

Sussex County Community College Anthropology Program

Occasional Paper No. 2

ARCHAEOLOGICAL INVESTIGATIONS OF THE WALNUT GROVE FARM
SITE (28SX483)

HAMPTON AND FRANKFORD TOWNSHIPS,

SUSSEX COUNTY, NEW JERSEY

THE 2013 SUSSEX COUNTY COMMUNITY COLLEGE ARCHAEOLOGICAL
FIELD SCHOOL

BY

WILLIAM SANDY, RPA

AND

JAMES KOTCHO, MA

MAY, 2015



MANAGEMENT SUMMARY

The 2013 Sussex County Community College (SCCC) Archaeological Field School carried out shovel testing and excavation of test units at the Walnut Grove Farm (WGF) Site in Hampton and Frankford Townships, Sussex County, New Jersey. This report contains the results of background research carried out at the New Jersey State Museum, a completed State Museum site registration form, and the results of the excavations.

The farmers have a surface collection of stone tools, including projectile points. An analysis of that collection was the subject of a previous report. The site was occupied from the late Middle Archaic period (5,000 BC) to the Late Woodland period (1600 AD). This time range came from well dated projectile points, including Brewerton Side-Notched, Poplar Island, Lackawaxen, Bare Island, Fishtail variants, Rossville, Fox Creek, Eshback, and Late Woodland triangle points. Partially completed bifaces show that chipped stone tool manufacture took place. Projectile points used to kill game, and scrapers often used to process animal hides, show hunting was a major site activity. Other tools were a core, scrapers, and cobble artifacts, including a mortar, a pestle, a muller, a grinding stone, and a pitted pounding stone.

Research at the New Jersey State Museum (NJSM) reviewed registered archaeological sites within a one-mile radius of WGF. Only one such site, the Branchville South Site 28Sx421, is located nearly one mile to the north. Investigated for a proposed wastewater treatment plant, there were 164 shovel tests and 5 excavation units completed. In total, 144 lithic artifacts were found; the vast majority were chert flakes. An untyped stemmed argillite point, cores, and fire-cracked rock (FCR) were also recovered. Hampton Township Historian Randy Pittinger reports an unregistered rockshelter site located just over one mile northeast of WGF. A NJSM- Bureau of Archaeology Site Registration Program Form was completed for WGF. It was assigned NJSM Site Number 28Sx483.

The 2013 Archaeological Field School used the same tools, paperwork, and methods as cultural resource management professionals. A substantial amount of testing was completed over much of the eastern part of the farm. West of the shovel tested area, a cluster of 3 units were opened on a sandy knoll, to expose a feature. Feature 1 was a small pit filled with sand; it produced a single stone expedient tool/utilized flake. A Poplar Island spear point came from ST1, an auspicious start to the testing. These points are thought to date from either the Middle or Late Archaic through the Middle Woodland. A Fishtail-like point came from Unit 2. They have been dated to the Transitional or Terminal Archaic, c BC 1230 to BC 763. Both points were found in the plowzone Level 1A and were among the point types in the farmers' surface collection.

Future fieldwork at the Walnut Grove Farm Site should expand the shovel test (ST) grid to the west and south so that most of the farm will be tested and the site borders determined. Feature 1 could be re-exposed and the north half excavated. A soil sample from the feature should be retained for possible flotation processing. If possible, additional STs should be dug in the vicinity of future discoveries. Methods such as STs dug at closer grid intervals of 7.5m, and clusters of tests around a positive test, could be used. These methods are used in cultural resource management.

The 2013 Sussex County Community College Archaeological Field School was important for several reasons. It was the first time in recent memory that a Sussex County school has undertaken a multi-pronged research project on a Sussex County archaeological site. Walnut Grove farmers Les and Deb Guile's strong support for the project, including an on-site classroom and wet lab, showed that research of this type is desired by the community. Because of this project, SCCC is exchanging information with researchers at the Hampton Township Historical Society, NJSM, and New Jersey Historic Preservation Office, Waterloo Village/WINAKUNG at Waterloo, Inc., and others. This free flowing information will not only benefit SCCC students, but also result in a better understanding of the rich heritage of Sussex County.

TABLE OF CONTENTS

Management Summary	2
Table of Contents	3
List of Photographs	4
List of Figures	4
Introduction	5
Geography, Geology and Soils	6
Precontact Background	9
Introduction	
Previous Investigations	
Field Results	11
Methods	11
Results	11
Conclusions and Recommendations	18
Bibliography	20
Photos	22
Figures	28
Appendices	
A. Artifact Inventory	
B. Record of Excavations	
C. New Jersey State Museum Site Registration Form- Walnut Grove Farm	

List of Photographs

- Cover Class photo of the 2013 Sussex County Community College Archaeological Field School.
- 1 View looking northwest at Unit 1 located next to ST1 at the Walnut Grove Farm Site.
 - 2 View looking north at the location of Unit 2, located along the ridgetop at the Walnut Grove Farm Site.
 - 3 Poplar Island projectile point from ST1.
 - 4 Fishtail-like projectile point from Unit 2.
 - 5 Unit 8 at the bottom of Level 2B showing Feature 1 in the north half.
 - 6 View looking northwest at Units 8, 10, and 11 with Feature 1 on right.
 - 7 Looking east at Feature 1 following excavation of Level 2 in Feature 1 and the east profile of Units 8 and 10.
 - 8 Expedient tool/utilized flake from Feature 1 Level 2 in Unit 8.

List of Figures

- 1 Part of the USGS Newton East (1964) Branchville (1954) Quadrangles showing the location of the Walnut Grove Farm Site marked with a blue line (Provided by Les & Deb Guile).
- 2 Aerial photograph from 2002 showing Walnut Grove Farm divided by the Frankford Township - Hampton Township border (Provided by Les & Deb Guile).
- 3 Physiographic provinces of New Jersey on which the location of Walnut Grove Farm Site is shown within the Valley and Ridge (Wolfe 1977:204).
- 4 Soils map showing Walnut Grove Farm outlined in blue (Provided by Les & Deb Guile; based on Shaw and Schoenagel 2007).
- 5 Site map.
- 6 Drawing of Fishtail variant projectile point from Unit 2 Level 1 and flake from Unit 7 Level 1 (by Derek Connor)
- 7 Plan of Units 8, 10, and 11 showing the top of Feature 1.
- 8 East profile of Units 8 and 10 showing the Feature 1 in profile.

INTRODUCTION

Sussex County Community College (SCCC) has a Community Archaeology Program (CAP) intended to foster research and education centered on the vast and rich cultural heritage throughout Sussex County, New Jersey. The program includes open communication with local experts in history and archaeology. One such expert in both subjects is Hampton Township Historian Randy Pittinger. Pittinger has visited archaeological sites throughout Hampton Township and surrounding communities; he has surface collected many of them. He recommended the Walnut Grove Farm Site for archaeological testing.

Owned since 1981 by Les and Deb Guile, the farm covers 10 acres (Figures 1 and 2). During the day to day operation of this organic vegetable and Christmas tree farm, they have amassed a considerable collection of stone tools.

In 2013, Sussex County Community College (SCCC) conducted an archaeological field school at Walnut Grove Farm (WGF). The field school was led by William Sandy, Adjunct Professor of Anthropology at SCCC. Part of the field school effort involved the cleaning and identification of artifacts. The lab efforts were led by SCCC Adjunct Professor of Anthropology, lithic analyst, and Lab Supervisor James Kotcho. Kotcho (2015) also analyzed and issued a report on the various Precontact stone tools collected over the years by the farmers on Walnut Grove Farm. Head of the SCCC Anthropology department Dr. Anthony "Tony" Balzano assisted the field effort in a variety of ways.

The SCCC field school investigated WGF between May 29 and July 2, 2013, and is the subject of this report (Photos Cover and 1). SCCC Anthropology Research Assistant Emily Davidson and Nadine Stevens were crew chiefs. Photos are by Sandy, Davidson, Kotcho, and Penny Steyer. Hampton Township Historian and avocational archaeologist Randy Pittinger visited the investigations and gave the research team the benefit of his decades of research into Sussex County archaeological sites. Author Marilyn Johnson visited the site and mentioned it in her bestselling book *Lives In Ruins: Archaeologists and the Seductive Lure of Human Rubble* (Johnson 2014:169). Historical Perspectives, Inc. of Westport, Connecticut provided field equipment and excavation record forms.

SCCC students taking place in the field school included Brandon Carlson, Meadow Cole, Derek Connor, Samantha Fonseca, Amanda Hendershot, Catherine Huddy, Judith Keith, Tyler Kelly, Meghan Maffetone, Steven Matthews, and Christine Wilson. Penny Steyer edited this report. All errors and omissions are the responsibility of the primary author.

GEOGRAPHY, GEOLOGY AND SOILS

Walnut Grove Farm is in the Kittatinny Valley, in the east central portion of the Valley and Ridge Physiographic Province. The Valley and Ridge is located in northwestern New Jersey, contains 530 square miles, and is located between the Delaware River and the New Jersey Highlands. Geologic processes created an area of long linear valleys and ridges which gives the province its name. The province consists of three distinctive physiographic regions, the Delaware Valley, the Kittatinny Mountain and the Kittatinny Valley (Kotcho 2015; Wolfe 1977; Figure 3).

The Kittatinny Valley, which includes the Paulins Kill river valley, is underlain by soluble dolomite and limestone formations. The Paulins Kill, a tributary of the Delaware River, flows to the southwest, and its bed is scoured through the dolomite and limestone formations. Relief can be as much as 200 feet with many rocky outcrops. This results in a rugged terrain with small rocky knolls and ridges, sinkholes and streamless valleys. Springs are fairly common throughout the Kittatinny Valley. Large irregular glacial depressions or karst basins cover portions of the valley. The largest of these basins are Swartswood, Newton Meadows, and Great Meadows. Glacial processes of scouring and dissolution of the dolomite and limestone bedrock produced these karst basins. During the last glacial episode, deposits of silt, clay, sand, and gravel from glacial lakes were deposited in the basins, as well as other portions of the valley. Slate, siltstone and sandstone belts, running in a generally northeastern direction, underlie the higher portions of the Kittatinny Valley. The preceding discussion of the geology was adapted from *The Geology and Landscapes of New Jersey* (Wolfe 1977; Figure 3).

There are two soil types present on Walnut Grove Farm: Hazen-Hoosic complex, very stony, with 3 to 8 percent slopes (HdxBb on Figure 4), and Rock outcrop-Farmington-Galway complex with 15 to 35 percent slopes (RnfD on Figure 4) (Shaw and Schoenagel 2007).

Almost the entire farm is composed of **Hazen-Hoosic complex soils** with slopes in the 3 to 8 percent range (HdxBb). Hazen-Hoosic complex soils are typically composed of 60% Hazen soils, 35% Hoosic soils, and 5% of minor soils. These soils typically occur as valley trains and outwash plains (Shaw and Schoenagel 2007:31). According to the USDA, an **Outwash Plain** is an extensive lowland area of coarse textured glaciofluvial material. An outwash plain is commonly smooth; where pitted, it generally is low in relief (Shaw and Schoenagel 2007:233). A **Valley Train** is a long narrow body of outwash confined within a valley beyond a glacier. It may, or may not, emerge from the valley and join an outwash plain (Shaw and Schoenagel 2007:239). **Glaciofluvial material** is stratified soil that has been moved by a glacier, and then redeposited by meltwater (Shaw and Schoenagel 2007:229).

Hazen soils can be derived from sandstone, shale, limestone/dolomite and/or conglomerate. When limestone/dolomite is the source, the soils may be slightly alkaline. Otherwise, they can be moderately acidic. The depth to the high water table of these well drained soils is more than 6 ft. (1.81m).

The USDA has provided a typical profile of Hazen soils:

Surface layer:

Oi—0 to 1 inch; slightly decomposed plant material

Ap (plowzone)—1 to 10 inches; loam

Subsoil layer:

Bt—10 to 18 inches; sandy loam

Substratum:

2C1—18 to 29 inches; very stony loamy coarse sand

2C2—29 to 41 inches; very gravelly coarse sand

2C3—41 to 60 inches; extremely gravelly coarse sand

A more detailed description of one type of a Hazen Series profile was recorded at the Flatbrook-Roy Wildlife Management Area in Sandyston. That profile was from a flat, fallow field with Hazen-Hoosic complex, very stony soils with slopes from 0 to 3 percent slopes (HdAxb).

Surface layer:

Oi—0 to 1 inch; black (10YR 2/1) slightly decomposed woody plant material.

Ap (plowzone)—1 to 10 inches; dark brown (10YR 3/3) loam (10YR 5/3, dry); moderate medium and fine subangular blocky structure; friable; 5 percent rounded red and gray sandstone and gray conglomerate medium gravel; moderately acid (pH-5.8)

Subsoil layer:

Bt—10 to 18 inches; strong brown (7.5YR 4/6) sandy loam; moderate medium and weak fine subangular blocky structure; friable; 10 percent rounded red and gray sandstone and gray conglomerate medium gravel; slightly acid (pH-6.2).

Substratum

2C1—18 to 29 inches; dark brown (7.5YR 3/4) very stony loamy coarse sand; massive; very friable; 40 percent rounded red and gray sandstone and gray conglomerate stones; 5 percent rounded red and gray sandstone and gray conglomerate cobbles; 5 percent rounded red and gray sandstone and gray conglomerate medium gravel; slightly acid (pH-6.2).

2C2—29 to 41 inches; dark brown (7.5YR 3/4) very gravelly coarse sand; 25 percent rounded red and gray sandstone and gray conglomerate medium gravel; 10 percent rounded red and gray sandstone and gray conglomerate coarse gravel; 10 percent rounded red and gray sandstone and gray conglomerate fine gravel; 5 percent rounded red and gray sandstone and gray conglomerate stones; 5 percent rounded red and gray sandstone and gray conglomerate cobbles; slightly acid (pH-6.4).

