ATTACHMENT 16
Archeological Site Review
Special Waste Landfill Permit
Big Sandy Plant – Ash Pond Closure
Lawrence County, Kentucky

The project area is an existing and operational fly ash pond; therefore, work in the area is not expected to result in impacts to areas that were previously undisturbed. An archival study performed March 2012 utilizing data from the Office of the State Archeologist in Lexington, Kentucky and the Kentucky Heritage Council in Frankfort, Kentucky, indicated no archaeological sites existed in the project area. Furthermore, no cultural resources were recorded in the National Register for Historic Places with in the project area.

A cultural resources walkover conducted in March and October 2012 by URS staff archeologists indicated that a large portion of the area has been previously disturbed by existing facilities such as the fly ash pond and dams. It was found that the area displayed a low probability for containing cultural resources and therefore; would not require a formal Phase I Archaeological Survey. The referenced report has been included as part of this attachment. As a result, the proposed closure of the existing fly ash pond will have no impact on archaeological resources or historic properties.

CULTURAL RESOURCES WALKOVER OF AMERICAN ELECTRIC POWER'S BIG SANDY PLANT POND CLOSURE PROJECT IN LAWRENCE COUNTY, KENTUCKY

Lead Agency: United States Army Corps of Engineers, Louisville District

Prepared for:
American Electric Power

May 2013

525 Vine Street, Suite 1800
Cincinnati, Ohio 45202
Voice (513) 651-3440
Fax (513) 651-3452

AUTHORS:

Crista M. Haag, MA

and

Benjamin S. Goodwin, MA, RPA

PRINCIPAL INVESTIGATOR:

Christopher Bergman, PhD, RPA

ABSTRACT

URS Corporation (URS) was contracted by American Electric Power (AEP) to conduct a cultural resources walkover for the proposed Big Sandy Plant Pond Closure Project near Louisa in Lawrence County, Kentucky (the Project). The purpose of this walkover was to evaluate the Project for the probability of encountering archaeological and/or historic resources, and to make recommendations for additional cultural resources work (if needed).

The Area of Potential Effect (APE) includes all areas where ground disturbance associated with the Project is expected to occur. In this instance, the APE consists of approximately 603 acres (244 hectares) contained within the maximum limits of disturbance for the Project. URS recognizes that a smaller area may be impacted within this APE.

Given the results of the background research, which recorded a low number of cultural resources within two kilometers (1.2 miles) of the APE; the large degree of previous disturbance and deflation exhibited within the soils during the walkover; and the incidence of steep slope greater than 15 percent; the APE displays a low probability for containing intact archaeological resources.

The majority of the APE does not require formal Phase I archaeological survey. In areas where there is steep slope near potential USACE jurisdictional areas, a pedestrian survey meeting the KHC guidelines may be conducted to identify any caves, quarries, benches, rock faces, and rock overhangs. If identified, these resources would need to be surveyed per the methodology in Sanders (2006:22). The only level area that would need formal Phase I archaeological survey may be the ridgeline in the eastern portion of the APE near the potential USACE jurisdictional area. The family cemetery that was identified within the western half of the APE should be avoided.

With regard to the indirect (viewshed) APE, because the Project involves the closure of an existing facility there appears to be no major viewshed concerns. No architectural history survey is therefore recommended. If the scope of the Project changes, the viewshed may need to be re-evaluated for indirect effects.

TABLE OF CONTENTS

SECTION **PAGE**

TABLES

FIGURES

PLATES

1.0 INTRODUCTION AND PROJECT DESCRIPTION

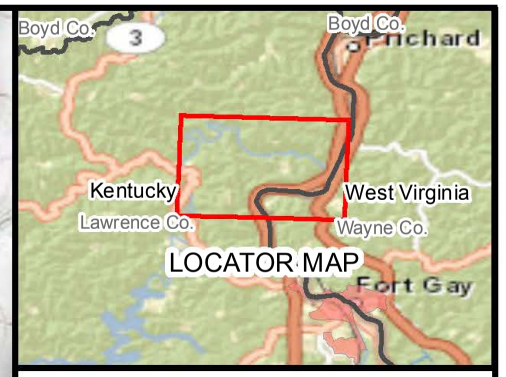
URS Corporation (URS) was contracted by American Electric Power (AEP) to conduct a cultural resources walkover for the proposed Big Sandy Plant Pond Closure project in Lawrence County, Kentucky (the Project). The purpose of this walkover was to evaluate the Project for the probability of encountering archaeological and/or historic resources during closure activities, and to make recommendations for additional cultural resources work (if needed).

