INTERPRETATIONS

INTERPRETATIONS

The preceeding sections of this project report contained information of use in evaluating the strategy and methodology of the research; information that can provide the necessary environmental background for interpreting the data base; and a detailed description of the data base, both artifacts and features. The section will present interpretations made by the Principal Investigator based upon his, and his associates, understanding of the context in which the data base existed, the data base itself, and the theoretical bias of the writer.

In as far as possible, the interpretations presented will be accompanied by a review of the data base analyzed and the theoretical structure used to arrive at the interpretations. Much of the information has been presented in a descriptive form so that reviewers can, if wanted, derive their own interpretations of the data. To a degree, however, the data base description has been organized along the lines of the research design and, therefore, are not purely descriptive. All inventory data, contextual data, and quanititative information are either in the appendices or are available for examination in the field notes and laboratory observation notes.

The organization of this section is as follows: first, a statement will be made concerning the chronology of the site occupational sequence based on radio-carbon dates, projectile point typology and ceramic typology. This will be followed by a synthesis of all chronological ordering data and an attempt to define tentative cultural components at the Delaware Park Site.

The second part of the following section will concern the determination of site function, through the analysis of feature and artifact functions. Both intrasite and intersite economic activity patterns will be sought. Finally, comments will be made concerning the relationship of the Delaware Park Site data base to the archaeological record in the Middle Atlantic region as a whole.

Cultural Chronology

The data obtained during the archaeological investigations at the Delaware Park Site contributed to the determination of chronological ordering in various ways. Most directly, the radio-carbon dates obtained from charcoal found in the feature matrices allowed the absolute dating of the approximate period of use of the feature. The presence of projectile points and ceramic sherds of morphological styles previously recognized in the archaeological record allow for comparitive dating of the site. The partial reconstruction of environmental parameters existing during the aboriginal occupations provide data for a gross dating of those occupations (based upon climatic and floral sequences established in the Holocene of the Middle Atlantic region. Following are discussions of inferences made about the span of cultural activity at the Delaware Park Site.

Radio-carbon Dates

Appendix K provides a listing of all radio-carbon dates obtained at the Delaware Park Site together with the Feature number from which the charcoal sample was obtained and photographs of diagnostic artifacts found within the feature matrix. The list of dates range from 3800 ± 100 B.P. to 1310 ± 155 B.P., a span of almost 2500 years. This time span does not appear to date the entire spectrum of aboriginal occupations of the site, but does seem to include the period of the most intensive site utilization, that period during which most, if not all, of the subsurface features were originally opened.

Twenty-one radio-carbon dates were obtained from the Delaware Park Site, one each from 21 of the 173 features being considered in this study. The sample approximates 12% of the total features present. The dates were obtained from charcoal taken from fill of five different feature categories (see the feature type descriptions. The date range appears to represent the actual time span during which these types of features were in use.

There does appear to be discontinuities in the date sequence. The earliest date of 3800 B.P. is separated by a time span of 1060 years from the next oldest date. This single radio-carbon reading can be assumed to date a Late Archaic/ Transitional Period occupation. A series of five dates range from 2740 B.P. to 2375 B.P. and may relate to an Early Woodland Period occupation. This is followed by a Middle Woodland Period sequence of ten dates ranging from 2100 B.P. to 1760 B.P. and then by a late Middle Woodland Period series ranging from 1675 B.P. to 1310 B.P. with five more dates. The following, then can be derived from the date sequence:

Occupation Period A: Prior to 4000 B.P. Any occupation prior to the first date obtained can not be given an absolute date. Nevertheless, from other indications (see below), earlier Archaic Period occupations did occur at the site.

Occupation Period B: 4000 B.P. to 3000 B.P. Period B is only dated by a single radio-carbon date (3800 B.P. ± 100) but can be attested to by means of projectile point types usually associated with this time span from the site, some found in features.

Occupation Period C: 3000 B.P. to 2200 B.P. This period of occupation is attested to by a series of five dates ranging from 2740 to 2375 B.P.

Occupation Period D: 2200 B.P. to 1300 B.P. Period D is dated by radio-carbon dates which span almost the entire period.

Occupation Period E: After 1300 B.P. Although no radio-carbon dates were obtained for occupation subsequent to 1310 B.P. artifact typology indicates later cultural activity. The later part of the Middle Woodland Period is not well represented by artifact types but Late Woodland Period material has been found.

These five occupation periods can be used as an organizational scheme for the following interpretation sections. Occupation A should be considered as relating directly to the Archaic Period, a time span during which numerous distinctive cultural complexes have been defined. The Transitional Period, which directly relates to Occupation Period B of the Delaware Park Site sequence, is a tighter occupation span and specific artifact types can be associated with it at the site. The single date, and its artifactual associations, will be discussed later. Occupations C and D both relate to the Early/Middle Woodland Period (Kinsey 1974), a temporal period about which a considerable amount of information has been gathered both at the Delaware Park Site and in the general Middle Atlantic region. Occupation E relates to the later part of the Middle Woodland Period and the entire Late Woodland Period. Occupation of the Delaware Park Site appears to have continued subsequent to the latest of the dated subsurface features.

Projectile Point Type Sequence

Projectile points are defined, for the purposes of this study, as bifacially flaked stone tools with tipped blades and definite hafting elements or stems. These tools, usually hafted to a spear, arrow or knife shaft or handle, have been made in a variety of forms, each relating to an idealized style which was somewhat distinctive to a particular socio-cultural group. As a consequence of this specificity of style, projectile points have been used sucessfully as "index fossils" to provide a chronological ordering to artifact assemblages otherwise undated.

The projectile points recovered from the Delaware Park Site archaeological investigations have been grouped into nine general morphological categories. Each category contains specimens which can be assigned to named and dated projectile point types defined at other archaeological sites and in other parts of the eastern United States. The following discussion is organized in a cultural/chronological fashion and relates Delaware Park Site projectile points to identified cultural types.

Occupation Period A possibly spans both the Archaic and the Paleo-Indian cultural periods. The Delaware Park Site did not produce any projectile points of types associated with Paleo-Indian cultures of the Middle Atlantic region. Fluted points have been found in the area but no evidence of Paleo-Indian occupation of the site has been suggested. Early Archaic projectile point types have been found in other parts of New Castle County, Delaware, although not in any large numbers. A single artifact that may be related to a defined Early Archaic projectile point type has been placed in Group II of the Delaware Park Site specimens (see earlier descriptions) and is referred to as a possible Kirk Corner Notched specimen (Coe 1964). No other indication of Early Archaic occupation of the Delaware Park Site has been found.

Subsequent Archaic cultural complexes are more numerous in the archaeological record of the Middle Atlantic region. Although no points of the types generally referred to as "bifurcates" have been found, a large number of specimens in Groups II, IV, V, VI and IX can be assigned to Middle and Late Archaic complexes. It appears that the Piedmont Archaic (Kinsey 1972) Tradition was strongly represented at the Delaware Park Site. This tradition, representing

the first significant period of occupation at the site, can be dated to the period between 4,500 B.C. and 2,500 B.C. Projectile point types from the above groups which seem to represent the Piedmont Archaic Tradition include Bare Island, Lamoka, Poplar Island, Brewerton and Normanskill.

