting laws that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well-suited to the particular site. Only those State standards that are identified by a State in a timely manner and that are more stringent than Federal requirements may be relevant and appropriate.

The key ARAR for this action would be the PCB waste requirements for sampling and disposal issued pursuant to Section 6 of TSCA at 40 C.F.R. § 761.61(a)-(c).

Alternatives 2, 3, and 4 meet this threshold criteria and would comply with chemical-specific, location-specific, and action-specific ARARs. As part of these alternatives, the PCB-contaminated soil and sediment above the PRG will be either capped, removed, or treated and covered, meeting chemical-specific ARARs. All three of these alternatives would temporarily impact the wetlands and floodplains during implementation, but through detailed assessments

during remedial design, it is expected that work could be performed without permanent impairment to these resources as long as proper engineering controls are implemented and sufficient wetlands restoration/mitigation is performed to meet location-specific ARARs. To meet action-specific ARARs, these three alternatives would employ monitoring and best management practices to manage noise, odor, and stormwater. Wastes (soil, sediment, and water) generated would be properly treated, stored, and/or disposed.

3. Long-Term Effectiveness and Permanence

Alternatives 2, 3, and 4 can be effective in the long term. Alternative 3 provides the most long-term effectiveness and permanence of all the alternatives because the soil and sediment with PCBs above the PRG would be permanently removed from the Site. Alternative 4 leaves PCB-contaminated material in the floodplain and future flooding events could wash away the cover material which could impact the long-term effectiveness and permanence. The use of all-terrain vehicles, which is common in the community, could damage the caps used in Alternatives 2 and 4 and add significant costs to long-term maintenance of the capped areas. In Alternatives 2 and 4, contaminated soil and sediment would remain on-site which would require access restrictions, ICs, and periodic evaluations to verify the integrity and effectiveness of the covers. Capping and in-situ treatment which are part of Alternatives 2 and 4, respectively, are both reliable technologies if the remedial areas are maintained through proper O&M, evaluated through FYRs and LTM, and if the ICs and access restrictions are properly enforced and maintained. Thus, Alternatives 2, 3, and 4 would all provide long-term effectiveness and permanence, but Alternative 3 would be more effective in that the source material would be removed.

4. Reduction of Toxicity, Mobility, or Volume through Treatment

Alternative 2 would not provide a reduction of toxicity, mobility, or volume through treatment. Alternative 3 would only provide a reduction of toxicity, mobility, or volume through treatment if the waste characterization sampling results indicate treatment at the disposal facility is required. Alternative 4 is the only alternative that satisfies this criterion and satisfies the statutory preference for treatment. This alternative includes in-situ treatment of the soil and sediment with an appropriate reagent to physically bind or adsorb the contaminants.

5. Short-term Effectiveness

Alternatives 2, 3, and 4 pose similar short-term adverse impacts to the environment associated with disturbing wetlands; some of the temporary impacts, such as erosion and sedimentation, can be minimized with engineering controls. These three alternatives also pose similar short-term impacts to human health, although the impact of Alternative 4 would be slightly less than Alternative 2 or Alternative 3 as no contaminated material handling would occur via in-situ treatment. The risks to workers can be minimized or eliminated through engineering controls. The adverse impacts to the community are mostly associated with increased vehicular traffic

and noise during construction activities; some of the temporary impacts, such as fugitive dust emissions and surface water turbidity, can be minimized with engineering controls.

6. Implementability

Alternatives 2 and 3 are constructable and would employ reliable technologies that could be implemented with materials and services that are readily available through general construction contractors and specialty contractors for the hazardous materials handling components. Alternative 4 is constructable and would employ a technology that could be implemented with materials and services that are readily available through specialty contractors. The reliability of Alternative 2 and Alternative 4 would be dependent on the ICs and access controls remaining in place and enforced to ensure the integrity of the cap and/or treatment area. Alternative 4 reliability would further depend on the results of treatability studies which would be used to determine the appropriate reagent and application method for Site conditions.

