VI. ARTIFACT ANALYSIS

This chapter provides descriptive and technological data concerning artifacts recovered from Phase III investigations at the Drawyer Creek South Site (7NC-G-143). The artifact analyses presented below provide more specific technological and stylistic information on the stone tools and ceramics that were described, in preliminary fashion, in Chapter V. The focus in Chapter V was to describe where the artifacts were located within the site and what kinds of meaningful spatial information could be derived from the artifact distributions. Chapter VI takes the analysis a step further by providing more details on the artifacts themselves, as recorded within features and activity areas across the site. The discussions in Chapters V and VI combined serve to address such issues as the chronology of the site, internal site patterning, site function, the nature of individual activity areas, the use of raw materials, and other research questions that are pertinent to understanding what occurred on the site during its series of brief occupations. The analyses and discussions are organized by component, as in the previous chapter, with assemblages split into an upper component, defined principally by a Woodland II occupation, and a lower component, defined by what appears to be an earlier and nebulously defined Woodland I/Woodland II component. As has been stated in previous chapters, the lower component contains some materials originally associated with the upper component.

All artifacts recovered from the Drawyer Creek South Site were processed in the Berger laboratory, located in East Orange, New Jersey. Appendix B contains a complete inventory of artifacts from the site. Appendix E contains the flotation analysis report.

A. CERAMIC ANALYSIS

The initial stage of ceramic analysis of the sherds recovered from the Drawyer Creek South Site involved counting, weighing, and cataloging the sherds on the basis of temper type, surface treatment, and decoration. Sherds were then sorted into groups exhibiting similar temper, surface treatment, and decoration in order to facilitate crossmending of vessel fragments. The groups of sherds were then related to the typological schemes, or ceramic ware groups, already established for prehistoric ceramics from northern Delaware and southern New Jersey (e.g., Custer 1985; Griffith 1982; Griffith and Custer 1985; McCann 1950; Morris et al. 1996; Mounier 1975; Staats 1974; Stewart 1996; Wise 1975).

Sherd lots were then compared to arrive at vessel counts for each block area of the site. Block Areas 4 and 5 contained no ceramics. Crossmending efforts concentrated first within the sherd groups that had been created and then progressed to attempting mends between individual groups. The refitting was attempted both to evaluate the contemporaneity of the contexts that produced ceramics and to produce larger sections of vessels for functional and typological analysis. Representative vessels for each block area are described below and summarized for the site as a whole. Tabulated sherds in Tables 17 and 18 are quantified by weight for each provenience rather than by count to provide a more accurate comparison of sherd groups. The high counts of sherdlets and crumbs inventoried are a better measure of vessel durability or lack thereof rather than actual representation on the site.

Table 17: Site 7NC-G-143, Block Area 1: Vessel 1 and Miscellaneous Sherds

PROVENIENCE	CAT. No.	WEIGHT (grams)	TEMPER	SURFACE TREATMENT
Unit 25/Lev. 1	32	2.2	-	-
Unit 24/Lev. 1	53	3.2	Quartz/sand	Wiped
Unit 24/Lev. 2	57	6.1	Quartz/sand	Plain
Unit 27/Lev. 1	72	9.8	Sand	Fabric-impressed
Unit 27/Lev. 2	79	3.5	Sand	Fabric-impressed
Unit 26/Lev. 1	51	4.5	Sand	Fabric-impressed
Unit 26/Lev. 2	55	5.9	Sand	Fabric-impressed
Unit 57/Lev. 2	162	1.6	Sand	Fabric-impressed
Unit 29/Lev. 1	82	9.8	Quartz/sand	Fabric-impressed
Unit 62/Lev. 1	182	2.8	Sand	-
Unit 70/Lev. 2	216	0.4	Sand	-
Unit 70/Lev. 2	216	13.0	Quartz/sand	Plain
Unit 118/Lev. 1	480	4.3	Sand	-
Unit 118/Lev. 2	481	3.7	Sand	Fabric-impressed

The ceramic assemblage from the site spans the entire range of the Woodland period beginning with Marcey Creek (1000 to 100 BC), Wolfe Neck (AD 200 to 800), and Hell Island (AD 800 to 1600), and progressing to the later Riggins series and Minguannan wares and their variants.

The collection of ceramics recovered consists of 286 sherds (total weight of 456.0 grams), including six rim sherds and a minimum of 19 vessels, although most of the latter include isolated sherds and very small clusters. The ceramic collection described below includes recoveries from both Phase II and Phase III excavations, and consists of five types, from Early through Late Woodland or late Woodland I through Woodland II.

Note: Analysis of the 286 sherds found on the site included counting, weighing, and cataloging attributes found on the sherds. Significant attributes include the contents of the ceramic paste, evidence of textures applied to the surface of ceramics before firing, such as cordmarking, and decoration. Sherds were then classified according to established types, and finally an estimate was compiled on the total number of ceramic vessels (19) represented at the site. Ceramic types range in age from 1000 BC to the 1500s.

B. CERAMIC DESCRIPTIONS BY BLOCK AREA

1. Block Area 1

In Block Area 1, five ceramic vessels are represented. The distribution of these vessel fragments is shown in Figure 5, in the previous chapter. Key attributes are tabulated below for Vessels 1 and 2, which represent the majority of the sherds recorded within the block. Vessel 1, which includes a small partially reconstructed rim section, is represented in Table 17. It is a thin-walled (5 mm) and well-constructed quartz- and sand-tempered vessel (Plate 6a) which is typical of the Riggins ware common in southern New Jersey. The surface treatment is fabric-impressed and appears to have been smoothed over somewhat, although the sandy character of the paste tends to obscure the surface detail.

Riggins ware was originally defined based on finds from the Riggins and Ware sites in southern New Jersey and initially described by McCann (1950). However, its identified range has expanded considerably since its initial description, encompassing much of the middle and lower Delaware drainage of New Jersey, Pennsylvania, and northern Delaware. It has also been identified on sites in southern Maryland (Thurman and Barse 1973). Riggins ware dates primarily to the period from AD 900 to 1500. It is quite variable in both temper (quartz, sand, gneiss, argillite), surface treatment (cord-marked, fabric-impressed, incised), and decoration, but this is not an uncommon trait of Late Woodland ceramics in the Middle Atlantic coastal region. Contemporary ceramic wares exhibiting similar simple patterns of decoration include Townsend, Minguannan, Potomac Creek, Overpeck, Bowman's Brook, and Indian Head, as well as others.

Table 18: Site 7NC-G-143, Block Area 1: Vessel 2 and Miscellaneous Sherds

PROVENIENCE	CAT. No.	WEIGHT (grams)	TEMPER	SURFACE TREATMENT
Unit 116/Lev. 1	460	7.6	Quartz/sand	Plain
Unit 116/Lev. 2	462	3.3	Quartz/sand	-
Unit 116/Lev. 3	466	0.3	-	-
Unit 77/Lev. 2	448	3.5	Quartz/sand	Plain
Unit 70/Lev. 1	209	8.1	Sand	-
Unit 117/Lev. 1	472	2.2	Quartz/sand	-

Vessel 2, selected sherds of which are represented in Table 18, is also a Riggins ware variant, and is also tempered with quartz and sand. The paste in this vessel contains a much higher percentage of sand than the first vessel, and surface treatment is not as apparent. The vessel walls are thin (4 mm) but well constructed. Most of the sherds representing Vessel 2 are small sherdlets and crumbs.

Vessel 3 is very similar in paste character and thickness (4 mm) to Vessels 1 and 2, with one exception: finely crushed gneiss is included in the temper. On at least one of the sherds, smoothed-over cordmarking is somewhat apparent on the exterior, although surface weathering has obscured the impressions. This vessel can also be considered a Riggins variant.

Vessel 4 consists of just a few sherds found in the southwestern portion of the block area. Temper is leached and the sherds are somewhat thicker (7 mm), perhaps indicating that these sherds represent an earlier, Middle Woodland, vessel form.

Vessel 5 is represented by a single sherd (Cat. No. 82) of Wolfe Neck pottery, which dates to circa 500 BC (Griffith 1982). It is fabric-impressed, thick (9 mm), and tempered with large fragments of crushed quartz (see Plate 6b). A similar thick quartz-tempered sherd was recovered from Unit 14 (Cat. No. 363), but this sherd is too small to clearly identify it as Wolfe Neck.

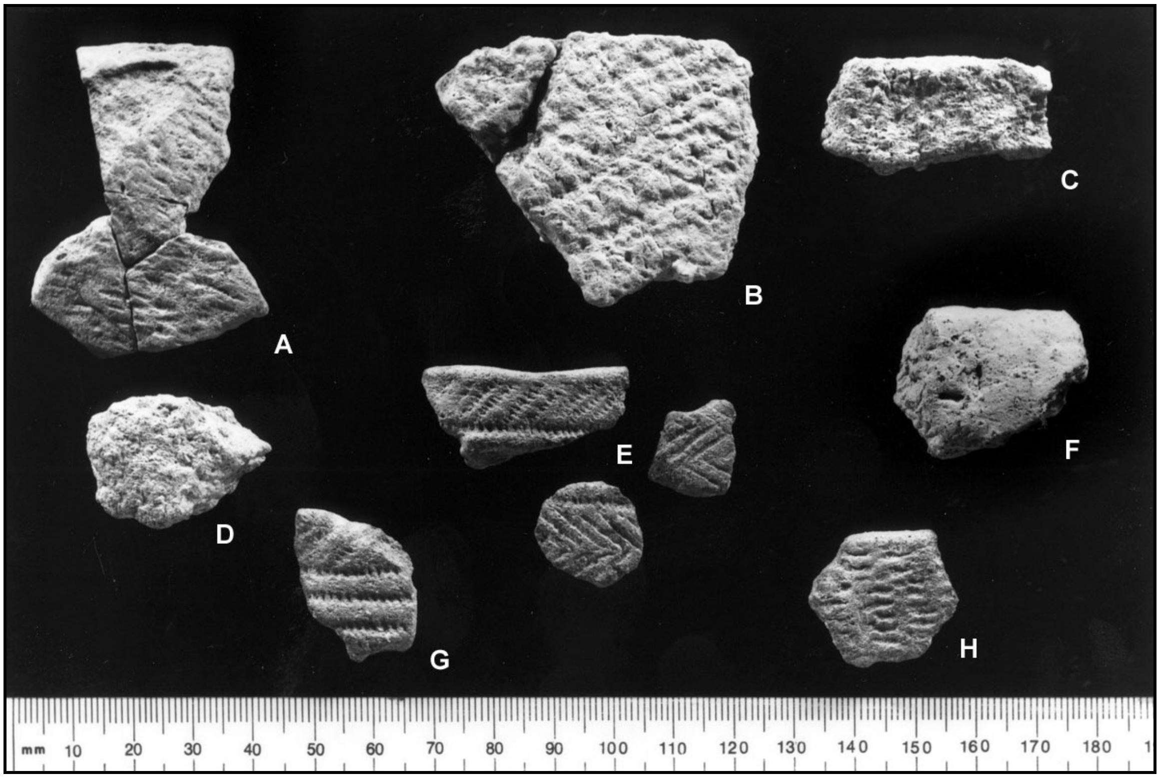

Plate 6: Site 7NC-G-143, Selected Ceramics

[A] Vessel 1, Area 1 (Cat. No. 82); [B] Vessel 5, Area 1 (Cat. No. 82); [C] Marcey Creek Sherd (Cat. No. 381); [D] Marcey Creek Sherd (Cat. No. 484); [E] Vessel 3 Fragments, Area 2 (Cat. No. 458); [F] Vessel 1, Dames Quarter, Area 3 East (Cat. No. 47); [G] Vessel 4, Area 3 East (Cat. No. 98); [H] Vessel 3, Area 3 Center (Cat. No. 83)

2. Block Area 2

Three ceramic vessels are represented in Block Area 2. Sherds from two of the vessels (Vessels 2 and 3) were recorded in the northeastern corner of the block area. Vessel 1 is represented by only two sherds of Marcey Creek pottery. It is difficult to ascertain whether both of these sherds (Cat. Nos. 381 and 484) are from the same vessel. They are similar in thickness (9-10 mm), but were found 2 meters apart in Level 1 of Units 99 and 115 (see Plate 6c and d). While both sherds are tempered with large fragments of steatite, one of the sherds also includes fragments of what appears to be crushed quartzite.

Vessel 2, represented by sand-tempered plain surfaced sherds (Cat. Nos. 233 and 458), would also fit a general Late Woodland Riggins ware classification comparable to some of the vessels in Block Area 1. This vessel averages 6-7 millimeters in thickness.

Vessel 3 is the most highly decorated ceramic container recovered from the site. There may also be a fourth vessel represented within the small collection of undecorated sand-tempered sherds from Units 113 and 74 (Cat. Nos. 458, 463, and 233). However, the small size of most of the sherds and the relatively homogeneous appearance of the temper make it more difficult to distinguish separate vessels. Sherd thicknesses are very consistent (4-5 mm) in this group as a whole, with only two sherds as thick as 6.5 millimeters.

