



Phase II and Phase III Archeological Database and Inventory

Site Number: 18AN489

Site Name: Higgins

Prehistoric

Other name(s) T.D. Jones Field S West, Kitten Branch West, 18AN23B

Historic

Brief Description:

Paleoindian - Late Woodland multi-component base camp, lithic workshop; Mid 19th -Early 20th century scatter

Unknown

Site Location and Environmental Data:

Maryland Archeological Research Unit No. 7

SCS soil & sediment code

Latitude 39.1969

Longitude -76.6916

Physiographic province Western Shore Coastal

Terrestrial site

Underwater site

Elevation m Site slope 0

Ethnobotany profile available Maritime site

Site setting

-Site Setting restricted

-Lat/Long accurate to within 1 sq. mile, user may need to make slight adjustments in mapping to account for sites near state/county lines or streams

Topography

- Floodplain
- Hilltop/bluff
- Interior flat
- Upland flat
- Ridgetop
- Terrace
- Low terrace
- High terrace
- Rockshelter/cave
- Hillslope
- Unknown
- Other

Ownership

- Private
- Federal
- State of MD
- Regional/county/city
- Unknown

Nearest Surface Water

Name (if any) Stony Run

- | Saltwater | | Freshwater | |
|--|--|--|--------------------------------|
| Ocean <input type="checkbox"/> | Estuary/tidal river <input type="checkbox"/> | Stream/river <input checked="" type="checkbox"/> | Swamp <input type="checkbox"/> |
| Tidewater/marsh <input type="checkbox"/> | Lake or pond <input type="checkbox"/> | Spring <input type="checkbox"/> | |

Minimum distance to water is 30 m

Temporal & Ethnic Contextual Data:

Paleoindian site

Woodland site

Contact period site ca. 1820 - 1860

Archaic site

MD Adena

ca. 1630 - 1675 ca. 1860 - 1900

Early archaic

Early woodland

ca. 1675 - 1720 ca. 1900 - 1930

Middle archaic

Mid. woodland

ca. 1720 - 1780 Post 1930

Late archaic

Late woodland

ca. 1780 - 1820

Unknown historic context

Unknown prehistoric context

Unknown context

Ethnic Associations (historic only)

- | | |
|---|---|
| Native American <input type="checkbox"/> | Asian American <input type="checkbox"/> |
| African American <input type="checkbox"/> | Unknown <input checked="" type="checkbox"/> |
| Anglo-American <input type="checkbox"/> | Other <input type="checkbox"/> |
| Hispanic <input type="checkbox"/> | |

Y=Confirmed, P=Possible

Site Function Contextual Data:

Prehistoric

- | | |
|---|--|
| Multi-component <input checked="" type="checkbox"/> | Misc. ceremonial <input type="checkbox"/> |
| Village <input type="checkbox"/> | Rock art <input type="checkbox"/> |
| Hamlet <input type="checkbox"/> | Shell midden <input type="checkbox"/> |
| Base camp <input checked="" type="checkbox"/> | STU/lithic scatter <input checked="" type="checkbox"/> |
| Rockshelter/cave <input type="checkbox"/> | Quarry/extraction <input type="checkbox"/> |
| Earthen mound <input type="checkbox"/> | Fish weir <input type="checkbox"/> |
| Cairn <input type="checkbox"/> | Production area <input checked="" type="checkbox"/> |
| Burial area <input type="checkbox"/> | Unknown <input type="checkbox"/> |
| Other context <input checked="" type="checkbox"/> | |

Historic

Urban/Rural? Rural

Domestic

- Homestead
- Farmstead
- Mansion
- Plantation
- Row/townhome
- Cellar
- Privy

Industrial

- Mining-related
- Quarry-related
- Mill
- Black/metalsmith

Furnace/forge

Other

Transportation

- Canal-related
- Road/railroad
- Wharf/landing
- Maritime-related
- Bridge
- Ford

Educational

Commercial

- Trading post
- Store
- Tavern/inn

Military

Battlefield

Fortification

Encampment

Townsite

Religious

- Church/mtg house
- Ch support bldg

Burial area

- Cemetery
- Sepulchre
- Isolated burial

Bldg or foundation

Possible Structure

Post-in-ground

Frame-built

Masonry

Other structure

Slave related

Non-domestic agri

Recreational

Midden/dump

Artifact scatter

Spring or well

Unknown

Other context

field spreading or refuse disposal

Interpretive Sampling Data:

Prehistoric context samples

Soil samples taken

Flotation samples taken

Other samples taken palynology phytoliths

Historic context samples

Soil samples taken

Flotation samples taken

Other samples taken



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Diagnostic Artifact Data:

