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ARCHEOLOGICAL SURVEY OF PROPOSED SWM-1A POND AND SWM-4B POND AND PHASE II ARCHEOLOGICAL EVALUATION OF SITE 44FX1936 FOR THE ROUTE 1 IMPROVEMENT PROJECT, FAIRFAX COUNTY, VIRGINIA

ARCHEOLOGICAL SURVEY OF PROPOSED SWM-1A POND AND SWM-4B POND AND PHASE II ARCHEOLOGICAL EVALUATION OF SITE 44FX1936 FOR THE ROUTE 1 IMPROVEMENT PROJECT, FAIRFAX COUNTY, VIRGINIA

Draft Report

Suzanne L. Sanders, M.A.
Principal Investigator

by

Kathleen M. Child, M.A., Martha R. Williams, M.A., M.Ed., and Katie L. Kosack, M.A.

R. Christopher Goodwin & Associates, Inc.
241 E. Fourth Street, Suite 100
Frederick, Maryland 21701

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for

A. Morton Thomas & Associates, Inc.
12750 Twinbrook Parkway
Rockville, Maryland 20852

Abstract

This report summarizes archeological investigations conducted for proposed storm water management (SWM) 1a Pond and 4b Pond, associated with the Route 1 improvement project in Fairfax County, Virginia. The location of SWM-4b Pond includes the eastern portion of previously identified Site 44FX1936, a multicomponent prehistoric and historic period archeological site that previously had been recommended as eligible for listing in the National Register of Historic Places (NRHP) under Criterion d. Recent cultural resources investigations determined that the northern and northwestern portions of the site did not contribute to its NRHP eligibility; SWM-4b Pond will be located within a previously unevaluated portion of the site.

R. Christopher Goodwin & Associates, Inc. undertook the cultural resources study during April and May 2014 on behalf of A. Morton Thomas and Associates, Inc. The investigations were designed to address cultural resource requirements for the project pursuant to Section 106 of the National Historic Preservation Act (NHPA), the National Environmental Policy Act (NEPA), and the Protection of Historic Properties Act (36 CFR Part 800). These studies followed guidelines set forth by the Secretary of the Interior and the Virginia Department of Historic Resources (VDHR).

Archeological investigations for SWM-1a Pond were designed to identify any archeological resources present within the study area, delineate those resources, and provide a preliminary assessment of the potential significance of those resources. These objectives were achieved through archival research and archeological field investigations that included the excavation of 42 close interval shovel tests. No cultural materials were present within the limits of disturbance for SWM-1a Pond. The archeological survey indicated that no historic properties, as defined in 36 CFR 800.16(l), will be affected by the construction of SWM-1a Pond. No further archeological investigations are warranted or recommended for SWM-1a Pond.

Archeological investigations for SWM-4b Pond were designed to assess the eligibility of archeological resources previously identified at Site 44FX1936 for listing in the National Register of Historic Places (NRHP), to determine the potential impact of SWM-4b Pond on the site, and to make recommendations for treatment of the site, if warranted. These objectives were achieved through archival research, archeological field investigations, and laboratory analysis of recovered cultural materials. The investigations included systematic excavation of 88 close interval shovel tests and 5 test units, and laboratory analysis of 385 artifacts.

Although just over half (59 per cent) of the 195 prehistoric artifacts recovered from Site 44FX1936 were from intact A-horizon or subsoil (E/Bt1/Bt2 horizon) contexts, the lack of diagnostic artifacts and substantive occupational features severely restricts the research potential of the prehistoric component of Site 44FX1936. Areas of artifact concentration identified at the site represented discrete, singular lithic reduction episodes suggestive of periodic use of the landform as a short-term hunting camp. No cultural features or deposits were present and no artifacts suggestive of activity other than tool maintenance were recovered. Based upon the results of the current archeological evaluation, and the results of other recent investigations, Site 44FX1936, as a whole, does not possesses the qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36CFR 60.4[a-d]). No further archeological investigations are warranted or recommended for Site 44FX1936 or for SWM-4b Pond.

Table of Contents

Abstract ii

List of Figures v

List of Tables viii

I. Introduction 1

Project Location and Description 1
Objectives 4
Organization of the Report 4

II. Natural and Cultural Setting 5

Natural Setting 5
Drainage 5
Vegetation 6
Geology and Soils 6
Prehistoric Context 9
Paleoindian (ca. 10,000 - 8,000 B.C.) 9
Early Archaic (8,000 - 6,500 B.C.) 10
Middle Archaic (6,500 - 3,000 B.C.) 10
Late Archaic (3,000 - 1,200 B.C.) 11
Early Woodland (1,200 B.C. - A.D. 300).\ 11
Middle Woodland (ca. A.D. 300 – A.D. 1000) 11
Late Woodland (A.D. 1000 – A. D. 1606) 11
Prehistoric Occupation at Fort Belvoir 12
Historic Context 12
Exploration and Frontier/Early Colonial Settlement (1607 - 1650) 12
Early Colonial Settlement (1650 - 1720) 12
Tobacco Plantation Society (1720 - 1800) 13
Early Diversified Agriculture (1750 - 1840) 13
Agrarian Fairfax (1840 - 1940) 14
Quakers in Fairfax County 14
Free Blacks in Fairfax County 14
Suburbanization and Urban Dominance (1890 - Present) 16
Project-Specific Historic Context 17

III. Research Design and Methods 19

Research Design and Objectives 19
Archival Research Methods 20
Archeological Field Methods 20
Test Units 21
Archeological Laboratory Methods 21
Historic Artifact Analysis 22

Prehistoric Artifact Analysis 23
Cores 23
Debitage 24
Firecracked Rock 24
Raw Material Classes 24
Records and Curation 25

IV. Results of Investigations for SWM-1a Pond 26

Results of Archeological Field Study 26
Shovel Test Results 26

V. Results of Archeological Evaluation of Site 44FX1936 28

Previous Investigations 28
Results of Archeological Field Study 30
Shovel Test Results 30
Soils 30
Prehistoric Component 34
Historic Component 35
Test Unit Results 36
Test Unit 1 37
Test Unit 2 38
Test Unit 3 43
Test Unit 4 47
Test Unit 5 53
Analysis and Interpretation 53

VI. Summary and Recommendations 59

Summary 59
SWM-1a Pond 59
SWM-4b Pond (Site 44FX1936) 59
National Register Eligibility 60
Integrity 60
Research Potential 60
Recommendation 61

References Cited 63

List of Figures

Figure 1-1. Map of Virginia showing the approximate location of the project area within Fairfax County 2

Figure 1-2. Excerpt from Fort Belvoir, VA-MD (2013) USGS 7.5 minute quadrangle showing the approximate location of SWM-1a Pond and Site 44FX1936 Pond 3

Figure 2-1. Photograph showing current conditions in western portion of Site 44FX1936, view west (Goodwin & Assoc., Inc., April 2013). 7

Figure 2-2. Photograph showing current conditions in eastern portion of Site 44FX1936, view south (Goodwin & Assoc., Inc., April 2013) 7

Figure 2-3. Photograph showing large oak trees standing near the northwestern corner of Site 44FX1936, view west (Goodwin & Assoc., Inc., April 2013). 8

Figure 2-4. Excerpt from Hoffman (1864) Map of Fairfax County showing the nucleated village of Accotink and the approximate locations of SWM-1a Pond and Site 44FX1936 (Image: American Memory, Library of Congress) 15

Figure 2-5. Excerpt from Hopkins (1878) Atlas of Fifteen Miles around Washington showing the approximate locations of SWM-1a Pond and Site 44FX1936 18

Figure 4-1. SWM-1a Pond: Map showing archeological testing pattern and relevant landscape features 27

Figure 5-1. Site 44FX1936: Map showing archeological testing pattern and relevant landscape features 29

Figure 5-2. Site 44FX1936: Photograph showing northern slope of stream valley, view east from near Pohick Road (R. Christopher Goodwin & Assoc., Inc., April 2013) 32

Figure 5-3. Site 44FX1936: Photograph showing spoil piles in northeastern portion of site, view east (R. Christopher Goodwin & Assoc., Inc., April 2013) 33

Figure 5-4. Site 44FX1936: Photograph showing cut area (on left) and undisturbed area (on right), view east (R. Christopher Goodwin & Assoc., Inc., April 2013) 33

Figure 5-5. Site 44FX1936: Photograph showing representative historic artifacts from shovel tests in western portion of site (Top Row [Left to Right]: Window glass [FS 47], Embossed table glass [FS 57]; Bottom Row [Left to Right]: Wire Nail [FS 47], Blue Transfer Print Whiteware [FS 56], Green Transfer Print Whiteware [FS 39], Green Bottle Glass [FS 47]) 37

Figure 5-6. Site 44FX1936: Photograph showing Test Unit 1, profile north 39

Figure 5-7. Site 44FX1936: Test Unit 1, soil profiles south and west 40

Figure 5-8. Site 44FX1936: Photograph showing Test Unit 2, profile west 41

Figure 5-9. Site 44FX1936: Test Unit 2, soil profiles west and north 42

Figure 5-10. Site 44FX1936: Photograph showing representative prehistoric debitage and material types from Test Unit 2, Stratum II, Level 2 (Top Row [Left to Right]: Quartz Secondary flake fragment [FS 51], Quartz Pressure flake [FS 51], Chert 04 Non-Cortex Late stage Biface thinning flake [FS 51]; Middle Row [Left to Right]: Chert 02 Non-Cortex Early/Late Stage Core Reduction flake [FS 51], Chert 02 Non-Cortex Late Stage Biface thinning flake [FS 51], Chert 02 Primary Early Stage Biface Thinning flake [FS 51], Chert 02 Non-Cortex Edge Preparation flake [FS 51]; Bottom Row [Left to Right]: Quartz Secondary Flake Fragment [FS 50], Chert 01 Non-Cortex flake fragment [FS 50], Chert 02 Primary Core Reduction Flake [FS 50], Chert 02 Non-Cortex Late Stage Biface Thinning flake [FS 50], Chert 04 Non-Cortex flake fragment [FS 50]) 44

Figure 5-11. Site 44FX1936: Photograph showing Test Unit 3, profile east 44

Figure 5-12. Site 44FX1936: Test Unit 3, soil profiles north and east 45

Figure 5-13. Site 44FX1936: Photograph showing representative artifacts from Test Unit 3, Stratum I, Level 1, FS 59 (Top Row [Left to Right]: Quartz Non-Cortex Flake Fragment, Chert 02 Non-Cortex Flake Fragment, Chert 02 Non-Cortex Late Stage Biface thinning flake, Chert 02 Non-Cortex Early/Late Stage Core Reduction Flake; Bottom Row [Left to Right]: Quartz 5% Cortex Multidirectional Core, Chert 01 Non-Cortex Flake Fragment, Plastic cap, Machine-made liquor bottle finish) 46

Figure 5-14. Site 44FX1936: Photograph showing Test Unit 4, profile west 48

Figure 5-15. Site 44FX1936: Test Unit 4, soil profiles south and west 49

Figure 5-16. Site 44FX1936: Photograph showing Test Unit 4, Plan view of Strata III (bottom) and IV (top), 25 cm (9.8 in) below datum, view north 50

Figure 5-17. Site 44FX1936: Photograph showing Test Unit 4, profile south 50

Figure 5-18. Site 44FX1936: Photograph showing representative sample of historic artifacts from Test Unit 4, Stratum II, Level 2, FS 62 (Top Row [Left to Right]: Whiteware [n = 2], Amber bottle glass, colorless table glass; Bottom Row: Wire Nail 54

Figure 5-19. Site 44FX1936: Photograph showing Test Unit 5, profile north 54

Figure 5-20. Site 44FX1936: Test Unit 5, soil profiles west and north 55

Figure 5-21. Site 44FX1936: Photograph showing representative lithic raw material types (Top Row [Left to Right]: Rhyolite 01 Flake Fragment [FS 60], Quartz Flake Fragment [FS 18], Quartzite Primary Flake Fragment [FS 06]; Bottom Row [Left to Right]: Chert 01 Late Stage Biface Thinning Flake [FS 07], Chert 02 Flake Fragment [FS 13], Chert 03 Early Stage Biface Thinning Flake [FS 33], Chert 04 Flake Fragment [FS 50]) 57

List of Tables

Table 2-1. Representative Soil Profile for Mattapex Series (NRCS 2008). 8

Table 2-2. Representative Soil Profile for Sassafras Series (NRCS 2013) 9

Table 2-3. Representative Soil Profile for Marumsco Series (NRCS 2003). 9

Table 2-4. Representative Soil Profile for Beltsville Series (NRCS 2007). 10

Table 3-1.Site 44FX1936: Summary of Lithic Raw Material Classes. 25

Table 5-2. Site 44FX1936: Summary of Historic Artifacts 31

Table 5-1. Site 44FX1936: Summary of Prehistoric Artifacts. 31

Table 5-3. Site 44FX1936: Summary of Prehistoric Artifacts Recovered during Shovel Test Excavation 35

Table 5-4. Site 44FX1936: Summary of Historic Artifacts Recovered during Shovel Test Excavation . . .36

Table 5-5. Site 44FX1936: Summary of Artifacts Recovered from Test Unit 1 38

Table 5-6. Site 44FX1936: Summary of Artifacts Recovered from Test Unit 2. 39

Table 5-7. Site 44FX1936: Summary of Artifacts Recovered from Test Unit 3 46

Table 5-8. Site 44FX1936: Summary of Artifacts Recovered from Test Unit 4 51

Chapter I

Introduction

This report summarizes archeological investigations conducted for proposed storm water management (SWM) ponds 1a (SWM-1a Pond) and 4b (SWM-4b Pond) associated with the Route 1 improvement project in Fairfax County, Virginia. The report was prepared by R. Christopher Goodwin & Associates, Inc., on behalf of A. Morton Thomas and Associates, Inc. The archeological investigations were designed to address cultural resource requirements for the project pursuant to Section 106 of the National Historic Preservation Act (NHPA) of 1966 as amended (16U.S.C. 470a; NPS 1983), the National Environmental Policy Act (NEPA) of 1969 (Public Law 91-190), Protection of Historic Properties Act (36 CFR Part 800), and the Virginia Department of Historic Resources (VDHR).

R. Christopher Goodwin & Associates, Inc. undertook the archeological investigations during April and May 2014. All work was completed in accordance with Federal, State, and local standards and guidelines and adhered to the Secretary of the Interior's "Standards and Guidelines for Historic Preservation Projects" (Federal Register, Vol. 48, No. 190), and the VDHR "Guidelines for Conducting Historic Resources Survey in Virginia" (VDHR 2011).

Project Location and Description

The overall Route 1 improvement project extends along both sides of the existing Route 1 (Richmond Highway) corridor from Telegraph Road (VA 611) to Mount Vernon Memorial Highway, in Fairfax County, Virginia (Figure 1-1). The current archeological investigations target the locations of two proposed SWM ponds (1a and 4b) (Figure 1-2). Both proposed pond locations are situated on the south side of Route 1 and are located on property currently under the administration of Fort Belvoir. Planned impacts include removal of woodlot vegetation, grading and filling activities, installation of SWM facilities, and post-construction landscaping. These activities will adversely affect any cultural resources located within the proposed pond locations.

Proposed SWM-1a Pond encompasses approximately 0.34 hectares (ha) (0.85 acres [ac]) of wooded land lying east of the intersection of Old Colchester/Telegraph Road (VA 611) and opposite the Inlet Cove residential development. Current design plans depict the pond as basically oval in shape, with inlet/outlet structures located along the northern side of the pond.

Proposed SWM-4b Pond encompasses approximately 0.32 ha (0.79 ac) of wooded land lying east of the intersection of Pohick Road and west of the abandoned railroad trestle. Commercial development bordering Belvoir Court and Shepard Lane lie on the northern side of Route 1, opposite the proposed SWM pond location. Similar to design plans for SWM-1a Pond, the design plans for SWM-4b Pond depict a basically oval pond. A single outlet structure is planned for the southern side of the pond; this structure will flow into an unnamed drainage of Accotink Creek.

The northern portion of both pond areas was included within property previously subject to cultural resources investigations as part of the Route 1 improvement study (Polk et al. 1993). These investigations were conducted within a linear corridor that extended 32.8 m (100 ft) to either side of Route 1 (Polk et al. 1993). No cultural resources were identified in the planned location of SWM-1a Pond. Archeological Site 44FX1936, a multi-component prehistoric and historic period site, was identified in the planned location of SWM-4b Pond.

Supplemental cultural resources investigations conducted in association with the Route 1 improvement project indicated the northern and western portions of Site 44FX1936 were heavily

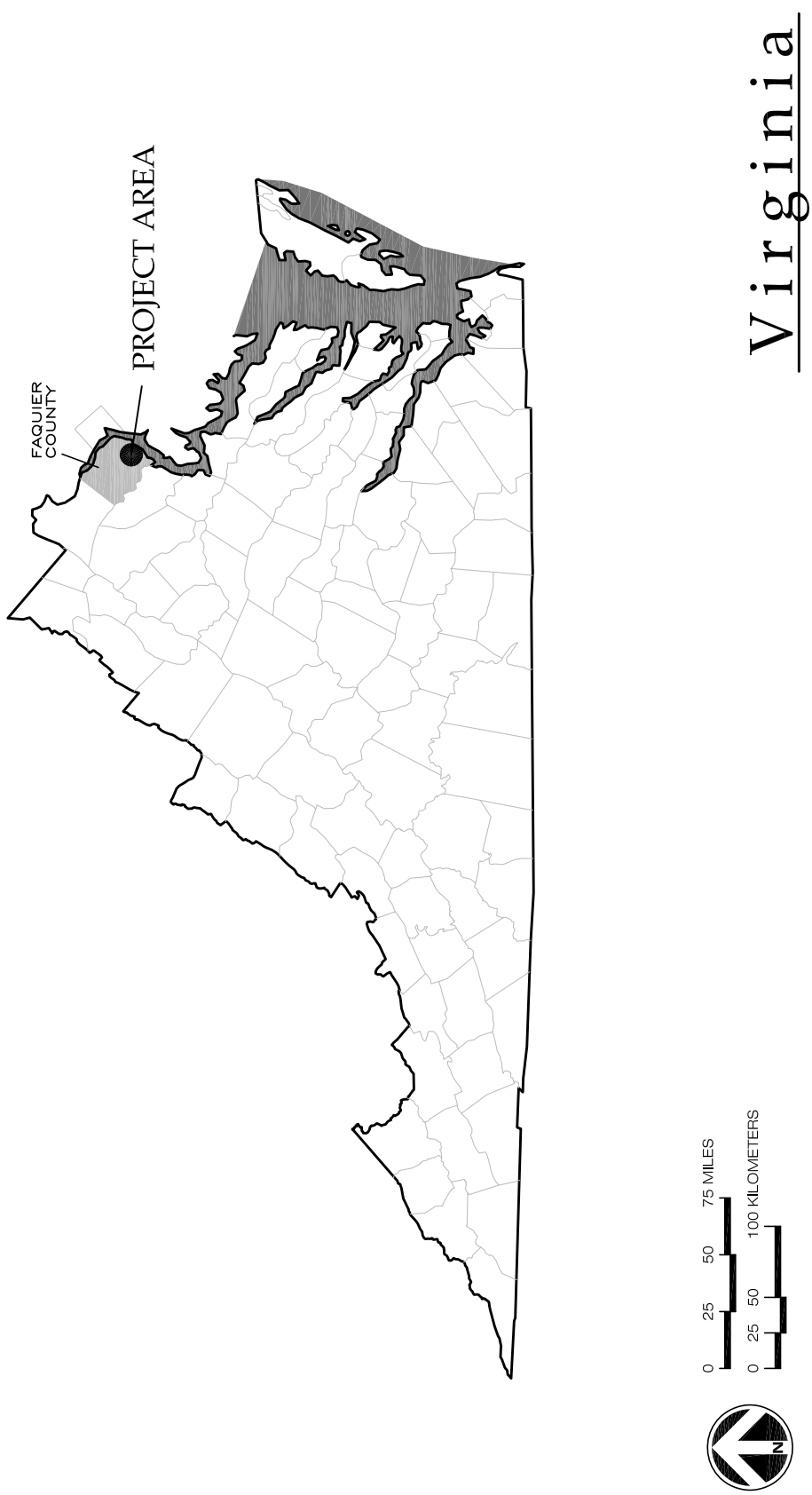


Figure 1-1. Map of Virginia showing the approximate location of the project area within Fairfax County

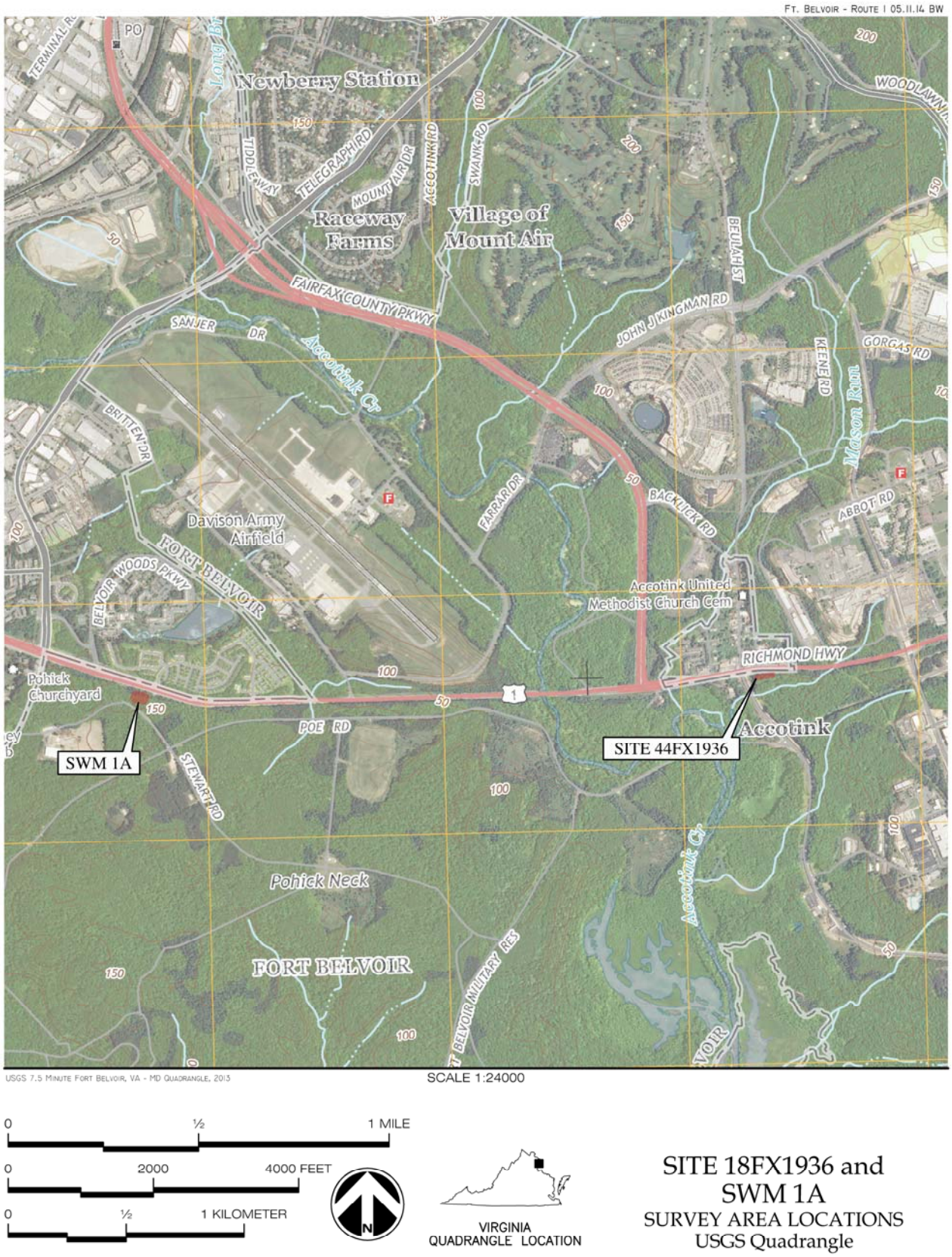


Figure 1-2. Excerpt from Fort Belvoir, VA-MD (2013) USGS 7.5 minute quadrangle showing the approximate location of SWM-1a Pond and Site 44FX1936 Pond

disturbed and lacked both integrity and a sufficient quantity of cultural material to define site activity (Deetz et al. 2006; Lautzenheiser et al. 2002; Lautzenheiser 2001). As such, those portions of Site 44FX1936 were recommended as not eligible for listing on the National Register of Historic Places under any of the specified evaluation criteria (36 CFR 60.4 [a-d]) and no further archeological investigation was recommended.

Proposed SWM-4b Pond was located within the eastern portion of Site 44FX1936 and lay outside of the area subject to the above supplemental investigations (Deetz et al. 2006; Lautzenheiser et al. 2002; Lautzenheiser 2001). In consultation with VDHR and Fort Belvoir, it was determined that any cultural resources investigations related to SWM-4b Pond would include Phase I level survey of the proposed pond location, as well as Phase I survey of all portions of Site 44FX1936 that had not been previously subject to cultural resources study. If required, Phase II evaluation of Site 44FX1936 would be undertaken.

Objectives

Archeological investigations for SWM-1a Pond and SWM-4b Pond were designed to identify any archeological resources present within the predetermined study area; to determine the approximate horizontal and vertical boundaries of any identified resources; and, to make preliminary assessments of the significance of any newly identified resources by applying the National Register Criteria for Evaluation (36 CFR 60.4 [a-d]). For any identified resource, the study would attempt to provide a preliminary determination of: (1) its nature, age, and function; (2) its horizontal and vertical boundaries; and, (3) its archeological integrity and potential. Additional objectives for SWM-4b Pond were to provide an assessment of the significance of cultural resources associated with previously identified Site 44FX1936, applying the National Register Criteria for Evaluation (36CFR 60.4 [a-d]).