1.1 PROJECT DESCRIPTION AND PROJECT AREA OF POTENTIAL EFFECT

Kentucky Power Company, a unit of AEP, is proposing to permanently close the Big Sandy Fly Ash Pond located in Lawrence County, Kentucky. AEP owns and operates the 1,097 MW Big Sandy Plant on the west bank of the Big Sandy River, near Louisa. Currently, coal combustion fly ash from the plant is disposed in the Big Sandy Fly Ash reservoir, which is impounded by the Horseford Creek Dam located approximately 0.75-miles northwest of the plant. In expectation of future Federal Regulations pertaining to wet ash impoundments, AEP proposing the design closure of the Plant's existing 130-acre (53-hectare) wet fly ash impoundment. AEP is proposing the completion of the Project since the fly ash pond will no longer be needed for wet sluice disposal beginning in 2016 (Figure 1.1). In an effort to effectively close the fly ash reservoir in accordance with expected but not-yet-promulgated Federal Regulations for wet coal combustion product (CCP) impoundments, it is AEP's desire to permanently close the facility by draining and capping the Big Sandy Fly Ash Pond. The lead federal agency for the Project is the United States Army Corps of Engineers, Louisville District (USACE).

The Area of Potential Effect (APE) will include all areas where ground disturbance associated with the Project will occur. In this instance, the APE consists of approximately 603 acres (244 hectares) contained within the maximum limits of disturbance for the Project.

Path: J:\Project\AEP\13815142 Big Sandy Special Waste LF\Data-Tech\GIS\CRM_Background_Fig1.1_Overview.mxd



LEGEND:

- Max Limit of Disturbance
- Haul Road

N

0 1,600 3,200
Scale in Feet

0 520 1,040
Scale in Meters

BASE MAP SOURCE:
USGS Topographic Quadrangles:
Fallsburg, KY/WV (1978) and
Prichard, WV/KY (1977)

Big Sandy Landfill

FIGURE 1.1
OVERVIEW MAP

JOB NO. 13815152

2.0 BACKGROUND RESEARCH

URS conducted background research in March 2012 utilizing the electronic GIS shapefiles from the Office of the State Archaeologist (OSA) in Lexington, and the Kentucky Heritage Council (KHC) in Frankfort, to locate any previously recorded cultural resources within a two-kilometer (1.2-mile) radius of the APE (referred to as the Archival Study Area, for ease of reference). This research was conducted with the primary goal of identifying any cultural resources that were previously defined within or adjacent to the APE for the Project.

As a result of the background research, only eight archaeological sites were identified within the Archival Study Area, none of which occur within the APE. One cemetery was also documented within the APE after an examination of topographic mapping.

Table 2.1 lists the archaeological sites documented within the Archival Study Area. Of these eight archaeological sites, all are located on the floodplain or on a terrace of Blaine Creek to the north of the Project. All of these resources are documented as unassigned prehistoric locales.

Table 2.1. Previous Archaeological Sites within the Archival Study Area

Site Number	Temporal Period	Site Type	NRHP Status
15La80	Unassigned Prehistoric	Open habitation w/o mounds	Not Recorded
15La81	Unassigned Prehistoric	Open habitation w/o mounds	Not Recorded
15La82	Unassigned Prehistoric	Open habitation w/o mounds	Not Recorded
15La83	Unassigned Prehistoric	Open habitation w/o mounds	Not Recorded
15La84	Unassigned Prehistoric	Open habitation w/o mounds	Not Recorded
15La85	Unassigned Prehistoric	Open habitation w/o mounds	Not Recorded
15La86	Unassigned Prehistoric	Open habitation w/o mounds	Not Recorded
15La87	Unassigned Prehistoric	Open habitation w/o mounds	Not Recorded
15La88	Unassigned Prehistoric	Open habitation w/o mounds	Not Recorded

3.0 WALKOVER FIELD METHODS AND RESULTS

3.1 FIELD METHODS

URS conducted a cultural resources walkover of the APE in March 2012 and October 2012. The March 2012 visit focused on the western portion of the APE, while the October 2012 visit focused on the eastern portion of the APE.

