CONTRACT NO. 68-W9-0051

HIGGINS DISPOSAL SERVICES
Town of Kingston
Somerset County, New Jersey

Work Assignment No. 012-2L3C

FINAL STAGE 1A ARCHAEOLOGICAL SURVEY

Remedial Planning Activities at Selected
Uncontrolled Hazardous Substance Disposal Sites
USEPA Region II (NY, NJ, PR, VI)

Malcolm Pirnie, Inc.
104 Corporate Park Drive
White Plains, New York 10602

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1.0 INTRODUCTION

This report presents the results of a Stage Ia archaeological survey of the Higgins Disposal Superfund Site (HDS), Franklin Township, Somerset County, New Jersey (Figures 1 and 2). The Stage Ia survey was conducted as part of the remedial investigation and feasibility study (RI/FS) at HDS. The archaeological survey was conducted, and this document prepared, in accordance with the United States Environmental Protection Agency (EPA) cultural resource survey procedures for Superfund Sites, 36 CFR 800, Section 106 of the National Historic Preservation Act, and the EPA publication CERCLA Compliance with other Laws Manual: Part III. Clean Air Act and Other Environmental Statutes and State Requirements. The objectives of this study were to assess the likelihood that possibly significant cultural resources are present within the project area and to recommend any necessary further investigations.

Portions of the present project site have been archaeologically evaluated in two previously conducted cultural resource investigations. The extreme northern portion of HDS was formerly part of the "6.91-Mile Milltown 'E' Loop of the Liberty Pipeline Upstream Facilities Temporary ROW and Workspace Expansion" project area (Louis Berger and Associates 1992). The second cultural resource survey evaluated the proposed Route 92 alignment corridor, part of which extended through portions of the central and southern sections of HDS (Federal Highway Administration 1986a and 1986b). These studies are discussed further in this report.

1.1 PROJECT AREA DESCRIPTION

The project site is an irregularly shaped parcel totaling approximately 37.6 acres in size located within Franklin Township, north of the unincorporated Village of Kingston (Figures 1 and 2). It is situated east of Laural Avenue (Kingston-Rocky Hill Road). The Borough of Rocky Hill is located approximately one half mile to the northwest. The project site is currently used as an equestrian center, called Hasty Acres Riding Club. The mid to late nineteenth century D. Comfort/C.H. Moore house, currently the residence of Clifford and Lisbeth Higgins,
is located in the west central portion of the project site near Laurel Avenue (Plate 1).

The project area is located on relatively flat plateau-like terrain approximately 1,500 feet east of the Millstone River. The plateau's maximum elevation is approximately 120 feet above mean sea level (Malcolm Pirnie 1992:3-2). It slopes gradually at the western boundary of the project area and more rapidly at the northern and southern borders. Dirty Brook, a tributary of the Millstone River, flows along the northern boundary of the project area (Plate 2). This stream has been redirected and its flow modified due to the installation of the Liberty Gas Pipeline across Dirty Brook in this area. In addition, a recently constructed roadway on Trap Rock Industries property, extending around the northern and eastern perimeters of the site, may have affected the flow of the stream.

A second Millstone River tributary flows along the southern boundary of the project area; portions of it being within the project site and other sections being immediately south of the property boundary (Plate 3). The flow of this tributary is currently seasonal and intermittent. It may have flowed throughout the year prior to the extensive land disturbance that apparently occurred on the property south of the present project area. This disturbance may have affected the flow of the stream. On historic period maps (see section 4.7), the stream is indicated which may suggest that it was formerly more substantial than it is currently. For convenience sake, the unnamed stream will be referred to in this work as "Higgins Brook" after the current owner of the property.

North of "Higgins Brook", are two fields currently used as pasture. The landscape, after rising rapidly for a short distance from the brook (the start of the small plateau), becomes generally level but undulating (Plate 4). The undulating ground produces numerous small, knoll-like topographic features within the pastures which are bordered, in part, by trees and brush (Plate 5).

North and east of the pasture fields are clustered the structures present within the project area. In addition to the former Comfort/Moore residence, outbuildings and other structures are present within the project site:

- A barn and several sheds are located in the north central section of the site. East of the barn is a vehicle maintenance building. A large indoor equestrian center is located in the central portion of the site.
• The transfer station and compactor shed [used in conjunction with the operation of a landfill] are behind the indoor equestrian center (Malcolm Pirnie 1992:2-2).

The landfill occupies an area of approximately 200 feet x 100 feet southwest of the transfer station (Malcolm Pirnie 1992:2-2).

The Comfort/Moore residence has apparently undergone extensive alterations since its construction. A large subsurface brick and concrete cistern is located adjacent to the northeast corner of the house (Plate 6). According to Ms. Linda Kulley, a daughter of Clifford Higgins, an outhouse was formerly located northeast of the cistern, adjacent to a pasture fence and immediately west of a currently standing shed (Ms. Linda Kulley: Personal Communication, October 21st, 1992). No evidence of the outhouse is currently visible on the surface.

The standing barn and adjacent large shed/barn are located northeast of the Comfort/Moore house. Their appearance suggests that they were constructed in the nineteenth century (Plate 7).

North of the barns is another pasture bordered on the west by trees and scrub vegetation and on the north and east by an entry road to the property (Plate 8). The pasture slopes steadily downward from the residence and barns towards the road. North and east of the road are two man-made agricultural ponds (Plate 9). Dirty Brook is located immediately northeast of the northernmost of these ponds. The area around Dirty Brook is low-lying and covered by trees and wetland vegetation (Plate 10). It appears to have been disturbed by the installation of the Liberty Gas pipeline (see Louis Berger and Associates 1992). A relatively level field is located east of the southernmost pond, adjacent to the eastern border of the project site.

North and east of the barns and other structures, along the project site's eastern border, the landscape slopes downward towards the southernmost pond and adjacent field. This area is covered by trees and scrub vegetation. The size of most of the trees is small and the density of tree growth is low. This suggests that this portion of the project site had previously been cleared and that the present woodland has developed fairly recently.

Three dirt roads are located within the project area. They probably represent former farm roads and may date to the mid-nineteenth century or earlier.
1.2 METHODOLOGY

This Stage Ia archaeological survey involved documentary research on the history and prehistory of the project area and a pedestrian reconnaissance of selected portions. Research for the project was conducted at the New York Public Library, Local History, Map, and General Research Divisions; Elmer Holmes Bobst Library, New York University; the Somerset County (Bridgewater) Public Library; the Lucy Jacobs Memorial Library (Borough of Rocky Hill); the South Brunswick Public Library; the Franklin Township Public Library; the Somerset County Historical Society; the Somerset County Soil Conservation Office; and the Office of New Jersey Heritage.

The pedestrian reconnaissance was conducted on October 21st, 1992.

A request for technical assistance (search of site files; opinions of sensitivity of project area; etc.) was made to the staff of the Office of New Jersey Heritage. A reply has not been received from that office as of the writing of this report. A visit was made to the Office of New Jersey Heritage to conduct research on previous archaeological investigations conducted in the project vicinity and on the location of local prehistoric sites.

In addition, during the course of research I met in person or spoke by telephone with the following persons.

Mr. Jonathen Gell, State of New Jersey, Office of New Jersey Heritage;
Mrs. Millie Matyola, Somerset County Historical Society;
Mr. John Matyola, Somerset County Historical Society and town historian of Bridgewater Township;
Ms. Liza Miller, State of New Jersey, Office of Environmental Protection.
Mrs. Lisbeth Higgins;
Ms. Linda Kulley, daughter of Mr. and Mrs. Clifford Higgins;
Ms. Dianne Parisi, daughter of Mr. and Mrs. Clifford Higgins.

Based on the documentary research and pedestrian reconnaissance the archaeological sensitivity of the site was assessed. Assessment of prehistoric period sensitivity was based on the location of known archaeological sites reported in the literature as well as a consideration
of the topographic and physiographic characteristics of the project area. Assessment of historic period sensitivity was based on an analysis of eighteenth to twentieth century maps as well as a review of secondary sources.
2.0 PROJECT AREA GEOLOGY AND SOILS

The project area is located within the Piedmont Lowlands physiographic province (Figure 3) which is bounded on the north by the New Jersey Highlands and on the south by the inner lowland of the Coastal Plain (Figure 3).

2.1 GEOLOGY

The Piedmont Lowlands make up about one fifth of the land area of New Jersey (1,500 miles) and consist of gently rolling terrain, generally between 100 and 400 feet in elevation, which gradually slopes to the southeast (Wolfe 1977:207 and 244). The undulating surface is interrupted by a series of intrusive ridges, 450 to 879 feet in elevation, and by slightly lower, plateau-like topographic features. The rolling lowlands are chiefly underlain by Triassic and Jurassic age shales, siltstones, and sandstones of the Brunswick Formation of the Newark Group while the ridges are composed of basaltic lava flows and Rocky Hill diabase traprock (Wolfe 1977:207). The plateau-like features developed on erosion resistant Lockatong Formation argillites (Wolfe 1977:244). The project area is located on one such small plateau-like feature.