These objectives were accomplished through close interval shovel test excavation and, where applicable, test unit excavation, the analysis of field data and recovered cultural materials, and the preparation of a technical report detailing the results of the study. All field procedures and methods followed the standards established by VDHR (VDHR 2011). The field investigations for SWM-1a Pond entailed the excavation of 42 close interval shovel tests; no cultural materials were recovered during this study. Field investigations for SWM-4b Pond included the excavation of 88 shovel tests and 5 test units. Test units measured 1 x 1-meter (m) (3.3 x 3.3-feet [ft]) in size. Investigations for SWM-4b yielded a total of 195 prehistoric and 190 historic artifacts; 18 additional artifacts were clearly modern in manufacture and were not retained for detailed analysis.

Suzanne Sanders, M.A., served as Principal Investigator and supervised all aspects of the study; Kathleen Child, M.A., served as Project Manager and field director; she was assisted by Grant Friedland, B.A., Craig Kitchen, B.A., Erin Mclaughlin, M.A., and Travis Shaw, M.A. Laboratory analysis and artifact photography was conducted by Katie Kosack, M.A. Graphics were prepared by Barry Warthen, A.A., and Ms. Sharon Little produced the report.

Organization of the Report

Chapter I contains a brief description of the project. The natural and cultural settings of the project are described in Chapter II, which also contains a discussion of previous research in the area. Chapter III reviews the research methods used in the investigations. Chapter IV reviews the results of the archeological investigations for proposed SWM-1a Pond. The results of the archeological investigations for proposed SWM-4b Pond are contained in Chapter V. Chapter VI contains a summary of the project and presents the management recommendations. Appendix I consists of the artifact inventories for both study areas. Appendix II contains the resumes of key personnel.

Chapter II

Natural and Cultural Setting

Natural Setting

The planned SWM ponds are located in Fairfax County, in northeastern Virginia, within the northern portion of property administered by the U.S. Army at Fort Belvoir. The ponds lie along the southern side of Route 1 (Richmond Highway), approximately (2.9 mi) southwest of the unincorporated area of Mt. Vernon and within the greater metropolitan Washington, D.C. area. The City of Alexandria is located approximately 9.8 km (6.1 mi) north-northeast of Ft. Belvoir, along the western bank of the Potomac River.

The study areas lie within the Coastal Plain physiographic province of Virginia (Bailey 1999). This province extends from the Chesapeake Bay westward to the gradually sloping uplands of the Piedmont province. Elevations range from sea level within the Barrier Islands and Salt Marsh sub-province to 76.2 m (250 ft) above mean sea level (amsl) in the western portion of the Upland sub-province. The intermediary Lowland sub-province encompasses a narrow area of relatively flat terrain that follows the lower reaches of the major tributaries as they flow into the Chesapeake Bay.

Both proposed SWM ponds are located within the Lowland sub-province, which typically ranges in elevation from sea level to 18.3 m (60 ft) amsl (Bailey 1999). SWM-1a Pond lies at an elevation of approximately 35.7 m (117 ft) amsl and encompasses nearly level terrain. Terrain in the location of SWM-4a Pond slopes noticeable to the south toward an unnamed drainage of Accotink Creek. Elevations in the planned location of SWM-4a pond range from approximately 19.8 m (65 ft) amsl in the northeastern part of the pond location to approximately 18.3 m (60 ft) near the western part of the pond location.

Drainage

No natural drainages are included within the limits of disturbance for either SWM pond. Both pond locations lie within the Potomac River watershed and are drained by tributaries of Gunston Cove. An unnamed tributary of Pohick Creek lies southwest of the limits of disturbance for SMM-1a Pond and is the nearest water source. The Pohick Creek watershed encompasses s 36.5 mi area and includes one recreational lake and six lakes that were created under the Watershed and Flood Prevention Act (Public Law 83-566) for flood control purposes (www.fairfaxcounty.gov). The latter lakes were created between 1970 and 1985 by damming sections of four tributaries of Pohick Creek. Pohick Creek flows into Pohick Bay, which in turn feeds Gunston Cove, located north of Mason Neck. Gunston Cove is an inlet of the Potomac River, which flows into the Chesapeake Bay between Smith Point, Virginia and Point Lookout, Maryland.

Immediately south of the limits of disturbance for SWM-4a Pond lies a deeply incised valley of an unnamed tributary of Accotink Creek. The Accotink Creek watershed drains an estimated 134.7 km^2 (51mi^2) and includes tributaries lying within Fairfax County, the City of Fairfax, and Fort Belvoir. Lake Accotink, a 22.3 ha (55 ac) artificial reservoir created in 1918 as a source of water for Camp Humphreys (later Fort Belvoir) is located on the upper reaches of Accotink Creek, approximately 10.6 km (6.6 mi) northwest of SWM-4b Pond. Sedimentation has decreased the size and depth of the lake from 44.5 ha (110 ac) and 7 m (23 ft) in depth to its current size and depth of less than 1.5 m (5 ft) (www.fairfaxcounty.gov). Accotink Creek empties into Accotink Bay just south of the project area. Acco-

tink Bay, in turn, flows into Gunston Cove, which empties into the Potomac River and finally, the Chesapeake Bay.

Vegetation

The planned location of SWM-1a Pond encompasses a woodlot of relatively young deciduous trees that include predominantly oak, sweet gum, and tulip tree (yellow poplar). The overstory vegetation is even-aged and suggests less than 30 years of growth. Understory vegetation is relatively sparse and includes growth typical of a young, reforested area. No obvious evidence of previous surface or subsurface disturbance was observed within the study area. The terrain was even and sloped very gradually down to the southwest toward an unnamed drainage located beyond the study area. An overhead power line corridor extended along the southern edge of the study area; significant disturbances related to tree removal and general corridor maintenance were noted within the corridor, but did not extend into the study area.

SWM-4b Pond is located within the eastern portion of archeological Site 44FX1936. The site encompasses a majority of the woodlot located southeast of the intersection of Pohick Road and Route 1 and north of a well-incised stream valley. In the previously disturbed northern portion of Site 44FX1936, woodlot vegetation consists of young hickory, American beech, blue beech, red oak, maple, and holly trees (Figure 2-1). A variably dense understory of sapling trees, green briar, honeysuckle, and mixed grasses and plants also occurred in this portion of the woodlot. The southern portion of the woodlot, which had not been subject to past disturbance, had a relatively open understory composed primarily of sapling trees (Figure 2-2). Overstory trees included red oak, white oak, American beech, sweet birch, hickory, tulip tree (yellow poplar), and maple. Most of the oak and beech trees measured from 40-60 cm (15.7-23.6 in) in diameter and were estimated to be 60-80 years of age.

Isolated, mature oak and beech trees stand outside of the planned pond location, but within the boundary of previously identified Site 44FX1936. An American beech located along the upper margin of the stream valley in the southern central portion of Site 44FX1936 measured 1.06 cm (41.7 in) in diameter and was estimated to be 250 years of age. A large red oak located just west of the beech and also situated along the margin of the valley measured 125.4 cm (49.4 in) in diameter and was estimated to be nearly 200 years of age. In the northwestern corner of the site, two mature white oak trees ranged from approximately 175 years of age to 275 years of age (Figure 2-3). The larger tree had a diameter of 140 cm (55.1 in), while the smaller tree had a diameter of 87.8 cm (34.6 in).

Geology and Soils

The project area is situated within narrow band of Lower Cretaceous age sediments that lie along the western bank of the Potomac River in Fairfax County, Virginia. These sediments overlie sediments of the neighboring Piedmont province and form the basal deposits of the Coastal Plain (Clark et al. 1912:61). The proposed SWM ponds lie within the Potomac Formation, a combination of sand, silt, clay or mud, and gravels that were deposited by ancient rivers (VDMR 1993). These deposits range from a few feet in thickness near the western edge of the formation to over 1,067 m (3,500 ft) in thickness near the outer Coastal Plain (VDMR 1993).

Soils mapped for the project area belong to several interrelated soil map units. Mattapex loam, 2-7 per cent slopes (Map Unit 77B) is mapped for the entirety of SWM-1a Pond, as well as for the northwestern corner of archeological Site 44FX1936. Common on upland flats in the Coastal Plain, this moderately well drained soil formed from silty eolian (wind-blown) deposits. These deposits typically overly fluviomarine deposits near the mouths of rivers. Mattapex soils have a typical profile composed of deep deposits of silt loam over parent material composed of fine sandy loam (Table 2-1). These soils have moderate to very rapid permeability and with a depth to bedrock of over 1.8 m (5.9 ft).

Soils of the Sassafras-Marumsco complex, 7-15 per cent slopes (Map Unit 91C) and 15-25 per cent slopes (Map Unit 91D), are mapped for the remainder for SWM-4b Pond and for the northern two-thirds of Site 44FX1936. Composed of approximately 50 per cent Sassafras

Figure 2-1. Photograph showing current conditions in western portion of Site 44FX1936, view west (Goodwin & Assoc., Inc., April 2013)

Figure 2-2. Photograph showing current conditions in eastern portion of Site 44FX1936, view south (Goodwin & Assoc., Inc., April 2013)

Figure 2-3. Photograph showing large oak trees standing near the northwestern corner of Site 44FX1936, view west (Goodwin & Assoc., Inc., April 2013)

Table 2-1. Representative Soil Profile for Mattapex Series (NRCS 2008)

Horizon	Depth Below Surface	Summary of Soil Description
Ap	0-31 cm (0-12 in)	Yellowish brown (10YR 5/4) silt loam
Bt1	31-51 cm (12-20 in)	Yellowish brown (10YR 5/6) silt loam
Bt2	51-72 cm (20-28 in)	Yellowish brown (10YR 5/6) silt loam; common distinct pale brown (10YR 6/3) and few common medium prominent light gray (10YR 7/2) iron depletions
Btg	72-95 cm (28-37 in)	Light brownish gray (2.5Y 6/2) silt loam; common medium prominent yellowish brown (10YR 5/6) and few medium distinct strong brown soft iron accumulations
2BC	95-115 cm (37-45 in)	Light brownish gray (2.5Y 6/2) fine sandy loam; few medium prominent light brown (7.5YR 6/3) mottles; common medium prominent yellowish brown (10YR 5/6) soft iron accumulations

soils, 35 per cent Marumsco soils, and 15 per cent minor soil series, this complex is common on the summits and shoulders of Coastal Plain terraces. Also formed in fluviomarine deposits, these soils are composed of well drained to moderately well drained clays and sandy loams. Both map units have a depth to bedrock of greater than 2 m (6.7 ft). Sassafras soils have a typical profile that includes sandy loam surface strata underlain by loamy to sandy clay loam substrata and gravelly sandy loam parent material (Table 2-2). Marumsco soils exhibit a similar soil profile to Sassafras soils, although with a noticeable increase in clay content in substrata (Table 2-3). Surface strata of the Marumsco series are described as loamy soils that can contain occasional mica and rounded quartz gravel. Substrata range from clay loam to clay to sandy clay loam and also include mica flakes and a low percentage of rounded quartz gravel. Unplowed areas of Sassafras and Marumsco soils both can contain an E horizon of loamy sand to fine sandy loam.

Soils of the Beltsville series (Map Unit 7B) are mapped for portions of Site 44FX1936 lying along the eroded margins of the terrace or within the deeply incised stream valley. Soils of this series are very deep, moderately well drained sediments that formed in silty eolian sediments overlying loamy fluviomarine deposits. Common on broad, interstream drainages on Coastal

Table 2-2. Representative Soil Profile for Sassafras Series (NRCS 2013)

Horizon	Depth Below Surface	Summary of Soil Description
Ap	0-23 cm (0-9 in)	Brown (10YR 5/3) sandy loam
BA	23-53 cm (9-21 in)	Yellowish brown (10YR 5/4) loam
Bt1	53-81 cm (21-32 in)	Brown (7.5YR 5/4) sandy clay loam
Bt2	81-102 cm (32-40 in)	Strong brown (7.5YR 5/6) sandy loam
C1	102-132 cm (40-52 in)	Strong brown (7.5YR 5/6) gravelly sandy loam; 3 per cent small light yellowish brown (10YR 6/4) pockets of clay

Table 2-3. Representative Soil Profile for Marumsco Series (NRCS 2003)

Horizon	Depth Below Surface	Summary of Soil Description
Oi	Surface	Partially decomposed hardoood leaves & twigs
A	0-3 cm (0-1 in)	Very dark grayish brown (10YR 3/2) loam; few fine mica flakes; 1 per cent rounded quartz gravel
E	3-18 cm (1-7 in)	Pale brown (10YR 6/3) loam; few fine mica flakes; 1 per cent rounded quartz gravel
Bt1	18-25 cm (7-10 in)	Brownish yellow (10YR 6/6) clay; few fine mica flakes; 1 per cent rounded quartz gravel
Bt2	25-74 cm (10-29 in)	Brownish yellow (10YR 6/6) clay; common medium distinct light brownish gray (10YR 6/2) and gray (10YR 5/1) mottles; few fine mica flakes; 1 per cent rounded quartz gravel
Btg	74-119 cm (29-47 in)	Gray (10YR 5/1) sandy clay loam; many medium and coarse distinct brownish yellow (10YR 6/6) and prominent reddish yellow (7.5YR 7/8) mottles; few fine mica flakes; 1 per cent rounded quartz gravel
Cg	119-190 cm (47-75 in)	Gray (10YR 6/1) sandy clay loam; common medium and coarse distinct brownish yellow (10YR 6/6) mottles; few fine mica flakes; 3 per cent rounded quartz gravel

Plain uplands, Beltsville soils typically include a silty loam surface stratum underlain by silty loam and loamy substrata (Table 2-4). Lower substrata and parent material can contain up to 21 per cent gravel and distinct accumulations of iron-manganese.

Prehistoric Context

Although the VDHR (2011) has developed both temporal and thematic frameworks for Virginia's development, the state's contexts were meant to provide overall guidance for development of more localized sequences. The background summary for the present study therefore has been based upon contexts developed in the original *Fairfax County Heritage Resources Management Plan* (Chittenden et al. 1988), as well as more site-specific themes presented in the Fort Belvoir Integrated Cultural Resources Management Plan (ICRMP) that was developed for the post in 2000 (Polglase et al. 2000).

Paleoindian (ca. 10,000 - 8,000 B.C.)

The climatic episode that influenced the Paleoindian period was the Late Glacial (ca. 15,000 - 8,500 B.C.), which represented the "last effects of the glaciers upon climate in the Middle Atlantic area" (Custer 1984:44). Although the Laurentide ice sheet did not itself extend as far south as Virginia, temperatures were some 10 – 15° C cooler than at present and vegetation across most of Virginia resembled the boreal forests of eastern Canada (Boyd 1989:143-145, Figure 1). Johnson (1986) suggested that the climate towards the Coastal Plain may have been somewhat milder. The glaciers also entrapped water and lowered sea levels significantly.

In 10,000 B.C., the Atlantic shoreline lay approximately 47 miles east of its current location, and the Chesapeake Bay "was a broad river valley whose streams, draining large areas of land--much now submerged--carried substantial amounts of water" (Parker 1986:16). The Potomac River likely was an unstable, braided stream, and the present Coastal Plain was an interior setting during this period. These conditions impose important implications for site distributions. Post-Pleistocene warming trends and the resultant rising sea levels likely inundated many Paleoindian (and pre-Clovis) sites (Malakoff 2009:30), including any that might have been present along the ancestral Potomac and its tributaries. As a result, the Paleoindian period is sparsely represented in eastern Fairfax County.

Evidence of Paleoindian activity commonly has been defined by the presence of fluted projectile points, including the Clovis, Mid-Paleo, Dalton, and Hardaway types, along with such other tools as scrapers and pièces esquillées (Johnson 1986; Malakoff 2009:29-30); most recorded "sites" actually have been isolated finds from disturbed surface contexts (Deetz et al. 2012:3-1). Only one

Table 2-4. Representative Soil Profile for Beltsville Series (NRCS 2007)

Horizon	Depth Below Surface	Summary of Soil Description
Oi	0-0.13 cm (0-0.5 in)	Slightly decomposed fibric material
A	0.13-8 cm (0.5-3 in)	Dark grayish brown (10YR 4/2) silt loam
E	8-20 cm (3-8 in)	Yellowish brown (10YR 5/4) silt loam
Bt	20-51 cm (8-20 in)	Yellowish brown (10YR 5/6) silt loam
Btx	51-71 cm (20-28 in)	Yellowish brown (10YR 5/6) loam; common medium prominent light brownish gray (10YR6/2) iron depletions and many medium faint strong brown (7.5YR 5/6) iron concentrations; 12 per cent gravels

site with Paleoindian associations (Site 44FX35) has been recorded within Fort Belvoir; it occupies the first terrace of Accotink Creek in the vicinity of Davidson Airfield (LeeDecker et al. 1984; Johnson 1988).

Early Archaic (8,000 - 6,500 B.C.)

Archeologically, the major changes noted during the Early Archaic phase include: (1) a more stable and restricted site distribution, implying a more sedentary lifestyle; (2) changes in projectile point morphology; and (3) the use of a broader range of locally available lithic material (Johnson 1986:P2-1). Diagnostic artifacts for this period include Palmer/Kirk corner notched, Kirk side notched/stemmed, and notched/stemmed bifurcate projectile points (Johnson 1991). Several points representing Early Archaic period activity have been recovered within the Accotink Creek drainage at Fort Belvoir (Chittenden et al. 1988:Figures P2-7 and P2-8).

The environmental setting during the Early Archaic was conditioned by the Pleistocene/Holocene transition, a climatic shift that involved warmer summer temperatures and continued wet winters (Custer 1984; Johnson 1986; Kavanagh 1982). The more moderate climate produced an increasingly diverse floral and faunal population, which in turn permitted the adoption of a subsistence strategy focused on exploiting small game species and plant foods in a manner similar to that of the preceding Paleo-Indian period (Parker 1986:20; Johnson 1991:10). In terms of settlement patterns, the population appears to have "concentrated near the shore and along the lower river courses," using upland areas (similar to the setting of Site 44FX1936) to conduct hunting forays (Parker 1986:20). The moderating climate also accelerated sea level rise. As a result, many sites dating from this period also may be submerged.

Middle Archaic (6,500 - 3,000 B.C.)

Johnson identified the following projectile points as diagnostic of Middle Archaic occupation: Stanly, lobate, Morrow Mountain/Stark (contracting stem), Halifax, and Guilford (lanceolate) (Johnson 1986, 1991). Several points from the later Big Sandy and Halifax/Brewerton traditions have been reported from sites in the lower Accotink stream valley (Chittenden et al. 1988:Figures P3-7, P3-8, P4-3). Of these types, Halifax points are the most abundant, mirroring a general increase in prehistoric activity and/or population that has been documented throughout Fairfax County.

Between approximately 6,500 B.C. and 5,000 B. C., a warmer and more humid period dominated the regional environment (Custer 1984:62-63). Rising temperatures accelerated sea level rise, which continued to inundate earlier sites in shoreline areas (Mouer 1991). Parker (1986:23) indicated that "the Potomac had begun down cutting in its present channel by about 5,500 B.C., and fluvial swamps may have developed in wide floodplain areas." Essentially modern forest conditions, with southern pine-oak forest in the uplands and oak-hickory forests in valley floors, were present in the region by 6,000 B.C. (Johnson 1986:3-1; Parker 1986:23). Adaptive strategies likely continued to focus on foraging, with varying emphases on hunting and collecting that may have co-varied with climatic change. Parker (1986:24) maintained that there was "an absolute decline in the use of the uplands, with populations instead perhaps dispersing and concentrating seasonally along the shores and the lower river courses."

Late Archaic (3,000 - 1,200 B.C.)

During this time frame, characterized by a warmer and drier environment (Kavanagh 1982:9), open grasslands re-appeared and oak-hickory forests expanded on valley floors and hillsides. By 3,000 B.C., the Atlantic coastline was only about four miles east of its current location, and the Chesapeake Bay was filling. Johnson (1986:5-5) noted that sites of this period in Fairfax County "often are larger and more intense in both the uplands and along the main riverine floodplain."

The principal diagnostics that mark the Late Archaic period include Savannah River and Holmes projectile points (Johnson 1986). Steatite bowls also were added to the tool kit during the Late Archaic; these would be followed by the steatite-tempered ceramics that mark the beginning of the Woodland period. Large quantities of Savannah River-like and Holmes points have been recovered from sites along the Accotink Creek (Chittenden et al. 1988:Figures P5-19 and P5-20). The increase in numbers of points and their wider distribution suggests that the Late Archaic period represents the initial phase of intensive prehistoric occupation in southeastern Fairfax County, including both tidal and freshwater zones.

Early Woodland (1,200 B.C. - A.D. 300)

In general, climate during the Woodland period approximated that of the present day, although episodic climatic variations apparently produced stress conditions that were reflected in changes in cultural practices and indicators. Settlement pattern models for the Late Archaic to Early Woodland on the Inner Coastal Plain have posited seasonal movements of macro- and micro-social units between fresh-water and salt-water zones, depending upon the availability of resources at given times of the year (Gardner 1982:59). Johnson (1986:5-1) and VDHR (2011:123) both noted a shift to greater sedentism during this period, characterized archeologically by the appearance of larger base camps. The appearance of ceramics is generally accepted as the hallmark of the Woodland Period; characteristic Early Woodland ceramics include steatite-tempered Marcey Creek and Seldon Island wares and sand tempered Accokeek wares.

Middle Woodland (ca. A.D. 300 – A.D. 1000)

Middle Woodland sites in the Coastal Plain of the Potomac are identified by the presence of Popes Creek Net-Impressed and shell-tempered Mockley ceramics, as well as Fox Creek and Selby Bay projectile points. Johnson (1986:5-21) reported that Piscataway-like points have been found in association with both Accokeek and Popes-Creek-like ceramics. Large numbers of Piscataway points were recovered from one site on the northern shore of the Accotink Creek estuary; however, the association between such points and ceramic-producing sites, and hence their settlement system implications, are unclear (Johnson 1986:5-26 -5-30). Popes Creek ceramics also have been found within the Dogue Creek drainage at Site 44FX1342 (Johnson 1988).

Late Woodland (A.D. 1000 – A. D. 1606)

According to Johnson (1986:6-1), Native American settlement and subsistence patterns in the Coastal Plain region of Fairfax County were distinguished by the following general characteristics:

> ...the intensive planting and cultivating of domestic plants (corn (maize), beans, squash, tobacco, etc.); a shift in riverine settlements from fishing and shellfishing locales to areas with prime agricultural soils (Gardner 1983:personal communication); the advent of semi-permanent villages; the apparent rise in inter-tribal conflict; the appearance of the bow and arrow, seemingly manifested in the triangular point type; and possibly the first appearance of complex political systems such as tribal confederacies and chiefdoms.

The locations of larger villages and hamlets appear to have been related to the availability of arable soils. Small shell-fishing camps also persisted in tidewater regions, with what Johnson terms "exploitative foray camps" located in the interior (Chittenden et al. 1988:III-P6-4).

On the Coastal Plain, shell-tempered Townsend ceramics dominated after A.D. 900 (Clark 1980:18). Crushed-rock tempered Potomac Creek ware, a ceramic type thought to be related to the historically known Piscataway Indians,

appeared somewhat later and was prevalent in the Inner Coastal Plain/Fall Line sections of Northern Virginia (Clark 1980:8; Egloff and Potter 1982:112). Representative projectile points from this period are the small triangular forms. Sites that have produced these diagnostic artifacts tend to cluster along the Potomac shoreline and the lower reaches of major tributaries of the Potomac River, although survey bias may have skewed this distribution.

Prehistoric Occupation at Fort Belvoir

The Belvoir peninsula may have been particularly attractive prehistorically because of its close proximity to three physiographic areas and their divergent resources: the Piedmont, the upper Coastal Plain, and the lower tidal wetlands. The area between the tidal zone and the Fall Line was the richest area in the coastal plain prehistorically; here productive, easily tilled soils combined with enormous biodiversity (Klein 1994). Gravel and cobbles formed the dominant component of many of the soils, resulting in a rich array of raw materials for tool production.

The most common site type identified in the Fort Belvoir area is the lithic artifact scatter from which no diagnostic tools or ceramics have been recovered. Most of these sites are found on upland terraces and bluffs overlooking the three major creeks (Dogue, Accotink, and Pohick) and the Potomac River or at the heads of minor drainages. For example, a 1983 pedestrian survey of portions of the Woodlawn Plantation property south of Rte. 1 recorded numerous clusters of lithic flakes, fire-cracked rock, and cores (Trinkley 2000:16). Although such artifact scatters are a ceramic, it would be a mistake to ascribe them arbitrarily to the Archaic Period; they could represent either exclusive Archaic Period exploitation or limited Woodland Period forays into upland areas.

Historic Context

The study units used in this section provide not only an overview of Fairfax County's history, but also an historical context for the specific Fort Belvoir study area. Certain temporal units used elsewhere have been modified to conform to specific areal considerations. For example, the Civil War has not been developed as a separate study unit in this report, since the impact of the conflict on the project area was relatively minimal. Sub- units on African-American and Quaker history have been included because these groups had a direct impact upon the pre-military history of Fort Belvoir.

Exploration and Frontier/Early Colonial Settlement (1607 - 1650)

Following John Smith's exploratory voyage into the Potomac watershed in 1608, a beaver trade flourished during the 1620s and 1630s along the Potomac and in the upper Chesapeake region. This trade brought whites into the area with increasing regularity (Fausz 1984), but none settled the region permanently until the second half of the seventeenth century. Until that time, the Doeg Indians controlled the middle Potomac shoreline (Moore 1993); John Smith's map located the chief Doeg town of Tauxenent on the north shore of the Occoquan River south of Fort Belvoir (Chittenden et al. 1988:III-H1-2). Smith visited Tauxenent and received a "friendly welcome" there (Rountree et al. 2007:99).

Early Colonial Settlement (1650 - 1720)

Tidewater tobacco planters quickly discovered that tobacco monoculture depleted the soil. As landholders sought new fields for the crop, and as indentured servants completed their terms of service and sought to acquire their own properties, Virginia's frontier pushed steadily northward (Parker 1986). The first land patents for tidewater Fairfax County were issued in 1651, but most of these grants probably were not "seated." Many later were re-patented (Mitchell 1977:3), particularly after Charles II assigned the rights to the entire region between the Rappahannock and Potomac Rivers to several of his supporters in England. Thomas Lord Culpeper eventually bought out most of the other grantees, and in 1675 he assumed sole control of the Northern Neck proprietary (Writers Program 1941:17).