Two rim sherds are represented for Vessel 3, along with decorated neck sherds that complete the pattern exhibited on the exterior surface of the vessel (see Plate 6e). The vessel itself is sand-tempered, thin, and well made. No decoration or surface treatment is exhibited on the interior surface of the rim, nor is there any on the lip, which is rounded in form. The rim profile on this vessel is straight to very slightly inverted. The rim exterior shows fine cord-wrapped stick impressions running obliquely from the lip to 9 millimeters below the lip, at which point it meets a horizontal band of cord-wrapped stick impressions, the first of three on this section of the vessel. Below this horizontal band are incised herringbone patterns. Associated body sherds appear to be plain, but surface weathering has obscured any surface treatment that would have remained. Of the 56 sherds in this group of Vessel 3 sherds, 50 percent could be considered crumbs of minimal analytical value, with the total ceramic assemblage from this area of the block totaling only 50.6 grams.

The pattern of decoration on Vessel 3 contains elements found in Minguannan Compound decorated ceramics (Custer 1985); however, very similar elements are also found in Indian Head and Riggins ceramics of southern New Jersey (Cross 1941) during the same time period as well as in the shell-tempered Townsend and Rappahannock series. Some of the incised patterns from the southern New Jersey ceramics collections are somewhat more complex than Minguannan, but the cord-wrapped stick impressions exhibited on this vessel are very similar to Minguannan motifs.

3. Block Area 3 East

All of the ceramics from this block area appear to be Woodland II (Late Woodland) in age, with the exception of a single thick (10 mm) gneiss-tempered rim sherd (Cat. No. 47; Vessel 1) recorded in Unit 37, Level 2. The rim sherd (see Plate 6f) is undecorated, has an uneven surface, shows no surface treatment, and can be assigned to the Dames Quarter ceramic type of Early Woodland age.

Vessels 2 and 3, most of which are represented in Unit 6 (Cat. No. 340), appear to be Riggins variants tempered with finely crushed quartz, gneiss, and a small amount of mica. The 10 sherds in this group average 8.5 millimeters in thickness, which is greater than the decorated and most of the undecorated Late Woodland sherds from the site.

Vessel 4 is a thin Late Woodland rim sherd (Cat. No. 98; see Plate 6g) which is similar to the decorated vessel from Block Area 2, i.e., exhibiting oblique over horizontal cord-wrapped stick patterns across the face of the rim. The rim sherd is tempered with sand and finely crushed quartz. Its similarity to Vessel 3 from Block Area 2 suggests that it is either a fragment of the same vessel or was one of several pots manufactured or utilized during the same occupation of the site. The pattern of decoration on Vessel 4 would, therefore, also be Minguannan Compound decorated (Custer 1985) or a variant from one of the southern New Jersey ceramic ware groups.

4. Block Area 3 Center

Only a few ceramic sherds were recovered from this block area. One of the sherds is a small Hell Island rim sherd tempered with quartz and sand and measuring 6 millimeters in thickness (Cat. No. 83; see Plate 6h). The rim fragment is small but appears to have a straight profile, and is rounded at the lip. The fabric-impressed surface runs parallel to the lip of the vessel. One other vessel is represented by a small thin sherd of probable Late Woodland affiliation.

5. Block Area 3 West

In Block Area 3 West a cluster of sherds that appear to represent two vessels was recorded, principally in Units 66, 67, and 97. Most of the sherds (35 sherds weighing a total of 29.8 grams) are crumbs and small sherdlets of limited analytical value. The larger body sherds are tempered with quartz and gneiss and, where surface treatment could be identified, are fabric-impressed. The vessels appear to fall within the Late Woodland Riggins ware classification, as described above.

6. Block Area 6

In Block Area 6, only a few scattered sherds were recovered from Unit 54, and four were recovered from Phase II Unit 12. The sherds from the Phase II unit are quartz- and sand-tempered and are probably of Woodland II (Late Woodland) affiliation. The age estimate is based on the construction and thinness of the sherds and the finely crushed character of the temper. The sherds are too small to make any detailed comparisons. In Unit 54, two vessels are represented, one incised with three parallel lines and one large plain-surfaced sherd. The plain-surfaced sherd is tempered with quartz and sand. Temper in the incised sherds is finely crushed quartz and sand.

C. LITHIC ASSEMBLAGE

Excluding FCR and minerals, 6,834 lithic artifacts were recovered from the Drawyer Creek South Site. The collection consists of 60 bifaces, 11 unifaces, 17 cores, seven cobble tools, and 6,739 pieces of debitage. Minerals recovered include one very small fragment of steatite (0.2 gram) from Unit 95, Level 3 (Cat. No. 33), and one piece (0.2 gram) of petrified wood from Unit 30, Level 3 (Cat. No. 335). The piece of petrified wood was located adjacent to Feature 2 within the context of hearthside workshop areas. Similar material has been recovered from Late Archaic (Koens-Krispin) contexts at the Indian Head Site in southern New Jersey (Mounier 1974). The fragments from the Indian Head Site appear to have been burned for unknown reasons. They were not chipped or modified in any other way. The find of the single fragment of petrified wood at the Drawyer Creek South Site from a hearthside context also suggests burning, although the small fragment recovered shows no indication of this. The raw material most likely originates in fossiliferous deposits of the Miocene-age Calvert Formation, exposed in many localities along the Appoquinimink River. It is also found in the Miocene-age Kirkwood Formation of Salem County, New Jersey, located directly across the Delaware River from New Castle County, Delaware (Wolfe 1977:122-123).

Fire-cracked rock was found throughout the site and is tabulated by level in Table 19. Areas within and adjacent to features contained the greatest amount of FCR. It is interesting to note that FCR counts continued into deeper levels below the defined feature, especially in the area surrounding

Feature 2. The areas with much lower counts of FCR across the site may represent the remains of scattered hearths and stone boiling features that were periodically disassembled and reassembled during successive occupations of the site.

Table 19: Site 7NC-G-143, Non-feature Contexts: Fire-Cracked Rock Weights by Level

LEVEL	WEIGHT
1	11,426
2	26,372
3	8,351
4	1,618
5	389
6	570
7	6
TOTAL	48,732

The descriptions of the lithic artifact assemblages that follow are organized by the two arbitrary site components, the upper component and the lower component. The lower component contains some debitage and stone tools that originated in the upper component and complete separation of these materials into clearly defined occupation surfaces is not possible. This is evident in the graphic depictions of the various block areas presented in Chapter V. Consequently, the lower component assemblage is described with the understanding that some of the materials recorded within that component are not affiliated with the earlier occupation. Some areas of the site present clearer representations than others. It is to be hoped that some sense can be made of the earlier occupations in spite of the background noise created by subsequent reoccupation of the site and localized soil disturbances.

1. Upper Component Artifact Analysis

The discussion that follows provides descriptions of the upper component assemblage by tool class. Table 20 shows comparisons of raw material types recovered within the upper component as a whole, clearly distinguishing a preference for the locally available raw materials such as jasper and quartzite. Chert is of secondary preference, but is still very well represented in the assemblage. Other raw materials, such as argillite, chalcedony, and rhyolite, were found in very limited quantities. The majority of the identifiable flake types consist of biface and early reduction flakes. Much lower numbers of decortication flakes and bipolar flakes were recovered in spite of the predominance of cobbles as raw material on this site, as on many other sites in the region. It is likely that identifiable bipolar flakes are lower in frequency as a result of being fragmented during the bipolar reduction process. Bipolar flake fragments are lost among the small shatter fragments that constitute most of the site assemblage.

Table 20: Site 7NC-G-143, Upper Component: Debitage Counts by Raw Material Type, Levels 1-2

RAW MATERIAL	LEVEL 1	LEVEL 2	TOTAL
Argillite	1	1	2
Chalcedony	3	3	6
Chert	82	149	231
Jasper	852	1,886	2,738
Quartz	57	76	133
Quartzite	706	1,668	2,374
Rhyolite	2	1	3
Miscellaneous*	7	9	13
TOTAL	1,710	3,793	5,503

* Miscellaneous totals include metasedimentary (3), shale (3), siltstone (4), metamorphic (1), sandstone (1), sedimentary (1), and indeterminate (3).

a. Bifaces

The collection of bifacial tools from the upper component of the Drawyer Creek South Site consists of 41 specimens. These tools may be divided into the following categories: (1) projectile points and fragments (N=14), (2) reduction-stage bifaces and fragments (N=21), and (3) indeterminate biface fragments (N=6). Descriptions of these classes and their respective subdivisions are given below. Raw material distributions for each biface category are shown in Tables 21-23.

1) Projectile Points

The collection of projectile points from the upper component at the Drawyer Creek South Site is subdivided into identifiable specimens, described in detail below, and fragments (basal, medial, and distal). They are manufactured from a variety of materials, including quartzite (N=5), jasper (N=4), chert (N=3), argillite (N=1), and chalcedony (N=1). The projectile points recovered (Table 21)

Table 21: Site 7NC-G-143, Upper Component: Projectile Point Attributes

RAW MATERIAL	WEIGHT (grams)	LENGTH (mm)	WIDTH (mm)	THICKNESS (mm)	PROVENIENCE	CAT. No.	DESCRIPTION
Argillite	4.6	47.9	17.5	5.5	Unit 101/Lev. 2	403	Point
Chalcedony	8.2	41.5	20.2	9.2	Unit 32/Lev. 2	69	Side-notched point
Quartzite	10.4	46.0	23.0	10.0	Unit 38/Lev. 1	73	Side-notched point
Chert	1.9	21.9	20.9	5.0	Unit 43/Lev. 1	84	Triangle
Jasper*	0.8	-	-	-	Unit 50/Lev. 2	131	Point base
Jasper#	2.1	-	-	-	Unit 67/Lev. 1	285	Point tip
Chert	5.2	33.3	34.4	6.2	Unit 70/Lev. 1	209	Large triangle
Quartzite*	0.7	-	-	-	Unit 72/Lev. 1	214	Point tip
Quartzite*	5.1	-	-	7.0	Unit 72/Lev. 2	215	Point fragment
Quartzite*	4.0	-	-	-	Unit 80/Lev. 2	261	Point fragment
Quartzite	6.6	38.8	22.0	7.0	Unit 87/Lev. 1	299	Stemmed point
Jasper	5.6	39.0	18.6	8.1	Unit 87/Lev. 2	380	Stemmed point
Jasper	2.8	25.8	21.0	5.6	Unit 104/Lev. 1	417	Side-notched point
Chert	3.2	25.6	21.6	6.7	Unit 115/Lev. 1	484	Side-notched point

* Quartzite workshop association
# Jasper workshop association

include nine complete specimens and five fragments. Among the complete specimens are an argillite tear drop point (Cat. No. 403; Plate 7a), a quartzite side-notched fishtail variant (Cat. No.

73; see Plate 7b), a chalcedony side-notched point (Cat. No. 69; see Plate 7c), a chert triangle (Cat. No. 84; see Plate 7d), a large siltstone triangle (Cat. No. 209; see Plate 7e), a quartzite stemmed Bare Island variant (Cat. No. 299; see Plate 7f) and a similar Bare Island variant of jasper (Cat. No. 380; see Plate 7g), a small jasper side-notched point (Cat. No. 417; see Plate 7h), and a gray chert side-notched point (Cat. No. 484; see Plate 7i). A jasper point tip (Cat. No. 285; Plate 8a) was recovered from the main quartzite workshop area described in Chapter V.

Findings of notched points as well as early ceramics in the upper levels of the site provide some evidence of pedoturbation in the upper component. The early points include the tear drop point referred to above, the fishtail variant, large stemmed points, and Bare Island variants. These are from the same context that produced triangular points of probable Late Woodland affiliation. All of these finds from the upper component are described in detail below.

Tear Drop Point: This point (Cat. No. 403; see Plate 7a), manufactured from argillite, closely resembles tear drop forms recovered from Late Archaic/Early Woodland contexts throughout the Middle Atlantic Coastal Plain region. The edges and the flake scars on this point are worn due to the heavy weathering typical of argillite tools. However, it is evident that the tool retains some of the original flake morphology. Flake scars are broad and uneven across the surfaces of the point, but the point is thin and well-made overall. The tip of the specimen was broken off, perhaps during manufacture, although characteristic flake scars indicating such a break are too worn to determine whether the tip was broken during manufacture or as a result of impact damage.

Kraft and Blenk (1974) suggested a date range between 3690 BC and 3900 BC for tear drop points before any radiocarbon-dated assemblages were available. More recently, dates from Sites 28GL15 and 28GL148 in southern New Jersey have produced a range of dates from 1480 to 220 BC (Mounier and Martin 1994:132), and a sequence of manufacture for this type. Tear drop points also resemble variants of the Piscataway type described by Stephenson and Ferguson (1963:plate XXVI) from the Accokeek Creek Site, where they were tentatively associated with Late Woodland Potomac Creek pottery. It is also possible that tear drop points represent a bifacial tool that is not restricted to any cultural/temporal period. This is comparable to the long triangular point sequence documented from central and southern New Jersey, and best represented at the Area D Site (28Me1-D) (Wall et al. 1996).