2.2 SURFACE GEOLOGY

The Piedmont Lowlands, were greatly affected by the Wisconsin glaciation. Glacial drift covers most of the lowland province from the New York State line to the terminal moraine of the Wisconsin glaciation. The moraine extents roughly from Perth Amboy to Metuchen, northward to Summit, and from there northwestward to Morris Plains and Troy Hills (Wolfe 1977:263). South of the moraine glacial drift from earlier glaciations (Kansan or Jerseyan age) is sporadically found (Wolfe 1977:262).

In addition, glaciofluvial events created kames, kame terraces, outwash plains, and eskers within the Piedmont Lowlands. In the project vicinity, glaciofluvial gravels are present near Kingston in the Millstone, Stony Brook, and Carter’s Brook Valleys (Wolfe 1977:262).
2.3 FLORA AND FAUNA

The two predominant pre-contact period habitats present within the Piedmont Lowlands were freshwater marshes and upland forests (Robichaud and Buell 1973:106). The forests are described as Oak-Chestnut Forests composed primarily of mixed oaks (white, red, and black) with some chestnut trees also present on drier slopes (Robichaud and Buell 1973:106). Beech, several varieties of hickory, sugar maple, white ash, and black cherry would also have been numerous (Shelford 1974). Both marsh and forest habitats are still found in less developed areas within the Piedmont Lowlands.

Pre-contact faunal species present within the forests of the Piedmont Lowlands include game birds, small mammals, deer, bear, and during at least a portion of the prehistoric period, elk (Shelford 1974). In the province's freshwater streams, marshes, and lakes were found mussels, fish, certain amphibians and reptiles, migratory fowl, and semi-aquatic mammals (Shelford 1974). Anadromous fish species would have been present seasonally within the Piedmont Lowlands area via the Raritan and Delaware estuaries. A daughter of the present owner of the project area, Ms. Linda Kulley, states that in her youth 'herring' still seasonally entered Dirty Brook from the Millstone River, a tributary of the Raritan River, to spawn (Ms. Linda Kulley: Personal Communication, October 21st, 1992).

A 1679 account of travel along the Assunpink trail (present day State Route 27 - see Section 3.3) by two Labadists, Jasper Danckaerts and Peter Sluyter, provides an indication of the habitats present in the project vicinity during the Contact Period:

The road from here [New Brunswick] to the falls of the south [Delaware] river... is nothing but a footpath for men and horses between the trees and through small shrubs, although we came to places where their were large plains, beset with a few trees, and grown over with long grass... The land we road over was neither the best, nor the worst. The woods consist of reasonably straight oak and hickory, with some chestnut, but they are not very close. They would, therefore, afford tolerably good tillable land; but we observed the best pieces lay here and there, along the creeks. We saw many deer running before us, out of the road, sometimes five or six together, starting off at the sound of the horses. [We came] to a high, but very rocky hill, which is very difficult for man or beast to walk upon. After crossing it, you come to a large valley [the Millstone or Stony Brook valleys], the descent to which is very steep by a very shrubby road (Danckaerts and Sluyter 1867:171).
Danckaerts and Sluyter's account is probably the earliest description and identification of the area as "Rocky Hill" (Menzies 1969:40).

2.4 SOILS

The soil associations mapped by the United States Soil Conservation Service for HDS are Birdsboro silt loams, Penn shaly silt loam, and Rowland silt loam. Birdsboro silt loam soils are deep, well drained soils of moderate permeability that are found in major stream valleys, particularly terrace areas. They are usually found on level terrain or on slopes of up to 12 percent. Birdsboro silt loam soils developed in old stream sediments of red sandstone, shale, and siltstone. Gravels may be present with these soils. Birdsboro soils are usually found above areas of normal stream overflow (Kirkham 1989:13). Bedrock is usually found six to ten feet deep in areas covered by these soils (Kirkham 1989:13-14).

Penn shaly silt loam soils are moderately deep and well drained soils of moderate to rapid permeability. The soil type is derived from the weathering of shale, siltstone, and fine-grained sandstone. Penn shaly silt loam soils are found in upland areas on gently undulating terrain with slopes ranging from two to 12 percent. Bedrock is usually found at depths of twenty to forty inches in locales covered by this soil type (Kirkham 1989:40).

Rowland soils are alluvial soils found in the vicinity of rivers and streams, primarily floodplain areas. The soils are deep and somewhat poorly drained to moderately drained; soil permeability is low. In areas covered by this soil type, the water table is usually found at a depth of one to three feet and bedrock is usually found at a depth of four to eight feet (Kirkham 1989:46).

A copy of the United States Soil Conservation Service soil survey map, which includes HDS, and associated legend is included as Appendix A to this report.
3.0 DOCUMENTARY RESEARCH - PREHISTORIC PERIOD

3.1 BACKGROUND CULTURE HISTORY

The prehistory of the Somerset County region includes the PaleoIndian, Archaic, Transitional, and Woodland periods. The PaleoIndian period (10,000-8,000 B.C.) represents the earliest occupation of this area. The Archaic (8,000-1,700 B.C.) refers to a time prior to the introduction of horticulture and pottery manufacture and is divided into Early, Middle, and Late periods. The Transitional period (1,700-1,000 B.C.) witnessed a gradual change in Archaic lifestyles with the development of "Woodland" period traits. The Woodland period (1,000 B.C.-1,600 A.D.), which is characterized by the use of pottery and reliance on horticulture, is also divided into Early, Middle, and Late periods.

The PaleoIndian period corresponds with the end of the Wisconsin glaciation. Sea levels were lower during this period and the subsequent Early Archaic period due to sea water being trapped in remaining glacial ice. During the Wisconsin era the area currently known as Somerset County was unglaciated. It was situated immediately south of the southernmost extent of the glacial ice. A tundra environment characterized the landscape of the area during the late glacial and immediate post-glacial periods. As the glaciers retreated northward water drained from the melting ice sheet creating large inland lakes, bogs, and marshes. One of the larger of these lakes, Glacial Lake Passaic, was located along the northern border of Somerset County. The tundra and lacustrian landscape was rapidly succeeded by forest. Local forests consisted primarily of spruce and fir with small amounts of oak and other deciduous species (Snow 1980). Many faunal species now extinct or no longer native to the area were present. These included mammoth, mastodont, horse, caribou, giant beaver, sloth, elk, moose, and peccary (Wolfe 1977; Snow 1980; Kraft 1986). The remains of three mammoths have been found within the central New Jersey region. Two were discovered at Middleton and the third at North Plainfield (Wolfe 1977:168).

Little is known about cultural activities during the PaleoIndian period although it is generally accepted that the region was first inhabited by man approximately 10,000 B.C. (Funk 1976; Ritchie 1980). Small nomadic bands of hunters and gatherers subsisted probably on the
animal species mentioned previously as well as small game, certain riverine resources, and a
variety of plants. Population density, however, was very sparse. Three PaleoIndian sites have
been identified in New Jersey: the Plenge site located on a terrace of the Musconetcong River
in Warren County (Kraft 1973 and 1977a); the Zierdt site located on a sandy terrace of a small
brook within the Delaware River drainage in Sussex County (Werner 1964); and the
multicomponent Turkey Swamp site located on the floodplain of a tributary of the Manasquan
River in Monmouth County near Freehold (Cavallo 1981; Marshall 1982). Other PaleoIndian
sites in the project region are located in Staten Island (Port Mobil site), Pennsylvania
(Shawnee-Minisink site), and the mid Hudson Valley region of New York State (Dutchess
Quarry Cave, Kings Road, West Athens Hill sites; see Funk 1976; Ritchie 1980; Marshall
1982).

A variety of functionally diverse site types have been identified for the PaleoIndian
period based upon intersite variability of artifact assemblages and environmental settings.
These include base camps, quarry workshops, rockshelter habitations, open air hunting camps,
kill and butchering sites, and other temporary camps (Funk 1972; Moeller 1980; Gramley
1982). Most evidence of PaleoIndian activity, however, is represented by scattered surface
finds of Clovis Fluted points, a diagnostic PaleoIndian artifact (Funk 1976:205). Almost all of
the more than two hundred fluted points found throughout New Jersey were recovered as
surface finds (Marshall 1982). Most of these finds were recovered from the Delaware River
valley and drainage, however, eighteen have been recovered from the Piedmont Lowland
province (Marshall 1982). Within the project vicinity, two fluted points were found on the
south side of Stony Brook in Mercer County (Marshall 1982:32-33).