Projectile Point Types		
Koens-Crispin		3
Clovis	3	
Hardaway-Dalton		
Palmer		
Kirk (notch)		
Kirk (stem)	1	
Le Croy	6	
Morrow Mntn		
Guilford		
Brewerton	19	2
Otter Creek	27	
Perkiomen		
Susquehana		
Vernon	7	
Piscataway	14	
Calvert		
Selby Bay		
Jacks Rf (notch)		
Jacks Rf (pent)		
Madison/Potomac		
Levanna		

Prehistoric Sherd Types

Marcey Creek	28	Popes Creek		Shepard		Keyser	
Dames Qtr		Coulbourn		Townsend		Yeocomico	
Selden Island		Watson		Minguannan		Monongahela	
Accokeek	12	Mockley		Sullivan Cove		Susquehannock	
Wolfe Neck		Clemson Island		Shenks Ferry			
Vinette		Page		Moyaone			
				Potomac Cr			

Historic Sherd Types

Earthenware		Ironstone		Staffordshire		Stoneware	
Astbury		Jackfield		Tin Glazed		English Brown	
Borderware		Mn Mottled		Whiteware		Eng Dry-bodie	
Buckley		North Devon		Porcelain		Nottingham	
Creamware		Pearlware				Rhenish	
						Wt Salt-glazed	

All quantities exact or estimated minimal counts

Other Artifact & Feature Types:

Prehistoric Artifacts		
Other fired clay		1
Flaked stone	52400	
Ground stone	29	
Stone bowls		
Fire-cracked rock	3472	
Other lithics (all)	3271	
Ceramics (all)	42	
Rimsherds	8	
Human remain(s)	<input type="checkbox"/>	
Modified faunal		
Unmod faunal		
Oyster shell	<input checked="" type="checkbox"/>	
Floral material	<input checked="" type="checkbox"/>	
Uncommon Obj.		
Other	<input type="checkbox"/>	

Prehistoric Features

Mound(s)	<input type="checkbox"/>	Storage/trash pit	<input type="checkbox"/>
Midden	<input type="checkbox"/>	Burial(s)	<input type="checkbox"/>
Shell midden	<input type="checkbox"/>	Ossuary	<input type="checkbox"/>
Postholes/molds	<input type="checkbox"/>	Unknown	<input type="checkbox"/>
House pattern(s)	<input type="checkbox"/>	Other	<input type="checkbox"/>
Palisade(s)	<input type="checkbox"/>		
Hearth(s)	<input checked="" type="checkbox"/>		
Lithic reduc area	<input checked="" type="checkbox"/>		

Lithic Material

Fer quartzite	<input type="checkbox"/>	Sil sandstone	<input type="checkbox"/>
Jasper	<input checked="" type="checkbox"/>	Chalcedony	<input type="checkbox"/>
Chert	<input checked="" type="checkbox"/>	Ironstone	<input checked="" type="checkbox"/>
Rhyolite	<input checked="" type="checkbox"/>	Argilite	<input checked="" type="checkbox"/>
Quartz	<input checked="" type="checkbox"/>	Steatite	<input type="checkbox"/>
Quartzite	<input checked="" type="checkbox"/>	Sandstone	<input checked="" type="checkbox"/>
		limonite, amphi	<input checked="" type="checkbox"/>
		European flint	<input type="checkbox"/>
		Basalt	<input type="checkbox"/>
		Unknown	<input type="checkbox"/>
		Other	<input checked="" type="checkbox"/>

Dated features present at site

Numerous prehistoric features dated based on the presence of diagnostics within the feature deposits.

Historic Artifacts		
Tobacco related		
Pottery (all)		
Glass (all)		
Architectural		
Furniture		
Arms		
Clothing		
Personal items		
Activity item(s)		
Human remain(s)	<input type="checkbox"/>	
Faunal material	<input type="checkbox"/>	
Misc. kitchen		
Floral material	<input type="checkbox"/>	
Misc.		
Other	<input checked="" type="checkbox"/>	coal, slag

Historic Features

Privy/outhouse	<input type="checkbox"/>	Depression/mound	<input type="checkbox"/>	Unknown	<input type="checkbox"/>
Const feature	<input type="checkbox"/>	Well/cistern	<input type="checkbox"/>	Burial(s)	<input type="checkbox"/>
Foundation	<input type="checkbox"/>	Trash pit/dump	<input type="checkbox"/>	Railroad bed	<input type="checkbox"/>
Cellar hole/cellar	<input type="checkbox"/>	Sheet midden	<input type="checkbox"/>	Earthworks	<input type="checkbox"/>
Hearth/chimney	<input type="checkbox"/>	Planting feature	<input type="checkbox"/>	Mill raceway	<input type="checkbox"/>
Postholes/molds	<input type="checkbox"/>	Road/walkway	<input type="checkbox"/>	Wheel pit	<input type="checkbox"/>
Paling ditch/fence	<input type="checkbox"/>				