Settlement in the area proceeded slowly until the end of the seventeenth century (Mitchell 1977:4). Augustin Herrman's 1673 *Map of Maryland and Virginia* (in Stephenson 1981:Plate 4) indicates that early plantation sites in southeastern Fairfax County clustered along

the Potomac River shoreline. Because so few landowners actually lived on their properties, it is likely that these remote grants were occupied by tenant farmers, indentured servants, slaves, and/or overseers. African slaves increasingly were imported to work the Northern Virginia's tobacco fields (Chittenden et al. 1988:III-H2-2).

As the area's population slowly increased, transportation routes were established across the Occoquan River from Woodbridge to Colchester, in Fairfax County, and a ferry was in operation there by the 1680s (Chittenden et al. 1988:III-H2-4). A former north-south Indian trail, the so-called "Potomac Path" was improved and extended into the county's frontier settlements. Also known as the "road to Colchester," the Potomac Path corresponded roughly to present-day Telegraph Road, which forms the northwestern boundary of Fort Belvoir's North Post. Other unimproved trails were widened into "rolling" roads over which hogsheads of tobacco were conveyed to wharves and warehouses on the Potomac River (Harrison 1987:466).

Tobacco Plantation Society (1720 - 1800)

The plantation society that had developed in southern Virginia spread to tidewater Fairfax during the early eighteenth century. Immense estates, including George Mason's Gunston Hall, George Washington's Mount Vernon, and William Fairfax's Belvoir, were established. The county's internal transportation network provided access to the churches, the county courthouse, and communities of the interior portion of the county, and connected plantations with ports at Colchester and Alexandria (Chittenden et al. 1988:III-H5-2). Affluent county landowners came to represent the political, economic, and social upper class of Fairfax County. The proprietor of the Northern Neck, Thomas Sixth Lord Fairfax and heir to the Culpeper holdings, also resided at Belvoir between 1745 and 1761 (LeeDecker 1984:38).

The American Revolution affected Fairfax County only marginally in a direct military sense, although French troops en route to Yorktown in 1781 encamped near Colchester, just south of Fort Belvoir. However, the residents of the plantations along the Potomac contributed significantly to the political and military leadership of the conflict, with Washington serving as military commander of Continental Armies and George Mason authoring, among other documents, the Virginia Declaration of Rights. Netherton et al. (1978:117) observed that "it is safe to say that through the efforts of both Mason and Washington the influence of Fairfax County on the Revolution was paramount in Virginia and significant on the whole."

Early Diversified Agriculture (1750 - 1840)

By the mid-eighteenth century, many planters in the region had begun to realize that continued dependence upon tobacco production ultimately would spell disaster. As a result, most progressive planters like George Washington began to diversify their plantation output. By the end of the eighteenth century, this diversified approach to agriculture had all but completely replaced tobacco production in Fairfax County (Chittenden et al. 1988:III-H5-1). Another significant change resulted from the ideology of the American independence movement, which encouraged Virginia slaveholders, including George Washington, to free their slaves, either through immediate manumission or in their wills. As a result, a free black population slowly developed in Fairfax County during the first half of the nineteenth century.

After the Revolution, the economy of Fairfax stagnated, and a sizeable portion of its population migrated west. Many planters sold their estates to satisfy their debts, while other properties were partitioned as a result of inheritance. As the nineteenth century progressed, smaller farm units came to characterize the county's economy, and the need for planters to maintain large numbers of slaves diminished. Virginia law permitted manumitted slaves to remain within the state as long as their free status was proved satisfactorily to the county court, usually by affirmation or witness by a white county resident (Sweig 1977:*passim*).

However, the county's agricultural economy slowly rebounded at mid-century as the regional adoption of "scientific" farming methods increased productivity (Lee 1982:46). An influx of Northern farmers and entrepreneurs, such as the Gillingham family who purchased Woodlawn in the 1840s, increased the county's population. The steady growth of the District of Columbia

created an expanding market for commodities produced on outlying farms (Chittenden et al. 1988:III-H5-1), and the number of grist mills and other agriculturally related industries increased. Transportation systems improved; steamboat service along Potomac River provided a faster mode of transportation for residents of the eastern part of the county (Harrison 1987:452), and interior road systems were upgraded and expanded. By the time of the Civil War, a road following the approximate route of present-day Beulah Street (VA Rte. 613), linking the village of Accotink with Telegraph Road, had been established.

Agrarian Fairfax (1840 - 1940)

Fairfax County remained predominantly rural and agrarian for the next century. Along the Potomac River, farming was supplemented by the development of a fishing industry (LeeDecker 1984:44). During the 1850s, small communities developed around railroad stations and post offices. The hamlet of Accotink, located immediately across Rte. 1 from Site 44FX1936, typified these small nucleated villages (Figure 2-4). The Woodlawn Baptist Church, the Friends' Meeting House, and another schoolhouse provided the focal points for a second community for residents who lived north of Accotink.

Fairfax County's location, south of the nation's capital, was strategically important during the Civil War. When Virginia seceded from the Union, Federal forces occupied parts of the county, took control of local turnpikes and railroads, and erected fortifications to guard Alexandria and the approaches to Washington. Because southeastern Fairfax County was relatively far from such scenes of direct conflict as Bull Run, the war's effects on the Belvoir area were comparatively minor, but troops from both sides of the conflict harassed local residents, occupied church buildings at Pohick and the Quaker meeting house, and foraged for supplies (see Netherton et al. 1978:329).

During this period, two unique social groups, Quakers and African-Americans, comprised an especially significant element in the Accotink and Woodlawn areas.

Quakers in Fairfax County

The Religious Society of Friends, also known as Quakers, had been active in Virginia since the seventeenth century. In the eighteenth century, early Quaker settlements coalesced around the western edges of Alexandria and along the Fairfax-Loudoun border; Alexandria's Quaker meeting was established in 1798. During the 1840s, several Quaker families from Pennsylvania and New Jersey acquired property in the Fort Belvoir area and established the present meeting there.

Three fundamental precepts of this group set them apart from their neighbors: their interest in education; their concern for African-Americans; and their implementation of progressive farming practices (Netherton et al. 1978:258; Chittenden et al. 1988:III-H7-2). The Gillingham and Troth families, who purchased the Woodlawn Plantation for its timber resources (Troth 1971:34, 37), were among the prominent leaders of the group. They helped to establish the Woodlawn Meeting at the intersection of Woodlawn Road and Route 1, and members of the Woodlawn community, dominated by an abolitionist philosophy, aided free blacks, especially during the Reconstruction period (Chase 1990:21).

After the Civil War, members of this progressive community continued to provide significant leadership in the Woodlawn area by establishing local agricultural self-help groups, such as the Woodlawn Farmer's Club, and promoting innovative approaches to farming. Some of their members established dairy farming as a significant economic component of Fairfax County's early twentieth century agriculture (Chittenden et al. 1988:III-H7-2). It also was partially due to the concern of the area's Quaker community that a sizeable African-American community began to coalesce in the Woodlawn area.

Free Blacks in Fairfax County

Fairfax County's free African-American population actually emerged prior to the Civil War. Freedom from slavery was gained as a result

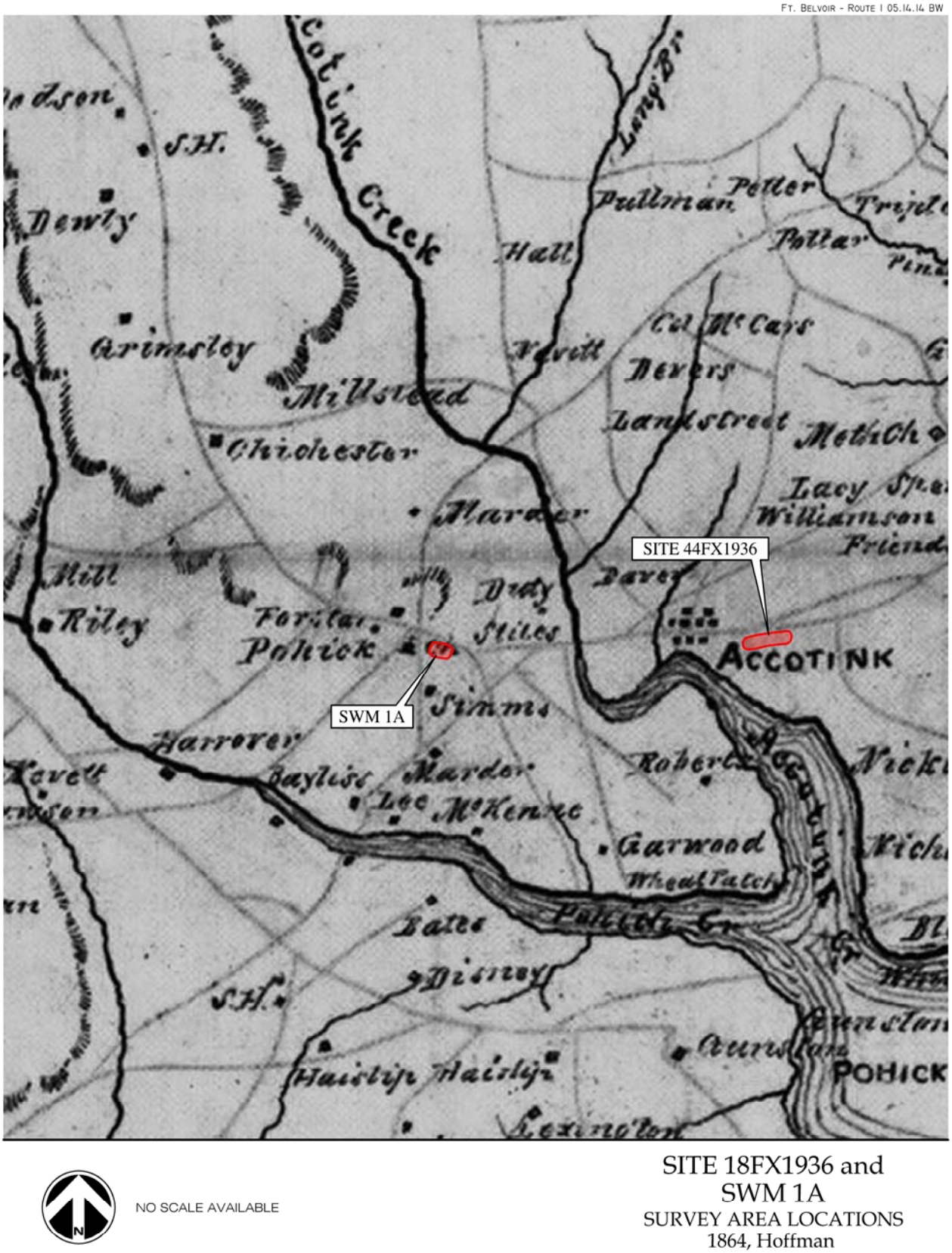


Figure 2-4. Excerpt from Hoffman (1864) Map of Fairfax County showing the nucleated village of Accotink and the approximate locations of SWM-1a Pond and Site 44FX1936 (Image: American Memory, Library of Congress)

of outright manumission by owners; by being freed in owners' wills; or following the status of previously freed African-American women. Local and state statutes required that free African-Americans either register with the local courts, or that they leave the state; however, documentary evidence suggests that such laws were enforced only sporadically (Sweig 1983:3-4).

During the first half of the nineteenth century, several free African-Americans established small communities throughout the county, as well as neighborhood enclaves in larger towns such as Alexandria (Chittenden et al. 1988:III-H9-3). The community of Gum Springs, located at the head of Little Hunting Creek, developed around property owned by a former Washington slave, West Ford (Netherton et al. 1978:274; Chase 1990:12). A small group of free African-Americans also apparently settled in the Woodlawn vicinity prior to the Civil War; some of these individuals registered as free "persons of color" during the 1840s and 1850s (Sweig 1977:*passim*), while others were listed as free persons in the 1850 and 1860 population censuses.

After the Civil War, the size of this community increased, and it remained intact through the first quarter of the twentieth century. Its members established the African Methodist Episcopal Church and cemetery on Woodlawn Road, as well as a school and an Odd Fellows' Lodge (United States Army 1995:11). Most of the area's nineteenth century road configuration and all of the dwellings shown on the Hopkins map were obliterated when Camp Humphreys was established during World War I (Hopkins 1878). The establishment of Camp Humphreys may explain why, for example , William Holland, an African American resident of Woodlawn, purchased a 52-ac tract of land in the Gum Springs neighborhood in 1919 (Chase 1990:33).

Suburbanization and Urban Dominance (1890 - Present)

The late nineteenth and twentieth century growth of the Federal government in Washington, D.C. radically changed the character of Fairfax County. As the number of Federal employees rose throughout the period, electric trolley lines and improved road systems integrated Fairfax County into the Washington metropolitan area, and established the area as a suburban "bedroom community" of the nation's capital. A transit line linked Mount Vernon and Washington in 1892; it carried both passengers and freight, especially the dairy products produced in the Woodlawn area (Chase 1990:46, 51).

However, the most profound change in the project area was occasioned by the entry of the United States into World War I. In 1910, Philip Otterback sold 1,500 ac of the former Belvoir estate to the United States government (LeeDecker 1984:46). Prior to and during the United States' involvement in World War I, the War Department purchased or condemned many contiguous properties and created the installation known as Camp A. A. Humphreys. By November 1918, Camp Humphreys had grown from a camp capacity of 17,700 men to 30,000 men in barracks with an additional 6,000 men housed in tents and thirteen large warehouses (*The Castle* 1918:1). Many unidentified late nineteenth and early twentieth century dwellings, especially those in areas north of US Rte. 1 and west of Woodlawn Road, were demolished after the Army's acquisition of property in the area It was at this time Rte. 1 was hard-surfaced to accommodate military traffic.

During the Depression and World War II, the needs of a growing Federal work force resulted in the establishment of more complex transportation network throughout the county, and gave rise to ever-expanding residential areas. Farmlands were sold to developers or to the Federal government. A second round of land acquisitions occurred as the Army expanded Fort Belvoir to accommodate anticipated training needs related to the United States' involvement in World War II (Peeler and Crosby 2012). The post increased in size to 8,600 acres; additional temporary buildings and housing for 24,000 men were constructed (United States Army 1995; Christensen 1991:2); and the first Engineer Replacement Training Center (ERTC) was established at the installation. At that time, the remaining small properties east of Woodlawn Road and north of Pole Road, as well as the institutional structures associated with the Woodlawn community itself, disappeared when the Fort Belvoir post was again enlarged.

During the last five decades, major shopping, business, and industrial centers have emerged to dominate Fairfax, particularly along major transportation routes such as Interstate 95 and the Capital Beltway. Fort Belvoir's mission also has changed; since 1988, the installation has functioned within the Military District of Washington (MDW) and hosts and supports a wide variety of tenant activities. In fact, the installation's growth has been one of the major drivers of development in southeastern Fairfax County. No longer rural, the Fort Belvoir area today presents a mosaic of commercial and residential areas that reflects the continuing growth of the Washington metropolitan region.

Project-Specific Historic Context

Archival research for this project focused on the historic development of the Accotink area, specifically the village of Accotink, which was located on the opposite side of Richmond Highway from the project area.

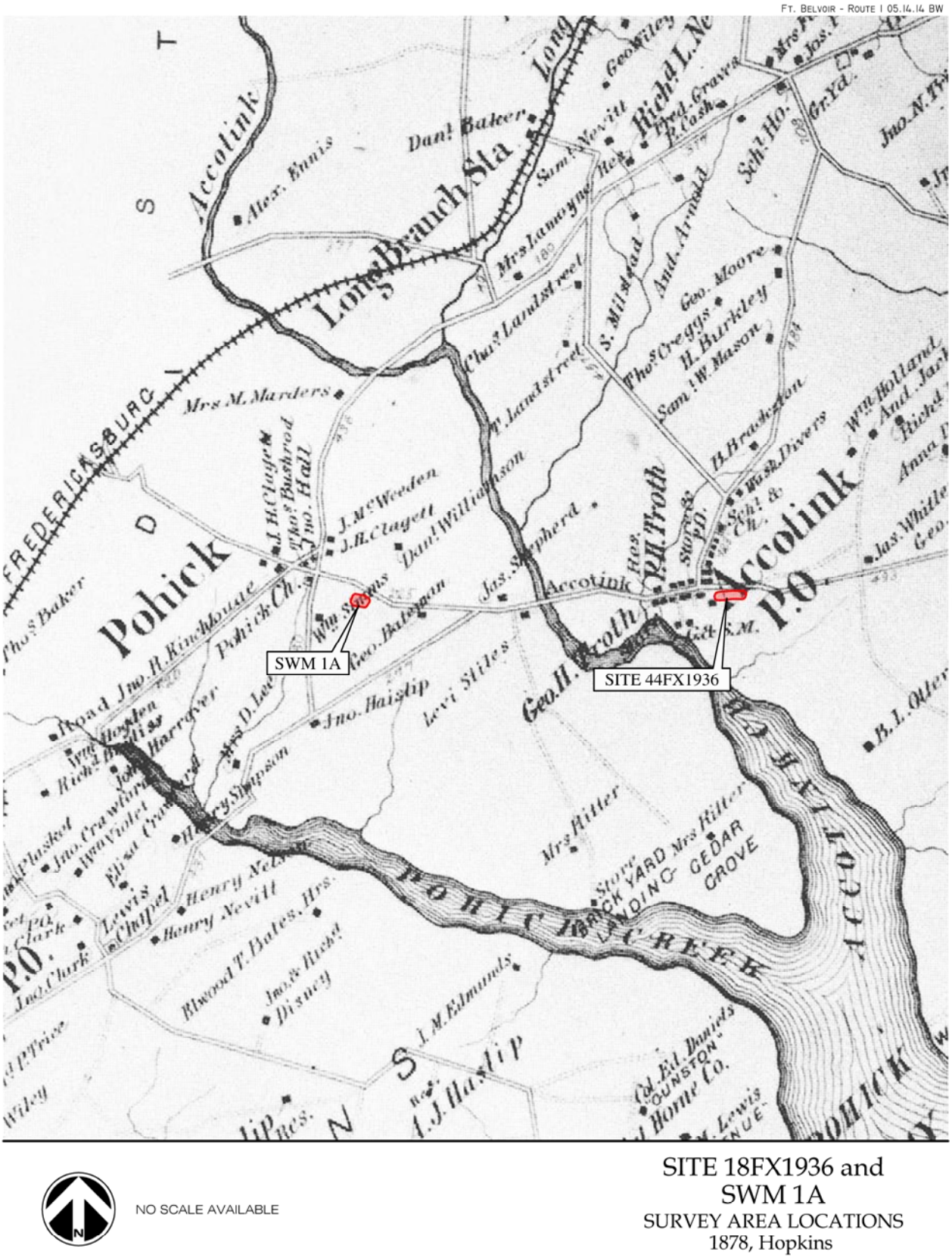
Early historic activity in the vicinity of the project area initially was focused at the mouth of Accotink Creek. During the early nineteenth century, Richard Windsor operated a grist mill in that location (Child et al. 2011:16). Windsor also acquired the larger Cameron Mill complex southwest of Alexandria in 1834 (Child et al. 2011:16). By the late 1840s, a saw mill had been added to the grist mill and the greater Accotink/Woodlawn area was the focus of timbering activity spurred by the arrival of a group of Quakers from the Philadelphia area. Two Quaker families within the group, the Troths and Gillinghams, purchased the rather moribund Woodlawn Plantation with the intention of exploiting the old-growth white oak forests of the area as a supply of timber for the ship building trade (Netherton et al. 1978:258).

The rising influence of Northern immigration into southeastern Fairfax became particularly apparent when Virginians cast their votes in May of 1861 on a secession referendum. Voters in the Accotink precinct voted overwhelmingly against succession, despite outright threats from secessionist interests (Netherton et al. 1979:319).

The village of Accotink continued to grow during the post-Civil War period; by 1879, it boasted such amenities as a schoolhouse, a Methodist Episcopal church, a blacksmith shop, the Troths' grist and saw mill, and two stores (Hopkins 1878) (Figure 2-5). Renewed economic activity was fueled by a further influx of Northern immigrants who demonstrably improved the fortunes of those communities in which they settled (Netherton et al.1979:395). A glance at the 1880 census listings for residents of the Mount Vernon District in the Accotink area revealed that nearly half of those residents were not Virginia natives; most residents had been born in New Jersey, Maine, or Pennsylvania (Census 1880). One resident was an immigrant from Switzerland. Elias Grimsley, whose home lay closest to the present project area, was a native Virginian. Listed on the 1880 Federal Census, he was employed at the Troths' saw mill (Ancestry.com 2014; Census 1880).

In 1910, Philip Otterback sold 1,500 acres of the former Belvoir estate to the United States government for the formation of Camp Humphreys (LeeDecker 1984:46). This acquisition supplemented earlier lands purchased in the Accotink area specifically for the formation of the installation. In conjunction with these and later acquisitions, many late nineteenth and early twentieth century houses that stood along Richmond Highway were demolished. Most of the area's nineteenth century roadways were reconfigured or obliterated during this period. Richmond Highway was hard-surfaced to accommodate military traffic, while all of the dwellings depicted on the 1878 Hopkins *Atlas of Fifteen Miles around Washington* in the vicinity of the project area were demolished.

Camp Humphrey's was renamed Fort Humphries in 1922 and became known as Fort Belvoir in 1935.



NO SCALE AVAILABLE

SITE 18FX1936 and
SWM 1A
SURVEY AREA LOCATIONS
1878, Hopkins

Figure 2-5. Excerpt from Hopkins (1878) Atlas of Fifteen Miles around Washington showing the approximate locations of SWM-1a Pond and Site 44FX1936

Chapter III

Research Design and Methods

This report summarizes cultural resources investigations for two proposed SWM locations associated with the Route 1 improvement project. Although both proposed pond locations are situated on the south side of Route 1 within Fairfax County, in Northern Virginia, both are located on property currently under the administration of U.S. Army Garrison Fort Belvoir (Fort Belvoir). SWM-1a Pond encompasses approximately 0.34 hectares (ha) (0.85 acres [ac]) of wooded land opposite the residential development of Inlet Cove. Previous investigations for this location were confined to the northern third of the planned SWM location (within 32.8 m [100 ft] of Route 1) and yielded no cultural material. SWM-4b Pond encompasses approximately 0.32 ha (0.79 ac) of wooded land southeast of the intersection of Pohick Road and Route 1. This location includes the eastern portion of previously identified multicomponent Site 44FX1936.

The northern and northwestern portions of Site 44FX1936 previously were subject to Phase I level archeological survey. These portions of the site were judged not to possess sufficient integrity or research potential to be considered eligible under Criterion d for inclusion in the National Register of Historic Places (Deetz et al. 2012; Polk et al. 1993). These portions of the site yielded a low quantity of material that supported generalized site use from the prehistoric period through the modern period. No cultural features or intact subsurface deposits were identified and a majority of the cultural materials were recovered from contexts that lacked integrity.

Research Design and Objectives

Archeological investigations for SWM-1a Pond and SWM-4b Pond were designed to identify any archeological resources present within the limits of disturbance for each pond area; to determine the approximate horizontal and vertical boundaries of any identified resources; and, to make preliminary assessments of the significance of any newly identified resources by applying the National Register Criteria for Evaluation (36 CFR 60.4 [a-d]). Investigations for SWM-4b Pond included Phase II level evaluation of previously identified Site 44FX1936. The evaluation was designed to supplement data obtained during previous cultural resources investigations and to provide an overall assessment of the eligibility of Site 44FX1936 for listing in the NRHP.

To be eligible for inclusion in the National Register an architectural or archeological resource must meet at least one of the following four criteria:

a. it must be associated with significant events in the broad patterns of national history;
b. it must be associated with the lives of persons significant in our past;
c. it must be representative of a type, period, or method of construction, or the work of a master; or
d. it must be capable of yielding information about the past (36 CFR 60.4 [a-d])

Archeological sites typically are evaluated under Criterion d of the National Register Criteria for Evaluation (36 CFR 60.4 [a-d]) for their potential to provide valuable information concerning past activity or use (NR Bulletin 36:14). Site 44FX1936 contains an unaffiliated (unknown) prehistoric component and a mid-nineteenth-twentieth century historic component. The historic component is included within the Antebellum Period (1830-1860), Civil War (1861-1865), Reconstruction and Growth (1866-1916), World War I to World War II (1917-1945), and The New Dominion (1946-present) periods. These periods define the Periods of Significance for the historic component of Site 44FX1936 and, as such, the

site is likely to yield important information related to these periods.

Eligibility assessment for inclusion in the NRHP followed the National Park Service's National Register Criteria for Evaluation (NPS 1991) (36 CFR 60.4 [a-d]). These criteria state that in order to be considered eligible, a resource must meet at least one of four criteria and must demonstrate sufficient depositional integrity to address important research questions. Each site is evaluated within an historic context that may include local, regional, or national events and patterns of development or change. A site may possess the qualities of significance in a given context because of association with important events or people, because they represent certain important types or styles, or for the information they may provide (NPS 1991).

A key element of NRHP eligibility for archeological sites is integrity. The integrity of a site profoundly affects its ability to provide information important to understanding historic and cultural significance. Major changes to the landscape through timbering, agricultural development, or construction activities can significantly alter landscape conditions and disturb the setting in which cultural materials and deposits were deposited, or cultural features were formed.

Under the National Register of Historic Places Criterion d (36 CFR 60.4 [a-d]), the research potential of an archeological site generally is tied to a series of research questions established for the site based on its context and period of significance. Research questions typically address regional, local, and property-specific topics that can be approached using a combination of archival research and archeological field investigations. Questions regarding the identity, ethnicity, social status, and occupation of property occupants are questions that can be addressed through archival research but may also appear in the archeological record as differences in refuse disposal patterns, purchasing patterns, and generalized landscape use.