7. Cost

The costs for Alternatives 2, 3 and 4 are summarized as follows:

	Alternative 2	**Alternative 3**	**Alternative 4**
Estimated Capital Cost:	$3,847,000	$4,449,000	$4,244,000
Estimated Annual O&M Cost:	$39,986	$0	$41,302
Estimated Present Worth Cost:	$4,472,000	$4,449,000	$4,954,000

Present worth cost is the total of an alternative over time in today's dollar value. The 30-year timeframe in the cost estimates is based on EPA guidance. Alternatives 2 and 4 would require the State of West Virginia to pay for O&M costs past 30 years and those costs are not included in this cost estimate, which is just for comparison of the alternatives. Cost estimates are expected to be accurate within a range of +50 to -30 percent. The 30-year present worth estimate was calculated using a 7 percent discount rate. Costs for long-term monitoring are included in the annual O&M costs above. The present worth cost for the three alternatives is within approximately 10% of each other, with Alternative 3 estimated to cost the least and Alternative 4 to cost the most.

8. State Acceptance

The State acceptance of the preferred alternative will be evaluated after the public comment period ends.

9. Community Acceptance

Community acceptance of the preferred alternative will be evaluated after the public comment period ends. EPA will summarize significant comments submitted during the public comment period and will respond to each issue in the responsiveness summary of the ROD.

VIII. EPA'S PREFERRED ALTERNATIVE

Based on the factors presented below, EPA's preferred alternative for the soil and sediment at the Possible Transformer Area, Britt Bath House Area, Arbuckle Creek and Arbuckle Creek Wetlands, and residential properties R5, R6, R7, R8, and R9 is **Alternative 3: Removal with Off-Site Disposal**. The estimated cost for Alternative 3 is $4,449,000. EPA is recommending Alternative 3 because it is protective of human health and the environment; it will comply with ARARs; it is a long-term, effective and permanent remedy; it is readily implementable; and it is cost-effective.

Remedy Components

The components of the preferred alternative would include the following:

1. Excavation of contaminated soils and sediment above performance standards
2. Disposal of contaminated soil and sediment at an approved offsite disposal facility
3. Backfill with clean fill, as necessary

Design Considerations

Due to the potential release of contaminated soil during a flooding event, the following mitigation strategies would be taken during the excavation work to minimize a release:

- Prior to work:
    - Evaluate upgradient watershed contributing stormwater runoff to the project area
    - Estimate stormwater flows during various storm events
    - Install perimeter erosion and stormwater controls
- During the work:
    - Continuously monitor weather for potential flash flood events
    - Excavate in small areas at a time
    - Backfill as soon as possible to minimize open excavations
    - Line and cover stockpiles with temporary covers
    - Establish a decontamination area to clean trucks and equipment before leaving the project area
    - Establish an area of sufficient size and volume to handle encountered groundwater

Rationale for Preferred Alternative

Based on the information currently available, EPA believes the preferred alternative for the soil and sediment at the Possible Transformer Area, Britt Bath House Area, Arbuckle Creek and Arbuckle Creek Wetlands, and residential properties R5, R6, R7, R8, and R9 meets the threshold criteria and provides the best balance of tradeoffs with respect to the balancing criteria. EPA expects the preferred alternative to satisfy the following statutory requirements of CERCLA § 121(b): (1) be protective of human health and the environment; (2) comply with ARARs; (3) be cost effective; and (4) utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. The preferred alternative does not satisfy the preference for treatment as a principal element because Alternative 4, which is the only alternative to include treatment, would leave PCB-contaminated soil and sediment in the floodplain, which could be released by future flooding events.

IX. COMMUNITY PARTICIPATION

EPA relies on public input so that the remedy selected for each Superfund site meets the needs and concerns of the local community.

Public Comment Period—To ensure that the community's concerns are being addressed, a public comment period will open May 21, 2026, and close June 20, 2026. During the public comment period, the public is encouraged to submit to EPA any comments on the Proposed Plan.

Public Meeting—A public meeting will be held to discuss the Proposed Plan on June 2, 2026, from 6:00 p.m. to 8:00 p.m. The public meeting will be held at Minden Community Center/New Beginning Apostolic Church, 179 McKinney Road, Minden, WV 25901.

During the comment period, you are invited to participate in any of the following ways: (1) by letter to Aaron Mroz or Lisa Trakis at the addresses listed to the right; (2) by email to Mroz.Aaron@epa.gov or Trakis.Lisa@epa.gov; (3) by leaving a voicemail at (215) 814-2008; and/or (4) in person at the public meeting. If you have any questions about the public meeting, contact Aaron Mroz or Lisa Trakis at the email addresses or telephone numbers listed above.