All quantities exact or estimated minimal counts

Radiocarbon Data:

Sample 1:	<input type="text"/> +/- <input type="text"/> years BP	Reliability	Sample 2:	<input type="text"/> +/- <input type="text"/> years BP	Reliability	Sample 3:	<input type="text"/> +/- <input type="text"/> years BP	Reliability
Sample 4:	<input type="text"/> +/- <input type="text"/> years BP	Reliability	Sample 5:	<input type="text"/> +/- <input type="text"/> years BP	Reliability	Sample 6:	<input type="text"/> +/- <input type="text"/> years BP	Reliability
Sample 7:	<input type="text"/> +/- <input type="text"/> years BP	Reliability	Sample 8:	<input type="text"/> +/- <input type="text"/> years BP	Reliability	Sample 9:	<input type="text"/> +/- <input type="text"/> years BP	Reliability

Additional radiocarbon results available



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External Samples/Data:

Collection curated at

Additional raw data may be available online

Summary Description:

The Higgins Site or 18AN489, also known as Jones Field S West, the Sink, or Kitten Branch West (18AN23B), is a buried, multi-component prehistoric site located near the Baltimore-Washington International (BWI) Airport in northwestern Anne Arundel County, Maryland. Represented at the site, are a series of base camps and lithic workshops dating from the PaleoIndian period, right up to the Late Woodland. The site is situated on an upland promontory extending northwestward between two small drainages that have their confluence approximately .45 km northwest of the site in a swampy lowland. Both ultimately drain into the Patapsco River and the Chesapeake Bay. In modern times, the Higgins site and much of its surrounding area has been wooded, with Virginia pine, oak, sassafras, and beech being the dominant tree species. The understory is relatively limited and includes greenbriers, brambles, grape, and poison ivy. These vegetation regimes, and the associated fauna are likely very different from what would have been present before European contact. Furthermore, given the 9,000 year or more occupation of 18AN489, it should be expected that the site has seen considerable change in its environmental setting over time. Soils at the site are largely well-drained, moderately eroded, and gently sloping Rumford loamy sands and Bibb soils.

The Higgins site area has been known to local collectors since at least the end of the 19th century. Aside from clearing and farming of the relatively level ridgetop from the early 19th century through the mid 1930s, the area remained undeveloped and essentially undisturbed until the late 1970s. These early collection activities are poorly documented and it is frequently difficult to determine if a specific collector was active at the site, or just in the general vicinity.

One of the better documented collections is that of Talbot Dickson (T.D.) Jones who was active in the general area around the turn of the 20th century. Jones referred to Higgins and the area around it as "Field S" or "The Sink". The latter name likely comes from a slight depression in the southern portion of the site where subsequent work has revealed a concentration of plowzone artifacts to be present. Jones' notes reveal the names of two other collectors of Field "S" (Messrs. Francis and Hancock), however nothing is known of these gentlemen nor of the whereabouts of their artifacts. In later years, a tenant farmer named Jenkins or Jackson discouraged collection on the property, thereby preserving much of the site.

The portion of the TD Jones collection from Field S that is still extant included 2 Marcey Creek sherds, 1 mano, 3 early stage bifaces, 2 drills, and 47 projectile points. Diagnostic points from the collection include 1 LeCroy, 1 Poplar Island, 2 Lamoka-like points, 4 Normanskill points, 2 Otter Creeks, a Matanzas-like point, 4 Brewerton side-notched points, 2 possible Genesees, 3 Bare Islands, 2 Clagett-like points, 3 possible Snook Kill points, 3 possible Koens-Crispin points, 2 Dry Brook Fishtails, a Hellgrammite point, a Vestal Notched point, a Wading River point, 5 Piscataways, 2 Vernons, and 2 Madison/Potomac points. It is uncertain how representative the collection of Field S is for the site area. Jones reported collecting almost 100 'arrowheads' from Field S on a single day in May 1899. The available specimens are all whole or nearly whole, implying culling of the collection at some later date. Again, other collectors are known to have been active in the area during the period of cultivation from the late 19th century to the mid 1930s and collections exist, but the documentation is not such that specific artifact can reliably be tied to 18AN489 as opposed to other nearby sites.