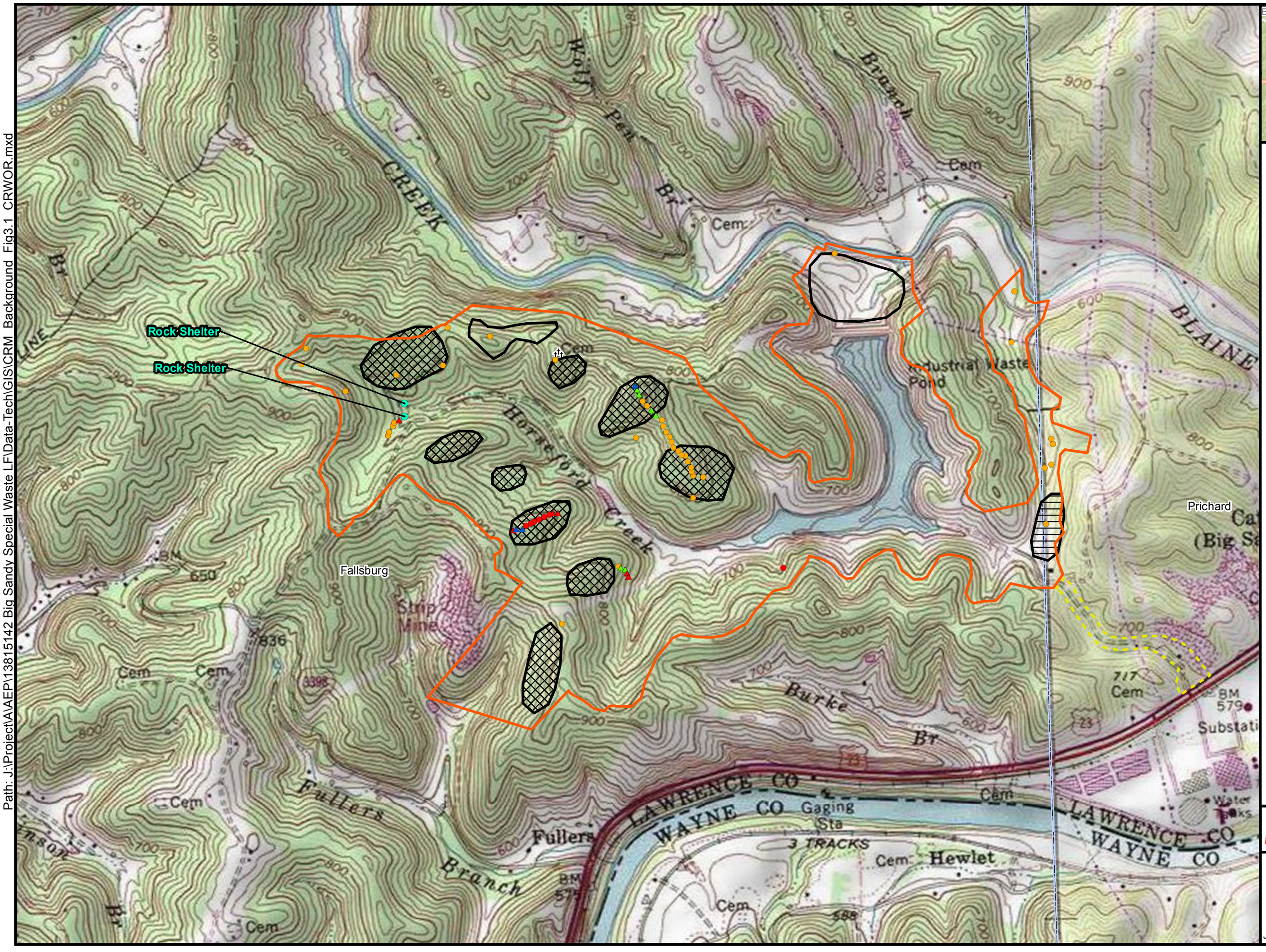
The cultural resources walkover involved photo documentation of the APE, including general views of the surrounding landscape, in addition to visible above-ground cultural features, obvious disturbance, steep slope, etc. In addition to photography, URS, when possible, excavated shovel probes to verify the presence of intact soils and/or disturbance.

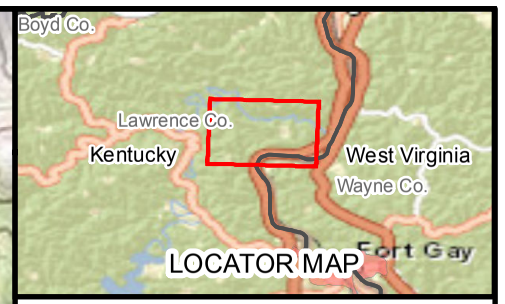
Shovel probes were excavated in accordance with the KHC guidelines entitled, *Specifications for Conducting Fieldwork and Preparing Cultural Resource Assessment Reports* (Sanders 2006). A 20-meter interval was utilized, and minimally 30 centimeter in diameter holes were excavated to archaeologically sterile soil or to 50 centimeters below the surface. Excavated soils were screened through ¼ inch wire mesh and examined for evidence of cultural materials. Profiles were described for each shovel probe and notes were recorded concerning the soil stratigraphy (including Munsell color designations and texture) and any cultural resources encountered. All shovel probes were assigned a unique designation that was then mapped with sub-meter accurate GPS equipment. During fieldwork, Sample Loci (SL) forms were completed by URS personnel.