Occupation Period B does not seem to be represented by a strong Transitional (Terminal Archaic) Period influence at the Delaware Park Site. Although projectile points of the Broadspear and Fishtail traditions were found, other diagnostic artifact types (such as steatite bowls, bannerstones, ground stone axes and celts, etc.) are not represented in the artifact inventory. Group III (4 specimens) contains points of the Fishtail Tradition and Variety A of Group VI is a good example of a Terminal Archaic Koens-Crispin/Savanna River projectile point type.

This same occupational period (B) is represented by cached tools like those found at other (Crozier 1940, Flegal 1954, Thomas 1973) Transitional Period sites. The cache consisted of a fully-grooved axe and unfinished bifacially-flaed knive blades (of a variety of materials). These items are usually dated to the very end of the Archaic Period or the beginning of the Transitional (circa 2500 B.C. to 1500 B.C.). Their association with a charcoal-laden feature from which a date of 1850 B.C. was obtained (Feature 94) tends to strenghten the chronological inference about the occupational period.

Occupation Period C as an Early Woodland Period occupation, should be represented in tne projectile point inventory by those types traditionally associated with this period throughout the Middle Atlantic region. The Delaware Park Site investigations resulted in the recovery of a variety of points that should be dateable to this occupation period. Among the total are points of Group VI (Rossville), Group VII (Calvert), and possibly some "generalized corner-notched specimens of Groups II and III.

The projectile point types of Occupation Period D from the site include specimens from Group VI, which is a contracting stemmed type with rounded or near-pointed bases. These are possibly Rossville Points. Also included are a number of extremely small projectile points with corner notched hafting elements (Group VIII). These small points do not appear to be common in any of the documented site collections from coastal plain or Piedmont areas within the Middle Atlantic region. They are apparently not named but seem to constitute a definite cultural type. These points have been described and discussed in detail in an earlier section of this report.

Occupation Period E has been defined primarily upon the presence at the site of projectile points, and ceramics, of types commonly associated with Late Woodland time periods. No evidence of any occupation during the latter stages of the Middle Woodland (Oxford or Webb Phases - see Thomas 1974) has been recognized from the Delaware Park Site. However, Late Woodland Period projectile points and ceramics have been recovered. These include triangular-shaped projectile points of the Levanna projectile point type (Ritchie 1961). These specimens have been placed in projectile point Group I of the present study.

FIGURE V-1 PROJECTILE POINT & CERAMIC TYPE CHRONOLOGY

	FEATURE #	RADIO-CARBON DATE	PROJECTILE POINT TYPE I	II	III	IV	V	VI	VII	VIII	IX	X	CERAMIC TYPE I	II	III
OCCUPATION PERIOD B	63	AD 640					●	●	●					●	
	42	AD 605		●				●						●	
	51	AD 455		●			●								
	194	AD 360				●		●	●						
	39	AD 275					●			●				●	
	36	AD 190								●					
	70	AD 185			●										
	55	AD 175		●											
	56	AD 100								●					
	45	AD 85											●		
	43	AD 80											●		
	12	AD 65								●					
	149	10 BC	●	●				●							
OCCUPATION PERIOD C	46	730 BC						●							
	138	740 BC			●										

Ceramic Chronology

During the entire period of excavation at the Delaware Park Site only 151 potsherds were recovered. Of this total only a few dozen could be identified as types with relatively limited temporal spans of existance within the Early/Middle Woodland Period of the Middle Atlantic region. Ceramic sherds were found in the matrices of features that have been dated from 425 B.C. to A.D. 640 and should be expected to consist of cultural types previously dated to that temporal span. It has already been stated that Late Woodland occupation of the site occurred and, consequently, pottery of that cultural period should be present in the ceramic collection.

Occupation Period A is defined as a preceramic period and should not be expected to contain evidence of pottery manufacture. Occupation Period B is the period during which Middle Atlantic region aboriginals were utilizing vessels made of steatite and when they began to experiment with the use of ceramics. The acceptance of pottery marks the beginning of Occupation Period C.

The Delaware Park Site produced some ceramics from features that had been radio-carbon dated to Occupation Period C and does have sherds that can be typed with early ceramic useage in the region. No steatite-tempered ceramics, however, have been found (Marcey Creek and Seldon Island Wares). The earliest typed pottery found at the site have been classified within Group 1 ceramics. These Early Woodland sherds are of the type Vinette I, a type defined in New York State as the earliest ceramic ware in that area. Vinette I pottery is usually placed at around 1000 B.C. and later, earlier than any of the ceramic-bearing features dated at the Delaware Park Site.

Later ceramic types are also present in Group 1 of the defined ceramic categories. Types defined as dating to the middle of the last millenium B.C. were found at the Delaware Park Site (Accokeek Cord Marked - Wright 1976). Also dating to Occupation Period C are such Group 2 types as Wolfs Neck Corded (Griffith and Artusy 1977), Broadhead Net Marked (Kinsey 1972) and Albemarle Net Impressed (Evans 1955).

Occupation Period D pottery types from the Delaware Park Site include Hell Island Fabric Impressed (Artusy 1977). No Mockley Ware (Stephenson and Ferguson 1963). ceramics, a type dating to the very end of the Middle Woodland in the Middle Atlantic region, have been found. It is likely that other ceramics from Group 2 belong to this occupational period.

The final set of ceramic types, probably relating to Occupation Period E, are from undated features and from top soil contexts. There are the thin, plain-surfaced sherds that appear to have been from the same ceramic vessel. They are classed as Group III ceramics and can be found in the literature identified as Riggins Fabric Impressed, Albemarle Fabric Impressed and/or Potomac Creek ware.

Based on the above discussion the occupation of the site by ceramic using peoples may have started with the beginning of Occupation Period C, certainly by 1000 B.C.. This occupation appears to have continued throughout most of the Woodland Period. An apparant hiatus during the later part of the Middle Woodland should be noted. No explanation is offered.

Feature Type Chronolgoy

Radiocarbon dates have been obtained from a series of subsurface features containing sufficient charcoal to allow for the determination of an absolute date. These dates have been presented in an earlier section of this report and range from 1850 B.C. to A.D. 640. Features of most of the six defined feature groups have been dated but no chronological patterning relating feature type to period of use has been determined. It appears that period of use and feature function are completely unrelated. In other words, it is not possible to state that certain feature types were restricted in use to particular periods of time or that they spanned the entire period of occupation of the Delaware Park Site. This does not mean that such restricted periods of use did not exist, just that based on the present data base, this can not be determined.

Feature Type B, which can be interpreted as being a living area (see discussion to follow), has been dated as the earliest of the feature types. Both features that have been placed into this type were dated to over twenty-five hundred years ago (740 B.C. and 1850 B.C.).

The only two dates from features of Type E, a very small and shallow pit, were assessed at A.D. 50 and A.D. 95, a very close degree of correspondence. Types A and C, those which have been most often dated, have a similar temporal span with Type C apparently starting somewhat earlier and phasing out about 400 years before Type A.

Finally, Type D, a category of only two members, has been dated at A.D. 605, one of the two most recent dates obtained from the site.

In spite of the above documented date ranges for various feature types, the fact that some features types have not been C-14 dated, and the low percentage of the total features that have been dated (about 11%), does not allow for a supported statement on period of use of various feature types. The above dates are used as general guidelines only.