Information from known PaleoIndian sites in the New York-New
Jersey-Pennsylvania-Connecticut region suggests that high, well-drained areas near streams or
wetlands were the areas preferred for occupation. Rock shelters, areas near lithic sources, and
lower river terraces also were subject to PaleoIndian occupation and use (Funk 1976; Moeller

During the Archaic period, the environment changed from a coniferous forest to an
increasingly deciduous forest which achieved an essentially modern character by 2,000 B.C.
(Salwen 1975). While Archaic cultures have been traditionally thought of as reflecting a
forest-based adaptation, more recent research has produced a picture of an increasingly varied subsistence pattern based on the seasonal exploitation of various faunal and floral resources (Ritchie and Funk 1973; Funk 1976; Kraft 1986).

Archaic hunters and gatherers were still nomadic and organized into small bands which occupied localities along the Atlantic coast and estuaries, including the Raritan River, and their tributaries during the warmer months and interior regions during the colder months (Ritchie 1980; Kraft 1986). Population growth throughout the period resulted in an increase in both site density and the number of functional site types represented in the archaeological record. Site types recognized for this period include spring fishing camps along major streams, fall open air hunting camps, rockshelter habitations, shellfish collecting and processing stations, mortuary sites, quarry and workshop sites, and semi-permanent villages (Brennan 1974; Dincause 1976; Barber 1980; Ritchie 1980; Snow 1980; Weigand 1980; 1983; Kraft 1986). Ritchie states that most Archaic sites were small and multicomponent, lacking traces of substantial dwellings, fortifications, storage pits, and graves (Ritchie 1980:32 and 35). Evidence of house patterns attributable to the Late Archaic period, however, has been reported from the Howard site in Old Lyme, Connecticut near Long Island Sound (Pfieffer 1983).

Most information concerning the Archaic period comes from Late Archaic sites since evidence for early and Middle Archaic sites in the project region is almost as scarce as for PaleoIndian sites (Kraft and Mounier 1982). The rarity of Early Archaic (8,000-5,000 B.C.) sites is probably due to the dominance of a coniferous forest in the region during that period (Ritchie 1980). Such environments are inhospitable to human exploitation, offering few plants and animals for consumption. Early Archaic components, however, have been identified in the project region at the Old Place, Wards Point, and Richmond Hill sites on Staten Island and along the Hudson River shore in Westchester County, New York (Ritchie and Funk 1971, 1973:38-39; Brennan 1977). Early Archaic life styles and adaptations are generally considered to be similar to PaleoIndian lifestyles and adaptations (Gardner 1974).

During the Middle Archaic (5,000 - 2,500 B.C.) the region's coniferous forests receded and were replaced by deciduous forests which provided humans with more exploitable resources. Sites dating to this period tend to be located on floodplains and low terraces of major rivers and streams and in association with marsh, swamp, and estuarine environments
(Louis Berger and Associates 1992:8). Although rare (or rarely recognized) in New Jersey (Kraft and Mounier 1982), Middle Archaic components have been identified in the mid-Hudson Valley region at the Shagabak site, the Bannerman site, the Sylvan Lake Rockshelter site, and the South Cruger Island site (Brennan 1974; Dincauze 1976; Funk 1976; Barber 1980; Starbuck and Bolian 1980; Wiegand 1980, 1983).

Human population, site density, and site size increased in the New Jersey region during the Late Archaic (2,500 - 1,500 B.C.). Some sites appear to have been occupied on a semi-permanent basis. Late Archaic sites have been found in low-lying areas in close proximity to area estuaries and along major interior streams. A major Late Archaic habitation and mortuary cremation site was identified at the Savich Farm in Marlton, New Jersey (Regensburg 1971).

Sites dating to the Transitional Period (or Terminal Archaic; 1,500 - 1,000 B.C.) are most frequently found along the coast and major waterways (Funk 1976; Ritchie 1980; Vargo and Vargo 1983) although smaller sites are known from the interior (Funk 1976; Vargo and Vargo 1983). New and radically different broadbladed projectile point types appeared during this period as did the use, during the latter half, of steatite (soapstone) vessels.

During the Early Woodland period (1,000 B.C. - A.D. 1), the use of fired clay ceramic vessels gradually replaced the reliance on steatite vessels. Subsistence practices included a continuation of the hunting, gathering, and fishing of the Archaic but were supplemented by an increase in shellfish collecting. It has been suggested that this indicates a trend towards more sedentary lifestyles (see Funk 1976; Snow 1980). Evidence of Early Woodland occupation is fairly widespread in New Jersey (Kraft 1975; Williams and Thomas 1982).

Human populations during the Middle Woodland period (A.D. 1 - 800) gradually adopted a more sedentary lifestyle. Although it is generally felt that subsistence was essentially based on hunting and gathering supplemented by fishing and shellfish collecting (Williams and Thomas 1982), there has been speculation that domestication of various plants occurred during this period (Ritchie and Funk 1973; Snow 1980). Most Middle Woodland sites are located along the Delaware or Hudson Rivers or their tributaries although smaller inland sites are also known (Funk 1976; Ritchie 1980). Middle Woodland components in the project vicinity have been found at the Abbott Farm site near Trenton (Federal Highway Administration 1986).
By Late Woodland times (A.D. 900 - 1600) horticulture was the primary subsistence base (Ritchie 1980; Snow 1980). Late Woodland sites are relatively numerous in New Jersey. Large base camps/villages are usually located adjacent to major rivers. These were probably occupied on a permanent basis. Smaller inland sites, usually located near a water source, that were probably occupied on a seasonal or temporary basis have also been recognized (Funk 1976; Ritchie 1980; Snow 1980; Kraft and Mounier 1982; Kraft 1986).

Late Woodland subsistence apparently relied extensively on horticulture although hunting, gathering, and in some locations, shellfish collecting also continued to be practiced.

3.2 NATIVE AMERICAN-EUROPEAN CONTACT

The Contact period (A.D. 1600 - ca. 1750) is the time of the first large scale contacts between Native Americans and European colonists. By the latter part of the Late Woodland period Native American cultures began to resemble those of groups that were encountered by seventeenth century Europeans. At this time Native Americans of central New Jersey were part of the widespread Algonquian cultural and linguistic stock. Specifically they were a group of Unami speakers who migrated into New Jersey during Late Woodland times (Goddard 1978a; 1978b; Salwen 1978). The Unami speakers were a linguistic subgroup of the Lenape or Delaware whose English appellation derived from the river named in 1610 by Captain Samuel Argall of the pinnace Discovery in honor of Thomas West, Lord de la Warr, the second Governor of Virginia (Weslager 1967; Salomon 1982:15). The Munsee and the Unalachtigo were the other two subgroups of the Lenape. The Somerset County Native Americans encountered by European settlers spoke the northern dialect of the Unami language (Ruttenber 1872; Bolton 1975; Salomon 1982).

The Lenape consisted of autonomous, loosely related bands or lineages living in small family groups or hamlets (Kraft 1975:61). They never formed a politically united tribe. The origin of the name "Lenape" is unclear. Goddard (1978b:236) states that the name translates roughly as "real people." Salomon (1982:14) agrees in a general sense stating that the name means "the real men" or "common people." "Lenapehoking" (The Land of the Lenape) was reportedly the aboriginal name for the territory that they occupied (Kraft 1984:1).
Originally the name Lenape (and Delaware) was applied only to the Unami-speaking bands. By the mid-eighteenth century it had become associated with the Unami, Munsee, and Unalachtigo speaking bands which had migrated away from their traditional homelands and merged.

The Unami occupied most of the lands between northern Delaware and a line drawn from the headwaters of the Lehigh River in Pennsylvania to the Delaware water gap area to the Raritan River in New Jersey (Goddard 1978a:214). They composed a relatively large, loosely related group who shared the same totemic symbol, the turtle (Ruttenber 1872:47). According to Salomon (1982:14), the term "Unami" probably roughly translates as "turtle."

Unami settlements included camps along the major rivers with larger villages located at the river mouths (Salomon 1982; Kraft 1986). Small hunting, gathering, and agricultural sites were located in the interior. Despite references to such sites by early European explorers and settlers, few Contact Period sites have been identified in New Jersey (Williams and Kardas 1982).

Robert Juet, an officer on the "Half Moon", provides an account in his journal of some of the Contact Period lower Hudson Valley Native Americans who probably were Unami. In his entries for September 4th and 5th, 1609 he states:

This day the people of the country came aboord of us, seeming very glad of our comming, and brought greene tobacco, and gave us of it for knives and beads. They goe in deere skins loose, well dressed. They have yellow copper. They desire cloathes, and are very civill. They have great store of maize or Indian wheate whereof they make good bread. The country is full of great and tall oakes.

This day [September 5, 1609] many of the people came aboord, some in mantles of feathers, and some in skinnes of divers sorts of good furres. Some woman also came to us with hempe. They had red copper tabacco pipes, and other things of copper they did wear about their necks. At night they went on land againe, so wee rode very quite, but durst not trust them (Juet 1959:28).