3.2 MARCH 2012 FIELD RESULTS

The walkover for the western portion of the APE was conducted on March 22 and 23, 2012, by URS staff archaeologist Benjamin S. Goodwin, MA, RPA. This area was also revisited by Mr. Goodwin in October 2012. Within the APE there is an existing fly ash pond surrounded by steep wooded slopes with some level areas on the outer portions of the APE (Plates 3.1 and 3.2). An existing access road extends around the entire fly ash facility that corresponds roughly to the APE boundary (Plate 3.3). A total of 54 SL were examined during the walkover of this western portion of the APE, 39 of which were excavated as shovel probes, and these are summarized in Table 3.1 (see Figures 3.1 and 3.2 for walkover results).

Path: J:\Project\AEP\13815142 Big Sandy Special Waste LF\Data-Tech\GIS\CRM Background Fig3.1 CRWOR.mxd





N

LEGEND:

- Ped, Disturbed
- Ped, Slope
- Ped, Wet
- ST
- ST, Disturbed
- Cemetery
- Max Limit of Disturbance
- Haul Road
- Deflated
- Disturbed Road Cut
- Requires Survey
- Topographic Quadrangle

0 1,000 2,000
Scale in Feet

0 320 640
Scale in Meters

BASE MAP SOURCE:
USGS Topographic Quadrangles:
Fallsburg, KY/WV (1978) and
Prichard, WV/KY (1977)

