REEVALUATION FOR
COALFIELDS EXPRESSWAY, SECTION IIIC: ROCKHOUSE
FROM ROUTE 643 TO
VIRGINIA ROUTE 83 AT THE WEST VIRGINIA STATE LINE
BUCHANAN COUNTY, VIRGINIA

State Project No. 0121-013-772, PE-101; UPC 85126
VDHR FILE # 1997-0950

ARCHAEOLOGICAL SURVEY

PREPARED FOR:
THE VIRGINIA DEPARTMENT OF TRANSPORTATION
RICHMOND, VIRGINIA
and
PARSONS TRANSPORTATION GROUP INC. OF VIRGINIA
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ABSTRACT

The Virginia Department of Transportation (VDOT) commissioned a cultural resources study to reevaluate the Final Environmental Impact Statement (FEIS) findings for the Rockhouse section of the Coalfields Expressway (CFX, U.S. Route 121). The FEIS was completed in 2001. Since that time, under provisions of the Virginia Public-Private Transportation Act (PPTA), the PPTA private partners (Pioneer Group, Inc. and Alpha Natural Resources, LLC) have proposed a different alignment than that presented in the 2001 FEIS. In order to make historic preservation recommendations for areas within the new alignment, Coastal Carolina Research, Inc. (CCR) conducted an archaeological assessment of the study area followed by an archaeological identification survey. Both studies were conducted for Parsons Transportation Group Inc., the firm retained by VDOT to prepare the transportation study for this project.

This report details the results of the archaeological identification survey of the Area of Potential Effects (APE) for the proposed Rockhouse section of the CFX, a proposed four-lane, controlled-access, primary highway. This section of the CFX is within Buchanan County, Virginia, and extends from Route 643 to Virginia Route 83 at the West Virginia state line. It includes approximately five miles of mainline roadway, which generally follows the original selected alternative, although some portions of the current proposed construction limits are outside the FEIS study corridor.

The archaeological survey was conducted to identify and record archaeological resources within the APE for the revised alignment that are on, or potentially eligible for inclusion on, the National Register of Historic Places (NRHP). The approximately 654-acre (265 ha) survey was conducted in compliance with Section 106 of the National Historic Preservation Act of 1966 and the Advisory Council on Historic Preservation's regulations for compliance with Section 106, codified as 36 CFR Part 800. The scope of the investigations was consistent with the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation*, and the report was prepared in accordance with the "Guidelines for Preparing Identification and Evaluation Reports for Submission Pursuant to Sections 106 and 110, National Historic Preservation Act, Environmental Impact Reports of State Agencies, Virginia Appropriation Act, 1992 Session Amendments" (VDHR 2001).

The archaeological survey resulted in the identification of one bedrock overhang 41BU0092 that is recommended not eligible for inclusion on the NRHP. Two historic cemeteries (VDHR # 013-5131 and 013-5133), that were originally reported in the architectural survey for the same project area, are also included in this report (Stewart and Lautzenheiser 2008). Neither resource is recommended eligible for the NRHP.

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INTRODUCTION

The Virginia Department of Transportation (VDOT) commissioned a cultural resources study to reevaluate the Final Environmental Impact Statement (FEIS) findings for the Rockhouse section of the Coalfields Expressway (CFX, U.S. Route 121, Figure 1). The FEIS was completed in 2001. Since that time, under provisions of the Virginia Public-Private Transportation Act (PPTA), the PPTA private partners (Pioneer Group, Inc. and Alpha Natural Resources, LLC) have proposed a different alignment than that presented in the 2001 FEIS. Coastal Carolina Research, Inc. (CCR) conducted an archaeological identification survey of the study area. The study was conducted for Parsons Transportation Group Inc., the firm retained by VDOT to prepare the transportation study for this project.

This report details the results of archaeological background research and the identification survey of the Area of Potential Effects (APE) for the proposed Rockhouse section of the CFX, a proposed four-lane, controlled-access, primary highway. This section of the CFX is within Buchanan County, Virginia, and extends from Route 643 to Virginia Route 83 at the West Virginia state line (Figure 2). It includes approximately five miles of mainline roadway, which generally follows the original selected alternative, although some portions of the current proposed construction limits are outside the FEIS study corridor.

The archaeological survey was conducted to identify and record archaeological resources within the APE for the revised alignment that are on, or potentially eligible for inclusion on the National Register of Historic Places. The approximately 654-acre (265 ha) survey was conducted in compliance with Section 106 of the National Historic Preservation Act of 1966 and the Advisory Council on Historic Preservation's regulations for compliance with Section 106, codified as 36 CFR Part 800. The scope of the investigation was consistent with the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* and the report is consistent with the Secretary of the Interior's *Standards for Archeological Documentation.*

Loretta Lautzenheiser, RPA, was the project manager, and Dennis C. Gosser, RPA, was the principal investigator. Dennis Gosser and Dawn M. Bradley, RPA, conducted the archaeological identification survey. Susan E. Bamann, Ph.D., RPA, was the senior author of the report, and Bill Hall conducted the background research for previously recorded sites and the historic context. Dawn M. Bradley, RPA, conducted the analysis of rockshelter locations and geologic context. Neil Mayberry produced the

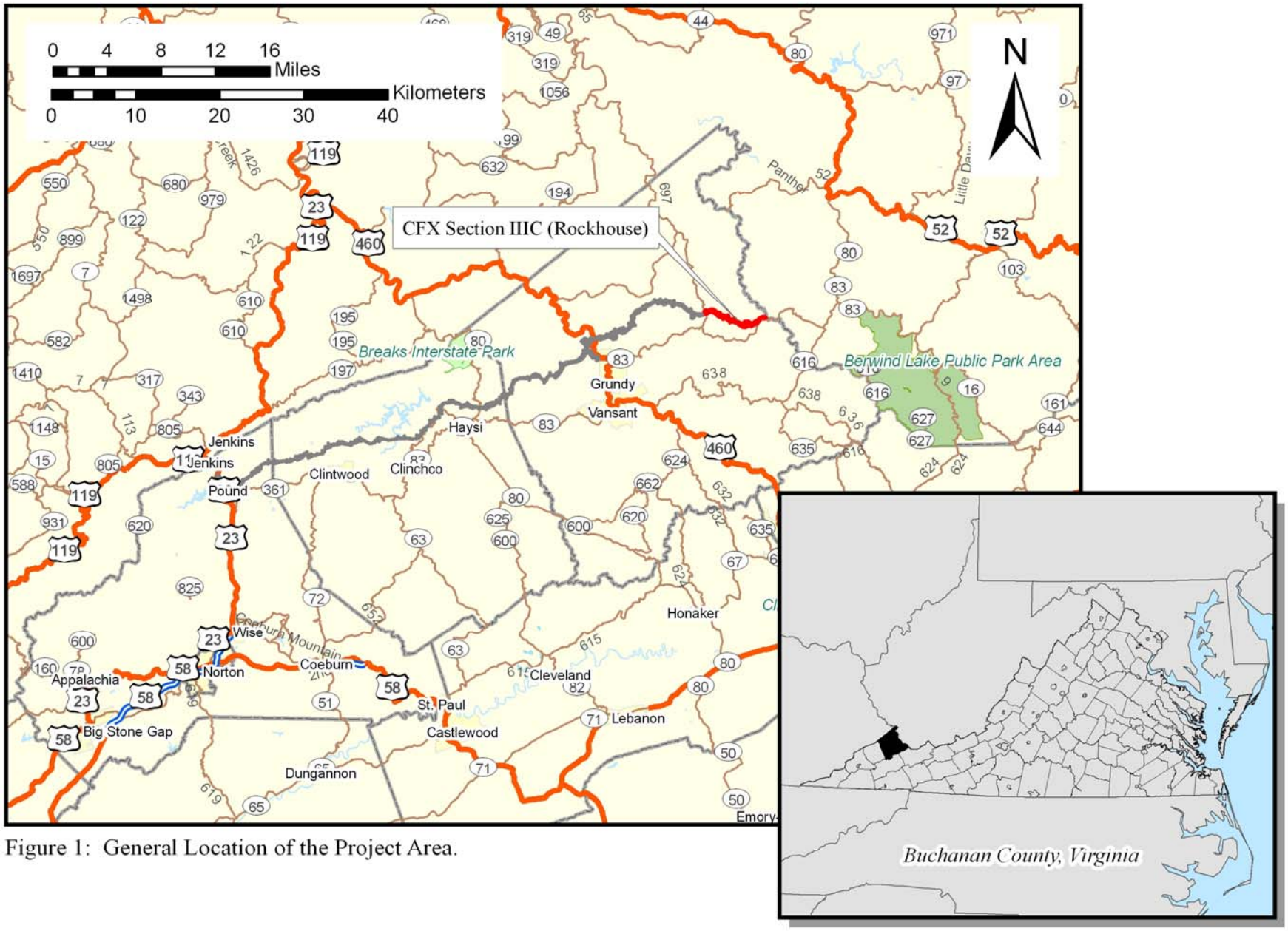

Figure 1: General Location of the Project Area.

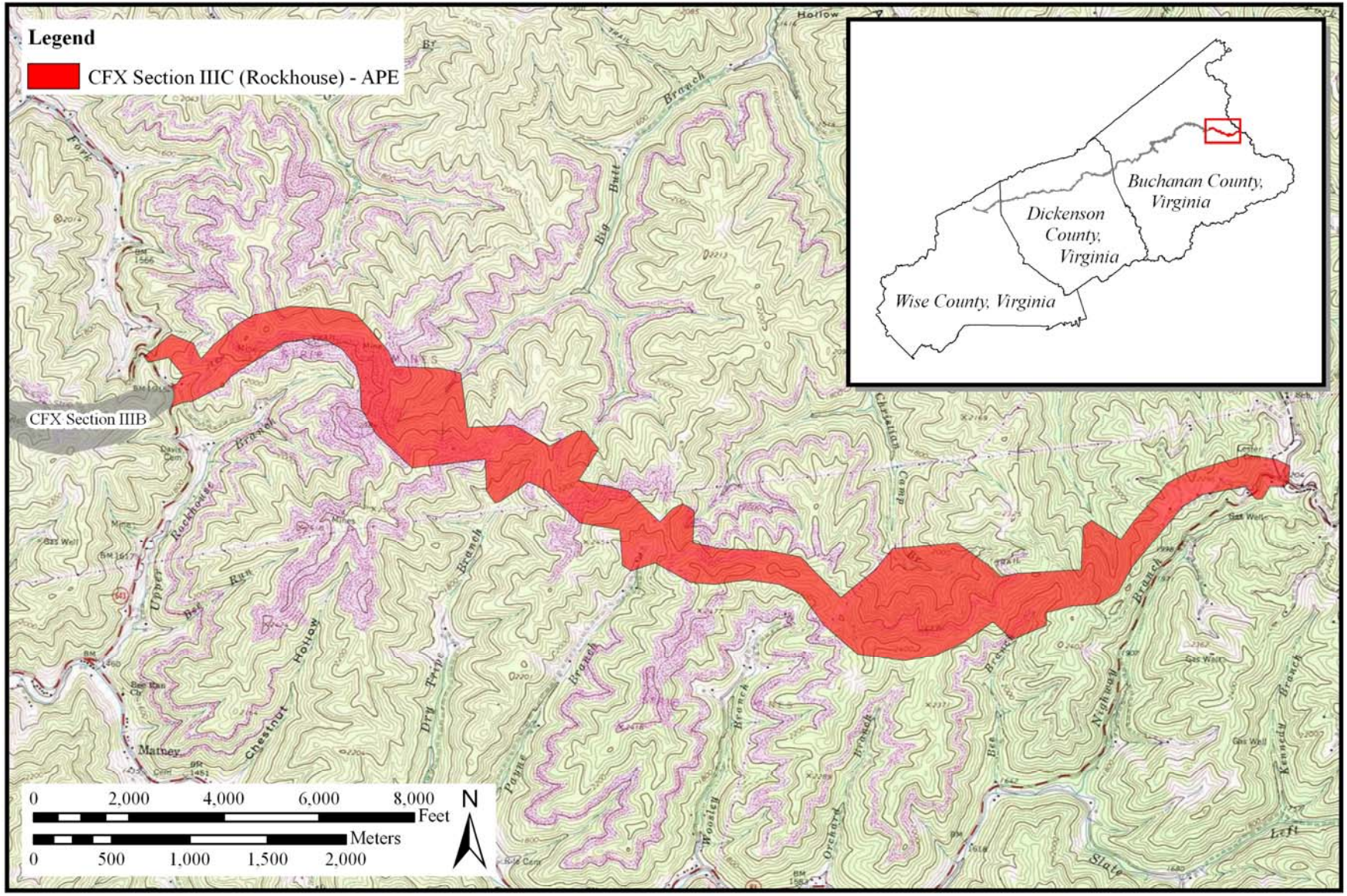

Figure 2: Location of the APE for CFX Section IIIC (Rockhouse), Shown on the 7.5' USGS Patterson, Virginia, Topographic Quadrangle.

GIS-based graphics and analyzed elevation data to determine areas with low potential for open-air sites. The archaeological identification survey was conducted between August 4 and August 19, 2008; 58 person days were required to complete the fieldwork.

NATURAL SETTING

Physiography

Buchanan County falls within the Appalachian Plateau physiographic region, locally referred to as the Cumberland Plateau (Dietrich 1970). The bedrock of this region is comprised of relatively flat-lying sedimentary rocks that have not been subjected to the intense deformation processes observed in the neighboring Ridge and Valley or Blue Ridge provinces (Dietrich 1970; Thornbury 1965). However, the plateau is highly dissected, giving the area the appearance of mountains, with the overall drainage pattern characterized as highly irregular with a tendency toward dendritic patterns (Dietrich 1970). Level land of even a few acres in extent is very rare. Resources such as coal, natural gas, and petroleum are often found in the plateau province, and the project area falls within the large eastern coalfields region of Kentucky, West Virginia, and Virginia.

Unlike other mountainous areas of Virginia, this region features average elevation that only rarely reaches 3,000 feet. In Buchanan County the elevation varies from 945 feet above sea level, where the Levisa River flows into Kentucky, to 3,735 feet above sea level on Big A Mountain in the southern part of the county (Baker 1976).

Geology

The majority of the project area falls within the Norton Formation, with smaller portions of the project area falling within the Wise Formation (Virginia Division of Mineral Resources 1993). Both formations are generally comprised of siltstone, shale, sandstone, conglomerate, limestone, and coal (Gaithright et al. 1993). Specifically, two rock units of the Norton Formation are noted within the project area: a unit of interbedded siltstone, shale, sandstone, and coal and a unit described as an unnamed sandstone. Sandstones within this formation are often noted as ledge or cliff forming (Whitlock 1989). The two units of the Wise Formation noted in a portion of the project area are similarly defined: one unit of interbedded siltstone, shale, sandstone, and coal and one unit of an unnamed sandstone (Whitlock 1989).

Soils

Several different soil complexes are present in the project area (USDA/NRCS 2008). The following is a list of all soils that occur within the project boundaries and a description of their general characteristics:

Cedarcreek, Fiveblock and Kaymine soils, 55-80 percent slopes. These well-drained to excessively well drained soils are generally associated with ridges and spurs. Their parent material is listed as mine spoil or earthy fill from shale, sandstone, siltstone, and coal.

Cedarcreek-Sewell-Rock Outcrop Complex. The soils in this complex are well drained to somewhat excessively well drained and are generally found on ridges

and spurs. The parent material is listed as mine spoil or earthy fill from sandstone, siltstone, shale, and coal. The rock outcrop portion of the complex refers to sandstone, siltstone, and shale cliff formations found within the complex.

Fiveblock-Sewell Complex, 0 to 15 percent slopes, extremely stony. These well-drained soils are generally found along drainageways and on ridges and spurs. Their parent material is colluvium derived from sandstone and shale.

Gilpin-Berks Complex, 25 to 35 percent slopes. These soils, associated with ridges and spurs, are well drained, with parent material of residuum weathered from sandstone and some shale and siltstone.

Highsplint-Shelocta Complex, 55 to 80 percent slopes, very stony. These soils, generally found along drainageways, as well as on ridges and spurs, are well drained, with parent material of colluvium derived from sandstone, siltstone, and shale.

Kaymine-Cedar Creek Complex, 35 to 55 percent slopes, extremely stony. This complex is comprised of well-drained soils which are generally found on ridges and spurs. Their parent material is noted as mine spoil or earthy fill from sandstone, siltstone, shale, and coal.

Sewell-Kaymine-Rock Outcrop Complex, 0 to 80 percent slopes, extremely stony. This soil complex is generally found on ridges and spurs, with the rock outcrop referring to cliffs found within the complex. Soils are well drained to excessively well drained, and their parent material is mine spoil or earthy fill from sandstone, siltstone, shale, and coal.

Marrowbone-Gilpin Complex, 15 to 70 percent slopes. The soils in this complex, generally found on ridges and spurs, are well drained. Their parent material is residuum weathered from sandstone.

Shelocta-Highsplint Complex, 35 to 55 percent slopes, very stony. These soils, associated with ridges, spurs, and drainageways, are well drained, with parent material of colluvium derived from sandstone and shale. Some siltstone is noted within the Highsplint soils of the complex.

Shelocta-Cedarcreek Complex, 35 to 55 percent slopes, very stony. This complex is comprised of well-drained soils generally found along drainageways, as well as on ridges and spurs. The parent material is colluvium derived from sandstone and shale.

Shelocta-Kaymine Complex, 35 to 80 percent slopes, very bouldery. The two soils of this complex are well drained and generally found along drainageways or on ridges or spurs. The Shelocta soils have a parent material of colluvium derived

from sandstone and shale, while the Kaymine soils have a parent material of mine spoil or earthy fill from sandstone, siltstone, shale, and coal.

Wharton-Gilpin-Berks Complex, 15 to 25 percent slopes. This complex, found on ridges and spurs, is comprised of moderately well drained to well-drained soils. Parent material for Wharton soils is residuum weathered from shale and siltstone. Parent material for Gilpin soils is residuum weathered from sandstone, with some shale and siltstone. Parent material for Berks soils is residuum weathered from acid shale interbedded with fine-grained sandstone and siltstone.

Gilpin and Lily Soils, 15 to 35 percent slope. These soils, generally associated with ridges, are well drained and have a parent material of residuum weathered from interbedded sedimentary rock.

The soil slope designations for most of the project area illustrate the low potential for sizeable or long-term open-air habitation sites. However, the geologic components of the area, coupled with slope and soil composition, indicate a potential for rockshelter habitations.

Hydrology and Vegetation

The project area follows a series of minor drainage divides involving small tributaries of Slate Creek and Knox Creek. Slate Creek drains to the southwest toward the Levisa Fork. Knox Creek drains to the northwest toward Tug Fork. In Kentucky, the Levisa and Tug Forks form the Big Sandy River. The latter flows into the Ohio River.

The project area is located in what Braun (1950) has termed the Mixed Mesophytic Forest. Before extensive timbering, dominant tree species in the region were sugar maple, basswood, buckeye, and tulip poplar on the north-facing slopes. Upper slopes and ridges were covered by oak-chestnut and oak-hickory communities, and pines dominated rocky outcrops on the ridges. Early accounts indicate that

> the poplar, the spruce, the oak, maple, ash, hickory and many other varieties of hardwood trees flourished, attaining great size in the rich coves and along the steep slopes of the ridges; while the mountain laurel, rhododendron and wild azalea covered the cliffs and rocky ledges and fairly smothered the meandering streams along the dark ravines and narrow valleys [Sulfridge 1929:2].

This growth was so dense that explorers and settlers had difficulty traveling through the region. In 1750, while he was exploring along Indian Creek, Christopher Gist wrote, “The weather being bad, we did not travel these two days, the country being still rocky and mountainous and full of laurel thickets, the worst traveling I ever saw” (Sulfridge 1929:2).

The chestnut blight has eliminated the native chestnut, and the Oak-Chestnut Forest no longer occurs in its original condition. Before the blight, chestnut was used extensively in tanning, and large areas of the forest were clear-cut for pulpwood and charcoal (Braun 1950). An early twentieth-century description of the forests of Buchanan County indicates that the chestnut blight had caused widespread destruction in the northeastern part of the country and had killed many trees in northern Virginia. By 1917, however, the blight had not yet reached the southwestern part of the state (Schwab 1918).