Definition of Cultural Complexes

One of the primary purposes of site excavation is to determine the nature of associations within the site. Artifacts which can be inferred to be temporally and functionally associated add support to cultural intepretations. The inference of association, however, must be supportable by field observations. The association of artifacts with one another and with subsurface features at the Delaware Park Site is tenuous at best. The presence of two items within a subsurface feature matrix does not allow the assumption or inference that the two items were made or used contemporaneously or as part of a particular economic industry (tool kit). Due to the manner in which features were filled after abandoned, any items which happened to be present on the site may have been tossed in together. The reuse of the Delaware Park Site over a period of at least 2400 years (based on radiocarbon dates obtained) and probably 6,000 years would have resulted in the disturbance of earlier deposits by later peoples and the mixing of artifacts from early and late contexts. Deliberate caches of artifacts, of which only one was recovered in Feature 94 at 7NC-E-41, may be the one instance of supportable association at the site.

In spite of these problems, there are recognizable differences in the collection of diagnostic artifacts at the Delaware Park Site that can be correlated with temporal sequence. Unfortunately, the data from the site, with a few possible exceptions, must rely on associations defined at other Middle Atlantic area sites and does not in itself contribute to the clarification of the chronological sequence problem. As a consequence, the definition of cultural complexes will depend, for the most part, on type-chronology associations established in the archaeological literature.

The following complexes, while temporal and cultural in nature, are not to be construed as suggesting total contemporaneity. Some may represent a mere "moment in time" while others may in reality be general traditions spanning thousands of years. The relative span of time represented by each complex will be alluded to in the following discussion.

Occupation Period A - no cultural complexes can be defined for this occupation period based on artifact associations at the Delaware Park Site. The lack of subsurface features and radiocarbon dates do not allow any associations other than those based upon typological considerations. As stated above, projectile points of Early through Late Archaic Periods have been recognized at the site and other lithic artifacts relating to the makers of those projectile points are certain to be present in the artifact collection. However, it is not possible, at this time, to identify complexes of tools that relate to any of the Archaic manifestations at the site.

Occupation Period B - the single radiocarbon date, probably associated with he sole cache of artifacts found at the site, appear to allow for the definition of a complex of artifactual traits which existed during Occupation Period B. This complex can be designated Complex B-1.

Complex B-1

The cache of artifacts found at the edge of Feature 94 (radiocarbon dated at 3800± 100 B.P.) can be assumed to represent a complex of tools created during a single cultural component (defined as a cultural manifestation representing a single cultural occupation period of relatively short duration). The craftsmen of Complex B-1 manufactured ground stone axes with grooves of the "three-quarter" variety. Also manufactured from lithic materials were unfinished cache blades. Materials selected by the lithic craftsmen included such non-flinty materials as quartz, argillite and limonite, as well as the locally-available Newark Jasper (a cryptocrystalline or flinty material).

Although no other artifacts were found within the Feature 94 cache, material similar to those used for the cache blades exist throughout the projectile point collection. Quartz is used for a variety of points associated with numerous chronological periods. Argillite and limonite, however, appear to be more restricted in use. Projectile Point Groups IV, VIII and IX contains artifacts of these materials. Complex B-1 projectile point types, however, can not be positively defined based on the data from the Delaware Park Site.

Feature # 94, classified as Feature Type B, must be associated with Complex B-1 due to its date and its association with the cache of artifacts described above.

Occupation Period C - only four diagnostic artifacts were found within features dated to this occupation period. The five features dated included examples of types A, B and C. Based on this sparse data, it is not possible to define cultural complexes within this occupation period.

In general, the period should contain artifact complexes relating to the Early Woodland cultural period. Projectile points of Type III can be defined as variants of the Orient Fishtail type, an Early Woodland Point defined in New York State (Ritchie 1961). The single Type VI projectile point found in Feature 46, dated at 730 B.C. is of the Rossville Type (Ritchie 1961), another Early Woodland projectile point type found throughout the Middle Atlantic region. The single potsherd found in Feature 139, radiocarbon dated at 425 B.C., is of Ceramic Group IIB and can possibly be associated with the Early Woodland Period.

Occupation Period D - this period contains features and artifacts dated from as early as 150 B.C. to as late as A.D. 640. A number of associations can be postulated within this occupation period.

Complex D-1

Projectile Point Group VIII consists of very small projectile points with corner notches and thin cross sections (refer to description in section on Data Base). These points have been found in seven features of Types A and C with radiocarbon dates clustering between A.D. 65 and A.D. 275. The only associations of diagnostic artifacts include the following; three ceramic sherds of Group IB (identified as Vinette 1), three ceramic sherds of Group IIA (a mica tempered ware), a projectile point of Group V (untyped) and a point of Group VI (a Rossville).

It is postulated that Complex D-1, as described above, is a valid cultural complex representing a separate unit within the Delaware Park Site continuum. The presence of the Rossville projectile point correlates well with the date range for this complex. The sherds identified in the Data Base section as Vinette 1 represent an enigma. Although the characteristics of these sherds (the only ones found of this type in any Delaware Park Site features) match those listed for Vinette 1 pottery (Ritchie 1944), it is likely that they, in fact, represent a Middle Atlantic ceramic type dating to the early part of the Middle Woodland. It has not been possible, unfortunately, to find any other references to this ceramic enigma in the Chesapeake or Delaware Bay drainages. The sherds in question were found in two different features, each of which contained projectile points of Group VIII and in no other features at the site.

Complex D-1 artifacts have been recovered from features of Types A and C. Three were of Type A (a single radiocarbon date of A.D. 275) and four were of Type C (with dates of A.D. 190, 100 and 65). Four of the seven features were clustered in the southeast portion of the Delaware Park Site. The other three were in the west central portion of the site.

The only ground stone ornament, a perforated pebble pendant (Feature 56) to be found at the Delaware Park Site may be associated with Complex D-1.

Complex D-2

The second complex of associated artifacts to be recognized as falling within Occupation Period D is that represented by ceramic Group II and a series of nine projectile points of similar characteristics. The sherds of Group II that are associated with the projectile points are all of a specific variety tentatively defined but not described in the Data Base section. These sherds (referred to as Group IIB) are all of a light orange paste, crushed quartz tempered, and have exterior surfaces that appear to have been roughened by impressing with a heavy fabric in an irregular fashion. The sherds were recovered from Features 42 and 63 (radiocarbon dated at A.D. 605 and A.D. 640 respectively).

In association with these ceramic sherds were projectile points of Groups II, IIa, IV, V, VI and VII. Based on lithic preference similarities, basic manufacturing technique and size and shape, those specimens considered as associated with the ceramic material are those of Group II, IIA, and VII. Group VI points are contracting stemmed Rossville points (Ritchie 1961) and those of Group IV are dissimiliar to any of the above nine specimens (intrusive items).

Complex D-2 also consists of rounded cobble hammerstones and subsurface features of Types A (6 examples) and D (a single feature). The only other feature type in which a projectile point of Group VII was found was a Type C feature which contained no other diagnostic artifacts of this complex. Radiocarbon dates of features in which artifacts of this complex have been found are A.D. 360, A.D. 455, A.D. 605 and A.D. 640.

Occupation Period E - although no dated features were excavated that pertained to this period of occupation artifacts were found in surface contexts or intrusive into earlier features which belong to later occupations than those that pertain to the digging of the features at the Delaware Park Site. This period of occupation is well known throughout the Middle Atlantic region and artifacts associated with various cultural complexes of this temporal span are easily identified.