The political, linguistic, and social relationships that existed among the various bands of Unami speakers will probably never be fully understood for a number of reasons. The native groups themselves had no fixed boundaries and "ownership" of particular areas may have
overlapped with use rights shared. EuroAmerican colonists also frequently misunderstood and misrecorded Native American associations with particular areas. Finally, early pressure on some Native groups by colonial expansion probably resulted in frequent shifts of villages and territories. Such confusion over relationships was particularly true for the bands inhabiting the relatively unexplored and unknown interior areas (Goddard 1978b; Kraft 1981).

What is known is that in political terms the Unami were divided into six main groups or chieftaincies and numerous smaller political and dialectic sub-groups and bands (Ruttenber 1872:47, 89-93; Goddard 1978b; Salomon 1982). Little is known about these divisions. The six main groups or chieftaincies, however, are recorded: Navisinks, Raritans, Hackinsacks, Aquackanonks, Tappans, and Haverstraws. Scholars have associated the Raritan group of the Unami with the area that now includes the project site (Ruttenber 1872:90; Hodge 1910:II:79; Bolton 1975). They were initially referred to as the Sanhikans or "Fire-workers" (Ruttenber 1872:90; Bolton 1975:58).

Knowledge of the exact territories that the various Unami bands inhabited is elusive. Traditionally, however, the Raritans were located in the valley of the Raritan River and its tributaries and from there east to the Atlantic Ocean and northeast to the Hudson River (Ruttenber 1872:89-90). DeLaet (1909) states that as of 1615 the Sanhikans "dwell within the Sandy Hook, and along the [Raritan] bay, as well as in the interior of the country." Their approximately location is indicated on the ca. 1650 Janssonius-Visscher map (Figure 4). This map also indicates a number of Native American villages located along the Raritan River and one of its tributaries (possibly Lawrence Brook) that were probably associated with the Raritans.

According to Bolton (1975:58):

The Raritan chieftaincy was a warlike and powerful group occupying the valley of Raritan River far back into the interior hill country. It is said that they comprised a score of subchieftaincies, and were divided under the control of two head sachems.

Ruttenber (1872:90) states that they were composed of twenty subchieftaincies and that "they were not a war like race, but peaceable in disposition, as became the totem which they bore."
According to Menzies (1969:12), the Mattawang was the Raritan subchieftancy that inhabited the Millstone Valley and surrounding area including the present project site. Cawley and Cawley (1942:15), however, state that this term was the Contact Period name for the Millstone River and supposedly translated as "hard to travel."

The Raritans were involved in a series of violent confrontations with the Dutch between 1640 and 1641. After peace was restored in the fall of 1641, most of the Raritans moved to the Kittatinny valley and mountain area in northwestern New Jersey (Ruttenber 1872:90; Bolton 1975:58; van der Zee and van der Zee 1978). Ruttenber states that the Raritans moved from the area for reasons additional to their hostilities with the Dutch. He states:

The district inhabited by a nation called Raritangs, is situated on a fresh water river, that flows through the center of the low lands which the Indians cultivate. This vacant territory lies between two high mountains, far distant the one from the other. This district was abandoned by the Natives for two reasons; the first and principal is, that finding themselves unable to resist the Southern Indians, they migrate further inland; the second, because this country was flooded every spring (Ruttenber 1872:90).

Although the Raritans were emigrating from their traditional homelands by 1642, their lands were not formally deeded to the Dutch and later the English until 1651 and 1664 (Ruttenber 1872:90). Some Raritans, however, apparently still resided in the project region late in the seventeenth century. The 1679 travel account by Jasper Danckaerts and Peter Sluyter (see Section 2.3) relates their encounter after a long period of heavy rain with some Native Americans along either the Millstone River or Stony Brook:

...we saw the houses of the Indians on the right and went to them partly for the purpose of drying ourselves, for though the rain seemed at times to abate it still continued, and partly to inquire the best way to go, in order to cross the large creek. We entered their dwelling where we dried ourselves and breakfasted a mouthful out of our traveling sacks. We presented the Indians some fish-hooks which pleased them. While we were in this house a little naked child fell from its mother's lap, and received a cut in its head, whereupon all who sat around that fire, and belonged to that household, began to cry, husband and wife, young and old and scream more than the child, and as if they themselves had broken their arms or legs. In another corner of this house, there sat around a fire, forming another household, a party whose faces were entirely blackened, who observed a gloomy silence and looked very singular. They were in mourning for a deceased friend. ...they offered us some boiled beans in a calabash, cooked without salt or greese, though they brought us our own kind.
of spoons to take them out with. It was the queen who did this, who was more dressed than the others. She gave us also a piece of their bread, that is, pounded maize kneaded into a cake and baked under the ashes (Danckaerts and Sluyter 1861:247-248).

Problems and conflicts during this period between New Jersey Indians and the Dutch resulted in the deaths of large numbers of Native Americans (see Washburn 1978). The introduction of European diseases, such as smallpox, further devastated local Native American populations. During the early years of European Contact, the total population of the Unami is estimated to have been approximately 6,500 individuals (Goddard 1978a:214). Others, however, feel that figure is low and an accurate number is closer to 10,000 (Nelson 1913). The population of the Raritan alone was estimated to be approximately 1,200 (Nelson 1913:252). By the year 1779, the total population of Unami speakers has been estimated to have been reduced to approximately 2,000 individuals (Goddard 1978a:214).

3.3 NATIVE AMERICAN SITES AND ACTIVITY IN THE PROJECT VICINITY

In order to evaluate the prehistoric archaeological potential of HDS we examined the archaeological literature as well as cultural resource reports on file in the Office of New Jersey Heritage and elsewhere. Research indicates that for the most part the prehistory of the the Somerset County area is relatively unknown. Although Skinner and Schrabisch (1913) reported no sites in Somerset County (Figure 5), their statement that there "must be more sites upon the Raritan and its affluents [including the Millstone River] than have been reported" indicates that they considered the existence of such sites probable. By 1941, some Millstone River sites had been identified by the Indian Site Survey (Figure 6; see Cross 1941). Those sites, plus other sites and artifact scatters in the general vicinity of the project area that have been identified subsequent to Cross' investigation, suggest that prehistoric activity may have occurred on the property.

The following are brief descriptions of the sites investigated by Cross (1941) in the general vicinity of HDS:
Munsell site (25-42-6-9-6,9)¹

This site is located on a gentle slope east of the Millstone River and south of Six Mile Run along the east side of Griggstown Road near Blackwell Mills in Somerset County. The site is multicomponent and has been interpreted functionally as a temporary camp (Cross 1941:30-31). The site is located less than five and a half miles northeast of the project site.

Stobbe sites 1 and 2

Both sites are located approximately a quarter mile northeast of Princeton Junction in Mercer County. Strobbe site 2 (28-12-5-5-2,3:2-8,9:6-1; 28Me5²), excavated during the Indian Site Survey (Cross 1941:31-34), is located west of the Millstone River, between that river and Bear Brook. It has been interpreted functionally as a multipurpose "camp site of semi-permanent occupation primarily occupied during the Late Archaic and Woodland periods" (Cross 1941:33-34).

Strobbe site 1 (28Me50) is located immediately west of Strobbe site 2, closer to the Millstone River (Federal Highway Administration 1986a). Both sites are located approximately five miles south of the project site.

Unnamed site (28-12-5-3-7)

This Middlesex County site is reportedly located adjacent to a marsh on the north side of the Millstone River across from the Stobbe sites and is possibly associated with those sites.

Surface finds were reportedly numerous there with steatite bowl fragments recovered (Cross 1941:225).

Stony Brook site (28-11-1-9-6:2-7-4)

This site is located on a slope adjacent to Stony Brook, a tributary of the Millstone River, in Mercer County. Surface finds recovered include projectile points, hammerstones,

¹New Jersey State Grid Coordinate number.
²New Jersey State Museum site number.
axes, celts, abradors, bannerstones, and flakes (Cross 1941:225). The site is located approximately eight miles southwest of the project area. According to Kraft (1977c:12) a number of other unreported sites are located along Stony Brook.

**Unnamed site (28-12-6-8-6,9)**

"Point, anvil, celt, [and] chips" were reportedly recovered from the surface of this site (Cross 1941:225) which is located immediately south of the Millstone River in Mercer County. The site is located approximately seven miles south of the present project.

**Unnamed site (28-13-7-1-5,6,8,9)**

This Mercer County site is situated on several knolls adjacent to a marsh on the southwest bank of the Millstone River. A small tributary of the Millstone River crosses the northern portion of the site. Surface finds there are described as numerous (Cross 1941:225; Kraft 1977c). The site is located approximately eight miles south of the HDS project area.