Written comments, questions about the Proposed Plan or public meeting, and requests for information can be sent to either representative below:

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It is important to note that, although EPA has proposed its preferred alternative, the remedy has not yet been selected for OU-2. All relevant comments received will be considered and addressed by EPA before the remedy is selected for OU-2.

Detailed information on the material discussed herein may be found in the administrative record for the Site, which includes the information from the December 2025 RI Report, the April 2026 FS Report, and other information used by EPA in the decision-making process. EPA encourages the public to review the administrative record in order to gain a more comprehensive understanding of the Site and the Superfund activities that have taken place there. Copies of the administrative record are available for review at https://semspub.epa.gov/src/collection/03/AR68069, or at the following locations:

Oak Hill Public Library
611 Main Street
Oak Hill, WV 25901
Hours: Call (304) 469-9890

EPA Administrative Records Room
Attention: Administrative Records Coordinator
Four Penn Center
1600 John F. Kennedy Boulevard
Philadelphia, PA
(215) 814-2469
Hours: Monday through Friday, 8:30am to 4:00pm
By appointment only

Following the conclusion of the public comment period on this Proposed Plan, a responsiveness summary will be prepared. The responsiveness summary will summarize and respond to substantive comments on EPA's preferred alternative. EPA will then prepare a formal decision document, the ROD, which summarizes the decision process and documents the selected remedy for OU-2. The ROD will include the responsiveness summary. Copies of the ROD will be available for public review in the designated repositories, described above.