2C3—41 to 60 inches; dark brown (7.5YR 3/4) extremely gravelly coarse sand; strong brown (7.5YR 4/6) extremely gravelly coarse sand; single-grain; loose; 30 percent rounded red and gray sandstone and gray conglomerate coarse gravel; 10 percent rounded red and gray sandstone and gray conglomerate medium gravel; 10 percent rounded red and gray sandstone and gray conglomerate fine gravel; 10 percent rounded red and gray sandstone and gray conglomerate stones; 5 percent rounded red and gray sandstone and gray conglomerate cobbles; slightly acid (pH-6.4) (Shaw and Schoenagel 2009:175, 176).

In contrast, the sources of Hoosic soils are from sandstone, shale, and conglomerates, not limestone or dolomite. Consequently these soils are more acidic, ranging from very strongly acid to moderately acid. The depth to the high water table of these somewhat excessively drained soils is more than 6 ft. (1.81m).

Description of Hoosic and similar soils. The typical sequence of Hoosic soils are as follows—

Surface layer:

Oi—0 to 1 inch; slightly decomposed plant material

Ap—1 to 9 inches; gravelly loam

Subsoil layer:

Bw—9 to 21 inches; very gravelly coarse sandy loam

Substratum:

2C1—21 to 27 inches; extremely gravelly loamy coarse sand

2C2—27 to 37 inches; extremely gravelly coarse sand

2C3—37 to 49 inches; extremely gravelly coarse sand

2C4—49 to 60 inches; extremely gravelly coarse sand

Less than 2 percent of Walnut Grove Farm has soils classified as **Rock outcrop-Farmington-Galway complex with 15 to 35 percent slopes (RnfD)**. These soils occur in two locations, in the south along Route 519 and in the northwest corner. It is considered a Till Plain or Ground moraine.

Till plain is an extensive area of level to gently undulating soils underlain predominantly by till and bounded at the distal end by subordinate recessional or end moraines. **Ground Moraine**, in this case means a layer of poorly sorted rock and mineral debris (till) dragged along, in, on, or beneath a glacier and deposited by processes (Shaw and Schoenagel 2007:229, 230,238). Bedrock in this vicinity is limestone/dolomite.

There is a linear band of wetlands, running from east to west in the southern part of Walnut Grove Farm. A newly excavated farm pond is in the southwest corner, near the intersection of Route 519 and Augusta Hill Road.

PRECONTACT BACKGROUND

INTRODUCTION

Because of a paucity of information, it is difficult to place the Walnut Grove Farm Site in a Sussex County-wide perspective. There has never been a systematic, scientific, survey of the County. In fact, the only County-wide site survey was conducted more than 100 years ago (Schrabisch 1915). This was before the advent of the projectile point typologies and radiocarbon dating that are now used to date sites (e.g. Ritchie 1989; Fogelman 1988; Justice 1995; Custer 2001). Schrabisch documented sites that were revealed to him by artifact collectors. He did not explore areas where sites had not been previously reported. He appeared to concentrate his work in locations relatively close to train stations (Lenik 1998). Clearly, the results of this pioneering study are not reflective of the actual distribution of sites in Sussex County.

Subsequent investigations by archaeologists were primarily the result of cultural resource management (CRM) studies of areas slated for construction. Most of what is known about Sussex County sites comes from investigations along the Delaware River. In the 1960s, this area was set to be flooded by the proposed (now defunct) Tocks Island Dam (e.g. Kinsey 1972; Kraft 1975). Later studies funded by the New Jersey Department of Transportation focused on improving existing roadways.

Schrabisch recorded many Precontact (prehistoric) sites in the Paulins Kill drainage. The overwhelming majority of those sites were well to the southwest of Walnut Grove Farm. An unusually large concentration of sites was west of Newton, in the vicinity of Swartswood Lake.

A survey of registered Precontact sites at the New Jersey State Museum (NJSM) located only one site within a one-mile radius of Walnut Grove Farm. The Branchville South Site (assigned site number 28Sx421 by NJSM) is located in Frankford, on the south side of Route 206 and nearly one mile north of WGF. It was investigated between 2003 and 2009 for a proposed wastewater treatment plant. There were 164 Shovel Tests (STs) and five 3-foot excavation units. In total, 144 lithic artifacts were found; the vast majority were chert flakes. An untyped stemmed argillite point, cores, and fire-cracked rock (FCR) were also recovered. Soils were similar to those at WGF, Hazen gravelly loam with slopes of 3 to 5 percent (New Jersey State Museum n.d.).

Two other registered sites are located more than one mile northeast of WGF. Site 28Sx210 is located in Frankford, while Site 28Sx209 is located further east in Lafayette. Hampton Township Historian Randy Pittenger reports a possible rockshelter, not registered with NJSM, a little over one mile northeast of Walnut Grove Farm in Frankford Township.

PREVIOUS INVESTIGATIONS

The owners and operators of Walnut Grove Farm have collected stone artifacts found during their cultivation of the property since 1980. Recently, these artifacts were analyzed and photographed, and a report generated (Kotcho 2015). Analysis showed that the site was occupied from the late Middle Archaic period (5,000 BC) through to the Late Woodland period (1600 AD). This time range came from well dated projectile points identified in the collection. These include Brewerton Side-Notched, Poplar Island, Lackawaxen, Bare Island, Fishtail variants, Rossville, Fox Creek, Eshback, and Late Woodland triangle points (Fogelman 1988; Kraft 1975; Ritchie 1989). However, some of the non-projectile point artifacts were of types utilized from the Paleo-Indian period (circa 10,000 BC) through the Late Woodland period, but are not diagnostic of any one cultural period. Especially intriguing are the prismatic-type blade and reamer, which resemble types found at Paleo-Indian sites in the Northeast (Gramly 1995). Partially completed bifaces from the collection strongly suggest that chipped stone tool manufacture took place on the site. Projectile points used to kill game and scrapers often used to process animal hides, point to hunting as a major site activity.

A core was used to supply flakes, and these flakes could be made into tools. One such core was used as a chopper. Scrapers could have been used to work wood, bone, and hides (Kotcho 2015).

Some of the cobble artifacts, including a mortar, a pestle, a muller, a grinding stone, and a pitted pounding stone indicate that site inhabitants processed plant materials for food, such as nuts, seeds or maize. All of this is consistent with well documented activities in the region (Kinsey 1972; Kraft 1975). The heavy, non-transportable mortar suggests that the site may have been revisited over time (Kotcho 2015).

It is highly likely that the black chert, from which the large majority of the artifacts were made, came from sources in the region, including local outcrops in the Paulins Kill drainage. Within the Valley and Ridge Province over 200 prehistoric chert quarries have been documented in the Wallkill River Valley of northern New Jersey and southern New York (LaPorta 1994). The Wallkill River drainage, which flows north from Sparta, New Jersey to New Paltz, New York, is a few minutes walk north of WGF.

It is likely that the cobble tools were derived from locations near the Paulins Kill, which flows approximately 600 meters west of the site. Chert outcrops along the Paulins Kill were found approximately 850 meters southwest of the Walnut Grove Farm site. Some of the utilized tool stone found in the collection, such as argillite, could be from formations in the Middle Delaware River Valley, although there are said to be argillite outcrops in Vernon, Sussex County. Several examples of non-local chert are also noted. These exotic materials were either brought to WGF by foraging groups, traded, or collected by the local inhabitants from their source. However it could be that they were derived from cobble sources of cherts that were deposited throughout the area as a result of the last glaciations (Kotcho 2015).

FIELD RESULTS

METHODS

The archaeological fieldwork at the Walnut Grove Farm Site generally followed the standard methods of Cultural Resource Management (CRM) professionals in New Jersey, New York, Connecticut and the region. Measurements used the metric system. Each excavation was assigned a North and West coordinate (e.g. N30W15). Two types of excavations were carried out, shovel tests and excavations.

Shovel tests (STs) measured about 0.37m (1.25 ft.) in plan. Each test was excavated into culturally sterile subsoil. Soil stratigraphy, including colors and textures, were recorded on pre-printed sheets. Soil colors were determined with a Munsell Soil Color Chart. Textures were determined using a flow diagram. All excavated material was sifted through one-quarter inch mesh (6mm) hardware cloth. Shovel tests were excavated at 15m (50 ft.) intervals.

Excavation Units (Units) measured 1m (3.3 ft.) square in plan. Unit contexts were determined by natural changes in soil color and/or texture. The topsoil (A horizon) was typically excavated as a single context (1A). Arbitrary contexts were used to subdivide the subsoil (B horizon) when natural strata are absent. These arbitrary levels of the B horizon were typically 20cm (0.67 ft.) thick. Excavations continued into culturally sterile subsoil, usually a gravelly C horizon. Precontact features were exposed in plan, then one-half of the anomaly was dug.

Appendix A is the Artifact Inventory. Appendix B is the summary Record of Excavations, which provides Shovel Test and excavation Unit profiles and other information. Appendix C is the NJSM Site Registration Form for Walnut Grove Farm. Table 1 summarizes the artifacts recovered. Figure 5 is the site map; it shows which excavations produced Precontact artifacts.

RESULTS

The Precontact era has been called the *Stone Age*, but many of the artifacts were bone, wood, or string. Due to the acid soils in New Jersey, these perishable materials rarely survive, except at sites such as flooded areas, shell middens, rockshelters, and caves (Funk and Steadman 1994; Sandy 2009). The lack of Precontact organic remains at WGF must be considered when relating the exclusively lithic artifact inventory to the activities that occurred. The lithic artifacts recovered from the investigations show that specific activities took place in specific locations, and at specific times during the long occupation of the Walnut Grove Farm Site.

There were 32 shovel tests (STs) completed in 4 rows within 60m (200 ft.) of the east end of the property. Eleven of these tests (34 percent) produced Precontact artifacts (Figure 5). All but 2 of the finds were confined to the plowzone (Level 1A).

There were 3 basic profiles of these shovel tests. The most common profile, which was found in 15 STs, had 3 strata, A, B, and C horizons, like ST1 (Photo 1).

ST 1 N76 W15

1 1 |

<u>Depth</u>	<u>Soil type</u>	<u>Color</u>	<u>Artifacts</u>	<u>Interpretations</u>
0-25cm	Clay loam	very dark grayish brown	Point, util. flake, redware, shell	A(p)
26 -50cm	Clay loam	dk brown	charcoal	B
51-64 cm	Stony clay loam	dk yellow brown	NCM	C

The plowzone ranged from 20 to 40cm thick, and was either clay loam or loam. Other colors were brown and dark yellowish brown. The artifacts recovered, including the Fishtail-like projectile point are discussed later in this report. . The B horizon ranged from 13 to 62cm thick. Other colors besides dark brown were dark yellowish brown, yellowish brown, and light yellowish brown. Other textures were loam, gravelly loam, sandy loam, loamy sand, and gravelly clay loam. C horizon textures were gravelly loamy sand, gravelly clay loam, stony sandy clay loam, loamy gravel, stony sandy loam, gravelly loam, and silty sandy loam. Other colors were brown, yellowish brown and light yellowish brown. These tests ranged in total depth from 45 to 97cm.

The second most common profile was present in 12 STs. It had only 2 strata, an A horizon over a B horizon. An example is ST7.

ST 7 N165 W15

<u>Depth</u>	<u>Soil type</u>	<u>Color</u>	<u>Artifacts</u>	<u>Interpretations</u>
0-30cm	Loam	very dark grayish brown	2 flakes, plastic	A(p)
31-65cm	Loamy sand	brown	NCM	B

The plowzone was between 30 and 45cm thick. Colors ranged from very dark grayish brown, dark brown, brown, dark yellowish brown, and light yellowish brown. Textures included loam, silt loam, clay loam, and silty clay loam. The B horizon textures included clay, loam, silty loam, and silty clay loam. Colors included very dark grayish brown, dark yellowish brown, light yellowish brown, and gray. Total depth ranged from 56 to 95cm.

The third type of profile was truncated; the plowzone atop the C horizon. It was found in five STs, including ST5.

ST 5 N135 W15

<u>Depth</u>	<u>Soil type</u>	<u>Color</u>	<u>Artifacts</u>	<u>Interpretations</u>
0-42cm	Clay loam	very dark grayish brown	2 flakes, util. flake	A(p)
43-75cm	Gravelly clay loam	yellowish brown	flake	C

The A horizon was between 28 and 42cm thick in these STs. Other colors were dark brown, and brown. Other soil textures were loamy clay and gravelly clay loam. These STs ranged from 49 to 75cm in depth. Colors included dark yellowish brown and brown. Other textures were gravelly sandy loam and clay loam.

There were 11 Units excavated; 8 (72 percent) produced Precontact artifacts. Artifacts from the STs and Units, broken down into Procurement Tools, Processing Tools, Debris, and Other classes are discussed below.

Unit 1 was located on the north side of the driveway into Walnut Grove Farm and 15m (50 ft.) from Augusta Hill Road (Photo 1) . It was positioned next to ST1, which produced a spear point and other artifacts in Level 1A (Photo 3, Figure 6). Artifacts in Unit 1 were limited to 2 fire-cracked rocks (FCR) in Level 3B and a chalcedony flake in Level 4B. (Photo 1).

Unit 2 was 45m (150 ft.) northwest of Unit 1; it was next to ST12 which produced a flake in Level 1A (Photo 2). Artifacts in the plowzone (Level 1A) of Unit 1 included a spear point, 2 expedient tools, 5 core fragments, and 3 flakes (Photos 2 and 4). One flake came from Level 2B; the rest of the finds came from Level 1A.

Unit 3 was about 40m (132 ft.) northwest of Unit 2. It had a utilized flake and a flake in Level 1A. Four core reduction fragments were found in Level 3B.

Unit 4 was 30m (100 ft.) south of Unit 3 and 30m (100 ft.) west of Unit 2. A flake in Level 1A was the only Precontact find.