As was stated above, no artifacts of types usually associated with the later portions of the Middle Woodland Period have been found at the Delaware Park Site. Among these types not found are such projectile points as the Fox Creek and the Jack's Reef series, the ceramics of the Mockley Series, and such ground stone tools as celts and pendants. Late Woodland materials have been found, however, and a cultural complex can be postulated.

Complex E-1

Compex E-1 consists of the ceramics of Group III tentatively classified as Group IIIA. These are thin, quartz tempered sherds with fabric impressed exteriors and smoothed interiors. They correspond with the type Riggins Fabric Impressed as defined in New Jersey (Cross 1956). Associated projectile points are those of Group I. No other associations can be made at this time.

Summary of Chronology

The data presented above serves to set the stage for a functional interpretation of the Delaware Park Site occupation history. A series of postulated occupation periods have been established based upon the absolute dates obtained through radiocarbon assessment of charcoal specimens. Periods A through E were then discussed in terms of artifacts associated either within the matrices of dated subsurface features or through cultural typological chronology. In most cases (ceramics and projectile points) previous knowledge of the relative or absolute dates of artifact types existed within the Middle Atlantic region. With feature typology, however, little additional information could be added to the sequence defined on the basis of the radiocarbon dates.

One other avenue of investigation is that of environmental reconstruction and chronological ordering. The appendices included with this report outline the different approaches taken by various investigators to determine the past environments in which the occupational history of the Delaware Park Site occurred. These environments, unfortunately, were relatively general and could not be tied to any well dated sequence existant within the Middle Atlantic region. As a consequence, chronological ordering of pit fill has not been attempted on the basis of the environmental reconstructions undertaken during the investigation of the Delaware Park Site.

Economic Activities at the Delaware Park Site

The determination of function is one of the key objectives of this investigation. Function is a term which pertains to the purpose or use of artifacts, intra-site features and to the site as an occupation unit. The section of this report which described the Data Base was organized along functional lines. The categories of artifacts and features described were categories which implied function. Following is a series of discussions of interpreted artifact, feature and site functions.

The most outstanding data unit recovered during the investigations were the many subsurface features. These features have been classified into seven categories based, as discussed earlier, upon morphological characteristics. As was stated, no attempt was made during their description to imply function, an implication that must be based on a variety of factors including morphology, contents, distribution across the landscape, etc. The following is an attempt to imply function to the various subsurface features found at the site.

The manner in which a function is interpreted for a subsurface feature is related to observable characteristics within the feature; artifact types, soil and remains of food debris, characteristics of the feature sidewalls and bases, etc. The former, the contents of the feature, must be considered the most tenuous since diagnostic artifacts are often intrusive into pits due to the ground disturbance caused by their construction. All of these, however, will be discussed below.

Feature Artifact Contents

Feature artifact contents are presented in Figures V-2 through V-5. These should be referred to during the following discussion.