Fishtail Variant: This side-notched quartzite projectile point (Cat. No. 73; see Plate 7b) recovered from the upper component is manufactured from a variety of red-banded quartzite that is common on the site. The base of the point is unfinished and exhibits some incipient beveling. The lateral edges are fairly straight, although some sinuosity (undulating curves) is apparent in a few locations. The cross section is lenticular (lens-shaped) and flake scars are broad and well defined. The step fractures on one of the lateral edges indicate that some difficulties were faced during the reduction process.

Fishtail points fit a broad variety of styles common during the Terminal Archaic and Early Woodland period: for example, Dry Brook and Orient types of fishtails suggest a date range from 1220 BC (Kinsey 1972:358) to 763 BC (Ritchie 1971:39). Comparisons can also be made with the Clagett

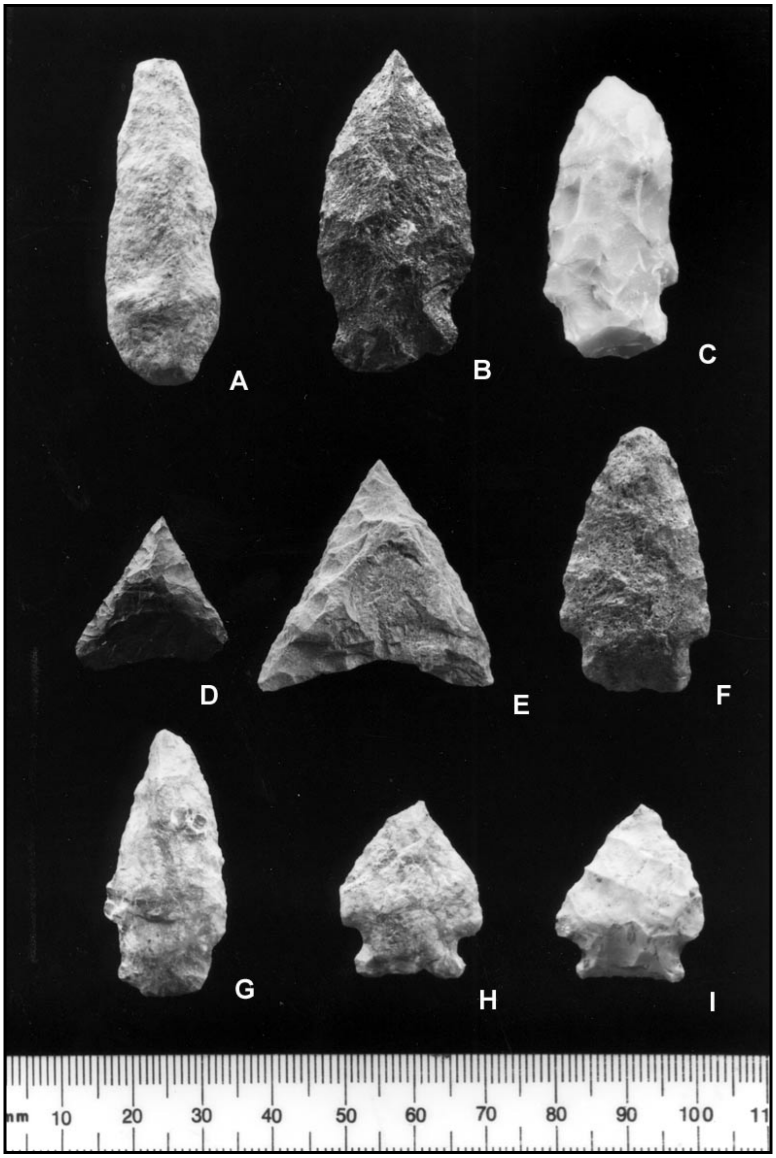

Plate 7: Site 7NC-G-143, Projectile Points, Upper Component

[A] Argillite Teardrop Point (Cat. No. 403);
[B] Quartzite Fishtail Variant (Cat. No. 73);
[C] Chalcedony Side-Notched Point (Cat. No. 69);
[D] Chert Triangle (Cat. No. 84);
[E] Chert Triangle (Cat. No. 209);
[F] Quartzite Bare Island Variant (Cat. No. 299);
[G] Jasper Bare Island Variant (Cat. No. 380);
[H] Jasper Point (Cat. No. 417);
[I] Chert Side-Notched Point (Cat. No. 484)

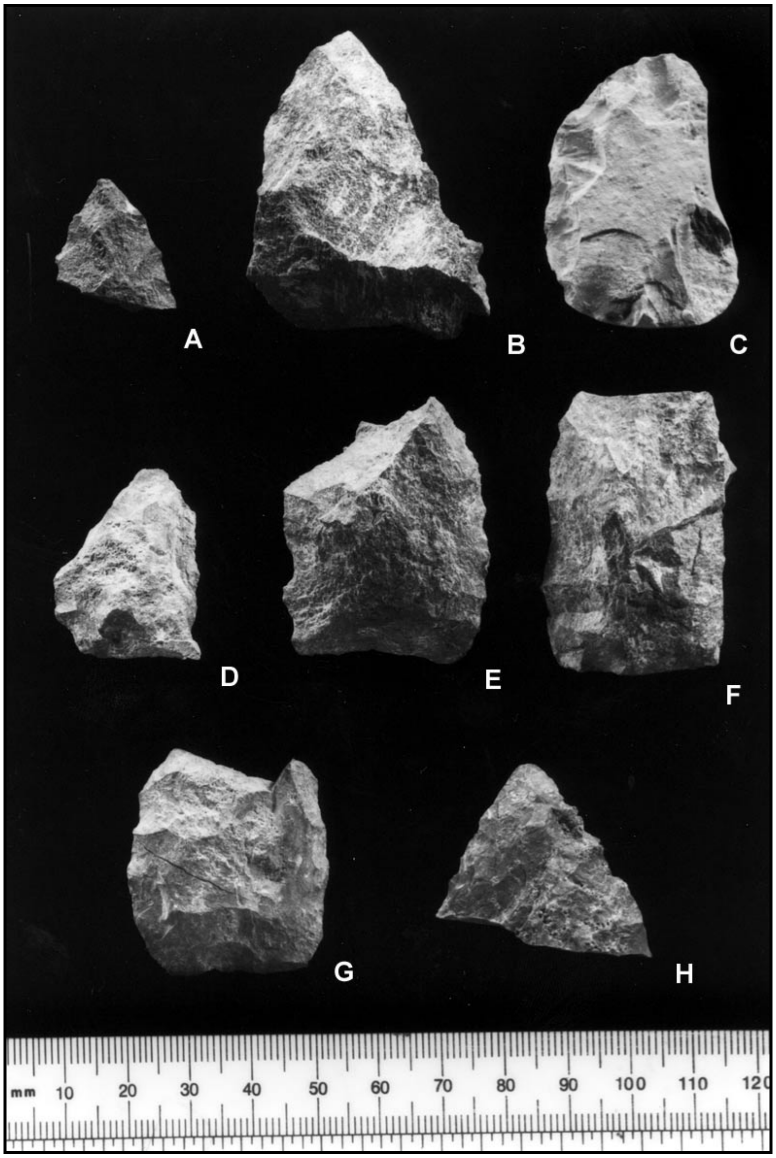

Plate 8: Site 7NC-G-143, Jasper Workshop Artifacts

[A] Jasper Point Tip (Cat. No. 285);
[B] Jasper Quarry Blank Fragment (Cat. No. 329);
[C] Jasper Early-Stage Biface (Cat. No. 403);
[D] Jasper Early-Stage Biface (Cat. No. 449);
[E] Jasper Middle-Stage Biface (Cat. No. 371);
[F] Jasper Middle-Stage Biface (Cat. No. 332);
[G] Jasper Middle-Stage Biface (Cat. No. 200);
[H] Jasper Late-Stage Biface (Cat No. 329)

type (Stephenson and Ferguson 1963:177) known for the Maryland Coastal Plain, estimated to date between 2200 BC and 1900 BC by Wanser (1982:96).

Triangles: Two triangular projectile points were recovered from the upper component. One of the triangles, a chert specimen (Cat. No. 84; see Plate 7d), has a broken corner but is otherwise intact. The overall outline is equilateral but offset to one side, and the base is concave. The lateral edges have relatively steep angles but exhibit fine pressure flaking in most areas, including the tip, where flaking is particularly fine. The fine flaking on the tip may have been part of a resharpening effort, which would also explain the offset outline form. In other words, one of the lateral edges may have been reworked after the tip snapped off, with the final resharpening focused on the tip.

The second triangle (Cat. No. 209; see Plate 7e) is large and made of a poor-quality chert or cherty siltstone; it is roughly equilateral in outline form and exhibits poor-quality flaking across both surfaces. The basal portion is concave in form. Along the lateral edges as well as the base, broad step fracturing is evident. It is possible that the coarse quality of the raw material was a deterrent to finer flaking on this specimen.

Side-Notched Points: The chalcedony side-notched point recovered (Cat. No. 69; see Plate 7c) has an unusual blade form—excurvate near the distal end and incurvate just above the shoulder. Flaking is uneven and the median ridges are also uneven and off-center. This would suggest that this specimen was unfinished and perhaps discarded before completion of the final thinning process. The lateral edges are steep and exhibit step fracturing, particularly close to pronounced humps on the surface which could not be removed by the reduction process. The tip of the point is also unfinished, and the overall uneven outline form of the blade portion also suggests that this is an unfinished piece.

One jasper and one chert side-notched point, very similar in form, were found in adjacent units (Nos. 115 and 104). The jasper point (Cat. No. 417; see Plate 7h) has a resharpened blade comparable to the Jack's Reef style. The lateral edges are sinuous and unevenly flaked, and show no obvious use-wear. The base is concave in form. The chert side-notched point (Cat. No. 484; see Plate 7i) is also unevenly flaked, although the lateral edges are relatively straight. The overall blade form, however, is irregular and offset, as is the irregular lenticular cross section.

Stemmed Points: Two stemmed points that may be Bare Island variants were recovered from the upper component. One of the points, made from quartzite (Cat. No. 299; see Plate 7f), has a triangular shaped blade form and moderate to steep lateral edges. The edges and both surfaces are systematically flaked, however, and the cross section is lenticular in form. The stem is slightly expanded, as is characteristic of many Bare Island forms.

The jasper Bare Island variant (Cat. No. 380; see Plate 7g), found very close to the Bare Island specimen just described, has an offset blade form and a convex base. It is less well flaked than the other Bare Island point, showing very uneven flaking, a pronounced medial ridge, an offset but lenticular cross section, and pronounced humps on both faces. The Bare Island type also resembles the Lackawaxen Straight Stemmed point style, which has been dated between 3230 BC and 1710 BC (Kinsey 1972:410-411; Kraft 1975:29-31). The Bare Island type, usually associated with the Late Archaic, is estimated to date circa 2200 BC (Funk 1965; Ritchie 1971:14-15).

A jasper stemmed point base (Cat. No. 131) with a convex base was broken at the top of the stem. It may have been shattered during manufacture, or was perhaps broken at the haft during use. Flake scars at the break do not clearly favor one interpretation over the other.

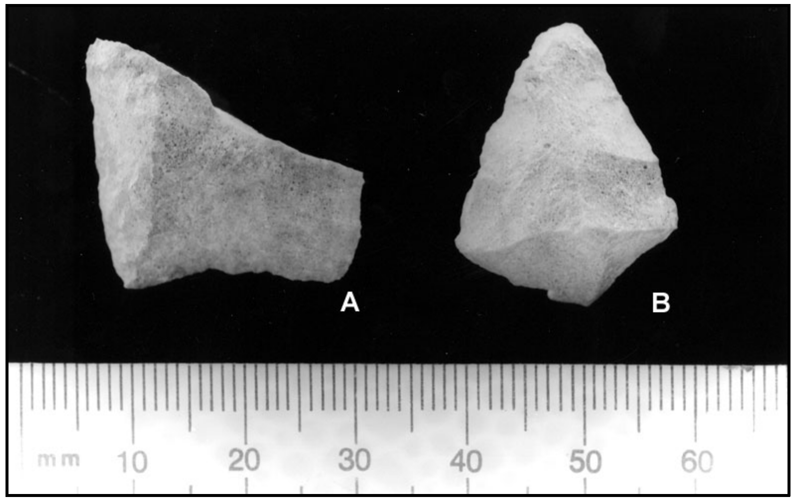

Plate 9: Site 7NC-G-143, Quartzite Workshop Projectile Points

[A] Quartzite Lanceolate Point Base (Cat. No. 261);
[B] Quartzite Point Tip (Cat. No. 41)

Lanceolate Points: Several lanceolate point fragments were found on the site, including the quartzite basal fragment (Cat. No. 261; Plate 9a) recovered from the primary quartzite workshop area in Block Area 3 Center. The point fragment (or knife form) resembles the Fox Creek lanceolate type, if one can assign a chronological time frame to this artifact. This specimen exhibits broad thinning flake scars along the basal edge and straight to sinuous lateral edges. This item may have been broken during manufacture within the quartzite workshop area. The type of quartzite used is the red-banded variety common in this quartzite workshop cluster. Available radiocarbon dates for Fox Creek points range between AD 360 and 700 (Ritchie and Funk 1973:123). In the Upper Delaware Valley, dates of AD 339 and AD 414 have been derived (Dent 1979:88; see also Staats 1989). At the Loyola Retreat Site in the Coastal Plain of Maryland, Selby Bay forms comparable to the Fox Creek type have been dated to AD 815 (Handsman and McNett 1974). The lanceolate form is generally comparable to Ritchie's Steubenville Lanceolate type (Ritchie 1971:50), which has a problematical chronological association. It is likely that the closely related stemmed forms are related to the Fox Creek stemmed type, which has been widely recognized in the Middle Atlantic region. The Steubenville form, described by Mayer-Oakes (1955) for the Upper Ohio Valley does, however, appear in Late Archaic contexts in that region.