Unit 5 was about 27m (89 ft.) west of Unit 4. It was only excavated about 10cm (0.4 ft.) when a PVC irrigation pipe was encountered and the Unit discontinued. No finds were made.

Unit 7 was positioned on the east side of Unit 5, in order to avoid the water pipeline. A flake blade and a flake, both of black chert, were found in Level 1A (Figure 6). No other finds were made.

Unit 6 was 25m (82.5 ft.) west of Unit 5. An expedient tool and a flake from Level 1A were the only finds.

Unit 9 was about 30m (100 ft.) south of Units 5 and 7. Because of lack of time, and discoveries elsewhere on site, Unit 9 was abandoned in Level 1A. A pitted stone and 2 pieces of glass were the only finds.

Unit 8 was on a slight knoll about 20m (66 ft.) northwest of Unit 6 and about 3m (10 ft.) south of a patch of Christmas trees. The plowzone (Level 1A) produced a piece of fire cracked rock. A small seed of poke was found; it was not charred and is considered modern. Level 2B produced an expedient sandstone pebble tool. It was clear at that point that the soils were varied and considerably different than previous units. Soils were much sandier than elsewhere; The northern half of the unit contained pockets of pure sand. At the base of Level 2B there were two distinct contexts. The southern part of the square was dark yellowish brown loamy sand while the north half consisted of yellowish brown and light yellowish brown sand. This led to the idea that the northern half was part of a larger feature (Feature 1), likely a pit that extended to the north and west of the square (Photos 5 and 6, Figure 7). In an attempt to expose the entire feature in plan, two adjacent units were opened. Unit 10 was placed to the north and Unit 11 was to the west (Figures 7 and 8, Photo 7).

Unit 10 was excavated through Level 3B. Only a wire nail was found. Unit 11 was excavated to the same depth. The lone find was a sandstone abradar in Level 1A.

At this point, it appeared that most of Feature 1 was exposed in plan (Figure 7). However, following excavation of Feature 1 in Unit 8, the eastern profile shows that Feature 1 extends further east (Figure 8). Two 20cm (0.67 ft.) levels of the south half of Feature 1 were excavated. Natural subsoil was reached. Soils were fine sand of various colors. No charcoal was present. The only artifact was an expedient tool in Feature 1 Level 2. Due to a lack of time, the north half of the feature was not excavated; the units were backfilled. It appears that Feature 1 is oval and about 1.1m (3.6 ft.) in diameter and about 0.55m (1.8 ft.) deep.

TABLE 1: 2013 ARTIFACT SUMMARY

	ST1	ST3	ST4	ST5	ST7	ST10	ST12	ST15	ST30	ST31
Projectile point	1	-	-	-	-	-	-	-	-	-
Graver	-	-	-	-	-	-	-	-	1	-
Pitted stone	-	-	-	-	-	-	-	-	1	-
Abrader	-	-	-	-	-	-	-	-	-	-
Chipped pebble	-	-	-	-	-	-	-	-	-	1
Expedient tool	-	-	-	-	-	-	-	-	-	-
Utilized flakes	1	1	1	1	-	-	-	-	-	-
Flake blade	-	-	-	-	-	-	-	-	-	-
Core fragments	-	-	-	-	-	-	-	-	-	-
Flakes	-	-	1	3	3	2	2	2	-	-
FCR	-	-	-	-	-	-	-	-	-	-
TOTAL	2	1	2	4	3	2	2	2	2	1

	U1	U2	U3	U4	U6	U7	U8	F1	U9	U11	SITE TOTAL
Projectile point	-	1	-	-	-	-	-	-	-	-	2
Graver	-	-	-	-	-	-	-	-	-	-	1
Abrader	-	-	-	-	-	-	-	-	-	1	1
Chipped pebble	-	-	-	-	-	-	-	-	-	-	1
Pitted stone	-	-	-	-	-	-	-	-	1	-	2
Expedient tool	-	2	-	-	1	-	1	1	-	-	5
Utilized flakes	-	-	1	-	-	-	-	-	-	-	5
Flake blade	-	-	-	-	-	1	-	-	-	-	1
Core fragments	-	5	4	-	1	-	-	-	-	-	10
Flakes	1	3	1	1	-	1	-	-	-	-	20
FCR	1	-	-	-	-	-	1	-	-	-	2
TOTAL	2	11	6	1	2	2	2	1	1	1	50

PROCUREMENT TOOLS

There were 2 identifiable **projectile points** recovered from the excavations, a Poplar Island point and a Fishtail variant. These points could also function as knives.

The **Poplar Island** projectile point was recovered from ST1 Level 1A (Photo 3, Figure 6). These points are thought to date from either the Middle or Late Archaic through the Middle Woodland (Wall *et al.* 1996:82; Custer 2001:43). A Poplar Island point was previously identified from the WGF surface collection.

In addition, a Rossville point with a contracting stem was also surface collected from the site (Kotcho 2015). Custer(2001:43,59) suggests that Rossville points are regional variants of the Poplar Island point.

Maximum Length: 39.1 mm
Width: 16.6 mm
Thickness: 6.6 m
Width/Thickness Ratio: 2.5
Weight: 4.5 g

Raw Material: Chert
Condition: Impact Fracture on Tip

This biface is triangular in shape with weak shoulders and a contracting stem. The shoulders are asymmetrical with one shoulder more defined. Its edges are fairly straight and the tip of the base is rounded. The piece is asymmetrically biconvex in cross section. It is relatively thick with a width/thickness ratio of 2.5. It is roughly made with little evidence of sharpening on the edges. The piece has a definitive impact fracture on the tip. There is no discernible evidence of reworking or resharpening on the edges. In overall appearance the piece is thick and chunky looking. Custer (2001:43) notes that specimens less than two inches (50 mm) in length are likely to post-date 0 A.D. This point is similar to those described and illustrated in Kraft (1975:30, 33) and Ritchie (1989:44-45, Plates 24-25).

A **Fishtail variant** point was recovered from Unit 2 Level 1A (Photo 4). They have been dated to the Transitional or Terminal Archaic, c BC 1230 to BC 763 (Ritchie 1971:39, 92-93; Fogelman 1988:147; Custer 2001:30; Wall *et al.* 1996:67). A Fishtail variant was previously surface collected at the site (Kotcho 2015).

Maximum Length: 37.9 mm
Width: 19.0 mm
Thickness: 3.6 mm
Width/Thickness Ratio: 5.3
Weight: 3.1 g
Raw Material: Metasediment
Condition: Worn with resharpening/reworking

This biface is roughly triangular in shape with fairly long and shallow/medium depth notches and an expanding stem. Its edges are excurvate and the base is convex. The piece is biconvex in cross section. It is relatively thin with a width/thickness ratio of 5.3. It appears to have been manufactured on a flake. This specimen has been robustly retooled to form a reamer/perforator distal element that looks like it has sustained a good amount of use damage. The edges are well rounded through usage. The point somewhat resembles a Lackawaxen Expanding Stem type (Kinsey 1972:408-409) especially with its convex base. Alternately, the raw material may be a type of argillite/hornfels that is made up of coarser, harder minerals that yield a surface roughness akin to 'shark skin'. This material is frequently used in certain Late Archaic/Early Woodland phases, i.e. Rossville, Lackawaxen and occasional Fishtail variant. A source of this material was found on the upper geological deposits above Walnut Brook, near Flemington which is considerably south of Walnut Grove Farm (Jack Cresson, Personal Communication). Geology maps also indicate argillite outcrops in Vernon. This point is similar to Type 10A in Wall *et al.* (1996:66-67) which is dated to the Late Archaic period. Custer (2001:30) suggests these Fishtail points date to the Late Archaic through the Early Woodland periods.

PROCESSING TOOLS

Processing tools were used to prepare foods or to create finished products from raw materials such as stone, bone and wood.

Utilized flakes are ordinary flakes that exhibit wear patterns from cutting, scraping, and incising organic materials (Hranicky 2004:563). Four utilized flakes were found in 4 shovel tests on the east end of the site, and another came from Unit 3.

A **flake blade** is a flake that was struck off a true blade core (Hranicky 2004:246). It has a cutting edge that can be used like a knife. One example came from Unit 7 (Table 1).

An expedient tool that was likely used as a graver or perforator and made of shale or slate was recovered from Level 2B of ST30. This lithic tool has a protruding edge (Hranicky 2004:277).

A pitted stone of quartzite conglomerate has a depression from use indicates that it was used as a hammer (Hranicky 2004:397). One was found in ST30.

An abraded is a soft stone that was used to polish or resharpen stone tools. One was found in Unit 11. Flintknappers also use abraders to prepare striking platforms. They can also function as a pestle (Hranicky 2004:78). An elongated pebble from the WGF surface collection was likely used as an abraded (Kotcho 2015).

A chipped pebble is a pebble that has evidence of flintknapping. It was found in ST31.

An expedient tool is a pick up tool that was used once or twice and then discarded (Hranicky 2004:234). There were 5 expedient tools excavated. Two came from Unit 2, one from Unit 6, one from Unit 8, and one from Feature 1 (Photo 8).

DEBRIS

Core Fragments are broken pieces of a knappable stone formerly used for removing flakes (Hranicky 2004:186). There were 10 core fragments from the excavations; there were 5 in Unit 2, 4 in Unit 3, and 1 from Unit 6 (Table 1).

Flakes are by the most common find at WGF and most other sites. In this case, 40 percent of the artifacts recovered were flakes (Table 1). Flakes are removed from stone during the manufacture of artifacts. Harder lithics typically produce flakes with bulbs of percussion, from which emanate concentric circles. Softer lithics, like shale and slate weather, so that the bulbs and concentric circles are obscured. Most of the flakes from WGF are from local black chert.

Fire-cracked rock (FCR) fragments are broken cobbles with angular breaks. They sometimes display reddish discoloration. Selecting the correct rocks for a campfire is important; the wrong rock can explode when heated. Only 2 pieces of FCR were recovered (Table 1).

OTHER OBJECTS

A single piece of a large mammal **bone** was surface collected from the site. The presence of a saw cut indicates that this bone dates to the historic era.

Other historic debris included **clam shell, redware, aluminum foil, plastic, a cut nail, container glass,** and a **poke seed** were also found.

CONCLUSIONS AND RECOMMENDATIONS

The 2013 Sussex County Community College (SCCC) Archaeological Field School carried out shovel testing and excavation of test units at the Walnut Grove Farm (WGF) Site in Hampton and Frankford Townships, Sussex County, New Jersey. This report contains the results of background research carried out at the New Jersey State Museum, a State Museum site registration form, and the results of the excavations.

Since 1980, the owners of the farm have amassed a surface collection of stone tools, including projectile points. An analysis of that collection identified and dated these points. The previous report showed that the site was occupied from the late Middle Archaic period (5,000 BC) to the Late Woodland period (1600 AD). This time range came from well dated projectile points, including Brewerton Side-Notched, Poplar Island, Lackawaxen, Bare Island, Fishtail variants, Rossville, Fox Creek, Eshback, and Late Woodland triangle points. Also in the collection, a prismatic-type blade and reamer resemble types found at Paleo-Indian sites in the Northeast. Partially completed bifaces from the collection show that chipped stone tool manufacture took place on the site. Projectile points used to kill game, and scrapers often used to process animal hides, show hunting was a major site activity. A core was used to supply flakes, and these flakes could be made into tools. Scrapers could have been used to work wood, bone, and hides. Some of the cobble artifacts, including a mortar, a pestle, a muller, a grinding stone, and a pitted pounding stone indicate that site inhabitants processed plant materials for food, such as nuts, seeds or maize (Kotcho 2015).

Research at the New Jersey State Museum reviewed registered archaeological sites within a one-mile radius of WGF. There is only one such site, the Branchville South Site 28Sx421, located nearly one mile to the north. It was investigated between 2003 and 2009 for a proposed wastewater treatment plant. There were 164 Shovel Tests (STs) and 5 excavation units completed. In total, 144 lithic artifacts were found; the vast majority were chert flakes. An untyped stemmed argillite point, cores, and fire-cracked rock (FCR) were also recovered. Soils were similar to those at WGF. Hampton Township Historian Randy Pittinger reports a rockshelter site is located a little more than one mile northeast of WGF. It was partially excavated years ago by local farmers; no report was completed. A New Jersey State Museum-Bureau of Archaeology Site Registration Program Form was completed for WGF. It was sent to the State Museum which assigned Site Number 28Sx483; the form is attached as Appendix C.

The 2013 Archaeological Field School used the same tools, paperwork, and methods as the cultural resource management professionals working in the area. A substantial amount of testing was completed; a large part of the farm, however, remains untested. There were 32 Shovel Tests (STs) completed in a 15m (50 ft.) grid over much of the eastern part of the farm. Eleven one-meter square excavation units were opened; most were excavated into sterile subsoil. Some units were west of the shovel tested area. A cluster of 3 units were opened on a sandy knoll in the west, in order to expose a feature. Feature 1 was a small pit filled with sand. It produced a single stone expedient tool/utilized flake.

A Poplar Island spear point came from ST1, an auspicious start to the testing. A Fishtail-like point came from Unit 2. Both were found in the plowzone Level 1A and were among the point types in the farmers' surface collection. The Poplar Island point was used over a very long time, from the Middle Archaic through the Middle Woodland (5000 BC-500 AD). The Fishtail-like point is thought to date to the end of the Late Archaic, around 1230 BC to 763 BC.

Future fieldwork at the Walnut Grove Farm Site should expand the shovel test grid to the west and south so that most of the farm will be tested and the site borders determined. Feature 1 could be re-exposed and the north half excavated. A soil sample from the feature should be retained for possible flotation processing. If possible, additional shovel testing should take place in the vicinity of future discoveries. Methods such as STs dug at closer grid intervals of 7.5m, and clusters of tests around a positive test, could be used. These methods are used in cultural resource management.