HISTORIC CONTEXT

Paleoindian Period

Native American occupation of eastern North America dates to at least the Paleoindian period, the beginning of which is placed at approximately 11,500 B.C. (Anderson et al. 2007). The evidence for Paleoindian occupations at this time includes fluted projectile points (i.e., Clovis and Cumberland points) (Griffin 1967; Justice 1987). These points are generally scarce and often occur as isolated finds in disturbed surface contexts. The highest concentrations of fluted points, including the earliest Clovis type, occur in the eastern half of the United States. Nearly 1,000 fluted projectile points have been reported from Virginia (Anderson and Faught 1998). Other Paleoindian projectile point types are Mid-Paleo, Hardaway-Dalton, and Hardaway Side-Notched (Barber and Barfield 1989). In Virginia, the majority of these points were manufactured from cryptocrystalline lithic material. Tools associated with the Paleoindian period include scrapers, gravers, wedges, unifacial tools, hammerstones, abraders, and a variety of "banging, smashing, chopping, and hacking tools" (Gardner 1989:18).

More recent evidence for much earlier New World lithic industries suggests that the makers of fluted points may represent relatively late migrations to the New World. Alternatively, the distinct fluted point technology may have developed within the New World in the context of populations established prior to 10,000 B.C. (Anderson and Faught 1998; Meltzer 1989). The Cactus Hill site in southeastern Virginia has produced evidence of human occupation of Virginia dating between 11,000 and 15,000 B.P. (McAvoy and McAvoy 1997). More recently, researchers have estimated that the site may involve as many as five pre-Clovis occupations characterized by prismatic blades and blade cores (Boyd 2003). The stratified site is situated on a sand dune along the Nottoway River. Stratification was the result of relatively steady aeolian sand deposition throughout the occupation of the site (McAvoy and McAvoy 1997). The Topper site, located in the Piedmont of South Carolina, has also produced evidence for pre-Clovis occupations (Goodyear 1999). The evidence includes concentrations of cortical chert with some split cobbles, small flake tools, small blade-like flakes, hammerstones, and cortical debitage. These were recovered from a zone of sandy alluvium at a meter below levels with Clovis deposits (Goodyear 1999, 2000; Boyd 2003).

Other stratified sites containing Paleoindian occupations include the Williamson site and the Thunderbird and Fifty sites of the Flint Run Complex in the Shenandoah Valley (Barber and Barfield 1989; Gardner 1974; Carr 1975; Johnson 1996). Evidence from these sites has been used to construct what has been referred to as the "Flint Run Lithic Deterministic Model" of Paleoindian settlement strategies (Anderson and Sassaman 1996:23). In this model, Paleoindian and Early Archaic settlement patterns were driven by the locations of the high-quality lithic material. Five functionally distinct site types have been identified in the Flint Run Complex: quarries, reduction sites, quarry-related base camps, maintenance camps, and non-quarry-associated base camps (Gardner 1989). The small, highly mobile bands characteristic of Paleoindian times were also focused on food collection and the hunting of animals such as caribou, deer, elk, and

moose (Turner 1989; Boyd 1989). Therefore, hunting and gathering, as well as lithic procurement, played a significant role in settlement patterns. Sites such as base camps are often found on resource-rich floodplains and adjacent alluvial fans (Turner 1989).

Archaic Period

The Archaic period (8000-1000 B.C.) is divided into three phases: Early, Middle, and Late. The tool kits from the Early Archaic are similar to those from the later part of the preceding Paleoindian tradition, as are the settlement and subsistence patterns. Existing data suggests that there was no distinct division between the two periods (Claggett and Cable 1982; Anderson et al. 1996). Instead, the Early Archaic is marked by growth in the size of sites and an increase in both the number of artifacts and the number of sites (Egloff and McAvoy 1990).

The onset of this period occurs during a time of climatic change. A shift from boreal forests to northern hardwoods occurred around the time of the Early Archaic period (8000-6800 B.C.). In the early Holocene, a cool, moist climate prompted the expansion of species-rich Mixed Hardwood Forest in the eastern United States. During this Hypsithermal, the Oak-Chestnut Forest became dominant in the central and southern Appalachians (Delcourt and Delcourt 1981, Delcourt and Delcourt 1985). A significant increase in the number of upland sites in Virginia and a postulated growth in population coincided with this shift in climate (Custer 1990). Hunting and gathering continued as the subsistence pattern during the Archaic, with a possible seasonal round of movement between base camps and hunting camps.

The Early Archaic period is typified by small corner-notched projectile points (such as Palmer and Kirk) and an increase in the use of hafted end scrapers (Coe 1964). Near the end of this period, inhabitants of the region began utilizing a wider variety of lithic resources and relying less heavily on the cryptocrystalline materials that had been so important during the Paleoindian period. Also during this period ground stone tools, such as adzes, celts, axes, and grinding stones, made their first appearance.

The Middle Archaic period (6800 to 3500 B.C.) coincides with a shift in the environment toward the warmer and drier conditions prevalent today. Projectile point types characteristic of this period include Stanley, Morrow Mountain, Guilford, Halifax, St. Albans, LeCroy, and Kanawha (Custer 1990). Settlement and subsistence patterns show a high degree of continuity with those of the Early Archaic period. However, it appears that Middle Archaic sites may have been occupied for longer periods of time than their earlier counterparts and may have been more frequently located in the floodplains along larger streams and rivers (Custer 1990).

The Late Archaic period began in Virginia around 3500 B.C. and is marked by distinctive projectile point types. The adaptations of this time, however, differ little from those of the Middle Archaic period. According to Mouer (1991:10), the primary attributes of Late Archaic culture are “small-group band organization, impermanent settlement systems, infrequent aggregation phases, and low levels of regional or areal

integration and interaction." Characteristic projectile points include Halifax, Lamoka, Merom, Lackawaxen, and Brewerton (Mouer 1991).

The time from ca. 2500 B.C. until 1200 B.C. is called the Transitional period by some researchers in Virginia (Mouer 1991). By 2500 B.C., the rise in sea level had dramatically altered the Atlantic coast, creating large estuaries and tidal wetlands that, in turn, vastly increased coastal resources such as fish and shellfish. Anadromous fish runs extended from the coast, up the rivers, to the foothills of the Blue Ridge. Settlement during this time was concentrated in the river valleys, and archaeological sites are more numerous and larger than sites from earlier periods. In southwestern Virginia, the Transitional period is characterized by Savannah River points and possibly Lamoka, Iddins, and Merom points, which are usually classified as Late Archaic (Mouer 1991). Broad-blade or "broadspear" types such as Savannah River Stemmed are frequently associated with soapstone vessels and other soapstone objects. Fire-cracked rock concentrations and platform hearths are also common on Transitional period sites (Mouer 1991; Dent 1995).

Woodland Period

The transition from Late Archaic to Early Woodland (1200 to 800 B.C.) in southwestern Virginia is not well understood. In the Piedmont, large, broad points are replaced by smaller notched, stemmed, and lanceolate points, and steatite-tempered ceramics (Marcey Creek wares) are introduced ca. 1200 B.C. (McLearen 1991). Crushed-quartz or coarse-sand-tempered Swannanoa ware is the earliest pottery in southwestern Virginia and does not appear until ca. 500 B.C. (Egloff 1991). The trend of settling in riverine habitats that began during the Middle Archaic period continues through the Early Woodland period in southwestern Virginia (Klein and Klatka 1991). However, Woodland sites are also found in non-floodplain settings such as valley floors, ridges, hills, and plateaus (Egloff 1987).

The Middle Woodland period (300 B.C. to A.D. 1000) is marked by the introduction of triangular projectile points. The characteristic indigenous pottery is limestone-tempered and cord-marked or fabric-impressed (e.g., Candy Creek Cord-Marked, Long Branch Fabric-Impressed). These ceramics are more typical of the southern Appalachians and the Southeastern Cultural Area than are the ceramics found in other portions of Virginia at this time (Stewart 1992; McLearen 1992). In the Appalachian Summit region of North Carolina, Connestee ware is common during the Middle Woodland period and is associated with a late Hopewellian influence (Keel 1976; Purrington 1983). This pottery is rarely found in southwestern Virginia (McLearen 1992). Although there is little evidence from the Middle Woodland period in this region, it appears that settlement continued to be semisedentary or sedentary and some horticulture may have been practiced. Evidence of ranked societies has been recovered from other areas of the Middle Atlantic region during this period but has yet to be found in southwestern Virginia (McLearen 1992).

During the Late Woodland period (A.D. 1000 to 1600) many of the people of southwestern Virginia lived in palisaded villages located primarily in the floodplains of major rivers, but they also settled the surrounding hills and ridges (Egloff 1987). Domestic crops such as corn, squash, and beans became increasingly important although wild plants and animals continued to be staples of the diet. The presence of exotic trade goods, coupled with evidence of a diversity of burial practices and possibly hierarchical settlement patterns suggests the presence of ranked societies or chiefdoms and the influence of Mississippian cultures from the area of Tennessee (Egloff 1992). Ceremonial mounds, such as the Ely and Carter Robinson Mounds in Lee County, offer further evidence of a Mississippian influence.

Archaeological evidence indicates that during the Late Woodland, southwestern Virginia was under the influence of three major ceramic traditions: Eastern Woodland, Southern Appalachian, and Mississippian (Egloff 1992). The most common pottery, "a cord-marked, net-impressed, or corncob-impressed pottery with either sand, soapstone, or limestone temper" is of the indigenous Eastern Woodland Tradition (Egloff 1992:198). The Southern Appalachian Tradition, more typical of areas to the south, is represented by a sand-tempered ware with either rectilinear or curvilinear stamped exterior. Finally, the Mississippian Tradition is represented by plain or cord-marked, shell-tempered pottery. In some instances, examples of all three ceramic traditions have been recovered from a single site, emphasizing the high degree of cultural interaction in southwestern Virginia prior to the arrival of Europeans (Egloff 1987). Although Europeans did not settle in the Appalachian region until the mid-eighteenth century, rivalry for trade was causing hostilities between Native American groups to the north and south beginning in the seventeenth century. When Europeans finally arrived in the mountains, they found evidence that the native populations had left the region years earlier (Hodges 1993).

Settlement to Society (1607-1750)

During the seventeenth century, settlement in Virginia was concentrated primarily in the Tidewater and was only gradually making its way to the west. Hunters and explorers whose names have not been documented undoubtedly visited southwestern Virginia prior to the eighteenth century. Among those Europeans for whom we have records, Gabriel Arthur, agent for Abraham Wood, was exploring in southwestern Virginia in 1673 (Briceland 1987). His journeys apparently did not take him through the current project area. The first known explorer into the far western part of Virginia was Dr. Thomas Walker, a land surveyor and agent for the Greenbrier and Loyal Land Companies. His expedition in 1750 was the first to enter Kentucky by way of the Cumberland Gap. His route followed the Clinch River to the North Carolina line and then followed the old Warrior's Path (Hale 1978). The first explorer known to have entered the region including Buchanan County was Christopher Gist, an agent with the Ohio Company (Sulfridge 1929). This company was formed in 1748 by Thomas Lee, governor of the colony, with the express purpose of establishing settlement in the western part of Virginia (Brown 1937). Christopher Gist explored southwestern Virginia during expeditions in 1751 and 1752, and returned to the east with descriptions of abundant fertile land. During the expedition in 1751, Gist is said to have traveled through Pound

Gap, returning home along a path known as the Kentucky Trace (Robertson 1993). It was around this time that Europeans first began to settle west of the Allegheny mountains, in part due to the encouragement provided by the government of Virginia, which passed an act exempting the settlers west of the mountains from county and parish levies for a period of 15 years (Summers 1966[1903]).

Virginians were being encouraged to occupy land to the west of the older settlements in order to counter attempts by the French to push eastward. For the first time, the western part of Virginia was considered relatively safe from attacks by Native Americans because of a treaty signed by the Iroquois in 1744 (Hofstra and Geier 1996). Although Indian attacks did occur, the perceived safety of the region served as a spur to settlement.

Early settlement in southwestern Virginia was strongly influenced by environmental factors such as topography, soils, and access to water. The location of natural resources, particularly agricultural land, timberlands, coal, and iron, was also an important factor in settlement patterns. The lack of good transportation routes was a major hindrance to settlement, however, and the absence of good roads and bridges through the area was to be a constant problem throughout the eighteenth, nineteenth, and early twentieth centuries.

Colony to Nation (1750-1789)

As the influx of settlers began, the frontier was increasingly upset by the French and Indian War from 1754 to 1763. The main threat to the settlers came from Indian attacks during this period. Many settlers were killed, and many fled to avoid a similar fate. After the war, the Loyal Land Company petitioned for a renewal of the 1749 grant entitling them to 800,000 acres of land along the Virginia frontier. This petition was denied, in acknowledgment of the Indians' prior claims to the land set forth in the Proclamation of 1763. The land companies, however, continued to sell land through their agents, including Thomas Walker (Summers 1966[1903]).

In 1768, the British government negotiated a treaty with the Iroquois and Shawnees extinguishing their rights to the coveted lands in southwestern Virginia. The treaty was signed at Stanwix in New York (Summers 1966[1903]). A second treaty was signed with the Cherokees in 1769 (Brown 1937). In spite of the treaties, Indian raids continued. In 1769, the Chickasaws defeated the Cherokees in a battle in which many Natives died. This occurrence slowed the Indian raids for many years, allowing the settlement of southwestern Virginia to progress (Brown 1937).

During the Revolutionary War, Indian depredations resumed, with encouragement from the British. According to local legend, Cherokee and Shawnee Indians lived in the vicinity of the current project area until 1793. In 1782, a Captain McClure led a party of militiamen in a skirmish with Indians near Nora (now in Dickenson County) and recovered several white captives (Russell County Heritage Book Committee 1989). Several Indian attacks are reported to have occurred in Buchanan County during this

period. Henry Harman and his two sons were attacked and killed in 1788, and William Wheatley was attacked in 1789. Other skirmishes include one at the head of Slate Creek and another approximately 12 miles from the town of Grundy at a gap in the mountains (Richardson 1958). The Indians who were killed during this latter skirmish are said to have been buried at this location, which has been called "Indian Grave Gap" ever since (Owens 1983).

Prior to the first major influx of settlers, the largest land grant in the area that became Buchanan County was a 1787 grant to Richard Smith. The grant was for land located in the southern part of the county along Big Prater Creek. The other two large grants were not made until 1795 (Owens 1983). Many of the earliest settlers in the region were tenant farmers for large landholders such as Smith (Robertson and Brown 1993). Because they did not own the land themselves, the names of these settlers usually were not recorded.

Most eighteenth-century travelers avoided the Buchanan County area because of its rugged terrain and the easier passage through the mountains provided by Cumberland and Pound Gaps. Fred Stiltner (or Stigler) appears to have been the first white man to settle in Buchanan County, at some time in the 1780s (Russell County Heritage Book Committee 1989). Stiltner was of German descent and came into the region traveling down Slate Creek from what is now McDowell County, West Virginia. According to local folklore, Stiltner spent his first winter in the county living in a large hollow poplar tree (Owens 1983). John Yates, originally from Patrick County, is considered to have been the second white man to settle in the territory that was to become Buchanan County (Russell County Heritage Book Committee 1989).

Early National Period (1789-1830)

Indian attacks in southwestern Virginia did not come to a halt until 1794, when General Anthony Wayne defeated the Indians at the Battle of Fallen Timbers, thus opening the Ohio, Big Sandy, and Levisa river valleys to more extensive settlement. The signing of the Treaty of Greenville in 1795 further encouraged the first great influx of settlers into the region (Brown 1937).

In 1795, Richard Smith and Henry Banks were granted 156,000 acres that included land from the Kentucky state line up to Big Prater. In the same year, a grant of 500,000 acres was made to Robert Morris. The majority of this land was located in West Virginia, but a 50,000-acre tract was located in Buchanan County (Russell County Heritage Book Committee 1989).

During the early 1800s, the land that would become Buchanan County was still part of Russell and Tazewell Counties. The territory that now makes up Buchanan County was referred to as "Sandy" in the years before the county was created (Compton 1958). Many of the early settlers in Buchanan County arrived in four distinct groups. The first group moved down Grassy Creek into the Oakwood area from Tazewell County and then continued west to Grundy. The second group was composed of people who had

gone to the Tug Valley in Kentucky during the early 1800s and, finding the area settled already, continued on to the Knox Creek area. The third group also arrived from Kentucky, possibly the Elkhorn area, traveled up the Levisa River, and settled into the Big Rock, Contrary, and Harman areas. The fourth group consisted of people who migrated from Russell County, across the Big A Mountain, and settled in the Council-Davenport area. Milton Ward arrived with the first group of settlers around 1733, bringing 15 slaves to help clear some of the 7,000 acres of land he owned along Dismal Creek. Other families in the region during this period included the Looneys, the Shelbys, the Bledsoes, and the Andersons (Russell County Heritage Book Committee 1989). Junior land grants issued for land in Buchanan County prior to 1830 include Daniel Ramey, 1821, 128 acres on Grassy Creek; John Brown, 1821, 15 acres on Dismal River; Reuben Pruett, 1821, 47 acres on Indian Creek; Joseph McGuire, 1824, 11 acres on Dismal Creek; John Ratliff, 1825, several acres on Dismal River; and George Marman, 1826, 50 acres on Knox Creek (Owens 1983:7).

There were three types of early roadways: 1) bridle paths, which were wide enough to allow the passage of one horse and were maintained by individuals or communities; 2) roads, which were wide enough for a wagon and were maintained by the county; and 3) turnpikes, which were covered by boards and wide enough for wagons to pass each other. Turnpikes were typically owned by an individual or a group of people and maintained for a profit (Weaver 1994). The general state road act mandated the construction of roads, bridges, and causeways where necessary, and road crews made up of local citizens were expected to build and maintain roads without pay. In fact, failure to maintain roads could result in heavy fines (Pawlett 1977; Weaver 1994). In 1789, however, the law was amended in recognition of the hardship that the rugged terrain imposed on the road builders in mountainous areas. This amendment relaxed the requirements for certain roads, allowing seven of the western counties to maintain "expedient" roads that were cleared and smoothed to a width of only 30 feet (Pawlett 1977:14).

In 1791, the residents of the western portion of Russell County (which included the areas now divided into Wise, Dickenson, and Buchanan Counties) petitioned the General Assembly to view and construct the portion of the road from Martins old station to Cumberland Gap. The road was marked in 1792 but had still not been constructed by 1794. The residents of the area sent another petition to the assembly noting that after the viewing and marking of the road,

> we had then greatest expectations of having a waggon road opened so that we might haul our produce to market and bring back salt and Iron and such other astutes as our county stood in need of. . . .[but] we still be under the disagreeable but absolute necessity of making use of that tedious and troublesome method of packing our produce from one hundred to one hundred and fifty miles to purchase salt and Iron at the works in Washington County the expense and trouble whereof added to that of packing

> those articles back again amounts to near so much as would purchase them at our own houses could they be waggoned into our county [Bales 1977:429].

In 1795 the legislature passed another act to open a wagon road to Cumberland Gap. In 1797 funds were appropriated for repair of the road and erection of a "turnpike." The road then came to be called the "Wilderness Turnpike" (Speed 1971[1886]). Summers (1929) mentions a Fincastle and Cumberland Gap turnpike running through the Clinch Valley, and this may be how the Wilderness Road was referred to in that area. The road traveled by many settlers into southwestern Virginia was known as the Chesapeake Branch of the Great Warriors Road. This road led from Pennsylvania, through the Valley of Virginia to the James River, then to Fincastle, up Catawba Creek, down the North Fork of the Roanoke River, over the mountains to Ingles Ferry on the New River, on to Fort Chiswell, Wytheville, Marion, Abingdon, Gate City, Jonesville, and, ultimately, to Cumberland Gap (Brown 1937).

The road that was to become the Kentucky-Virginia Turnpike extended from Pike County, Kentucky, to what is now Tazewell County in 1830. In Buchanan County, this route took it past the following places: Buckeye Creek, Conaway Creek, Big Rock Creek, Home Creek, Lynn Camp Creek, Bull Creek, Poplar Creek, Stiltner's Creek, Looney's Creek, Six-and-Twenty Mile Branch, Slate Creek at Grundy, Hoot Owl Branch, Watkins Branch, Little Prater, Big Prater, Stilton Branch, Dismal River, Webb Branch, Garden Creek, Kennel Branch, Contrary Creek, Grassy Creek, along Levisa River, and across Sandy Ridge (Russell County Heritage Book Committee 1989).

Before transportation routes into and out of southwestern Virginia were improved, there were very few ways for residents of the region to raise money. Most were subsistence farmers who allowed their stock to range freely in the woods. Some earned a small amount of extra cash by selling dried ginseng roots that they had gathered. Others sold the furs and skins of animals they hunted and trapped. Most residents of the county were almost self-sufficient. Each farmer acted as his own smith, and each family was responsible for its own food, clothing, and medical care (Compton 1958; Owens 1983). The first gristmill in Buchanan County, built by William Looney, was not erected until 1828 (Owens 1983).