**Unnamed site (28-13-7-5-1)**

This site is located in Mercer County on the east side of a small tributary of the Millstone River. Points, an axe, and a drill were recovered from the surface of the site (Cross 1941:225) which is located approximately eight and a quarter miles southwest of the present project area.

**Unnamed site (28-13-7-5-3:6-1,4,5)**

Points, scrapers, knives and flakes were recovered from the surface of this site which is located adjacent to a swamp on the west side of the Millstone River in Mercer County. The site is located less than nine miles south of the Higgins project area (Cross 1941:225).

**Unnamed site (28-12-6-8-3,6:9-1,4)**

This Middlesex County site is located approximately seven miles south of the present project area. It is situated on four knolls approximately thirty feet north of the Millstone River.
Artifacts recovered from the surface include "points, hammerstones, bola stones, netsinker, scraper, knife, plummet, [and] pottery (Cross 1941:225; Lukenda 1962:2-4; Flammer and Lukenda 1963:11-16).

**Unnamed site (28:13-7-5-1)**

Projectile points, an axe, and flakes were reportedly recovered from this site (Cross 1941:225) which is located adjacent to a marsh on the north bank of the Millstone River. The site is in Middlesex County approximately seven miles south of the project area.

Other sites located in the project vicinity that were identified subsequent to Cross' (1941) survey are:

**Carter Site (28Mi113)**

This hunting/butchering site is located 2,500 feet northeast of the intersection of Ridge Road and Hostetler Access Road in South Brunswick Township, Middlesex County. It is situated on well-drained terrain approximately 500 feet east of Carters Brook. No diagnostic artifacts were recovered from the site (Federal Highway Administration 1986a) which is situated approximately one and a half miles southeast of the present project site.

**Madison site (no grid coordinate number)**

Formerly known as the Hart site, this multicomponent site revealed evidence of occupations dating from the Late Archaic to Early Woodland periods. The site is located west of the Millstone River approximately two and a half miles northwest of the project area.

**Trumm site (28-2-5-7-1)**

The Trumm site is located adjacent to the Madison site and may be associated with it. Evidence of occupations dating to the Late Archaic and Early Woodland periods were recovered there (Ashman 1970:5-9; Kraft 1970:119-120).

**Wychoff site (28Mi110)**

This Late Archaic and Late Woodland site apparently functioned as a hunting and
gathering camp. It is located north of Dey Road and east of Schalk Road in Plainsboro Township approximately four miles southeast of the project area.

**RCA sites 1 and 2**

(28-12-5-2-7:5-2,3 and 28-12-2-7-7; 28Me22) Both sites are located on the southwest bank of the Millstone River on property now or formerly owned by the R.C.A. David Sarnoff Research Center (Curbishley 1954; Lord 1964; Hemmings 1965:1-4; Engelke 1965:12-14; Kraft 1977c:13). Both sites have been interpreted as temporary hunting camps. They are located approximately four miles southwest of HDS project area.

**Soon Ring site** (no grid coordinate number)

This site is located on the Millstone River near Cranbury Neck Road (Weeks 1965:5,6; Kraft 1977c:13) approximately five miles south of the project site.

**Wellnitz Hill site** (28Mi90)

This multicomponent Late Archaic to Late Woodland site is located east of the Carnegie Lake portion of the Millstone River (Kardas and Larrabee 1984) approximately four miles southwest of the present project.

**Windsor Hollow site** (28Me126)

This multicomponent site revealed evidence of occupation dating from the Early Archaic to the Early Woodland periods (Federal Highway Administration 1986a:III-147). It is located on a knoll near the confluence of the Millstone River and Rocky Brook in East Windsor Township. The location is approximately nine miles southeast of the Higgins project area.

**Vacarro Sod Farm site** (28Me22)

This site, functionally interpreted as a base camp, is located south of Duck Pond Run and west of U.S. Route 1 in West Windsor Township. It was occupied primarily during the Late Archaic period although a small Late Woodland component has also been identified there.

**Delaware and Raritan Canal Aggregate site**

This site was identified in 1979 during an archaeological investigation of the proposed I-95 corridor (Federal Highway Administration 1979:19). It is situated on both sides of the Millstone River in Hillsborough and Franklin Townships. West of the river, the site is situated on a number of floodplain knolls. East of the Millstone River, the site extends from the Delaware and Raritan Canal to Oak Spring Road. Projectile points, including a stemmed point, and argillite and black chert flakes have been recovered from the surface of this site (Federal Highway Administration 1979:20).

**Yellow Bank site (28So73)**

This site was identified during the cultural resource investigation of the proposed Route 92 alignment corridor (Federal Highway Administration 1986a). It is situated in the uplands east of the Millstone River in Franklin Township, approximately 1,400 feet northwest of the junction of State Route 27 and Raymond Road. The environmental setting of the Yellow Bank site is similar to a portion of the present project area. The site is approximately 3.5 acres in size and lies on a gently sloping terrace east of a small tributary of Heathcote Brook. The site has been identified as a Late Archaic hunting camp. The soils at the site belong to the Birdsboro series which is one of the soil types present at HDS (Federal Highway Administration 1986a:III-126). The location of the Yellow Bank site is approximately a half mile southeast of the present project area.

**Lithic scatters**

A number of lithic scatters were also discovered during the Route 92 alignment cultural resource investigation (Federal Highway Administration 1986a:III-130-III-132). These scatters were discovered during controlled surface collection of selected areas along the proposed Route 92 corridor. Although portions of the present project area were within the corridor they were not subject to controlled surface collection (Federal Highway Administration 1986a). The lithic scatters identified during the investigation consisted of "small, isolated, highly diffuse
lithic" finds with the majority of them occurring on "well-drained uplands" (Federal Highway Administration 1986a: III-130), an environmental setting similar to that present at HDS.

Other evidence

Other evidence of Native American occupation has been found near the Village of Millstone on the old "Jacob Van Doren" farm (Menzies 1969:42). Other Native American artifacts have been recovered between Millstone River Road and the Millstone River in Hillsborough Township (Menzies 1969:42).

Other Native American activity in the vicinity of the project site is suggested by references to Contact period aboriginal trails in the area. Present day State Route 27, which crosses the Millstone River at Kingston, follows the course of the Assunpink trail. This trail was the primary route between the Raritan and Delaware Rivers (Snell 1881:42; Menzies 1969). Millstone River Road and Mount Lucas Road, west of the Millstone River, probably follow other aboriginal paths (Murphy n.d.:3). The use of these routes would have brought seventeenth century Native Americans into the immediate vicinity of the project area.

3.4 EVIDENCE OF NATIVE AMERICAN ACTIVITY WITHIN HDS

Evidence of Native American activity within HDS was recovered from one shovel test conducted in the northern portion of the property as part of the Liberty Pipeline cultural resource investigation (Louis Berger Associates 1992). One chert flake (weight: 0.2 g.) was recovered from a disturbed soil stratum in shovel test Q-10 which was excavated immediately east of the northernmost farm pond (Louis Berger and Associates 1992:Appendix B). Shovel test Q-10 and most of the other shovel tests excavated on the Higgins property as part of the Liberty pipeline cultural resource investigation revealed disturbed soil profiles:

consisting of fill deposits of clayey or silty loam containing angular crushed gravel and occasional brick fragments. Fill deposits extended to depths of as much as 50 centimeters under which truncated subsoils of sterile clay were observed (Louis Berger and Associates 1992:57).
The disturbances detected by the subsurface testing is probably the result of the excavation of the man-made ponds.

In a few shovel tests, an intact plow zone was encountered above the sterile subsoil (Louis Berger and Associates 1992:57).

3.5 ASSESSMENT OF ARCHAEOLOGICAL SENSITIVITY - PREHISTORIC PERIOD

The reported presence of Native American sites and activity in the vicinity of the project area and the other sites noted in Section 3.1 indicate that in general the vicinity of the project witnessed extensive Native American occupation and utilization. Kraft (1977c:15) states that the entire length of the Millstone River and surrounding area has high archaeological potential and should be considered an archaeologically significant area. Some of the sites and scatters in the project vicinity are located in upland environmental settings similar to that present at HDS.

The extensive use of the area by Native Americans is not surprising given the area's favorable topography (high ground and terraces overlooking the Millstone River, Dirty Brook, and "Higgins Brook"; low-lying, marsh-like areas and knolls) and physiography (Dirty Brook and "Higgins Brook"; well drained areas) and the resulting subsistence potential of the area (Millstone River and Dirty Brook; fresh water as an attraction for game; valley and terrace lands for plant gathering and/or agriculture, etc.). Areas having these characteristics within the present project site would have been excellent locations for temporary or semi-permanent camps oriented towards the exploitation of game animals moving along the plateau towards the Millstone River, Dirty Brook, or "Higgins Brook." The terrace-like areas and knolls may have been used for agriculture. The lack of extensive development of large portions of the project area, other than historic period agricultural use of the land (see Section 4.7), suggests that Native American archaeological sites could be present within it.