Figure 1: Site Location

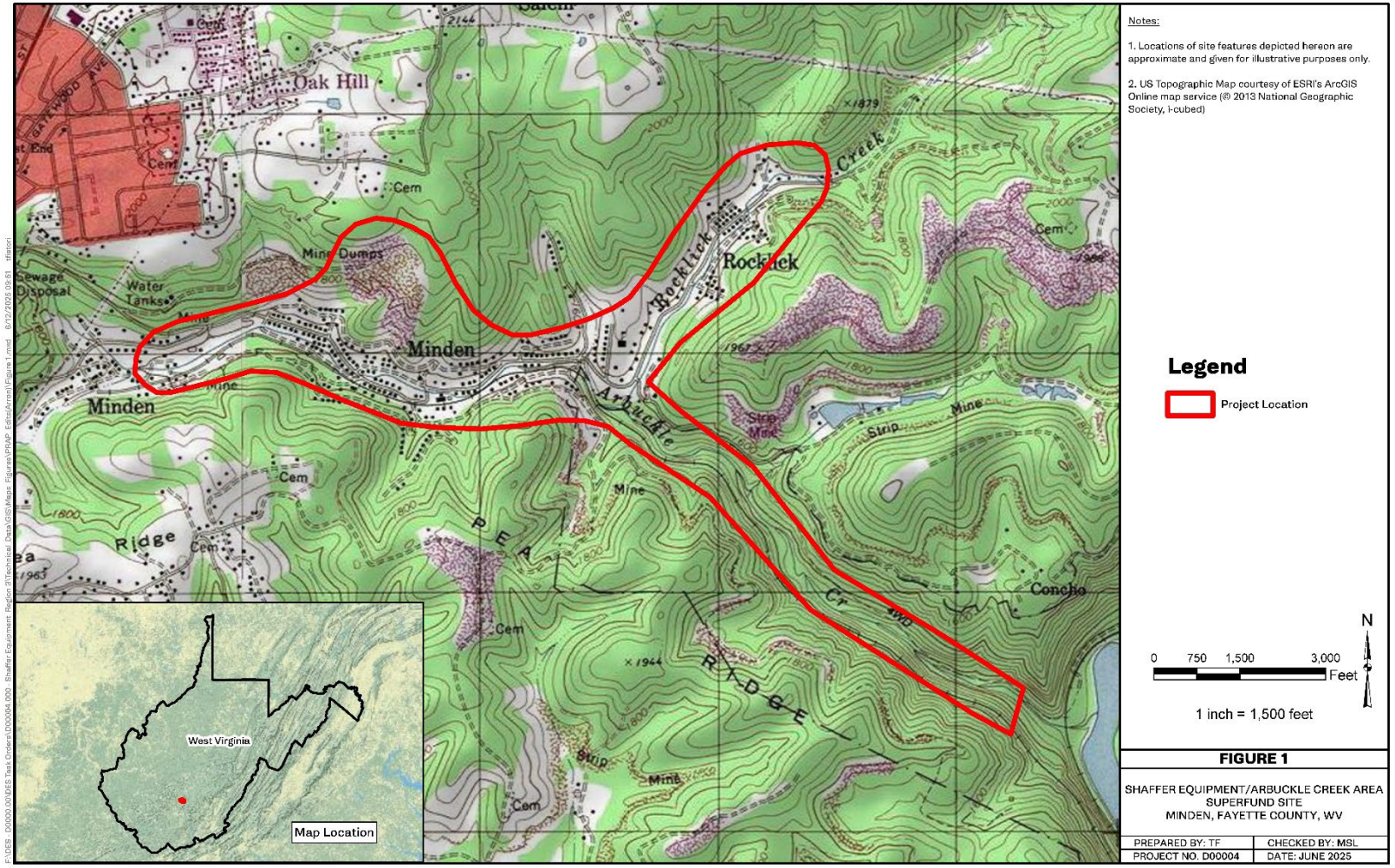

Figure 2: Project Areas