Antebellum Period (1830-1861)

One of the earliest churches to be established in Buchanan County was the Old Regular Baptist Church. A list of early members of this church is not available. However, a list of possible Buchanan County residents who joined the Sand Lick Primitive Baptist Church between 1837 and 1858 includes the following last names: Belcher, Church, Clevinger, Coleman, Davis, Deel, Looney, Pressley, Ramey, Shortridge, Stilton, Stiltner, Vance, and Yates. Other early settlers in the region included the Elswicks, Rowes, Boothes, Lesters, Smyths, and Stacys (Baker 1976). A Methodist Church was established in 1855 on Holly Creek, near the present-day town of Clintwood.

Subscription schools existed in the region as early as the 1830s, and the first store was established by John P. Chase in 1857 (Russell County Heritage Book Committee 1989).

Junior land grants issued for land in Buchanan County prior to 1840 include Sally Shortridge, 1835, 40 acres on Levisa River; Moses Davis, 1838, 38 acres on Levisa River; John Wright, 1838, 45 acres on the right-hand fork of Russell's Creek; Jesse Childress, 1838, 84 acres on Levisa River, 145 acres at Conaway; Shadrick White, 1838, 195 acres on Garden Fork of Levisa River (Owens 1983:7).

Early farmers in southwestern Virginia grew cereal grains and flax and raised livestock. In 1850, the region grew only 0.2 percent of the state's tobacco yield, and few of the farmers had large slave holdings. In Russell County (which contained areas that later would become Buchanan, Wise, and Dickenson Counties), there were only 982 slaves in the total population of 11,919 persons. The effect of improved transportation in southwestern Virginia started to become visible during the 1850s with the arrival of the Virginia and Tennessee Railroad, which was chartered in 1847 and began to be funded in 1848. With the rail connection to eastern markets, old trade routes and older economic patterns were abandoned. The residents of the southwestern part of the state began producing more cash crops, relying especially on tobacco and wheat. Tobacco production jumped from 107,720 pounds in 1850 to 2,284,167 pounds in 1860, an increase of 2,020 percent. As a result, slave holdings increased as well. Wheat production more than doubled during this decade, and the production of livestock for the market also increased (Noe 1992).

Buchanan County was formed in 1858 from parts of Tazewell and Russell Counties and was named for James Buchanan, president of the United States at that time. The first wooden courthouse in Buchanan County was built on lands belonging to John Ratliff and Thomas Gillespie at the mouth of Slate Creek in Grundy (Owens 1983; Hageman 1988).

At the beginning of the Civil War, southwestern Virginia was still sparsely settled and "more closely resembled 1760's Virginia than the rest of the 1860's South" (Weaver 1994:7). According to the 1860 census, there were 2,793 people living in Buchanan County (Weaver 1994). The population density of Buchanan County was 4.5 per square mile. The average population density for the state of Virginia at that time was 15.9 per square mile (Weaver 1994). Most of the residents of southwestern Virginia were employed as small farmers, fur traders, and whiskey distillers. In 1860, only 10 citizens of Buchanan County were employed as nonfarmers. Very few inhabitants of the region owned slaves. Slave owners included Milton Ward at Pilgrims Knob; the Watkins family at Watkins Branch; the Owens family at Russell Prater; the Colley family at Sandlick; and the Mullins family at Grassy Creek, near the Breaks (Owens 1983).

Civil War (1861-1865)

Most early writers of Civil War history have viewed the entire Appalachian region as solidly antislavery and Unionist. In 1944, however, Henry Shanks published an

article in the *North Carolina Historical Review* that was the first to suggest that the residents of southwestern Virginia supported both slavery and southern secession in 1861. This support for southern secession eroded as a result of Confederate defeats, economic deprivation, and what Noe (1992:313) has termed "Confederate incompetence." Residents of the Big Sandy River basin were divided: some volunteered for the Union forces, some for the Confederates, and some attempted to remain neutral. Although relatively little fighting actually occurred in Buchanan or Wise Counties, opposing groups robbed, looted, burned property, and murdered each other (Owens 1983; Weaver 1994). According to Weaver (1994:7), "Most of the military activity in Buchanan County was incidental to that in Wise County to the south, Pike County, Kentucky, to the west, and McDowell and Logan Counties to the north. The walled nature of Buchanan County also helped to insulate that area from the ravages of external raiders. They had enough problems with local renegades without external forces."

As in other parts of the state, southwestern Virginia was devastated by the war. Troops ranging through the area destroyed crops, burned houses and barns, tore down fences for firewood, and drove away and slaughtered cows and horses (Owens 1983). These depredations were often carried out at the express orders of officers leading the troops. Humphrey Marshall, whose Confederate troops were responsible for defending Pound Gap (also known as Sounding Gap), angered the residents of this region by taking the following actions in 1862:

> I have prohibited the disbursing officers of this command from giving more than 75 cents per bushel for corn, 40 cents for shelled oats, $1 for wheat, rye or barley. I have directed that where there is a surplus beyond the wants of the farmer, that surplus shall be taken, if not sold, at the prices above stated . . . Men feeding cattle near the road to Pound Gap I have directed to take their stock elsewhere, and I have levied on all their hay, grass, and small grain, which public animals will want on our line of march [letter from Garfield to his superiors, quoted in Weaver 1994:112-113].

By March 1862, Union officers in southwestern Virginia were already remarking upon a change in mood among the residents of that region, and Colonel James Garfield wrote that "there has been a marked change in favor of the Union among the citizens of Wise, Buchanan and Scott Counties" (letter from Garfield to Assistant Adjutant General James Barnett Fry, quoted in Weaver 1994:118).

Southwestern Virginia contained numerous resources that were of vital importance to the Confederacy, including the saltworks at Saltville, the Virginia-Tennessee Railroad, the Austinville lead mines, and various nitre, copper, and iron mines. At the time of the war, there were only four ways to approach this area—through the Kanawha-New River Valley, through upper east Tennessee, through Cumberland Gap, and through Pound Gap (Weaver 1994). During the first year of the war, most of the

fighting occurred around the Kanawha Valley. By late 1861, however, Kentucky was no longer a neutral state, and the Union forces concentrated on the strategic location of Cumberland Gap. At this time, most soldiers from southwestern Virginia were participating in the fighting going on in other parts of the South, and there were few Confederate soldiers in a position to defend the region. The Federal occupation of Cumberland Gap brought additional pressure on the area of Pound Gap and left southwestern Virginia open to continuous raiding. The Confederate breastworks at Pound Gap were difficult to defend because Union soldiers were able to cross the mountains at several other smaller passes and thus attack Pound Gap from all sides. Fighting during the Battle of Pound Gap ranged from the north bank of the Pound River above the town of Pound, across the gap to the site of the Little Elkhorn Creek Camp on the other side of Pine Mountain in Kentucky. The Confederate garrison at Pound Gap fell on March 16, 1862, and the Confederate barracks at Almira were burned (Weaver 1994; Robertson 1993).

The town of Gladeville (now known as Wise) was first captured by Federal troops in June 1862, and several houses were burned to the ground (Weaver 1994). In the fall of the same year, Confederate soldiers camped near Grundy described the town as consisting of "3 dwelling houses, 1 store, 1 Blacksmith shop [and] a few outbuildings" (Weaver 1994:140). These demoralized men referred to their camp as "Camp Dismall."

During 1863, General Marshall was called on to defend the actions of his troops in southwestern Virginia. His men were accused of taking provisions from local citizens and burning fence rails while occupying a heavily forested area. The general countered by accusing the locals of profiteering from the war, but did agree to establish a curfew for his troops. This curfew was enforced by a special camp police force, and soldiers caught breaking the curfew were to be shot (Weaver 1994).

Numerous raids were conducted throughout the rest of 1863, ranging back and forth across Wise and Buchanan Counties. By this time, local men were switching sides to join the Unionists, some citing the depredations of the Confederates as their reason. In September 1863, a skirmish occurred in the vicinity of the Pound River and Holly Creek (Weaver 1994). A guerrilla war broke out between Secessionists and Unionist mountaineers, and mass depopulation occurred as secessionists fled south and west. War weariness had developed into Unionism by the last year of the war (Noe 1992).

On three separate occasions in 1864, Union General Stephen Burbridge led troops through southwestern Virginia in order to attack the saltworks operated by the Confederacy at Saltville. In his first two unsuccessful attempts, he advanced from Pike County, Kentucky, through Buchanan County. For his third attempt, Burbridge advanced by way of Cumberland Gap, joined up with a second Union Force, and succeeded in destroying the saltworks (Owens 1983).

Reconstruction and Growth (1865-1917)

Reconstruction of southwestern Virginia after the war required considerable effort. Local governments had to be reconstructed; schools, churches, homes, barns, and outbuildings had to be rebuilt; and food remained scarce. Many of the returning soldiers were disabled and could not help with the effort. The economy was very depressed, and many residents abandoned the effort to regain their old lives, moving to Texas or Kentucky in order to start over completely (Weaver 1994).

Major Jedidiah Hotchkiss was a leading cartographer for the Confederate Army. While serving in the western Virginia campaign in 1861, he had observed large outcroppings of coal, especially along the eastern base of Flat Top Mountain. After the war he attempted to interest investors in developing these coalfields. Due to the rugged nature of the terrain and the lack of transportation, it was a number of years before attention was turned to developing these fields (Eller 1982). In southwestern Virginia at this time, coal was primarily being used by blacksmiths, and wood was the fuel of choice for cooking and heating (Pobst ca. 1962).

The business depression of the 1870s also delayed Hotchkiss's plans, but he continued to promote the industrial potential of the mountains, and in 1880 began publication of a journal, *The Virginias: A Mining, Scientific, and Industrial Journal Devoted to the Development of Virginia and West Virginia*. The journal served to disseminate information about industrial activities in the mountains. As a result of Hotchkiss's efforts, the backers of the newly created N&W Railroad became interested in the coalfields and began development of the area in 1881 (Eller 1982).

Because Buchanan County was even more remote than many counties in southwestern Virginia, investors did not begin to buy up coal land there until the late 1880s (Pobst ca. 1962). The concentration of land ownership in the hands of huge land companies became characteristic of the development of much of the Appalachian coalfield. This contributed significantly to the exploitation of the region's coal deposits and greatly influenced the development of the industry (Eller 1982).

Buchanan County was under military rule between 1865 and 1875 (Baker 1976). The town of Grundy, the county seat, was incorporated in 1876. County records stored in the Grundy courthouse were destroyed in a fire in 1865 and again in 1885 (Weaver 1994). Following the 1885 fire, the courthouse was reconstructed from wood, but the county records were housed in a stone vault. This wooden structure was replaced by a large sandstone building in 1905. This courthouse was itself gutted by fire in 1915, along with many other buildings and homes in the town (Baker 1976; Owens 1983).

One of the speculators in southwestern Virginia was John Fox, Jr., who, with his brothers, James and Horace, had participated in the opening of mineral lands near the Cumberland Gap in the 1880s. John Fox achieved international success as a writer, his two most popular novels being *The Trail of the Lonesome Pine* and *The Little Shepherd of Kingdom Come*. These novels portrayed Appalachia as a strange land with peculiar

people. Fox believed, as did many of his associates, that the mountain people were inherently inferior and "must inevitably give way to the onrush of the new industrial order" (Eller 1982:78). Fox's writings symbolized the struggle between the forces of modernization and the traditional patterns of Appalachian life.

A boom period in the coal industry started in 1890, but was followed by a bust in 1893, resulting in panic and industrial depression. The mining industry became stagnant throughout the country, was very depressed in southwestern Virginia, and was nearly discontinued in Wise County (Pendleton 1920). After the turn of the century, coal production increased rapidly as a result of consolidation and the opening of new and larger mines. During the early part of the twentieth century, the growth of industry in southwestern Virginia fueled improvements in the transportation system, which in turn made the further growth of the industries possible. In the early years of the century, the Buchanan County Coal Company purchased approximately 25,000 acres along the Levisa River, the Northern Coal and Coke Company bought thousands of acres in Buchanan County and neighboring Pike County, Kentucky; and the Clinchfield Coal Company purchased thousands of acres of land in Buchanan, Dickenson, and Wise Counties. Local investors also began banding together to buy coal lands and form their own coal companies. By 1910 coal production had more than doubled and in the next decade had increased fivefold. Virginia's mines had an output of about 45 million tons of coal in 1920 and employed 14,000 men (Eller 1982).

Accompanying the development of the coal industry was the rise of the timber industry. Most of the areas along the railroads began to market their timber shortly after the arrival of the railroad. In southwestern Virginia, the industry rose in the 1890s and reached a peak shortly after the turn of the century. Much of the lumber produced in the coal counties was used to construct railroads, company towns, coal tipples, and other structures needed in the expanding coal industry. In the noncoal counties, commercial timber production became an important part of the local economy (Eller 1982).

Before 1890 and the start of the logging boom, commercial logging in Buchanan County was primarily conducted by local individuals. Until railroad lines were built into the region, logs were floated down the Levisa River to the Ohio River. During dry periods, timber would sometimes pile up for a year before water levels were high enough to float the logs. An exceptionally high volume of logs was rafted down the Big Sandy in 1900, when heavy rains caused the river to rise, covering shoals and making it easier to float the logs. Splash dams were constructed of timber and stones in smaller streams. After a large number of logs had been floated downstream and were accumulated behind the dam, openings in the dam would release the logs with enough force to carry them over the rough sections of the rivers. In 1910, the largest splash dam of its time was constructed by the Yellow Poplar Lumber Company near the mouth of Bartlick to facilitate the movement of logs through the Breaks. When this dam was filled, water is reported to have backed up to the junction of the Pound River with Russell Fork and then up each river as far as a mile (Sutherland 1955). Part of the concrete dam was later used in the construction of a bridge used to transport automobiles across the river (Owens 1983).

The W. M. Ritter Lumber Company began the construction of a narrow gauge railroad, the Big Sandy and Cumberland Railroad, in the first years of the twentieth century. This railroad ran from Devon, on the Tug River in West Virginia, to Hurley and Blackey in Buchanan County. About 1908 the railroad finished the line from Blackey to the mouth of the Upper Rockhouse Branch where Matney Depot was built (Figure 3). The line was not extended to Grundy until 1916. The line continued to be extended to various points in the county until 1925, when the W. M. Ritter Lumber Company left the county. In 1910, the C. L. Ritter Lumber Company constructed a tramroad in Buchanan County, but this company also left the county in 1924 or 1925 (Owens 1983). The Honaker Lumber Company, which may have been the second largest corporation in the United States in the first decade of the twentieth century, operated lumber camps and constructed railroad lines in Buchanan County (Owens 1983).

World War I to World War II (1917-1945)

Until 1921, none of the roads in Buchanan County were any better than wagon roads along the Levisa River and sled roads along the creeks. No bridges for wagons or automobiles existed, and people could cross the rivers only at fords when the water was low (Pobst ca. 1962) The first state highway through the county was not completed until 1929, and it was almost 1940 before most of the main roads in the county had been surfaced (Owens 1983).

Before the 1931 completion of the Norfolk and Western Railway Company's standard line from Tug Fork to Grundy, few attempts were made to mine coal in Buchanan County. Although vast areas of land were being purchased with an eye to future mining, little coal actually left the county (Owens 1983). Until the Norfolk and Western line was completed in 1931, there were no coal-carrying railroads through Buchanan County (Pobst ca. 1962). After this line was completed, Home Creek Smokeless Coal Company, Buchanan County Coal Corporation, H. E. Harman Coal Corporation, and Panther Coal Company began operating in the county and were soon followed by other companies. The first train-car load of coal was shipped out of Buchanan County in 1932. The first local chapter of the United Mine Workers was established in Buchanan County in 1933 (Baker 1976; Owens 1983).

Though the coal mining boom in Buchanan County did not begin until the completion of the Norfolk and Western Railroad in the 1930s, the potential economic benefits of the county's untapped coal potential was being investigated years before. A 1918 geologic map of the county notes the location of coal mines, both mines that shipped coal and those that were categorized as small local mines or prospect pits (Figure 4). Several small local mines or prospect pits are located in the vicinity of the project corridor, and though none are within the project corridor, some are immediately adjacent.

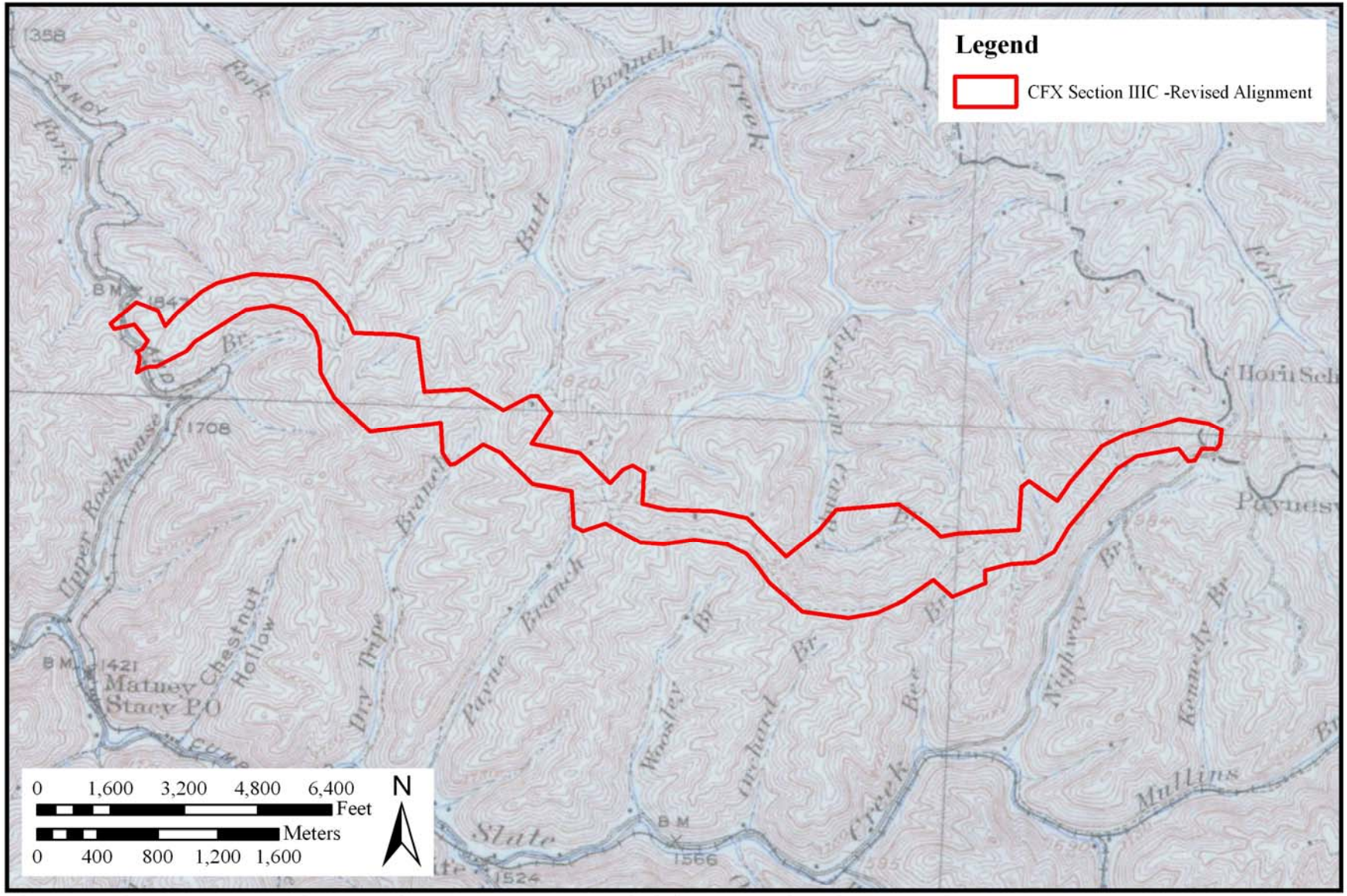

Figure 3: The Current APE Shown on the 1927 Iaeger, West Virginia, 15' Quadrangle (Maptech, Inc. 2008).

The effect of improved transportation and increasing industrialization is reflected in the increase in population of the general area during this period. In 1920, the population of Buchanan County was 15,441. In 1930, the population was 16,740, and by 1940, it was 31,477 (Baker 1976).

During the Depression, most of the coal industries in southwestern Virginia were ruined, other businesses failed, and many families were forced to resort to subsistence farming to keep from starving. Most of the virgin timber in southwestern Virginia was gone by 1930, and the logging industry began to decline in importance (Craft 1993; Owens 1983). The banks in Buchanan County closed their doors in 1931 (Baker 1976). The Works Progress Administration (WPA) and the Civilian Conservation Corps began programs that provided money and training to residents of the region (Sutherland 1955).

The New Dominion (1945-Present)

After the end of the war, mining companies began a shift from deep mining to strip mining, and the increased mechanization of the industry in the middle of the 1950s caused a recession in the local economy that continued into the 1970s (Robertson and Brown 1993). Most of the southern Appalachians experienced heavy outmigration in the 1950s, slowing in the 1960s, with a general net increase in population in the 1970s (ARC 1974). This trend does not appear to have been followed in the current study area. In Buchanan County, the population stood at 31,477 in 1940; 35,748 in 1950; 36,724 in 1960; and 32,071 in 1970 (Baker 1976).