Two amateur archeologists, Edward Higgins of Linthicum and Paul Seman of Kent Island, amassed collections from the site in the 1950s and 1960s. The Higgins collection from 18AN489 included 15 diagnostic projectile points, 1 un-typed projectile point, numerous biface fragments, a full-grooved stone axe poll, and a ground stone axe bit. Although never formally tallied and analyzed, the debitage consisted almost entirely of quartz flakes, with a few scattered rhyolite flakes. Decortication flakes with cobble cortex were common. Diagnostic points include a St. Albans side-notched point, 2 Brewerton eared-notched points, 1 Brewerton side-notched point, 4 Bare Islands, 2 Wading River points, a Poplar Island, 1 Piscataway point, 1 Vernon point, a Lehigh broadspear, and an Orient Fishtail point. It should be noted that there is some overlap between materials from 18AN489 and nearby site 18AN622 in the Higgins collection, but for the most part these materials are believed to have come from the former rather than the latter. The Seman collection has never been professionally examined.

The first professional examination of the Higgins site occurred in 1978 when researchers from the Maryland Geological Survey's Division of Archeology investigated the (then) proposed location of a rapid rail station and associated parking and access facilities which would serve the nearby BWI airport. The survey was conducted to determine the location of any archeological sites within the impact area of the project in conformance with state and federal legislation.

The Higgins site was wooded at the time of the 1978 survey and adequate surface visibility was present only along an extant fire road. Examination of the road yielded two quartz projectile point fragments, 3 biface fragments, 2 chert flakes, approximately 150 quartz flakes, and the poll of a full-grooved axe. In addition to surface reconnaissance, 43 shovel test pits (STPs) were excavated along the proposed rail station access road, along the crest of the ridge, in a line trending southeast toward one of the aforementioned drainages, and in the proposed station and parking lot locations. These STPs were generally spaced at 30.48-45.72 m (100-150 ft) intervals, but spacing varied considerably due to field conditions. Shovel tests yielded 2 quartz bifaces, 1 "worked quartz" artifact, 105 pieces of quartz debitage, and 10 pieces of fire-cracked rock. Of these 128 artifacts, 32 were found below the base of the plowzone, indicating that intact subplowzone deposits might exist. In one STP, fire-cracked rock was found to a depth of 76 cm. Diagnostic artifacts from the site included a single Bare Island and a Lamoka-like point.

While the Division of Archeology 1978 surface is clearly biased by collection of the same are often reconnoitered by Edward Higgins, the subsurface survey provided a more controlled artifact sample. The predominance of quartz is overwhelming, constituting 100% of the subsurface collection of flaked stone, and 99% of the observed surface material. This survey produced the only known chert debitage from the site at that time, while rhyolite artifacts were conspicuously absent.

As a result of the Phase I survey, the site was determined to be potentially significant and design changes were made to the rail station and parking lot layouts so that only the periphery of the site was impacted. The project was, thus, permitted to proceed without further investigation. Only an access road to the parking lot was constructed through the eastern site margin.

Division of Archeology personnel returned to the site on several occasions in 1979 and 1980 for brief field visits. Three additional diagnostic points were collected. These included a Brewerton Eared-notched point, a Brewerton Side-notched point, and a Normanskill point, all manufactured from quartz.

The next stage of professional archeological fieldwork at Higgins, came in 1987. This fieldwork was the consequence of the (then) proposed construction of a headquarters building for the State Railroad Administration within the site boundaries. Due to federal and state legislation mandating consideration for



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archeological resources when funding construction with public monies, the Division of Archeology of the Maryland Geological Survey conducted Phase II testing in 1987 and 1988 to more precisely determine site boundaries, and the integrity and nature of the deposits. These investigations revealed the presence of highly significant, horizontally stratified, intact, subplowzone deposits dating to the Archaic period, warranting Phase III-level investigation. The Phase III work was carried out by the Division of Archeology later in 1988 and description of both the Phase II and Phase III projects follow.

The 1987 Phase II test excavations at Higgins were designed to provide basic data about the vertical and horizontal extent of the site, and the nature and integrity of deposits. Thus, the work entailed the excavation of both systematically placed shovel test pits and the excavation of 24 square meters in formal test units.

Phase II testing began with the establishment of a grid system over the wooded ridgetop area west of rail station access road. Wooden stakes were set in every 60 meters, with pin flags placed at intervening 15 meter intervals. One hundred ninety-four grid points marking shovel test locations were ultimately set in on areas of low to moderate slope. No grid points were marked on steep slopes descending to the local drainages. STP excavation were centered on pin flag markers, but offset to one side on wooden stake markers. Stakes were left in place in anticipation of subsequent work.

Shovel tests measured 50 cm in diameter and were stratigraphically excavated into sterile subsoil. With the exception of a few STPs located in a graded fire road at the northern ridge terminus, shovel tests penetrated at least 50 cm below the surface, some extending as deep as 120 cm. All soil was screened through hardware cloth and artifact provenience was maintained for each natural layer encountered. STP profiles and appropriate soil and artifact data were recorded on standardized forms. A total of 176 shovel test pits were excavated.