Archival Research Methods

Background research focused on supplementing data compiled during previous investigations conducted by R. Christopher Goodwin & Associates, Inc. in the Fort Belvoir area. These investigations have included an Integrated Cultural Resources Management Plan (ICRMP) (Polglase et al. 2000), and most recently, a National Register nomination for the Fort Belvoir Historic District (Peeler and Crosby 2012). The historic and prehistoric contexts presented in this report have drawn heavily on archived documentary materials compiled in Goodwin & Associates' project archives and research library. These basic document sources were supplemented through available online resources, including Ancestry.com, the American Memory web site maintained by the Library of Congress, and Virginia's Cultural Resources Information System (V-CRIS).

Archeological Field Methods

Archeological investigations of SWM-1a Pond and SWM-4b Pond included systematic survey of the planned area of impact associated with each pond, as well as delineation cultural resources associated with previously identified Site 44FX1936. Portions of the ponds' limits of disturbance that had previously been subject to cultural resources survey were excluded from the current study area. For both locations, these areas extended south from the southern edge of Route 1for a distance of 132.8 m (100 ft) (Polk et al. 1993; Deetz et al. 2012). In some areas, extensive surface disturbances and obstructions further restricted the available locations for archeological testing. Piles of redeposited soil or construction debris (spoil piles), previously graded or filled areas, and areas subject to significant erosion represented some of the obstructions encountered during the current study.

Archeological field methods included pedestrian reconnaissance, systematic shovel testing, and, for SWM-4b Pond, the excavation of test units. All procedures and methods of recordation followed the standards established by the VDHR "Guidelines for Conducting Historic Resources Survey in Virginia" (VDHR 2011).

Prior to the initiation of fieldwork, each proposed pond location was subjected to pedestrian reconnaissance. The reconnaissance included identification of any existing natural or cultural

landscape features, an assessment of current surface disturbances, and a review of potential hazards at each location. Piles of construction debris and soil, fallen trees, and the presence of "homeless" encampments were some of the potential hazards to archeological survey.

In both areas, shovel tests were spaced at 7.5 m (25 ft) intervals along transects spaced 7.5 m (25 ft) apart. For SWM-1a Pond, transects originated from a project baseline that extended along the northern edge of the survey area. Shovel tests were excavated southward from the baseline to edge of the limits of disturbance. For SWM-4b Pond, transects originated from a project datum (N1000/E1000) placed near the northern central portion of Site 44FX1936. Shovel tests followed a grid orientation of grid North=3º; the locations of all shovel tests within the testing pattern were referenced to the survey datum and received a coordinate designation.

All shovel tests measured a minimum of 40 cm (15.7 in) in diameter and were excavated to a minimum depth of 40 cm (15.7 in) below surface, 10 cm (3.9 in) into sterile soil, or until ground conditions prevented further excavation, whichever came first. Soil was removed according to natural stratigraphic levels and screened through 0.635 cm (0.25 in) hardware mesh. Shovel tests were not excavated in areas where ground conditions, such spoil piles or areas of extensive surface disturbance, prevented excavation. The shovel test results, including the position of the shovel test in the testing grid, the depths of soil horizons, and the presence or absence of cultural materials were recorded on standardized shovel test recordation forms. All shovel tests were documented using Munsell Soil Color Chart designations and standard soil nomenclature.

Test Units

Five test units totaling 5 m² (53.8 ft²) were excavated during the investigation of SWM-4b Pond and Site 44FX1936. Test units were assigned sequential numbers (1-5) that reflected their order of excavation, as well as grid coordinates that reflected their location within the testing pattern. Grid coordinates were derived from the southwestern corner of each test unit; this corner also served as the reference corner or datum. All test units were aligned to 3º (grid north). All depth measurements were referenced to a string level set 10 cm (3.9 in) above the existing ground surface in the datum corner of the test unit. Test unit excavation preceded in 10 cm (3.9 in) arbitrary levels within the natural stratigraphy and all excavated soil was screened through 0.635 cm (0.25 in) hardware mesh. Test units were excavated to a minimum depth of 10 cm (3.9 in) into undisturbed, culturally sterile soil (subsoil).

Documentation of each test unit included the completion of standardized excavation level, unit summary, and feature recordation forms and scale profile drawings and digital photography of a minimum of two stratigraphic profiles. Scale drawings and digital photographs were completed for all suspected cultural features. Soil characterizations followed Munsell Soil Color Chart designations and standard soil nomenclature.

Archeological Laboratory Methods

All artifacts recovered during this investigation were transferred to the laboratory of R. Christopher Goodwin & Associates, Inc. in Frederick, Maryland, for cleaning, cataloging, and analysis. Laboratory procedures were performed in accordance with state and federal curation guidelines. The conditions of individual artifacts were assessed for degree of stability prior to carrying out any of the processing procedures. Artifacts were sorted into those that could be wet washed or dry-brushed by hand; they were air-dried and sealed in clean, archival grade, resealable plastic bags. Provenience data were recorded on the outside of each bag as well as on acid-free paper tags placed in each bag.

All artifact data and filed records were inventoried utilizing Microsoft Access™ to permit more expedient manipulation of chronological, functional, and distributional data. Each entry included the material class, artifact type, any distinguishing attribute(s), and functional category, as well as site and provenience designations.

Historic Artifact Analysis

The coded catalogue system for historic artifacts used by Goodwin & Associates includes artifact attribute data, artifact counts, manufacturing information, and temporal range data. It is organized in a manner that permits manipulation of different aspects of the artifact data set.

The classification system proceeds from the most general attributes of an artifact and progresses to the most specific. The basic categories used to organize this information include *Group, Class, Type, Sub-Type, Modification,* and *Date Range*. Certain classes of artifacts are subjected to additional descriptive analyses that record specific measurements, glaze, color, and other relevant morphological aspects. Categories and classificatory types are determined using standard literature in the field, including Miller (1980, 1991; 2000), Noël Hume (1985), Jones and Sullivan (1989), South (1977), Worthy (1982), and others. Where possible, manufacture's marks are used in conjunction with artifact types to refine temporal associations of particular artifact sub-assemblages. To permit more expedient manipulation of chronological, functional, and distributional data, all artifact data is inventoried using Microsoft Access computer program.

The primary basis for the classification of historic artifacts is the material from which they are made. Artifacts initially are designated as Ceramic, Glass, Metal, Organic, Stone, Manufactured, Synthetic, Composite, Other, or Indeterminate material types. More specific information about the material follows, and includes the basic classes of ceramic (earthenware, porcelain, stoneware), the manufacturing methods of glass artifacts, the element or alloy of metal artifacts, the scientific kingdom of non-food organic materials (floral or faunal), and similar classifications for other material groups. Ceramics, for instance, were further identified as to basic ware type (e.g., earthenware, stoneware, and porcelain) and to more specific subtypes within these type divisions (e.g., whiteware, ironstone, yellow ware, etc.) based on observed physical attributes. Glass artifacts were divided into subtypes based on coloration and metal based on type of metal or alloy. Similar classifications were made for the remainder of the material classes.

Data entry fields are included for artifact colors, manufacturing method (non-glass artifacts), styles, and regional origins of artifacts. These attributes are presented in the report inventory under the *Type* category. *Sub-Type* identifies the form and/or recovered portion of the artifact. This inventory category combines descriptions of shape, condition, and function of an artifact. The *Modification* category may include information on intentional modifications such as decorative types (for example, transfer print or hand painted ceramics, pressed or cut glass), and unintentional modifications such as burning or corrosion.

In addition to the five primary report categories of *Group*, *Class*, *Type*, *Sub-Type*, and *Modification* that appear on the final copy of the inventory, several other internal categories may be utilized in the cataloguing system. The most common of these is the assignment of artifacts to one or more functional categories. Functional pattern analysis of historic artifact assemblages has been widely used in historical archeology since Stanley South first published his Carolina Artifact Pattern (South 1977). Classification of vessel or artifact function is based on South's (1977) general functional groupings, used in combination with more defined functional categories where applicable. Broad functional groupings include *architecture, kitchen, clothing, furniture, personal, transportation, arms, industrial, activities*, and *indeterminate/miscellaneous*.

The architecture functional group includes artifacts related to the construction and/or maintenance of buildings and structures. Typical artifacts within this group include brick, mortar, window glass, nails, tiles, and construction hardware. The sampling strategy implemented as part of the field methods limited the amount of architectural debris that was collected for analysis. The sub-assemblage of architectural materials does, however, include construction materials typical of the late nineteenth and early twentieth centuries (e.g., asbestos roof tiles, linoleum, ceramic tiles, etc.). These types of architectural materials are contained within the manufactured material class to avoid confusion with ceramic vessels. When level of preservation allowed, manufacturing method of nails was identified as either wrought, cut, or wire and associated date ranges were assigned us-

ing the nail chronology developed for Louisiana (Edwards and Wells 1993; Wells 1998).

The kitchen functional group includes vessels and artifacts used in the preparation, consumption, and storage of food and drink. Ceramic and glass vessels dominate this category, while faunal remains are also considered to be a part of this group. The clothing functional group includes artifacts related to the manufacture (e.g., needles, pins, thread, etc.) of clothing as well as fasteners and decorations (e.g., buttons, clasps, hook-and-eyes, hooks). Personal artifacts are defined as possessions belonging to an individual including hygiene/grooming related artifacts, medicinal bottles and equipage, jewelry, coins, smoking pipes and equipage, toilet ware, and other personal belongings. The activities group is a very broad grouping that includes artifacts related to non-domestic activities or activities encompassed by other functional groups. Typical artifacts include toys, tools, and objects related to hobbies, recreation, and other activities.

The furniture functional group includes materials related to household furniture, represented in the archeological assemblage by hardware. Objects classified as transportation related include automobile parts and artifacts related to carriage and wagon parts. The arms group includes weapons, ammunition, and tools for the maintenance and repair of guns and other weapons. The industrial group includes artifacts related to machinery and related activities. The indeterminate/miscellaneous group has limited use, but includes non-cultural stone and artifacts that lack positive identification such as unidentifiable metal.

Prehistoric Artifact Analysis

During the first stage of lithic analysis, all collected prehistoric lithic artifacts were subdivided into formal descriptive categories based on interpretations of their technological attributes. The principal categories used were: *Group*, *Class*, *Type*, and *Subtype*. The *Group* category subdivides lithic artifacts based on technological interpretations and assessments of possible cultural function. An artifact's *Class* reflects its lithic source or raw material designation, while an artifact's *Type* defines its overall lithic reduction stage. The *Subtype* category is used to indicate distinct descriptive attributes that further describe the artifact and its potential functional category.

Supplemental artifact analysis conducted during Phase II investigations includes detailed descriptions of each artifact, including the artifact's weight, dimensions, and technological attributes. Weight measurements were made to a tolerance of 0.01 g using an Acculab digital scale (Model #V-200); dimensions were measured to a tolerance of 0.01 mm. Interpretations of utilization and raw material class were made using a Meiji Techno EMZ-Series zoom stereo microscope. Procedures for measuring edge angles of lithic artifacts were based on the technique outlined by Keeley (1980). Measurements and descriptions of artifacts in each category were encoded by provenience into a computerized database (Microsoft ACCESS™). Subsequent analyses of data used Microsoft Access and Excel software.

The lithic artifacts recovered from Site 44FX1936 during cultural resources investigations for SWM-4b Pond consisted of debitage, a core, and fire-cracked rock. Identified material types were limited to chert, quartz, quartzite, and rhyolite. Analysis of these artifact groups and classes is described below.

Cores

A single multidirectional core was recovered from Site 44FX1936. Cores were defined as cobbles or pieces of raw material that exhibited one or more flake scars. Weathered surfaces, recent (shovel/plow) impacts, and fracture planes were excluded from the interpretation. If these types of damage accounted for all "modification" to the piece, the object was not included in the artifact assemblage and was discarded. Also excluded from this group were tested cobbles.

Procedures utilized during core analysis included recordation of raw material class, core type, core weight, and other pertinent information, such as thermal alteration and evidence of bipolar reduction. The type of core was identified according to general morphological characteristics. Multidirectional cores were characterized by unsystematic flake removals of varying size and shape. The direction of flaking varied and flakes typically originated from multiple platforms.

Debitage

Debitage comprised a majority of the prehistoric sub-assemblage for Site 44FX1936. Identified debitage sub-types were: flake fragment, core reduction flake, edge preparation flake, biface thinning flake, and pressure flake. Primary, secondary, and non-cortex debitage was represented.

Analytical procedures for debitage consisted of sorting by raw material class and presence of heat-treatment; classification by reduction stage and technological attributes; and weighing. These procedures were used in an attempt to incorporate analyses of the technological attributes of individual flakes with traditional analyses by primary, secondary, and non-cortex reduction stages (Bradbury and Carr 1995). Primary flakes were defined as flakes with 50 per cent and greater cortex remaining on the dorsal surface; secondary flakes exhibited less than 50 per cent cortex remaining on the dorsal surface; and non-cortex flakes had an absence of cortex.

Technological attributes were recorded under Sub-Type (Morphology). A designation of early stage biface thinning flake was assigned if the flake exhibited a single or multi-faceted bifacial, low-angled, platform that was thin and curved or twisted in long section and that had multiple dorsal flake scars (Ritter and Tyree 1999:92; Flenniken 1987). Early stage bifacial thinning flakes tended to be the largest flakes removed during biface manufacture. Late stage bifacial thinning flakes were identified by a bifacial, multifaceted, low-angled, platform; these flakes were nearly flat in long section and had numerous flake scars on the dorsal surface that typically had a feather termination (Flenniken 1987).

Early stage core reduction flakes retained less than 50 per cent cortex on the dorsal surface. These flakes had few dorsal flake scars, were straight in long section, and had a platform that was single faceted with a smooth, flat planar surface (Nilsson 1988). In contrast, late stage core reduction flakes had no cortex on the dorsal surface were straight to slightly curved in long section, and had a single-faceted platform with a smooth, slightly angled planar surface (Ritter and Tyree 1999:92-93). Edge preparation flakes exhibited a prepared or rejuvenated edge with a scooped or "V" shaped platform that was usually crushed. The widest part of these flakes was at or near the striking platform, which often retained a biface edge remnant. Pressure flakes were small, twisted in long section and had a pin-point platform with no bulb of percussion.

Firecracked Rock

Three pieces of fire-cracked rock (FCR) were recovered from Site 44FX1936. The FCR group included broken rock fragments that exhibited indications of heat damage, including jagged outlines and reddening. Included in this group were spalls, which might resemble primary flakes or cores. Some examples of spalls are similar to primary flakes, but they lack both impact areas that might have caused their detachment from cores and lack bulbs of percussion. The ventral surface of a spall sometimes may exhibit a slight negative bulb of percussion, but it does not show evidence of use as a core (House 1975:68). Analysis of FCR was confined to weighing fire-cracked rock by provenience and raw material class. Those showing no other modification were grouped together by provenience and weighed.

Excluded from the FCR group were examples that exhibited evidence of previous or subsequent modification. An exhausted core might have been discarded in a hearth and may show evidence of heat damage; this artifact would be analyzed within the Core group and would include a comment regarding any previous or subsequent use.

<u>Raw Material Classes</u>

Raw material determinations primarily were based on macroscopic observations with additional information provided by a hand lens (10x) or stereomicroscope (10-30x). Raw material definitions relied on Mottana et al. (1978) and Chesterman and Lowe (1992). In addition to raw material class, the presence of heat-alteration was recorded as absent, present, or possible. Evidence for heat-alteration included color change, luster change, and heat fracture scars, such as spalls, potlids, and crazing.

Four raw material types were identified within the prehistoric sub-assemblage for Site 44FX1936: chert, quartz, quartzite, and rhyo-

lite (Table 3-1). **Chert** included fine to coarse-grained cryptocrystalline sedimentary rocks that exhibited conchoidal fracture and a hardness of 7. Color varied from white and light gray to brown and black; luster varied from dull to waxy to vitreous. Transparency varied from opaque to translucent. **Chert 01** was defined as a translucent dark gray chert with white mottle inclusions. The material has a dull luster and a grainy texture. **Chert 02** was an opaque greenish gray material. The chert has no luster and a smooth texture. A bluish gray chert grading to a light gray was identified as **Chert 03** and had fine quartz veins with an opaque appearance with no luster and a smooth texture. **Chert 04** was a chert with light gray coloring grading to pink with no inclusions. The material was opaque with no luster and a smooth to chalky texture.

Quartz designations were restricted to crystalline varieties of silica-rich rocks in which no individual grains were detectable under low magnification (10x).

Quartzite is a siliceous arenaceous metamorphic rock primiarily composed of quartz, mica, feldspar minerals. Texture can be minute to granoblastic, but all particles in one sample are predominantly of one size. The arenaceous designation signifies particles ("clasts") of medium to fine grain (2 mm to 1/16 mm). Structure of quartzite is usually massive, but becomes schistose with an increase in mica (Chesterman and Lowe 1992; Mottana et al. 1978).

The genetic material for quartzite is usually clastic sedimentary rocks including orthoquartzite, greywacke, and arkose. Other genetic materials can include quartz-rich chemical sedimentary rocks (including siltstones and cherts) as well as igneous rocks (Chesterman and Lowe1992; Mottana et al. 1978). In the lab, identification of quartzite was based on the predominance of quartz and fine-grained, homogenous texture. The quartzite designation was restricted to metamorphosed sandstone, in which individual grains were detectable under low magnification but which lacked individual structural identity.

Rhyolite is an extrusive felsic igneous rock; since it is usually composed of quartz and feldspars, rhyolite is usually light in color. Darker examples contain biotite, magnetite, ilmenite, pyroxene, or amphibole. Identification in the lab was based on the presence of phenocrysts in a fine to very fine matrix which may show banding or flow lines. The variation in types of rhyolites warranted separation; definition of groups was based on color, mottling, presence of veins/banding, and inclusions/phenocrysts. **Rhyolite 01** is a mottle tan or white material with pale gray coloration. The material consists of indistinct mottle, quartz phenocrysts, ferromagnesium phenocrysts, feldspar phenocrysts and has a "granite-like" appearance.

Records and Curation

Following the analyses described above, artifacts were sealed in clean plastic bags; appropriate provenience data were recorded on the outside of each bag and artifacts will be labeled. Upon completion of the project, all artifacts, as well as artifact inventory and technical documentation, will be curated with Fairfax County.

Table 3-1.Site 44FX1936: Summary of Lithic Raw Material Classes

Raw Material	Description
Chert 01	Dark gray (10YR 4/1), translucent, dull luster, grainy texture, white mottle inclusions. FS 9 was mostly white with mottles of dark gray.
Chert 02	Greenish gray (Gley 2 6/1 10G with 5G mottles), opaque, no luster, smooth texture. Another was Gley 1 6/1 5GY with a 10YR 6/6 brownish yellow cortex.
Chert 03	Bluish gray (Gley 2 6/1 10B) grading to a light gray (2.5Y 7/1) with fine quartz veins, no luster, smooth texture, opaque.
Chert 04	Light gray (10YR 7/2) grading to pink (7.5YR 7/3) opaque, no luster, smooth to chalky texture, no inclusions.
Rhyolite 01	Mottled tan or white with pale gray; material consists of indistinct mottle, quartz phenocrysts, ferromagnesium phenocrysts, feldspar phenocrysts. Has a "granite-like" appearance.
Quartz	Crystalline varieties of silica-rich rocks in which no individual grains were detectable under low magnification.
Quartzite	Metamorphoses sandstone, in which individual grains were detectable under low magnification but which lacked individual structural identity.

Chapter IV

Results of Investigations for SWM-1a Pond

Proposed SWM-1a Pond encompasses approximately 0.34 ha (0.85 ac) of wooded land lying along the southern side of Route 1, east of the intersection of Old Colchester/Telegraph Road (VA 611). The residential development of Inlet Cove lies on the opposite side of Route 1 from the planned SWM pond location. Current design plans depict the pond as oval in shape; with inlet/outlet structures located along the northern side of the pond. The eastern portion of the limit of disturbance includes an open space area designated as an access road for the pond.

The Phase I archeological investigation of SWM-1a Pond focused on identifying any cultural resources within the limits of disturbance for the proposed pond. Previous cultural resources studies conducted in association with the Route 1 project indicated that no known archeological sites or architectural properties were located within the boundaries of SWM-1a Pond (Polk et al. 1993). Archival research suggests that although historic settlement occurred in the vicinity of the study area as early as the mid-seventeenth century, no buildings or structures were constructed within the limits of disturbance for SWM-1a Pond.

Results of Archeological Field Study

Archeological field investigations related to the planned construction of SWM-1a Pond comprised the excavation of 42 close interval shovel tests. The study yielded no cultural material and indicated consistent subsurface disturbance related to past agricultural use of the property.

Shovel Test Results

A total of 42 shovel tests were excavated during the archeological field investigation. Portions of the proposed SWM pond located within 30.5 m (100 ft) of Route 1were excluded from the current archeological study. These portions of the study area previously were subject to cultural resources survey and were found to contain no architectural or archeological features or deposits; no further work was recommended for these areas (Polk et al. 1992).

Shovel tests were excavated at 7.5 m (25 ft) intervals along four transects placed 7.5 m (25 ft) apart. Transects originated from a temporary survey datum paced near the northwestern corner of the study area, approximately 35 m (xx ft) south of Route 1. Transects extended west from the baseline at an orientation of 300º (magnetic), or parallel to Route 1. Each transect was numbered consecutively (Transect1-4) beginning in the northwestern corner of the study area. Transects ranged in length from 82.5-67.5 m (270.6-221.5 ft) and included from 9-11 shovel tests per transect. Shovel tests were numbered consecutively beginning along the survey baseline with Shovel Test 1 and continuing eastward to the end of the study area.

Soil profiles within the proposed storm water pond area were consistent across the study area and suggested the area previously had been cultivated. A typical soil profile, taken from Transect 2/Shovel Test 4, exhibited a 5 cm (1.9 in) thick root mat and organic layer underlain by a historic plow zone of yellowish brown (10YR 5/4) silt loam. The plow zone was 29 cm (11.4 in) thick and underlain by at least 10 cm (3.9 in) of dark yellowish brown (10YR 4/6) silt loam. This soil profile was within the range of variation for the plow zone (Ap) and subsoil (Bt) of the Mattapex map unit, mapped for the area.

No cultural materials were recovered during the survey and no cultural deposits or features were present.

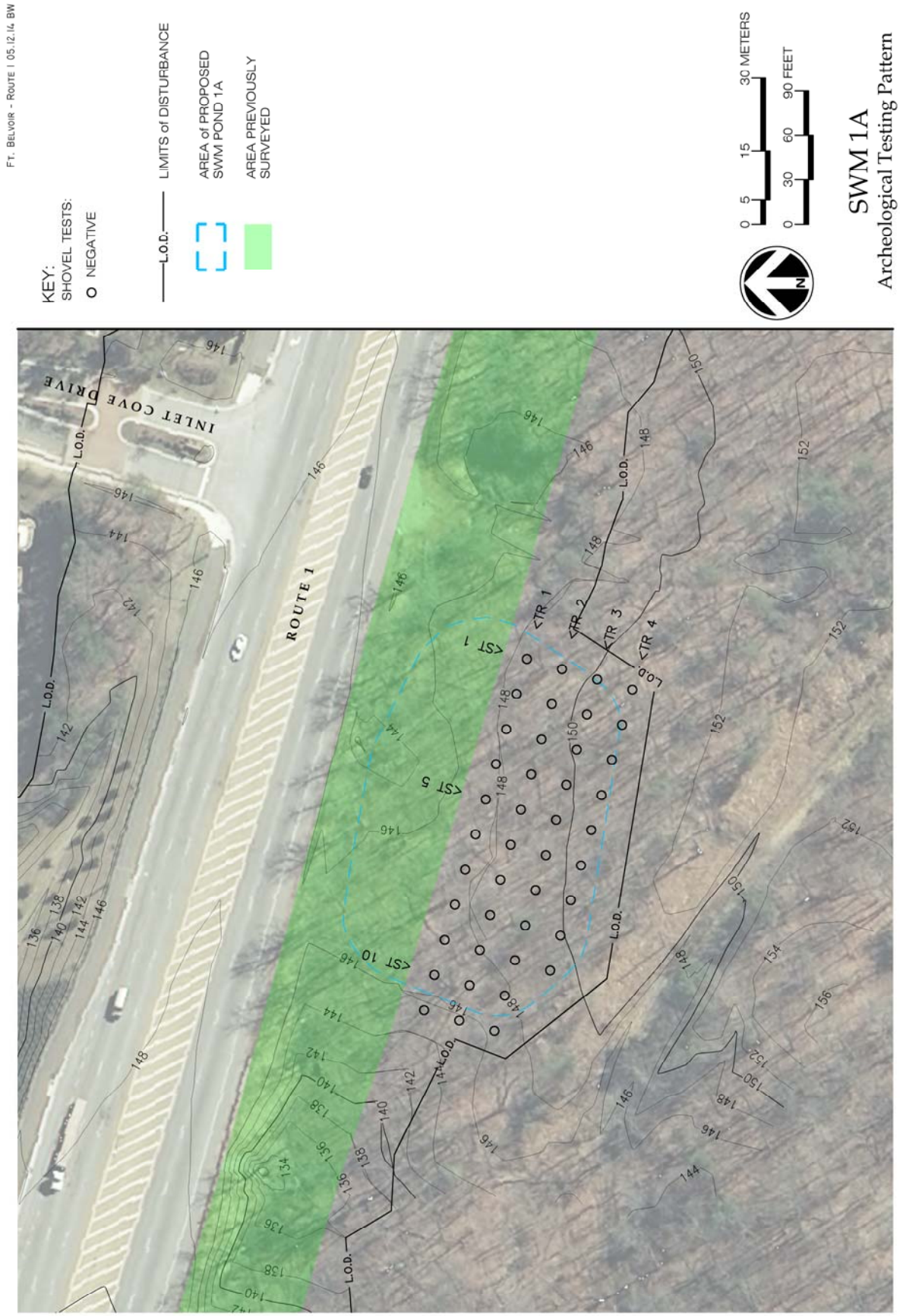


Figure 4-1. SWM-1a Pond: Map showing archeological testing pattern and relevant landscape features

Chapter V

Results of Archeological Evaluation of Site 44FX1936

Site 44FX1936 encompasses approximately 1.36 ha (3.37 acres) of gently to steeply sloping wooded land southeast of the intersection of Richmond Highway and Pohick Road. The site includes an unaffiliated prehistoric lithic scatter that is concentrated within the eastern portion of the site, and a nineteenth-twentieth century historic artifact scatter that is concentrated in the western portion of the site. The extreme southern portion of the site lies within an actively eroding stream valley associated with an unnamed tributary of Accotink Creek. The stream valley contains modern alluvial sediment and was not subject to archeological survey. Proposed SWM-4B Pond lies within the eastern portion of the site area and will impact approximately 0.32 ha (0.79 ac) or 23.4 per cent of the site area (see Figure 5-1).