During the 1970s, Buchanan was the leading coal producing county in the state. In 1972, the county produced 39 percent of the state's coal and employed 47 percent of the mineworkers (Owens 1983). In 1974, there was a tremendous boom in the coal industry, and parts of southwestern Virginia experienced a period of prosperity (Baker 1976). In the late 1970s, the enactment of stricter environmental codes made surface mining increasingly expensive, and deep mining regained favor. Although coal mining remains a leading source of income, many people continue to live on farms. Even though the majority of their cash income is from other sources, farming has allowed many people in the region to produce their own food and supplement their income by selling the surplus.

Southwestern Virginia was struck by the worst floods in the area's history in April 1977 when nearly 30 hours of continuous hard rain caused rivers to overflow their banks. Twelve counties in the region were designated major disaster areas and qualified for federal disaster assistance. Buchanan County alone sustained more than $94 million in damage (Bowman 1998). The town of Grundy was especially hard hit when the Levisa River and Slate Creek both rose and converged on the center of town, covering it with tons of water, mud, and debris. None of the buildings in town were spared, and

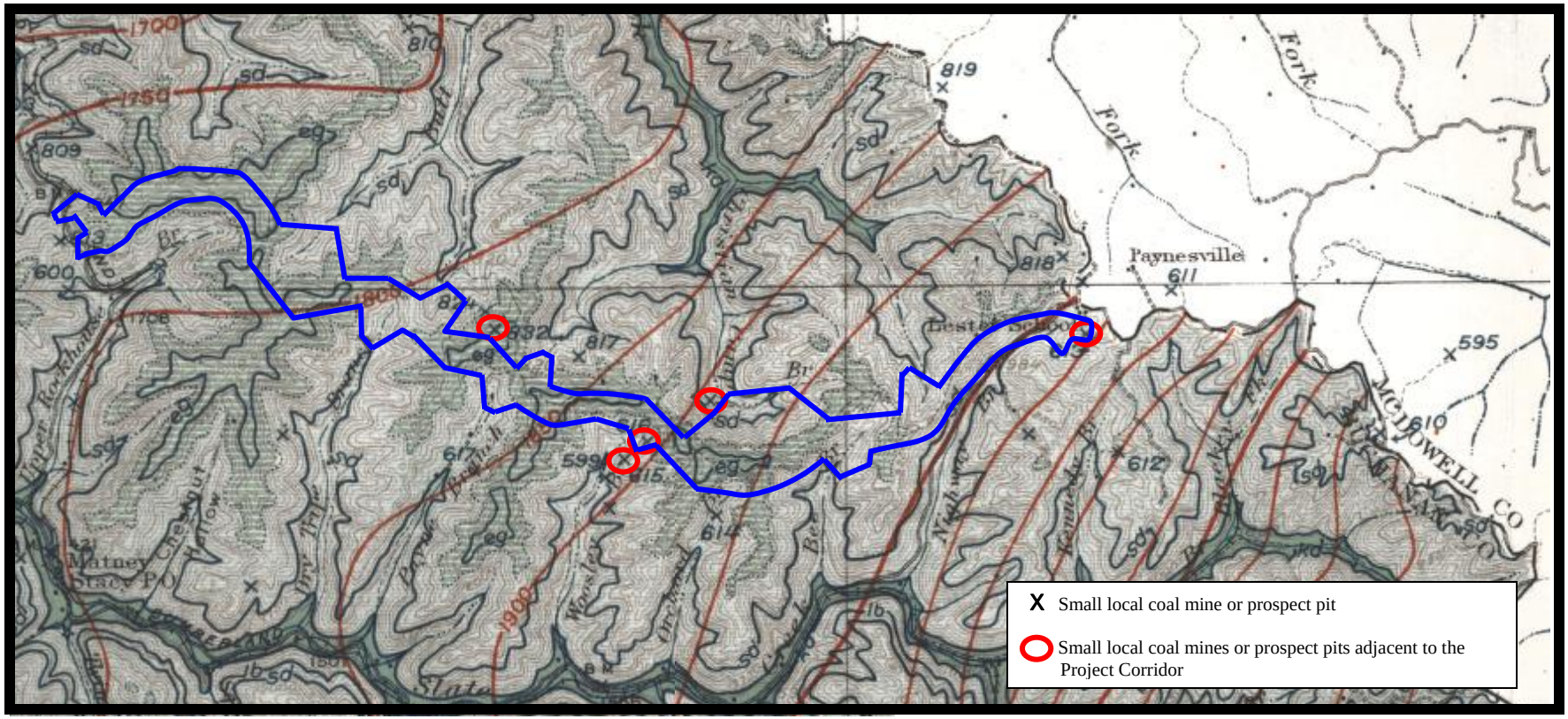

Figure 4: Location of the Current APE, Shown on a 1918 Geologic Map of Buchanan County (Hinds et al. 2008).

county records, including more than 75 deed books, were severely damaged. Approximately 99 percent of the records were later restored at the cost of $10,000. In Buchanan County, the towns of Haysi, Pikeville, and Williamson also experienced extensive property damage. Businesses, homes, and many mobile homes were washed away completely by the floodwaters (Owens 1983).

PREVIOUS ARCHAEOLOGICAL RESEARCH

Previously Recorded Sites Near the Current Project Area

No previously recorded sites are located within the current project area for the Rockhouse section of the CFX, even within areas previously surveyed for the earlier CFX alignment. There are a few sites, however, within a few miles of the current APE.

Sites 44BU40 and 44BU41 were recorded in 1991 when personnel from Michael Baker, Jr., Inc., conducted a survey of a 62.9-km-long, 15.2-m-wide right-of-way for a methane gas gathering line (Siemon et al. 1992). Both sites are located on ridge lobes, with 44BU41 on a lobe immediately south of adjacent CFX Section IIIB. Since only a few nondiagnostic artifacts were recovered, no further work was recommended. A third site recorded during the survey, 44BU42, is well to the northwest of the proposed CFX but deserves mention since it is a rare example of a potentially significant open-air habitation. This upland site yielded numerous cores and flakes, as well as the base of an unidentified projectile point. A-horizon soils at the site were generally thin and somewhat disturbed, but the artifact density was sufficient to suggest a longer-term campsite with the possibility of intact features. The site was therefore recommended for evaluation excavations or avoidance (Siemon et al. 1992).

Site 44BU75, a late nineteenth-century cemetery located on a ridge toe above Route 641, was recorded by CCR during a survey for the proposed Compton Mountain regional water project (Holm and Lautzenheiser 2000). The cemetery appeared to contain 20 marked burials with hand-carved fieldstone markers. The water line was rerouted to avoid the cemetery, and CCR recommended no additional archaeological work. However, VDHR lists the cemetery as potentially eligible in DSS.

Site 44BU76 was also recorded during the Compton Mountain regional water project survey conducted by CCR. This small lithic scatter was encountered during shovel testing of a toe slope and yielded a side-notched projectile point and several flakes. Due to evidence of soil disturbance related to a nearby gas well, the site was recommended as not eligible for the NRHP (Holm and Lautzenheiser 2000).

A cluster of 21 sites (44BU18 through 44BU36, 44BU38, and 44BU39) is located approximately four miles southwest of the current project area. These are linked to a survey conducted in 1982 by Bruce Larson and J. Mark Wittkofski, but the only available information is on older VDHR site forms and site forms in the current DSS.

Sites 44BU18, 44BU25, 44BU35, and 44BU36 are all rockshelters. Lithic material and possibly ceramics were recovered from 44BU18. At the time it was recorded, this site showed evidence of looting activities, and the floor of the shelter was covered by more than 0.5 m of roof fall. No artifacts were recovered from site 44BU25, although lithic material was observed on the slope of the hillside in which the rockshelter was located. Site 44BU35 was not actually inspected by archaeologists, but merely

identified by binoculars from across the hollow. Site 44BU36 was briefly inspected, but no artifacts were recovered.

Site 44BU24 is the location of possible Native American burials that were uncovered and reported by local workers who did not disclose the whereabouts of the disturbed remains. DSS shows the site in an upland area on a small ridge toe. This site was not field verified, and the site form does not mention whether the remains were properly identified. It is also unclear whether the site is related to a rockshelter. The other previously recorded sites with human remains near the CFX project area have been rockshelters.

Site 44BU21 is reported to be the location of the Runion family cemetery and contains graves marked by headstones with dates ranging from ca. 1880 to 1980. Site 44BU28 is also a cemetery containing headstones dating from 1881 to 1974. This cemetery was still being maintained in 1982 when it was first recorded. It is reported to be the cemetery for families who lived in a nearby nineteenth-century planned community. No information about this community is available beyond its mention on archaeological site forms on file at VDHR. Site 44BU31 is the location of the Dawson cemetery, also probably related to the planned community. Most of the sandstone markers in this cemetery were not engraved. Sites 44BU38 and 44BU39 are also the locations of nineteenth- and twentieth-century cemeteries where the majority of the marked graves have unengraved tombstones.

Sites 44BU20, 44BU22, 44BU23, 44BU26, 44BU27, 44BU29, 44BU30, and 44BU34 are all associated with the nineteenth-century planned community. Only the location of the ruins of a house was recorded for site 44BU27, but the site itself was not inspected. Artifacts recovered from the other domestic sites (44BU20, 44BU26, 44BU29, 44BU34) include tin cans, bottles, bricks, lumber, ironstone, whiteware, and nails. Sites 44BU23 and 44BU30 are serpentine fences constructed of split chestnut rails. Site 44BU22 was also associated with this community and consists of a log barn that was still standing and in stable condition in 1982.

Site 44BU32 is the location of a nineteenth- to twentieth-century house, and site 44BU33 is the location of a nineteenth- to twentieth-century frame house and log barn. Although the locations of these sites were mapped, neither site was investigated. Site 44BU19 is the location of a nineteenth- to twentieth-century still that, in 1982, was scheduled to be disturbed by mining activities. Artifacts collected from this site include tinned iron containers, charcoal, and mason jars.

Previous Surveys for CFX

CCR recorded a number of archaeological sites and cemeteries during previous surveys of CFX alternatives in Wise, Buchanan, and Dickenson Counties (Jones and Lautzenheiser 1999; Bamann et al. 2001; Bamann et al. 2003; Moore et al. 2003; Lautzenheiser and Stewart 2004). Eleven cemeteries were recorded as architectural resources (VDHR #s 025-5003, 025-5006, 025-5017, 025-5021, 025-5023, 025-5027,

025-5042, 025-5052, 025-5055, 025-5058, and 097-5018) during the architectural identification survey for the original CFX multiple study alternatives (Jones and Lautzenheiser 1999). These cemeteries are generally small, though two have up to 100 interments. Several are located on a slope or a knoll overlooking houses. None were recommended as eligible for the NRHP.

CCR conducted the archaeological identification study for the Preferred Alternative for the CFX from U.S. Route 23 at Pound to the Virginia/West Virginia state line (Bamann et al. 2001). Twelve sites, nine historic cemeteries (recorded with VDHR architectural numbers), and four artifact locations were recorded or revisited. The sites include domestic sites, lithic scatters, and four rockshelters. Two of the rockshelters, 44DK23 and 44DK24, are located in Dickenson County. They contain Woodland and possible Archaic period deposits that were documented during preliminary shovel testing (outside the shelter areas) and subsequent evaluations of the interior areas. Only the type of deposits and integrity at 44DK24 warranted a determination of eligibility for the NRHP. The other two rockshelters, 44DK27 and 44BU77, were small and yielded no cultural material during the identification survey or a subsequent evaluation. Both were determined ineligible for the NRHP.

Other sites, some that VDHR requested be given architectural resource numbers rather than site numbers, include 44DK22, 44DK25, 44BU79, 44BU80, VDHR # 025-5068, and VDHR # 025-5069. All involve historic stone foundation remnants or stone features (retaining walls, raised garden beds, wells, etc.) associated with homesteads. Site 44DK26 is a gated 1930 coal mine entrance. None of the sites retained sufficient context to warrant eligibility for the NRHP. Site 44BU78, known as the Elswick site, is a historic domestic site with a Native American lithic scatter. The site is located at the intersection of Rt. 609 and Rt. 664 in Harman, and is situated around an 1890 I-house that was built by the Elswick family (VDHR # 013-0020). Both historic and Native American artifacts were recovered from shovel tests around the house, but no intact deposits were encountered. The historic artifacts appear to be associated with the 1890 house, and include whiteware, late nineteenth- to early twentieth-century stoneware, wire nails, and modern glass. Neither component of the site was recommended as eligible for the NRHP (Bamann et al. 2001).

The eight historic cemeteries (VDHR #s 025-5063, 025-5064, 025-5065, 025-5066, 025-5067, 025-5069, 013-5046, and 013-5047) recorded during the archaeological survey include small family cemeteries and larger community cemeteries. Some of the smaller family cemeteries are located on steep slopes adjacent to houses. None of the cemeteries have significant associations or gravemarkers with artistic merit, and none were recommended as eligible for the NRHP. Four additional nonhistoric cemeteries, all small, were encountered near houses or along roads.

A 2003 survey for the realignment of Section A of the CFX in Buchanan County (Bamann et al. 2003) recorded nine archaeological sites and one cemetery. The sites include three rockshelters (44BU81, 44BU85, and 44BU86), each of which was small and did not appear to retain potential for additional information on precontact Native

American settlement. Five of the sites (44BU82, 44BU83, 44BU87, 44BU88, 44BU89) are historic mine entrances. These entrances lack the intact associated features such as mine buildings, excavation or pumping equipment, or conveyors that would be necessary to convey the history of mining activities in the region and were recommended as not eligible for the NRHP. One site, 44BU84, is a domestic site with dry-laid fieldstone features representing a springhouse or root cellar and water collection areas. The features lacked sufficient associations to determine their age and did not appear to have the potential to yield additional information on historic settlement. The cemetery recorded during this survey (VDHR # 013-5089) is a small family cemetery situated on a side slope in a cow pasture. It was also recommended as not eligible for the NRHP.

Only one site, a small rockshelter recorded as 44BU90, was encountered during an addendum to the survey for the CFX Section A realignment (Moore et al. 2003). This rockshelter did not appear to have the potential to yield additional information on Native American settlement and was recommended as not eligible for the NRHP.

A final addendum survey for the CFX Section A realignment (Lautzenheiser and Stewart 2004) resulted in the recording of one new archaeological site and two cemeteries. The site (44BU91) is a complex of three building ruins that are likely associated with an adjacent abandoned coal mine. The ruins feature cinder block rubble and steel doors, and the associated artifacts generally date to the twentieth century but offer little information on the site's function. The site was recommended as not eligible for the NRHP due to the lack of significant intact features related to the mine industry.

Site Potential Based on Previous Research

Although no previously recorded sites are located within the current APE for the Rockhouse section of the CFX, previous research in the project vicinity, including previous research for the CFX alignment, suggests that a variety of site types might be encountered during archaeological survey. The common site types include Native American rockshelters, historic cemeteries, Native American open-air habitation sites, historic domestic sites, and historic mine shaft openings with or without related features. Many of these site types, including rockshelters, mine openings, and cemeteries, occur on steep slopes. The sloping terrain of the Rockhouse section, therefore, does not preclude the possibility of encountering such sites, and historic maps indicate that old mine pits are located on slopes near the APE (see Figure 4). However, only two of the examples of rockshelters, cemeteries, or mines discussed in this review have been determined eligible or potentially eligible for the NRHP. These are a rockshelter investigated by CCR (44DK24; Bamann et al. 2001) and a small cemetery with fieldstone markers recorded by CCR (44BU75; Holm and Lautzenheiser 2000). Some of the other sites mentioned in the review have not been evaluated with respect to NRHP criteria, but information on a number of them suggests that they would not meet the criteria of eligibility.

METHODS

Introduction

The purpose of the archaeological identification survey was to determine if archaeological resources that are on, or potentially eligible for, the NRHP were located in the project APE. Resources were assessed against the NRHP criteria to determine their potential for eligibility. These criteria require that the quality of significance in American history, architecture, culture, and archaeology should be present in buildings, structures, objects, sites, or districts that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that the buildings, structures, objects, sites, or districts:

A. are associated with events that have made a significant contribution to the broad patterns of our history;
B. are associated with the lives of persons significant in our past;
C. embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
D. have yielded, or may be likely to yield, information important in prehistory or history (Federal Register 1981).

Background Research

A general location study (Holm et al. 1998), archaeological assessments (Bamann et al. 2008; Holm and Lautzenheiser 1999), an architectural identification survey (Jones and Lautzenheiser 1999; Jones et al. 1999), and archaeological identification surveys (Bamann et al. 2001; Bamann et al. 2003; Moore et al. 2003; Lautzenheiser and Stewart 2004) have been completed for previous CFX alignments. These documents provide historic context, an overview of previous archaeological research, information on resources recorded by CCR, and information regarding the potential for various site types within the current project area.

In addition to background research conducted at the CCR library, research was also undertaken at the following locations:

Virginia Department of Historic Resources (VDHR), Richmond
Library of Virginia, Richmond
Virginia Historical Society, Richmond
Dickenson County Courthouse, Clintwood
Dickenson County Library, Clintwood
Haysi Library, Haysi
Buchanan County Library, Grundy
Wise County Library, Wise.

CCR researchers also consulted the following internet resources:

- The Library of Congress American Memory project (includes historic maps)
- The Library of Virginia's Virginia Historical Inventory (historic architecture and site information)
- The University of Alabama Map Library (includes archive of historic maps of Virginia)
- The Buchanan County History Project (Buchanan County Historical Society and the Buchanan County Public Library)

In preparation for the survey, project maps were reviewed to determine that no previously recorded archaeological sites were located within or adjacent to the current project area. The locations of architectural sites with potential for associated archaeological components were noted at this time. The Data Sharing System (DSS) at VDHR was reviewed to update records for the current project, and related reports on file at VDHR were examined for specific site and previous survey information.

Relevant United States Department of the Interior Geological Survey (USGS) and 7.5' topographic quadrangles were consulted for information on topography, hydrology, vegetation, strip mining, special features such as cemeteries and mine adits, and infrastructure. Relevant USGS 15' topographic quadrangles dating to the early twentieth century were also reviewed.

The 1918 *Geologic Map of Buchanan County, Virginia* (Hinds et al. 2008), was examined for information on historic features and mining. The following geologic quadrangles were consulted for information on the bedrock geology of the current section and for the analysis of rockshelter geology in the Coalfields region. Full citations appear in the References Cited section.

1972 *Geologic Map of the Elkhorn City Quadrangle, Kentucky-Virginia, and Part of the Harman Quadrangle, Pike County, Kentucky* (Alvord and Miller 1972)
1973 *Geologic Map of the Jenkins West Quadrangle* (Rice 1973)
1984 *Geology of the Prater and Vansant Quadrangles, Virginia* (Nolde and Mitchell 1984)
1988 *Geology of the Virginia Portion of the Clintwood and Jenkins East Quadrangles* (Diffenbach 1988)
1988 *Geology of the Pound and Caney Ridge Quadrangles, Virginia* (Nolde et al. 1988a)
1988 *Geology of the Coeburn Quadrangle and the Coal-Bearing Portion of the Dungannon Quadrangle, Virginia* (Nolde and Diffenbach 1988)
1988 *Geology of the Virginia Portion of the Flat Gap Quadrangle* (Nolde et al. 1988b)

1989 *Geology of the Nora Quadrangle, Virginia* (Diffenbach 1989)
1989 *Geology of the Haysi Quadrangle, Virginia* (Henika 1989a)
1989 *Geology of the Virginia Portion of the Harman and Jamboree Quadrangles* (Henika 1989b)
1989 *Geology of the Grundy Quadrangle, Virginia* (Taylor 1989)
1989 *Geology of the Virginia Portion of the Patterson, Bradshaw, and War Quadrangles* (Whitlock 1989)

Map Compilation and Slope Analysis

Map compilation and slope analysis was performed using ESRI's ArcView 9.2 GIS software, and its spatial analysis extension. The purpose of the analysis was to identify special concerns such as areas with potential to contain rockshelters and areas previously disturbed by strip mining. Mapping layers were created for various data and tied to a geographic coordinate system (Figure 5). The mapping layers included:

- Project area limits provided by Parsons Transportation Group Inc,
- Previously surveyed areas developed from CCR reports and addendums,
- Areas heavily disturbed from strip mining identified on the 7.5' USGS Patterson, Virginia, topographic quadrangle (1964; photorevised 1977) and refined using 2003 aerial photography (USDA Farm Service Agency, Aerial Photography Field Office) and 1998 Infrared aerial imagery (Geospatial and Statistical Data Center at the Alderman Library, University of Virginia),
- Slope, expressed as percentage of rise, computed for all areas in the APE using ArcView spatial analysis tools and a 30-m-resolution digital elevation model (Geospatial and Statistical Data Center, Alderman Library, University of Virginia); separate layers were created for areas with slope greater than 15 percent and areas with slope less than 15 percent,
- Areas within the current APE not previously surveyed, not heavily disturbed due to strip mining, and not in areas with greater than 15 percent slope, and
- Areas of rockshelter potential, determined using the above noted geological maps in combination with the slope data.