Shovel test pit results indicate that the Higgins sit occupies virtually all of the remaining intact ridgetop west of the rail station access road. Although artifact density generally dropped off towards the road, one shovel test located on the berm of the access road contained significant quantities of quartz debitage in intact soil, underlying 20 cm of fill from road construction. The state road appears to have impinged on the site in this area, and additional artifactual remains are likely to be east of the road as well.

Placement of formal test units was based on the distribution and density of prehistoric artifacts found below the plowzone in the shovel test pits. A secondary factor in test unit placement was the presence of soil anomalies noted during shovel testing. Test units were both 1 X 2m and 2 X 2 m in size. Again, a total area of 24 m² was excavated during Phase II work in 7 test units of the aforementioned sizes.

Test units were excavated in 5 cm arbitrary levels within natural stratigraphic layers. Five cm levels were used rather than the more standard 10 cm arbitrary level in an attempt to pick up any fine stratification of cultural deposits which might be present in the otherwise uniform sand. All observed tools, cores, and fire-cracked rock were left in place, pedestalled, and piece plotted. An attempt was made to piece-plot all debitage as well, however, this proved impractical due to soil conditions. The saturated (and later frozen) soil, combined with the translucency of much of the quartz debitage, making the in situ detection of flakes extremely difficult. As a result, the mapped debitage was heavily biased towards larger flakes and chunks. Most of the debitage was found in the screens. All soil, including the plowzone, was screened through hardware cloth. In addition, a two-gallon soil sample was taken from the southwest quadrant of every level in each excavation unit for flotation to capture both organic matter and a sample of small lithic artifacts that would normally fall through the screens.

In general, excavation of the seven test units clearly demonstrated the presence of intact cultural deposits. Despite the presence of intact remains from three temporally distinct prehistoric components, there was little evidence of vertical stratigraphy encountered at this stage. Only one unit (in the southeast portion of the site) produced potentially stratified deposits, with two scatters of fire-cracked rock found superimposed in different levels. The limited exposure was insufficient to verify the apparent stratification in the subsoil. Diagnostic artifacts were not recovered from this unit, and debitage showed a continuous decrease in quantity from higher to lower levels.

The data from private surface collections combined with the controlled testing provides some indication that intact vertical stratigraphy did exist on the site prior to plowing in historic times. Both the Jones and Higgins surface collections consist largely of projectile points dating to the Late Archaic-Early Woodland subperiods. Although the sample of clearly diagnostic projectile points recovered from Phase II investigations is small, it tends to suggest that Woodland and Late Archaic artifacts are found in the disturbed upper layers, while Middle Archaic and Early Archaic deposits remained undisturbed. Some Late Archaic remains are also found in intact contexts.

The prehistoric features uncovered during Phase II tests excavations (deposits of fire-cracked rock, a concentration of limonite, and a possible Late Archaic living floor) were well defined and showed little evidence of disturbance. Several cases of small-scale movement of artifacts were encountered. Artifacts were found in upright positions in the subsoil in several instances, indicating some vertical movement from their original positions. Bioturbation is undoubtedly responsible for some of this movement given the wooded condition of the site. Although test units were placed to avoid large trees, those roots encountered tended to be densest in the plowzone and usually spread horizontally along the plowzone/subsoil interface.

Sub-freezing temperatures during test excavations provided a clear demonstration of potential artifact movement due to freeze/thaw cycles. Needle ice, crystallizing in the sandy, saturated soils, elevated exposed artifacts almost 2 cm above their pedestals after overnight freezing. This effect is undoubtedly muted for buried artifacts whose movement is restricted by overlying sediments. However, the potential vertical movement of individual artifacts through the soil by this process cannot be ignored. Furthermore, these deposits were, at one time, on the surface. This may be the major process by which artifacts were turned or dislodged from their original orientations in the subsoil.

Preservation of prehistoric organic remains was virtually nil due to the rapid leaching of the acid, sandy soils. Although charcoal flecks were occasionally observed in the subsoil, these were without reliable associations, were relatively solid, and appeared to be fresh. The origin of this charcoal was thought to be related to recent forest fires and natural carbonization of buried organic remains. No prehistoric bone was observed. All of the shell recovered was found in the plowzone and almost certainly represents historic fertilizer. Thus, no materials suitable for radiometric dating were recovered.