Point Tips: Point tips recovered include a quartzite piece (Cat. No. 214) made from the same type of red-banded quartzite as the fishtail point (Cat. No. 73) and another point tip (Cat. No. 215). One of the point tips (Cat. No. 214) appears to have been broken along the surface of a raw material flaw, whereas the other (Cat. No. 215) may simply be the result of a manufacturing error. A jasper point tip (Cat. No. 285; see Plate 8a) with a sinuous edge, probably an unfinished specimen broken during the reduction process, was located in the main quartzite workshop area.

2) Reduction-Stage Bifaces

A small collection of early-, middle-, and late-stage bifaces is included in the assemblage from the upper component (Tables 22 and 23). Six early-stage forms were recovered from this component: three jasper, two quartzite, and one argillite. One of the jasper early-stage bifaces (Cat. No. 329; see Plate 8b) is a small fragment of what appears to be a quarry blank. The edges are very sinuous and poorly flaked, indicating that the form had simply been roughed out during the initial stages of reduction. The fragment may represent a reduction failure.

Table 22: Site 7NC-G-143, Upper Component: Early- and Middle-Stage Bifaces

RAW MATERIAL	WEIGHT (grams)	LENGTH (mm)	WIDTH (mm)	THICKNESS (mm)	PROVENIENCE	CAT. No.
Early-Stage Bifaces						
Quartzite*	19.9	-	34.9	14.0	Unit 80/Lev. 1	260
Jasper#	25.3	-	-	-	Unit 100/Lev. 2	390
Jasper#	16.3	43.8	29.4	9.9	Unit 101/Lev. 2	403
Jasper#	10.3	-	-	14.6	Unit 109/Lev. 2	449
Argillite	3.1	36.2	11.1	8.5	Unit 117/Lev. 2	476
Quartzite	7.9	-	-	-	Unit 72/Lev. 2	215
Jasper#	23.7	-	-	-	Unit 95/Lev. 1	329
Middle-Stage Bifaces						
Quartzite*	10.2	-	-	17.3	Unit 72/Lev. 2	215
Quartzite*	6.8	39.8	-	9.0	Unit 19/Lev. 1	35
Quartzite*	4.2	-	-	-	Unit 53/Lev. 2	198
Quartzite	12.5	-	35.6	10.4	Unit 57/Lev. 2	162
Jasper#	12.0	-	33.0	10.3	Unit 64/Lev. 2	200
Quartzite*	13.9	-	27.4	12.2	Unit 72/Lev. 2	215
Quartzite	11.2	-	-	-	Unit 84/Lev. 2	293
Jasper#	21.1	-	33.7	15.1	Unit 97/Lev. 2	371
Jasper*	17.5	52.8	28.1	17.0	Unit 110/Lev. 2	461
Quartzite#	2.2	-	-	-	Unit 18/Lev. 2	22
Jasper#	22.2	-	30.0	17.0	Unit 95/Lev. 2	332

* Quartzite workshop association
# Jasper workshop association

Table 23: Site 7NC-G-143, Upper Component: Late-Stage Bifaces

RAW MATERIAL	WEIGHT (grams)	LENGTH (mm)	WIDTH (mm)	THICKNESS (mm)	PROVENIENCE	CAT. No.
Quartzite*	7.6	-	24.0	9.0	Unit 17/Lev. 2	14
Quartzite*	13.1	-	18.8	10.0	Unit 18/Lev. 2	22
Jasper#	9.8	-	-	-	Unit 95/Lev. 1	329

* Quartzite workshop association
# Jasper workshop association

The second jasper early-stage biface (Cat. No. 403; see Plate 8c) is a flat cobble that was roughly flaked around the edges. Approximately 30 percent of the cortex remains on this piece. The edges are roughly shaped and sinuous in form. The third jasper early-stage biface (Cat. No. 449; see Plate 8d) is made from a poor-grade jasper exhibiting blocky fracture planes. Beyond initial shaping efforts typical of quarry blank preparation, this biface shows only a few broad flake scars across the surface. The lateral edges show minimal evidence of edge thinning. All three of the jasper early-stage bifaces were recovered from the main jasper workshop area recorded in Block Area 3 West.

Both of the quartzite early-stage bifaces were made from the red-banded quartzite common in the site assemblage. One of these bifaces (Cat. No. 260; Plate 10a) was sheared on the distal end, has an unmodified base, and shows roughly shaped edges exhibiting flat projections and irregular sinuosity. The lateral edge form is typical of the early-stage biface form. The biface shows evidence of preliminary shaping into a roughly ovoid form, but little thinning along the edges. The second quartzite early-stage biface (Cat. No. 215/462; Plate 11b) is a small medial-section fragment that is very thick and uneven in form. Both of these quartzite bifaces were recovered from the main quartzite workshop area recorded in Block Area 3 Center.

The single argillite early-stage biface (Cat. No. 476; Plate 12a) is drill-shaped in form and has a sinuous edge that approaches the edge form more typical of middle-stage bifaces. One of the faces has a large hump, which may have been too difficult to remove during the thinning process. This specimen thus may have been discarded during the reduction process.

Eleven middle-stage bifaces were recovered from the upper component. By raw material they include seven of quartzite and four of jasper. Six of the seven quartzite bifaces were manufactured from the red-banded variety; the seventh was made from a white quartzite. Only one complete specimen was recovered. The remainder may have been broken during the reduction process. The complete biface (Cat. No. 461; see Plate 11c), which came from the quartzite workshop area in Block Area 3 Center, is ovoid in shape, has a sinuous edge form, and has large humps near one of the lateral edges. Flaking across the surfaces is very uneven, most likely due to the poor quality of the raw material.

One of the jasper bifaces (Cat. No. 371; see Plate 8e) has a squared base, typical of a number of bifaces in this assemblage. The distal end was most likely broken off during the reduction process. Broad flake scars characterize much of the surface, with finer flaking evident along the lateral edges. The edges are slightly sinuous and the basal portion is slightly concave in form. Step fractures are evident on one of the faces. Another squared base fragment (Cat. No. 332; see Plate 8f) is very similar to specimen No. 371 in flaking patterns and edge form, and is characterized by breakage of the distal end. A hump on one face is bordered by step fractures, and the opposing face is only minimally flaked. A third square-based middle-stage biface (Cat. No. 200; see Plate 8g) also is characterized by uneven flaking patterns and distal-end breakage. The lateral edges are relatively straight along the length, but in overall form are concave from one end to the other. All three of these biface fragments were recovered from the jasper workshop area described for Block Area 3 West.

Among the quartzite middle-stage bifaces, square-based forms are also evident (e.g., Cat. Nos. 22, 198, and 215). One of the bifaces (Cat. No. 22; see Plate 11d) shows a broad flaking pattern (i.e.,

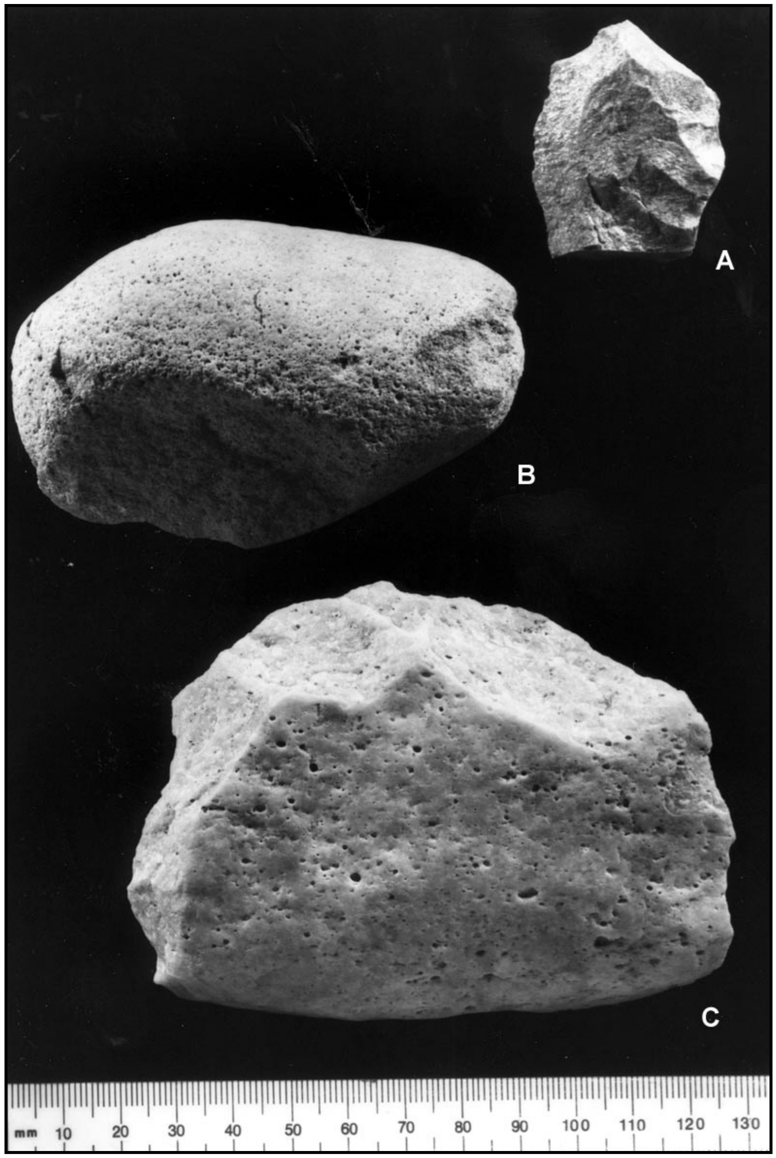

Plate 10 Site 7NC-G-143, Cobble Tools, Upper Component

[A] Quartzite Early-Stage Biface (Cat. No. 260);
[B] Sandstone Hammerstone (Cat. No. 327);
[C] Quartzite Chopper (Cat. No. 358)

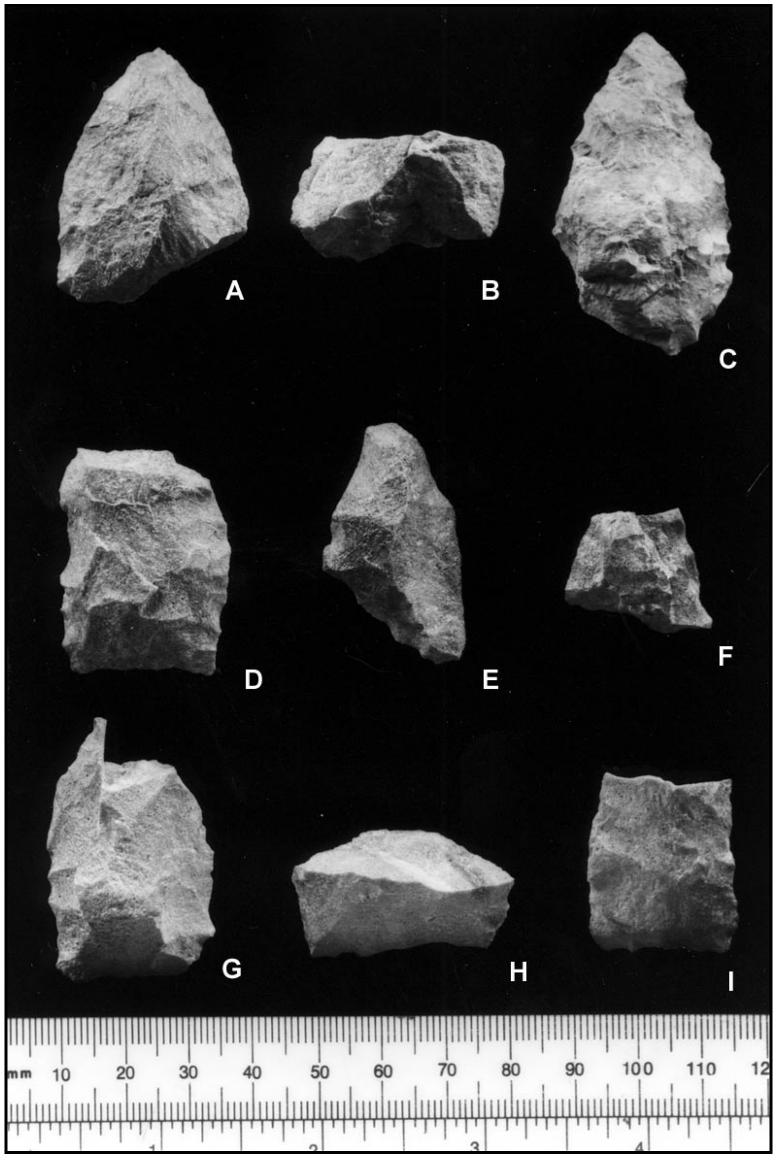

Plate 11: Site 7NC-G-143, Quartzite Workshop Bifaces

[A] Quartzite Late-Stage Biface (Cat. No. 24);
[B] Quartzite Early-Stage Biface (Cat. No. 215/462);
[C] Quartzite Middle-Stage Biface (Cat. No. 461);
[D] Quartzite Middle-Stage Biface (Cat. No. 22);
[E] Quartzite Middle-Stage Biface (Cat. No. 35);
[F] Quartzite Middle-Stage Biface (Cat. No. 198);
[G] Quartzite Middle-Stage Biface (Cat. No. 215/460);
[H] Quartzite Middle-Stage Biface (Cat. No. 215/461);
[I] Quartzite Late-Stage Biface (Cat. No. 14)

only 3-4 flake scars per edge), although the edges are fairly straight. The distal end has been broken off this specimen. Another quartzite biface (Cat. No. 35; see Plate 11e) is very similar in form to the biface just described. It is a medial section (Cat. No. 198; see Plate 11f), exhibiting a large hump on one face and a flat, well-thinned opposing face. The hump feature is bordered by step fractures from both lateral edges. It is likely that unsuccessful attempts to reduce this face and remove the hump resulted in transverse fracture and failure of the reduction process for this specimen. All three of these quartzite biface fragments were recorded in the large quartzite workshop area in Block Area 3 Center.