The Phase I/II archeological evaluation of Site 44FX1936 focused on supplementing data obtained during previous Phase I cultural resources investigations to provide an overall assessment of the eligibility of the site for listing in the NRHP. The multi-component site initially was judged to have the potential to yield significant information related to early historic settlement in the region, as well as to prehistoric settlement along the upper reaches of Accotink Creek (Polk et al. 1993). Later cultural resources investigations conducted in advance of planned improvements to Richmond Highway indicated the northern and western portions of the site lacked both integrity and research potential (Deetz et al. 2012; Lautzenheiser et al. 2001). The study area for the current investigation focused on the previously unevaluated southern portion of the site area.

Previous Investigations

Site 44FX1936 first was identified in 1992 during Phase I cultural resources survey on portions of Fort Belvoir by MAAR Associates, Inc. (Polk et al. 1991, 1993). The survey included archeological survey of both sides of the Route 1 corridor in the vicinity of Fort Belvoir and coincided with initiation of a general program of archeological survey for the installation as a whole. A low quantity of prehistoric debitage was recovered from the eastern end of the site, while nineteenth-twentieth century historic materials were recovered from the western end of the site. Based upon these results, Site 44FX1936 was recommended as potentially eligible for listing on the National Register of Historic Places. A notation on the site form indicated that the central portion of the site had been bulldozed.

The site was re-visited as part of a generalized testing program associated with concept development of the Route 1 improvement project in 2001 (Launtzenheiser et al. 2001). The study, which was performed by Coastal Carolina Research (CCR) for the Virginia Department of Transportation (VDOT), included additional testing in areas not previously subject to archeological survey. Although CCR recommended no further work for the portion of Site 44FX1936 located within the Route 1 project corridor (Launtzenheiser et al. 2001). The northwestern portion of Site 44FX1936 was subject to additional Phase I archeological survey in 2012 during consideration of planned SWM locations for the Route 1 improvement project (Deetz et al. 2012). The study included pedestrian reconnaissance and the excavation of 14 shovel tests. A single sherd of whiteware ceramic was recovered from a dis-

Figure 5-1. Site 44FX1936: Map showing archeological testing pattern and relevant landscape features

Figure 5-1. Site 44FX1936: Map showing archeological testing pattern and relevant landscape features

turbed context; no additional work was recommended and the investigated portion of the site was recommended not eligible for listing on the National Register due to intensive subsurface disturbance (Deetz et al. 2012:5-17).

Based upon VDHR site files, the unevaluated southeastern portion of the site, which includes the location of planned SWM-4b Pond, remained potentially eligible for listing in the National Register at the time of the current field investigations.

Results of Archeological Field Study

Archeological field investigations related to the planned construction of SWM-4B Pond included the excavation of 88 close interval shovel tests and 5 test units (see Figure 5-1). The study yielded a total of 195 prehistoric artifacts and 190 historic artifacts. Prehistoric artifacts consisted primarily of late-stage debitage and flake fragments, while historic artifacts consisted of a mixture of nineteenth century through modern period artifacts. These artifacts were broadly distributed across the study area and included materials recovered from intact stratigraphic contexts along the southern margin of the marine terrace.

Shovel Test Results

A total of 88 shovel tests were excavated during the archeological field investigation. This number includes 23 shovel tests located within planned SWM-4B Pond. Portions of the site that were judged to possess low or no archeological potential were excluded from the current archeological study. Those areas included previously surveyed portions of the site located within 30.5 m (100 ft) of Route 1, portions of the site in which the slope exceeded 15 per cent (8.5º), and portions of the site that lay on the modern floodplain of the unnamed tributary of Accotink Creek. When possible, shovel tests located in areas of obvious surface disturbance were excavated to determine the extent of disturbance.

Shovel tests yielded a total of 61 prehistoric and 59 historic artifacts (Tables 5-1 and 5-2). In addition to these artifacts, 18 modern artifacts were recorded and discarded in the field. These artifacts are not included in Table 5-2 and consisted of three fragments of brick, eight pieces of colorless glass, a piece of amber/brown glass, three pieces of coal, a piece of asphalt, a metal fruit jar lid, and a 0.22 caliber bullet casing. Additional modern artifacts observed on the surface included an assortment of glass and plastic bottles and containers, plastic sheeting, miscellaneous tarp materials, chunks of concrete and asphalt, and clothing/personal items. While the majority of these materials represented casual discard or random dumping activity, some items were associated with abandoned modern camps found within the project area.

Prehistoric and/or historic cultural materials were recovered from 42 shovel tests, or nearly half (47.7 per cent) of the shovel tests excavated during the study. Sixteen shovel tests yielded prehistoric artifacts, 20 shovel tests yielded historic artifacts, and 6 shovel tests yielded both prehistoric and historic artifacts. This number includes nine shovel tests that yielded modern materials that were not retained for detailed analysis. While prehistoric and historic artifacts were recovered from most portions of the study area, prehistoric artifacts tended to be concentrated in the central portion of the site, while historic artifacts were concentrated in the western portion of the site.

Soils

The study area lies on the southern margin of a moderately eroded marine terrace overlooking an unnamed low-order tributary of Accotink Creek (Figure 5-2). Soils mapped for the study area consist primarily of soils of the Sassafras-Marumsco complex (91C and 91D); small areas of Mattapex loam (77B) are mapped in the northern portion of the study area, along Richmond Road. Areas of Beltsville silt loam (7B) are mapped within the stream valley and along the eroding margins of the marine terrace.

Shovel tests in the northwestern portion of the site exhibited variable soil profiles that suggested both large-scale grading and potential use of a portion of the area as a construction parking/staging area or access road. Historic disturbances within the northern two-thirds of the project area also appeared to be related to early twentieth century grading. This portion of the project area exhibited an overall uneven topography that

Table 5-1. Site 44FX1936: Summary of Prehistoric Artifacts

Category	Group	Type	Total
Lithics	Core	5% cortex	2
	Core Total		2
	Debitage	Non-cortex	149
		Primary	22
		Secondary	19
	Debitage Total		190
	Fire-cracked rock	N/A	3
	Fire-cracked rock Total		3
Lithics Total			195
Grand Total			195

Table 5-2. Site 44FX1936: Summary of Historic Artifacts

Group	Class	Type	Subtype	Date Range	Total
Ceramic	Earthenware	Whiteware	Molded Decoration	1820-Present	1
			Transfer Printed	1820-Present	2
			Undecorated	1820-Present	5
Ceramic Total					8
Glass	Machine Made	Bottle, Lip/ Neck	Colorless	1881-Present	2
	Indeterminate	Bottle, Base	Colorless		1
		Bottle, Base/ Body	Colorless		4
		Bottle, Body	Amber		9
			Aqua		2
			Colorless		105
			Light Green		2
		Indeterminate Form, Fragment	Copper Green		1
			Milk Glass		2
		Tableware, Body	Colorless		29
		Window, Fragment	Aqua		2
			Colorless		7
Glass Total					166
Metal	Iron	Indeterminate Form, Fragment			1
		Nail, Fragment	Cut	1815-1890	3
			Indeterminate Method		5
		Nail, Whole	Wire	1890-Present	5
			Indeterminate Method		1
Metal Total					15
Synthetic	Plastic	Cap, Whole			1
Synthetic Total					1
Grand Total					190

Figure 5-2. Site 44FX1936: Photograph showing northern slope of stream valley, view east from near Pohick Road (R. Christopher Goodwin & Associates, Inc., April 2013)

was delimited on the southern side by conspicuous piles of soil, gravel, and construction debris, and by areas in which the ground surface was noticeably lower that the surrounding undisturbed ground (Figures 5-3 and 5-4). Based upon the age of overstory trees within the disturbed portion of the project area, these disturbances most likely occurred during the first two decades of the twentieth century and were related to the formation of Camp Humphries.

A typical soil profile in the northwestern portion of the site contained a layer of disturbed, native soil or imported fill soil overlain by a developing topsoil (Ao horizon) layer. The topsoil layer was less than 10 cm (3.9 in) thick and generally composed of dark grayish brown (10YR 4/2) sandy loam. In the northern portion of the site, soil underlying the topsoil layer was extremely compact and included either a layer of imported strong brown (7.5YR 5/8) clayey sand and rounded gravel fill material or disturbed soils composed of mottled dark grayish brown (10YR 4/2) and light yellowish brown (10YR 6/4) loamy sands. Fill and disturbed soils typically extended to 20-25 cm (7.9-9.8 in) below surface, where they overlay an excessively compact grayish brown (10YR 5/2) loamy sand. When excavated, this latter soil exhibited a platy structure characteristic of soil compressed through mechanical compaction or heavy machinery/vehicle traffic. The underlying subsoil was described as light yellowish brown (10YR 6/4) to pale brown (10YR 6/3) clayey sandy loam that had a cohesive, slightly blocky structure typical of subsoil in undisturbed portions of the project area.

In the southwestern portion of the site, soil profiles contained a thin topsoil layer overlying a disturbed soil horizon, and subsoil. The topsoil was consistent with the topsoil layer described above and typically was less than 10 cm (3.9 in) in thickness. The underlying disturbed soil horizon was composed of mottled grayish brown (10YR 5/2) loamy sand mottled with pale brown (10YR 6/3) sand. This soil extended to an average of 20 cm (7.9 in) below surface and overlay undisturbed subsoil. Subsoil was described as light yellowish brown (10YR 6/4) loamy sand that graded to yellowish brown (10YR 5/6) clay

Figure 5-3. Site 44FX1936: Photograph showing spoil piles in northeastern portion of site, view east (R. Christopher Goodwin & Assoc., Inc., April 2013)

Figure 5-4. Site 44FX1936: Photograph showing cut area (on left) and undisturbed area (on right), view east (R. Christopher Goodwin & Assoc., Inc., April 2013)

loam. These soils appear to be disturbed Marumsco soils, which are mapped within the Sassafras-Marumsco complex.

In the central and eastern portions of the site, disturbed soil profiles were characterized by mottled clayey soils that contained variable quantities of round gravel. A typical disturbed soil profile exhibited a thin topsoil of dark grayish brown (10YR 4/2) slightly clayey sandy loam overlying a disturbed soil composed of yellowish brown (10YR 5/6) silty clay loam mottled with topsoil. The depth of disturbance ranged from 13-27 cm (5.1-10.6 in), with greater depths of disturbance occurring closer to Richmond Highway. Disturbed soils ranged from slightly to moderately compact, but were not noticeably platy in texture as were disturbed soils in the western portion of the site. Underlying the disturbance horizon was an undisturbed subsoil of light yellowish brown (10YR 6/4) to pale brown (10YR 6/3) loamy fine sand. These soils appeared to be disturbed Mattapex soils.

Undisturbed, natural soil profiles were encountered in shovel tests excavated along the extreme southern edge of the project area, along the edge of the marine terrace overlooking the stream valley. Undisturbed soil profiles typically exhibited three soil horizons: topsoil, an E horizon or upper subsoil, and lower subsoil. The topsoil was described as dark grayish brown (10YR 4/2) loamy fine sand to very dark gray (10YR 3/1) loam; this layer was typically less than 10 cm (3.9 in) in thickness. The underlying subsoil horizon was described as light yellowish brown (10YR 6/4) slightly clayey fine sand; this horizon overlay a lower subsoil of yellowish brown (10YR 5/6-10YR 5/4) sandy clay. These soils were within the range of variation for Marumsco soils.

Prehistoric Component

A total of 61 prehistoric artifacts were recovered during shovel testing. Prehistoric artifacts consisted almost exclusively of debitage (n=59). A multi-directional core and a single piece of fire-cracked rock were the only other prehistoric artifacts recovered during shovel testing (Table 5-3). No expedient or formal tools were identified within the sub-assemblage.

A majority of the debitage sub-assemblage comprised flake fragments (n=51); these accounted for 86.4 per cent of the debitage sub-assemblage and included non-cortex (n=34), secondary (n=6), and primary (n=11) flake fragments. The remaining debitage consisted of core reduction flakes (n=4), biface thinning flakes (n=2), and pressure flakes (n=2). The biface thinning flakes included an early stage, primary flake and a late stage, non-cortex flake, while the core reduction flakes consisted of both secondary (n=1) and non-cortex (n=3) flakes. Both pressure flakes were non-cortex.

An examination of lithic raw material types showed quartz was the most common lithic material, followed by chert and quartzite. Quartz artifacts comprised just over half (n=34; 55.7 per cent) of the prehistoric sub-assemblage and both debitage (n=33) and a multi-directional core. While the majority of the quartz debitage were flake fragments (n=31), a pressure flake and two core reduction flakes were present. Chert artifacts, which consisted exclusively of debitage (n=14), included four sub-varieties of chert: Chert 01 (n=5), Chert 02 (n=7), Chert 03 (n=1), and Chert 04 (n=1). Similar to the quartz debitage, most of the chert debitage (n=11) were flake fragments. The only identified flake types for chert were a Chert 03 early stage biface thinning flake, a Chert 01 late stage biface thinning flake, and a pressure flake. The remaining lithic artifacts were quartzite; these artifacts included flake fragments (n=9), core reduction flakes (n=2), and a piece of fire-cracked rock.

Analysis of the horizontal distribution of prehistoric artifacts showed no distinct areas of lithic concentration that would indicate potential activity areas. Shovel tests that yielded slightly higher quantities of debitage occurred, without exception, in areas otherwise characterized by a diffuse and sporadic low-density prehistoric artifact scatter. For example, the eight shovel tests that surrounded ST N992.5/E1037.5, which yielded 12 pieces of quartz debitage, yielded a combined total of only 4 pieces of debitage. This debitage was recovered from two shovel tests that, them-

Table 5-3. Site 44FX1936: Summary of Prehistoric Artifacts Recovered during Shovel Test Excavation

Group	Class	Type	Sub Type	Total
Core	Quartz	5% cortex	Multidirectional	1
Core Total				1
Debitage	Chert 01	Non-cortex	Biface thinning flake-late stage	1
			Flake Fragment	3
			Pressure flake	1
	Chert 02	Non-cortex	Flake Fragment	6
		Secondary	Flake Fragment	1
	Chert 03	Primary	Biface thinning flake--early stage	1
	Chert 04	Non-cortex	Flake Fragment	1
	Quartz	Non-cortex	Early/Late Stage Core Reduction Flake	1
			Flake Fragment	19
		Primary	Flake Fragment	9
		Secondary	Early/Late Stage Core Reduction Flake	1
			Flake Fragment	3
	Quartzite	Non-cortex	Early/Late Stage Core Reduction Flake	2
			Flake Fragment	5
			Pressure flake	1
		Primary	Flake Fragment	2
		Secondary	Flake Fragment	2
Debitage Total				59
Fire-Cracked Rock	Quartzite	N/A	N/A	1
Fire-Cracked Rock Total				1
Grand Total				61

selves, yielded no quartz debitage. Shovel Test N1000/E992.5, which yielded eight quartz flakes from a disturbed context, was similarly isolated. A total of four flakes were recovered from shovel tests that surrounded that shovel tests; although one quartz flake was recovered nearby, the other nearby lithic materials were quartzite (n=2), and Chert 01 (n=1).

Although a large proportion of the study area has been disturbed by past historic land modification activities, just over half (n=36; 59 per cent) of prehistoric artifacts were recovered from contexts judged to be "undisturbed" by the historic activity. These artifacts were recovered from shovel tests located in the southern central and southeastern portions of the study area, south of the line of spoil piles that defined the limits of the previously graded and cut/filled area. Prehistoric artifacts were recovered from the A horizon (Stratum I) and from the subsoil (Strata II-IV) in undisturbed shovel tests. Stratum I yielded 7 prehistoric artifacts and Strata II-IV yielded 29 prehistoric artifacts. The remaining 25 prehistoric artifacts were recovered from disturbed contexts.

Historic Component

A total of 59 historic artifacts were recovered during shovel testing. The artifacts included ceramic (n=5), glass (n=48), and metal (n=6) items (Table 5-4). In addition to these artifacts, 18 modern artifacts were recorded and discarded in the field. Previously mentioned in this chapter, these items included construction materials, pieces of coal, container and bottle glass, a jar lid, and a bullet casing that were on the ground surface in the shovel test location. These items were of modern introduction and did not contribute the overall evaluation of the site.

A nearly even quantity of ceramic and metal items was recovered during shovel testing. Of the five ceramic artifacts recovered, all were identified as pieces of whiteware (1820-present). Four of the fragments were portions of unspecified flatware vessels, while the final piece was a portion of an unspecified hollowware vessel. Just over half (n=3) of the whiteware fragments were decorated. Identified decorations were limited to molded decoration or transfer printing. One flatware rim piece bore a molded geometric pattern along its rim. A second unspecified flat vessel bore a transfer printed botanical green transfer print. The final decorated vessel was the base of a hollowware vessel that exhibited blue transfer

Similar to the results obtained during the initial Phase I study (Polk et al. 1993), the majority of the historic artifacts were glass. Glass comprised 81.4 per cent (n=48) of the sub-assemblage and was comprised almost exclusively of

Table 5-4. Site 44FX1936: Summary of Historic Artifacts Recovered during Shovel Test Excavation

Group	Class	Type	Sub Type	Date Range	Total
Ceramic	Earthenware	Whiteware	Unspecified Flat Form, Base	1820-Present	1
			Unspecified Flat Form, Body	1820-Present	1
			Unspecified Flat Form, Rim	1820-Present	2
			Unspecified Hollow Vessel, Body	1820-Present	1
Ceramic Total					5
Glass	Indeterminate	Amber	Bottle, Body		2
		Aqua	Bottle, Body		2
		Colorless	Bottle, Base		1
			Bottle, Body		36
			Tableware, Body		1
			Window, Fragment		3
		Copper Green	Indeterminate Form, Fragment		1
		Light Green	Bottle, Body		1
		Milk Glass	Indeterminate Form, Fragment		1
Glass Total					48
Metal	Iron	Cut	Nail, Fragment	1815-1890	3
		Indeterminate Method	Nail, Fragment		2
		Wire	Nail, Whole	1890-Present	1
Metal Total					6
Grand Total					59

non-diagnostic bottle fragments (n=42; 87.5 per cent of glass). The remaining glass in the sub-assemblage consisted of a handful of window glass (n=3) fragments, a few pieces of tableware (n=2), and some indeterminate (n=2) glass. The only decorated glass was a piece of tableware embossed with a leaf. Glass colors were varied and included colorless (n=37), amber (n=2) aqua (n=2), light green (n=36), and copper green (n=1); two pieces of milk glass (n=1) also were present in the sub-assemblage.

Metal artifacts were limited to nails. Both machine cut (n=3; 1815-1890) and wire (n=1; 1890-present) nails were present, as were portion of two indeterminate nails. These nails were the only other diagnostic historic materials recovered during shovel test excavation. Collectively, the nails suggested use of the site during the late nineteenth through the twentieth century.

An examination of the horizontal distribution of historic artifacts shows a majority of the artifacts were recovered from the western third of the site. A total of 43 artifacts, or 72.9 per cent of the sub-assemblage from shovel testing, was recovered from the western portion of the site (west of the E940 transect) (Figure 5-5). The remaining artifacts were dispersed across the eastern portion of the site. The only shovel test to yield ten or more historic artifacts was located in the western portion of the site at ST 977.5/E895; this shovel tests yielded a total of 10 artifacts. In keeping with the overall pattern of materials recovered from the site, ST N977.5/E895 yielded primarily glass (n=9), with a single wire nail (1890-present). This data supports the initial assessment of Site 44 FX1936, which indicated that historic artifacts were clustered toward the northern end of the site.

Nearly all of the historic artifacts recovered during the current study originated from contexts disturbed by past historic landscape modification activities. Of the 59 historic artifacts from shovel testing, 93.2 per cent (n=54) were recovered from contexts that lacked stratigraphic integrity. These artifacts were recovered from the clearly disturbed subsurface contexts, from the surface of shovel tests, or from the A horizon. The remaining four historic artifacts were recovered from the upper 5 cm (2 in) of the subsoil in four different shovel tests. In each shovel test, these materials were judged to be isolated artifacts that were intrusive into that soil horizon.

Test Unit Results

Five 1 x 1 m (3.3 x 3.3 ft) test units were excavated within the study area. Test Units 1, 2, 3 and 5 were placed in the central portion of the study area, within a portion of the site that had yielded a broad diffuse scatter of prehistoric lithic material. Test Unit 1 was placed in the southern central portion of the site, adjacent to ST N985/E1015. Shovel tests in that portion of the site

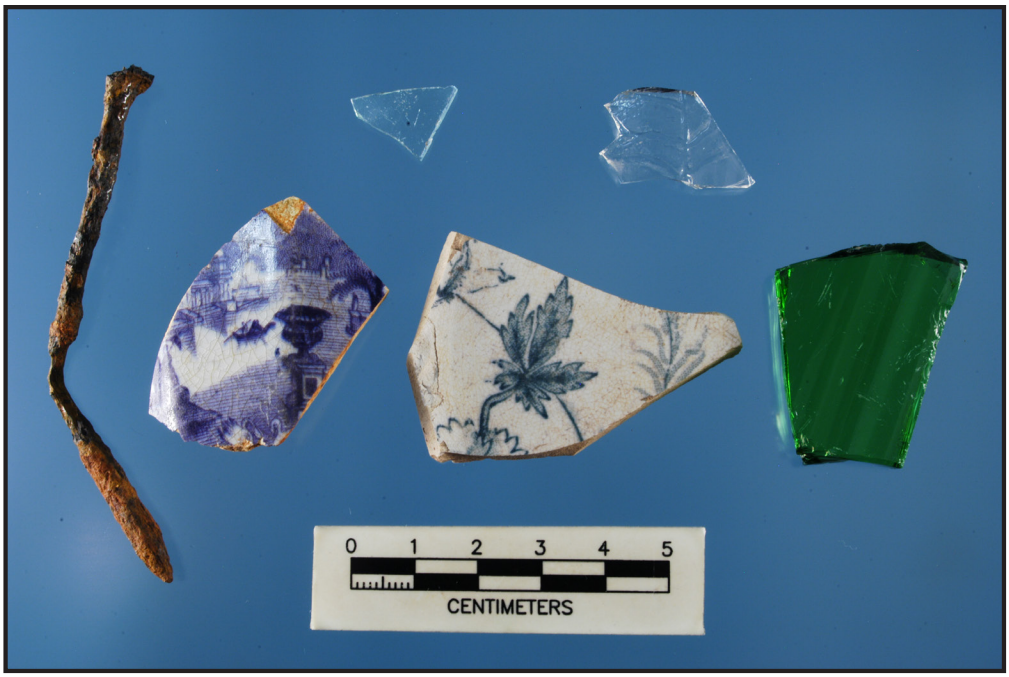


Figure 5-5. Site 44FX1936: Photograph showing representative historic artifacts from shovel tests in western portion of site (Top Row [Left to Right]: Window glass [FS 47], Embossed table glass [FS 57]; Bottom Row [Left to Right]: Wire Nail [FS 47], Blue Transfer Print Whiteware [FS 56], Green Transfer Print Whiteware [FS 39], Green Bottle Glass [FS 47])

generally had yielded 1-2 artifacts per shovel test. Test Units 2 and 3 were placed 25 m (82 ft) east of Test Unit 1, on a gently sloping portion of the marine terrace adjacent to ST N992.5/E1037.5, which had yielded the highest quantity of lithic debitage recovered during shovel testing. Test Unit 4 was placed in the northwestern portion of the study area, within an area of apparent historic artifact concentration. The final test unit, Test Unit 5 was placed approximately 15 m (49.2 ft) east of Test Units 2 and 3, on a moderately sloping portion of the marine terrace that lay within the eastern edge of the prehistoric artifact scatter.

Test Unit 1

Test Unit 1 was placed in the southern central portion of the site, near the southern edge of the marine terrace. Placed within an area that had yielded a consistently low density of prehistoric lithic debitage during shovel testing, this test unit was excavated to a total depth of 45 cm (17.7 in) below surface. The unit yielded a total of three prehistoric lithic artifacts and three historic artifacts from undisturbed soil strata.

The unit contained three distinct soil strata (Strata I-III) and an indistinct, transitional stratum (Stratum IIIa) (Figures 5-6 and 5-7). The uppermost stratum (Stratum I) was a well-developed root mat and humus layer composed of very dark brown (10YR 2/2) sandy loam. This layer averaged 10 cm (3.9 in) in thickness and unevenly overlay Stratum II, an E horizon composed pale brown (10YR 6/3) sandy loam. Stratum II averaged 29 cm (11.4 in) in thickness and contained an increasing quantity of rounded pebbles and cobbles. The underlying Bt1 horizon (Stratum III) was marked by a dramatic increase in the quantity of pebbles and cobbles; although described as yellowish brown (10YR 5/4) clayey sandy loam, this stratum consisted predominately of gravel. Intermixed with Stratum III was a second deposit of pebbles and cobbles (Stratum IIIa) that contained strong brown (7.5YR 4/6) sandy clay loam. Excavation of Test Unit 1 was discontinued following the removal of 10 cm (3.9 in) of Strata III and IIIa.