AEP

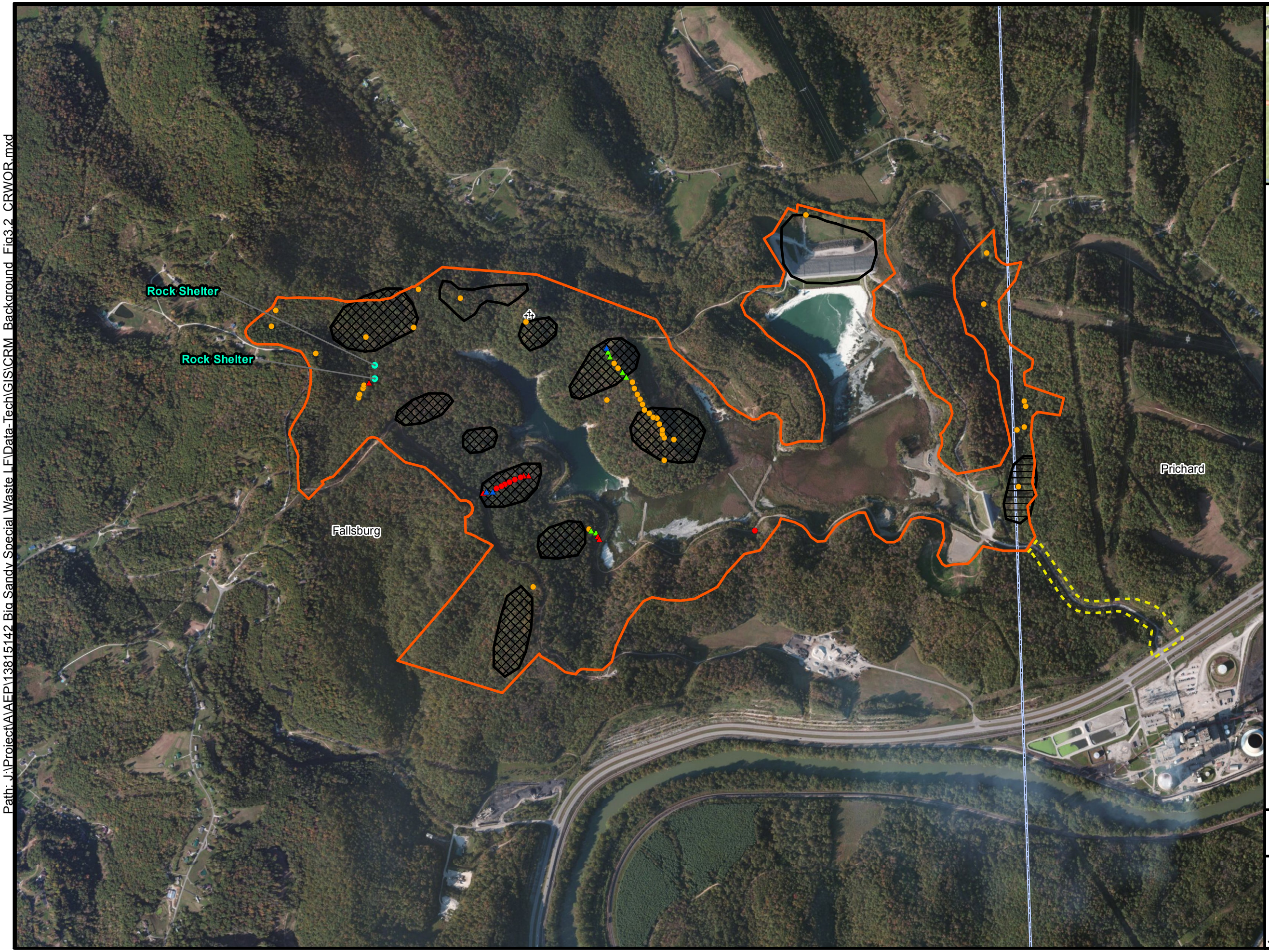
Big Sandy Landfill

FIGURE 3.1
CULTURAL RESOURCES
WALKOVER RESULTS

JOB NO. 13815152

URS

Path: J:\Project\AEP\13815142 Big Sandy Special Waste LF\Data-Tech\GIS\CRM_Background_Fig3.2_CRWOR.mxd



LEGEND:

N

- Ped, Disturbed
- Ped, Slope
- Ped, Wet
- ST
- ST, Disturbed
- Cemetery
- Max Limit of Disturbance
- Haul Road
- Deflated
- Disturbed Road Cut
- Requires Survey
- Topographic Quadrangle

0 1,000 2,000
Scale in Feet

0 320 640
Scale in Meters

BASE MAP SOURCE:
National Agriculture
Imagery Program, 2010

AEP

Big Sandy Landfill

FIGURE 3.2
CULTURAL RESOURCES
WALKOVER RESULTS

JOB NO. 13815152

URS

Plate 3.1. Example of Existing Fly Ash Pond.

Plate 3.2. Example of Wooded Slopes.

Plate 3.3. Example of Existing Access Road.

Table 3.1. Summary of SL Data in Western Portion of APE

SL Type	SL Count (n=)
Pedestrian, Disturbed	6
Pedestrian, Slope	6
Pedestrian, Wet	3
Shovel Probe, Disturbed	7
Shovel Probe, Negative	32
Total	**54**

Large portions of the level areas surrounding the existing ash pond are either deflated or disturbed (Plates 3.4 and 3.5). Deflated soil profiles, such as SL 7, revealed a brown (10YR 4/3) silt loam to a depth of 15 centimeters below ground surface, with an underlying very pale brown (10YR 7/4) clay mottled with brownish yellow (10YR 6/6) clay B horizon soil. No cultural materials were recovered from the 32 excavated shovel probes.

Plate 3.4. Example of Deflated Soils.

Plate 3.5. Example of Disturbed Soils.

One family cemetery was documented within the western portion of the APE (see Figure 3.1 and 3.2). This cemetery appears to be maintained, and consists of 21 marked graves

dating from 1918 to 2010 (Plates 3.6 and 3.7). Family names in the cemetery include Elkins, Jones, McDaniel, Samson, and Thompson.

Plate 3.6. Overview of Cemetery.

Plate 3.7. Oldest Grave Identified at Cemetery.

Figure 3.3 illustrates areas within the APE that contain slope greater than 15 percent (encompassing most of the APE), and do not require formal Phase I cultural resources survey according to KHC guidelines (Sanders 2006). Sanders (2006:22) does suggest,

however, that steeply sloped areas would still need a visual inspection to look for caves, quarries, benches, rock faces, and rock overhangs. During the cultural resources walkover of the western portion of the APE in October 2012, URS did identify two possible rock overhangs at the very western end of the APE (Plate 3.8; Figures 3.1 and 3.2).

Plate 3.8. Example of a Rock Overhang.