The 2013 Sussex County Community College Archaeological Field School was important for several reasons. It was the first time in recent memory that a Sussex County school has undertaken a multi-pronged research project on a Sussex County archaeological site. Walnut Grove farmers Les and Deb Guile's strong support for the project, including an on-site classroom and wet lab, showed that research of this type is desired by the community. Because of this project, SCCC is exchanging information with researchers at the Hampton Township Historical Society, New Jersey State Museum, and New Jersey Historic Preservation Office, among others. This free flowing information will benefit SCCC students and the community, because it will result in a better understanding of the rich heritage of Sussex County.

BIBLIOGRAPHY

Custer, J. F.

- 2001 *Classification Guide for Arrowheads and Spearpoints of Eastern Pennsylvania and the Central Middle Atlantic*. Commonwealth of Pennsylvania, Pennsylvania Historical and Museum Commission, Harrisburg.

Fogelman, Gary L.

- 1988 *Projectile Point Typology For Pennsylvania And The Northeast*. Fogelman Publishing, Turbotville, PA.

Funk, Robert E. and David W. Steadman

- 1994 *Archaeological and Paleoenvironmental Investigations in the Dutchess Quarry Caves, Orange County, New York*. Persimmon Press, Buffalo.

Gramly, R. M.

- 1995 *Guide to the Paleo-Indian Artifacts of North America*. 2nd ed. Persimmon Press Monographs in Archaeology, Buffalo.

Hranicky, Wm. Jack

- 2004 *An Encyclopedia of Concepts and Terminology in American Lithic Technology*. Authorhouse, Bloomington, Indiana.

Johnson, Marilyn

- 2014 *Lives In Ruins: Archaeologists and the Seductive Lure of Human Rubble*. HarperCollins, New York.

Justice, N. J.

- 1995 *Stone Spear and Arrowpoints of the Midcontinental and Eastern United States: A Modern Survey and Reference*. University of Indiana, Bloomington, Indiana.

Kinsey, Fred

- 1972 *Archaeology in the Upper Delaware Valley*. The Pennsylvania Historical and Museum Commission, Harrisburg.

Kotcho, James P.

- 2015 Sussex County Community College Anthropology Program Occasional Paper No. 1. An Analysis of Surface Collected Artifacts from the Walnut Grove Farm Site, Hampton and Frankford Townships, Sussex County, New Jersey in Conjunction with the 2013 Sussex County Community College Archaeological Field School. Sussex County Community College, Newton. DRAFT

Kraft, Herbert C.

- 1975 *The Archaeology of the Tocks Island Area*. Seton Hall University Museum, South Orange.

LaPorta, P.

- 1994 Lithostratigraphic Models and the Geographic Distribution of Prehistoric Chert Quarries within the Cambro-Ordovician Lithologies of the Great Valley Sequence, Sussex County, New Jersey. In *Recent Research into the Prehistory of the Delaware Valley*, edited by C. Bergman and J. Doershuk, pp. 47-66.

Lenik, Edward J.

- 1998 *Max Schrabish, Rockshelter Archaeologist*. Wayne County Historical Commission, Wayne, NJ.

Leslie, Vernon

1973 *Faces In Clay: The Archaeology and Early History of The Red Man in the Upper Delaware Valley*. T. Emmett Henderson, publisher, Middletown, NY.

New Jersey State Museum

n.d. Branchville South (28Sx421) Site Registration Form. NJSM, Trenton.

Ritchie, William A.

1989 *New York Projectile Points; A Typology and Nomenclature*. New York State Museum Bulletin 384.

Sandy, William

2009 Hansen Rockshelter; A Preliminary Look at a Black Dirt Area Time Capsule. *Occasional Papers Number 3*. The Incorporated Orange County Chapter, New York State Archaeological Association, Middletown.

2012a Healing the Scar Two: The 2010 Sussex County Community College Archaeological Field School, Archaeological Research at the Black Creek Site - A Second Interim Report. Sussex County Community College, Newton.

2012b Healing the Scar Three: The 2012 Glen Meadow Middle School Fieldtrip, Archaeological Research at the Black Creek Site - A Third Interim Report. William Sandy, Registered Professional Archaeologist, Westtown, New York.

Schrabisch, Max

1915 Indian Habitations In Sussex County, New Jersey. *Geological Survey of New Jersey Bulletin 13*. Dispatch Printing Co., Union Hill, N.J.

Shaw, Richard K. and Frederick C. Schoenagel III

2007 Soil Survey of Sussex County, New Jersey. United States Department of Agriculture, Natural Resources Conservation Service, Washington, D.C.

United States Geological Survey (USGS)

1954 Branchville Quadrangle. USGS, Washington. Photorevised 1971.

1964 Newton East Quadrangle. USGS, Washington.

Wall, R. D., R. M. Stewart and J. Cavallo

1996 *The Lithic Technology of the Trenton Complex*. The Cultural Resource Group, Louis Berger & Associates, Inc., East Orange, N.J. Prepared for the Federal Highway Administration and the New Jersey Department of Transportation, Bureau of Environmental Analysis, Trenton. Trenton Complex Archaeology: Report 13.

Wolfe, Peter.

1977 *The Geology and Landscapes of New Jersey*. Crane, Russak and Company, New York, NY.

PHOTOGRAPHS

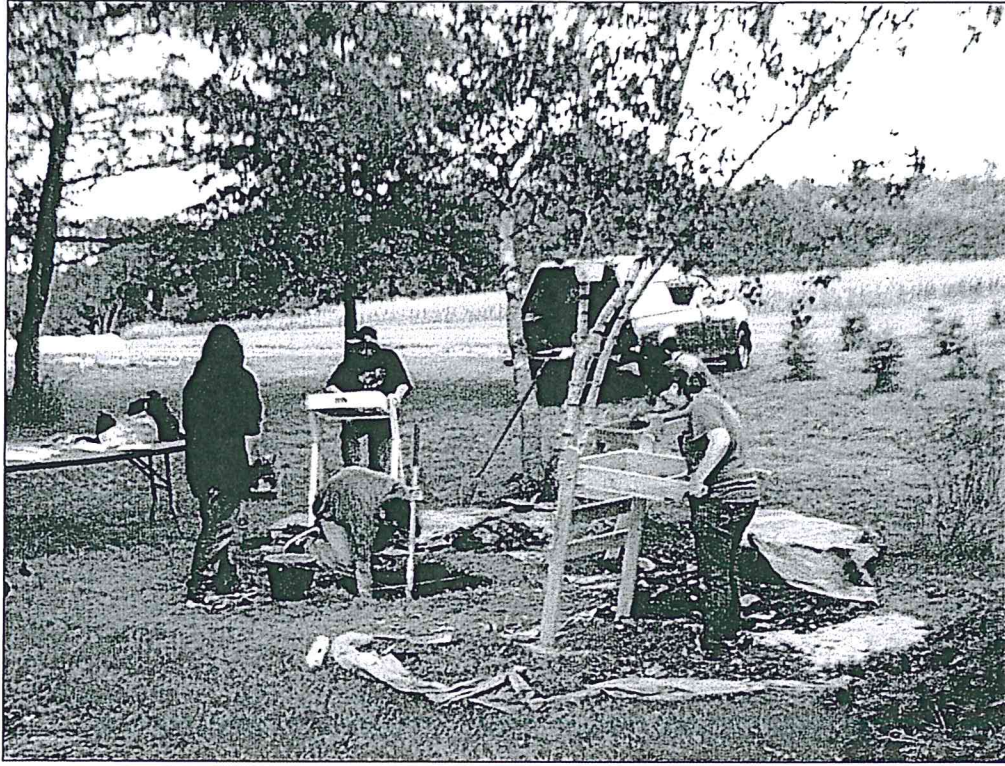


Photo 1. View looking northwest at Unit 1 located next to ST1 at the Walnut Grove Farm Site.



Photo 2. View looking north at the location of Unit 2, located along the ridgetop at the Walnut Grove Farm

Site.

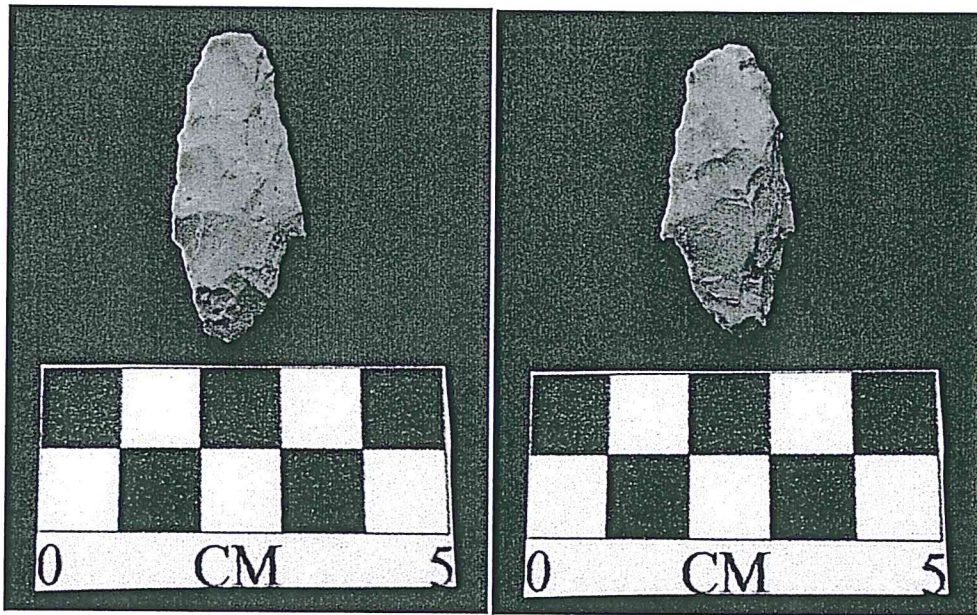


Photo 3. Poplar Island projectile point from ST1.

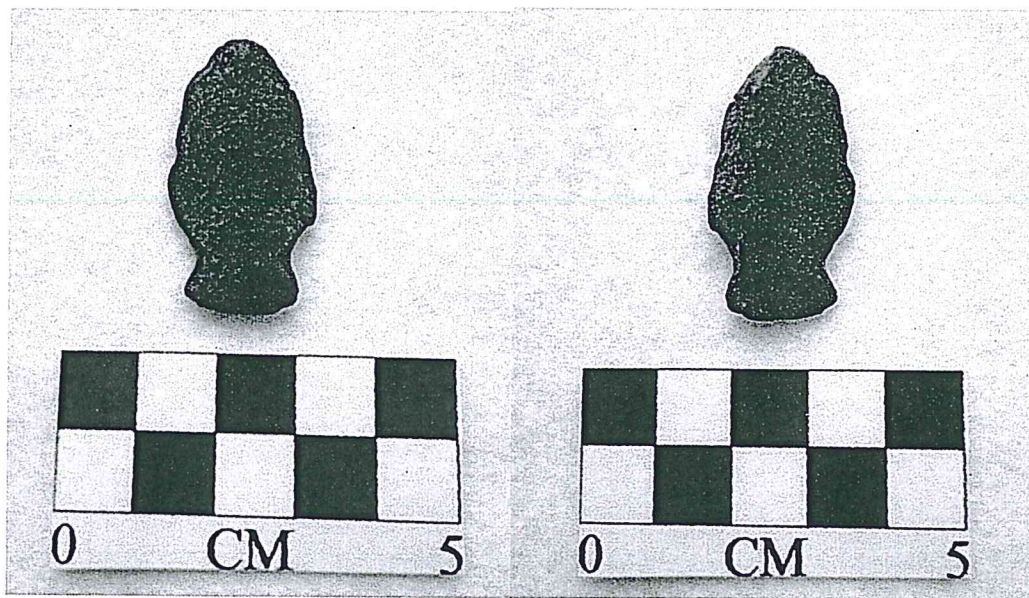


Photo 4. Fishtail-like projectile point from Unit 2.



Photo 5. Unit 8 at the bottom of Level 2B showing Feature 1 in the north half.

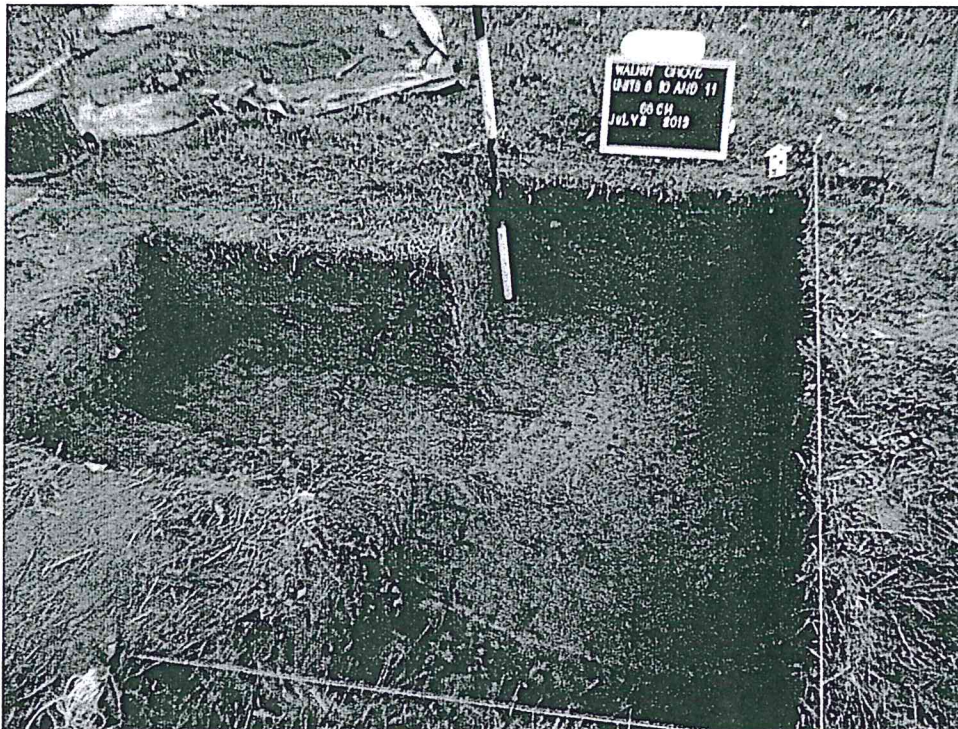


Photo 6. View looking northwest at Units 8, 10, and 11 with Feature 1 on right.