The recovery of a chert flake from one of the shovel tests excavated on the Higgins property by Louis Berger and Associates (1992) archaeologists suggests that Native American activity did occur within the project area.
Accordingly, the project area is considered sensitive for the possible presence of prehistoric archaeological resources.
4.0 DOCUMENTARY RESEARCH - HISTORIC PERIOD

4.1 SEVENTEENTH AND EIGHTEENTH CENTURY SETTLEMENT

On July 16th, 1640, Cornelius van Tienhoven, traveling through the Raritan Valley on a mission to the Raritan Indians for the New Netherland government, provided the first description of the Somerset County region. He described the area as well watered and the riverbanks cleared of forest where the Indians grew large quantities of maize, beans, and squash and opined that the land was "the handsomest and pleasantest country man can behold" (van Tienhoven 1909). During the next forty years, other explorers and later settlers, merchants, and others must have traveled into the interior of central New Jersey and to what is now Somerset County but these visits, for the most part, are unrecorded.

In 1664, the Dutch surrendered New Amsterdam to the English King Charles II. Charles deeded the newly acquired colony to his brother James Stuart, Duke of York and future British king, and it became known as New York. James, in turn, granted a portion of his territory west of the Hudson River (New Jersey) to Lord John Berkeley and Sir George Carteret (Lipscomb 1942:7).

By 1674, four Quakers had come into possession of Berkeley's portion of the New Jersey grant. The Quakers and Carteret divided the grant into two provinces, East and West Jersey, by the Quintipartite Deed of 1676 (Lipscomb 1942:7). Carteret retained control of East Jersey. Twelve investors headed by William Penn purchased East Jersey from Carteret's widow in 1682. The number of investors was later increased to 24 (Menzies 1969:12).

Somerset County was established in a portion of East Jersey in 1688. In that same year James Stuart, by then King James II, reasserted his governing right and brought the Jerseys into the Dominion of New England. After the collapse of the Dominion in 1689, East and West Jersey reverted to full proprietary control. In 1702, however, the proprietors surrendered their governing power to the Crown, but retained their land titles. In 1738, New Jersey was reestablished as a separate royal colony (Ferris 1968:126). The first municipal division of Somerset County occurred in 1745 when the county was divided into the Northern, Western, and Eastern Precincts (Snyder 1969). The present project area was included within the Eastern
Precinct.

For the first fifty-five years after the Dutch founding of New Netherlands in 1626, no notable land purchases or settlements occurred within the present borders of Somerset County. As far as can be ascertained, the first legal land sale which included present day Somerset County occurred in 1681. On May 4th of that year Thomas Codrington and three partners acquired 1,877 acres of land from two Raritans, Konackama and Queromak, in what is now the southern part of the county for one hundred pounds worth of merchandise (Clark, Havens, and Hoagland 1976:8). Codrington was the first partner to occupy his property settling there in 1683. He is generally considered to be the first settler in Somerset County (Clark, Havens and Hoagland 1976:8). Large numbers of immigrants entered the region during the remaining years of the century and throughout the first third of the eighteenth century. Immigration was encouraged by the authorities by promises of religious toleration, representative government, and moderately priced land (Ferris 1968:126). Settlers were primarily English Puritans and Scotch-Irish from New England and eastern Long Island and Dutch from western Long Island (Frakt 1967; Wacker 1975).

The first settler in the project vicinity was Henry Greenland who established a tavern around 1685 just west of the Millstone river along what is now State Route 27 (Snell 1881). The tavern was established to serve travelers journeying between New York and Philadelphia.

The first individual to settle within the limits of what is now Kingston was Jediah Higgins who arrived sometime during the first decade of the eighteenth century. He was probably a squatter on the lands he settled (Menzies 1969). By mid-century the settlement around Kingston grew to include several dwellings, a Presbyterian church, a saw mill and a grist mill (Craig 1982; Kralick 1983). A cooper mine was in operation north of Kingston at Rocky Hill by 1731 (Menzies 1969:57). By the time of the American Revolution, Kingston had grown into a large village. According to Thompson (1963:159) during the late colonial period Kingston was:

a thriving village, situated as it was on the main stagecoach road from New York to Philadelphia. It was a chief stopping place for hotel and livery stable accomodations and for change of horses. It is stated that as many as 49 stages with about 400 passangers have halted there at the same time at 2 hotels which were across the road from each other.
A portion of the historic Village of Kingston was nominated to the National Register of Historic Places on November 22, 1989 (Kelly 1989). Another portion of the village is part of the Kingston Mill Historic District which was placed on the National Register of Historic Places on April 10th, 1986 (Office of New Jersey Heritage 1988:4).

During the late seventeenth and early to mid-eighteenth century most of Somerset County consisted of widely scattered, largely self sufficient farms that produced yields high enough for surpluses to be sold to local markets (Schmidt 1973; Cohen 1987). A variety of crops were grown such as maize, wheat, and vegetables. Livestock was also kept and orchards were cultivated (Cohen 1987).

The population of the county remained small throughout most of the eighteenth century. In 1726, the earliest year for which census figures are available, the county's population was 2,271 individuals. By 1780, the population of the county had grown to only about 10,000 people (Honeyman 1912; Wacker 1975).

Prior to the eighteenth century the project vicinity was primarily forested. After the turn of that century it probably quickly became agricultural in nature. By the middle of the eighteenth century the project site was probably part of a farm (see Section 4.7).

4.2 THE REVOLUTIONARY WAR YEARS

Somerset County, as part of central New Jersey, occupied a valuable strategic position throughout the American Revolution (see Menzies 1969). The area was situated between New York and Philadelphia which were the focus of both American and British strategic planning for much of the war. A section of the main supply and communication route between those cites, and between the northern and southern colonies, was situated in the county, passing through Kingston. As a result, central New Jersey, including Somerset County, was the setting for a series of large scale military maneuvers. Another strategic value of Somerset County was the large quantities of foodstuffs and other supplies grown and produced there. The productivity of the area caused numerous raiding and foraging parties from both sides to operate in the county (Davis 1916; Menzies 1969).

After 1776, except for occasional British and Loyalist raids and foragers, the Somerset
County area remained primarily in American control for the remainder of the Revolution. A large number of American troops were located in the region whose task it was to keep open the lines of communication and supply and counter British troop movement across New Jersey. A number of encampments, depots, and other military positions existed throughout the area and military traffic along local roads was common. A number of battles and skirmishes occurred within the region (Davis 1916; Menzies 1969).

Although no battles or skirmishes occurred within the immediate vicinity of the project site, the area did witness much activity associated with the Revolutionary War. American troops were numerous in the area with large encampments located at Middlebrook, Morristown, Trenton, and other locations. These encampments, plus the presence of the strategic New York to Philadelphia road (State Route 27), must have ensured that troops, messengers, and teamsters with supplies frequently moved through the Kingston area.

The following list includes the major Revolutionary War events which occurred in the project vicinity. It is possible that these or unrecorded activities associated with incidents and activities that took place in the vicinity of the project area could have led to the deposition of artifacts there.

- During the war the Millstone Valley was crossed several times by both the British and American armies. In the fall of 1776, Lord Cornwallis led the British advance across New Jersey from New York to Trenton. The American Army retreated in a parallel route immediately north of Cornwallis's line, passing through Kingston on its way to cross the Delaware River on December 7th, 1776. Washington and the army recrossed the Delaware River and defeated the Hessians at Trenton on December 25th and 26th (Middlekauf 1982:352-355; Ketchum 1991).

Upon learning of the American victory, British troops quartered at Princeton moved to engage them. After some skirmishing which culminated in the Battle of Princeton on January 3rd, 1777, Washington and the American army retreated to the northeast with the intent of attacking British supply depots located at New Brunswick. During the withdrawal, Washington and his army passed through Kingston, where they destroyed the bridge across the Millstone River. At Kingston, Washington gathered his officers for a conference in the Presbyterian cemetery (a DAR marker commemorates the spot). Concluding that his troops were exhausted, Washington ordered the army to move north to winter camps at Morristown. The army marched north along the Kingston-Rocky Hill Road late in the day on January 3rd, passing the present project site, and arrived at Morristown on January 5th and 6th (Middlekauf
In late August 1781, American and French troops marched down the Millstone Valley on their way to Yorktown, Virginia. A year later (September, 1782) the French Army, returning from Yorktown, again marched through the Millstone Valley (Menzies 1969:229). During the return march, Lauzun's Legion, a French dragoon unit of renown, camped at Kingston (Menzies 1969:232).

- Between late summer and November 9th, 1783, George Washington, his wife Martha, and thirty-eight of his officers were quartered at Rocky Hill, northeast of the present project area (McFarlane 1912; Carrick 1978). The house leased by Washington and his entourage for the period was called "Rockingham." Since the eighteenth century, the house has been moved twice (Carrick 1978). It was listed on the National Register of Historic Places on December 18th, 1970 (Office of New Jersey Heritage 1988:96).