3.3 OCTOBER 2012 FIELD RESULTS

The walkover for the eastern portion of the APE was conducted on October 15 and 16, 2012, also by Mr. Goodwin. Similar to the western portion, the eastern APE contains an existing fly ash pond surrounded by steep wooded slopes (Plate 3.9). In the northern portion of this section near Blaine Creek is an existing dam (Plate 3.10). A total of eight shovel tests were excavated in level areas during the walkover of this eastern portion of the APE, and these are summarized in Table 3.2 (see Figures 3.1 and 3.2 for walkover results).

Path: J:\Project\AI\AEP\13815142 Big Sandy Special Waste LF\Data-Tech\GIS\CRM Background Fig3.3 Slope.mxd

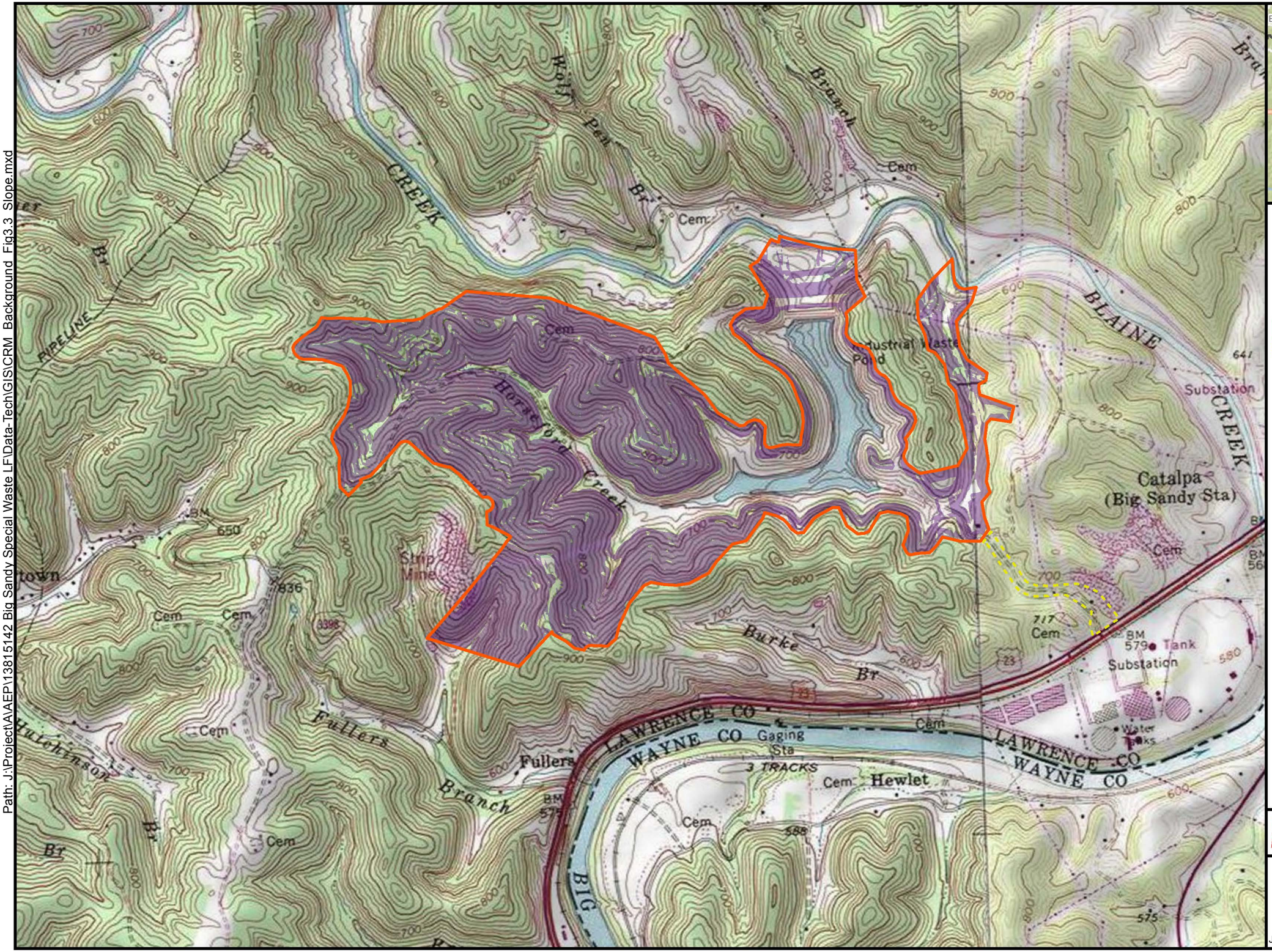


Plate 3.9. Overview of the Eastern Portion of the APE.