Two other quartzite middle-stage biface fragments (Cat. Nos. 215/460 and 215/461) were also recovered from the quartzite workshop area. One of them (Cat. No. 215/460; see Plate 11g) has a broken distal end, a squared base with rounded corners, slightly sinuous lateral edges, and broad flake scars. Both faces exhibit large step fractures, some centering on large hump features which could not be removed during the thinning process. The second biface (Cat. No. 215/461; see Plate 11h) is very thick in cross section but has a well-flaked squared base. The consistent recovery of end fragments may be due to the occurrence of end shock during the biface reduction process: that is, attempts to thin the basal portions of bifaces resulted in shearing of the biface closer to the basal edge of the tool. This would typically occur if the striking surfaces along the edge were struck too

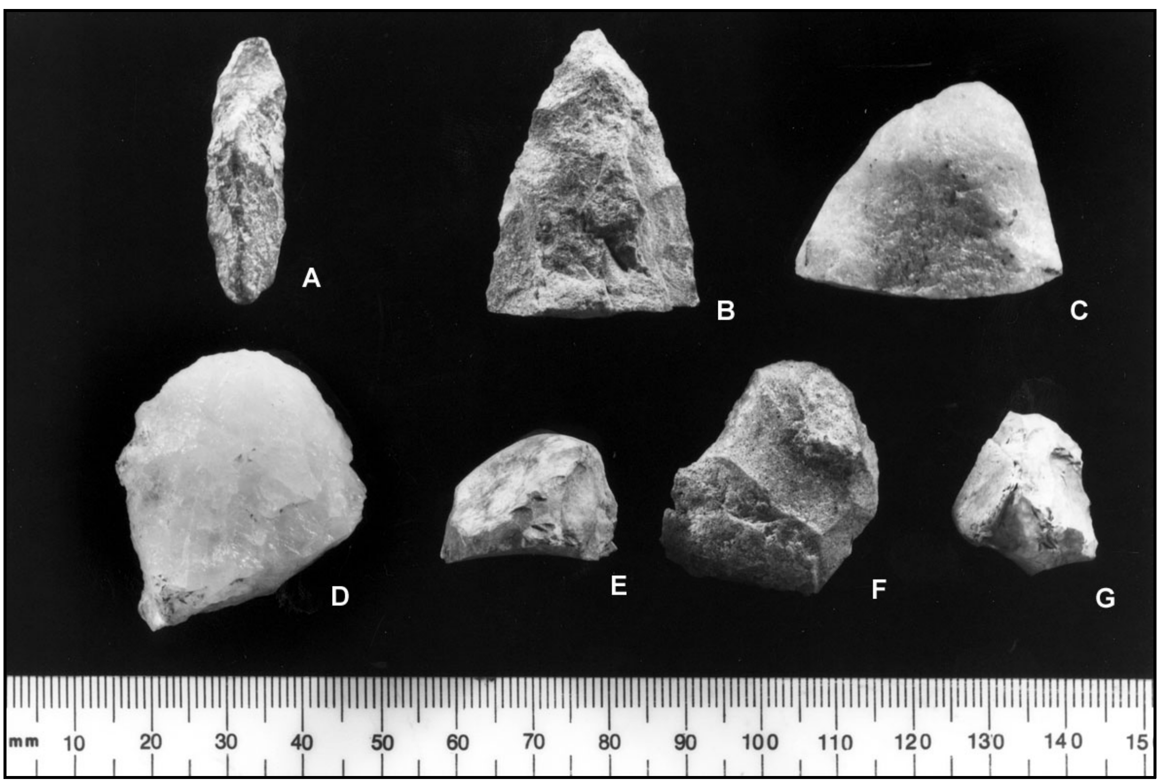

Plate 12: Site 7NC-G-143, Bifaces and Unifaces, Upper Component

[A] Argillite Early-Stage Biface (Cat. No. 476); [B] Quartzite Middle-Stage Biface (Cat. No. 293); [C] Quartzite Middle-Stage Biface (Cat. No. 162); [D] Quartzite Flake Scraper (Cat. No. 9); [E] Jasper Split Cobble Scraper (Cat. No. 82); [F] Quartzite Flake Scraper (Cat. No. 320); [G] Jasper Split Cobble Scraper (Cat. No. 363)

high above the center plane of the edge. The result would be the dissipation of too much force into the center of the piece and shearing of the end of the biface.

The last quartzite middle-stage biface (Cat. No. 293; see Plate 12b) manufactured from the red-banded quartzite is a distal end with slightly sinuous lateral edges, broad flake scars across one face, and finer flaking close to the edges of the biface. Some step fractures border a hump along the medial ridge of one face. This distal fragment is also probably the result of end shock that occurred during the reduction process.

The white quartzite middle-stage biface (Cat. No. 162; see Plate 12c) is also a distal fragment. Like many of the other specimens, this biface shows step fracturing indicating difficulty in the bifacial thinning process, and a surface characterized by broad and uneven flake scars. The edges of this piece are only slightly sinuous.

Three late-stage bifaces were recovered from the upper component, two of red-banded quartzite (Cat. Nos. 14 and 22) and one of jasper (Cat. No. 329). One of the quartzite bifaces (Cat. No. 14; see Plate 11i), recovered from the quartzite workshop area in Block Area 3 Center, has the typical squared base and the distal end is broken off. Broad flake scars are evident across both faces and short flake scars exhibiting finer thinning work are evident along the basal edge. The edges of the tool all around are slightly sinuous.

Two late-stage biface distal ends were recovered from the upper component, one of red-banded quartzite (Cat. No. 22) and one of jasper (Cat. No. 329; see Plate 8b). The jasper biface tip was sheared from a relatively large biface; it was recovered from the jasper workshop area in Block Area 3 West. Both specimens show slightly sinuous edges.

3) Indeterminate Biface Fragments

Six indeterminate biface fragments were recovered from the upper component. They include a large jasper quarry blank fragment (Cat. No. 151) with only one flaked edge, two jasper point stem fragments (Cat. Nos. 363 and 314), a jasper biface tip (Cat. No. 484), a jasper basal corner fragment (Cat. No. 410), and a quartz point base fragment (Cat. No. 317).

b. Unifaces

A collection of nine unifaces was obtained from the upper component (Table 24). The collection consists of flake scrapers, retouched flakes, and utilized flakes. Flake scrapers are defined as flakes which have had edges modified into steep-angled expedient tools but have not been formally modified into the more traditional sidescraper and endscraper forms. These tools are considered to be suitable for use in a variety of tasks requiring strong steep-angled edges. No formal unifacial tools, such as endscrapers or sidescrapers, were recovered.

One quartz flake scraper (Cat. No. 9; see Plate 12d) has the basic outline form of a formal scraper tool but lacks the characteristic parallel flake scars usually found perpendicular to the working edge. The ventral surface is flat to slightly undulating and the working edge is rounded in form. The edge shows some crushing damage that may be attributed to use-wear; however, the wear is inconsistent across the working edge.

A split-cobble jasper scraper (Cat. No. 82; see Plate 12e) has a working edge that has only been minimally retouched to prepare a suitable working edge angle. The ventral surface still shows evidence of the original conchoidal fracture which resulted from splitting the cobble used as the source material for the tool. Most of the working surface is focused around the original platform area that served as the striking area for splitting the cobble. Use-wear is indicated by some crushing and microflaking along the working edge.

A flake scraper (Cat. No. 320; see Plate 12f) made from the red-banded quartzite typical in the site assemblage is partially flaked on the edge of the ventral surface, but the majority of the retouch work is along the working edge on the dorsal side. Most of the retouch work appears to have been done for the purpose of preparing a suitably steep edge angle for the working edge, which has both a convex and a concave form along its length. The scraper edge exhibits some crushing on both the concave and the convex edges.

A jasper split-cobble scraper (Cat. No. 363; see Plate 12g) shows some retouch along the working edge, with subsequent small flake retouch scars overlaying the initial work. Use-wear is indicated by crushing along the working surfaces, which include two concavities and one straight edge.

The retouched flakes include one flake of red-banded quartzite (Cat. No. 315), one jasper biface thinning flake (Cat. No. 329) with use-wear along its distal edge and one lateral edge, and a jasper flake (Cat. No. 332) that may have split from the end of a larger bifacial tool. Two jasper utilized flakes (Cat. Nos. 329) and another jasper retouched flake (Cat. No. 409) were also recovered from the component.

Table 24: Site 7NC-G-143, Upper Component: Unifacial Tool Attributes

RAW MATERIAL	WEIGHT (grams)	PROVENIENCE	CAT. No.	DESCRIPTION
Jasper	4.3	Unit 14/Lev. 1	363	Flake scraper
Quartz	17.0	Unit 16/Lev. 2	9	Flake scraper
Jasper	13.9	Unit 29/Lev. 1	82	Flake scraper
Quartzite	1.0	Unit 91/Lev. 1	315	Retouched flake
Quartzite	8.9	Unit 91/Lev. 2	320	Flake scraper
Jasper	2.5	Unit 95/Lev. 1	329	Utilized flake
Jasper	1.8	Unit 95/Lev. 1	329	Utilized flake
Jasper	0.5	Unit 95/Lev. 2	332	Retouched flake
Jasper	4.3	Unit 102/Lev. 2	409	Retouched flake

c. Cores

Three types of cores were recorded in the upper component—(1) freehand, (2) bipolar, and (3) tested cobbles—making a total of 12 cores (Table 25). The freehand cores were the most common, and included four jasper, three quartzite, and two quartz. The tested cobbles included one of jasper and one of quartzite. Only one bipolar core, a quartz specimen, was recovered. The source for these raw materials, where it could be identified from cortex on individual pieces, is considered to be predominantly cobbles.

Table 25: Site 7NC-G-143, Upper Component: Core Attributes

RAW MATERIAL	WEIGHT (grams)	PROVENIENCE	CAT. No.	DESCRIPTION
Quartzite	13.8	Unit 3/Lev. 1	334	Freehand Core
Quartz	18.6	Unit 15/Lev. 2	3	Freehand Core
Quartz	1.6	Unit 33/Lev. 1	36	Bipolar Core
Quartzite	30.1	Unit 52/Lev. 2	185	Freehand Core
Quartzite	6.4	Unit 53/Lev. 2	198	Tested Cobble
Quartz	7.3	Unit 90/Lev. 1	309	Freehand Core
Jasper	44.2	Unit 95/Lev. 1	329	Freehand Core
Jasper	17.7	Unit 95/Lev. 1	329	Freehand Core
Jasper	37.9	Unit 95/Lev. 1	329	Freehand Core
Quartzite	35.8	Unit 96/Lev. 1	334	Freehand Core
Jasper	339.7	Unit 114/Lev. 1	457	Freehand Core
Jasper	36.3	Unit 117/Lev. 1	472	Tested Cobble

The jasper freehand cores show minimal modification. For example, three of them (all Cat. No. 329) from the same unit are simply blocks of shatter that have had only a few flakes removed from the surface. These chunky expedient cores appear to be fragments derived from outcrop surfaces which were subsequently shaped for transport. A much larger jasper freehand core (Cat. No. 457; Plate 13a), of the same blocky appearance, was also minimally modified. These jasper chunks were probably transported to the site from the outcrop sources and subsequently used for flake production. No obvious edge or platform preparation was observed on any of these cores.