Key Relating to

FEATURE ARTIFACT CATEGORY
PERCENTAGES

AFP - Faunal Food Procurement & Processing Tools

DE - Domestic Equipment-Utility Tools

LM - Manufacturing Tools-Lithic Fabrication

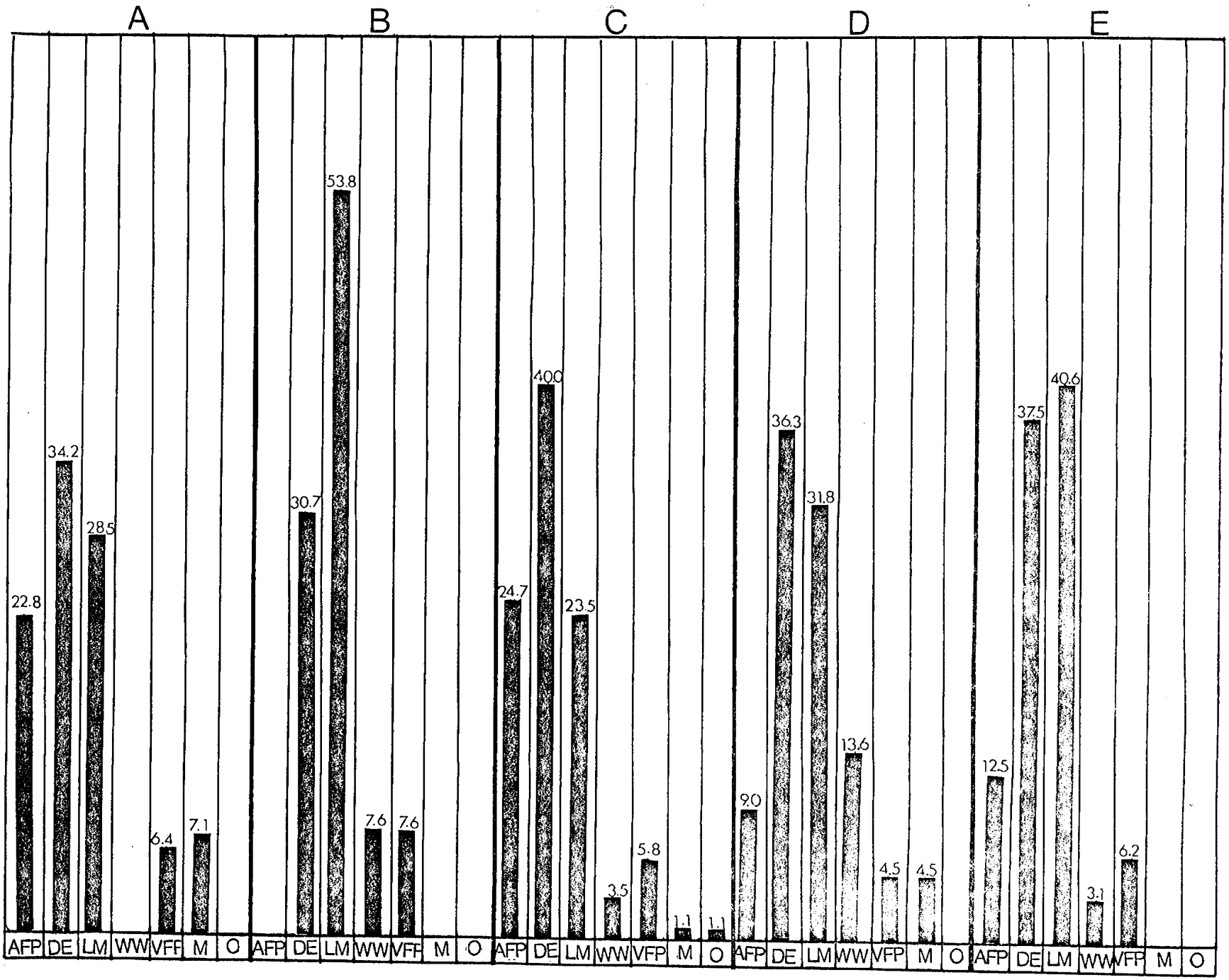
WW - Manufacturing Tools-Woodworking

VFP - Floral Food Procurement & Processing Tools

M - Domestic Equipment-Miscellaneous Items

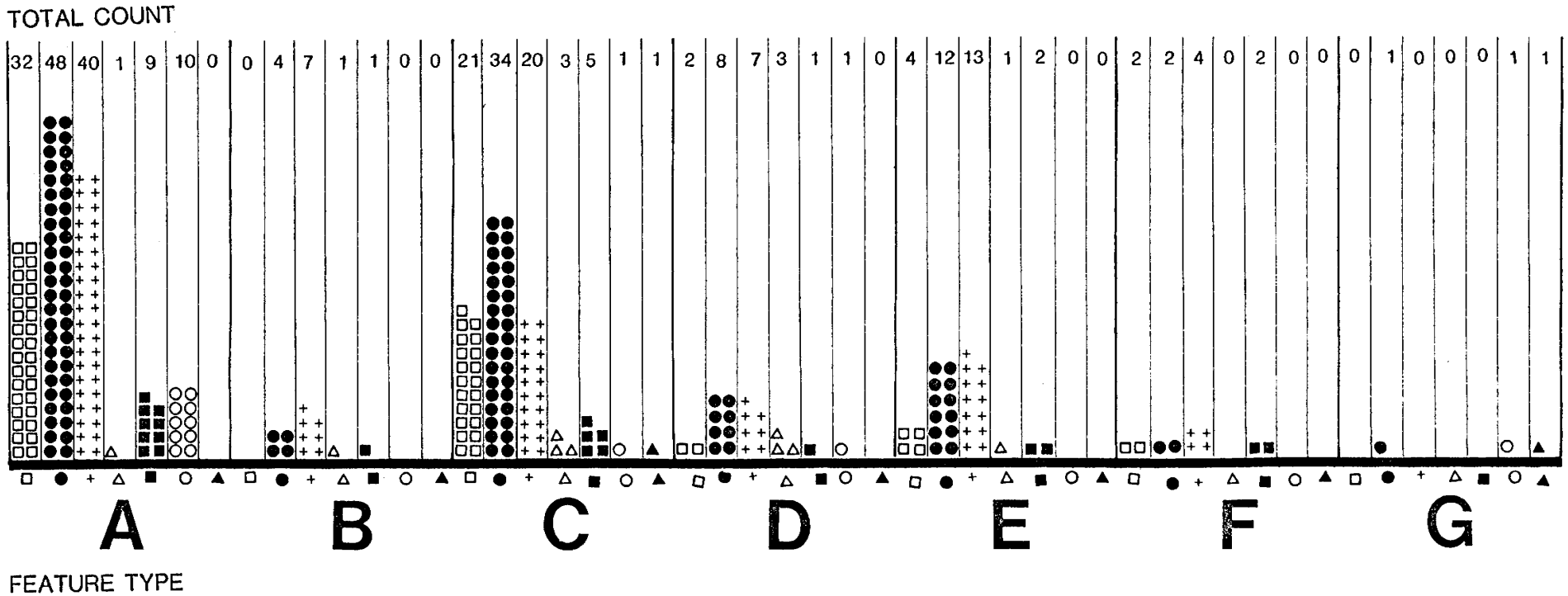
O - Non-economic Artifacts

ARTIFACT QUANTITIES FROM FEATURE TYPES F & G ARE TOO LOW TO BE GRAPHED



(SEE KEY)

FIGURE V-2 FEATURE ARTIFACT CATEGORY PERCENTAGES



KEY

- □ Faunal Food Procurement & Processing Tools
- ● Domestic Equipment-Utility Tools
- + Manufacturing Tools-Lithic Fabrication
- △ Manufacturing Tools-Woodworking
- ■ Floral Food Procurement & Processing Tools
- ○ Domestic Equipment-Miscellaneous Items
- ▲ Non-economic Artifacts