Test Unit 1 yielded a total of six artifacts (Table 5-5). Cultural materials were recovered

Table 5-5. Site 44FX1936: Summary of Artifacts Recovered from Test Unit 1

Category	Group	Class	Type	Subtype	Date Range	Stratum		Grand Total
						I	II	
Historic Artifacts	Glass		Bottle, Body	Colorless		1		1
			Window, Fragment	Aqua		2		2
Historic Artifacts Total						3		3
Prehistoric Lithic Artifacts	Debitage	Quartz	Non-cortex	Flake Fragment		1	1	2
			Primary	Flake Fragment		1		1
Prehistoric Lithic Artifacts Total						2	1	3
Grand Total						5	1	6

from Stratum I and from the upper 10 cm (3.9 in) of Stratum III. Nearly all of the artifacts from Test Unit 1 were from Stratum I. This stratum yielded two-thirds (n=3; 66.67 per cent) of the prehistoric artifacts and 100 per cent (n=3) of the historic artifacts. The sub-assemblage from Stratum I comprised colorless bottle glass (n=1), aqua window glass (n=2), a non-cortex quartz flake fragment (n=1), and a primary quartz flake fragment (n=1). A single quartz fragment with no cortex was recovered from the Stratum II.

Test Unit 2

Test Unit 2 was placed in the southeastern portion of the site. Also located near the southern edge of the marine terrace, this test unit was situated adjacent to a shovel test that had yielded an unusually high quantity of lithic debitage. Described previously, that shovel test had yielded 12 quartz flake fragments, of which at least 9 fragments had been recovered from undisturbed contexts. Test Unit 2 was excavated to a total depth of 44 cm (17.3 in) below surface and yielded 106 prehistoric lithic artifacts and 20 historic artifacts.

The unit exposed four distinct soil strata (Strata I-IV) and an indistinct, transitional stratum (Stratum IIa) (Figures 5-8 and 5-9). Similar to Test Unit 1, the uppermost stratum (Stratum I) was a well-developed root mat and humus layer that unevenly overlay the underlying E horizon (Stratum II). Stratum I averaged 5 cm (2 in) in thickness and Stratum II averaged 22 cm (8.7 in) in thickness. Stratum II was described as moist, relatively homogeneous pale brown (10YR 6/3) clayey sandy loam that contained occasional rounded pebbles and pieces of ironstone rock. The basal portion of Stratum II was increasingly mottled with yellowish brown (10YR 5/6) sandy clayey loam, such that the transition between Stratum II and Stratum III was very indistinct. In profile, the transitional layer was designated Stratum IIa; it overlay a more homogeneous deposit of yellowish brown (10YR 5/6) sandy clayey loam that was designated Stratum III (Bt1 horizon). A deposit of rounded gravel within a matrix if strong brown (7.5YR 4/6) clayey loam in the northeastern corner of the test unit was designated Stratum IV; this deposit strongly resembled Stratum IIIa within the base of Test Unit 1.

Test Unit 2 yielded a total of 126 artifacts (Table 5-6). Prehistoric lithic artifacts comprised a majority of the sub-assemblage, totaling 106 artifacts and accounting for 84.13 per cent of the artifacts recovered from the test unit. Test Unit 2 also yielded 20 historic artifacts (15.9 per cent of the sub-assemblage), including a sample of glass from a broken beverage bottle on the surface of the test unit. Prehistoric artifacts were recovered from Strata I-IIa, while historic artifacts were confined to Stratum I and the upper 10 cm (3.9 in) of Stratum II.

The prehistoric sub-assemblage consisted almost exclusively of debitage (n=104). Two pieces of fire-cracked rock were the only other prehistoric artifacts. The debitage included a range of biface thinning flakes (n=14), core reduction flakes (n=5), edge preparation flakes (n=2), pressure flakes (n=2), and flake fragments (n=81) that suggested activity related to tool maintenance. Both early (n=3) and late (n=11) stage biface thinning flakes, as well as primary (n=1) and early/late stage core reduction (n=4) flakes were represented. Non-cortex debitage comprised over three-quarters (78.3 per cent; n=83) of the sub-assemblage. Secondary debitage was represented by 12 pieces (11.3 per cent) and primary debitage was represented by 9 flakes. Lithic material types comprised Chert 01 (n=1), Chert 02 (n=66), Chert 03 (n=7), Chert 04 (n=30), and quartzite (n=2).

Figure 5-6. Site 44FX1936: Photograph showing Test Unit 1, profile north

Table 5-6. Site 44FX1936: Summary of Artifacts Recovered from Test Unit 2

Category	Group	Class	Type	Subtype	Date Range	Stratum I	Stratum II	Stratum III	Grand Total
Historic Artifacts	Glass		Bottle, Body	Colorless			6		6
			Tableware, Body	Colorless		14			14
	Glass Total					14	6		20
Historic Artifacts Total						14	6		20
Prehistoric Lithic Artifacts	Debitage	Chert 01	Non-cortex	Flake Fragment		1			1
		Chert 02	Non-cortex	Biface thinning flake-late stage		4	6		10
				Early/Late Stage Core Reduction Flake			3		3
				Edge Preparation Flake			1		1
				Flake Fragment		16	21	1	38
				Pressure flake			1		1
			Primary	Biface thinning flake--early stage			1		1
				Flake Fragment		2	1		3
				Primary Core Reduction Flake		1			1
			Secondary	Biface thinning flake--early stage			2		2
				Early/Late Stage Core Reduction Flake			1		1
				Flake Fragment		3	2		5
		Chert 04	Non-cortex	Biface thinning flake-late stage			1		1
				Flake Fragment		4	2		6
		Quartz	Non-cortex	Edge Preparation Flake				1	1
				Flake Fragment		4	15	1	20
				Pressure flake			1		1
			Primary	Flake Fragment		3	1		4
			Secondary	Flake Fragment		2	2		4
	Debitage Total					40	61	3	104
	Fire-Cracked Rock	Quartzite	N/A	N/A		2			2
	Fire-Cracked Rock Total					2			2
Prehistoric Lithic Artifacts						42	61	3	106
Grand Total						56	67	3	126

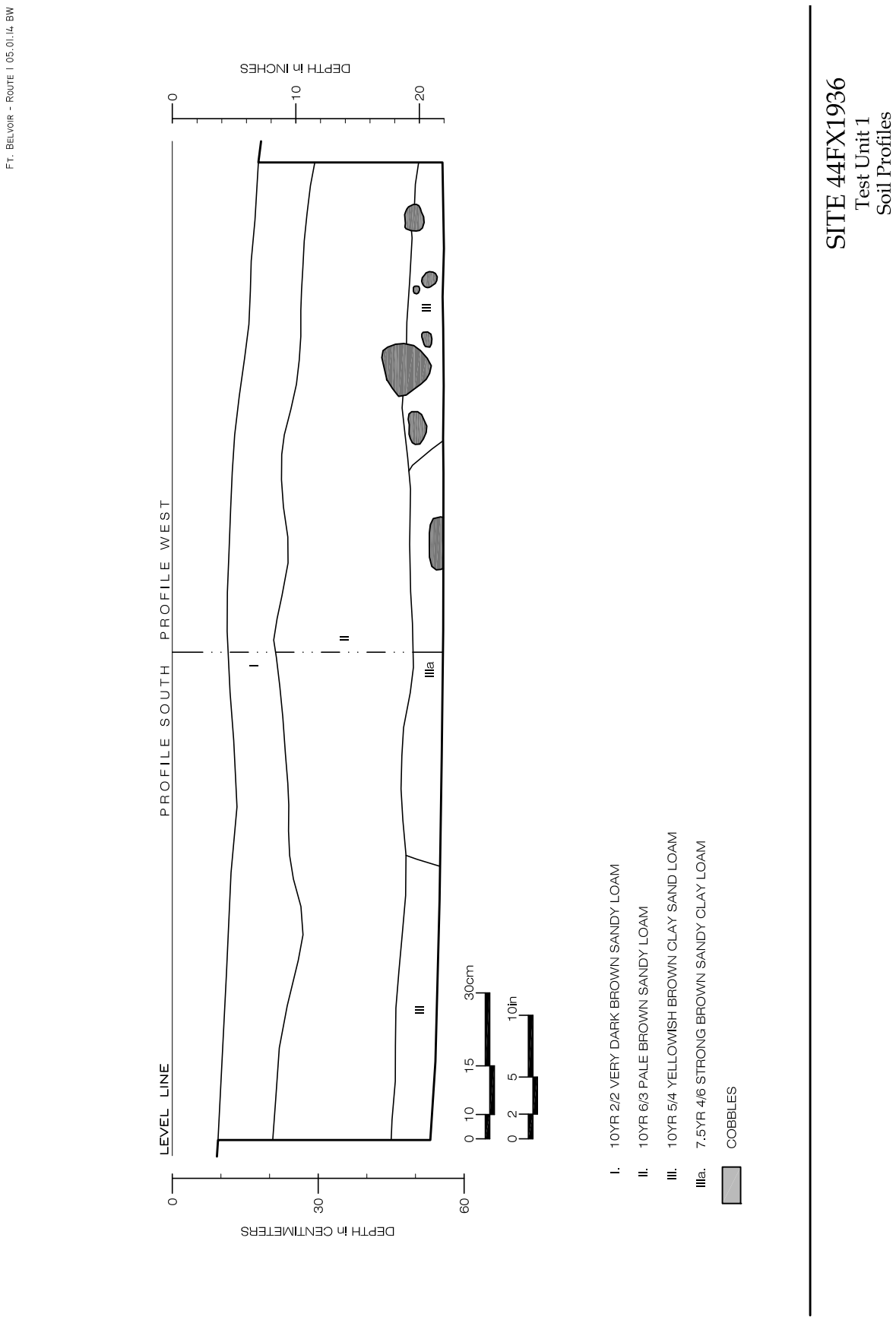
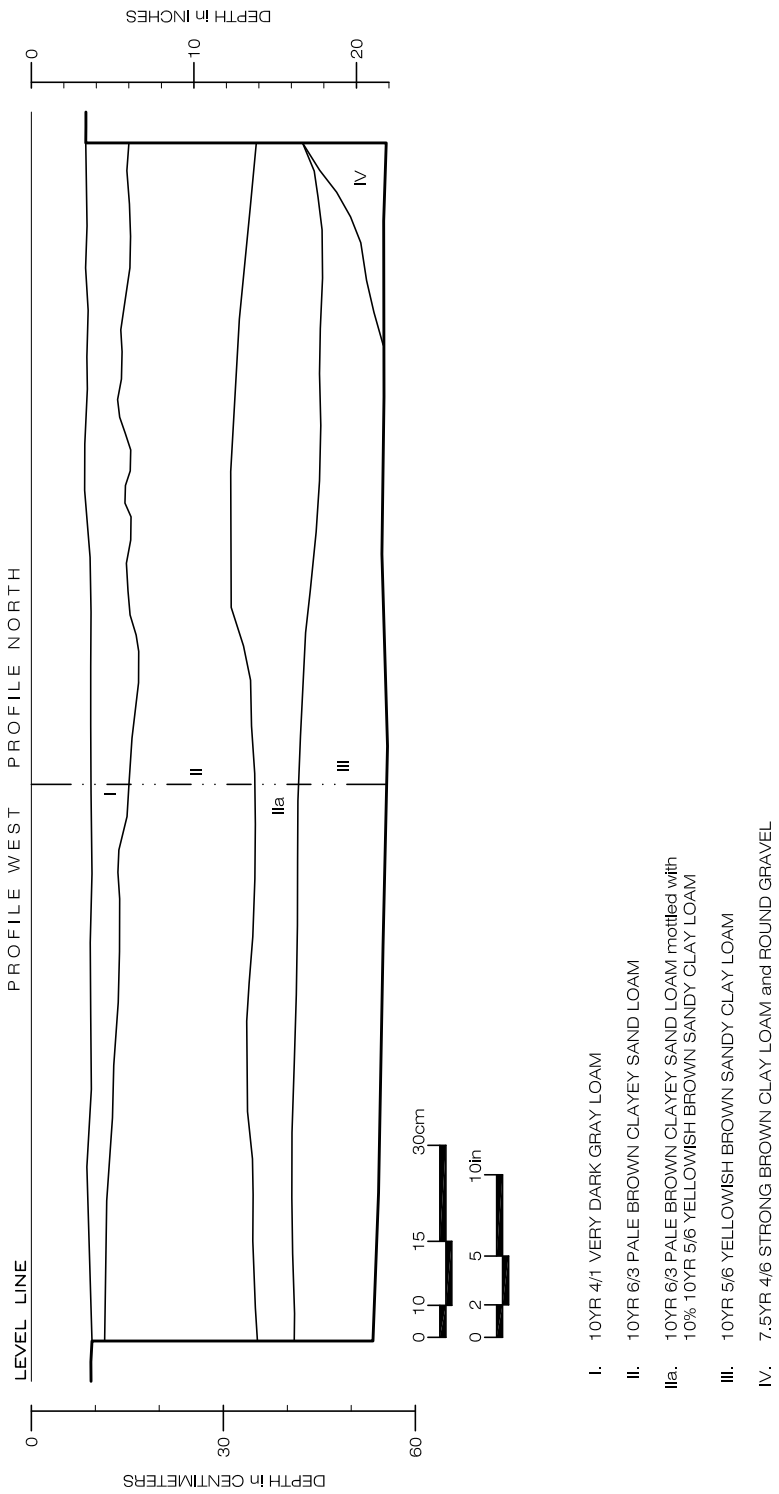


Figure 5-7. Site 44FX1936: Test Unit 1, soil profiles south and west

Figure 5-8. Site 44FX1936: Photograph showing Test Unit 2, profile west



SITE 44FX1936
Test Unit 2
Soil Profiles

Figure 5-9. Site 44FX1936: Test Unit 2, soil profiles west and north

Stratum I yielded 56 artifacts, or 44.4 per cent of the prehistoric sub-assemblage. A majority of this material was non-cortex debitage that included flake types typically associated with late-stage tool manufacture and maintenance. Stratum II yielded 67 artifacts, or just over half (53.2 per cent) of the sub-assemblage (Figure 5-10). Although this stratum contained a slightly wider range of debitage types, the overall trajectory was toward late-stage tool manufacture and maintenance. The artifacts recovered from Stratum IIa (n=3) also reflected this trend. These artifacts suggest all of the prehistoric material recovered from Test Unit 2 originated from a single, short-term event.

The historic sub-assemblage consisted exclusively of non-diagnostic glass (n=20) fragments that appeared to represent the remains of two vessels. The remains of a modern beverage bottle were represented by a sample of 14 body fragments retained from Stratum I; an additional 21 pieces of the bottle and an aluminum twist-on Budweiser cap from a 32-ounce bottle were discarded in the field. Characterized as tableware, three of the body fragments were embossed with leaves and dots. Stratum II yielded six body fragments from a colorless glass bottle; none of the fragments bore any diagnostic characteristics.

Test Unit 3

Test Unit 3 was placed 0.5 m (1.6 ft) southeast of Test Unit 2. The unit was intended to assist in the characterization of a possible discrete lithic reduction episode identified within Test Unit 3. Test Unit 3 had yielded 106 lithic artifacts, of which nearly a third (60.3 per cent; n=64) had been recovered from undisturbed strata underlying the topsoil layer (Stratum I). Test Unit 3 was excavated to a total depth of 38 cm (15 in) below surface and yielded a total of 24 prehistoric artifacts and 7 historic artifacts.

Three distinct soil strata (Strata I-III) were exposed during the excavation (Figures 5-11 and 5-12). Although these strata were largely consistent with those exposed within Test Unit 2, this unit lacked the thick, mottled transition layer between the E horizon and the Bt1 horizon. This layer had been designated Stratum IIa in Test Unit 2. The soil sequence within Test Unit 2 included a 7 cm (2.8 in) thick root mat and humus layer (A horizon) that overlay an E horizon of pale brown (10YR 6/3) sandy loam (Stratum II). Stratum II was 21 cm (8.3 in) in thickness and overlay a Bt1 horizon of strong brown (7.5YR 5/6) clayey sandy loam that contained an increasing quantity of rounded gravel in its southern half. As before, this basal horizon was consistent with the basal soil horizon exposed in Test Units 1 and 2.

Test Unit 3 yielded a total of 31 artifacts (Table 5-7). Prehistoric lithic artifacts comprised over three-quarters (77.4 per cent; n=24) of the sub-assemblage from Test Unit 3 and were recovered from Strata I and II. Seven historic artifacts (22.6 per cent of sub-assemblage) also were recovered; these artifacts were confined to Stratum I.

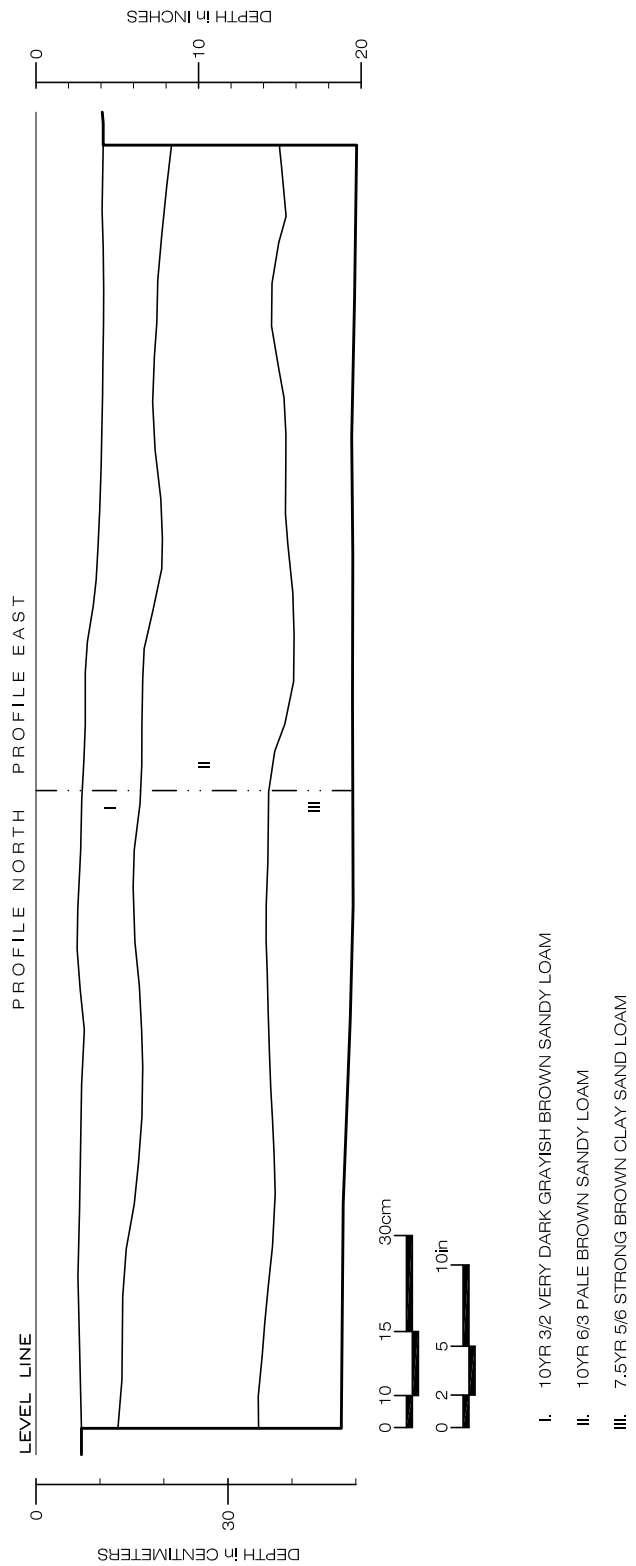
Typical for the study area, the prehistoric sub-assemblage was comprised entirely of lithic artifacts. Test Unit 3 yielded 23 pieces of debitage and a multidirectional core fragment. Among the debitage were flake fragments (n=12), an early/late stage core reduction flake, and three late stage biface thinning flakes. As noted for Test Unit 2, these artifacts suggest prehistoric activity was focused on tool manufacture and maintenance. Lithic material types represented within Test Unit 2 generally were consistent with those identified within Test Unit 1. These included predominately chert 02 (n=16), with lower quantities of quartz (n=3), chert 01 (n=3), and chert 04 (n=1). The only exception was a single rhyolite flake fragment recovered from Stratum II. Rhyolite was not present within Test Unit 2, and the single flake fragment was the only piece of rhyolite recovered during the current study.

A majority of the prehistoric artifacts from Test Unit 3 originated from Stratum I (Figure 5-13). That stratum yielded just over two-thirds (n=17; 70.8 per cent) of the prehistoric artifacts; the remainder were from Stratum II (n=7; 29.2 per cent). All of the debitage that was identified by reduction stage originated from Stratum I; Stratum II yielded only flake fragments.

The historic sub-assemblage was comprised largely of non-diagnostic glass. A single white, threaded plastic cap also was included in the sub-assemblage; this artifact was recovered from Stratum I. The glass consisted of six

Figure 5-10. **Site 44FX1936: Photograph showing representative prehistoric debitage and material types from Test Unit 2, Stratum II, Level 2 (Top Row [Left to Right]: Quartz Secondary flake fragment [FS 51], Quartz Pressure flake [FS 51], Chert 04 Non-Cortex Late stage Biface thinning flake [FS 51]; Middle Row [Left to Right]: Chert 02 Non-Cortex Early/Late Stage Core Reduction flake [FS 51], Chert 02 Non-Cortex Late Stage Biface thinning flake [FS 51], Chert 02 Primary Early Stage Biface Thinning flake [FS 51], Chert 02 Non-Cortex Edge Preparation flake [FS 51]; Bottom Row [Left to Right]: Quartz Secondary Flake Fragment [FS 50], Chert 01 Non-Cortex flake fragment [FS 50], Chert 02 Primary Core Reduction Flake [FS 50], Chert 02 Non-Cortex Late Stage Biface Thinning flake [FS 50], Chert 04 Non-Cortex flake fragment [FS 50])**

Figure 5-11. **Site 44FX1936: Photograph showing Test Unit 3, profile east**



SITE 44FX1936
Test Unit 3
Soil Profiles

Figure 5-12. Site 44FX1936: Test Unit 3, soil profiles north and east

Table 5-7. Site 44FX1936: Summary of Artifacts Recovered from Test Unit 3

Category	Group	Class	Type	Subtype	Date Range	Stratum		Grand Total
						I	II	
Historic Artifacts	Glass	Machine Made	Bottle, Lip/ Neck	Colorless	1881-Present	1		1
			Bottle, Body	Colorless		5		5
	Glass Total					6		6
	Synthetic	Plastic	Cap, Whole			1		1
	Synthetic Total					1		1
Historic Artifacts Total						7		7
Prehistoric Lithic Artifacts	Core	Quartz	5% cortex	Multidirectional		1		1
	Core Total					1		1
	Debitage	Chert 01	Non-cortex	Flake Fragment		1	2	3
		Chert 02	Non-cortex	Biface thinning flake-late stage		3		3
				Early/Late Stage Core Reduction Flake		1		1
				Flake Fragment		9	3	12
		Chert 04	Non-cortex	Flake Fragment			1	1
		Quartz	Non-cortex	Flake Fragment		2		2
		Rhyolite 01	Non-cortex	Flake Fragment			1	1
	Debitage Total					16	7	23
Prehistoric Lithic Artifacts Total						17	7	24
Grand Total						24	7	31

Figure 5-13. Site 44FX1936: Photograph showing representative artifacts from Test Unit 3, Stratum I, Level 1, FS 59 (Top Row [Left to Right]: Quartz Non-Cortex Flake Fragment, Chert 02 Non-Cortex Flake Fragment, Chert 02 Non-Cortex Late Stage Biface thinning flake, Chert 02 Non-Cortex Early/Late Stage Core Reduction Flake; Bottom Row [Left to Right]: Quartz 5% Cortex Multidirectional Core, Chert 01 Non-Cortex Flake Fragment, Plastic cap, Machine-made liquor bottle finish)

pieces of colorless bottle glass (n=6). One lip/neck fragment was identified as machine-made glass (1881-present) and included a two-part straight finish with an externally threaded upper portion. Also recovered from Stratum I, this most likely was part of a liquor bottle. A different, non-diagnostic body piece was embossed with squares; the remaining glass pieces were plain, non-diagnostic body fragments.

Test Unit 4

Test Unit 4 was placed near the northwestern corner of Site 44FX1936, approximately 4.5 m (14.76 ft) southeast of a very large oak tree. The test unit was located within an area that had consistently yielded nineteenth to twentieth century historic artifacts, yet that appeared to exhibit extensive subsurface disturbance. The test unit was intended to assist in the characterization of the stratigraphic sequence in that portion of the site and, if possible, to determine the extent and nature of the historic disturbance. Test Unit 4 was excavated to a total depth of 45 cm (17.7 in) below surface and yielded 1 prehistoric lithic artifact and 100 historic artifacts. Nearly all of the artifacts (n=97; 96 per cent) were recovered from disturbed strata.

Five distinct soil strata (Strata I-V) and an area of historic disturbance (Disturbance) were exposed during the excavation (Figures 5-14 and 5-15). The upper three strata (Strata I-III) were extensively disturbed and appeared to consist of a combination of imported fill material and disturbed native soils. The uppermost soil stratum was composed of dark grayish brown (10YR 4/2) sandy loam overlain by a thin root mat. Although characterized as an A horizon, this soil evenly overlay a layer of imported fill soil (Stratum II) and, as such, most likely represents a redeposited topsoil layer. The fill layer was composed of lightly mottled, very compact yellowish brown (10YR 5/6) sandy loam that contained a high proportion of rounded gravel. It ranged from 4 cm (1.6 in) in thickness in the western central portion of the unit, to 12 cm (4.7 in) in thickness near the southeastern corner of the unit.

Underlying Stratum II in the northern third of Test Unit 4 was a compact layer of mottled dark grayish brown (10YR 4/2) sandy loam (Stratum III) that appeared to be a disturbed, remnant A horizon (Figure 5-16). Less than 5 cm (2 in) in thickness, this stratum had an uneven lower interface typical of a naturally developed soil horizon. The upper extent of the stratum, however, had been truncated and the compact, platy nature of the soil suggested it had been both disturbed and compressed by past grading activity and heavy machinery traffic. Stratum IV, described as an excessively compact subsoil composed of pale brown (10YR 6/3) slightly clayey sandy loam, underlay Stratum III in the northern portion of the unit and Stratum II in the southern portion of the unit. As observed for Stratum III, this horizon exhibited a platy nature that was consistent with artificial compaction. The final stratum exposed within Test Unit 4 was a Bt2 horizon of yellowish brown (10YR 5/6) clayey loam. This horizon was noticeably less compact.