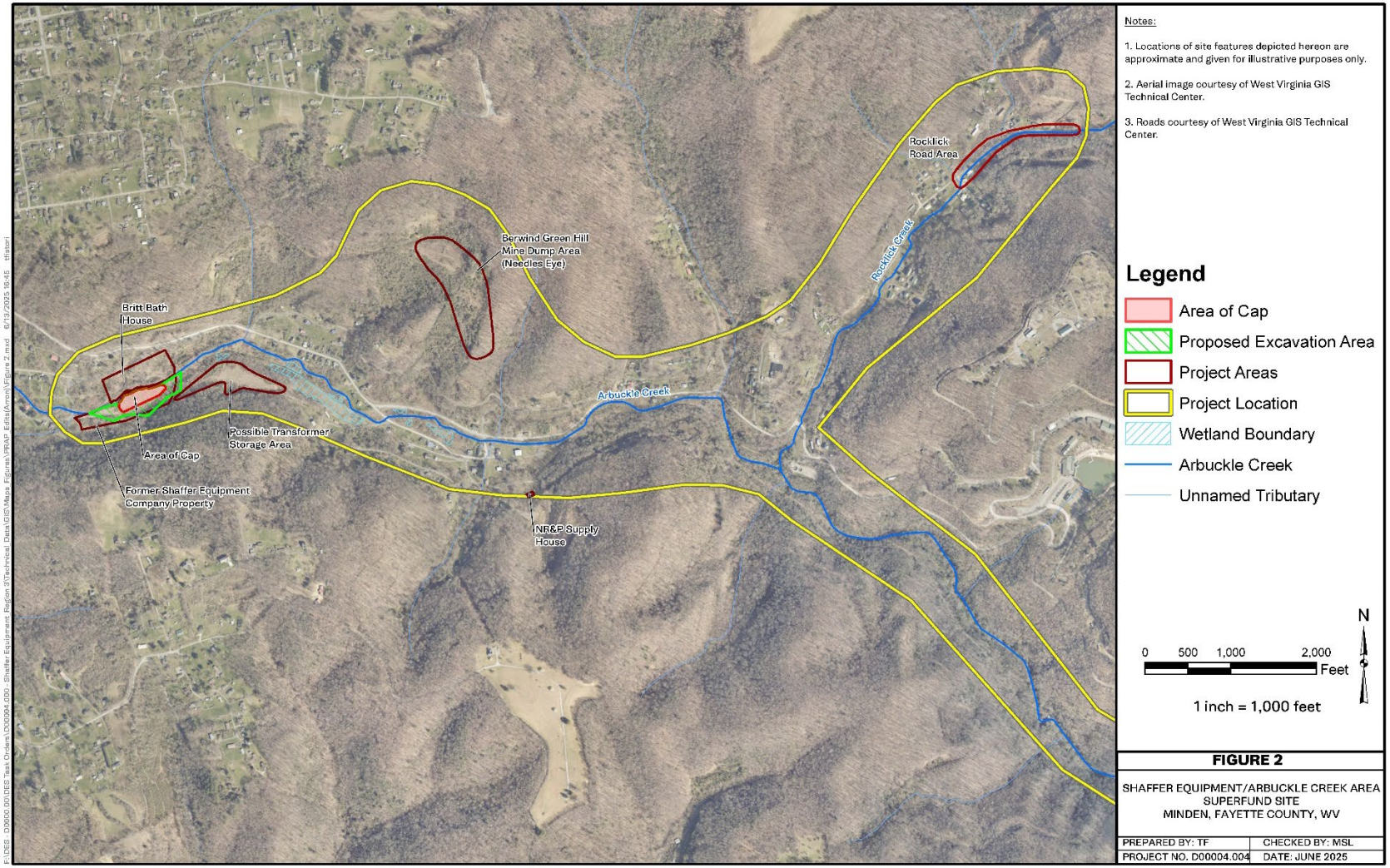

Figure 3: Floodplain

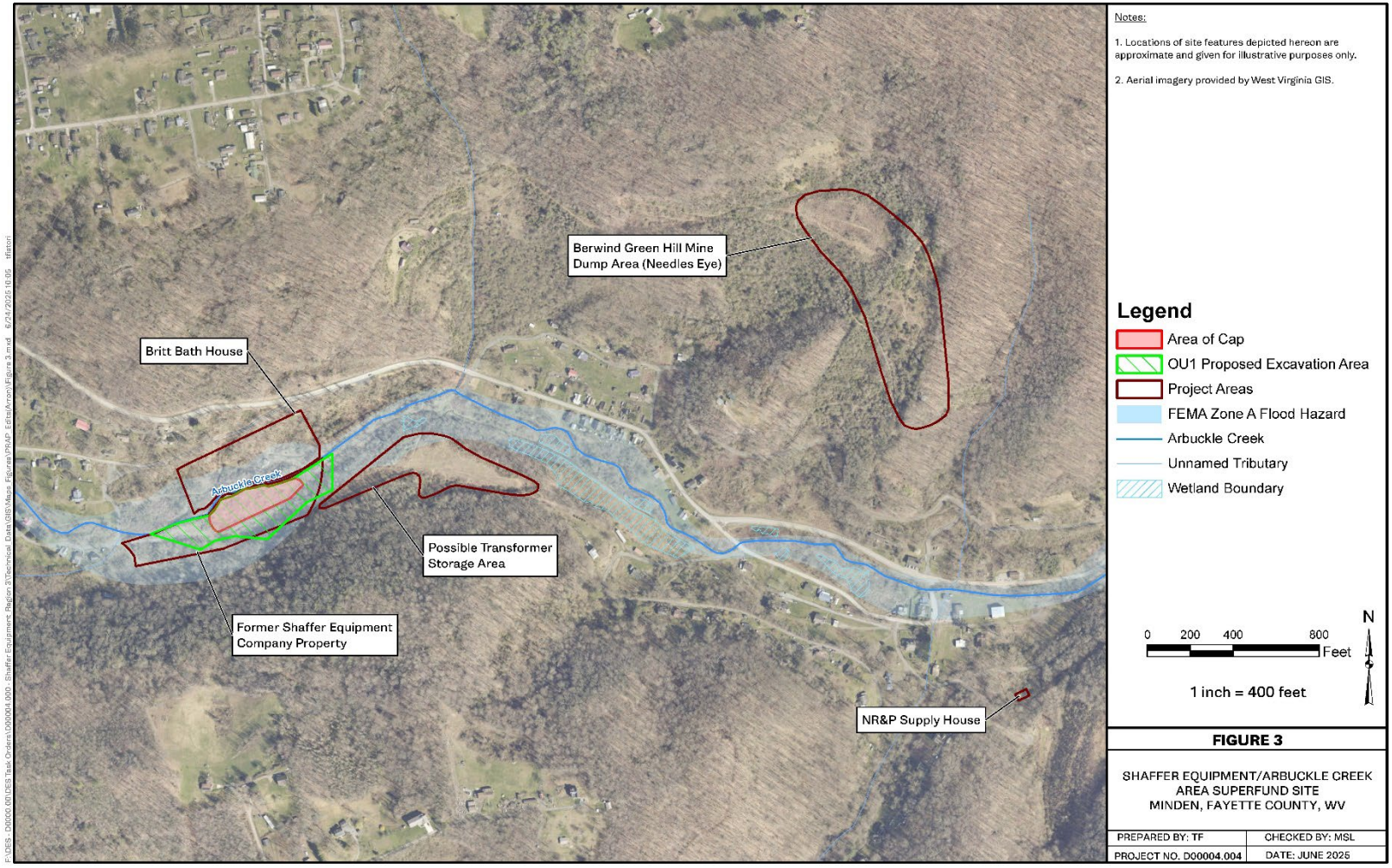