The three quartzite freehand cores, all made from the red-banded variety, are also blocky in shape and minimally modified. One minimally modified core (Cat. No. 185; Plate 14a) recovered from the Block Area 3 Center quartzite workshop area, for example, exhibits only a few broad flake scars and several areas where step fracturing indicates reduction failures. Two other quartzite freehand cores from the same provenience (Cat. Nos. 334; see Plate 14b and c) show multidirectional flake scarring and little evidence of platform preparation or more formal shaping of the piece. The cores appear in fact to be little more than modified chunks of raw material that were used to drive off a

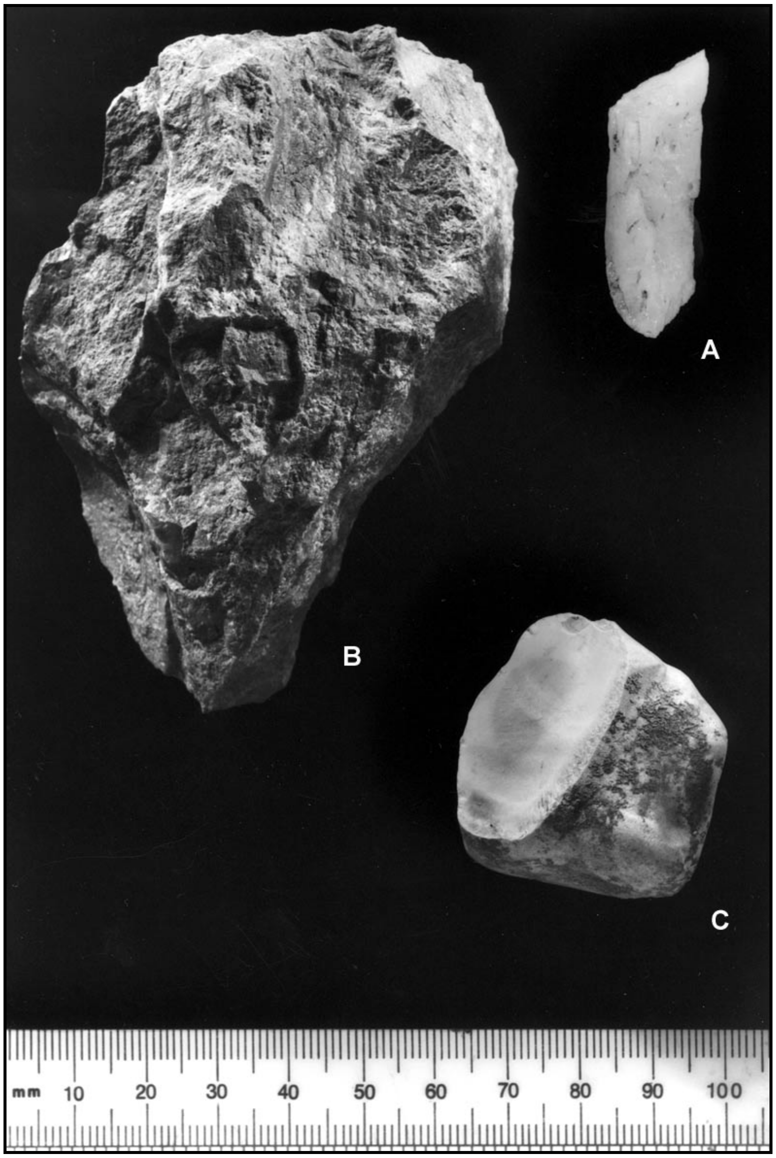

Plate 13: Site 7NC-G-143, Cores, Upper Component

[A] Jasper Freehand Core (Cat. No. 457);
[B] Quartz Core (Cat. No. 309);
[C] Jasper Tested Cobble (Cat. No. 472)

few flakes before being discarded. These pieces are therefore essentially expedient cores that were probably used for a single task before being disposed of, most likely near the place where the specimen was used. The context of these cores is within the main quartzite workshop area described for Block Area 3 Center. One of the cores just described (Cat. No. 334) appears to have sheared from a larger core or block of raw material, perhaps during the on-site reduction process.

The quartz cores recovered from the upper component are also expedient forms that were probably used once and discarded. One of the cores (Cat. No. 309; see Plate 13b) is a piece of cobble shatter that was subsequently flaked along one surface. The other core (Cat. No. 3) exhibits many flaws and cleavage planes which most likely minimized its usefulness as a source of raw material. Only a few flake scars indicate its use as a core.

A smaller quartz shatter fragment (Cat. No. 36) was classified as a bipolar core based on its flake scar morphology, which shows opposing points of impact fracture. The tested cobbles include one small quartzite cobble (Cat. No. 198) and a larger jasper cobble (Cat. No. 472; see Plate 13c). The jasper cobble shows only two flake scars attributable to the prehistoric occupation. Earlier flake scars are heavily waterworn and may be natural fracture surfaces.

The core assemblage, as described above, is primarily expedient in nature. More formal cores, or even identifiable core forms such as the micro-cores commonly found on the New Jersey Coastal Plain, and at Abbott Farm near the fall line on the Delaware River, appear to be absent from the

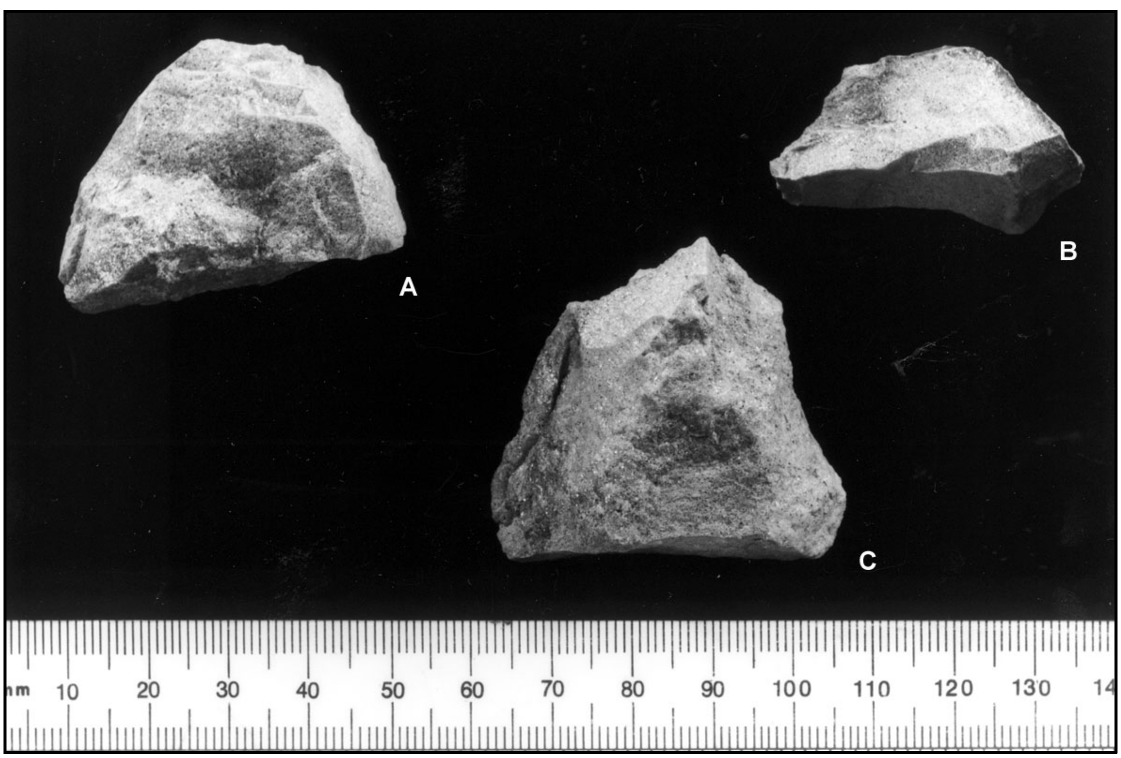

Plate 14: Site 7NC-G-143, Quartzite Workshop Cores

[A] Quartzite Freehand Core (Cat. No. 185); [B] Quartzite Freehand Core (Cat. No. 334/1076); [C] Quartzite Freehand Core (Cat. No. 334/3015)

Drawyer Creek South Site. Moreover, none of the characteristic blade-like flakes derived from the micro-core technology described by Stewart (1987, 1989) were found at the Drawyer Creek South Site. Even if the few bipolar forms described for the Drawyer Creek South Site assemblage could be classified as micro-cores, the assemblage is much too small to permit adequate comparisons. The important point is that expedient core technology appears to be the focus of raw material processing and initial reduction at the site. No particular preference for raw material type is evident. Quartzite and jasper are most prevalent in the assemblage, but that is probably because it is these raw materials that are most commonly available in the vicinity of Drawyer Creek. Flake tools, such as the expedient flake scrapers recorded in the site assemblage, were most likely the primary focus of tool production activities. Consequently, formal core preparation was not necessary. Flakes were being produced from a variety of raw materials and were subsequently discarded after short-term use. The lack of bipolar cores in the assemblage may also explain the lack of the small blade-like flakes often derived from the bipolar reduction of cobbles.

d. Cobble Tools

Six cobble tools were recovered from the upper component, including four hammerstones, one pitted cobble, and one chopper (Table 26). The hammerstones are manufactured from sandstone. One of the hammerstones (Cat. No. 314) shows some impact damage on the lateral edges, but most of the damage, which is not severe, is on the two ends of the specimen. Two hammerstones were recovered from Feature 5. One of these hammerstones (Cat. No. 327; see Plate 10b) is angular in shape with rounded edges; only one of the ends shows very heavy impact damage. The other hammerstone (Cat. No. 327) from the same provenience is an elongated cobble with battering evident on both ends. The impact damage is evident as spall fractures and pitting on the surface. A third sandstone cobble hammerstone, from the western half of Feature 5, shows very little use-wear. The fourth hammerstone (Cat. No. 357) also shows little impact damage. A sandstone pitted cobble (Cat. No. 277) shows some impact damage on one end but none of the obvious pitting that would occur as a result of anvil use.

A quartzite chopper was recovered from Unit 13 (Cat. No. 358; see Plate 10c). Large but short flake scars typical of hard hammer impact are found along much of the edge. Flakes have been removed from three sides of the relatively flat cobble. The edge preparation is bifacial along two of the working edges and unifacial along the third edge. Use-wear is indicated by minimal edge crushing found intermittently on the three working edges.

Table 26: Site 7NC-G-143, Upper Component: Cobble Tools

TOOL FORM	WEIGHT (grams)	LENGTH (mm)	WIDTH (mm)	THICKNESS (mm)	PROVENIENCE	CAT. No.
Hammerstone	236.4	88.0	59.0	33.0	Unit 92/Lev. 1	314
Hammerstone	254.5	90.0	60.0	37.0	Fea. 5/Lev. 2	327
Hammerstone	199.8	67.0	60.0	48.0	Fea. 5/Lev. 2	327
Pitted Cobble	60.1	60.9	36.6	-	Sh. Test 50/Lev. 2	277
Mano	307.1	77.0	65.8	45.5	Fea. 5/Lev. 2	357
Chopper	358.1	108.0	80.0	30.0	Unit 13/Lev. 2	358

e. Debitage

Debitage recovered from the upper component totaled 5,503 flakes. The flakes are classified according to raw material type in Table 20, presented at the beginning of this chapter. Quartzite and jasper were the primary raw materials utilized, with lesser amounts of chert and quartz. Although very little rhyolite is represented on the site, most of it came from the lower component, possibly indicating an earlier preference for this raw material by early Woodland I (Late Archaic) occupants of the site during a very brief habitation. Many of the flakes exhibit cortex, indicative of the consistent use of cobble sources for raw material acquisition. However, a high frequency of primary-source or outcrop material is also evident, particularly for jasper.

Clear consistencies with regard to raw material use through time are difficult to discern, owing to contextual problems. The primary raw materials used on the site—quartzite, jasper, chert, and quartz—all co-vary in frequency over the first three arbitrary levels (Figure 19).