Phase II test excavations produced 8,135 prehistoric artifacts. The assemblage consisted of 36 projectile points, 1 hafted scraper, 3 other scrapers, 62 bifaces, 2 graters, 4 retouched flakes, 2 other flaked tools, 93 cores, 136 chunks, 6,987 flakes, a groundstone axe, 3 other groundstone objects (incomplete), 33 hammerstones, 293 pieces of fire-cracked rock, and 479 other lithics (unmodified rock). Quartz debitage (including flakes, chunks, and cores) makes up the overwhelming majority of the assemblage. Temporally-diagnostic artifacts recovered include projectile points from several periods. The diagnostic projectile points include 1 LeCroy point, 2 Otter Creek points, 3 Bare Island points, a Lamoka point, 2 Wading River points, 2 Piscataway points, a rhyolite



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"spike" point, and at least three triangular points.

As a result of the Phase II testing, at least three intact prehistoric components were identified at the Higgins site. These were all of Archaic period temporal affiliation and included an Early Archaic LeCroy component in the northern section of the site, a Middle-Late Archaic Otter Creek component in the east-central portion of the site, and a Late Archaic Bare Island component in the easternmost unit at the site. Mixed Archaic remains were found in a unit just to the west of the LeCroy component. Limited evidence of a disturbed Woodland component came from both the plowzone of the southern-most unit and from shovel testing in the area surrounding it. Archaic remains were generally confined to the disturbed upper layers and appear to be secondarily deposited. For this reason, they have not been included in the artifact tallies above.

As noted previously, the distribution of identifiable projectile point types strongly suggests horizontal separation of components (as opposed to stratified occupations), with potential to identify specific activity areas. Thus, while the Phase II testing indicated that vertical stratigraphy was apparently absent, the site clearly had intact deposits with probable horizontal integrity. Based on these findings, Phase III data recovery was recommended in areas of the site where construction impacts could not be avoided.

Near the close of Phase II testing, the size and location of the impact area for the construction and landscaping of the State Railroad Administration headquarters building were finalized. The project impact area incorporated some 8,362 m². The Phase III investigations would ultimately entail the excavation of 221 m², representing about 2.6% of the overall construction project area or about .78% of the total 7.5 acre site. Thus, Phase III work adequately sampled the area to be impacted by the construction of the new headquarters, but by no means did it obtain a representative sample of the site as a whole.

Phase III excavations at the Higgins site were designed to fill a gap in basic knowledge about the Archaic period in Maryland, and the Middle Atlantic region in general. Although sites of this time period are numerous, few are known to contain intact deposits, and fewer still have been excavated. Obtaining basic chronological data on different Archaic components and refinement of projectile point typology were important goals of the Phase III investigations. The location of the deeply-buried deposits on a ridgetop (where soils are usually found to be shallow) enhanced the possibility of gaining new information about site function and use of space in an environmental setting that is rarely amenable to testing. The presence of intact features potentially permitted the definition and reconstruction of temporally discrete activity areas, which could be functionally and technologically compared with other occupations found on the site and elsewhere in the region.

Prior to mitigation excavations, a detailed topographic map of the site was produced using a .25 m contour interval. Intersections on the 15 m interval grid established during the Phase II testing were employed to obtain systematically-placed elevations over the ridgetop. Historic features, such as a series of drainage ditches and the fire road that crosses the site, were also mapped. All Phase III excavations were oriented on the grid established during Phase II test excavations.

Phase III excavations were undertaken at the Higgins site in three separate blocks totaling 221 square meters. Block 1 along the fire road that runs north-south through the center of the site (the largest area with 151 square meters opened) was initiated between 2 Phase II shovel tests, which contained moderate densities of prehistoric artifacts in intact subsoil. Exploratory trenches were opened in all directions from the block. Based on the relative quantities of diagnostic and other artifacts, and the distribution of features and living floor areas, these exploratory trenches were expanded into smaller excavation area designated A, B, and C. Block 2 (to the west of Block 1) extended excavations around one of the Phase II test units which had produced a concentration of limonite and several clusters of fire-cracked rock. The LeCroy point also came from this unit, suggesting that very early deposits were centered in this area. This area was expanded to further investigate a possible Early Archaic "structure" remnant marked by a concentration of limonite slabs. Because it was outside the construction project area, excavations in Block 2 were limited to 18 square meters. Block 3 was excavated southeast of Block 1 in the area of a Phase II test unit that exposed a possible Otter Creek occupation living floor. Work was undertaken in all directions until artifact densities dropped off, thus defining the specific occupational area. It eventually encompassed 52 sq. meters.

Excavation blocks were dug in 1 X 1 m squares (test units). Humus and plowzone were generally removed as a single layer, although in several units these layers were excavated and screened separately. Once intact subsoil was exposed, each unit was sub-divided into 50 X 50 cm quadrants designated by their geographical coordinates, and excavated separately. Quadrants were excavated in 10 cm arbitrary levels within natural layers, and all fill was screened through hardware cloth. All units were excavated to the base of cultural deposits.