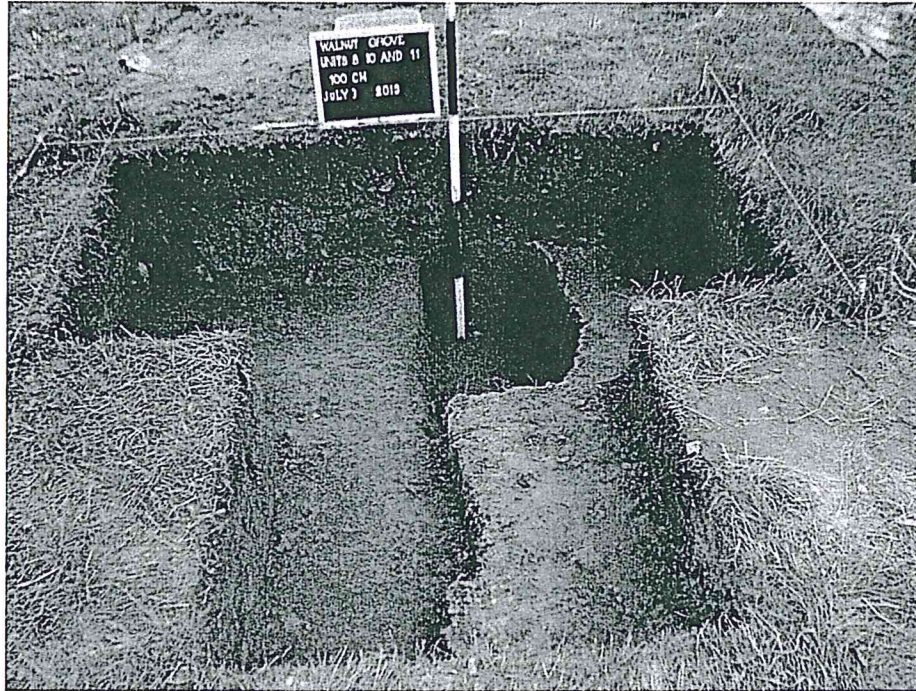


Photo 7. Looking east at Feature 1 following excavation of Level 2 in Feature 1 and the east profile of Units 8 and 10.

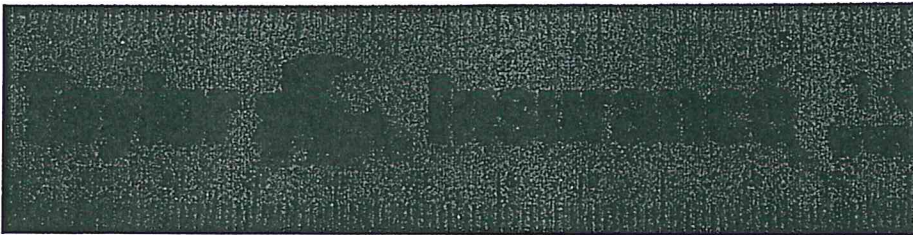
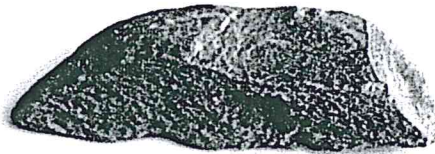
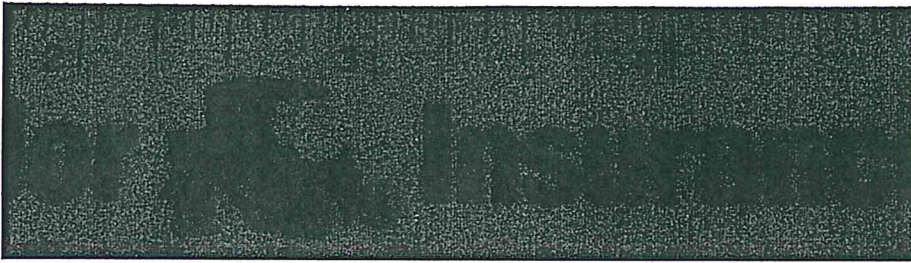
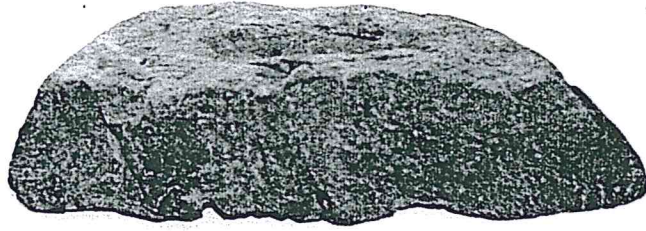


Photo 8. Expedient tool/utilized flake from Feature 1 Level 2 in Unit 8, both sides.

FIGURES



Figure 1. Part of the USGS Newton East (1964) Branchville (1954) Quadrangles showing the location of the Walnut Grove Farm Site marked with a blue line. (Provided by Les & Deb Guile).

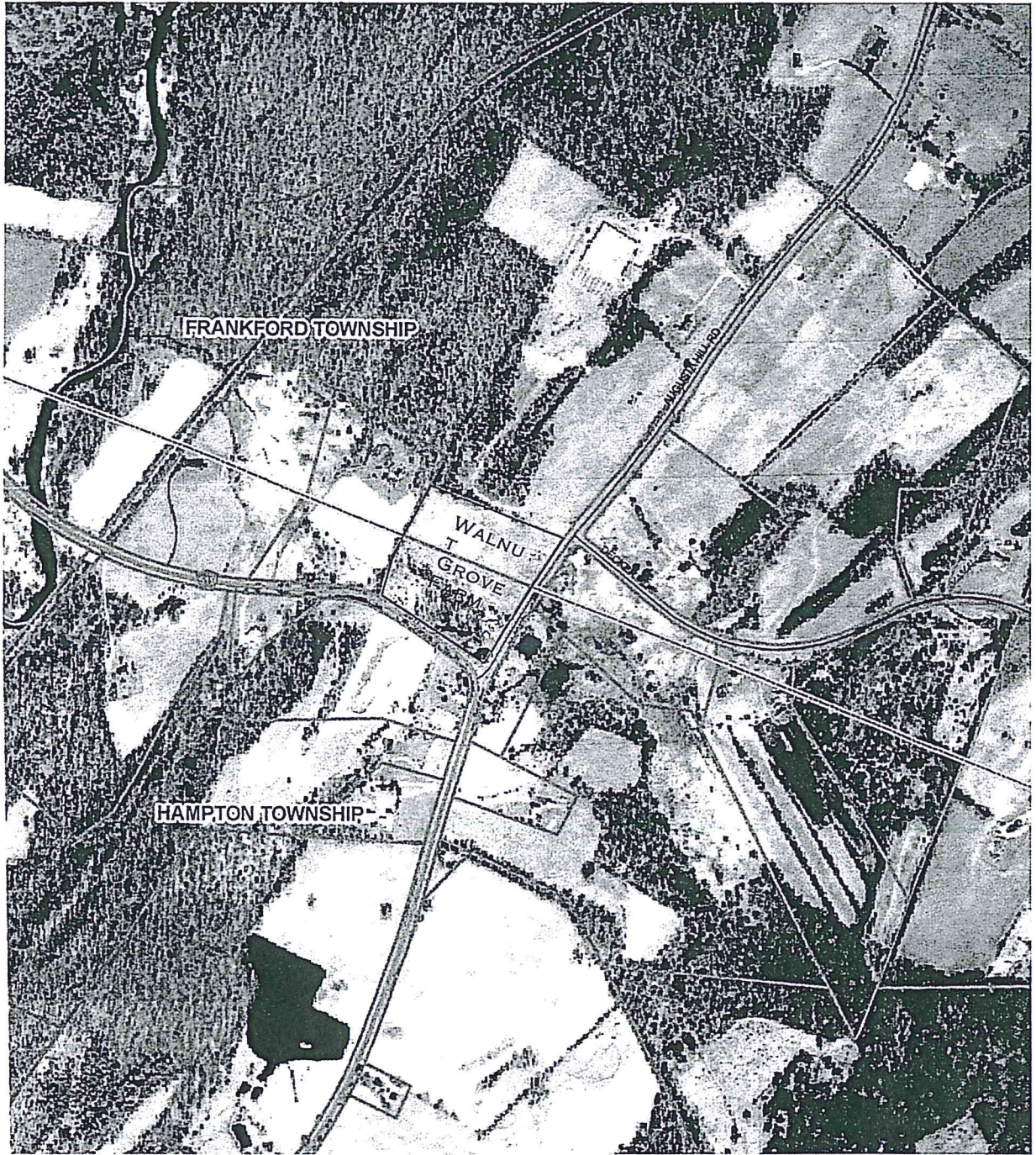


Figure 2. Aerial photograph from 2002 showing Walnut Grove Farm divided by the Frankford Township – Hampton Township border (Provided by Les and Deb Guile).

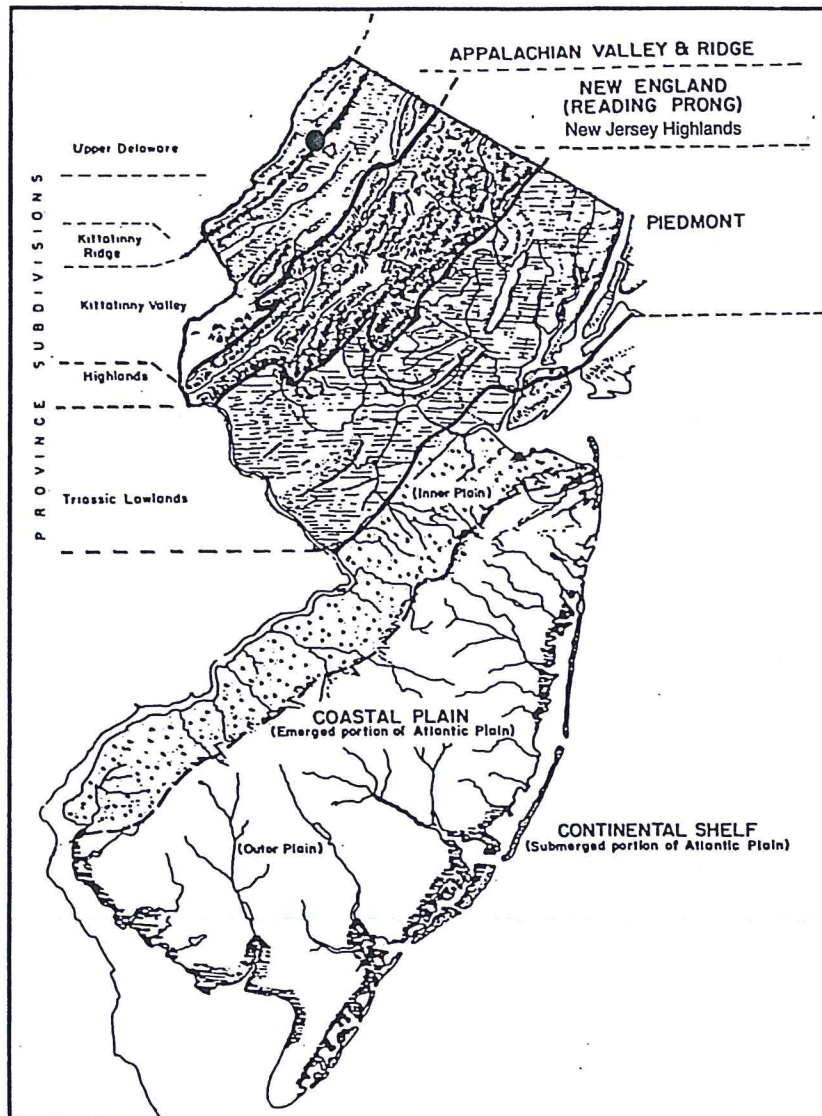


Figure 3: Physiographic provinces of New Jersey on which the location of Walnut Grove Farm Site is shown within the Valley and Ridge (Wolfe 1977:204).