Figure 4: Possible Transformer Area

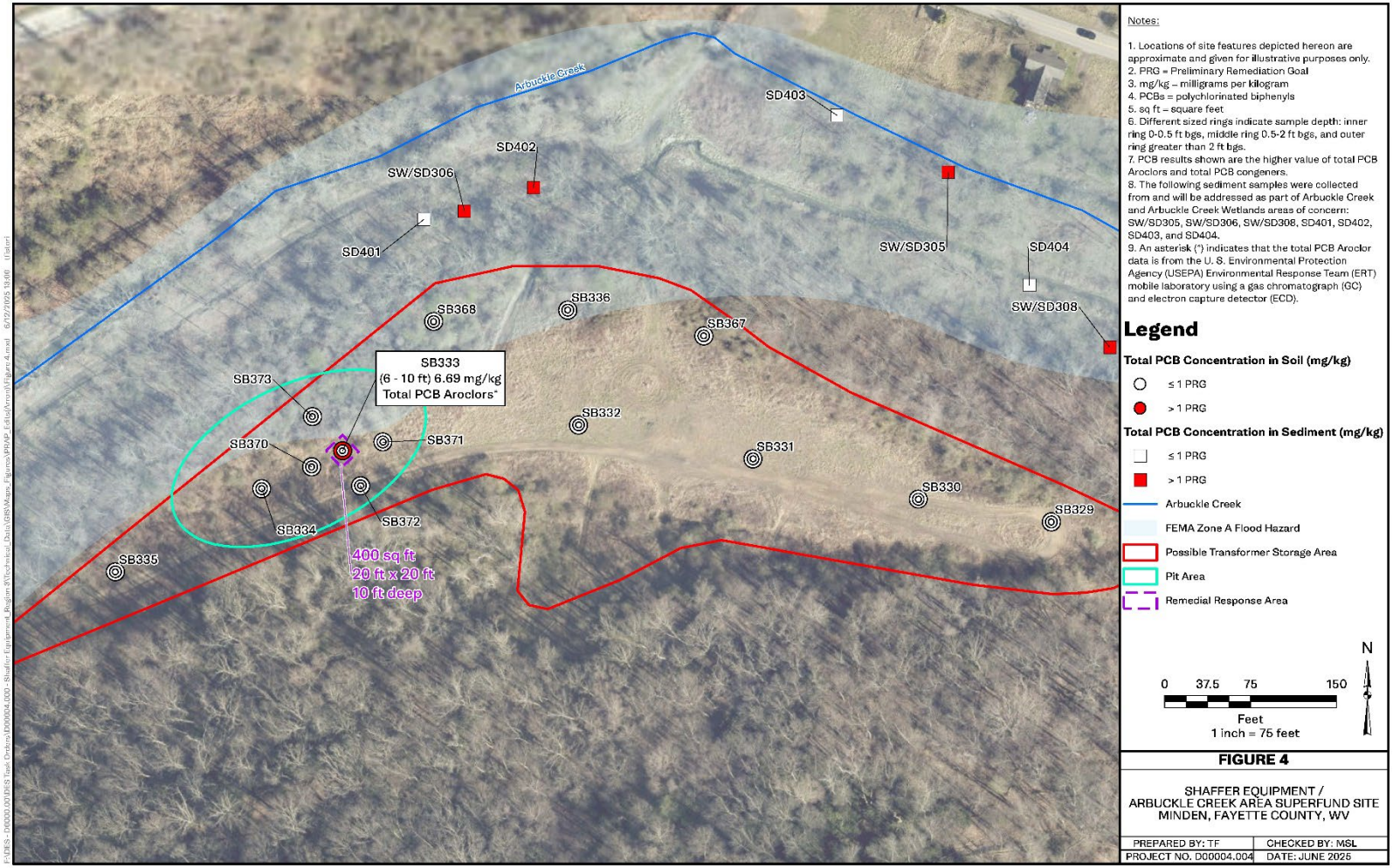

Figure 5: Britt Bath House