Analysis of Rockshelter and Cemetery Potential

CCR researchers analyzed data from 67 previously recorded rockshelters in counties covered by the proposed CFX (Wise, Dickenson, and Buchanan Counties) in order to understand the most likely locations for significant rockshelters in the current APE. This study placed particular emphasis on bedrock geology units but also reviewed expectations for attributes such as aspect and distance to water. The sample included all

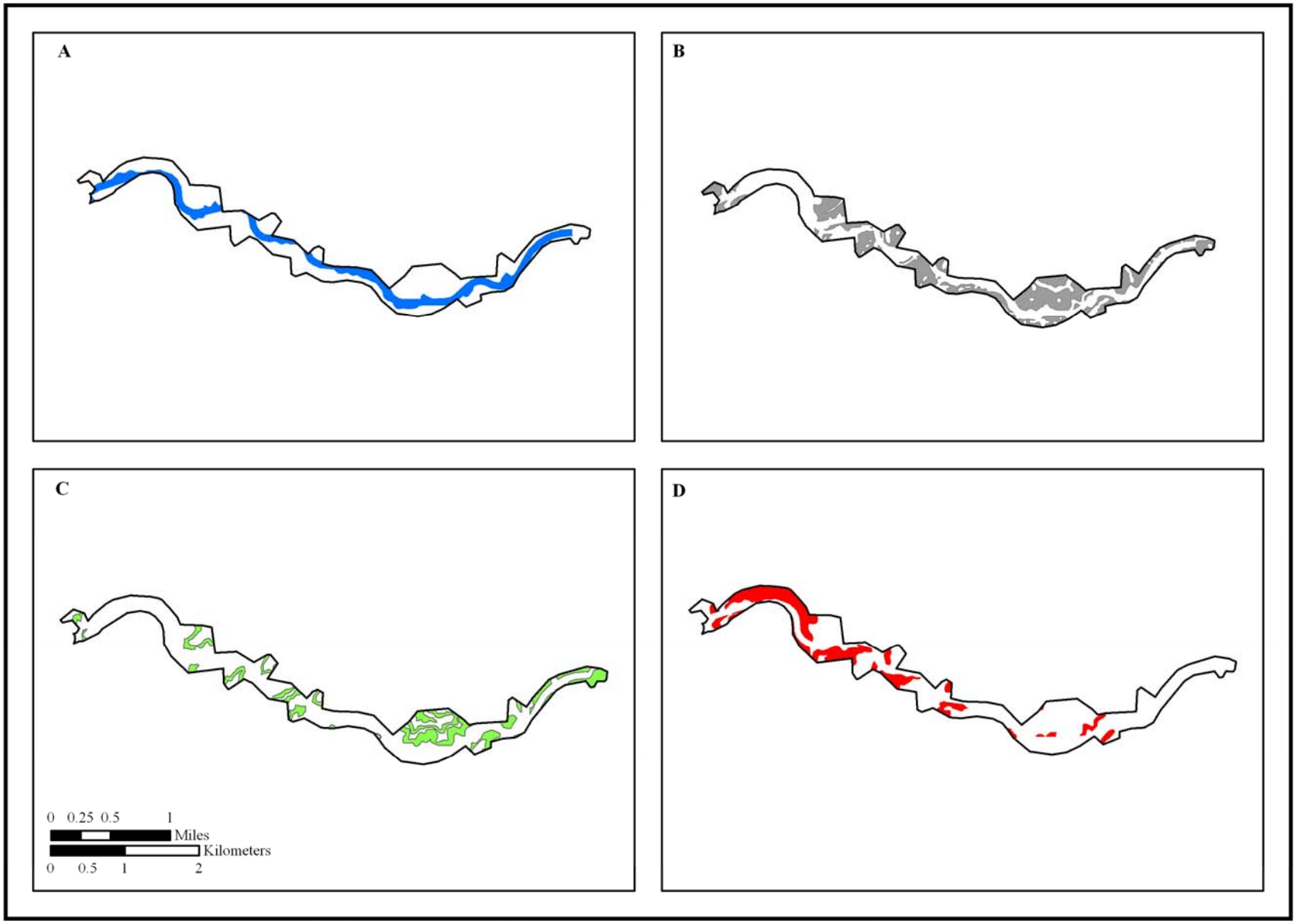

Figure 5: Key Variables Used for GIS Mapping and Slope Analysis: A. Previous Archaeological Surveys; B. Slope Terrain Greater Than 15 Percent; C. Geological Mapping Showing Favorable Settings for Rock Outcrops; and D. Areas Previously Strip Mined.

rockshelters previously identified by CCR and all but the most poorly documented sites noted during DSS queries for rockshelters in the three counties. Specific data were collected by examining the state site form and the mapped location for each site. Reports on file at VDHR were also examined.

An analysis of historic cemetery locations was also conducted to understand the most likely locations for cemeteries within the current APE. This analysis utilizes data from all previous CCR studies associated with the CFX project.

Archaeological Field Survey

The field survey considered all areas of the APE, but was guided by the results of the GIS analysis of slope, disturbance, previous survey, and rockshelter potential (see Figure 5). The survey methodology consisted primarily of systematic pedestrian transects that followed the natural topography. When bedrock outcrops were observed, the entire outcrop was examined for possible rockshelters. In general, areas with slopes greater than 45 degrees were physically inaccessible. In these areas, attempts were made to evaluate the slope for possible rockshelters from lower elevations.

The potential for shovel testing was limited due to excessive slope and disturbance. However, when shovel testing was appropriate, standard 30-cm-by-30-cm tests were excavated into sterile subsoil or until bedrock was reached. No standard interval was possible, and shovel tests were located where feasible. Soils were characterized using standard USDA terminology for texture; soil color was determined using Munsell charts. Appendix B shows representative soil profiles from shovel testing. Digital photography was used to document field conditions and resources observed during the survey.

ANALYSIS OF ROCKSHELTER POTENTIAL AND LOCATIONS

Introduction and Discussion of Previous Rockshelter Research

Rockshelters are a particular form of natural recess within bedrock. They are shallow, cavelike spaces formed by an overhanging cliff or standing rock, and they were often occupied by precontact Native American peoples (Porter 1970; Waters 1992). Rockshelters are commonly found at the base of cliffs, at rock or ledge overhangs, or where rock masses have detached from their parent cliff (Harris 2001a, 2001b). Rockshelters can be found in a variety of different lithologies, but are most commonly associated with sandstone and limestone (Waters 1992). This is because rockshelters commonly form where a rock stratum resistant to erosion and weathering, such as sandstone, overlays a less resistant rock stratum, such as shale or siltstone. The less resistant rock erodes easily, undercutting the more resistant rock and forming a recess or overhang (Figures 6 and 7; Waters 1992; Porter 1970).

A number of rockshelters have been identified within the region surrounding the proposed CFX, but few have been intensively studied. For example, although a total of 34 occupied rockshelters were identified in the Flatwoods area of Wise County during a cultural resource management study for the proposed Coeburn land exchange (conducted from 1977 to 1983), Barber (1996) notes that only eight have been the subject of test excavations. The eight rockshelters are located along a south-facing sandstone cliff above Jaybird Branch. Excavations were conducted by personnel from the Western Carolina University Archaeology Laboratory under the direction of Anne Rogers (Rogers 1982). The excavations involved 1-x-1-m test units within and around each rockshelter. Based on the results, five of the rockshelters (44WS17, 44WS22, 44WS24, 44WS29, and 44WS32) were recommended as potentially eligible for the NRHP.

Two 1-x-1-m test units at 44WS17 yielded a few pieces of lithic debitage, a possible Early Archaic Palmer Corner-Notched projectile point, and faunal remains. A single 1-x-1-m test unit at 44WS22 contained a few pieces of debitage, a biface fragment, and a Middle Archaic Morrow Mountain projectile point. At 44WS24, three 1-x-1-m units and two parallel meter-wide trenches yielded a large assemblage of Archaic to Woodland period artifacts. Ceramic sherds, lithic debitage, and bone tools were recovered, as well as Palmer Corner-Notched, Lamoka, and triangular projectile points. One distinctive item was a mica fragment with a cut mark. Three 1-x-1-m units at 44WS29 yielded lithic debitage and tools, ceramic sherds, and Archaic period Lamoka and Morrow Mountain projectile points. The quantity of material was quite high and intact deposits extended to 70 cm below surface. Abundant material was also recovered from two 1-x-1-m units at 44WS32. This material included lithic debitage and tools, as well as a Middle Archaic period Morrow Mountain projectile point. Each of these sites appeared to have potential for intact deposits, even in those cases where evidence for moderate disturbance from looting was present. The sites were recommended as eligible for the NRHP for their ability to yield information on short-term exploitative camps, especially for their potential to yield data on subsistence and local and regional

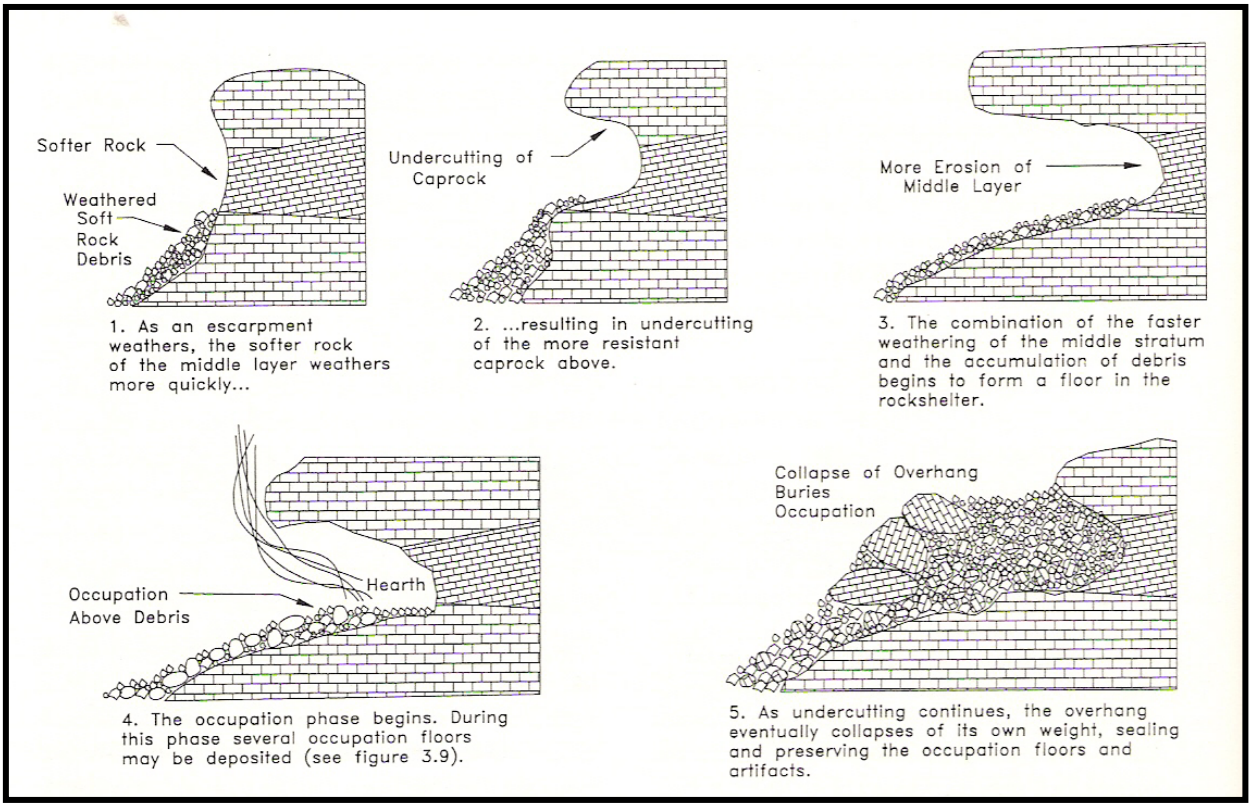

Figure 6: Illustration of Generalized Rockshelter Formation Sequence and Morphology, from Rapp and Hill (1998). Note Significance of Weathering of Softer Interbedded Rock, a Key Process in the Formation of Both Limestone and Sandstone Rockshelters.

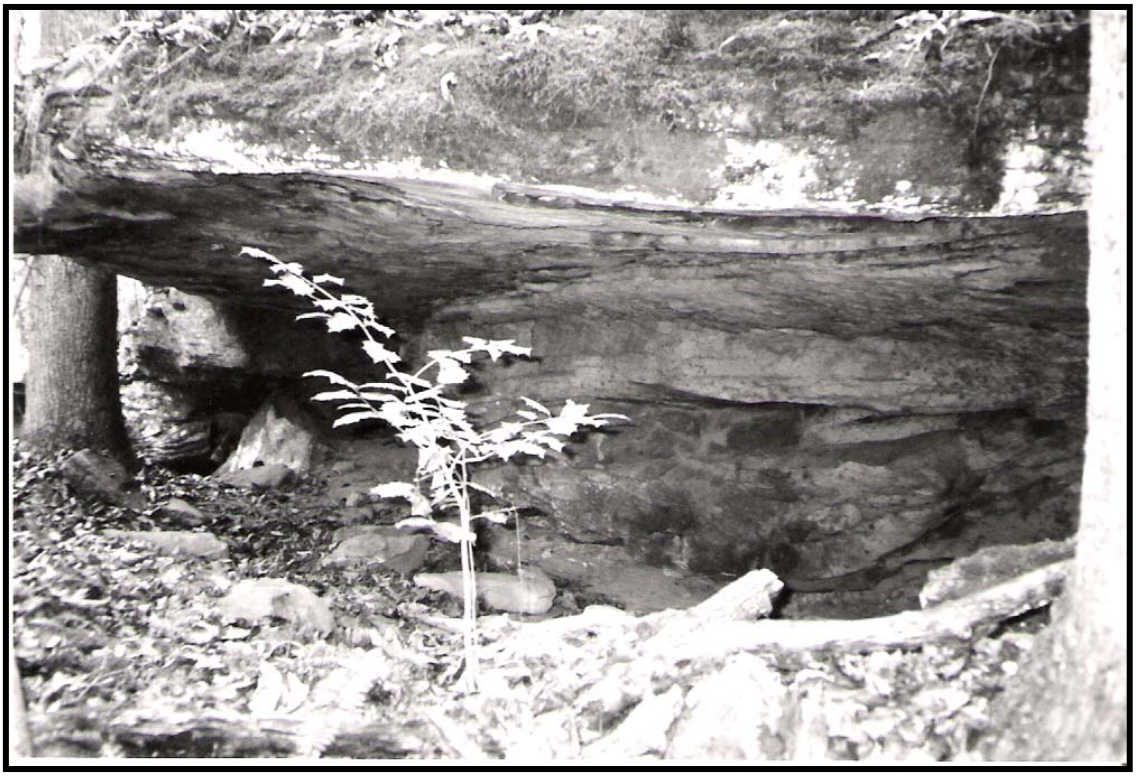

Figure 7: Example of Small Sandstone Rockshelter (44DK24) in the Former Preferred Alternative for the Coalfields Expressway (Not in Current APE).

interaction during the Archaic and/or Woodland periods. It appears, however, that the project was able to avoid adverse effects to these sites, and no further fieldwork has been conducted.

Barber (1996) created a settlement pattern model based on Rogers's test excavation results and very general and limited survey data on the other rockshelters in the Flatwoods area. He admits that much of his data is incomplete, partly due to extensive looting that has taken place in the rockshelters. He recommends intensive investigation as a step toward interpreting *and* preserving information contained in the rockshelter sites. In his model, the Flatwoods rockshelters were utilized only occasionally as transient camps during the Early, Middle, and Late Archaic periods, Although there is no evidence that they were ever occupied during the Early Woodland period, "this may reflect a lack of recognition of temporally diagnostic artifacts of this time period as opposed to a real lack of occupation" (Barber 1996:155). During the Middle and Late Woodland periods, the Flatwoods area was used more frequently and in an increasingly complex manner. There is evidence that the rockshelters in the Flatwoods area were used as both base camps and as transient camps during these later times, a fact that has been interpreted as the result of a local population increase and/or the establishment of a more complex regional political system (Barber 1996).

The Indian Kettle site (44WS6), investigated by the Wolf Hills Chapter of the Archaeological Society of Virginia in 1977 (Bartlett 1984), is another rare example of more intensive rockshelter investigation. The rockshelter is also located near the Flatwoods area and occurs in a sandstone bluff. The shelter features a round depression known as the "Indian Kettle." It may have been made during the site's occupation through grinding with a stone pestle. The site is well known to surrounding residents, and disturbances from looting were documented during the excavations. The excavations involved three 2-x-2-m test squares, and though there was very little soil over the bedrock in the shelter floor, over 600 pieces of debitage, as well as faunal remains, several diagnostic projectile points, and two small limestone-tempered ceramic sherds, were recovered. The diagnostic artifacts indicated principal occupation during the Middle and Late Woodland periods. No further work was conducted, though the results suggest that there is future potential for significant information from the site. The work was preliminary in nature and underscores the need for more intensive studies of rockshelter sites.

The background research for this project has indicated that a number of other minimally documented rockshelters have been recorded in the general vicinity of the current project and in southwestern Virginia in general. For example, Holland's (1970) synthesis of research in southwestern Virginia inventories rockshelter sites in Carroll, Giles, Grayson, and Wise counties. With the exception of Holland's limited excavations in Grayson County (44GY10) and the work discussed above, very little additional research has been taken place. Some rockshelters in the region, such as 44DK3 and 44DK9 in Dickenson County, are listed at VDHR as having been extensively looted with the looting including unauthorized removal of human remains. A portion of these rockshelter sites may be yet undisturbed, suggesting research potential with respect to more intensive rockshelter habitations.

In contrast to the situation pertaining to rockshelter investigations, substantial research has been conducted at regional cave sites, including Daugherty's Cave (44RU14) in Russell County and Bone Cave (44LE169) in Lee County (Benthall 1990; Kimball and Whyte 1995). Large-scale excavations at Daugherty's Cave, conducted in cooperation with VDHR, revealed stratified deposits spanning the Early Archaic through the Late Woodland periods. Evidence of early historic period occupation was also present. Test excavations at Bone Cave, conducted by the Appalachian State University Laboratories of Archaeological Science, identified human skeletal remains suggesting extensive mortuary use during the Woodland period. The site was determined eligible for the NRHP. This research has contributed to our understanding of Native American use of caves in the southwestern Virginia region, but both sites represent the intensive occupation or use of limestone solution caves rather than the type of rockshelters discussed above. The limestone caves are located in a different physiographic setting than the sandstone formation rockshelters. Rockshelters in southwestern Virginia, which appear to have been used as shorter-term base camps or exploitative camps, represent a different setting and site type for which intensive research has not been conducted.

CCR's previous review of published rockshelter research for an archaeological assessment of the proposed CFX (Holm and Lautzenheiser 1999) noted that the underlying sandstone and siltstone bedrock found in much of the study area is very favorable for the formation of rockshelters. The assessment also noted specific expectations for rockshelter locations, which include the following: rockshelters are likely to be encountered on steep slopes where streams have cut through beds of sandstone, although sites have also been encountered in rockshelters located just below the crests of ridges (Porter 1970; Dorsey 1996; Tolley 1996); while elevation and distance to water do not seem to have been major factors in determining the likelihood that a rockshelter was utilized, exposure does appear to have been important; and rockshelters with a southern or eastern aspect may be more likely to have been occupied than those with western or northern exposures, but the latter cannot be eliminated from consideration (Barber 1996; Bush 1996; Dorsey 1996; Tolley 1996).

CCR subsequently recorded eight rockshelters (44DK23, 44DK24, 44DK27, 44BU77, 44BU81, 44BU85, 44BU86, and 44BU90) within the preferred alternative for the CFX (Bamann et al. 2001; Bamann et al. 2003; Moore et al. 2003). All but one are located within or nearly within the mapped boundaries of the Wise or Norton Formations in areas of coal beds and interbedded shale, siltstone, and sandstone. One (44DK27) is in the Breathitt Formation, which features sandstone, shale, and coal. All but one is south or southwest facing. The other (44BU77) is west facing. Only one of the rockshelters recorded by CCR (44DK24) was recommended as eligible for the NRHP. This rockshelter had two relatively small sections, one facing southwest and one facing south, and was minimally disturbed. Test excavations revealed evidence of intensive Woodland period occupation, with one unit documenting a deep, middenlike deposit containing precontact lithic and ceramic artifacts, bone fragments, and carbonized botanical remains (Bamann et al. 2001). No further work was conducted due to plans for avoidance. Another rockshelter (44DK23) occupied during the Woodland period was recorded nearby in the same bedrock formation, but this was determined not eligible for the

NRHP. The other rockshelters were recommended as not eligible due to a lack of evidence for occupation.