FIGURE V-3 FUNCTIONAL CATEGORIES BY FEATURE TYPE
Worked Stone Tools

FUNCTIONAL CATEGORIES BY FEATURE TYPE

Utilized Flakes

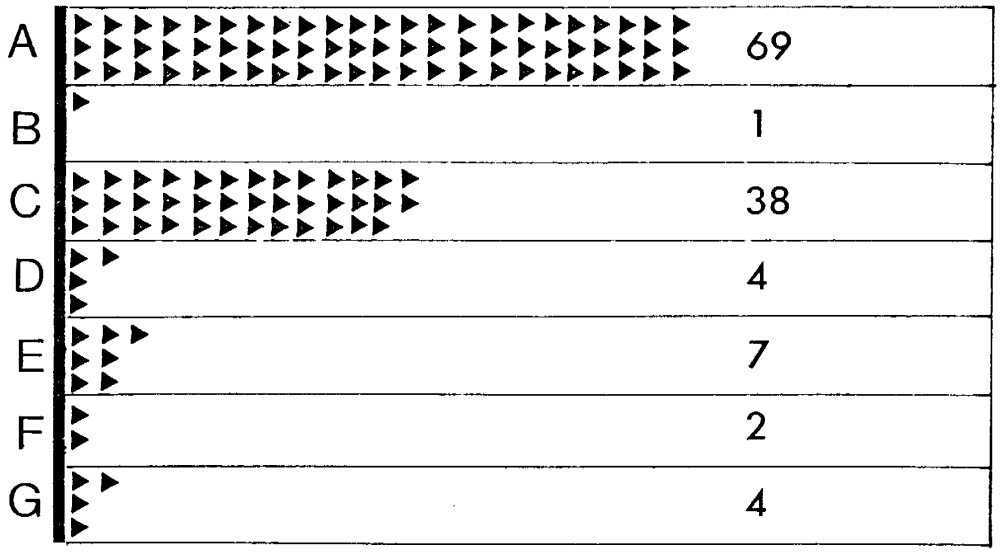


FIGURE V-4

FUNCTIONAL CATEGORIES BY FEATURE TYPE

Fire Cracked Rock

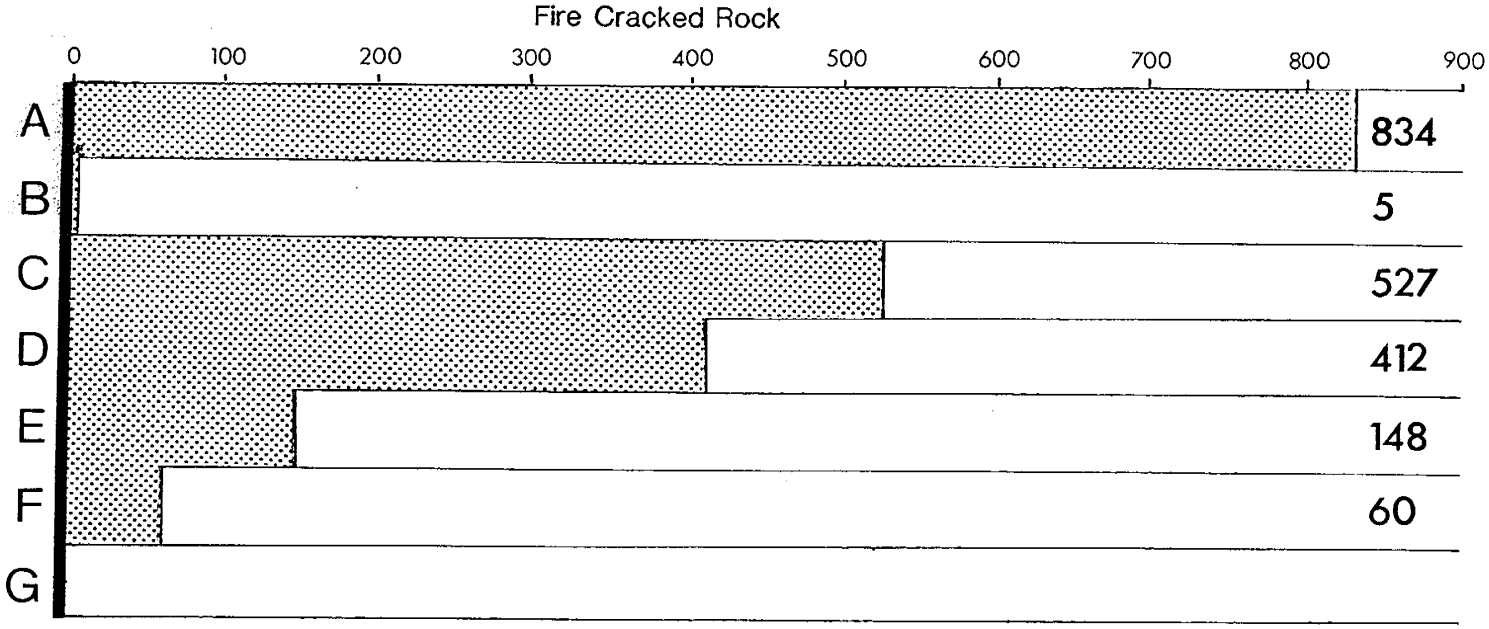


FIGURE V-5

Feature Discussion

Feature Type A

Features classified within this category, a total of 31, are large, have circular to oval surface configurations, are relatively deep in relation to their surface size and have vertical sidewalls and flat bottoms. Feature matrices include organic-laden soil, artifacts of various types, varying quantities of charcoal and residues of food debris (pollen, seeds, chemicals, etc.). The immediate impression is that these features were intended for storage units possibly situated within surface structures (houses, sheds, pavillions, etc.).

During the field investigations attempts were made to determine feature function based upon soil characteristics and upon observations as to the presence of sidewall burning, base configuration, artifact distribution within features, etc. Artifact content is given in Figures V-2, V-3, V-4, & V-5.Excluding fire-cracked rock and flakes, the majority of the artifact recovered in Features of Type A were related to domestic activities. This was closely followed by lithic manufacturing tools and then faunal food procurement tools. At first glance this content distribution may seem to reflect the field impression that the features were located near, if not within, domicles and that they were primary intended to be used for the storage, and possible preparation of faunal food. A closer look, however, results in the realization that this distribution almost exactly matches that of the artifact category distribution of the site as a whole.

Due to the size of features of Type A a larger amount of preserved organic materials were recovered. Seeds identified from within this type of feature do not vary significantly from the seeds obtained within other feature types. The overall volume of seeds, however, may be interpreted as suggesting that they were stored within features of Type A. Information about the seed content can be found in the Appendices. The percentage of various chemical residues within Feature Type A soil samples is no more revealing of feature function than were the artifacts. These percentages vary little from the total sample obtained from all feature types within the Delaware Park Site.

The feature configuration can provide clues to its intended (original use). The 31 features of Type A share common characteristics which can be expressed by referring to them as inverted silos. They are basically cylindrical in form, a factor which limits ease of accesibility to the bottoms. It is possible that they had to be entered by a ladder-like mechanism. Attempts to find evidence in the bottoms of the features of post molds was not conclusive. A few of the features did contain irregularities that may have been caused by supporting members but this could not be conclusively demonstrated. Side walls often had vertical channels which may have represented storage rack members, again this contention is only impressionistic. The presence of stored food remains was not noted.

Another factor that was noted during excavation was that the bottoms of all Type A features were excavated through the A horizon soil into a B horizon composed of a relatively heavy sand and gravel with excellent drainage characteristics. It was suggested that this may have been a cultural choice, the implication being that storage units require good drainage.

Several Type A features contained concentrations of fire-cracked rock within the feature matrices rather than on feature bottoms. This is most likely due to a reuse of the pits or a factor of filling of the pits rather than function.

In summary, although conclusive evidence of function does not exist, it can be suggested that features of Type A were used as storage units, probably for the storage of both floral and faunal preserved food materials. Other possible uses, such as domicles, steam baths, etc. are not supportable based on present evidence.

Feature Type B

Type B features, four of which were excavated at the Delaware Park Site, are very large with oval surface configurations and shallow, basin-shaped cross sections. Bottoms are relatively regular with both sloping and flat bottoms present. Feature matrices include the range of lithic artifacts, soil residues, and charcoal fragments noted for features of Type A. The immediate impression provided is that these features were large enough and that the accessibility was easy enough for their use as occupation units of some sort.

Function based upon fill content is limited by the small number of diagnostic artifacts found during the excavation of the four examples. Only 13 artifacts, exluding fire-cracked rock and debris flakes, were found, most within a single cache of dubious association with Feature 94 (described earlier). The cache has been attributed to a single event and can not be associated directly with feature function.

Feature 94 does provide clues to function, however, such as slight bottom slope with a definite fire hearth located in the center of the floor. Also found in association with this feature were possible interior and exterior post holes and a possible entranceway represented by an eroded, funnel-like area to one side. A hard packed floor in this feature was also noted during excavation.

It is possible that Features of Type B were domicles or that they served as shelters for some other human activity. Alternative suggestions were that they functioned as special club or religious structures or as sweat houses.

Feature Type C

The Type C features are relatively small, basin-shaped, pits with sloping sidewalls and convex bottoms. Feature matrices include all types of data noted with Features A and B with an exceptionally large number of fire-cracked rock (27% of the total recovered at the site) and lithic debris.

Artifact content consists of slightly lower amounts of lithic manufacturing tools, however. In contrast, the amount of domestic items of a utility nature is slightly higher than the percentage for the site as a whole as is the amount of animal food procurement and processing tools. This association of artifact functional types can be construed as evidence that the Type C features were utilized as fire hearths, ovens or other food processing facilities.

No observations were made during the field investigations which may add to the validity or lack of validity of this tentative interpretation of the function of Type C features. Any evidence of fire would have been noted, this was not recorded, however, by any of the investigators. No intact fire hearths were found (concentrations of fire-cracked rock and charocal) in any of the features. All of the fire-cracked rock found in the pits were completely within the fill rather than on the feature bottom or sidewalls. Charred seeds were no more numerous within these features than in other types of features.

In summary, although Feature Type C has been intepreted as a domestic fire containing facility (hearth, oven, etc.) no evidence to verify this interpretation can be noted.

Feature Type D

The features classified as Type D features resemble those of Type A in surface configuration and form with a difference in size being the only morphological characteristic separating the two types. Type D features are smaller in surface area and depth (volume). Feature content is similar to that of Type A, except in the category of animal food procurement and processing tools where only two examples were found. Features of Type D, although numbering only 8, have almost exactly one half of the amount of fire-cracked rock as that found in Feature Type A features.

As with Type A features, no evidence of function was noted during the field investigations. Flat bottoms often bore irregularities that resembled those of Type A features. As with Type A features, the eight Type D features are interpreted as storage units. It is possible that they were used during a different period of occupation or that they were used for the storage of different commodities.

Feature Type D is considered as representing storage units at the Delaware Park Site. Season of use, temporal-cultural affiliation, and materials stored within are unknown. They may be the latest types found at the site.

Feature Type E

Features of Type E are circular in surface configuration, have very shallow "dish-shaped" cross sections and convex bottoms. Type E features are quite small and shallow, however, it should be noted that their original configuration has been truncated considerably by ground erosion (sheet wash) at the site. Feature content matches that discussed in the above feature description sections.

No soil anomolies were noticed during excavation that serve to explain feature functions. Artifact content is also unuseful for functional analysis. No attempt will be made to interpret the function of these features.