### 4.3 THE POST-REVOLUTIONARY WAR YEARS

After the Revolutionary war, agriculture and small business formed the basis of the Kingston area economy. Local industry, however, was developing and diversifying. A woolen factory was built in the village late in the century and cider mills, a lumber mill, and a pottery were established in the area by the early nineteenth century (Menzies 1969; Sourlands Citizens Planning Council n.d.). This increase in the economic base is reflected in the County wide...
increase in population which occurred during this period. In 1790 the population of the county was 12,296 individuals which represents an increase of almost two thousand people from the previous decade (Honeyman 1912).

The need for new administrative units in New Jersey after the Revolutionary War resulted in the creation of new townships. In 1798, the area known as the Eastern Precinct of Somerset County, which included the present project area, was incorporated as Franklin Township (Snyder 1969:223). The Township was named in honor of either Benjamin Franklin or his son, William, the last Royal Governor of New Jersey who apparently was remembered fondly by local residents (Van Horn 1965).

4.4 THE NINETEENTH CENTURY

After incorporation, Franklin Township grew steadily although it remained rural with a small and scattered population. The township, including the project vicinity, during this period remained primarily agricultural in nature with large quantities of grain (oats, barley, rye, wheat), flaxseed and garden vegetables grown. Orchards were also quite common producing apple cider and apple vinegar as well as fruit (Schmidt 1973).

Livestock, particularly cattle and sheep, played an increasingly important role in the economic life of Somerset County. Goods were transported by wagon to New Brunswick and the Raritan River where they were shipped by boat to New York City. With the coming of the railroad to the Kingston area in 1839, enabling dairy products to be shipped quickly to markets in New York City, dairy farming became a major agricultural activity (Menzies 1969).

4.5 THE DELAWARE AND RARITAN CANAL

A section of the Delaware and Raritan Canal is located approximately 1,300 feet west of the present project area. Its approximately 15 mile route through Somerset County parallels the Millstone and Raritan Rivers. The canal company was chartered in 1820. Construction started at Kingston in 1830 and the canal officially opened in May 1834 (Baer 1981; Lane 1939). The Canal was the second constructed in New Jersey (construction of the Morris Canal
started in the mid-1820's). The Delaware and Raritan Canal Company merged with the Camden and Amboy Railroad in 1831. The canal was approximately 44 miles in length, extending between the Delaware River at Bordentown to Raritan Bay at New Brunswick. A twenty-two mile feeder canal brought Delaware River water into the system at Bulls Island and provided additional areas with canal access. The Delaware and Raritan Canal was profitable until 1900 primarily carrying coal from Pennsylvania to New York after which it operated at a loss (Haussamen 1984). It ceased to operate at the end of 1932 and was sold in 1934 by its owner, the Pennsylvania and Reading Railroad which purchased the canal in the 1870's, to the State of New Jersey (Kardas and Larrabee 1982). The canal was made a State Park shortly after the State acquired the property and since the 1960's some communities have used it as a water supply.

The construction of the Delaware and Raritan Canal was a stimulus to Kingston's growth during the mid-nineteenth century. Kingston was again a stopping point on a major transportation route, being located approximately midway between Trenton and New Brunswick. Several canal oriented businesses and industries developed in the village. These included a lumber yard, a coal yard, a lime yard, several steam saw mills, and a fulling mill (Craig 1982; Kralick 1983).

The Delaware and Raritan Canal was placed on the National Register of Historic Places on May 5th 1973 (Office of New Jersey Heritage 1988:4).

No cultural resources associated with the Delaware and Raritan Canal are present within the HDS project area.

4.6 THE TWENTIETH CENTURY

Between 1900 and 1980 Somerset County became substantially less agricultural and more suburban. In 1920, 70% of the county was farmed but by 1978 only 27.5% of the land was devoted to agriculture (Federal Highway Administration 1983). Many local farms were sold to people who acquired them for residential purposes. Others were sold to business and industry (Menzies 1969).

The project area during this period remained agricultural in nature.
4.7 PROJECT AREA HISTORY

In order to investigate the history of EuroAmerican land use within the project site, maps showing the pertinent sections of Somerset county and other documentary sources were consulted. It was determined that on mid eighteenth to early twentieth century maps the project site was located north of the Village of Kingston, southeast of the Borough of Rocky Hill, and east of the Kingston-Rocky Hill Road (Laural Avenue) between two small east to west flowing streams. These streams, tributaries of the Millstone River, are Dirty Brook, located on the northern edge of the property, and "Higgins Brook" located on the southern edge (see Section 1.1).

4.7.1 The Early to Mid Eighteenth Century

No historic structures were present during the early to mid eighteenth century west of the Kingston-Rocky Hill Road in the vicinity of the present project as indicated by the Dalley Map produced in 1745 by John Dalley of Kingston (Figure 7). The Kingston-Rocky Hill Road is indicated on this map as are the two project area streams (Dirty Brook and "Higgins Brook"). The project area during this period may have been forested to some extent. It is likely, however, that at least portions of it were used agriculturally.

4.7.2 The Mid to Late Eighteenth Century

A structure is indicated east of the Kingston-Rocky Hill Road and immediately south of Dirty Brook on the 1762 Bancker Map (Figure 8; see Rice 1970). The location of the house as indicated by this map is at the approximate location currently occupied by the Higgins residence.

On the 1766 Morgan Map (Figure 9), a structure is indicated at approximately the same location as on the Bancker map. The Kingston-Rocky Hill Road is also depicted although "Higgins" and Dirty Brooks are not. A cluster of three structures is indicated on this map (in the center of Figure 9) astride the Kingston-Rocky Hill Road. Two structures are east of the road and one is located on the west side. This configuration of structures is similar to that indicated on the Bancker map. The southernmost of the three structures indicated on the
Morgan map (which corresponds to the southernmost of the three structures indicated on the Bancker map) was probably located within the present project site in the area now occupied by the Higgins residence.

The Morgan Map also provides information on land ownership. It indicates that Charles Armstrong owned 1,000 acres of land in the vicinity of, and including, the project area. It is possible that Armstrong owned the property earlier than the 1760's. Menzies (1969:43), on a map she compiled, indicates that Charles Armstrong (or Ormiston) is the early to mid eighteenth century owner of the land (Figure 10).

It does not appear that any historic structures are located within the project area on the 1778 Erskine Map (Figure 11). However, on this map the name "Rocky Hill" was printed over the approximate location of the project area and may have obliterated a structure indicator. It is possible, however, that the structure shown on the 1762 and 1766 maps no longer existed in 1778.

4.7.3 The Mid to Late Nineteenth Century

Beginning in the mid-nineteenth century, fairly detailed maps were drawn which indicate land ownership and land-use within the project site. The earliest of these maps dates to 1850 (Otley and Keily 1850 - see Figure 12). A house owned by D. Comfort is shown east of the Kingston-Rocky Hill Road, south of Dirty Brook. The D. Comfort house is probably the same house now occupied by the Higgins family. It is assumed that the land surrounding the house, including the project site, was also owned by D. Comfort. No outbuildings or other structures are shown on the Otley and Keily map.

On the 1873 Beers Map (Figure 13), the former D. Comfort house is shown as the residence of Charles Moore. Moore probably owned the surrounding land as well including the project site. No outbuildings or other structures are shown on this map.

According to Warranty Deeds in the possession of Mrs. Betty Higgins, Charles B. Moore and Willaim A. Pierce acquired the former Comfort house and land on April 1st, 1865; Moore, his wife Margaret, and William A. Pierce sold the Moore residence and property to Isaac Van Zandt on April 11, 1874 (Liber 1866, 1874).

Snell (1851:812) writes that the:
Hon. Charles B. Moore was born at Flemmington on January 6th, 1822. When nineteen years of age he started a small grocery store at Kingston, where he continued in trade until 1864, in which year he removed his store to its present location at that place. Here he still remains in trade. He also operates a hay-press at Kingston, and engages extensively in the lumber and coal business. He occupies and tills a fertile farm near Kingston.

In 1875 he was elected to represent Somerset County in the State Senate, and was one of the most popular and influential members of that body.

Senator Moore was married in June, 1847, to Margaret A., daughter of John and Margaret Van Tilberg, of Kingston, N.J.

4.7.4 The Twentieth Century

On both the 1905 Whitlock map (Figure 14) and 1906 United States Geological Survey, Princeton Quadrangle map (Figure 15) a structure is indicated south of Dirty Brook and east of the Kingston-Rocky Hill Road within the project area. This structure is the former Comfort/Moore house. No outbuildings or other structures are shown on either map. According to Warranty Deeds in the possession of Mrs. Bettsy Higgins, during this period the owners of the house and lands were Francis M. Tichenor and Alonzo R. Tichenor (Liber 1900, 1906).