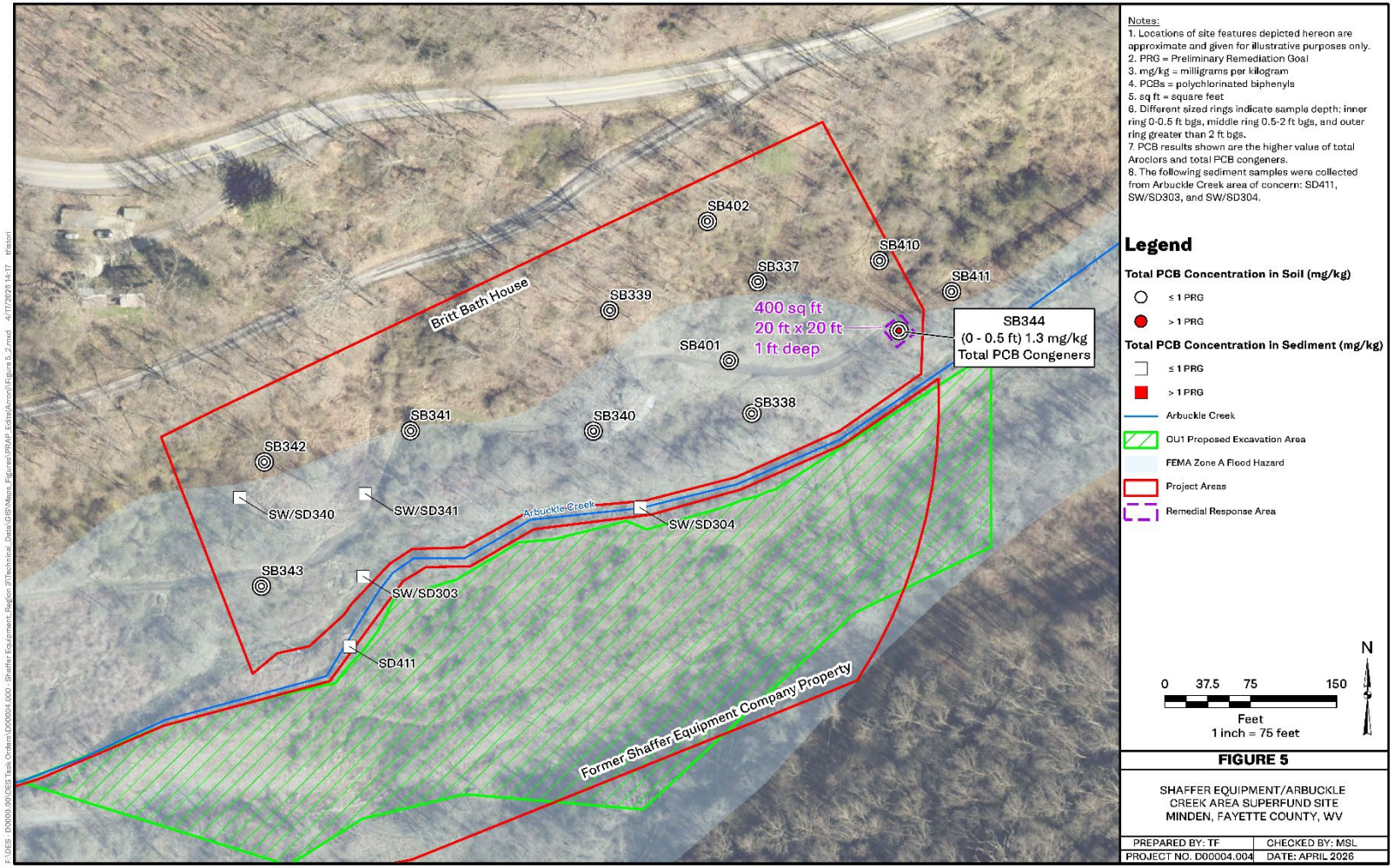

Figure 6: West Arbuckle Creek and Arbuckle Creek Wetlands