A more recent rockshelter overview by Michael Barber et al. (2004) involved analysis of rockshelter characteristics in Wise, Dickenson, and Scott Counties. He found that southeast-facing shelters were most frequently inhabited, followed by ones south and southwest facing. He interprets this as a preference for those shelters protected from winds and rain. However, he cautions that at least one-third of the sample involved occupied rockshelters with western or northern aspects, and concludes that "shelters were used on a year round basis and at times where cold, inclement weather was not a controlling factor. From a survey standpoint, all cliff lines require examination" (Barber et al. 2004:108). He further concludes that characteristics such as elevation, shelter size, and proximity to other shelters may be important but do not provide a basis for prediction of rockshelter locations (Barber et al. 2004:113).

Analysis of Rockshelter Characteristics

Despite extensive previous research on rockshelters in southwestern Virginia, it is difficult to narrow down the specific criteria for areas with high probability for inhabited rockshelters within the current CFX project area. It is particularly difficult since Barber (1996), Barber et al. (2004), and others have warned that having a western, eastern, or northern aspect cannot be used to rule out rockshelter potential. A more detailed study of a larger sample of rockshelters was therefore undertaken in attempting to understand the most likely locations for rockshelters in the region covered by the current APE. This study places particular emphasis on specific bedrock geology units but also reviews previously studied attributes such as aspect and distance to water.

Using data derived from 67 known rockshelters in Wise (n=53), Dickenson (n=5), and Buchanan Counties (n=9) (Appendix A), an attempt was made to link one or more common attribute to the location of the rockshelter, as well as to link attributes to rockshelters with higher densities of cultural materials and potential significance. The sample includes all rockshelters previously identified by CCR and all but the most poorly documented rockshelter sites noted during DSS queries for rockshelters in the three counties. Specific data was collected by examining the state site form and the mapped location for each site. Reports on file at VDHR were also examined. Specific attributes discussed below include geology, aspect, distance to water, type of water source, distance to drainage confluence, landform, elevation, slope, and location in relation to prominent ridges.

Few of the rockshelters in the study sample have been evaluated for NRHP significance. For the purposes of this study, the potential for unevaluated rockshelters to retain significant information on Native American traditions, settlement patterns, and lifeways was estimated from available data. Unevaluated rockshelters with high potential significance have had reports of 20 or more artifacts, including diagnostic items, and/or heavy looting. Those with moderate potential significance have had reports of less than 20 recovered artifacts and some looting, while those with low potential have had reports of only 10 to 20 artifacts and no known looting. In cases of no information, the potential

is listed as indeterminate. The estimation of rockshelter potential, though very tentative due to the lack of systematically recovered data, provides additional context for locational data.

Geology. Bedrock type is the most consistent attribute related to rockshelter locations, and correlated types appear to have significant potential for rockshelters with research value. Detailed geological information was accessed for those rockshelters covered by geological map sheets obtained for the general CFX corridor (n=48), and the results indicate that these are located on distinctive rock units (Tables 1 and 2). A majority of the studied rockshelters (n=44) are located on the interbedded sandstone and siltstone members within a formation, or near the interface of the interbedded member and an unnamed sandstone member. Within this group, some rockshelters (n= 6) are also associated with prominent coal beds within the formation. Other rockshelters (n=6) are located within geologic units defined as having resistant sandstone members forming cliffs or ledges (see Table 2). Therefore, it appears that areas within interbedded rock members, particularly along the interfaces of interbedded members with unnamed sandstone members or near prominent coal beds, and within geologic units specifically defined as having cliff or ledge formations, have the highest potential for containing rockshelters.

Table 1: Overview of the Rock Composition for Rockshelters in the Study Sample.

Rock Unit	**Number of Rockshelters**	**Percent of Rockshelters**	**Number of Rockshelters with Potential Significance***
Interbedded sandstone and siltstone, including units with resistant sandstone forming cliffs and ledges	27	40.30%	13
Interface of interbedded sandstone/siltstone and unnamed sandstone or other sandstone unit	17	25.37%	5
Named or unnamed sandstone, including one unit with resistant sandstone forming cliffs and ledges	3	4.48%	2
Sandstone and shale	1	1.49%	0
Not Determined (all in Wise County)	19	28.36%	12
Total	67	100.00%	32

*includes those estimated to have high, moderate-high, or moderate potential for significant information

Table 2: Specific Associated Geologic Unit for Rockshelters in the Study Sample.

Site	**Associated Geologic Formation**
44WS0011	Lee Formation, upper Middlesboro Member, defined as sandstone, siltstone, and coal
44WS0012	Interface of Lee Formation, upper Middlesboro Member, and Norton Formation, interbedded siltstone and sandstone
44WS0013	Interface of Lee Formation, upper Middlesboro Member, and Norton Formation, interbedded siltstone and sandstone
44WS0014	Interface of Lee Formation, upper Middlesboro Member, and Norton Formation, interbedded siltstone and sandstone
44WS0018	Interface of Lee Formation, upper Middlesboro Member, and Norton Formation, interbedded siltstone and sandstone
44WS0019	Interface of Lee Formation, upper Middlesboro Member, and Norton Formation, interbedded siltstone and sandstone
44WS0020	Lee Formation, upper Middlesboro Member, defined as sandstone, siltstone, and coal
44WS0021	Lee Formation, upper Middlesboro Member, defined as sandstone, siltstone, and coal
44WS0022	Interface of Lee Formation, upper Middlesboro Member, and Norton Formation, interbedded siltstone and sandstone
44WS0023	Norton Formation, interbedded siltstone and sandstone
44WS0029	Norton Formation, interbedded siltstone and sandstone
44WS0030	Norton Formation, interbedded siltstone and sandstone
44WS0031	Norton Formation, interbedded siltstone and sandstone
44WS0033	Lee Formation, upper Middlesboro Member, defined as sandstone, siltstone, and coal
44WS0044	Lee Formation, upper member, defined by resistant sandstone units, forming cliffs and ledges
44WS0069	Interface of Lee Formation, upper Middlesboro Member, and Norton Formation, interbedded siltstone and sandstone
44WS0070	Norton Formation, interbedded siltstone and sandstone
44WS0071	Interface of Lee Formation, upper Middlesboro Member, and Norton Formation, interbedded siltstone and sandstone
44WS0072	Lee Formation, upper Middlesboro Member, defined as sandstone, siltstone, and coal
44WS0074	Lee Formation, upper Middlesboro Member, defined as sandstone, siltstone, and coal
44WS0075	Lee Formation, upper Middlesboro Member, defined as sandstone, siltstone, and coal
44WS0076	Lee Formation, upper Middlesboro Member, defined as sandstone, siltstone, and coal
44WS0077	Lee Formation, upper Middlesboro Member, defined as sandstone, siltstone, and coal
44WS0078	Lee Formation, upper Middlesboro Member, defined as sandstone, siltstone, and coal
44WS0079	Lee Formation, upper Middlesboro Member, defined as sandstone, siltstone, and coal
44WS0170	Norton Formation, interbedded siltstone and sandstone.
44WS0179	Lee Formation, lower member, generally occurs in three separate cliff-forming ledges
44WS0180	Lee Formation, lower member, generally occurs in three separate cliff-forming ledges
44WS0181	Lee Formation, lower member, generally occurs in three separate cliff-forming ledges
44WS0182	Lee Formation, lower member, generally occurs in three separate cliff-forming ledges
44WS0183	Lee Formation, lower member, generally occurs in three separate cliff-forming ledges
44WS0207	Lee Formation, Middlesboro Member, defined as sandstone, siltstone, and coal
44WS0210	Lee Formation, Middlesboro Member, defined as sandstone, siltstone, and coal
44WS0211	Lee Formation, Middlesboro Member, defined as sandstone, siltstone, and coal

Table 2: continued.

44DK0003	Wise Formation, unnamed sandstone
44DK0009	Lower Norton and Upper Lee Formation, Bee Rock sandstone member
44DK0023	Wise Formation, interbedded sandstone, siltstone, and shale
44DK0024	Wise Formation, interbedded sandstone, siltstone, and shale
44DK0027	Breathitt Formation, sandstone, shale, and coal
44BU0018	Norton Formation, interbedded sandstone, siltstone, and shale, near interface with unnamed sandstone
44BU0025	Norton Formation, interbedded shale, siltstone, and sandstone, near interface with unnamed sandstone
44BU0035	Norton Formation, interbedded siltstone, shale, and sandstone, near interface with unnamed sandstone
44BU0036	Norton Formation; Norton Coal Bed, interface of interbedded siltstone, shale, and sandstone and unnamed sandstone
44BU0077	Norton Formation; Norton Coal Bed; interface of interbedded shale, siltstone and sandstone and unnamed sandstone.
44BU0081	Wise Formation; Williamson Coal Bed, interface of interbedded shale, siltstone, and sandstone and unnamed sandstone.
44BU0085	Norton Formation; Norton Coal Bed, interface of interbedded shale, siltstone, and sandstone and unnamed sandstone.
44BU0086	Norton Formation; Norton Coal bed, interface of interbedded shale, siltstone, and sandstone and unnamed sandstone.
44BU0090	Aily Coal Bed, interface of Norton Formation, interbedded shale, siltstone, and sandstone, and Wise Formation unnamed sandstone

Aspect. A majority of the rockshelters examined (59.70 percent) are south, southeast, or southwest facing (Table 3). Of these rockshelters, 21 were found to be moderate to high in terms of estimated potential significance. A similar conclusion was drawn during an investigation of settlement patterns in the Appalachian plateau in southwestern Virginia (Barber 1996). Therefore, appropriate bedrock areas that face south, southeast, or southwest have the highest probability to contain rockshelters with cultural materials and potential research value.

While there appears to be high potential for rockshelters with southerly or southeasterly aspects to contain significant information, a number of rockshelters with westerly, easterly, or northerly aspects also appear to have potential significance based on the information on state site forms. For instance, the Deer Cave Rockshelter (44WS182) contained a high density of cultural materials, including numerous projectile points, limestone-tempered ceramics, scrapers, and gravers (Hardison 2003). Raw material was highly variable, and included nonlocally available cherts and exotic materials. This rockshelter, however, is noted as facing north. Therefore, areas with aspects other than south, southeast, or southwest should be examined as areas that may contain rockshelters with research value. This conclusion is consistent with earlier research conducted by Barber (1996) and Barber et al. (2004).

Table 3: Summary of Aspect for Rockshelters in the Study Sample.

Aspect (Direction Facing)	**Number of Rockshelters**	**Percent of Rockshelters**	**Number of Rockshelters with Potential Significance***
East	5	7.46%	1
West	7	10.45%	3
North	5	7.46%	2
South	12	17.91%	6
Southeast	16	23.88%	12
Northeast	3	4.48%	1
Southwest	12	17.91%	3
Northwest	5	7.46%	3
Unknown	2	2.99%	1
Total	67	100.00%	32

*includes those estimated to have high, moderate-high, or moderate potential for significant information

Distance to Water. In general, over 75 percent (n=52) of the recorded rockshelters in the study sample are 500 ft or less from water (Table 4). Two rockshelters already determined eligible for the NRHP are located less than 100 ft from a water source. Including these, 23 of the 32 rockshelters with potential for significant information are within 500 ft or less of water. It appears, therefore, that areas 500 ft or less from a water source have a higher probability for containing rockshelters with research value.

Table 4: Summary of Distance to Water for Rockshelters in the Study Sample.

Distance to Water	**Number of Rockshelters**	**Percent of Rockshelters**	**Number of Rockshelters with Potential Significance***
Less than 100 ft	12	17.91%	6
100 to 300 ft	35	52.24%	15
301 to 500 ft	5	7.46%	2
501 to 800 ft	8	11.94%	6
801 to 1,000 ft	2	2.99%	0
Greater than 1,000 ft	5	7.46%	3
Total	67	100.00%	32

*includes those estimated to have high, moderate-high, or moderate potential for significant information

However, the possibility of significant rockshelters located further than 500 ft from water should still be taken into consideration. Of the rockshelters in the current sample, 14 are located further than 500 ft from a water source. Three of these rockshelters, one of which is the Deer Cave Rockshelter discussed above (44WS182), were reported to have relatively high amounts of associated cultural material, and nine are considered to have potential for significant information. Therefore, although the data suggests that rockshelters in close proximity to present-day water sources appear to have been preferred for more intensive use, they are not likely to have been sought out to the

exclusion of those currently further from a water source. Water sources that are no longer extant, such as a spring, might have been utilized at some rockshelters.

Location in Relation to Drainage Headwaters. Additional data was collected to determine whether rockshelters are likely to occur at the heads of drainages as well as near more substantial waterways. As viewed in Table 5, it appears that a substantial number of rockshelters have been found near drainage heads as well as near streams and rivers. Though a majority of the rockshelters in the sample are located along smaller streams (n=22) or could not be directly associated with a water source (n=18), 13, including some potentially significant, are located at drainage heads. It appears, therefore, that appropriate bedrock units near drainage heads also have potential for significant rockshelters.

Table 5: Summary of Water Source Associations for Rockshelters in the Study Sample.

Association With Water	**Number of Rockshelters**	**Percent of Rockshelters**	**Number of Rockshelters with Potential Significance***
Along Main River	8	11.94%	2
Along Smaller Stream	22	32.84%	11
At Drainage Head	13	19.40%	5
Not Directly Associated	18	26.87%	10
Unknown	6	8.96%	4
Total	67	100.00%	32

*includes those estimated to have high, moderate-high, or moderate potential for significant information

Distance to Drainage Confluence. Another factor taken into consideration was the distance from a rockshelter to the nearest confluence of two drainages and therefore a higher order stream with more potential for subsistence resources. Approximately 65 percent of the rockshelters in the study sample are located 5,000 ft or less from a drainage confluence (Table 6). Of these rockshelters, 20 have potential significance. This suggests that areas within 5,000 ft of a drainage confluence have a higher potential to contain significant rockshelters. However, the estimated potential of six of the 13 rockshelters located greater than 5,000 ft from a confluence also suggests that they may have research value. Similar to the conclusion in factoring distance to a water source, rockshelters closer to a drainage confluence may have been preferred for habitation, but were not sought out to the exclusion of those further from drainage confluences.

Landform. The types of landforms associated with the rockshelter sample were also examined (Table 7). However, this attribute was difficult to work with due to the varying interpretation of landforms on state site forms and the difficulty of estimating the specific topography from USGS quadrangles for rockshelters with no data on the site forms. Therefore, although a cliffline landform appears to have the highest potential to contain rockshelters, other landforms can not be excluded. Furthermore, clifflines may occur within areas generally appearing as side slopes on contour maps.

Table 6: Summary of the Distance to a Stream Confluence for Rockshelters in the Study Sample.

Distance to Confluence	Number of Rockshelters	Percent of Rockshelters	Number of Rockshelters with Potential Significance*
Less than 1,000 ft	10	14.93%	3
1,001 to 3,000 ft	22	32.84%	10
3,001 to 5,000 ft	13	19.40%	7
5,001 to 8,000 ft	12	17.91%	5
Greater than 8,000 ft	1	1.49%	1
Unknown	9	13.43%	6
Total	67	100.00%	32

*includes those estimated to have high, moderate-high, or moderate potential for significant information

Table 7: Summary of Landform Type for Rockshelters in the Study Sample.

Landform Type	Number of Rockshelters	Percent of Rockshelters	Number of Rockshelters with Potential Significance*
Ridge Toe	2	2.99%	0
Outcrop	1	1.49%	1
Cliffline	38	56.72%	20
Ridge Spur	1	1.49%	0
Saddle	2	2.99%	2
Sideslope	17	25.37%	7
Colluvial Apron	3	4.48%	0
Ridge Top	2	2.99%	1
Other	1	1.49%	1
Total	67	100.00%	32

*includes those estimated to have high, moderate-high, or moderate potential for significant information

Elevation. The elevation of each rockshelter was also examined (Table 8). Although a greater number of rockshelters have been recorded at elevations between 1,500 to 3,000 ft above sea level (asl), this is likely a function of the elevation of the area, as opposed to a specific preference for such an elevation range. Also, although only five rockshelters were listed as occurring at elevations above 3,000 ft asl, four out of the five rockshelters have potential research value. Therefore, elevation does not appear to be a useful attribute in predicting rockshelter locations.

Slope. Like landform type, the slope on which each rockshelter occurs appears to be an unreliable attribute due to variation in interpretation by the recorder. It is not specified on state site forms whether the recorder is referring to the slope within the rockshelter, the slope of the rockshelter apron, or to the general slope of the surrounding landform. Therefore, analysis of slope is not included in this study.

Table 8: Summary of Elevation Data for Rockshelters in the Study Sample.

Elevation	Number of Rockshelters	Percent of Rockshelters	Number of Rockshelters with Potential Significance*
Less than 1,500 ft asl	3	4.48%	0
1,500 to 1,999 ft asl	12	17.91%	6
2,000 to 2,500 ft asl	37	55.22%	15
2,501 to 3,000 ft asl	10	14.93%	7
Greater than 3,000 ft asl	5	7.46%	4
Total	67	100.00%	32

*includes those estimated to have high, moderate-high, or moderate potential for significant information

Location in Relation to Prominent Ridges. The relationship of the rockshelters to prominent ridgelines was also examined since there may have been a preference for landforms on the southern side of ridgelines with less wind and greater exposure to daylight. For this study, prominent ridges were defined as those with significant elevation and very steep slope, often identified as named features on topographic maps. Less prominent ridges were defined as lower drainage divides represented on topographic maps by a series of peak elevation areas.

As shown in Table 9, the rockshelter locations do not show a clear pattern with respect to prominent and less prominent ridge formations. Although fewer rockshelters (n=7) are located on the northern side of prominent ridges, five out of the seven are included in the potentially significant category. Therefore, location in relation to a prominent ridge does not provide useful information in predicting rockshelter locations. Furthermore, a majority of rockshelters with potential significance (n=14) are located on the north side of less prominent ridges.

Table 9: Summary of Locations of Rockshelters in the Study Sample With Respect to Prominent Ridges.

Location in Relation to Ridge	Number of Rockshelters	Percent of Rockshelters	Number of Rockshelters with Potential Significance*
South Side Prominent Ridge	13	19.40%	6
South Side Less Prominent Ridge	15	22.39%	2
North Side of Prominent Ridge	7	10.45%	5
North Side of Less Prominent Ridge	25	37.31%	14
Other	7	10.45%	5
Total	67	100.00%	32

*includes those estimated to have high, moderate-high, or moderate potential for significant information

Summary of Expectations for Rockshelter Locations

The analysis of rockshelter characteristics for the study sample from Wise, Dickenson, and Buchanan Counties suggests that rockshelters with potential research value are most likely within appropriate bedrock units with southern, southeastern, or southwestern aspects. However, they are also somewhat likely in appropriate bedrock units with other aspects since rockshelter site selection was not always controlled by exposure issues and summer habitations might have favored windward or less sunny locations. Bedrock units favorable for rockshelter formation include those with interbedded rock members, particularly along the interfaces of interbedded members with unnamed sandstone members or near prominent coal beds, and those within geologic units specifically defined as having cliff or ledge formations. Attributes such as distance to water, type of water source, landform type, specific elevation, slope, and location with respect to prominent ridgelines do not exhibit specific patterning useful in assessing the most likely rockshelter locations within the current APE.

ANALYSIS OF CEMETERY LOCATIONS

Overview of Previously Recorded Cemeteries from CFX Surveys

A sample of 26 cemeteries recorded during previous CCR investigations for the CFX in Wise, Dickenson, and Buchanan Counties provides information that is useful in assessing areas with potential for cemeteries within the current APE for the Rockhouse section. Table 10 is a summary of the cemeteries and includes both historic (n=22) and post-1950 (n=4) cemeteries. None are listed as eligible for the NRHP. Some of the cemeteries were recorded during architectural surveys of previous alternatives and represent those related to, or near, houses as well as those reported by informants. A number of the cemeteries were recorded during archaeological surveys of the previous selected alternative, which gave full consideration to all areas within that APE.