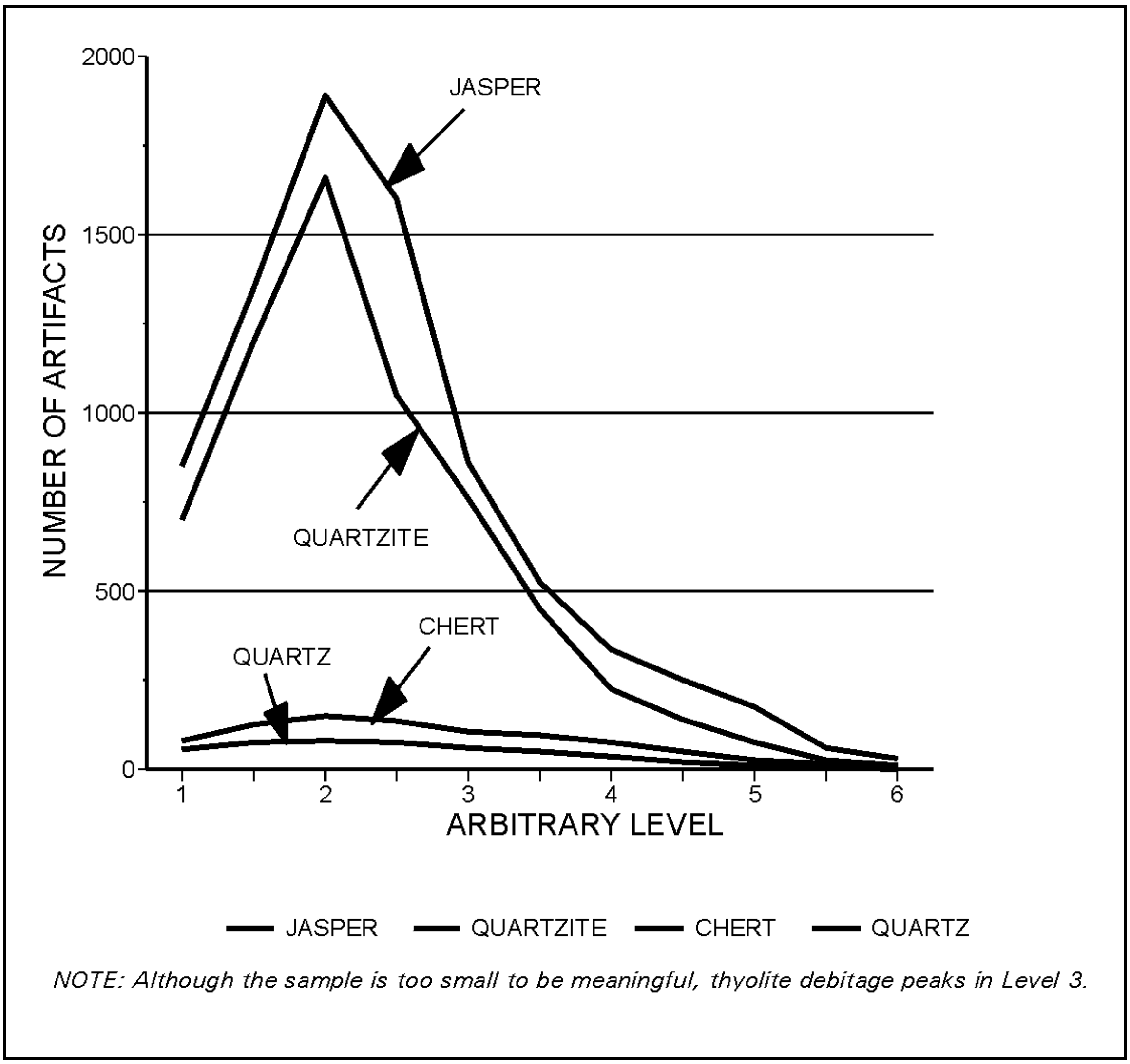

Figure 19: Debitage Frequencies by Raw Material, by Arbitrary Level

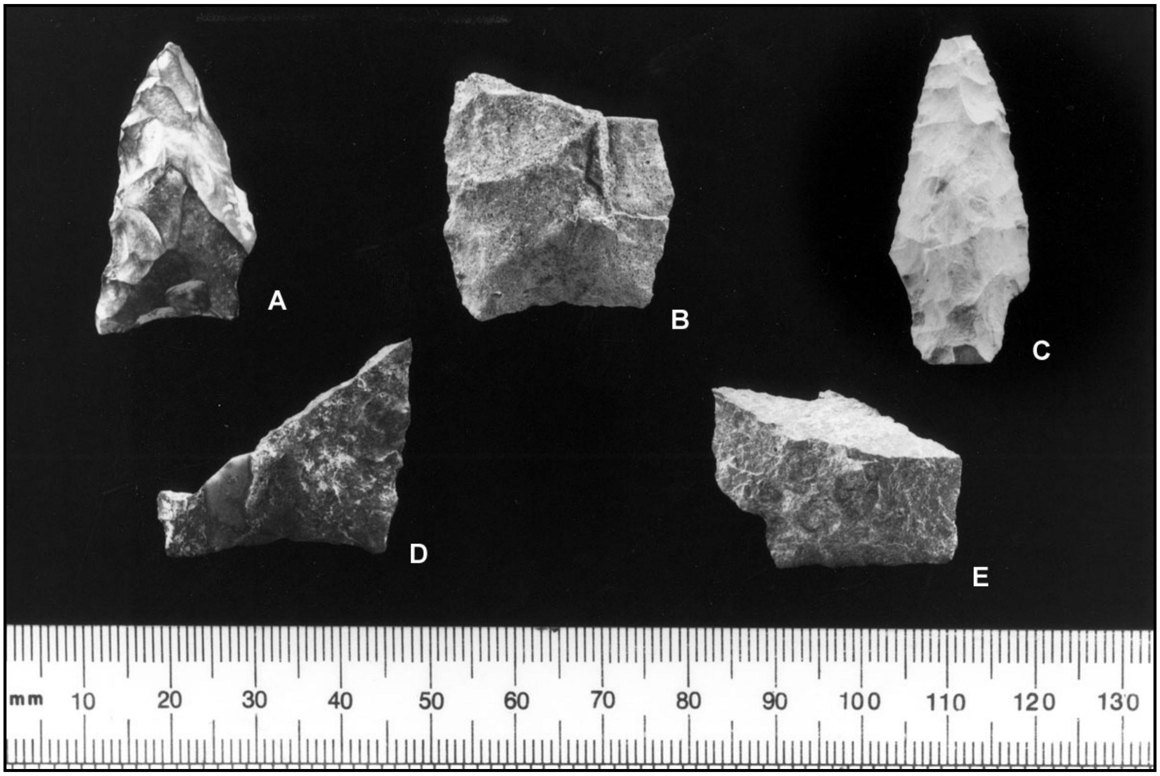

Plate 15: Site 7NC-G-143, Projectile Points, Lower Component

[A] Chert Fishtail Variant (Cat. No. 350); [B] Quartzite Lanceolate Fox Creek Variant (Cat. No. 16); [C] Jasper Contracting-Stemmed Point (Cat. No. 164); [D] Jasper Lanceolate Point Fragment (Cat. No. 335); [E] Jasper Lanceolate Point Fragment (Cat. No. 407)

2. Lower Component Artifact Analysis

a. Bifaces

The assemblage of bifaces from the lower component of the Drawyer Creek South Site consists of 19 specimens, which may be divided into the following categories: (1) projectile points and fragments (N=9), (2) reduction-stage bifaces and fragments (N=6), and (3) indeterminate biface fragments (N=4). Descriptions of these classes and their respective subdivisions are given below. Raw material distributions for each biface category are shown in Tables 27-29. Bifaces from the lower component are illustrated in Plates 15 and 16.

1) Projectile Points

Projectile points recovered from the lower component at the site consist of identifiable specimens, described in detail below, and fragments (basal, medial, and distal). They are manufactured from a variety of materials, including jasper (N=4), quartzite (N=2), and chert (N=2) (Table 27). One complete projectile point and seven fragments were recovered (see Table 27). The identifiable specimens include a chert fishtail variant (Cat. No. 350; see Plate 15a), a lanceolate Fox Creek variant (Cat. No. 16; see Plate 15b), a jasper contracting-stemmed point (Cat. No. 164; see Plate

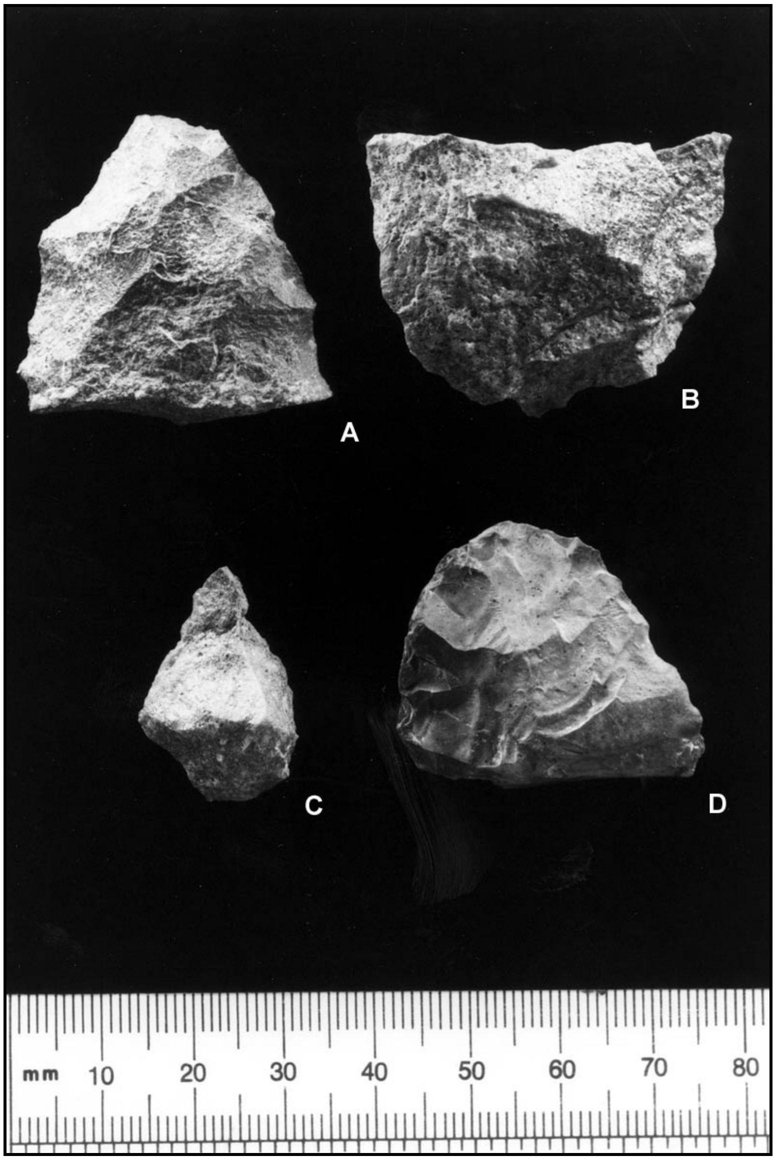

Plate 16: Site 7NC-G-143, Bifaces and Unifaces, Lower Component

[A] Jasper Early-Stage Biface (Cat. No. 420);
[B] Quartzite Middle-Stage Biface (Cat. No. 345);
[C] Quartzite Flake Scraper (Cat. No. 267);
[D] Split Chert Cobble Retouched Flake (Cat. No. 248)

15c), and two jasper lanceolate point fragments (Cat. Nos. 335 and 407; see Plate 15d and e). Owing to the problem with stratigraphic inconsistencies on the site, mentioned earlier, it appears very likely that a few of the specimens identified with the lower component may in fact be associated with upper-component activity areas. Diagnostic projectile points identified in this discussion with the lower component span a range of time from Early through Middle Woodland. This time frame lies within the greater range (Late Archaic to Late Woodland) described earlier for the upper component.

Table 27: Site 7NC-G-143, Lower Component: Projectile Point Attributes

RAW MATERIAL	WEIGHT (grams)	LENGTH (mm)	WIDTH (mm)	THICKNESS (mm)	PROVENIENCE	CAT. No.	DESCRIPTION
Chert	4.4	34.0	-	8.0	Unit 11/Lev. 3	350	Fishtail variant
Quartzite	7.0	-	26.8	8.0	Unit 17/Lev. 3	16	Point base
Jasper	3.6	38.5	16.3	7.6	Unit 58/Lev. 3	164	Stemmed point
Jasper	2.3	-	-	-	Unit 61/Lev. 3	184	Point tip
Quartzite	3.0	-	-	-	Unit 85/Lev. 4	302	Point tip
Jasper	3.6	-	-	-	Unit 95/Lev. 3	335	Point base
Jasper	6.0	-	-	-	Unit 101/Lev. 3	407	Point base
Chert	1.2	-	-	-	Unit 103/Lev. 3	418	Point fragment

Fishtail Point: The fishtail point (Cat. No. 350; see Plate 15a) recovered from the lower component resembles fishtail forms from Early Woodland contexts throughout the Middle Atlantic region. It is manufactured from chert. The point appears to be unfinished, exhibiting broadly undulating lateral edges, thick and obliquely formed median ridges, broad uneven flake scars on both faces, and a concave basal form. The point was most likely discarded during the manufacturing process. As has been mentioned, this point style is similar to a range of forms that include Dry Brook and Orient types (Kinsey 1972; Ritchie 1971), as well as Clagett (Stephenson and Ferguson 1963).

Lanceolate Points: Three additional lanceolate point fragments were found in the lower component of the site, including a quartzite basal fragment (Cat. No. 16; see Plate 15b) and two jasper point bases. The quartzite point base is made from the same variety of red-banded quartzite described for the assemblage from the upper component. This specimen exhibits fine thinning work along both the lateral and the basal edges. The base is concave and partially beveled via short thinning flake scars originating from the basal edge. The lateral edges are excurvate in form and straight along the edge. The point may have been broken during manufacture. This lanceolate form resembles the Fox Creek form described for the upper component of the site. The specimen (Cat. No. 261) from the upper component was recorded at a distance of less than 3 meters from this find.

One of the jasper lanceolate bases (Cat. No. 335; see Plate 15d) is very thin and well made, with relatively straight lateral and basal edges and thinning flake scars carrying well onto the medial ridge from both the basal and lateral edges. The specimen appears to be thermally altered, as indicated by the waxy surface luster and the reddened color. Breakage of this specimen most likely occurred during the thinning process, as raw material flaws are clearly evident along the break surface. The primary flaw extends through the medial ridge. This specimen may also be classified as a Fox Creek lanceolate variant.