By the early 1930's, the Tichenor (former Comfort/Moore) house and property had been acquired by the Higgins family (Mrs. Betty Higgins: Personal Communication, October 21st, 1992). Although the 1939 Hagstrom map (Figure 16) shows property ownership in the project vicinity, it does not indicate the Higgins property. Mrs. Betty Higgins, however, states that their property was located south of the land owned by Gillette Wynkoop, which is shown on the Hagstrom map (Mrs. Betty Higgins: Personal Communication, October 21st, 1992).

A structure (the Higgins residence) is indicated on the 1947 United States Geological Survey, Monmouth Junction Quadrangle map (Figure 17).

4.8 ASSESSMENT OF ARCHAEOLOGICAL SENSITIVITY - HISTORIC PERIOD

Historic period resources possibly present within the project area may be associated with the mid to late nineteenth century Comfort/Moore house. The house is still present within

4-10 301103
the project area although it has been substantially altered. The Route 92 cultural resource investigation determined that the Comfort/Moore structure was ineligible for listing on the National Register of Historic Places due to these extensive alterations (Federal Highway Administration 1986a:IV-119).

It is possible that historic period deposits associated with the occupation of this house may be present within the project property. Such archaeological deposits may take the form of surficial middens which represent refuse discarded during the residential occupation. Evidence of a surficial midden was observed in the extreme southern portion of the site during the pedestrian reconnaissance (Figure 2; Plate 11). Surface indications suggest that the midden consists of domestic debris and dates to the first half of the twentieth century.

Also possibly present within the property are archaeological features associated with the Comfort/Moore house such as wells, privies, and cisterns. A cistern, possibly of late nineteenth century construction, was observed northeast of the Higgins residence. No deposits are present within this feature which is currently used to house a well pump.

Buried architectural remains associated with the dwelling indicated on the Bancker (1762) and Morgan (1766) maps and deposits and/or features associated with its occupation may also be present in the vicinity of the Higgins residence.

Two barns probably associated with the Comfort/Moore house are still present within the project site (Plate 7). The remains of other historic period outbuildings or archaeological deposits associated with activities occurring at such structures may also be present within the project area.

Documented historic period activity also occurred in the vicinity of the project site during the Revolutionary War when American and British troops passed through Kingston, at times camping in the area. Although unlikely, an encampment may have been located within the present project site. Archaeological deposits (filled latrine pits, refuse pits, burnt earthen hearths, middens, etc.) associated with such an encampment may be located within the project area.

Due to the possible presence of such deposits and remains, portions of the project area are considered sensitive for the possible presence of historic period archaeological resources.
5.0 CONCLUSIONS AND RECOMMENDATIONS

The results of the research and analysis conducted for this study indicate that HDS is sensitive for the presence of possibly significant prehistoric archaeological sites because: 1) its topographic and physiographic characteristics are similar to those of sites reported elsewhere in the region; 2) sites have been noted in the vicinity of the project area; and 3) although no sites have been reported on the property, a previously conducted cultural resource investigation (Louis Berger and Associates 1992) recovered a prehistoric flake from a shovel test excavated in the vicinity of Dirty Brook. Although the flake was recovered from a disturbed context, its presence within the present project area suggests that Native American activity occurred on the property.

The project area is considered sensitive for the presence of possibly significant historic period archaeological resources because: 1) the former Comfort/Moore house is located within the project area. Features and/or deposits associated with the occupation of this house may be present; 2) during the eighteenth century, a dwelling may have been located within the project area south of Dirty Brook, probably in the vicinity of the residence currently owned by the Higgins family. Features, deposits, and/or architectural remains associated with the occupation of this dwelling may be present; and 3) extensive Revolutionary War activity occurred in the vicinity of the project area. Archaeological deposits associated with such events may possibly be located within the project area.

If it is determined from the RI/FS that remedial activities which would result in extensive ground disturbance are necessary at HDS, it is recommended that subsurface testing be conducted in the archaeologically sensitive portions of the property that will be disturbed as a result of those activities. Subsurface testing will determine whether any possibly significant archaeological resources are present within those areas. The sensitive areas that should be tested are (Figure 2):

- Zone 1: A row of shovel tests located at fifty foot intervals should by excavated immediately north of "Higgins Brook." The surfacial midden observed during the pedestrian reconnaissance is located in this area (Plate 11) and should be tested to determine its stratigraphy and temporal association.
The location of the midden is shown on Figure 2.

- Zone 2: Shovel tests should be excavated at 100 foot intervals in the two pastures located south of the Higgins residence. In particular, shovel tests should be excavated on the small knolls located in the southernmost of the two fields.

A portion of Zone 2 was within the project area of a previously conducted cultural resource investigation (Federal Highway Administration 1986) but was not systematically investigated by subsurface testing.

- Zone 3: Shovel tests should be conducted in the immediate vicinity of the Higgins residence, particularly in areas north and west of the house.

- Zone 4: Shovel tests, located at 100 foot intervals, should be excavated in the pastures north and east of the Higgins residence.

The portion of the project site in the immediate vicinity of Dirty Brook was within the study area of a previously conducted cultural resource investigation and has been systematically tested (Louis Berger and Associates 1992). The area was found to be disturbed and no possibly significant cultural resources were encountered. No additional testing is recommended for this area.
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FIGURES
Figure 1
Project Location
Scale of original: 1:24,000
Key: = approximate location of project area
DOC ID # 39476

DOC TITLE/SUBJECT:
HIGGINS DISPOSAL SERVICES SITE
PROJECT AREA
FIGURE 2

THIS DOCUMENT IS OVERSIZED AND CAN BE
LOCATED IN THE ADMINISTRATIVE RECORD FILE
AT THE

SUPERFUND RECORDS CENTER
290 BROADWAY, 18TH FLOOR
NEW YORK, NY 10007
Figure 3
Physiographic Provinces of New Jersey showing the location of the Piedmont Lowlands
Source: Wolfe (1977)
Key: $\approx$ = approximate location of project area
Figure 4
1650 Janssonius-Visscher Map
Source: Jameson (1909)
Figure 5
Portion of Skinner and Schrabisch (1913) map showing distribution of archaeological sites in New Jersey
Figure 6
Indian Site Survey Map
Source: Cross (1941)
Figure 7
Source: John Dalley (1745)
Scale of original: 1 inch = approximately 3/4's of a mile
Key: X = approximate location of project area
Figure 8
Source: Gerald Bancker (1762)
Scale of original: one inch = 50 chains (3,300 feet)
Key: ○ = approximate location of project area
Figure 9
Source: Morgan (1766)
Scale of original: one inch = 50 chains (3,300 feet)
Key: = approximate location of project area
Figure 10
Source: Menzies (1969)
Figure 11
Source: Robert Erskine (1778)
No scale given
Key: ● = approximate location of project area
Figure 12
Source: Otley and Keily (1850)
Scale of original: 3/4's of an inch = approximately 1,000 fee
Key: ○ = approximate location of project area
Figure 13
Source: Beers (1873)
Scale of original: 1 inch = approximately 2 miles
Key: = approximate location of project area
Figure 14
Source: Whitlock (1905)
Scale of original: 3/4's of an inch = approximately 1 miles
Key: ○ = approximate location of project area
Figure 15
Source: United States Geological Survey - Princeton Quadrangle (1906)
Scale of original: 1 inch = approximately 1 miles
Key: ● = approximate location of project area
Figure 16
Source: Hagstrom (1939)
Scale of original: 1 inch = approximately 3,300 feet
Key: ◆ = approximate location of project area
Figure 17
Source: United States Geological Survey - Monmouth Junction Quadrangle (1947)
Scale of original: 1 inch = approximately 2,500 feet
Key: ● = approximate location of project area
Plate 1
Former D. Comfort/Charles Moore house
Plate 2
Area of Dirty Brook
Plate 3
Area of Higgins Brook
Plate 4
Second pasture north of Higgins Brook
Plate 5
Knolls in first pasture north of Higgins Brook
Plate 6
Brick and concrete cistern
Plate 7
Barns within project area
Plate 8
Pasture north of the Comfort/Moore house
Plate 9
One of the ponds within the project area
Plate 10
Disturbed area around Dirty Brook
Plate 11
Surficial midden in Zone 1
APPENDIX A

UNITED STATES SOIL CONSERVATION SERVICE
SOIL SURVEY AND LEGEND

(Key:  = approximate location of project area)
GUIDE TO MAPPING UNITS

For a full description of a mapping unit, read both the description of the mapping unit and that of the soil series to which it belongs. The suitability of the soils for use as cropland is discussed in the soil descriptions. Other information is given in tables as follows:

Acreage and extent, table 1, page 9.
Estimated yields, tables 2 and 3, pages 54 through 55.
Woodland, table 4, page 56, and table 5, page 58.

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