The cemeteries include family cemeteries with 15 or fewer interments (n=11), family/community cemeteries with 16 to 50 interments (n=7), community cemeteries with more than 50 interments (n=5), and indeterminate cemeteries (n=3). Some are situated on slopes (approximately 35 percent; n=9), and at least two of these are on steep slopes. Others occur on knolls or rises (approximately 54 percent; n=14), ridge tops (approximately 8 percent; n=2), or level areas (approximately 4 percent; n=1). It appears, therefore, that cemetery locations are not limited to a specific type of landform, but are nearly as common on sloping terrain as they are on low knolls or rises. Figures 7 and 8 show examples of the range of cemetery landforms in the current sample.

Although cemeteries may occur in a variety of settings and may be on unusually steep terrain, approximately 58 percent (n=15) of the current sample is associated with a house, church, or farm, or is near a modern structure, and approximately 85 percent (n=18) is along, or near, a road. Only one cemetery (VDHR # 025-5023) is set back away from existing structures and roads. However, this one case is clearly marked and labeled on the USGS quadrangle, as are many cemeteries in the region.

Summary of Expectations for Cemetery Locations

Analysis of cemetery locations from previous CCR investigations for the CFX suggests that cemeteries may occur on a variety of landforms but are almost always near a road or associated with a house, church, or farm. Most were actually visible from a structure or road, though a few were set back on a property. An older cemetery may be associated with a newer structure since level building sites are rare in the Coalfields region and are frequently reused after demolition of an older house. No cemeteries were encountered in remote settings during previous CFX archaeological surveys by CCR, which gave full consideration to all project areas and included visual examination of all sloping terrain. Information on cemeteries may be included in the Buchanan County Public Library's "*Buchanan County Ancestry Cemetery Lists.*" However, this holding is not available (indefinitely) and is not included in the collection of the Library of Virginia in Richmond.

Table 10: Summary of Cemeteries Recorded During Previous CCR Investigations for the CFX Project.

VDHR#/ CCR #	County	Name	Associated with House, Church, or Farm or Near Modern Structure?	Along or Near Road?	Landform	Cemetery Size/ Number of Burials	Reference
013-5046	Buchanan	Stiltner-Elswick Cemetery	no	yes	side slope	>13 interments	Bamann et al. (2001)
013-5047	Buchanan	Hess Cemetery	no	yes	steep slope	6 interments	Bamann et al. (2001)
013-5089	Buchanan	Shortridge Cemetery	no	yes	slope	100x50 ft; 16 gravestones	Bamann et al. (2003)
013-5121	Buchanan	Stiltner Cemetery	no	yes	steep slope	60x70 ft; 7 gravestones	Lautzenheiser and Stewart (2004)
013-5122	Buchanan	(Cemetery)	no	yes	slope	60 interments	Lautzenheiser and Stewart (2004)
025-5003	Dickenson	Fleming Cemetery	yes	yes	knoll	11-25 graves	Jones and Lautzenheiser (1998)
025-5006	Dickenson	Elkins Cemetery	yes	yes	knoll	26-50 gravestones	Jones and Lautzenheiser (1998)
025-5017	Dickenson	(Rte. 83 Cemetery)	no	yes	slope	<5 gravestones	Jones and Lautzenheiser (1998)
025-5021	Dickenson	Mullins Cemetery	yes	no	knoll	51-100 gravestones	Jones and Lautzenheiser (1998)
025-5023	Dickenson	Mullins-Phillips Cemetery	no	no	knoll	26-50 gravestones; area marked on quad	Jones and Lautzenheiser (1998)
025-5027	Dickenson	Puckett House and Cemetery	yes	yes	knoll	8x8m; 11-25 interments	Jones and Lautzenheiser (1999)
025-5042	Dickenson	House and Cemetery	yes	yes	knoll	unknown	Jones and Lautzenheiser (1999)
025-5052	Dickenson	Vanover Cemetery	no	yes	knoll	11-25 gravestones	Jones and Lautzenheiser (1999)
025-5055	Dickenson	Bise House and Cemetery	yes	yes	rise	11-25 gravestones	Jones and Lautzenheiser (1999)
025-5058	Dickenson	Peuther Chapel Cemetery	yes	yes	slight elevation	51-100 gravestones	Jones and Lautzenheiser (1999)
025-5063	Dickenson	Meade Cemetery	yes	no	slope	15x12m; 12 interments	Bamann et al. (2001)
025-5064	Dickenson	Fleming Cemetery	yes	yes	rise	40x40m; 5 interments	Bamann et al. (2001)
025-5065	Dickenson	Large Cemetery	no	yes	low ridge	20x20m; 6 interments	Bamann et al. (2001)
025-5066	Dickenson	Historic Cemetery	no	yes	rise	40x40m; 75-100 interments	Bamann et al. (2001)
025-5067	Dickenson	Davis Cemetery	yes	no	knoll	30x15m; many burials	Bamann et al. (2001)
025-5069	Dickenson	Mitchell Senters Cemetery	yes	yes	terrace/slope	75x43m; 50-100 interments	Bamann et al. (2001)
097-5018	Wise	Homer E. Buchanan Cemetery	yes	yes	knoll	unknown	Jones and Lautzenheiser (1999)
97-15-22	Wise	Hayes Cemetery	yes	yes	high ridge	30x15m; 7 interments	Bamann et al. (2001)
97-15-23	Wise	Mullins Cemetery	yes	yes	knoll	20x20m; 7 interments	Bamann et al. (2001)
97-15-29	Wise	Sumner Cemetery	yes	yes	level area	5x5m; 2 interments	Bamann et al. (2001)
97-15-6	Wise	Hall Cemetery	no	yes	slope	15x15m; 4 burials	Bamann et al. (2001)

RESULTS

Introduction

The entire APE was considered during the archaeological identification survey. The survey was aided in the field by maps produced as part of the GIS-based map compilation and slope analysis (Figure 8). Approximately 90 percent of the APE has either been previously surveyed (180.7 acres, 73.1 ha), has a slope of greater than 15 percent (273.8 acres, 109.5 ha), or has been disturbed by strip mining (135.4 acres, 54.8 ha) (Figures 9 and 10). In addition to the GIS analysis, the fieldwork confirmed that the acreage of areas strip-mined has increased by approximately 35 acres due to active and recent mining within the APE as well as at the back of Payne and Dry Tripe Branches (see Figure 8). The field survey also noted that past logging activities, which included the creation of dendritic trail systems used to haul logs down slope, has impacted most hollows, although the extent of disturbance is unclear due to secondary growth. Conversations with a local resident (E. Davis, personal communication 2008) indicate that north of the APE, logs were moved down the hollows to a railroad spur along Knox Creek.

Additionally, the GIS analysis overestimated the amount of land with slopes less than 15 percent. In general, areas predicted to have slopes less than 15 percent were areas along stream drainages and ridge tops. It was noted in the field that drainages were typically V-shaped with few expanses of flat land, and that the few prominent ridge tops in the APE were either too narrow to be exploited or had been disturbed by jeep trails.

The survey resulted in the identification of one possible archaeological resource (44BU0092). While the resource, as recorded, does not contain cultural material, the area with the greatest potential for cultural material, the overhang interior, was not examined due to regulations regarding cave exploration. In addition, two historic cemeteries (VDHR # 013-5131 and 013-5133) within the APE are included in this report. The cemeteries have also been reported as part of the architectural survey for the same project area (Stewart and Lautzenheiser 2008) (Table 11).

Table 11: Summary of the Resources Recorded During the Current Survey.

Inventory Number	**Description**	**Date**	**Recommended NRHP Eligibility**
44BU0092	Bedrock Overhang/Rockshelter	N/A	Not Eligible
013-5131	Lester Cemetery, North Side of Slate Creek Road (Route 83)	c. 1879	Not Eligible
013-5133	Stacy-Mullins Cemetery, North Side of Coal Bank Road	pre-1910	Not Eligible

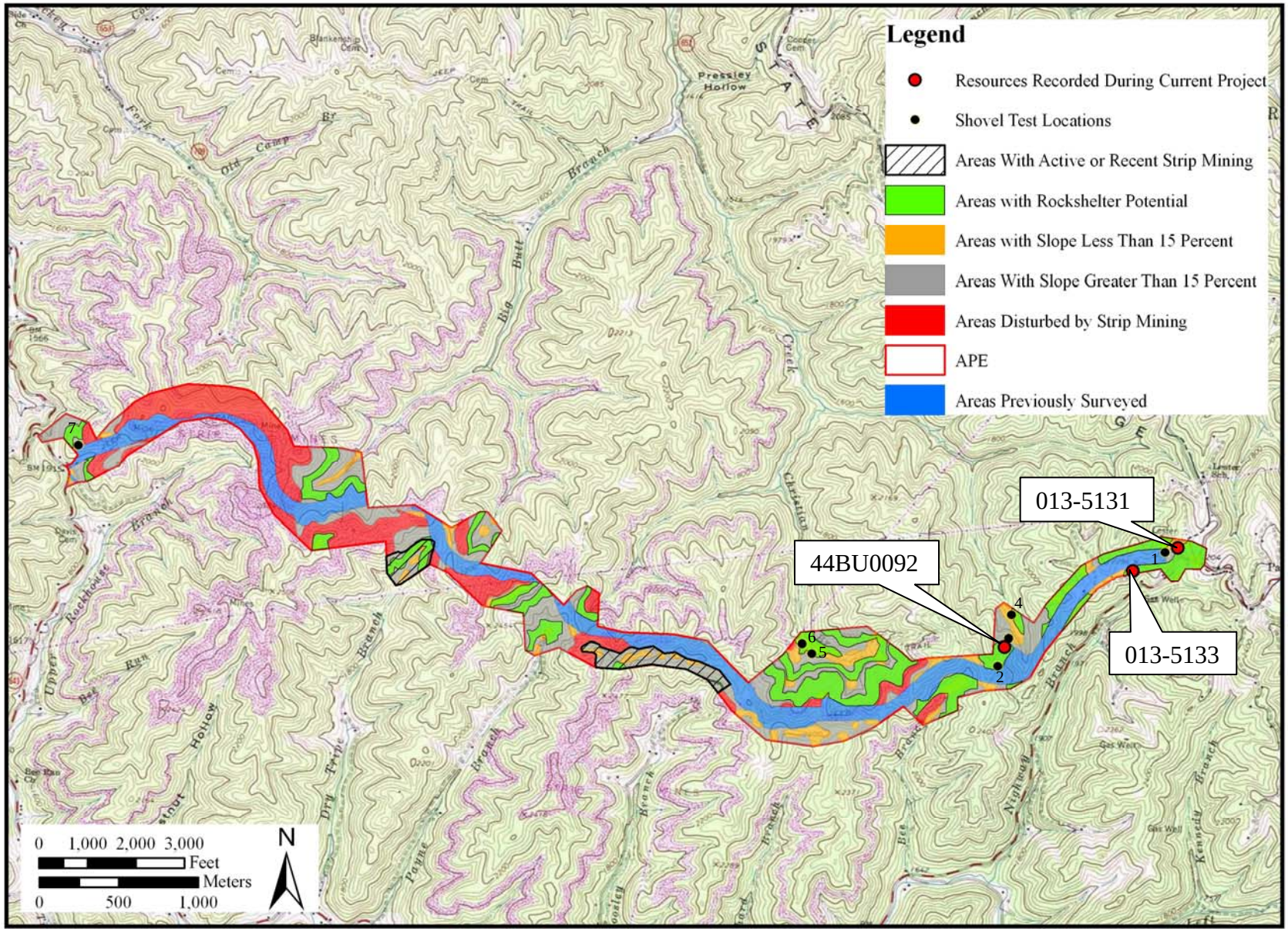

Figure 8: CFX Rockhouse APE Showing Field Observations, Shovel Test Locations, and Recorded Resources.

Figure 9: View of Typical Slope Environment Within the APE.

Figure 10: View of Area Disturbed by Strip Mining in the APE.

Recorded Resources

SITE NUMBER: 44BU0092
SITE TYPE: Bedrock Overhang/Rockshelter
SOIL TYPE: Cloverlick-Shelocta Complex, 55-80 percent slopes, very stony
SITE SIZE: Total area: 10 m (32.81 ft) (E-W) x 4.5 m (14.76 ft) (N-S);
Overhang: 2.5 m (8.2 ft) (width) x 2.0 m (6.52 ft) (depth) x 1.0 m (3.28 ft) (height)
SELECTED ARTIFACTS: None
COMMENTS: Site 44BU0092 is a small natural sandstone overhang on a northeast-facing 40 degree slope, approximately 122 m (400 f) southwest of a Knox Creek headwater tributary, and approximately 1,829 m (6,000 ft) southeast of the confluence of Knox Creek and Christian Camp Branch (see Figure 8). The exposed outcrop does not appear to have been modified, and, based on visual inspection, the floor of the overhang appears to be primarily bedrock with a thin layer of soil deposit (Figure 11). In compliance with cave regulations, no shovel tests or surface inspections were conducted within the interior of the overhang. A single shovel test (see Appendix B) was excavated on the approximately 1-m-wide (3.25 ft) gravel and soil terrace north of the overhang (Figure 12). The soil profile consisted of a 12-cm-thick dark grayish brown (10YR 4/2) gravelly silt loam above a very pale brown (10YR 7/4) gravelly silt clay loam; no cultural material was recovered. This rockshelter is located within an area identified as having rockshelter potential based on the project background research (see Figure 8). This area was defined by the presence of a bedrock unit featuring interbedded rock members and/or described as having cliff or ledge formations. Two additional smaller overhangs were recorded on the same bedrock outcrop (see Figure 12), but are likely too small for occupation and too exposed to be used for caching or storage (see Figure 11).

Based on its small size, environmental factors discussed above, and comparisons with other recorded rockshelters in the region, site 44BU0092 is unlikely to yield significant information contributing to Native American use or settlement of the area (Bamann et al. 2001; Bamann et al. 2003). An examination of Table 12 (derived from data presented in Appendix A) indicates that approximately 47 percent of rockshelters with similar size parameters as site 44BU0092 were determined to either have low potential for archaeological significance or were determined ineligible for the NRHP; approximately 28 percent were classified as having moderate potential. Approximately 16 percent of the resources from the same rockshelter dataset were determined to have high potential for archaeological significance or were determined eligible for the NRHP. Although it is possible that the interior space has decreased in size over time due to roof fall and other depositional events, the natural size of the outcrop is probably not large enough to sustain any activity other than expedient, low-density use.
RECOMMENDATIONS: Since no cultural material was recovered to provide temporal or functional context for the overhang, and because other rockshelters of similar size and within similar environmental contexts have not yielded significant information, site 44BU0092 is recommended as not eligible for inclusion on the NRHP.

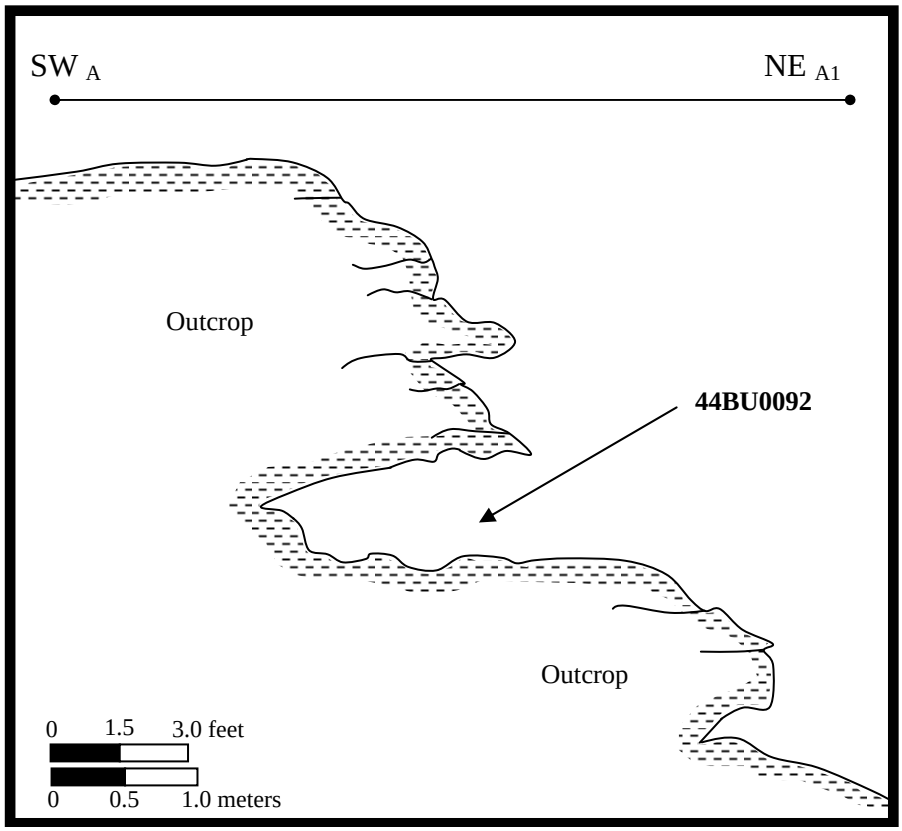

Figure 11: Profile Sketch of Site 44BU0092. See Figure 13 for Profile Orientation.

Figure 12: View of Site 44BU0092 Looking West.

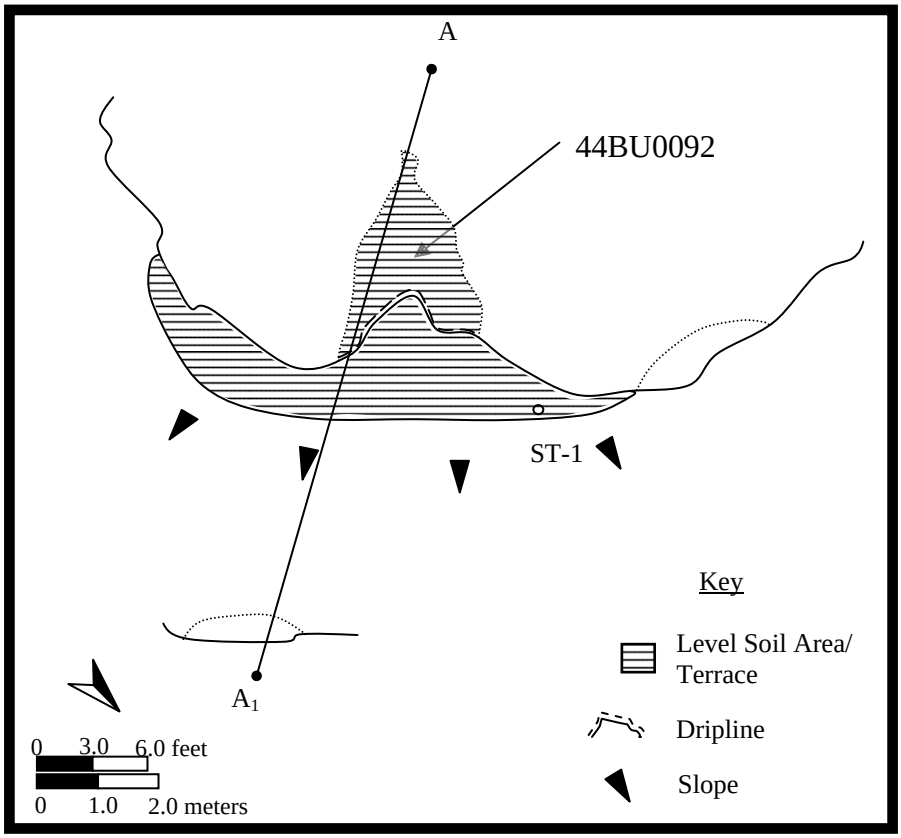

Figure 13: Plan View Sketch of Site 44BU0092.

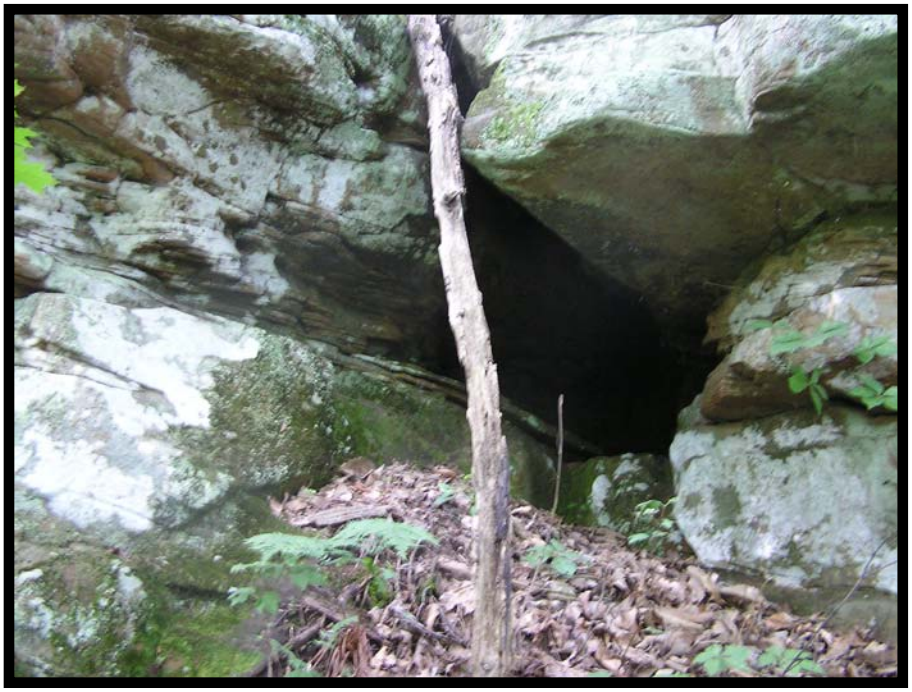

Figure 14: View of Site 44BU0092 Showing Overhang Opening.