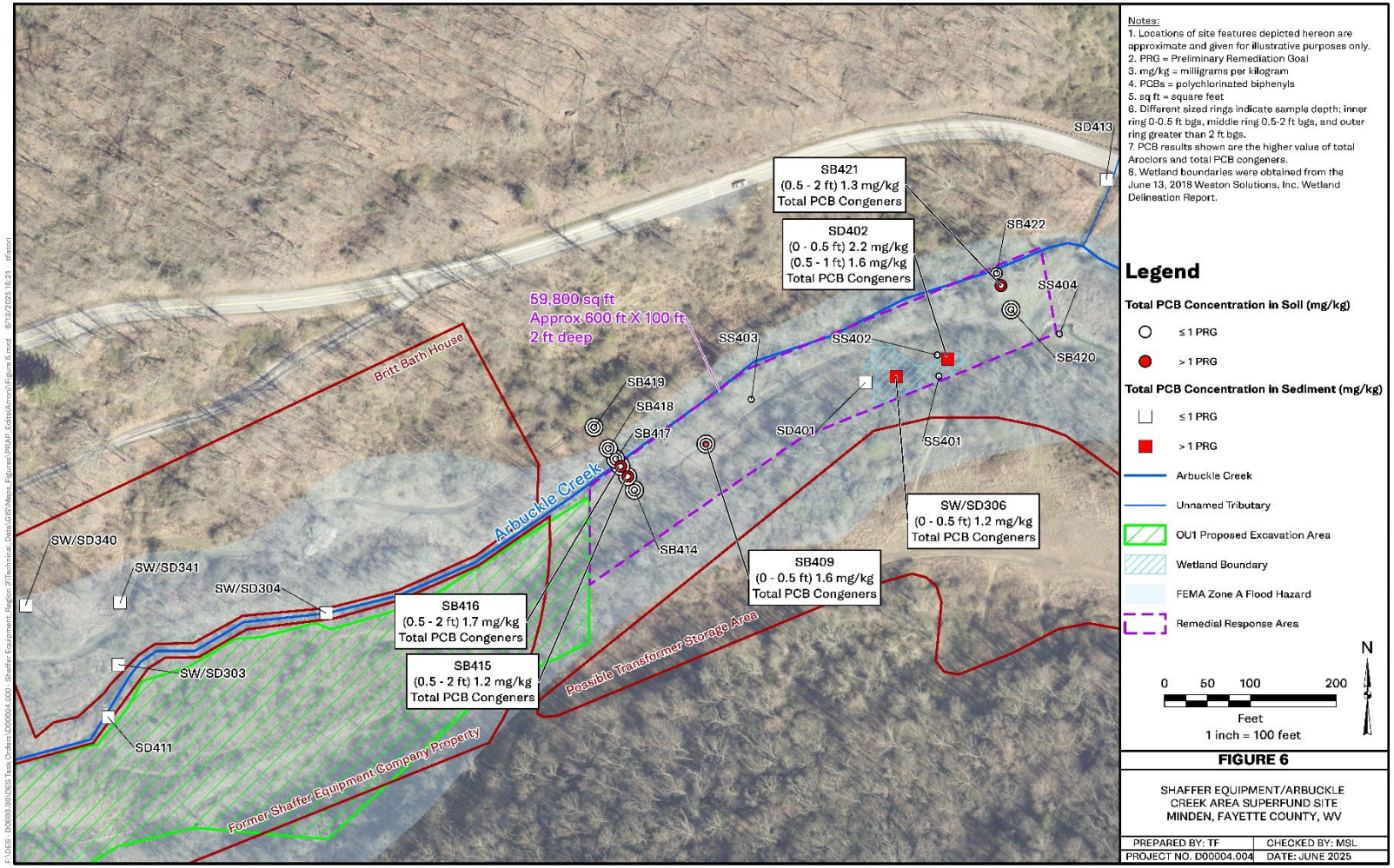

Figure 7: East Arbuckle Creek and Arbuckle Creek Wetlands