The other lanceolate point base (Cat. No. 407; see Plate 15e) is manufactured from a poorer quality red jasper that is common in the workshop debris across the site. This specimen lacks the concave base of the other points, but appears to be an earlier stage form than the others. Consequently, it is possible that flaking of the basal concavity was one of the final steps in the thinning process. The fact that one of the corners on the base is broken could relate to the occurrence of a reduction error during the initial steps of basal thinning. Overall, the edges along the specimen are straight, but the cross section is relatively thick for a late-stage biface form.

The two jasper lanceolate bases were recovered from adjacent units (Units 95 and 101) and may be byproducts of the same workshop events. The quartzite base just described was found in an adjacent block area, only 7 meters away.

Stemmed Points: A contracting-stemmed point (Cat. No. 164; see Plate 15c) manufactured from jasper has a narrow blade form and a stem that resembles the Lamoka form. It is a systematically flaked specimen that shows even and roughly parallel thinning flakes along the lateral edges, terminating along the medial ridge. The base is broadly thinned from the lateral edges, and the basal edge consists of an unmodified surface that retains the original cobble cortex of the specimen. In appearance, the basal edge is similar to a ground platform, but it is actually a remnant cortex surface. Although the tip of the point is very slightly damaged, the lateral edges show no apparent use-wear.

Point Tips and Bases: Point tips recovered include a jasper fragment (Cat. No. 184) with a slightly sinuous lateral edge. This specimen, due to obvious material flaws, appears to have been broken during manufacture. A quartzite point tip (Cat. No. 302) recovered from the lower component shows slightly sinuous lateral edges and a lenticular cross section. A chert point base (Cat. No. 418) was broken at the top of the stem, perhaps at the haft element during use, or possibly during the course of basal thinning.

2) Reduction-Stage Bifaces

A single jasper early-stage biface fragment (Cat. No. 420; see Plate 16a) has a roughly ovoid shape and broad flake scarring across both surfaces (Table 28). In form, the specimen approaches the middle-stage form, but the edges are crudely flaked and very sinuous. There is little or no platform grinding evident along the edges.

Three middle-stage bifaces were recovered from the lower component (see Table 28). One basal fragment (Cat. No. 345; see Plate 16b) of red-banded quartzite, exhibiting step fractures along a very thick and sinuous edge, was recovered. The biface was probably broken during the thinning process. A second middle-stage biface of gray chert (Cat. No. 237) exhibits systematic flaking across one face but step fracturing and more diffuse flaking patterns on the opposing face. Cortex is evident near the base of the specimen, which appears to have sheared longitudinally. The biface was made on a split-cobble preform. The third middle-stage biface fragment (Cat. No. 487) is a biface tip with flawed and sinuous edges.

Table 28: Site 7NC-G-143, Lower Component: Early- and Middle-Stage Bifaces

RAW MATERIAL	WEIGHT (grams)	LENGTH (mm)	WIDTH (mm)	THICKNESS (mm)	PROVENIENCE	CAT. No.
Early-Stage Bifaces						
Jasper	15.1	-	-	12.5	Unit 101/Lev. 6	420
Middle-Stage Bifaces						
Quartzite	26.3	-	-	-	Unit 8/Lev. 4	345
Chert	4.9	34.2	-	8.3	Unit 76/Lev. 3	237
Jasper	2.4	-	-	-	Unit 115/Lev. 3	487

Two late-stage biface fragments, both manufactured from red-banded quartzite, were recovered from the lower component (Table 29). One of the bifaces (Cat. No. 41; see Plate 9b) is a tip fragment exhibiting moderate to broad flake scars across the surface and slightly sinuous edges. The other biface fragment (Cat. No. 24; see Plate 11a) is thick in cross section but very well flaked to the medial ridge. The cross section is lenticular but off-center, and the edges are slightly sinuous.

Table 29: Site 7NC-G-143, Lower Component: Late-Stage Bifaces

RAW MATERIAL	WEIGHT (grams)	LENGT H (mm)	WIDTH (mm)	THICKNESS (mm)	PROVENIENCE	CAT. No.
Quartzite*	3.0	-	-	-	Unit 19/Lev. 3	41
Quartzite*	14.4	-	30.4	13.0	Unit 18/Lev. 3	24

* Quartzite workshop association

3) Indeterminate Biface Fragments

Indeterminate bifaces from the lower component include specimens that were too fragmentary to permit the stage of manufacture to be identified but exhibit some evidence of bifacial retouch beyond simple flake edge retouch. These specimens include a quartz lateral edge fragment (Cat. No. 17), a gray chert sheared point fragment (Cat, No. 163), a quartz point tip (Cat. No. 446), and a small quartz biface fragment (Cat. No. 10).

b. Unifaces

Two unifacial tools were recovered from the lower component. A flake scraper made from red-banded quartzite (Cat. No. 267; see Plate 16c) was prepared on a thick flake. The working edge shows minimal retouch, and use-wear on the working edge is not evident due to the coarse texture of the raw material.

A recovered split chert cobble was retouched (Cat. No. 248; see Plate 16d) along one surface. Bifacial retouch as a result of the thinning process is also evident on one of the flake surfaces.

c. Cores

Only five cores were recovered from the lower component. They fit into three core classes: bifacial (2), bipolar (1), and freehand (1) (Table 30). A piece of shatter is also included in this collection of five cores. The bifacial cores are both jasper. One of the cores (Cat. No. 407; Plate 17a) is rounded in outline form and exhibits a few broad flake scars over a relatively angular surface. The edges of the core are very sinuous, comparable to the type of edge found on early-stage bifaces.

The second jasper bifacial core (Cat. No. 33; see Plate 17b) was made on a waterworn split jasper cobble. Very waterworn conchoidal flake scarring is apparent on the surfaces. The more recent flake scarring occurs only along the edges of the core and does not carry far onto the core surface. In spite of its bifacially worked appearance, this core may also be considered as a tested cobble.

Table 30: Site 7NC-G-143, Lower Component: Core Attributes

RAW MATERIAL	WEIGHT (grams)	PROVENIENCE	CAT. No.	DESCRIPTION
Jasper	1.4	Unit 14/Lev. 3	365	Shatter
Chert	10.9	Unit 14/Lev. 3	365	Bipolar Core
Jasper	31.4	Unit 30/Lev. 3	33	Bifacial Core
Argillite	112.7	Unit 63/Lev. 3	189	Freehand Core
Jasper	52.3	Unit 101/Lev. 3	407	Bifacial Core

A small chert bipolar core (Cat. No. 365; see Plate 17c) exhibits multiple flake scarring from opposing impact points. Little remains of the original cobble cortex. The argillite freehand core (Cat. No. 189; see Plate 17d) was made on a rounded cobble. Flake scars are present but very weathered, as is typical of argillite. Flake scars are multidirectional in orientation and limited in number, again suggesting expedient core technology.

d. Cobble Tools

The single cobble tool recovered from the lower component is a siltstone abrader (Cat. No. 92) that also appears to have served as a hammerstone.

e. Debitage

Debitage recovered from the lower component totaled 2,946 flakes. These flakes are classified according to raw material type in Table 31. Quartzite and jasper were the primary raw materials utilized, with lesser amounts of chert and quartz. This trend is the same as the trend observed for the upper component. In fact, frequencies of the four primary raw materials co-vary across the site, as is shown in Figure 19. The raw material frequencies peak in Level 2 and decrease in frequency at Level 3 and below. This trend can be viewed in a number of ways.

For example, the predominant raw materials used on the site in the upper component are jasper and quartzite. This is clearly shown in the debitage frequencies, and it possibly carries into the deeper levels as a result of pedoturbation. Consequently, Level 3 and below will have lower frequencies

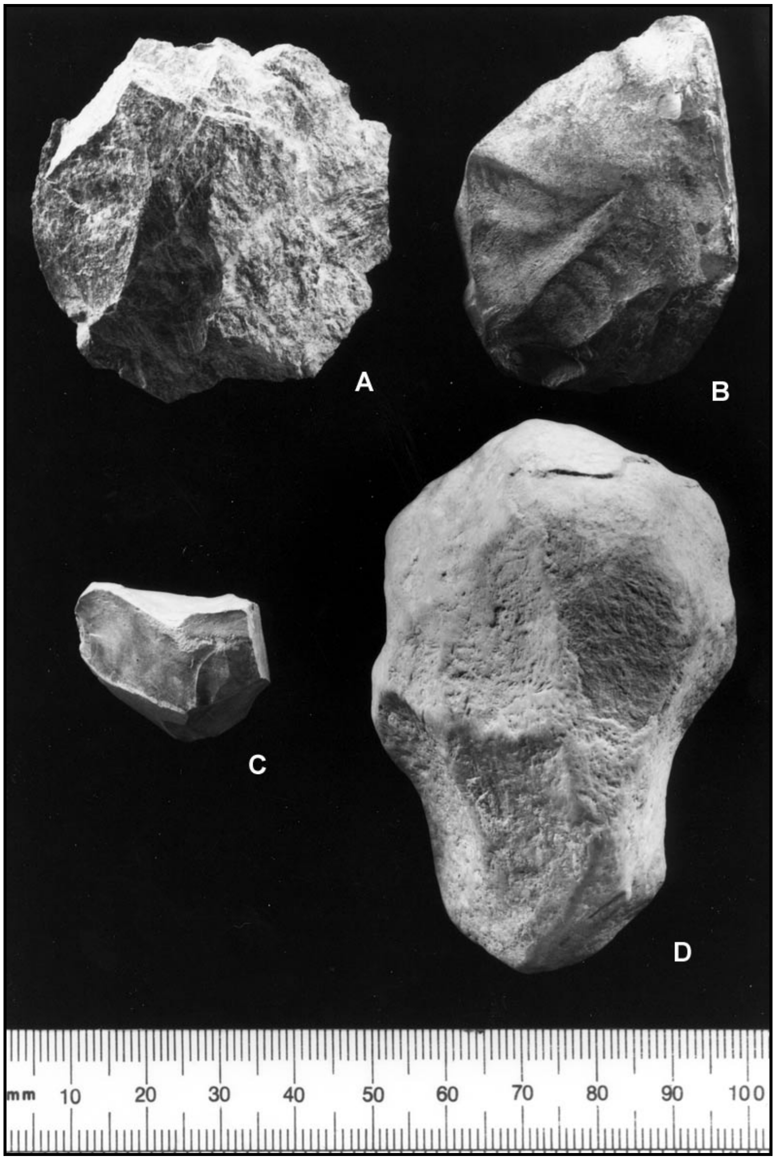

Plate 17: Site 7NC-G-143, Cores, Lower Component

[A] Jasper Bifacial Core (Cat. No. 407);
[B] Jasper Bifacial Core (Cat. No. 33);
[C] Chert Bipolar Core (Cat. No. 365);
[D] Argillite Freehand Core (Cat. No. 189)

of debitage if the living floor lies somewhere within Level 2. Such pedoturbation would tend to mask areas in the lower component living surfaces that were probably less densely occupied. If there had been any change in raw material preference from the earlier occupations to the later occupations, the difference might have been evident in the raw material frequencies: i.e., peaks in frequencies would have shown up beginning with Level 3 and into deeper levels.

If one assumes that minimal pedoturbation occurred on the site, an argument can be made that the same types of locally available raw materials were being utilized throughout the history of the site occupation. If the lower component represented much smaller and more intermittent occupations, this would account for the decrease in debitage frequencies for all raw material classes. This is probably not the case, however, because mapped debitage distributions are congruous through several levels. Consequently, at least a portion of the debitage frequencies in some of the deeper levels can be matched with activities that took place on overlying living surfaces.

As was observed for the upper component of the site, many of the flakes recovered from the lower component also exhibit cobble cortex. However, much of the jasper debitage does not exhibit cobble cortex, indicating frequent use of primary source or outcrop material, possibly from the Iron Hill region outcrops west of the site. As with the upper component, most of the identifiable flake types recovered from the lower component are biface and early reduction flakes. The low frequency of decortication flakes and bipolar flakes indicates some exploitation of cobble sources, but certainly not to the exclusion of primary outcrop sources. The degree to which cobbles were used as raw material may also be underrepresented because most of the byproducts of bipolar cobble reduction are classified as shatter.

Table 31: Site 7NC-G-143, Lower Component: Debitage Count by Raw Material Type, Levels 3-10

RAW MATERIAL	LEVEL 3	LEVEL 4	LEVEL 5	LEVEL 6	LEVEL 7	LEVELS 8-10	TOTAL
Argillite	2	-	-	-	-	-	2
Chalcedony	1	-	-	-	-	-	1
Chert	105	70	27	8	9	1	220
Jasper	861	338	195	60	41	26	1,521
Quartz	58	27	11	1	-	-	97
Quartzite	757	226	74	21	2	1	1,081
Rhyolite	8	1	2	-	-	-	11
Miscellaneous*	12	1					13
TOTAL	1,804	663	309	90	52	28	2,946

* Miscellaneous totals include metasedimentary (3), siltstone (1), sedimentary (5), and indeterminate (4).