Table 12: Subset of Rockshelters from Appendix A With Size Parameters Similar to Site 44BU0092.

Site	Rockshelter/ Site Size (ft)	Site Potential	Landform	Slope (%)	Elevation (ft)	Aspect (Facing)	Distance to Water (ft)
44WS0001	10 x 15	Moderate-High	Sideslope	Unknown	2,660	West	350
44WS0013	20 x 10	Low	Cliffline	2-6	2,120	South	5
44WS0014	17 x 35	Moderate	Cliffline	0-2	2,120	Southeast	5
44WS0017	27 x 15	Low	Cliffline	0-2	2,380	Southwest	300
44WS0018	22 x 30	Moderate	Cliffline	0-2	2,360	Southeast	500
44WS0019	15 x 25	Moderate	Cliffline	0-2	2,200	Southeast	2
44WS0020	40 x 15	High	Cliffline	0-2	2,140	East	200
44WS0022	20 x 8	Low	Cliffline	0-2	2,400	South	700
44WS0030	35 x 15	High	Cliffline	0-2	2,350	South	700
44WS0031	35 x 15	Moderate	Cliffline	0-2	2,400	Southeast	700
44WS0032	25 x 15	Moderate	Cliffline	>50	2,400	Southwest	600
44WS0033	35 x 20	Low	Cliffline	2-6	2,000	East	300
44WS0044	35 x 20	Low-Moderate	Cliffline	2-6	1,800	Northeast	60
44WS0069	30 x 5	Low	Cliffline	0-2	2,230	Northwest	300
44WS0070	25 x 10	Low	Cliffline	0-2	2,240	North	300
44WS0071	35 x 15	High	Cliffline	0-2	2,240	Northwest	250
44WS0074	32 x 10	Low	Cliffline	0-2	2,220	Southwest	250
44WS0078	16 x 8	Historic	Cliffline	N/A	2,020	East	60
44WS0079	35 x 8	Unknown	Cliffline	0-2	2,020	Southwest	110
44WS0097	7 x 20	Low	Ridge Spur	0-2	2,272	Southwest	1,500
44WS0122	18 x 6	Eligible	Sideslope	25-50	3,340	Northwest	50
44WS0151	30 x 4	Moderate	Sideslope	10-15	2,860	Southwest	250
44WS0170	30 x 8	Low	Colluvial Apron	10-15	1,900	South	200
44WS0177	35 x 20	Unknown	Sideslope	2-6	3,200	South	200
44WS0181	25 x 10	Moderate	Cliffline	6-10	2,840	Soutwest	250
44WS0206	30 x 20	Low	Cliffline	10-15	2,378	Northwest	200
44WS0210	25 x 12	Low	Colluvial Apron	2-6	2,441	West	200
44WS0211	10 x 28	Low-Moderate	Colluvial Apron	0-2	2,393	North	220
44DK0023	33 x 7 x 6	Not Eligible	Sideslope	2-6	1,800	South	210
44DK0027	33 x 10 x 7	Not Eligible	Sideslope	15-25	1,500	Southwest	379
44BU0086	7 x 5 x 3	Not Eligible	Sideslope	>50	1,371	Southwest	246
44BU0090	36 x 11 x 8	Not Eligible	Ridge Toe	25-30	1,036	Southwest	315

VDHR INVENTORY NUMBER: 013-5131
RESOURCE NAME AND ADDRESS: Lester Cemetery, North Side of Slate Creek Road (Route 83)
DATE(S): c. 1879
DESCRIPTION: This historic cemetery (Figures 13 and 14) was defined on the basis of more than 100 visible grave markers. Most of markers are made of granite, concrete, or marble and are oriented in an east-west direction. In the oldest part of the cemetery is a group of graves marked by field stones with no inscriptions. The earliest marker with an inscription is for Polly Stacy Lester 1841-1879. The field stone markers appear to pre-date 1879, but do not bear inscriptions. The cemetery is on a mountain to the north of Slate Creek Road (Route 83) and is maintained by the congregation of Mary Lou Old Regular Baptist Church. There is no structure, such as a fence, to define the cemetery boundaries. The stones occur in two sections along the ridge of the mountain where it is located. Families in the cemetery include Lester, Horn, Baker, Blakenship, Davis, Kennedy, Hess, and Tipton.
RECOMMENDATIONS FOR NRHP ELIGIBILITY: This historic cemetery does not lend itself to comparative archaeological or physical anthropological studies. The cemetery is recommended as not eligible for the NRHP under Criteria A, B, C, or D. It is also recommended as not eligible under Criteria Consideration C for association with important persons or Criteria Consideration D, as it contains no graves of important persons, is not of great age, contains no special design elements, and is not associated with significant events. However, relevant local and state statutes regarding the protection and relocation of cemeteries must be followed if the cemetery is impacted.

VDHR INVENTORY NUMBER: 013-5133
RESOURCE NAME AND ADDRESS: Stacy-Mullins Cemetery, North Side of Coal Bank Road
DATE(S): pre-1910
DESCRIPTION: This historic cemetery (Figure 15) was defined on the basis of approximately 15 visible grave markers. The markers are made from granite, concrete, and field stones. The graves are oriented in an east-west direction. The oldest part of the cemetery is a group of graves marked by field stones with no inscriptions. The earliest marker with an inscription in the cemetery is for David Stacy 1880-1910 (Figure 16). The field stone markers appear to pre-date 1910, but do not bear inscriptions. The cemetery is on a hill to the north of Coal Bank Road and is maintained by Mr. Mullins. There is no structure, such as a fence, to define the cemetery boundaries. The cemetery is a family cemetery and not used by the community in general.
RECOMMENDATIONS FOR NRHP ELIGIBILITY: This historic cemetery does not lend itself to comparative archaeological or physical anthropological studies. The cemetery is recommended as not eligible for the NRHP under Criteria A, B, C, or D. It is also recommended as not eligible under Criteria Consideration C for association with important persons or Criteria Consideration D, as it contains no graves of important persons, is not of great age, contains no special design elements, and is not associated with significant events. However, relevant local and state statutes regarding the protection and relocation of cemeteries must be followed if the cemetery is impacted.

Figure 15: Lester Cemetery (VDHR #013-5131).

Figure 16: Lester Cemetery (VDHR #013-5131).

Figure 17: Stacy-Mullins Cemetery (VDHR #013-5133).

Figure 18: Stacy-Mullins Cemetery (VDHR #013-5133), Grave of David Stacy.

SUMMARY AND RECOMMENDATIONS

The current study included an archaeological identification survey of the Area of Potential Effects (APE) for the proposed Rockhouse section of the CFX, a proposed four-lane, controlled-access, primary highway. This section of the CFX is within Buchanan County, Virginia, and extends from Route 643 to Virginia Route 83 at the West Virginia state line.

The archaeological survey was conducted to identify and record archaeological resources that are on, or potentially eligible for, inclusion on the NRHP within the 654-acre (265 ha) APE. The APE consisted primarily of steep ridges, previously surveyed areas, and areas heavily disturbed by strip mining. Survey consisted of pedestrian transects following topographic contours and shovel testing where possible.

The archaeological survey resulted in the identification of one bedrock overhang/rockshelter (44BU0092) that is recommended not eligible for inclusion on the NRHP. This rockshelter is located in an area identified as having rockshelter potential based on the project background research. Two historic cemeteries, originally reported in the architectural survey (VDHR # 013-5131 and 013-5133), are also located within the APE. Both are located at the eastern end of the APE and, as is typical for the area, are visible from a road or driveway. Neither resource is recommended eligible for the NRHP.

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APPENDIX A:

DATA FOR ROCKSHELTER SITES IN WISE (WS), DICKENSON (DK), AND BUCHANAN (BU) COUNTIES.

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Site	Rockshelter/Site Size	Site Potential	Landform	Slope	Elevation (ft)	Aspect (Facing)	Distance to Water (ft)	Geologic Rock Formation
44WS0001	10 x 15	Moderate-High	Sideslope	Unknown	2,660.00	West	350.00	
44WS0006	95 x 15	Moderate	Cliffline	Unknown	2,050.00	Southeast	164.00	
44WS0011	160 x 160	Low	Ridge Top	0-2%	2,580.00	East	1,050.00	Lee Formation, Middlestone Member, sandstone, siltstone, and coal
44WS0012	125 x 125	High	Outcrop	0-2%	2,280.00	Southeast	100.00	Interface of Lee Formation, Middlestone Member, sandstone, siltstone, and coal, and Norton Formation, interbedded siltstones and sandstones
44WS0013	20 x 10	Low	Cliffline	2-6%	2,120.00	South	5.00	Interface of Lee Formation, Middlestone Member, sandstone, siltstone, and coal, and Norton Formation, interbedded siltstones and sandstones
44WS0014	17 x 35	Moderate	Cliffline	0-2%	2,120.00	Southeast	5.00	Interface of Lee Formation, Middlestone Member, sandstone, siltstone, and coal, and Norton Formation, interbedded siltstones and sandstones
44WS0017	27 x 15	Low	Cliffline	0-2%	2,380.00	Southwest	300.00	
44WS0018	22 x 30	Moderate	Cliffline	0-2%	2,360.00	Southeast	500.00	Interface of Lee Formation, Middlestone Member, sandstone, siltstone, and coal, and Norton Formation, interbedded siltstones and sandstones
44WS0019	15 x 25	Moderate	Cliffline	0-2%	2,200.00	Southeast	2.00	Interface of Lee Formation, Middlestone Member, sandstone, siltstone, and coal, and Norton Formation, interbedded siltstones and sandstones
44WS0020	40 x 15	High	Cliffline	0-2%	2,140.00	East	200.00	Lee Formation, Middlestone Member, sandstone, siltstone, and coal
44WS0021	40 x 20	Low	Cliffline	0-2%	2,280.00	Northeast	200.00	Lee Formation, Middlestone Member, sandstone, siltstone, and coal
44WS0022	20 x 8	Low	Cliffline	0-2%	2,400.00	South	700.00	Interface of Lee Formation, Middlestone Member, sandstone, siltstone, and coal, and Norton Formation, interbedded siltstones and sandstones
44WS0023	44 x 13	Moderate	Cliffline	0-2%	2,390.00	Southeast	750.00	Norton Formation, interbedded siltstones and sandstones
44WS0024	95 x 28	High	Other	N/A	2,380.00	South	250.00	
44WS0029	50 x 15	Moderate-High	Cliffline	>50%	2,400.00	South	600.00	Norton Formation, interbedded siltstones and sandstones
44WS0030	35 x 15	High	Cliffline	0-2%	2,350.00	South	700.00	Norton Formation, interbedded siltstones and sandstones
44WS0031	35 x 15	Moderate	Cliffline	0-2%	2,400.00	Southeast	700.00	Norton Formation, interbedded siltstones and sandstones
44WS0032	25 x 15	Moderate	Cliffline	>50%	2,400.00	Southwest	600.00	
44WS0033	35 x 20	Low	Cliffline	2-6%	2,000.00	East	300.00	Lee Formation, Middlestone Member, sandstone, siltstone, and coal
44WS0044	35 x 20	Low-Moderate	Cliffline	2-6%	1,800.00	Northeast	60.00	Lee Formation, upper member

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Site	Rockshelter/Site Size	Site Potential	Landform	Slope	Elevation (ft)	Aspect (Facing)	Distance to Water (ft)	Geologic Rock Formation
44WS0058	164 x 164	Low	Cliffline	N/A	2,900.00	North	800.00	
44WS0069	30 x 5	Low	Cliffline	0-2%	2,230.00	Northwest	300.00	Interface of Lee Formation, Middlestone Member, sandstone, siltstone, and coal, and Norton Formation, interbedded siltstones and sandstones
44WS0070	25 x 10	Low	Cliffline	0-2%	2,240.00	North	300.00	Norton Formation, interbedded siltstones and sandstones
44WS0071	35 x 15	High	Cliffline	0-2%	2,240.00	Northwest	250.00	Interface of Lee Formation, Middlestone Member, sandstone, siltstone, and coal, and Norton Formation, interbedded siltstones and sandstones
44WS0072	97 x 15	Moderate	Cliffline	0-2%	2,260.00	Southeast	200.00	Lee Formation, Middlestone Member, sandstone, siltstone, and coal
44WS0074	32 x 10	Low	Cliffline	0-2%	2,220.00	Southwest	250.00	Lee Formation, Middlestone Member, sandstone, siltstone, and coal
44WS0075	60 x 10	Unknown	Cliffline	0-2%	2,020.00	Southeast	130.00	Lee Formation, Middlestone Member, sandstone, siltstone, and coal
44WS0076	75 x 18	High	Cliffline	N/A	2,020.00	Southeast	94.00	Lee Formation, Middlestone Member, sandstone, siltstone, and coal
44WS0077	60 x 10	Moderate	Cliffline	2-6%	1,900.00	Southeast	60.00	Lee Formation, Middlestone Member, sandstone, siltstone, and coal
44WS0078	16 x 8	Historic	Cliffline	N/A	2,020.00	East	60.00	Lee Formation, Middlestone Member, sandstone, siltstone, and coal
44WS0079	35 x 8	Unknown	Cliffline	0-2%	2,020.00	Southwest	110.00	Lee Formation, Middlestone Member, sandstone, siltstone, and coal
44WS0097	7 x 20	Low	Ridge Spur	0-2%	2,272.00	Southwest	1,500.00	
44WS0098	10 x 10	Moderate	Saddle	6-10%	3,200.00	Northeast	300.00	
44WS0099	100 x 10	Moderate-High	Saddle	6-10%	3,200.00	Northwest	300.00	
44WS0117	60 x 15	Moderate	Sideslope	2-6%	3,350.00	West	280.00	
44WS0122	18 x 6	Eligible	Sideslope	25-50%	3,340.00	Northwest	50.00	
44WS0151	30 x 4	Moderate	Sideslope	10-15%	2,860.00	Southwest	250.00	
44WS0152	2,000 x 100	Moderate	Cliffline	10-15%	3,000.00	South	1,800.00	
44WS0158	100 x 100	Historic	Cliffline	2-6%	2,700.00	Southeast	200.00	
44WS0160	700 x 100	High	Cliffline	2-6%	2,800.00	Southeast	300.00	
44WS0161	900 x 100	Low-Moderate	Cliffline	2-6%	2,300.00	Southeast	200.00	

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Site	Rockshelter/Site Size	Site Potential	Landform	Slope	Elevation (ft)	Aspect (Facing)	Distance to Water (ft)	Geologic Rock Formation
44WS0170	30 x 8	Low	Colluvial Apron	10-15%	1,900.00	South	200.00	Norton Formation, interbedded siltstone and sandstone
44WS0176	35 x 25	Moderate	Sideslope	2-6%	3,000.00	South	200.00	
44WS0177	35 x 20	Unknown	Sideslope	2-6%	3,200.00	South	200.00	
44WS0179	90 x 25	Low	Cliffline	>50%	2,200.00	West	75.00	Lee Formation, lower member
44WS0180	50 x 45	Low	Cliffline	>50%	2,160.00	East	50.00	Lee Formation, lower member
44WS0181	25 x 10	Moderate	Cliffline	6-10%	2,840.00	Soutwest	250.00	Lee Formation, lower member near interface with Pennington Formation
44WS0182	60 x 9	High	Cliffline	25-50%	1,920.00	North	1,500.00	Lee Formation, lower member
44WS0183	60 x 9	Moderate	Cliffline	25-50%	1,920.00	North	1,500.00	Lee Formation, lower member, near interface with Hance Formation
44WS0206	30 x 20	Low	Cliffline	10-15%	2,378.00	Northwest	200.00	
44WS0207	40 x 27	Moderate	Cliffline	0-2%	2,800.00	West	300.00	Lee Formation, Middlestone Member, sandstone, siltstone, and coal
44WS0210	25 x 12	Low	Colluvial Apron	2-6%	2,441.00	West	200.00	Lee Formation, Middlestone Member, sandstone, siltstone, and coal
44WS0211	10 x 28	Low-Moderate	Colluvial Apron	0-2%	2,393.00	North	220.00	Lee Formation, Middlestone Member, sandstone, siltstone, and coal
44DK0003	Unknown	High	Ridge Top	Unknown	1,840.00	Unknown	800.00	Wise Formation, unnamed sandstone
44DK0009	Unknown	High	Sideslope	Unknown	1,880.00	Southeast	200.00	Lower Norton and Upper Lee Formation, Bee Rock sandstone member
44DK0023	33 x 7 x 6	Not Eligible	Sideslope	2-6%	1,800.00	South	210.00	Wise Formation, interbedded sandstone, siltstone, and shale
44DK0024	67 x 20 x 10	Eligible	Sideslope	2-6%	1,800.00	South and Southwest	85.00	Wise Formation, interbedded sandstone, siltstone, and shale
44DK0027	33 x 10 x 7	Not Eligible	Sideslope	15-25%	1,500.00	Southwest	379.00	Breathitt Formation, sandstone, shale, and coal
44BU0018	66 x 65	Unknown	Ridge Toe	Unknown	2,200.00	Unknown	980.00	Norton Formation, unnamed sandstone
44BU0025	33 x 33	Unknown	Sideslope	Unknown	2,120.00	West	947.00	Norton Formation, interface of interbedded siltstone, shale, and sandstone and unnamed sandstone
44BU0035	Unknown	Unknown	Sideslope	Unknown	2,000.00	Southeast	163.00	Norton Formation, interface of interbedded siltstone, shale, and sandstone and unnamed sandstone

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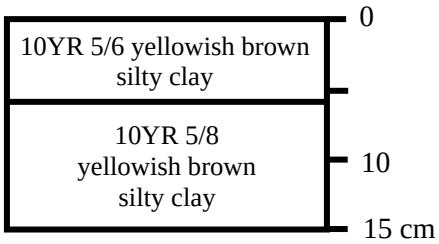
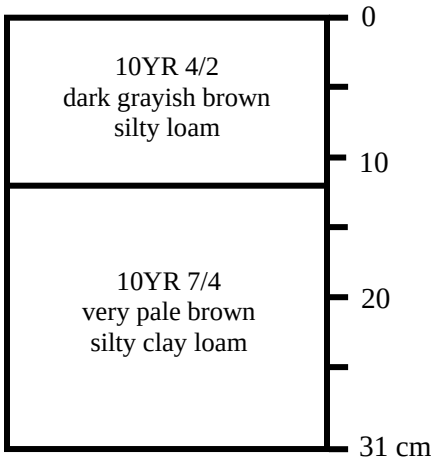
Site	Rockshelter/Site Size	Site Potential	Landform	Slope	Elevation (ft)	Aspect (Facing)	Distance to Water (ft)	Geologic Rock Formation
44BU0036	Unknown	Unknown	Sideslope	Unknown	2,160.00	South	293.00	Norton Formation; Norton coal bed; Interface of interbedded siltstone, shale, and sandstone, and unnamed sandstone
44BU0077	16 x 10 x 4	Not Eligible	Sideslope	25-50%	1,660.00	West	100.00	Norton Formation; Norton coal bed; interface of interbedded shale, siltstone and sandstone and unnamed sandstone
44BU0081	13 x 10 x 5	Not Eligible	Sideslope	25-50%	1,782.00	Southwest	66.00	Wise Formation: Williamson coal bed; interface of interbedded shale, siltstone, and sandstone, and unnamed sandstone
44BU0085	10 x 7 x 7	Not Eligible	Sideslope	>50%	1,424.00	Southwest	328.00	Norton Formation; Norton coal bed; Interface of interbedded shale, siltstone and sandstone and unnamed sandstone
44BU0086	7 x 5 x 3	Not Eligible	Sideslope	>50%	1,371.00	Southwest	246.00	Norton Formation; Norton coal bed; Interface of interbedded shale, siltstone and sandstone and unnamed sandstone
44BU0090	36 x 11 x 8	Not Eligible	Ridge Toe	25-30%	1,036.00	Southwest	315.00	Aily Coal Bed; Interface of Norton interbedded shale, siltstone, and sandstone, and Wise unnamed sandstone

APPENDIX B
SAMPLE SHOVEL TEST PROFILES

Shovel Test 2



44BU0092
Shovel Test 1