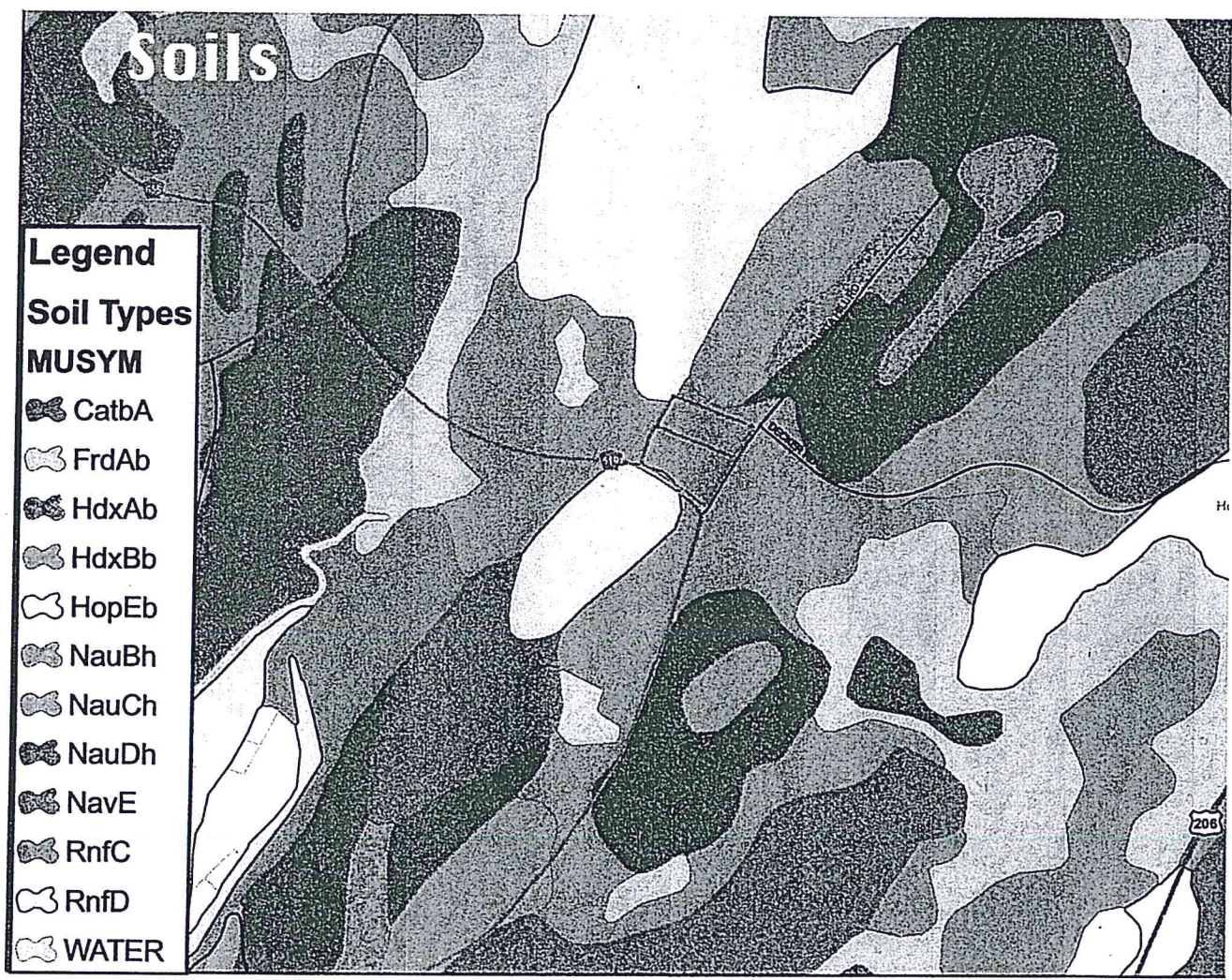


Figure 4. Soils map showing Walnut Grove Farm outlined in blue (from Shaw and Schoenagel 2007).

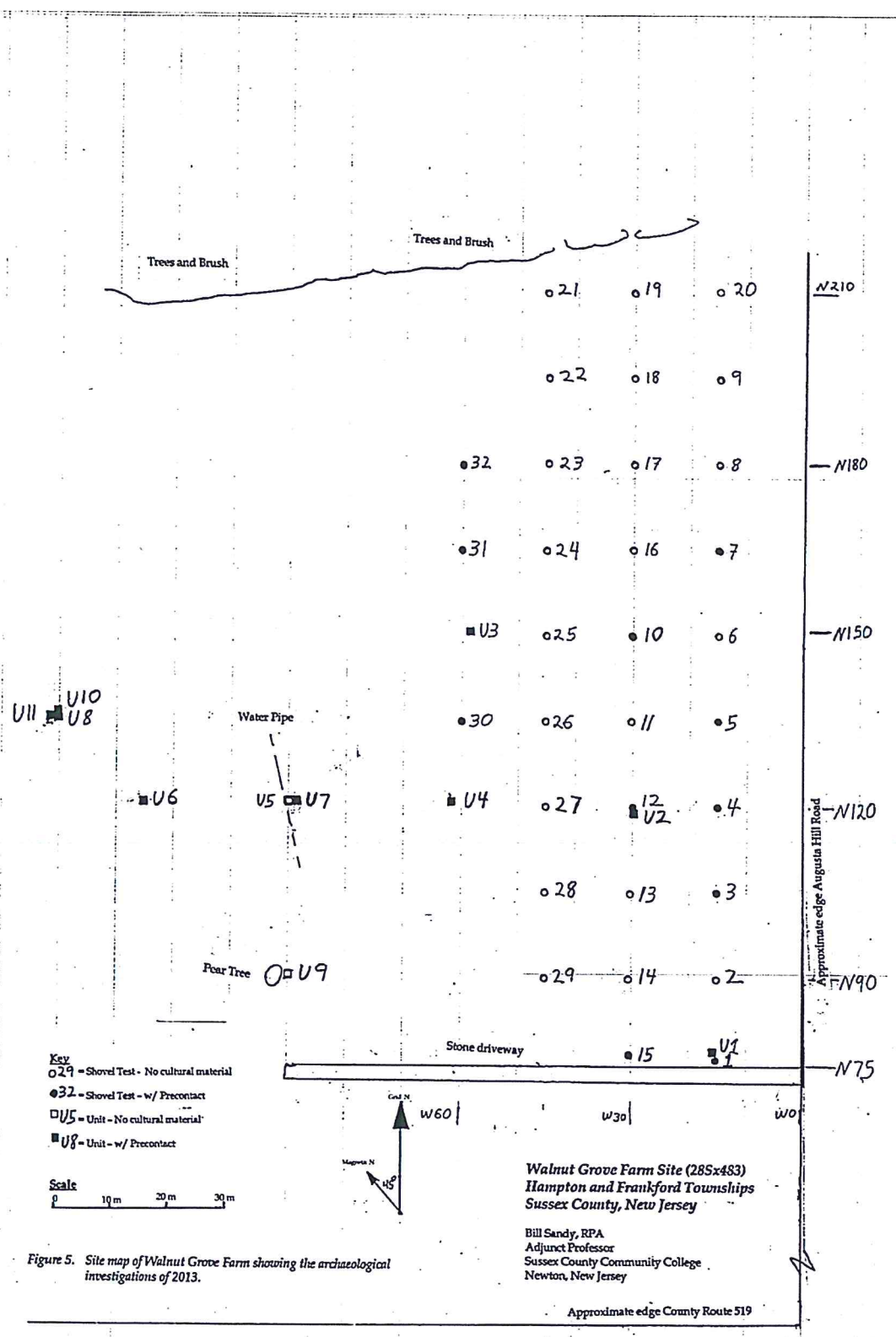


Figure 5. Site map of Walnut Grove Farm showing the archaeological investigations of 2013.

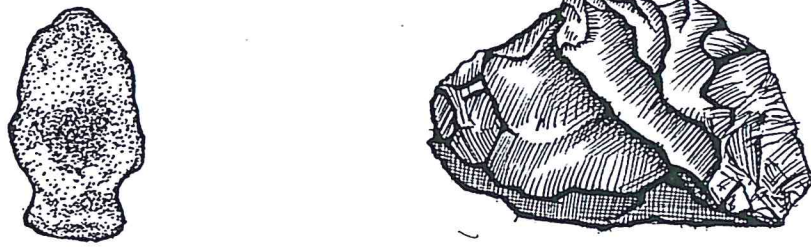


Figure 6. Drawing of Fishtail variant projectile point from Unit 2 Level 1 (left) and flake from Unit 7 Level 1 (by Derek Connor).

KEY

- A = dark yellowish brown sandy loam
- B = yellowish brown silt loam
- C = dark yellowish brown gravelly sand
- D = dark yellowish brown sandy loam
- E = yellowish brown sandy clay loam
- F = dark yellowish brown loamy sand
- G = yellowish brown sandy loam
- H = brownish yellow and yellowish brown loamy sand mixed w/ brown, brownish yellow, and dark yellowish brown sand

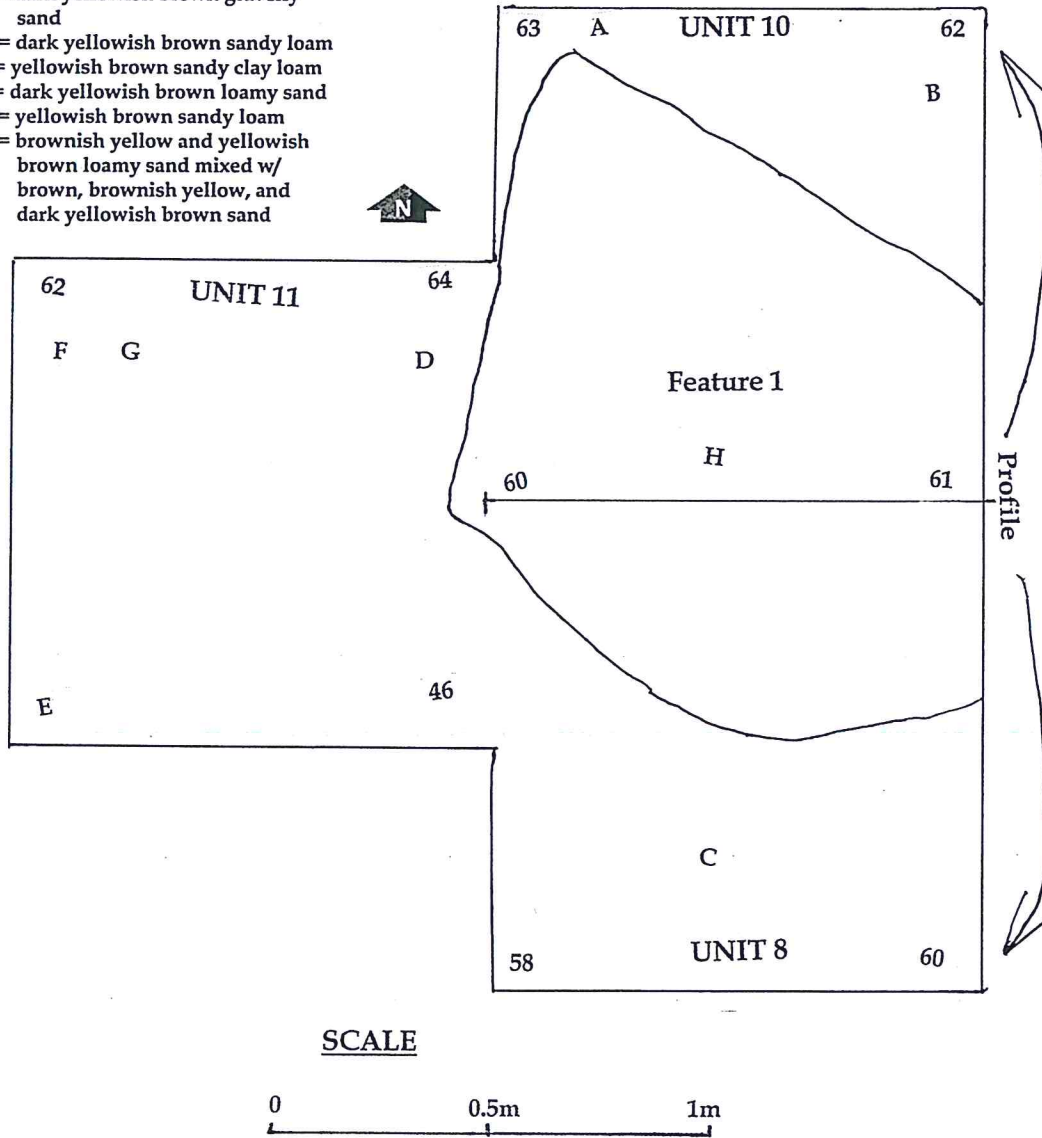


Figure 7. Plan of Units 8, 10, and 11 showing the top of Feature 1.

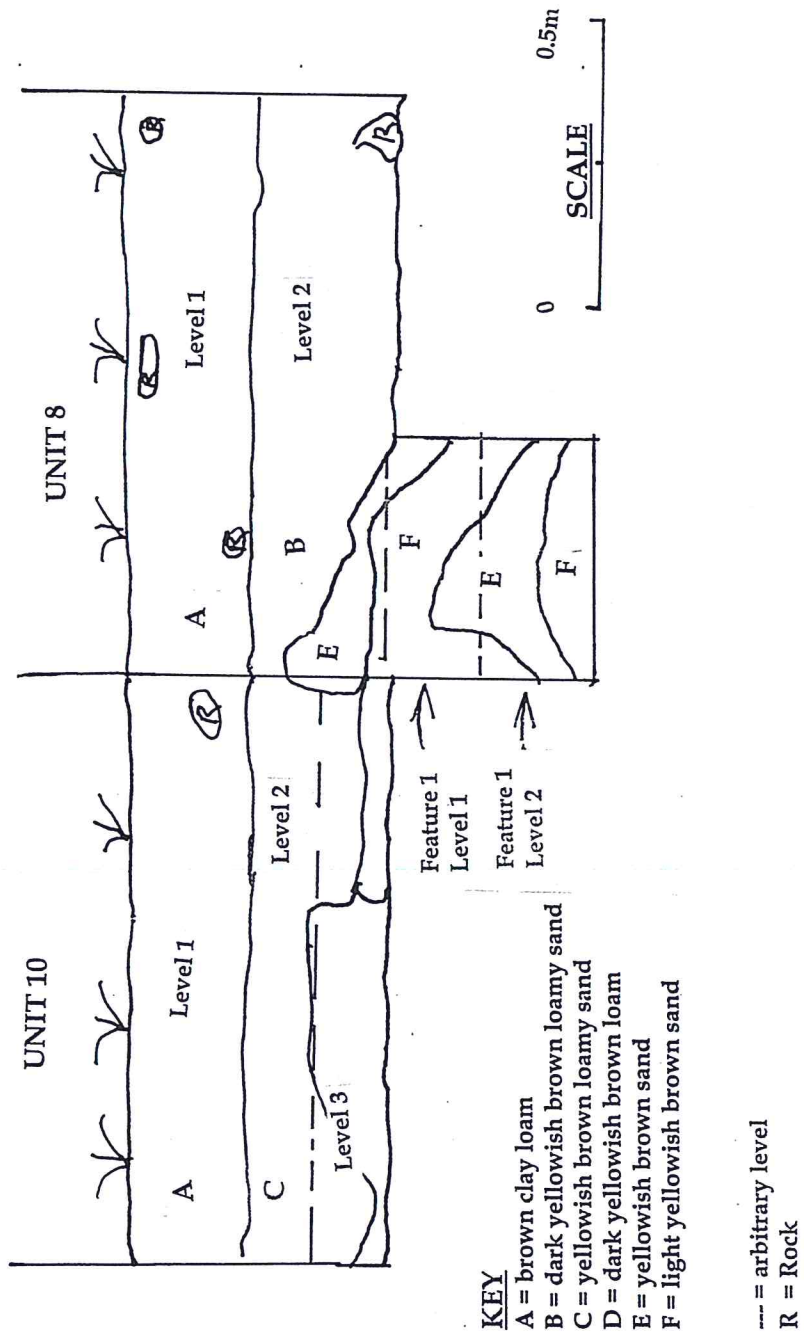


Figure 8. East profile of Units 8 and 10 showing the profile of Feature 1.