Plate 3.10. Overview of the Dam within the APE (photo taken north of the dam).

Table 3.2. Summary of SL Data in Eastern Portion of APE

SL Type	SL Count (n=)
Shovel Probe, Negative	8
Total	**8**

Selected shovel probes were placed within the APE just north of the dam and within the easternmost portion of the APE along a ridgeline. Soil profiles north of the dam indicate that this portion of the APE is disturbed, most likely as a result of dam construction (Plate 3.11). Soils consisted of a yellowish brown (10YR 5/8) and grayish brown (10YR 5/2) silt clay loam. These disturbed soils are consistent with the web soil survey (2012) that classifies this area as Dm (dumps, mine, tailings, and tipple).

Plate 3.11. Overview of the APE just north of the Dam.

The easternmost portion of the APE is located along a level ridgeline. Soils along the ridgeline were shallow, consisting of a 12 centimeter thick dark yellowish brown (10YR 4/4) silt clay loam, underlain by a grayish brown (10YR 5/2) and brownish yellow (10YR 6/8) clay (Plate 3.12). One shovel test, excavated on the floodplain, revealed deeper soils with a 25 centimeter thick layer of 10YR 4/3 brown silt loam on top of a 10YR 5/4 yellowish brown silt loam. Excavated to 50 centimeters below the ground surface, sterile

soil was not encountered. No cultural materials were recovered from any of the shovel probes.

Plate 3.12. Overview of the APE within the level ridgeline.

Similar to the western portion of the APE, the eastern portion also contained large areas of slope greater than 15 percent slope (Figure 3.3), which do not require formal Phase I cultural resources survey according to KHC guidelines (Sanders 2006). Sanders (2006:22) does suggest however, that steeply sloped areas would still need a visual inspection to look for caves, quarries, benches, rock faces, and rock overhangs. During the cultural resources walkover of the eastern portion of the APE in October 2012, URS did not identify any caves, quarries, benches, rock faces, and rock overhangs.

4.0 SUMMARY AND RECOMMENDATIONS

URS conducted a cultural resources walkover for the Project near Louisa, Kentucky. The purpose of this walkover was to evaluate the Project for the probability of encountering archaeological and/or historic resources, and to make recommendations for additional cultural resources work (if needed).

The APE includes all areas where ground disturbance associated with the Project is expected to occur. In this instance, the APE consists of approximately 603 acres (244 hectares) contained within the maximum limits of disturbance for the Project. URS recognizes that a smaller area may be impacted within this APE.

As a result of the background research conducted in March 2012, eight archaeological sites were identified within two kilometers (1.2 miles) of the Project. None of these sites occur within the APE. Of these eight archaeological sites, seven are associated with Blaine Creek to the north and are documented as unassigned prehistoric locales in floodplain or terrace settings. No historic structures or NRHP listings were previously recorded within two kilometers (1.2 miles) of the Project. One cemetery was noted within the APE from topographic mapping, as well as identified during the walkover.

The cultural resources walkover, which was conducted in March and October 2012, indicates that large portions of the APE have been disturbed by existing activities and facilities at the Big Sandy Plant, such as the ash pond and dam. In addition to this previous disturbance, the APE contains mostly 15 percent or greater slopes (Figure 3.3). The cultural resources walkover of these steep sloped areas identified a potential rock overhang at the very western edge of the APE. The few level areas within the APE, especially within the western half, are either disturbed or deflated. Within the eastern half of the APE, disturbance also occurs on the floodplain north of the dam. The only portion that does not appear disturbed is the easternmost portion of the APE along a ridgeline and on the floodplain (Figures 3.1 and 3.2).