Feature Type F

These features are quite small but variable. In general they have circular surface configurations with sidewalls and bottoms ranging from sloped to vertical to convex. The features are not concentrated in one area and soil contents vary with the nature of the soil in the vicinity of each feature. Very few artifacts were found in the 21 examples of this feature type.

It is not possible to determine the function of this feature type. Due to the small size it is unlikely that they were intended to serve a function as a storage unit. It is possible that they are related to some sort of domestic preparation activity but no evidence to support or refute this has been found.

Feature Type G

These features vary greatly and consist of some that are natural erosion channels, some that may be rodent burrows, others of probable modern origin and some that have been so thoroughly disturbed by aboriginal activity that any attempt at reconstructing their configuration is futile. The small number of artifacts found within features of this class does not warrant any sort of functional analysis. No further mention of these units will be made.

Feature Distribution

The following figures provide information on the size, configuration and distribution of the Delaware Park Site subsurface cultural features. A project base map, locating each of the features, is placed in the envelope attached to the back cover of this report. Appendix J is a foldout of each ten meter block and provides information about type of function and radio-carbon dates obtained from the features.

Figure IV-1 is a version of the ten meter block maps and the foldout. It can be seen that clusters of certain feature types appear to occur. At this point, no analysis of clustering has been undertaken. Certain observations can be made, however. Features of Type A, the large "storage units" cluster on the rise and slightly down slope from the rise at the center of the investigated area. Three of the four Type B features are situated on the north slope of the site while the fourth is on the south slope. The slope in these areas is relatively steep. Type C, E and F features occur throughout the entire site, both on the crest of the hill as well as on both slopes.

It can be seen from various site maps that quite a bit of intrusion occurs. This seems to indicate the reuse of site areas after the abandonment of some of the subsurface features. Features of various functions are found to overlap. Radiocarbon dated features do not cluster in any one portion of the site. Some of the earliest dates are on the north slope, although one is on the south slope. The latest dates do appear to be generally located on the south slope of the site.

Discussion of Subsurface Features

The aboriginal subsurface features identified during the data recovery operations conducted at the Delaware Park Site obviously represent a socio-economic function of some importance to the prehistoric occupants of the site. These features, which apparently are associated with the major or primary occupation, or sequence of occupations, of the site have been described, categorized and carefully examined for content. The spatial distribution of the different feature classes has been plotted and attempts have been made at determining feature function. This latter question must be further discussed.

Most aboriginal archaeological sites within the Middle Atlantic coastal region that are found to contain large numbers of subsurface features are associated primarily with late prehistoric, food-producing cultures, in some cases with ethnohistorically-identified peoples. Assumptions are made that the subsurface features (pits) were utilized for the storage of the large surpluses of plant foods derived from horticultural activity. In some cases subsurface features are associated with surface structures (usually domicles) and are interpreted as winter storage caches for use by permanent occupants of the site.

The present indications are that earlier periods of occupation within the Middle Atlantic coast were based on the procurement of natural food resources although it appears that the knowledge of food cultivation techniques was present in the area. The archaeological evidence will not support the contention that food production techniques provided even a major part of the aboriginal diet prior to the Late Woodland Period. Evidence for a shift in subsistence/settlement systems in the area is not found prior to this time (in the Delmarva Peninsula during the Slaughter Creek Phase of the Late Woodland Period - see Griffith and Artusy 1975:8).

The Delaware Park Site appears to be an anomoly. The radiocarbon dates obtained from charcoal found within the matrices of subsurface features indicate a major occupation of the site during the Early/Middle Woodland Period. The almost 200 subsurface features, 35 of which appear to have been large storage units, can not be explained as being associated with a Late Woodland food-producing cultural manifestation. What then is the explanation for this seeming anomoly?

A factor that has only been touched upon earlier in this report is that of the distribution of the subsurface features within the data recovery area and within the Delaware Park Site as a whole. The limits of occupation at the site exceed that area selected for intensive investigation. During an earlier reconnaissance survey of the proposed ROW for the State Route 7 improvements project it was determined that the Delaware Park Site reached from the east edge of the right-of-way to the banks of the White Clay Creek. Approximately one fourth of the site was within the construction easement and subsequently subjected to data recovery operations. The remainder was only partially investigated through surface examination.

It is suggested that the feature functions interpreted do not represent the total feature functions of the aboriginal occupants of the Delaware Park Site. It is possible that the aboriginal occupation at the Delaware Park Site may have been spatially differentiated and that specialized activity areas existed in separate parts of the occupation area. A review of the site description presented indicates that various feature types usually associated with a prehistoric manifestation are not present within the data base recovered from the intensively investigated portion of the site.

By way of review, during the earlier discussion of feature function it was suggested that Feature Types A and D probably served as storage units; that Feature Type B may have been a part of a structure (perhaps a domicile, a steam bath or a specialized shelter); that Feature Type C was most likely associated with fire; and that the remaining types appeared to be domestic activity areas of some sort. No other features, surface or otherwise, were found during the careful examination of the site.

Noticeably absent from the archaeological record at the Delaware Park Site are post-mold patterns, surface hearths and graves, among other features. It is possible that some of these expected activities were carried out in another part of the Delaware Park Site (outside of the investigated area). It is unlikely that all evidence of these activities would have been destroyed through natural or human factors. It is also possible that these functions were present within the excavated area but have been misidentified.

Whatever the explanation for this apparent absence of certain expected data categories, the archaeological record at the Delaware Park Site is incomplete and not representative of the entire spectrum of activities carried out at the site. Nevertheless, much has been learned from this investigation and can be reviewed below.

The presence of the large, silo-shaped, features of Type A, as well as the smaller versions classed within Type D, indicate that a major function carried out at the Delaware Park Site was the storage of some surplus material, most probably foodstuffs. If this inference is correct, it is of importance to determine just what food resources were being exploited for storage and what types of socioeconomic systems were present to manage the food surpluses. The content of many of the Type A and Type D features were carefully examined through soil flotation, phytolith analysis, soil chemistry, and palynology. No evidence for the exploitation of cultivated food plants was found. However, a wealth of natural plant remains were identified, an indication that floral food procurement activities were of major importance in the associated subsistence system.

The most prevalent plant material present in the examined samples was nut hulls. Identified were acorns and probably hickory nuts or chestnuts. These natural resources were suggested in the predictive model developed as a part of the Research Design (see Appendix A) as potentially a major food source. The storage procedures utilized by aboriginal man are not known but processing activities used are described in ethonohistorical sources. Surface roasting beds, which would be represented archaeologically by large concentrations of fire-cracked rock, were utilized to crack-open and cook nuts and

acorns. Such roasting beds have not been found at the Delaware Park Site although large amounts of fire-cracked rock are present as fill in subsurface features. Sites in which these types of surface features have been found are usually undisturbed by slope wash and/or plowing activities. The storage of processed nut foods within the Type A and D features is possible but can not be verified through the Delaware Park Site data base.

Another food resource found to be used at the site is that of plant greens, roots, fruits, etc. Again, the lack of evidence that these were actually stored in the subsurface features of Type A and D must be noted. Fish scales, indicating the procurement of fish, perhaps from the White Clay Creek, and the presence of faunal food procurement and processing tools in the inventory also do not lend support to the inference that these features were storage units.