During Phase III excavations, all artifacts except flakes were pedestalled within the 10 cm level in which they were found. However, the provenience of debitage was maintained by quadrant and level only. Separate records were maintained for each level in each unit and standardized forms were used. All pedestalled artifacts were mapped and assigned consecutive field numbers, and were subsequently recorded as tracings on level forms.

Features were identified by the presence of clusters of artifacts, usually fire-cracked cobbles and small pieces of limonite. The leached, sandy, acidic soil prevented feature fill from being distinguished from the matrix by either changes in soil texture or color. It is important to note, therefore, that many prehistoric features lacking substantial artifact concentrations may not have been recorded because they were no longer detectable. Features were given unique number and excavated separately.

At least two representative series of profiles for each block excavation were recorded for north-south and east-west directions. In addition, at least one unit in each block was extended well below the culture-bearing strata to confirm the base of cultural deposits, obtain paleoenvironmental data, and gather geological information about site formation processes and the origin of the landform in which the site was located.

As was done during Phase II test excavations, two-gallon soil samples were systematically taken from the southwest quadrant of each level in intact subsoil in every 1 X 1 m unit. Over 1000 such samples were thus acquired. Soil samples were also taken from within features. Data from previous excavations indicated that the probability of recovering much prehistoric organic material was low, and the large samples were primarily collected to provide a sample of lithic debitage that normally would not be captured by a screening through hardware cloth.

Small soil samples were taken from each feature and from the pedestals of many tools and project points to be processed for pollen, phytoliths, and other micro residues. Columns of pollen samples were also collected from one wall of the deep excavation unit in each block to provide environmental data. Trowels cleaned with sterile water were used to collect the samples. Additional columns of soil samples were collected in 5 cm increments from one wall of the deep unit profile in each excavation block for geological analyses. These included analysis of grain size and shape, geochemistry, and mineralogy.



Phase II and Phase III Archeological Database and Inventory

Site Number: 18AN489

Site Name: Higgins

Prehistoric

Other name(s) T.D. Jones Field S West, Kitten Branch West, 18AN23B

Historic

Brief Description:

Paleoindian - Late Woodland multi-component base camp, lithic workshop; Mid 19th -Early 20th century scatter

Unknown

Phase III excavations yielded much additional information about the range of prehistoric occupations at the Higgins Site, and the processes of site formation. Numerous intact remains from the Early, Middle, and Late Archaic subperiods were found as anticipated from the Phase II testing. Unexpected intact deposits were also uncovered relating to PaleoIndian and Early Woodland times. The PaleoIndian remains are particularly significant due to their rarity in an intact subsurface context. This component also constitutes the only unequivocal example of vertically-stratified remains in the excavated portion of the site.

Several occupations were isolated for study based on the horizontal placement of diagnostic artifacts. PaleoIndian remains were restricted to the central portion of Block 1C and are concentrated in the deeper levels. Early Archaic LeCroy deposits occur only in Block 2. Middle-Late Archaic Otter Creek and Brewerton remains are most numerous and were exposed in several areas of the site. These included the western portion of Block 1A, the northeastern portion of Block 1B, and the southern and central portions of Block 3. Late Archaic Bare Island remains were found in the upper levels of Block 1C, and in the extreme southern portion of Block 1A. Early Woodland Marcey Creek remains were confined to the central northern portions of Block 3. A probably unrelated Early Woodland Wading River component was identified over much of Block 1B.

In general, diagnostic artifact distributions and site structural data led to five conclusions regarding 18AN489. 1) The depositional characteristics of the site are complex, and are not reflected in the existing site surface topography, which has been homogenized by plowing. 2) Plowing has destroyed some pre-existing vertical stratigraphy to the extent that Woodland period artifacts are usually confined to the plowzone, while earlier deposits predominate in the intact subsoil. 3) Except in rare cases, apparently associated with extinct drainages, clear subplowzone vertical stratigraphy is absent on the site. 4) Except in these extinct drainage areas, subplowzone stratigraphy is compressed, especially for the Archaic period occupations. Tree root activity and needle ice formation are probably the most significant sources of disturbance to the site and have caused some vertical displacement of individual artifacts. Given the highly leached and uniform nature of the soil, only horizontal artifactual relationships can be considered to be significant over most of the site. 5) Deposits are likely to be more deeply buried as one approaches the adjoining drainages. Intact Woodland remains are likely to be present only in the eastern portions of the site. Woodland deposits are likely to be confined to the plowzone in the central and western portions of the site. In general, Archaic and PaleoIndian deposits can be expected to be largely intact over the entire site area, although Late and Terminal Archaic remains may sometimes be truncated.