APPENDIX A

2013 ARTIFACT INVENTORY

<u>CAT. #</u>		
1		<u>ST1 LEVEL 1A</u>
	1	PROJECTILE POINT/KNIFE, CONTRACTING STEM, POPLAR ISLAND-LIKE, BROWNISH GRAY CHERT (FOGELMAN 1988:107) (4000-2000 BC) (4.5G, 39.2 x 16.6MM)
	1	UTILIZED FLAKE, RED JASPER, HEAT TREATED
	1	CLAM SHELL FRAGMENT
	1	REDWARE, BROWN AND TAN GLAZE
2		<u>ST1 LEVEL 2B</u>
	1	CHARCOAL SAMPLE, SMALL
5		<u>ST2 LEVEL 2B</u>
	2	FOIL, ALUMINUM
7		<u>ST3 LEVEL 1A</u>
	1	UTILIZED FLAKE, BLACK CHERT, USE WEAR ON BOTH MARGINS
	1	SHEET PLASTIC
	1	ROCK
9		<u>ST4 LEVEL 1A</u>
	1	UTILIZED FLAKE, BLACK CHERT
	1	FLAKE, BLACK CHERT
11		<u>ST5 LEVEL 1A</u>
	1	UTILIZED FLAKE, USE-WEAR ON ONE EDGE, UNMODIFIED, POSSIBLE SCRAPING FUNCTION
	1	FLAKE, BLACK CHERT, PROXIMAL
	1	FLAKE, GREY CHERT, "ROTTEN" MATERIAL
12		<u>ST5 LEVEL 2C</u>
	1	FLAKE, BLACK CHERT
16		<u>ST7 LEVEL 1A</u>
	2	FLAKES, BLACK CHERT, DECORTICATION
	2	ROCK, SANDSTONE
	1	FLAKE, METASEDIMENT
	1	PLASTIC*
23		<u>ST10 LEVEL 1A</u>
	2	FLAKES, BROWNISH GREY CHERT
29		<u>ST12 LEVEL 1A</u>
	2	FLAKES, BLACK CHERT (1 "ROTTEN")
<u>CAT. #</u>		
36		<u>ST15 LEVEL 1A</u>
	2	FLAKES, GREEN ARGILLITE
	3	ROCKS
	1	WHITEWARE
40		<u>ST16 LEVEL 2B</u>
	1	NAIL, HAND WROUGHT, IRON

43		<u>ST17 LEVEL 2B</u>
	1	GLASS, CONTAINER, CLEAR
44		<u>ST18 LEVEL 1A</u>
	2	ROCKS
60		<u>ST25 LEVEL 2B</u>
	1	ROCK
71		<u>ST30 LEVEL 1A</u>
	1	PITTED STONE, QUARTZITE CONGLOMERATE, QUARTZ INCLUSIONS, POSSIBLE LIGHT
TOOL USE	4	ROCKS, SHALE
72		<u>ST30 LEVEL 2</u>
	1	EXPEDIENT TOOL, GRAVER OR PERFORATOR, SLATE OR SHALE
74		<u>ST31 LEVEL 1A</u>
	1	CHIPPED PEBBLE, CHERT
	2	ROCKS, CHERT
76		<u>ST31 LEVEL 3C</u>
	1	ROCK, SHALE
79		<u>ST32 LEVEL 3C</u>
	1	ROCK, BLACK SHALE
80		<u>UNIT 1 LEVEL 1A</u>
	1	ROCK, BLACK CHERT
	4	GLASS, CLEAR, CONTAINER
81		<u>UNIT 1 LEVEL 2B</u>
	1	ROCK, GREEN SHALE
	2	ROCK, BLACK CHERT
82		<u>UNIT 1 LEVEL 3B</u>
	2	FIRE-CRACKED ROCK
	2	ROCK, BLACK CHERT
	2	ROCK, GREEN SHALE
<u>CAT. #</u>		
83		<u>UNIT 1 LEVEL 4B</u>
	1	FLAKE, CHALCEDONY
85		<u>UNIT 2 LEVEL 1A</u>
	1	PROJECTILE POINT, FISHTAIL VARIANT, METASEDIMENT, MADE ON SMALL FLAKE (78MMX8.7MMX3.6MM, 3.3G)(C BC 1230 TO BC 763) (RITCHIE 1971:39, 92-93; FOGELMAN 1988:147).
	1	EXPEDIENT TOOL, BLACK CHERT, NIBBLING ON EDGES, SMALL FLAKE SCARS ONE EDGE, SLIGHTLY MODIFIED
	1	EXPEDIENT TOOL, GREY SHALE, USE-WEAR ON EDGE, SEMI LUNAR, SOME POLISH ON EDGE
	5	CORE REDUCTION FRAGMENTS, BLACK CHERT
	2	FLAKES, GREY CHERT
	3	ROCKS, GRAY CHERT
	2	ROCKS, GRAY SHALE

86		<u>UNIT 2 LEVEL 2B</u>
	1	FLAKE, BLACK CHERT
88		<u>UNIT 3 LEVEL 1A</u>
	1	UTILIZED FLAKE, BLACK CHERT
	1	FLAKE, BLACK, CRUSHED PLATFORM, HINGED TERMINATION
	5	ROCKS, BLACK CHERT
	2	ROCKS, GREY SHALE
	1	RUBBER FRAGMENTS
89		<u>UNIT 3 LEVEL 2B</u>
	1	ROCK, BLACK CHERT
	1	GLASS, AMBER
90		<u>UNIT 3 LEVEL 3B</u>
	4	CORE REDUCTION FRAGMENTS, BLACK CHERT, NON-ORIENTABLE FRAGMENTS
	1	ROCK, BLACK CHERT
91		<u>UNIT 3 LEVEL 4B</u>
	1	ROCK, BLACK CHERT
92		<u>UNIT 4 LEVEL 1A</u>
	1	FLAKE, BLACK CHERT, MEDIAL PORTION
	1	ROCK, SHALE
	2	SHELL FRAGMENTS, CLAM
	1	PLASTIC TUBE, RED
94		<u>UNIT 5 LEVEL 1A</u>
	1	ROCK, SHALE
 <u>CAT. #</u>		
95		<u>UNIT 6 LEVEL 1A</u>
	1	EXPEDIENT TOOL, GREY SLATE, USE WEAR ON EDGES
	1	CORE REDUCTION FRAGMENT, WHITE QUARTZ
	10	ROCKS, SHALE, GREEN
	2	ROCKS, BLACK CHERT
96		<u>UNIT 6 LEVEL 2B/C</u>
	3	ROCKS, SHALE
97		<u>UNIT 7 LEVEL 1A</u>
	1	FLAKE BLADE, BLACK CHERT, W/ 4+ FLAKE SCARS, CRUSHED PLATFORM
	1	FLAKE, BLACK CHERT
	4	ROCKS, SHALE
100		<u>UNIT 8 LEVEL 1A</u>
	1	FIRE-CRACKED ROCK, QUARTZ
	1	SEED, POKE (<i>PHYTOLACCA AMERICANA</i>)
	15	ROCKS, ASSORTED MATERIAL
	1	COAL
101		<u>UNIT 8 LEVEL 2</u>
	1	EXPEDIENT TOOL, PEBBLE, SANDSTONE, POSSIBLE USE-WEAR DAMAGE ON TIP, PATINA OF FLAT FACE, ONE TIME USE?

102		<u>UNIT 8 FEATURE 1 LEVEL 2</u>
	1	EXPEDIENT TOOL/UTILIZED FLAKE, EDGE DAMAGE, INFERRED USE-WEAR, NIBBLES, DAMAGE FROM TROWEL
104		<u>UNIT 9 LEVEL 1A</u>
	1	PITTED STONE, SANDSTONE, FITS HAND WELL, ONE DEPRESSION WAS PECKED OR FROM USE, POSSIBLE NUTTING STONE OR ANVIL
	2	GLASS, CONTAINER, CLEAR
	1	GLASS, MILK, CONTAINER
	5	ROCKS, SHALE
105		<u>UNIT 10 LEVEL 1A</u>
	2	NAILS, WIRE
	10	ROCKS, SHALE, GREEN
	2	ROCKS, CHERT, BLACK
106		<u>UNIT 10 LEVEL 2B</u>
	5	ROCKS, SHALE, GREEN
	1	ROCKS, QUARTZ, WHITE
107		<u>UNIT 10 LEVEL 3B</u>
	1	ROCK, BLACK CHERT
<u>CAT. #</u>		
108		<u>UNIT 11 LEVEL 1A</u>
	1	ABRADER, SANDSTONE
110		<u>SURFACE</u>
	1	BONE, LONG, LARGE MAMMAL, SAWED ON ONE END

NOTE: * = DISCARDED

APPENDIX B

APPENDIX B

RECORD OF EXCAVATIONS
WALNUT GROVE FARM SITE

2013

ST or EU	# & Grid Coordinates.	Level	Strata	Depth cmbs	Soil Color	Soil Description	Cultural Material	Comments/ Reason for Termination
ST	1 N76W15	1	A	0-25	10YR3/2	Cl Lo	projectile point, utl. flake, redware, shell	
ST	1 N76W15	2	B	25-50	10YR3/3	Cl Lo	charcoal	
ST	1 N76W15	3	C	50-64	10yr4/4	St Cl Lo	NCM	Sterile Subsoil, moved 1m N to avoid drive
ST	2 N90W15	1	A	0-28	10YR3/2	Cl Lo	Alum foil	
ST	2 N90W15	2	B	28-50	10YR4/4	Cl Lo	NCM	
ST	2 N90W15	3	C	50-60	10YR4/3	Gr Cl Lo	NCM	Sterile Subsoil
ST	3 N105W15	1	A	0-30	10YR3/2	Gr Cl Lo	util. flake, plastic	
ST	3 N105W15	2	C	30-49	10YR 4/3	Gr Cl Lo	NCM	Sterile Subsoil, truncated profile
ST	4 N120W15	1	A	0-32	10YR3/2	Lo Cl	util. flake, flake	
ST	4 N120W15	2	C	32-56	10YR 4/4	Gr Cl Lo	NCM	Sterile Subsoil, truncated profile
ST	5 N135W15	1	A	0-42	10YR3/2	Cl Lo	util. flake,	
ST	5 N135W15	2	C	42-75	10YR5/4	Gr Cl Lo	Flake	Sterile Subsoil, truncated
ST	6 N150W15	1	A	0-40	10YR 4/3	Cl Lo	NCM	
ST	6 N150W15	2	B	40-56	10YR4/4	Gr Cl Lo	NCM	
ST	6 N150W15	3	C	56-76	10YR 5/3	Gr Cl Lo	NCM	Sterile subsoil
ST	7 N165W15	1	A	0-30	10YR3/2	Lo	Plastic, 2 flakes	
ST	7 N165W15	2	B	30-65	10YR4/3 &	Lo Sa	NCM	Sterile subsoil, 4.5m
ST	8 N18W15	1	A	0-30	10YR4/3	Lo	Charcoal*	
ST	8 N18W15	2	B	30-55	10YR5/3	Gr Lo	Charcoal*	
ST	8 N18W15	3	C	55-68	10YR5/8	Lo Gr	NCM	Sterile subsoil, very compact
ST	9 N195W15	1	A	0-45	10YR3/3	Si Lo	NCM	
ST	9 N195W15	2	B	45-67	10YR6/1 mottled 10YR5/8	Lo Sa	NCM	Sterile Subsoil
ST	10 N150W30	1	A	0-25	10YR4/3	Cl Lo	2 flakes	
ST	10 N150W30	2	B	25-46	10YR4/6	Sa Lo	NCM	
ST	10 N150W30	3	C	46-51	10YR4/6	St Sa Lo	NCM	Sterile subsoil
ST	11 N135W30	1	A	0-26	10YR4/4	Lo	NCM	
ST	11 N135W30	2	B	26-88	10YR4/6	Lo	NCM	
ST	11 N135W30	3	C	88-92	10YR3/4	Sa	NCM	Sterile subsoil
ST	12 N120W30	1	A	0-30	10YR4/3	Lo	2 flakes	
ST	12 N120W30	2	B	30-50	10YR 5/6	Lo Sa	NCM	
ST	12 N120W30	3	C	50-77	10YR4/3	Gr Lo Sa	NCM	Sterile Subsoil