During the excavation of Test Unit 4, an area of soil disturbance was observed in the southwestern corner of the unit (Figure 5-17). Less than 5 cm (2 in) of the disturbance extended into the test unit and was available for sampling. Identified at the base of Stratum II, the disturbance extended to the base of Stratum IV and was a maximum of 19 cm (7.5 in) deep. In profile, the area of disturbance measured 27 cm (10.6 in) in width and exhibited a rounded base with a broad, flared lip. Soils within the area of disturbance were described as gray (10YR 6/1) clayey loam with distinct iron oxide streaking. The sampled portion of the disturbance was slightly less compact than Stratum IV. Although it is likely that the area of disturbance is contemporaneous with the grading and filling activity, the lack of diagnostic artifacts restricts any additional interpretation of the deposit.

Test Unit 4 yielded a total of 101 artifacts (Table 5-8). Unlike test units excavated in the eastern portion of the study area, prehistoric artifacts comprised only 4 per cent (n=1) of the sub-assemblage from Test Unit 4. A single non-cortex quartz flake fragment accounted for this percentage. The remaining 96 per cent (n=100) of the sub-assemblage was composed of historic artifacts. These artifacts included ceramic (n=3),

Figure 5-14. Site 44FX1936: Photograph showing Test Unit 4, profile west

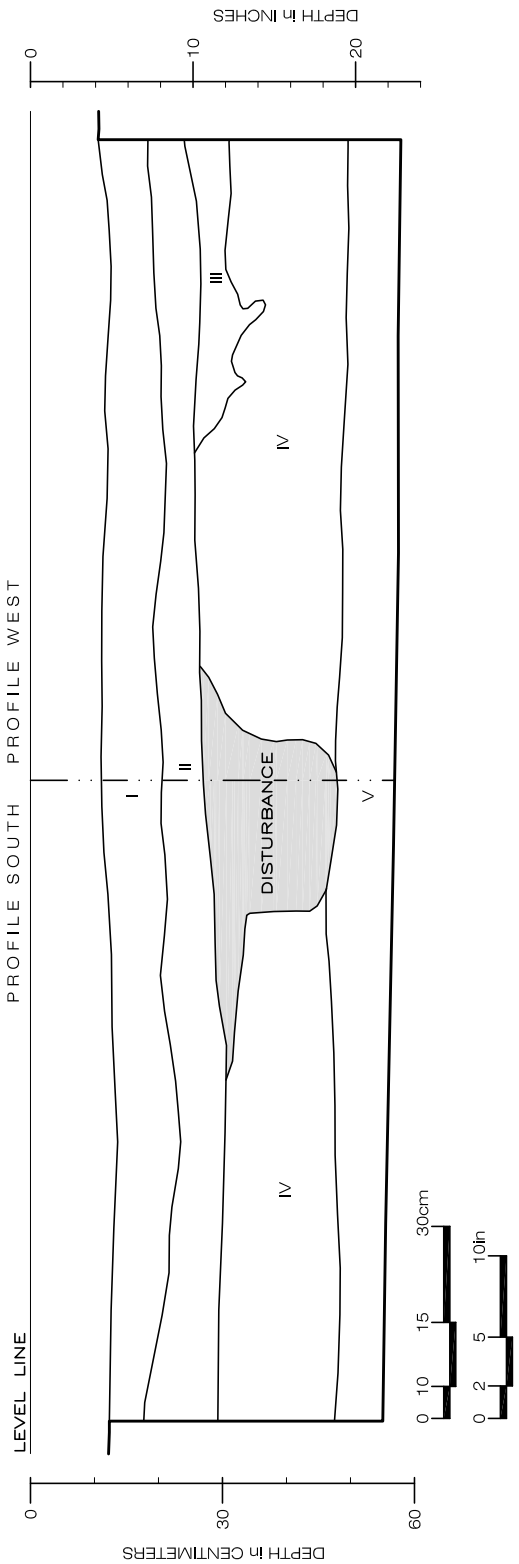


Figure 5-15. Site 44FX1936: Test Unit 4, soil profiles south and west

Figure 5-16. Site 44FX1936: Photograph showing Test Unit 4, Plan view of Strata III (bottom) and IV (top), 25 cm (9.8 in) below datum, view north

Figure 5-17. Site 44FX1936: Photograph showing Test Unit 4, profile south

Table 5-8. Site 44FX1936: Summary of Artifacts Recovered from Test Unit 4

Category	Group	Class	Type	Subtype	Date Range	Stratum					Grand Total
						I	II	III	IV	Disturbance	
Historic Artifacts	Ceramic	Earthenware	Whiteware	Undecorated	1820-Present	1	2				3
	Ceramic Total					1	2				3
	Glass	Machine Made	Bottle, Lip/ Neck	Colorless	1881-Present				1		1
		Indeterminate	Bottle, Base/ Body	Colorless			4				4
			Bottle, Body	Amber			5	2			7
				Colorless		4	47	2	2	1	56
				Light Green		1					1
			Tableware, Body	Colorless		1	13				14
			Unspecified Hollow Vessel, Body	Milk Glass				1			1
			Window, Fragment	Colorless			2	1	1		4
	Glass Total					6	71	6	4	1	88
	Metal	Iron	Indeterminate Form, Fragment				1				1
			Nail, Fragment	Indeterminate Method			3				3
			Nail, Whole	Wire	1890-Present		5				5
	Metal Total						9				9
Historic Artifacts Total						7	82	6	4	1	100
Prehistoric Lithic Artifacts	Debitage	Quartz	Non-cortex	Flake Fragment			1				1
	Debitage Total						1				1
Prehistoric Lithic Artifacts Total							1				1
Grand Total						7	83	6	4	1	101

glass (n=88), and metal (n=9) artifacts (Figure 5-18). In addition, two pieces of clear cellophane, a squashed Styrofoam cup, two pieces of brick, and two pieces of coal were recorded and discarded in the field.

The historic sub-assemblage comprised mainly non-diagnostic glass. Glass comprised nearly nine-tenths (88 per cent; n=88) of the historic sub-assemblage and included bottle (n=69), tableware (n=14), window glass (n=4), and milk glass (n=1). The only diagnostic piece of glass was a portion of a machine-made (1881-present) colorless glass liquor bottle that included a two-part straight finish with an externally threaded upper portion. Ceramic artifacts recovered from Test Unit 4 were limited to three fragments of undecorated whiteware (1820-present). Metal artifacts accounted for only 9 per cent (n=9) of the historic sub-assemblage. These artifacts consisted of a handful of wire nails (n=5; 1890-present) and indeterminate nail fragments (n=3), as well as, a triangular piece of cast iron.

The majority of the artifacts recovered from Test Unit 4 were recovered from contexts that had been disturbed through historic grading and filling activities. Strata I and II yielded a combined total of 90 artifacts, or 89.1 per cent of the sub-assemblage, including the single prehistoric artifacts. Composed of redeposited soil (Stratum I) overlying imported fill soil (Stratum II), these strata lack both stratigraphic integrity and integrity of location. Cultural materials recovered from these strata are of unknown origin and most likely were imported with the fill material; as such, they do not contribute to the interpretation of Site 44FX1936. The presence of wire nails within Stratum II suggests these soils were deposited during the twentieth century, while the relative age of the overstory vegetation suggests the second quarter of the twentieth century. Artifacts recovered from the subsoil consisted of four pieces of non-diagnostic bottle glass and a piece of window glass; these artifacts were considered intrusive. The area of disturbance in the southwestern corner of the test unit yielded a single non-diagnostic piece of colorless bottle glass.

Test Unit 5

Test Unit 5 was placed in the southeastern portion of the site, near the eastern boundary of Site 44FX1936 and within the southern portion of proposed SWM-4B Pond. The unit was situated in an area of moderately sloping terrain, within a part of the study area that had yielded only low quantities prehistoric lithic debitage during shovel testing. Test Unit 5 was excavated to a total depth of 38 cm (15 in) below surface. The unit yielded a single historic artifact from disturbed soil strata.

Three distinct soil strata (Strata I-III) were exposed during the excavation of Test Unit 5 (Figures 5-19 and 5-20). The uppermost stratum (Stratum I) was topsoil layer (A horizon) composed of dark grayish brown (10YR 4/2) sandy loam. This layer averaged 10 cm (3.9 in) in thickness and was overlain by a 2 cm (9.1 in) thick root mat of very dark grayish brown (10YR 4/2) loam. The underlying soil horizons were consistent with those described for Test Unit 3 and included a thick E horizon overlying a Bt1 horizon. The E horizon averaged 14 cm (5.5 in) in thickness and was described as pale brown (10YR 6/3) slightly clayey sandy loam. The Bt1 horizon was composed of strong brown (7.5YR 4/6) sandy clay loam. Excavation of Test Unit 5 was discontinued following the removal of 10 cm (3.9 in) of Stratum III.

Test Unit 5 yielded a single piece of non-diagnostic colorless bottle glass from Stratum I. The glass was a body fragment that was embossed with squares.

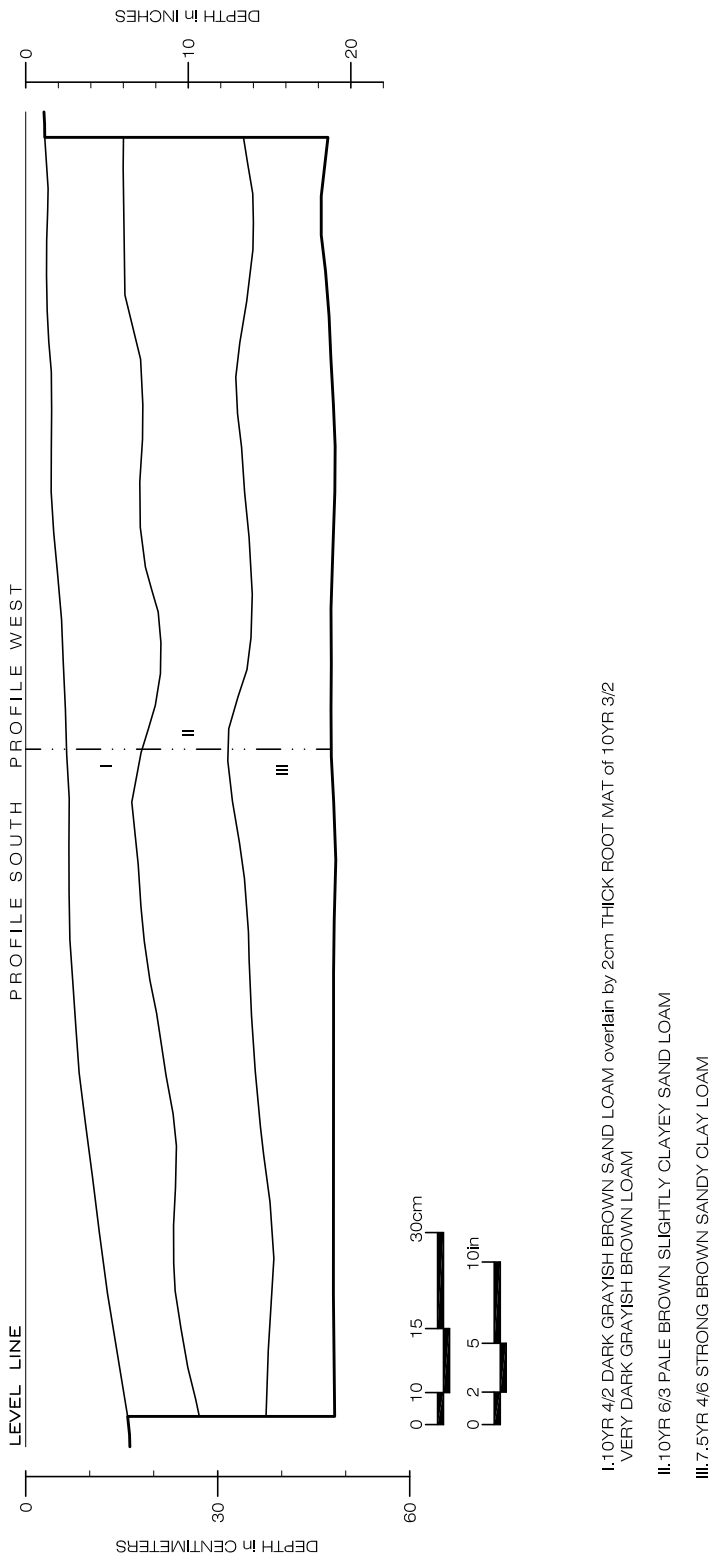
Analysis and Interpretation

A total of 385 artifacts were recovered from Site 44FX1936 during shovel testing and unit excavation. The assemblage included both prehistoric material (n=195; 50.65 per cent) and historic material (n=190; 49.35 per cent). These artifacts were broadly distributed across the site area with a low-density scatter of prehistoric lithic material generally occurring in the central and eastern portions of the site and a medium-density scatter of historic material occurring in the western portion of the site.

Overall, the quantities of both prehistoric and historic artifacts recovered during shovel testing were very low. Nearly two-thirds (n=26;

Figure 5-18. Site 44FX1936: Photograph showing representative sample of historic artifacts from Test Unit 4, Stratum II, Level 2, FS 62 (Top Row [Left to Right]: Whiteware [n = 2], Amber bottle glass, colorless table glass; Bottom Row: Wire Nail

Figure 5-19. Site 44FX1936: Photograph showing Test Unit 5, profile north



SITE 44FX1936
Test Unit 5
Soil Profiles

Figure 5-20. Site 44FX1936: Test Unit 5, soil profiles west and north

61.9 per cent) of the shovel tests yielded only a single prehistoric or historic artifact. Shovel tests that yielded higher quantities of prehistoric artifacts tended to be located in the central and eastern portions of the site, while shovel tests that yielded higher quantities of historic artifacts were located in the western portion of the site. This supported an overall pattern where, although artifacts were distributed broadly across the site, nearly all (n=187; 95.9 per cent) of the prehistoric artifacts were recovered from the central and eastern portions of the site and most of the historic artifacts (75.3 per cent; n=143) were recovered from the western portion of the site.

The lithic artifact sub-assemblage consisted of core fragments (n=2), debitage (n=190), and fire-cracked rock (n=3); no diagnostic artifacts were present. A limited range of lithic material types were represented; these consisted of four varieties of chert (n=108), quartz (n=71), quartzite (n=15), and rhyolite (n=1) (Figure 5-21). Chert varieties included chert 01 (n=9), chert 02 (n=89), chert 03 (n=1), chert 04 (n=9). Three-quarters of the chert 02 material (n=108; 75.9 per cent) was recovered from Test Units 2 and 3 and appeared to represent an isolated, single-episode lithic reduction locus. A similar locus related to reduction of quartz material may have been located in the northern portion of the site; this locus was heavily disturbed by historic grading activity. No additional areas of potential activity were identified.

The lithic sub-assemblage, as a whole, suggested a focus on late stage tool maintenance. Analysis of flake size and the percent of cortex retained typically is utilized to assist in determination of the stage of tool manufacture. Nearly two-thirds (n=66; 63.5 per cent) of the debitage recovered from Test Unit 2 was Chert 02. This material type was recovered in low quantities from three shovel tests (ST N992.5/E997.5, ST N992.5/E1007.5 and ST N992.5/E1030) and from Test Unit 3, located 0.5 m (1.6 ft) southeast of Test Unit 2. Chert 02 recovered during shovel testing consisted only of flake fragments; materials recovered from Test Unit 3 included flake fragments (n=12), biface thinning flakes (n=3), and a core reduction flake. Excluding flake fragments (n=46), Chert 02 within Test Unit 2 included six identifiable stages of early-late stage tool maintenance.

Archeologically derived data indicate that average flake weights greater than 3.0 g often are associated with quarry and primary reduction sites (e.g., Pleasantdale: 3.5 g, Brumbach 1987; Mt. Jasper-Locus 1: 3.14 g, Mt. Jasper-Locus 2: 3.47 g, Gramly 1980). Secondary reduction sites tend to have flake weights between 1.5 and 2.5 g (e.g., North Greenbush No.9: 2.1 g, Brumbach 1987; Russett 21: 1.70 g, Polglase et al. 1990); such sites often include a mixture of both core and biface reduction debitage. Base camps usually have average flake weights below 1.5 g; on the whole, lithic reduction activity on these sites examples was dominated by later biface thinning, shaping, and resharpening.

The same late stage biface or tool maintenance activity appears to have been the main focus of prehistoric activity at Site 44FX1936. For debitage, the average flake weight was 0.89 g. The low density and broad distribution of prehistoric artifacts suggests that Site 44FX1936 was used as a temporary campsite for small groups of people whose primary focus was resource procurement. Several different prehistoric groups and/or individuals appear to have used the site area, as suggested by the presence of at least two areas of lithic concentration. Shovel tests identified two areas that contained slightly higher quantities of quartz debitage, while test unit excavation identified a single area that contained a concentration of chert debitage.

The frequency of flakes and the amount of cortex retained on them also help to determine raw material access, since local materials are expected to display more body cortex. A large majority of the debitage from Site 44FX1936 was non-cortex debitage. This accounted for 78.4 per cent (n=149) of the debitage recovered and had an average weight of 0.53 g. Secondary reduction material accounted for only 10 per cent (n=19), while primary reduction material comprised the remaining 11.6 per cent (n=22) of the debitage. Secondary material averaged 1.46 g in weight and primary material averaged 2.84 g in weight. Chert 02, quartz, and quartzite were present as non-cortex, secondary, and primary reduction

Figure 5-21. Site 44FX1936: Photograph showing representative lithic raw material types (Top Row [Left to Right]: Rhyolite 01 Flake Fragment [FS 60], Quartz Flake Fragment [FS 18], Quartzite Primary Flake Fragment [FS 06]; Bottom Row [Left to Right]: Chert 01 Late Stage Biface Thinning Flake [FS 07], Chert 02 Flake Fragment [FS 13], Chert 03 Early Stage Biface Thinning Flake [FS 33], Chert 04 Flake Fragment [FS 50])

material. Rhyolite, chert 01, and chert 04 were present only as non-cortex debitage, while chert 03 was represented by a single piece of primary debitage.

The vast majority of historic materials from Site 44FX1936 was recovered from contexts disturbed by past historic activity or represented materials imported into the study area within fill soils or through random discard and did not accurately represent historic activity that may have occurred within the site boundaries. Only eight artifacts, or 4.2 per cent of the historic sub-assemblage, were found within soils classified as "intact" or undisturbed by historic grading, filling, or other activity. These artifacts consisted of non-diagnostic bottle (n=5) and window (n=1) glass and whiteware ceramic (n=2) fragments. All of these artifacts were isolated materials that were judged to be intrusive into the subsoil horizon.

Overall, the historic sub-assemblage included ceramic (n=8), glass (n=166), metal (n=15), and synthetic items (n=1). The ceramic sub-assemblage was limited to eight whiteware fragments. Whiteware, as a ceramic type, was manufactured from 1820 through the present. Two fragments recovered from the site exhibited a transfer print decoration (1820-Present) and one exhibited a molded decoration (1820-Present); all of the other fragments were plain. Two of the plain fragments were recovered from the eastern end of the site, while the remaining fragments were recovered from the western end of the site. One hollow vessel and at least four flat vessels were represented.

Glass fragments comprised the vast majority (n=166; 87.39 per cent) of the historic sub-assemblage. The glass sub-assemblage included bottle glass (n=125), tableware (n=29), window (n=9), and indeterminate fragments (n=3), of which the vast majority were non-diagnostic body fragments. The only diagnostic pieces of glass were portions of two different machine-made (1881-present) colorless glass liquor bottles that included a two-part straight finish with an externally threaded upper portion; one fragment

was recovered from Test Unit 3 and the other from Test Unit 4.

Metal artifacts were the next most common historic artifact (n=15; 7.89 per cent). These artifacts, however, were limited to nails (n=6), nail fragments (n=8), and an indeterminate iron fragment (n=1). Identified nail types were cut (n=3; 1815-1890) and wire (n=6; 1890-present). Cut nails were recovered from two shovel tests in the northwestern portion of the site (ST 970/E880 and ST N985/E880). Test Unit 4, placed between these shovel tests, yielded four wire nail fragments and four indeterminate nail fragments. All of the nails were recovered from disturbed or fill contexts.

Historic materials present within fill and disturbed contexts in the western end of Site 44FX1936 likely were deposited at the beginning of the twentieth century. These materials reflect improvements made along the Route 1 corridor during the formation of Camp Humphries. This period saw extensive reconfiguration of local roadways and the redevelopment of formerly residential areas. Houses that stood along the Route 1 corridor in the vicinity of Site 44FX1936 were razed during the early twentieth century and the property converted to open space. This activity appears to have included large-scale grading of the northern half of the site area, as the removal of any evidence of historic buildings and their associated cultural deposits that may previously have existed within the site boundaries. In addition, a portion of the northwestern corner of the site area appears to have been used temporarily as a parking or storage area for heavy machinery; it is possible the large oak trees that remain were retained to provide shade for temporary construction facilities in that location.

Chapter VI

Summary and Recommendations

This report summarizes archeological investigations conducted for proposed storm water management (SWM) ponds 1a (SWM-1a Pond) and 4b (SWM-4b Pond) associated with the Route 1 improvement project in Fairfax County, Virginia. R. Christopher Goodwin & Associates, Inc. undertook the archeological investigations on behalf of A. Morton Thomas and Associates, Inc. during April and May 2014. The archeological investigations were designed to address cultural resource requirements for the project pursuant to Section 106 of the National Historic Preservation Act (NHPA) of 1966 as amended (16U.S.C. 470a; USDI/NPS 1983), the National Environmental Policy Act (NEPA) of 1969 (Public Law 91-190), Protection of Historic Properties Act (36 CFR Part 800), and the Virginia Department of Historic Resources (VDHR).

The Phase I archeological investigation of SWM-1a Pond focused on identifying any cultural resources within the limits of disturbance for the proposed pond. Research objectives for SWM-4b Pond focused on providing an assessment of the significance of cultural resources associated with previously identified Site 44FX1936. The unevaluated southern portion of the site, which includes the location of SWM-4b Pond, previously has been recommended as potentially eligible for listing on the National Register of Historic Places under Criterion d (36 CFR 60.4 [a-d]) (Deetz et al. 2012; Polk et al. 1992). These project objectives were accomplished through archeological field investigations, the analysis of field data and recovered cultural materials, and the preparation of this technical report.

All work was completed in accordance with Federal, State, and local standards and guidelines and adhered to the Secretary of the Interior's "Standards and Guidelines for Historic Preservation Projects" (Federal Register, Vol. 48, No. 190), and the VDHR "Guidelines for Conducting Historic Resources Survey in Virginia" (VDHR 2011).

Summary and Recommendations

SWM-1a Pond

Proposed SWM-1a Pond encompasses approximately 0.34 ha (0.85 ac) of wooded land along the southern side of Route 1, east of the intersection of Old Colchester/Telegraph Road (VA 611). Current design plans depict the pond as oval in shape with inlet/outlet structures located along the northern side of the pond and an access road located along the eastern side of the pond. Previous cultural resources studies conducted in association with the Route 1 project indicated that no known archeological sites or architectural properties were located within the boundaries of SWM-1a Pond (Polk et al. 1993).

Archeological field investigations related to the planned construction of SWM-1a Pond included the excavation of 42 close interval shovel tests. The study yielded no cultural material and indicated consistent subsurface disturbance related to past agricultural use of the property. **No historic properties, as defined in 36 CFR 800.16(l), will be affected by the construction of SWM-1a Pond. No further archeological investigations are warranted or recommended for SWM-1a Pond.**

SWM-4b Pond (Site 44FX1936)

Proposed SWM-4b Pond encompasses approximately 0.32 ha (0.79 ac) of gently sloping wooded land along the southern side of Route 1, southeast of the intersection of Route 1 and Pohick Road. The design plans for SWM-4b Pond depict a basically oval pond with a single outlet located along the southern side of the pond; this structure will flow into an unnamed drainage of Accotink Creek. Previous cultural resources studies conducted in association with the Route

1 project indicated that Site 44FX1936, a multicomponent prehistoric and historic period artifact scatter, is in the location of the planned SWM pond (Deetz et al. 2012; Polk et al. 1993). As currently designed, SWM-4b Pond lies within the eastern portion of the site and will impact approximately 23.4 per cent of the site area.

Field investigations for SWM-4b Pond included the excavation of 88 shovel tests and 5 test units related to the delineation and evaluation of Site 44FX1936. A total of 385 artifacts were recovered from Site 44FX1936. The sub-assemblage included both prehistoric material (n=195; 50.65 per cent) and historic material (n=190; 49.35 per cent). These artifacts were broadly distributed across the site area with a low-density scatter of prehistoric lithic material generally occurring in the central and eastern portions of the site and a medium-density scatter of historic material occurring in the western portion of the site.

National Register Eligibility

Site 44FX1936 was evaluated applying Criterion d, for its potential to provide valuable information concerning past occupation, use, or activity (NR Bulletin 15:21-24. Under Criterion d, the site must exhibit the potential to provide information that will answer research questions, add to available information, and help reconstruct past activities and sequences of occupations (NR Bulletin 15:21). This site's significance would lie in the presence of cultural features and deposits that can provide useful information concerning prehistoric settlement or technological adaptations within the greater Potomac drainage, and in exploring nineteenth and early twentieth century historic development of the community of Accotink.

Integrity

Evaluation of integrity entails examination of the condition of the site and its ability to provide information concerning activity at the site during its period of significance. When sites are evaluated under Criterion d, for their potential to provide valuable information, integrity most often refers to the ability to answer a set of research questions (NR Bulletin 36:14).

The prehistoric component of Site 44FX1936 was characterized as a short-term resource procurement campsite. The lack of significant quantities of fire-cracked rock or evidence of subsurface cultural features such as hearths, pits, or structural postholes supports short-term occupation by small, transient groups. Based upon the broad distribution of artifacts and the limited diversity of lithic material types present, the site most likely was visited repeatedly over a relatively short period of time. Testing indicated some integrity for the prehistoric component; just over half (59 per cent) of the 195 prehistoric artifacts were from intact A-horizon or subsoil (E/Bt1/Bt2 horizon) contexts.