Phase II and III excavations revealed 26 prehistoric features. Morphologically, these can be grouped into three types: 1) small, round to oval clusters of fire-cracked rock with minor quantities of limonite, that are 50 cm or less in diameter, 2) large, round concentrations of fire-cracked rock with minor quantities of limonite, that are between 70 to 100 cm in diameter and may be associated with dispersed fire-cracked rock, and 3) round limonite concentrations of small diameter.

All features lack visible charcoal, evidence of burned earth, textural evidence of pit excavation in the surrounding matrix, or evidence of pit containment in the arrangement of fire-cracked rock. Although this undoubtedly is in part the result of post-depositional leaching, charcoal collected from flotation feature fill was likewise sparse.

The function(s) of the small fire-cracked rock clusters is unclear, and could include small cooking hearths, smoke or steam-generating hearths, boiling-stone dumps or caches, sweat-lodge locations, or any other activity requiring a small, intense fire and/or heated rocks. The generation of archeological fire-cracked rock is a poorly studied phenomenon. Preliminary ethnographic review and replicative studies, however, have indicated that discard areas for worn-out boiling stone mimic features commonly ascribed to small round or oval "hearths", and that stone boiling (vs. steaming or roasting) creates the irregular, angular fracture patterns common to fire-cracked rock found on archeological sites. Larger, well-defined, packed concentrations of fire-cracked rock were hypothesized to represent boiling stones discarded, or possibly cached, in their original perishable container.

Fire-cracked rock features were common at the Abbott Farm site in New Jersey, and on Terminal Archaic and Early Woodland sites in the Upper Delaware Valley. Two "boiler" features were identified in Early Archaic (bifurcate) contexts at the nearby Indian Creek Site (18PR94), that are very similar to the 20 small clusters found at the Higgins site. These features were present in occupations of all of the subperiods at the Higgins site, except possibly the Late Archaic.

The two roughly circular concentrations of small limonite fragments resemble the large fire-cracked rock concentrations in form and could also represent hearth areas that simply made use of limonite rather than sandstone or quartzite cobbles. Alternatively, they could have a distinct function unrelated to fire-generating activities.

Prehistoric artifacts recovered during the Phase III investigations included 164 projectile points, 3 drills, 1 perforators, 351 other bifaces, 4 hafted scrapers, 15 other scrapers, 1 uniface, 2 choppers, 4 graters, 518 cores or core fragments, 48 retouched flakes, 41,687 other flakes or flake fragments, 1,065 chunks, 5 pestles, 1 groundstone object of a geometric form, 15 unfinished or incomplete groundstone objects, 87 hammerstones, 5 abraders, 12 use-modified grinding stones, 3,073 pieces of fire-cracked rock, 2,645 other lithics (unmodified rock), 26 ceramic sherds, and 1 ceramic pipe fragment.

Diagnostic projectile points included 3 Clovis point fragments (representing 2 Clovis points), 1 Kirk point, 1 Kanawha stemmed point, 1 MacCorkle Stemmed point, 2 LeCroy points, 22 Otter Creek points, 7 Brewerton side-notched points, 3 Brewerton Eared-notched points, 1 Brewerton Corner-notched point, 3 Normanskill points, 14 Bare Island points or point fragments, 4 Vernon points, 3 Lamoka points, a Savannah River-like point, 3 Snook Kill points, 1 Dry Brook Fishtail, an Archaic or "Beekman" triangular point, 9 Wading River points, 6 Piscataway points, and 5 Late Woodland triangular points.

With the exception of two very small, eroded, non-diagnostic sherds, all of the ceramic sherds were Early Woodland Marcey Creek ware. Twenty-five of the sherds mended to form two large sections of the same Marcey Creek pot. At least 8 rim sherds are present.

Although several options were explored, no absolute dating techniques could be employed on the Higgins site. Organic preservation was virtually nil. However, the Phase III excavations yielded a wealth of palynological, micro-residue, geochemical, pedological, and sedimentological data. These auxiliary techniques provided both environmental and functional data related to particular artifacts, components, and time periods.

Geomorphological investigations indicated a primarily fluvial source, rather than an Aeolian origin, for the Higgins site sediments. The incorporation of archeological remains have helped to date various aspects of downcutting and deposition resulting in the present-day ridgetop, and have helped to clarify the Pleistocene and Holocene geomorphology of the Inner Coastal Plain in this region.

In total, 24 features and feature pedestals (many with associated diagnostic artifacts) were selected for pollen sampling. Underlying soils were also analyzed and pollen analysis was performed on residue derived from artifact washes. Phytolith analysis of samples from associated artifacts was also completed. The analysis of feature fill and artifact washes for pollen, phytolith and/or cross-polarization data from the Higgins Site was designed to provide subsistence



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