SCCC

APPENDIX A-1

7/13

ST or EU	# & Grid Coordinates.	Level	Strata	Depth cmbs	Soil Color	Soil Description	Cultural Material	Comments/ Reason for Termination
ST	13 N105W30	1	A	0-29	10YR4/3	Cl Lo	NCM	
ST	13 N105W30	2	C	29-54	10YR4/4	Cl Lo	NCM	Sterile subsoil
ST	14 N90W30	1	A	0-28	10YR3/3	Cl Lo	NCM	
ST	14 N90W30	2	C	28-57	10YR4/4	Gr Sa Lo	NCM	Sterile Subsoil, 5m NW of
ST	15 N77W30	1	A	0-32	10YR3/3	Cl Lo	2 flakes, whiteware	of 6" d. oak
ST	15 N77W30	2	B	32-60	10YR4/4	Cl Lo	NCM	Moved 2m N, drive
ST	15 N77W30	3	C	60-69	10YR4/4	St Cl Lo	NCM	Sterile subsoil
ST	16 N65W30	1	A	0-28	10YR4/4	Cl Lo	NCM	
ST	16 N65W30	2	B	28-61	10YR4/6	Lo Sa	Nail	
ST	16 N65W30	3	C	61-69	10YR5/6	Sa Lo	NCM	Sterile subsoil
ST	17 N180W30	1	A	0-35	10YR4/3	Lo	NCM	
ST	17 N180W30	2	B	35-95	10YR5/6	Si Cl Lo	glass	charcoal @ 72cm, sub.
ST	18 N195W30	1	A	0-45	10YR3/3	Si Cl Lo	NCM	
ST	18 N195W30	2	B	45-56	10YR5/3	Cl	NCM	Sterile subsoil
ST	19 N210W30	1	A	0-35	10YR4/2	Cl	NCM	
ST	19 N210W30	2	B	35-59	10YR6/2 mottled 10YR5/8	Cl	NCM	Sterile subsoil
ST	20 N210W15	1	A	0-33	10YR4/3	Lo	NCM	
ST	20 N210W15	2	B	33-66	10YR5/3 mottled 10YR5/8	Lo	NCM	Hydric
ST	21 N210W45	1	A	0-22	10YR 4/3	Cl Lo	NCM	
ST	21 N210W45	2	B	22-35	10YR6/4	Lo	NCM	
ST	21 N210W45	3	C	35-48	10YR6/4	St Lo	NCM	Sterile Subsoil, 7.5m S of fence
ST	22 N195W45	1	A	0-30	10YR3/2	Cl Lo	NCM	
ST	22 N195W45	2	B	30-72	10YR5/4	Si Cl Lo	NCM	Sterile subsoil
ST	23 N180W45	1	A	0-40	10YR4/3	Cl Lo	NCM	
ST	23 N180W45	2	B	40-65	10YR4/4	Lo	NCM	Sterile subsoil
ST	24 N165W45	1	A	0-30	10YR4/4	Lo	NCM	
ST	24 N165W45	2	B	30-74	10YR4/6	Lo Sa	NCM	Sterile subsoil
ST	25 N150W45	1	A	0-33	10YR4/4	Lo	NCM	
ST	25 N150W45	2	B	33-66	10YR4/6	Si Lo	NCM	Sterile subsoil
ST	26 N135W45	1	A	0-35	10YR4/3	Cl Lo	NCM	
ST	26 N135W45	2	B	35-65	10YR4/4	Lo	NCM	Sterile subsoil
ST	27 N120W45	1	A	0-20	10YR4/3	Cl Lo	NCM	
ST	27 N120W45	2	B	20-40	10YR4/4	Lo	NCM	
ST	27 N120W45	3	C	40-45	10YR4/4	Gr Lo	NCM	Sterile subsoil
ST	28 N105W45	1	A	0-27	10YR4/4	Lo	NCM	
ST	28 N105W45	2	B	27-40	10YR4/6	Lo	NCM	
ST	28 N105W45	3	C	40-72	10YR4/6	Gr Lo	NCM	Sterile subsoil
ST	29 N90W45	1	A	0-40	10YR4/4	Lo	NCM	

ST or EU	# & Grid Coordinates.	Level	Strata	Depth cmbs	Soil Color	Soil Description	Cultural Material	Comments/ Reason for Termination
ST	29 N90W45	2	B	40-85	10YR4/6	Lo	NCM	Sterile subsoil, moved 3m E to avoid plants
ST	30 N135W60	1	A	0-28	10YR4/4	Lo	pitted stone	
ST	30 N135W60	2	B	28-53	10YR5/6	Sa Cl Lo	1 tool	
ST	30 N135W60	3	C	53-75	10YR4/6	Sa	NCM	Sterile subsoil
ST	31 N165W16	1	A	0-39	10YR4/3	Cl Lo	chipped pebble	Bedrock Shale - mixed soils - disturbed
ST	31 N165W16	2	B	39-70	10YR4/4	Sa Lo	NCM	
ST	31 N165W16	3	C	70-80	10YR3/6	Sa	NCM	Sterile subsoil
ST	32 N180W60	1	A	0-35	10YR4/4	Cl Lo	NCM	
ST	32 N180W60	2	B	35-54	10YR5/6	Sa Cl Lo	NCM	
ST	32 N180W60	3	C	54-73	10YR5/6	St Sa Cl Lo	NCM	Sterile subsoil, final 2013
EU	1 N77W16	1	A	7-40	10YR3/2	Cl Lo	glass	
EU	1 N77W16	2	B	35-50	10YR4/4	Cl Lo	NCM	
EU	1 N77W16	3	B	50-62	10YR4/4	Cl Lo	2 FCR	
EU	1 N77W16	4	B	60-73	10YR4/4	Cl Lo	flake	
EU	1 N77W16	5	C	70-80	10YR4/4	Ch Cl Lo	NCM	Sterile subsoil
EU	2 N118.5W30	1	A	13-50	10YR4/4	Cl Lo	point, 2	
EU	2 N118.5W30	2	B	43-61	10YR5/6	Gr Lo Sa	flake	
EU	2 N118.5W30	3	C	57-75	10YR4/4	Gr Sa	NCM	Sterile subsoil
EU	3 N150W59	1	A	11-48	10YR4/3	Cl Lo	flake, util. flake	
EU	3 N150W59	2	B	40-54	10YR4/4	Sa Cl Lo	glass	
EU	3 N150W59	3	A	53-63	10YR4/4	Cl Lo	4 core frags.	
EU	3 N150W59	4	B	61-74	10YR4/4	Cl Lo	NCM	Sterile subsoil
EU	4 N120W62	1	A	10-45	10YR3/4	Sa Cl Lo	1 flake,	
EU	4 N120W62	2	B	38-56	10YR5/4	Gr Cl	NCM	
EU	5 N120W90	1	A	5-21	10YR3/4	Sa Cl Lo	NCM	Water pipeline
EU	6 N120W115	1	A	8-39	10YR4/3	Gr Cl Lo	1 tool, 1 core frag.	
EU	6 N120W115	2	B/C	29-52	10YR4/4	Sa Lo	NCM	Sterile subsoil
EU	7 N120W89	1	A	5-53	10YR3/4	Gr Sa Cl Lo	2 flakes	
EU	7 N120W89	2	B	45-63	10YR5/6	Gr Lo Sa	NCM	
EU	7 N120W89	3	C	55-76	10YR5/6	Gr Lo Sa	NCM	Sterile subsoil
EU	8 N135W130	1	A	14-47	10YR4/3	Cl Lo	1 FCR, 1 seed, coal	
EU	8 N135W130	2	B	42-63	10YR4/3	Sa/Gr Sa	1 tool	
EU	8 N135W130	1	Feat.1	61-85	10YR4/3 & 10YR6/4	Sa	NCM	

ST or EU	# & Grid Coordinates.	Level	Strata	Depth cmbs	Soil Color	Soil Description	Cultural Material	Comments/ Reason for Termination
EU	8 N135W130	2	Feat. 1	81-100	10YR6/4, 10YR5/6 & 10YR4/6	Sa	1 tool	
EU	9 N90W89	1	A	7-25	10YR3/3	Si Cl	1 pitted stone, 2 glass	
EU	10 N136W13	1	A	11-44	10YR 3/4	Lo	2 nails	
EU	10 N136W13	2	B	40-55	10YR5/4	Lo Sa	NCM	
EU	10 N136W13	3	B	52-66	10YR4/3, 10YR4/4, 10YR4/6 & 10YR5/6	Lo Sa, Sa & Si Lo	NCM	
EU	11 N135.5W	1	A	16-49	10YR3/4	Lo	1 abrader	
EU	11 N135W30	2	B	42-64	10YR4/4, 10YR3/4, 10YR5/6	Sa Lo	NCM	
NCM	No Cultural Material							
	Lo = Loam							
	Gr = Gravel							
	Sa = Sand							
	Si = Silt							
	Cl=Clay							
	Ch=Channery							

APPENDIX C

NEW JERSEY STATE SITE REGISTRATION FORM – WALNUT GROVE

SITE REGISTRATION PROGRAM
NEW JERSEY STATE MUSEUM
Bureau of Archaeology
205 West State Street
Trenton, N.J. 08625
ph. (609) 292-9594
fx. (609) 984-1403

SITE NO.: 28-Sx-
Site Name: Walnut Grove Farm
Atlas Coordinates:
U.S.G.S. Coordinates:
National Register Status:

State Register Status: no
Date: March 19, 2015
File:

County: Sussex

Municipality: Hampton and Frankford Townships

Location (descriptive): North of Rt. 519 and west of
Augusta Hill Road

Period of Site: Middle Archaic
through Late Woodland &
possible PaleoIndian

Type of Site: Precontact

Cultural affiliation(s) (if known): Brewerton Side-Notched, Poplar Island, Lackawaxen, Bare
Island, Fishtail variants, Rossville, Fox Creek, Eshback, and Late Woodland triangle points.

Owner's Name: Les & Deb Guile

Address: 65 Augusta Hill Rd., Augusta NJ 07822

Phone: 973-383-5029

Attitude toward preservation: Great!

Tenant's Name: None

Address:

Phone:

Surface Features: Pond

Prominent Landmarks: Rolling hills

Vegetation Cover: Garlic, other crops, Christmas trees

Nearest Water Source: Paulins Kill Distance: 600 ft (180m) west

Soil Type: Hazen-Hoosic complex 3 to 8 percent range (HdxBb).

Erosion: Little

Stratified (if known): Possible

THREAT OF DESTRUCTION (if known): None

PREVIOUS WORK (list below):

By Whom	Date	Collection Stored	Previous Designation
Owners	1978 to present	Walnut Grove Farm	No

Recorders Name: William Sandy

Address: 2403 Co. Rt. 1, Westtown, NY 10998

Phone: 845-726-0956

Collection stored: Same (temporary), Walnut Grove Farm or Hampton Twp. Hist. Society

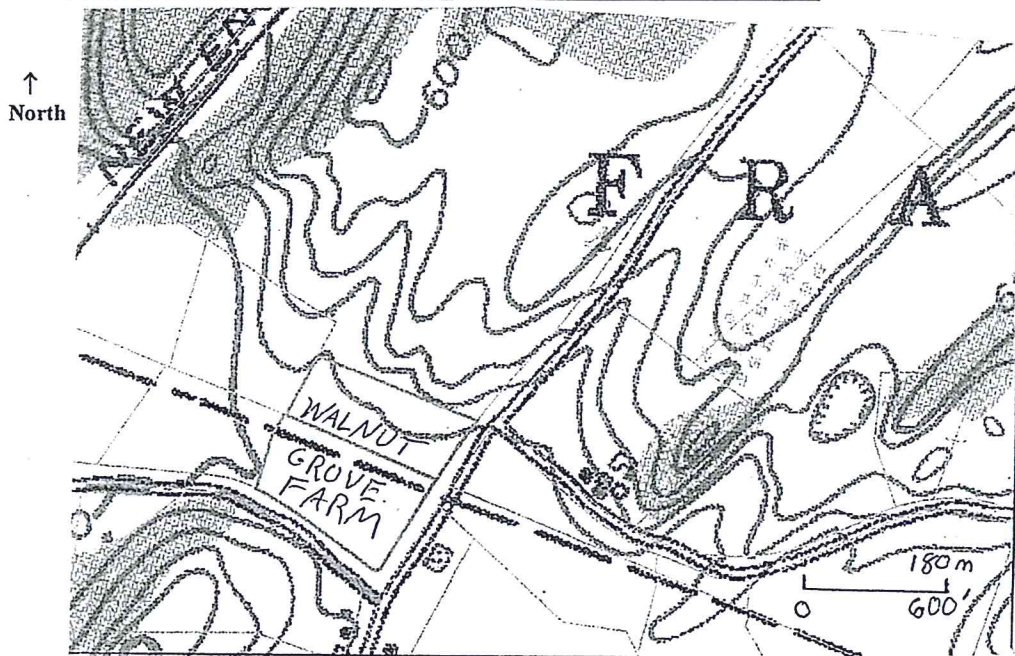
Date recorder at site: June and July, 2013

(Please complete reverse side)

Revised 1978b

Sketch Map of the Site:

Indicate the chief topological features, such as streams, swamps, shorelines, and elevations (approx). Also show buildings and roads. Indicate the site location by enclosing the site area with a dotted line. Use a scale (approx) to indicate distance and dimensions.



Observations, Remarks, or Recommendations: FROM NEWTON EAST USGS Scale: 1 INCH = 600'

Sussex County Community College's Anthropology Dept. conducted an analysis of the owners' collection. Also an archaeological fieldschool was conducted in 2013. Another session is scheduled for July, 2015. Preliminary shovel testing covered the eastern 60m (200 ft) of the site. Excavation units were dug there and further west. One Precontact feature was found.

References:

Kotcho, James P.

Sussex County Community College Anthropology Program Occasional Paper No. 1. An Analysis of Surface Collected Artifacts from the Walnut Grove Farm Site, Hampton and Frankford Townships, Sussex County, New JerseySCCC, Newton. In preparation.

Sandy, William and James P. Kotcho

Sussex County Community College Anthropology Program Occasional Paper No. 2 Archaeological Investigations of the Walnut Grove Farm Site Hampton and Frankford Townships, Sussex County, NJ. The 2013 SCCC Archaeological Field School. SCCC, Newton. In preparation.