Conversely, any cultural deposits related to the historic development of the property prior to its redevelopment for Camp Humphries (Fort Belvoir) have been severely disturbed and/or removed through grading activity. Soils within disturbed portions of the site lack both horizontal and vertical integrity; artifacts recovered from fill material additionally lack integrity of location. Due to the extensive amount of disturbance, the limited amount of cultural material present, and the indeterminate association of the material, the historic component cannot contribute to the understanding of historic occupation of the early community of Accotink.

Research Potential

When sites are evaluated under Criterion d, for their potential to provide valuable information, integrity most often refers to the ability to answer a set of research questions (NR Bulletin 36:14). The research potential of a site entails the ability of the features or deposits within the site to provide useful or valuable information concerning past activity or use. Under Criterion d, this potential is tied to a series of research questions established for the site based on its context and period of significance.

For the prehistoric component, the lithic sub-assemblage, as a whole, suggested a focus on late stage tool maintenance activities, primarily the sharpening of already produced bifacial tools. Although varying quantities of locally available chert, quartz, and quartzite debitage were represented in the sub-assemblage, these materials

appear to have been transported to the site in a nearly finished to finished stage. Artifacts typically associated with food procurement and preparation activities and with quarrying or localized procurement of lithic resources were absent from the sub-assemblage. An isolated lithic reduction locus comprised primarily of chert debitage was identified during the investigation and appeared to reflect a singular, short-term event. A smaller locus related to the reduction of quartz material may have been located in the northern portion of the site; this locus was heavily disturbed by historic grading activity.

Site 44FX1936 has yielded no temporally diagnostic prehistoric artifacts or tools that would assist in further characterization of the site or in its placement within the broader framework of regional Virginia prehistoric occupation. Areas of artifact concentration represent discrete, singular lithic reduction episodes suggestive of periodic use of the landform for short-term hunting camps. No artifacts suggestive of activity other than tool maintenance were recovered and no cultural features or deposits were present that would potentially provide useful information on prehistoric life ways. This data was consistent with the information presented in the VDHR site form, which indicated an unaffiliated prehistoric component represented exclusively by debitage.

The vast majority of the historic sub-assemblage consisted of non-diagnostic fragments of glass. Bottle glass comprised three-quarters (n=125; 75.3 per cent) of the sub-assemblage and included only two diagnostic glass fragments. Ironically, both fragments were portions of machine-made liquor bottles that exhibited the same threaded finish. Other diagnostic artifacts were whiteware ceramic sherds (1820-present), cut nails (1815-1890), and wire nails (1890-present). Based upon these artifacts, the period of significance for the historic component of Site 44FX1936 appears to span the late-nineteenth century through the mid-twentieth century. Although modern artifacts were recovered during the study, the current vegetative growth suggests that no new historic development took place after the mid-twentieth century.

The excessively limited range and quantity of artifacts recovered, however, severely restricts any additional interpretation of the site, including discussions of distinct occupation periods and potential activity areas. While artifacts whose periods of manufacture extend into the early nineteenth century were recovered, these artifacts were within disturbed contexts and also continue to be manufactured today. As such, without additional supporting archeological evidence, it is equally likely that the same early nineteenth century artifacts initially interpreted as representing early development of the site area actually have been deposited during the early-mid-twentieth century from an unrelated property also developed during the nineteenth century.

In summary, any cultural deposits related to the historic development of the property prior to its redevelopment for Camp Humphries (Fort Belvoir) have been severely disturbed and/or removed through grading activity. Soils within disturbed portions of the site lack both the horizontal and vertical integrity; artifacts recovered from fill material additionally lack integrity of location. Due to the extensive amount of disturbance, the limited amount of cultural material present, and the indeterminate association of the material, the historic component cannot contribute to the understanding of historic occupation of the early community of Accotink.

Recommendation

Archeological deposits identified at Site 44FX1936 lack sufficient depositional integrity and research potential to address questions related to the prehistoric occupation or to the historic period of significance, specifically the role of the property in the early development of the community of Accotink. Although the prehistoric component retains nominal integrity, cultural materials associated with this component suggest only sporadic use of the area as a short-term campsite at some period during the prehistoric past. These site types are common throughout the Potomac River drainage and along the Chesapeake Bay, in general, and do not represent a unique or potentially significant. The historic component of Site 44FX1936 has been extensively disturbed by past historic grading activity and lacks both integrity and research potential. Although historic materials suggest the site area was occupied during the

late nineteenth through mid-twentieth centuries, the majority of these materials was recovered from fill material imported to the site area and, as such, is unrelated to occupation of the site.

Based upon the results of the archeological investigation, Site 44FX1936 does not fit the description of a historic property as defined in 36 CFR 800.16(l). The site does not possess the qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4[a-d]). No historic properties, as defined in 36 CFR 800.16(l), will be affected by the construction of SWM-4b Pond. No additional work is recommended for Site 44FX1936.

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APPENDIX I

ARTIFACT INVENORY

Report Inventory: Site 44FX1936

FS Number	Unit	Northing	Easting	Strat	Level	Category	Group	Class	Type	Sub Type	Date Range	Total
1		1000	992.5		3	Lithics	Core	Quartz	5% cortex	Multidirectional		1
							Debitage	Quartz	Primary	Flake Fragment		1
2		1000	992.5		4	Lithics	Debitage	Quartz	Non-cortex	Flake Fragment		3
									Primary	Flake Fragment		2
									Secondary	Flake Fragment		1
3		992.5	992.5		2	Lithics	Debitage	Chert 01	Non-cortex	Flake Fragment		1
								Quartz	Non-cortex	Flake Fragment		1
4		992.5	992.5		3	Lithics	Debitage	Quartzite	Non-cortex	Early/Late Stage Core Reduction Flake		1
5		992.5	1000		2	Lithics	Debitage	Quartzite	Non-cortex	Flake Fragment		1
6		977.5	1000		2	Lithics	Debitage	Quartzite	Primary	Flake Fragment		1
									Secondary	Flake Fragment		1
7		992.5	1007.5		1	Historics	Glass		Colorless	Bottle, Body		2
						Lithics	Debitage	Chert 01	Non-cortex	Biface thinning flake-late stage		1
8		992.5	1007.5		2	Historics	Glass		Colorless	Bottle, Body		2
						Lithics	Debitage	Chert 02	Non-cortex	Flake Fragment		1
									Secondary	Flake Fragment		1
9		985	1007.5		3	Lithics	Debitage	Chert 01	Non-cortex	Flake Fragment		1
10		992.5	1015		1	Lithics	Debitage	Quartz	Primary	Flake Fragment		1
11		985	1015		1	Lithics	Debitage	Quartzite	Secondary	Flake Fragment		1
12		985	1015		2	Lithics	Debitage	Quartz	Non-cortex	Flake Fragment		1
13		992.5	1030		3	Lithics	Debitage	Chert 02	Non-cortex	Flake Fragment		3
14		1000	1037.5		2	Historics	Glass		Colorless	Window, Fragment		1
16		992.5	1037.5		1	Historics	Glass		Colorless	Bottle, Body		2
						Lithics	Debitage	Quartz	Non-cortex	Flake Fragment		1
									Primary	Flake Fragment		2
17		992.5	1037.5		2	Historics	Glass		Colorless	Bottle, Body		1
						Lithics	Debitage	Quartz	Non-cortex	Flake Fragment		8
18		992.5	1037.5		4	Lithics	Debitage	Quartz	Non-cortex	Flake Fragment		1
19		985	1037.5		2	Historics	Glass		Colorless	Bottle, Body		1
20		985	1037.5		3	Lithics	Debitage	Chert 01	Non-cortex	Pressure flake		1
22		1000	1052.5		1	Lithics	Debitage	Quartz	Secondary	Flake Fragment		1

23	992.5	1052.5	1	Lithics	Debitage	Quartzite	Non-cortex	Early/Late Stage Core Reduction Flake		1
								Flake Fragment		2
24	992.5	1052.5	2	Lithics	Debitage	Quartzite	Non-cortex	Flake Fragment		1
							Primary	Flake Fragment		1
25	992.5	1067.5	2	Lithics	Debitage	Quartz	Non-cortex	Flake Fragment		1
26	985	880	1	Historics	Glass		Colorless	Bottle, Body		2
27										7
28	985	887.5	1	Historics	Glass		Colorless	Bottle, Body		2
29	985	887.5	2	Historics	Glass		Colorless	Bottle, Body		2
					Metal	Iron	Indeterminate Method	Nail, Fragment		1
30	985	887.5	3	Lithics	Debitage	Quartz	Non-cortex	Flake Fragment		2
31	992.5	977.5	1	Historics	Glass		Colorless	Bottle, Body		1
								Window, Fragment		1
				Lithics	Debitage	Chert 02	Non-cortex	Flake Fragment		1
32	992.5	977.5	2	Historics	Glass		Colorless	Bottle, Body		1
				Lithics	Debitage	Chert 02	Non-cortex	Flake Fragment		1
						Quartzite	Non-cortex	Flake Fragment		1
								Pressure flake		1
33	992.5	970	1	Lithics	Debitage	Chert 03	Primary	Biface thinning flake--early stage		1
34	992.5	970	2	Lithics	Debitage	Chert 04	Non-cortex	Flake Fragment		1
35	985	970	2	Lithics	e-cracked r	Quartzite	N/A	N/A		1
36	962.5	902.5	2	Historics	Glass		Aqua	Bottle, Body		1
							Milk Glass	Indeterminate Form, Fragment		1
37	970	895	2	Historics	Ceramic	Earthenware	Whiteware	Unspecified Flat Form, Rim	.820-Presen	1
38	962.5	895	2	Historics	Glass		Colorless	Bottle, Body		1
39	962.5	887.5	2	Historics	Ceramic	Earthenware	Whiteware	Unspecified Flat Form, Base	.820-Presen	1
40	955	887.5	2	Lithics	Debitage	Quartz	Primary	Flake Fragment		1
41	970	880	3	Historics	Metal	Iron	Cut	Nail, Fragment	1815-1890	1
42	985	872.5	2	Historics	Glass		Colorless	Bottle, Body		1
43	4296626	312518.3	(blank)	Lithics	Debitage	Quartz	Secondary	Flake Fragment		1
44	1000	970	2	Lithics	Debitage	Quartz	Non-cortex	Flake Fragment		1
45	1000	977.5	2	Lithics	Debitage	Quartz	Secondary	Early/Late Stage Core Reduction Flake		1
46	985	910	1	Lithics	Debitage	Chert 01	Non-cortex	Flake Fragment		1

								Quartz	Primary	Flake Fragment		1
47		977.5	895		2	Historics	Glass		Aqua	Bottle, Body		1
									Colorless	Bottle, Body		5
										Window, Fragment		1
									Copper Green	Indeterminate Form, Fragment		1
									Light Green	Bottle, Body		1
							Metal	Iron	(blank)	Nail, Whole	.890-Presen	1
48	TU1	988	1013	I	1	Historics	Glass		Aqua	Window, Fragment		2
									Colorless	Bottle, Body		1
						Lithics	Debitage	Quartz	Non-cortex	Flake Fragment		1
									Primary	Flake Fragment		1
49	TU1	988	1013	II	3	Lithics	Debitage	Quartz	Non-cortex	Flake Fragment		1
50	TU2	993	1038.5	I	1	Historics	Glass		Colorless	Tableware, Body		14
						Lithics	Debitage	Chert 01	Non-cortex	Flake Fragment		1
								Chert 02	Non-cortex	Biface thinning flake-late stage		4
										Flake Fragment		16
									Primary	Flake Fragment		2
										Primary Core Reduction Flake		1
									Secondary	Flake Fragment		3
								Chert 04	Non-cortex	Flake Fragment		4
								Quartz	Non-cortex	Flake Fragment		4
									Primary	Flake Fragment		3
									Secondary	Flake Fragment		2
							Fire-cracked r	Quartzite	N/A	N/A		2
51	TU2	993	1038.5	II	2	Historics	Glass		Colorless	Bottle, Body		6
						Lithics	Debitage	Chert 02	Non-cortex	Biface thinning flake-late stage		5
										Early/Late Stage Core Reduction Flake		2
										Edge Preparation Flake		1
										Flake Fragment		16
									Primary	Biface thinning flake--early stage		1
										Flake Fragment		1

									Secondary	Biface thinning flake--early stage		2
										Early/Late Stage Core Reduction Flake		1
										Flake Fragment		2
								Chert 04	Non-cortex	Biface thinning flake-late stage		1
										Flake Fragment		2
								Quartz	Non-cortex	Flake Fragment		8
										Pressure flake		1
									Primary	Flake Fragment		1
									Secondary	Flake Fragment		2
52	TU2	993	1038.5	II	3	Lithics	Debitage	Chert 02	Non-cortex	Biface thinning flake-late stage		1
										Early/Late Stage Core Reduction Flake		1
										Flake Fragment		5
										Pressure flake		1
								Quartz	Non-cortex	Flake Fragment		7
53	TU2	993	1038.5	III	4	Lithics	Debitage	Chert 02	Non-cortex	Flake Fragment		1
								Quartz	Non-cortex	Edge Preparation Flake		1
										Flake Fragment		1
54		992.5	887.5		2	Historics	Glass		Amber	Bottle, Body		1
									Colorless	Bottle, Body		1
							Metal	Iron	Indeterminate Method	Nail, Fragment		1
55		992.5	887.5		3	Historics	Glass		Colorless	Bottle, Body		3
56												1
57		992.5	880		3	Historics	Glass		Colorless	Bottle, Base		1
										Bottle, Body		3
										Tableware, Body		1
58		992.5	880		4	Historics	Glass		Colorless	Bottle, Body		2
59	TU3	991.5	1039.5	I	1	Historics	Glass	Machine Mad	Colorless	Bottle, Lip/ Neck	.881-Presen	1
									Colorless	Bottle, Body		5
							Synthetic	Plastic	(blank)	Cap, Whole		1
						Lithics	Core	Quartz	5% cortex	Multidirectional		1
							Debitage	Chert 01	Non-cortex	Flake Fragment		1

								Chert 02	Non-cortex	Biface thinning flake-late stage		3
										Early/Late Stage Core Reduction Flake		1
										Flake Fragment		9
								Quartz	Non-cortex	Flake Fragment		2
60	TU3	991.5	1039.5	II	2	Lithics	Debitage	Chert 01	Non-cortex	Flake Fragment		2
								Chert 02	Non-cortex	Flake Fragment		3
								Chert 04	Non-cortex	Flake Fragment		1
								Rhyolite 01	Non-cortex	Flake Fragment		1
61	TU4	986.5	881	I	1	Historics	Ceramic	Earthenware	Whiteware	Unspecified Flat Form, Body	.820-Presen	1
							Glass		Colorless	Bottle, Body		4
										Tableware, Body		1
									Light Green	Bottle, Body		1
62	TU4	986.5	881	II	2	Historics	Ceramic	Earthenware	Whiteware	Indeterminate Form, Body	.820-Presen	2
							Glass		Amber	Bottle, Body		5
									Colorless	Bottle, Base/ Body		4
										Bottle, Body		47
										Tableware, Body		13
										Window, Fragment		2
							Metal	Iron	Indeterminate Method	Nail, Fragment		3
									Wire	Nail, Whole	.890-Presen	5
									(blank)	Indeterminate Form, Fragment		1
						Lithics	Debitage	Quartz	Non-cortex	Flake Fragment		1
63	TU4	986.5	881	III	3	Historics	Glass		Amber	Bottle, Body		2
									Colorless	Bottle, Body		2
										Window, Fragment		1
									Milk Glass	Unspecified Hollow Vessel, Body		1
64	TU4	986.5	881	IV	4	Historics	Glass	Machine Mad	Colorless	Bottle, Lip/ Neck	.881-Presen	1
									Colorless	Bottle, Body		2
										Window, Fragment		1
65	TU4	986.5	881		1	Historics	Glass		Colorless	Bottle, Body		1
66		1000	1090		1	Historics	Ceramic	Earthenware	Whiteware	Unspecified Flat Form, Body	.820-Presen	1
										Unspecified Flat Form, Rim	.820-Presen	1
							Glass		Amber	Bottle, Body		1

								Colorless	Bottle, Body	1
67	TU 5	998	1056.5	I	1	Historics	Glass	Colorless	Bottle, Body	1
Grand Total										385

APPENDIX II

RESUMES OF KEY PROJECT PERSONNEL

SUZANNE L. SANDERS, M.A.

SENIOR PROJECT MANAGER / HISTORIC SITES SPECIALIST

Suzanne Sanders, M.A., Senior Project Manager, received her Bachelor of Arts degree from SUNY Binghamton in 1984, and her M.A., in Historical Archaeology from the College of William and Mary in 1988. Ms. Sanders' M.A. thesis focused on vernacular architecture (standing structures), and included an inventory and analysis of over 400 buildings. For four years, while at William and Mary, Ms. Sanders instructed archeological field schools in historical archeology held by the College in the West Indies. In addition to extensive field experience in the Mid-Atlantic, Ms. Sanders has worked in the southeast, including North Carolina, Florida, and Louisiana; and, in West Virginia and Ohio. Her fieldwork also includes extensive experience on both historic and Precolumbian sites in the Bahamas and in the Caribbean. Ms. Sanders has worked on sites ranging in date from the mid-seventeenth through the twentieth century. These have included both urban and rural sites related to domestic, agricultural, industrial, institutional, and military activities. These investigations have included the range from Phase I survey and inventory, through Phase II evaluation, and Phase III mitigation.

Her experience in cultural resource management includes participation in the preparation of planning documents such as Memoranda of Agreement (MOAs), Programmatic Agreements (PAs), Environmental Assessments, Environmental Impact Assessments, Environmental Impact Statements, and Historic and Archeological Resources Protection Plans (HARP Plans). Additional participation in planning under Federal Preservation Law has included the preparation of National Register of Historic Places nominations and amendments to nominations for both sites and districts.

Ms. Sanders has supervised or served as project manager for Phase I survey and inventory projects that include extensive, long-term Section 110 inventory on federal properties and military installations. These surveys have included the preparation of planning documents for these facilities. Her involvement in Phase II evaluation of prehistoric, Precolumbian, and historic sites has included extensive domestic, agricultural and plantation, industrial and institutional, and military sites throughout the Mid-Atlantic, Louisiana, The Bahamas and the Caribbean. Research projects encompassed eighteenth and nineteenth century domestic and plantation sites in Maryland, Virginia and Louisiana; seventeenth, eighteenth, and nineteenth century plantation and sugar processing sites in the Caribbean; and Precolumbian habitation sites in the Caribbean and The Bahamas. Ms. Sanders has managed or supervised many Phase III mitigation projects, including extensive urban domestic and industrial sites in Maryland and Louisiana, Civil War campsites in Pennsylvania and Virginia, nineteenth century graveyards in Pennsylvania and Maryland. At Goodwin & Associates, Inc., Ms. Sanders also has been involved with many comprehensive, multi-phase investigations of urban neighborhoods. In Baltimore, these include working with the Maryland Stadium Authority in connection with the development of Oriole Park at Camden Yards, the Baltimore Convention Center, and the Ravens Stadium. Her work with the City of Annapolis was connected with several phases of downtown development, including the Gott's Court Parking Area and the Main Street, West Street, Fleet and Cornhill Streets and Church Circle streetscape renovations. She also was involved in the extensive archeological investigations related to the construction of the new Veterans' Hospital in New Orleans.

KATHLEEN M. CHILD, M.A. PROJECT MANAGER / ARCHEOLOGIST

Ms. Kathleen Marie Child, M.A., Project Manager, has served as Project Manager and Assistant Project Manager for R. Christopher Goodwin & Associates, Inc. (RCG&A) for the past 16 years. She was awarded a M.A. in Historical Archeology from The College of William and Mary (2009) and a baccalaureate from St. Mary's College, Maryland (1989).

While at RCG&A, Ms. Child has worked on numerous cultural resource surveys, archeological evaluation and mitigation/data recovery projects, and cemetery relocation projects. The geographic range of the projects under her supervision spans the Mid-Atlantic and southeast regions and she has worked for a wide range of private, state, and federal agencies, including the U.S. Army Corps of Engineers, Baltimore and New Orleans Districts; Maryland State Highway Department; the Veterans Administration; and NASA Langley. Her experience includes investigations conducted on properties managed by the National Park Service, the U.S. Army, the U.S. Marine Corps, the U.S. Navy, the Air National Guard, the Veterans Administration, and NASA.

Ms. Child has supervised cultural resources investigations at a diverse range of prehistoric and historic period sites within challenging settings that have ranged from undeveloped wilderness areas to inner-city urban sites. She has supervised Phase I through Phase III level investigations on prehistoric and historic archeological sites spanning a diverse range of temporal periods. Her expertise is in historical archeology and includes investigations on sites ranging from the early colonial period through modern period. She has served as field director for investigations undertaken in diverse settings ranging from inner-city areas of major cities such as New Orleans, Baltimore, Washington, D.C., and the District of Columbia to rural sites situated within undeveloped wilderness areas. Recently, Ms. Child served as a field director for Phase II-III investigations for the Veterans Affairs Medical Center in downtown New Orleans, and as project manager for a Phase I studies conducted within the City of Alexandria, Virginia and the City of Frederick, Maryland. Ms. Child also has supervised mortuary excavations at nineteenth century historic cemeteries ranging from a single interment to 84 individuals interred within a multi-family plot. Her mortuary experience includes investigations at a prehistoric contact period site, as well as with Middle and Late Woodland period interments in isolated settings.

Ms. Child has authored and co-authored many technical reports while employed with RCG&A. She has presented two original research papers at the Mid-Atlantic Archeological Conference, including one on the regional significance and research potential of two historic sites related to the early development of Leonardtown, Maryland. She also has prepared public information presentations for the Maryland State Highway Administration and for local historical and preservation societies.

MARTHA R. WILLIAMS, M.A., M.ED. RESEARCH ASSOCIATE

Martha R. Williams, M.A., M.Ed., Research Associate, holds a B.A. (1960) from Lebanon Valley College; a Master of Education, with emphasis in the Social Sciences, from the University of Pennsylvania (1965); and an M.A. in History, with emphasis in Applied History, from George Mason University (1987). She was a Coe Fellow in American Studies at SUNY Stony Brook in 1982 and 1989. While completing her internship with George Mason University, she co-authored the original Heritage Resource Management Plan for Fairfax County, Virginia.

Ms. Williams' experience in cultural resource management and in historical archeology began in 1972 with a field school at Colonial Williamsburg, under the direction of Ivor Noel Hume. From 1973 to 1987, she co-directed the Fairfax County Seminars in historical archeology for high school students, a program that investigated 15 archeological sites in Fairfax County. Her archeological experience also includes extensive volunteer work with the Fairfax County (VA) Heritage Resources Branch; the City of Alexandria, VA; the Virginia Division of Historic Resources; and the Museum of the Albemarle in North Carolina. She has been a member of the Lost Colony archeological team since its inception in 1991.

Following her retirement from teaching, Ms. Williams joined the professional staff at R. Christopher Goodwin & Associates, Inc. in 1989. Until her retirement from full-time employment in 2007, Ms. Williams served as historian, project archeologist, project manager, and public interpretation specialist for the company. Her historical research supported both terrestrial and underwater projects in a states ranging from Louisiana and Illinois to Maine and Florida. She also managed all types of archeological projects, including preparation of archeological predictive models and disturbance studies; Phase I and II archeological surveys and evaluations; Phase III archeological data recovery projects; and preparation of cultural resource planning documents for Federal agencies and local governments. As public interpretation specialist, she designed and executed a wide range of public information activities, including two public information and training booklets and a CRM training video for the Legacy Program of the Department of Defense. Since 2007, she has continued to support projects for Goodwin & Associates as a Research Associate.

Ms. Williams has been and remains actively involved in the field of historic preservation. She has contributed articles and reviews to the *Yearbook* of the Historical Society of Fairfax County, *Museum News*, *Interpretation* (NPS), the *Quarterly Bulletin* of the ASV, *American Antiquity*, and the *Journal of Mid-Atlantic Archaeology*. She presently sits on the Board of Directors of the Archeological Society of Virginia, and serves on the Society's Kittiewan Plantation Committee, which manages the cultural resources of the ASV's 18th century plantation property. Williams also continues to work with the First Colony Foundation, a group committed to archeological research at the Lost Colony, and was recently appointed as its Education Coordinator. These efforts have led to several awards, including the Fairfax County History Commission's Distinguished Service Award (1991); the Archeological Society of Virginia's "Professional Archeologist of the Year" (1996) and "Out of State Professional of the Year" (2008); and the Society for Historical Archaeology's Award of Merit (2001) for her contributions to archeological education. In 2011, Ms. Williams received a Ben Brenman Outstanding Professional Archaeologist award from the City of Alexandria, VA, for "her nearly 40 years of outstanding teaching, historic research, and archaeological investigations in and near Alexandria."

KATIE L. KOSACK, M.A.

LABORATORY SUPERVISOR/HISTORIC ANALYST

Katie L. Kosack, M.A., Laboratory Supervisor/Historic Analyst, received her M.A. in Historical Archeology from the University of Massachusetts Boston in Boston, Massachusetts in 2010. She also holds a B.A. in Historic Preservation and American Studies from the University of Massachusetts Boston in Boston, Massachusetts.

At R. Christopher Goodwin & Associates, Inc. (RCG&A) Ms. Kosack oversees the organization of all archeological collections in the laboratory, and manages the processing and curation of archeological collections from testing and mitigation/data recovery excavations spanning prehistoric to modern times. She manages over 200 archeological collections with experience in Louisiana, Maryland, Virginia, West Virginia, Pennsylvania, Ohio, New Jersey, Puerto Rico, Oklahoma, and Massachusetts. Ms. Kosack collaborates regularly with state and feral curation facilities to coordinate curation. In addition, she conducts analyses of historic artifacts and possesses a suite of technical skills that allows her to specialize in historic ceramic and glass analyses. She has contributed to numerous reports, including temporal and socioeconomic analyses for data recoveries.