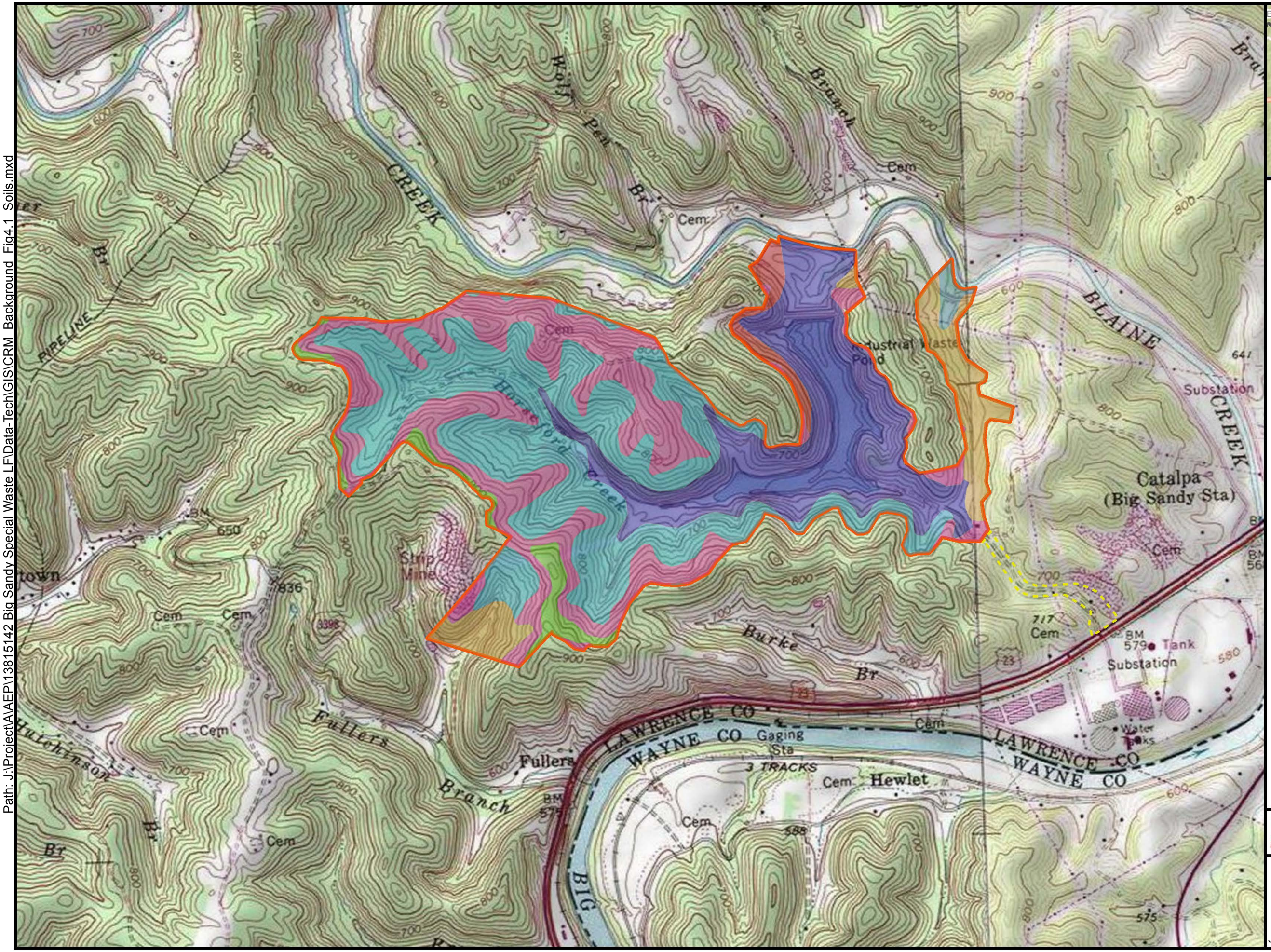
Given the results of the background research which recorded a low number of cultural resources within two kilometers (1.2 miles) of the APE; the large degree of previous disturbance and deflation exhibited within the soils during the walkover (Figure 4.1); and that most of the APE contains slope greater than 15 percent (please reference Figure 4.1); the APE displays a low probability for containing cultural resources.

The majority of the APE does not require formal Phase I archaeological survey. In areas where there is steep slope near potential USACE jurisdictional areas, a pedestrian survey

meeting the KHC guidelines may need to be conducted to identify any caves, quarries, benches, rock faces, and rock overhangs. If identified, these resources would need to be surveyed per the methodology in Sanders (2006:22). The only level area that may need formal Phase I archaeological survey would be the small portion of ridgeline in the eastern portion of the APE, located within a potential USACE jurisdictional area. The family cemetery that was identified within the western half of the APE should be avoided.

Because the Project involves the closure of an existing facility, there appears to be no major viewshed concerns. No architectural history survey is recommended. If the scope of the Project changes, the viewshed may need to be re-evaluated for indirect effects.

Path: J:\Project\AEP\13815142 Big Sandy Special Waste LF\Data-Tech\GIS\CRM Background Fig4.1 Soils.mxd



5.0 REFERENCES

Sanders, Thomas N. (editor)
2006 *Specifications for Conducting Fieldwork and Preparing Cultural Resource Assessment Reports*. Kentucky Heritage Council, Frankfort, KY.

Web Soil Survey
2012 Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed [11/13/2012].