The Type C feature discussion suggested the possible use of these as earth ovens or deep hearths. Also, Feature Types E and F may have had a similar function as domestic and food processing activity areas. No indication that any of these features were associated with lithic manufacturing, woodworking, ceramic production, or any other such non-food processing activities has been noted. Although bone material is not preserved at the Delaware Park Site, it is unlikely, due to their small size, that these features served as graves.

In order to do justice to speculations offered by various members of the investigative team during the data recovery operations the following list of suggested feature functions is offered for the record.

Type A - storage units (inverted silos), animal traps, mushroom cellars, domicles for winter occupation, graves, cisterns, plant sprouting areas, refuse pits,

Type B - semi-subterrainean house pits, steam baths, menstrual huts, storage areas, wild-fowl hunting blinds,

Type C - earth ovens, hearths, pottery kilns, lithic heat-treating hearths, refuse pits, tanning basins,

Type D - storage units (smaller version of Type A), same as Type A,

Type E - bottoms of graves, bottoms of hearths,

Type F - animal burrows, post-holes, ovens,

Feature/Artifact Associations

The purpose in attempting to associate certain functional artifact types with specific feature types is to determine the function of the features and to define areas within the Delaware Park Site devoted to specific activities at certain times during its occupation. The distribution of artifact functional types appears to be rather random and it has not been possible to associate specific artifact types with features. This problem has been addressed before and will be discussed at this time.

Artifact types can be relatively easily defined based on attributes of size, shape, material, manufacturing technique and evidence of useage. These criteria stand alone, separate from provenience patterning - a characteristic which is often used to support or "validate" intepretations of function based on the above attributes. At the Delaware Park Site the factor of provenience does not appear to lend itself to confirmation of functional intepretations. The nature of the site may be a major factor in the apparent homogeneity of artifact distribution. The site seems to have been intensively occupied over a long period of time. During these sequential occupations subsurface activity by the occupants appear to have considerably disturbed patterns of use by earlier occupants. The mixing of artifactual material and the intrusion of later features into earlier features are factors that may explain why the lack of provenience patterning is so obvious at the Delaware Park Site.

Provenience patterning, or associations between artifact and feature types, has been searched for intently during the analysis of the data base. General statements can be made that may help to illustrate the lack of patterning. Fire-cracked rock, one of the most abundant of artifact types recovered, tend to occur in larger amounts in features of Type A. When this statement is analyzed it does not contradict the earlier statements about the lack of provenience patterning at the site. Feature Type A is the largest feature type in terms of volume of fill. It not only contains the major portion of the recovered fire-cracked rock but also contains the largest number of all other artifact types found at the site. Projectile points, a very useful diagnostic category for interpretive purposes, also reflects the same patterning, ie. the majority were found in features of Type A.

Ceramics occur in all feature types, even those which, based on the evidence provided by radio-carbon dates, are the earliest type found at the site. Other artifact types, as well as evidence of floral and faunal remains, repeat this general patterning of large numbers of items in larger feature types. The artifact inventory and the listing of feature types will allow the skeptical reviewer to determine if any patterning exists. Perhaps more sophisticated analytical techniques will reveal such patterning at the Delaware Park Site.

Functional Activity Areas

The Delaware Park Site data base did not reveal any provenience patterning in terms of feature/artifact associations nor did it reveal patterns of spatial activity utilization. The project area, as pointed out earlier, did not encompass the entire identified Delaware Park Site. Those areas investigated appear to have been utilized by prehistoric occupants for similar economic activities thoughout the period of occupation. It has been pointed out that certain types of artifacts, usually expected at major base camps, do not exist in the Delaware Park Site data base.

This possibility should be considered in any future research designs developed for further investigation at the Delaware Park Site. It is suggested that an area of possible different social and economic function may be found to the stream-side of the project area (construction easement ROW). It is also possible that further activity associated with the aboriginal utilization of the Delaware Park Site may have existed in the areas destroyed by the construction of the abandoned railroad spur and storage yard. Figure V-6 summarizes the distribution of artifacts as revealed through the 1980 controlled surface collection, no pattern was noted.

Subsistence/Settlement Patterning

The position of the Delaware Park Site in the overall picture of prehistoric utilization of the "fall line zone" of New Castle County, Delaware is one that can be further addressed on the basis of the information obtained during the investigations at the site. The Delaware Park Site is located near the upstream limit of tidwater in the Christiana River/White Clay Creek drainage system. It lies only a few miles south of the fall line and about six miles upstream from the Delaware River. The immediate area is one of potential high resource procurement opportunities and, it can be expected, this factor should be reflected in the archaeological record at the Delaware Park Site.

At the risk of repitition the potential resource procurement activities can be reviewed. The Delaware Park Site is situated adjacent to a white water stream flowing out of the hills of the Piedmont. The stream, in its natural state, would have served, and does to an extent, as a spawning area for thousands of anadromous fish during the spring fish runs. Consequently, the site appears to be ideally located as a fish procurement station. As was pointed out through various forms of analysis (see Appendices D, E, F and G) the site was, and is, located near areas of marsh or swamp vegetation and fauna. This proximity to wetland areas would have made the site ideally located for the procurement of the food resources to be found in abundance in such areas. Also adjacent to the site are large expanses of relatively well-drained highlands, a base for wooded environments containing other types of resources. The well-drained woodlands of the area would have provided abundant nut crops as well as mast-dwelling faunal forms (see Thomas et al 1975). Finally, the proximity of the site to more specialized areas of resource procurement on the shores of the Delaware River and the lower Christina River and in the hills of the Piedmont, would have made the Delaware Park Site a strategic location for a base camp for transient hunters and gatherers.

Due to the fact that the Delaware Park Site is located within a short distance of another well-known prehistoric archaeological manifestation, the Clyde Farm Site, a short discussion of the relationship between the two is in order. In the Research Proposal (see Appendix A) mention was made of the intensity of occupation and the duration of use of the Clyde Farm by aboriginal peoples. The site occupation seems to have far exceeded that of the Delaware Park Site, yet, no evidence of such a high intensity of utilization as found at 7NC-E-41 has been found at the Clyde Farm. It is possible that both sites were simultaneously occupied and even that both served as base camps at the same time. This interpretation, however, is highly unlikely.

It is suggested that the Delaware Park Site was a more intensely occupied site used during a more limited period of time and that the Clyde Farm, primarily because of its location at the confluence of the White Clay Creek and the Christina River at Churchman's Marsh, was an area of general hunting and gatherering activities. It is possible that an analysis of the artifactual material from the Clyde Farm will reveal more about the nature of its many occupations. Such an analysis will, of course, add more to the understanding of the picture at the Delaware Park Site. The nature of the relationship between the two sites is one that should be given attention in the future.

In general, it appears that the Delaware Park Site served as a major base camp for a limited number of occupational periods during the Early and Middle Woodland Periods. These occupations seemed to have utilized the Delaware Park Site as a multi-seasonal base camp from which transient excursions to other nearby procurement areas were scheduled. The Delaware Park Site served as a processing area and as a storage area used during the long term use of the site as the major occupation of the communities involved. It is likely that the site was occupied for the full year.

If this proves to be the case then evidence must be sought in the immediate area of those aspects of the socioeconomic system that are not represented in the data base gathered during the investigations of 1980. Evidence for dwelling sites, mortuary areas and certain activity areas such as nut processing, fish processing and related activities should be found. This brief discussion should be considered as a challenge to future researchers and not a recommendation for further work at the Delaware Park Site.