APPENDIX G

WAREHOUSE BUILDING INSPECTION

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

February 1, 2001

REPLY TO
ATTENTION OF

Construction/Operations Division
Westover Resident Office

Ms. Leslie McVickar, Office of Site Remediation Restoration
Environmental Protection Agency – Region I
1 Congress Street
Boston, MA 02214

SUBJECT: Removal Action, Pownal Tannery Site, Pownal, Vermont
Contract No. DACW33-97-D-0002, Delivery Order No. 0008

Subject: Warehouse Building Inspection

Dear Ms. Leslie McVickar:

Attached for your information and use is Stone & Webster's Warehouse building inspection report, dated January 29, 2001.

If you have any questions, please contact Randy Sujat at 413-593-6791.

Sincerely,

Raymond G. Goff
Contracting Officer's Representative

Encl. as stated

Stone & Webster
Founded 1889

Department of the Army
New England District, Corps of Engineers
570 Patriot Ave, Box 70
Chicopee, MA 01022-1634

January 29, 2001
J.O. 06851.08

Attention: Mr. Raymond G. Goff
Contracting Officer's Representative

CONTRACT NO. DACW33-97-D-0002, DELIVERY ORDER NO. 0008
POWNAL TANNERY SITE
N. POWNAL, VT
WAREHOUSE BUILDING INSPECTION

Dear Mr. Goff;

Stone and Webster is performing a Removal Action for the United States Army Corps of Engineers (USACE) at the Pownal Tannery Superfund Site in North Pownal, Vermont. As part of this effort, Stone & Webster is steam cleaning the floor and walls of a pre-engineered Butler building previously used as the tannery warehouse. More recently the structure was used as a transfer station for wood chips. During the preparation for cleaning some residual wood chips were being removed and a 20-foot x 13-foot high section of concrete masonry unit (CMU) wall along the north end of the building collapsed. As a result of the collapse, Stone and Webster was asked to perform a structural inspection of the building. This inspection was conducted on January 17, 2001.

The pre-engineered building is approximately 300-foot long by 60-foot wide. It consists of thirteen rigid frame bents spaced about 25 feet on centers. Steel purlins support the roof and the floor is a soil supported concrete slab. The east and west walls of the structure consist of 14 courses of single width concrete masonry units (CMUs) in running bond for a total height of about 10 feet. Translucent panels extend approximately 3 feet from the top of the CMU wall to the eave of the roof. A foundation wall visible at the floor level indicates that the building was extended after its original construction.

In general, the structural steel of the pre-engineered building was in fair condition. The only significant deterioration noted in the steel occurred in the bottom foot of the columns. In this area, significant corrosion was observed with the majority of the column web missing in the two northern most columns along the western wall (Photo 1).

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The western wall of the structure had four bays with steel rod vertical bracing to transfer the north-south lateral loads to the ground floor slab. The three southern bays of vertical bracing appeared to be effective; however, the northern most bay was not effective as the bottom webs of the columns had been lost to corrosion, rendering the vertical bracing useless. There was only one bay of vertical bracing in the east wall of the structure. This bay of bracing appeared to be effective. The rigid steel frame resists lateral shear in the east-west direction. Repairs to the severely deteriorated column webs may be necessary for this load system to be effective.

An examination of the collapsed wall indicated that there had been no positive anchorage (e.g., dowels) extending from the concrete floor slab into the CMU wall. While steel horizontal wire reinforcement such as durowall was observed in the wall rubble, there did not appear to be a positive anchorage system at the edges of the wall. Most of this interface was smooth indicating that proper lateral restraint was not provided.

An inspection of the remaining CMU exterior walls raised concerns about the wall lateral support system. While steel horizontal wire truss reinforcement was observed in some horizontal joints of the CMU wall, there did not appear to be a consistent anchorage system at the lateral support points of the walls. The block was not anchored to vertical steel struts (Photo 2) in the north end of the building. In addition, several vertical joints in the block between lateral support points such as columns were observed. One vertical joint was located in the west wall just north of the building extension. In the western half of the north wall, the eastern edge of the wall had moved about $1^1/_2$" beyond the edge of the ground floor concrete slab suggesting that the wall was not anchored to the slab or the vertical steel strut. The use of the building as a transfer station by the current tenant suggests the possibility of the CMU walls being used as push walls. On one occasion a small bulldozer was observed in the building pushing the wood chips as high as the roof frame members. Many wall segments are not plumb with the top of the wall gapped outward from the structural support system (Photo 3). An effort had been made at about one-half of the columns on the west wall to anchor the wall to the column supports by bolting a channel on the outside face of the block through the wall to the column (Photo 4). No similar system was observed on the east wall. In addition, several significant step cracks were observed in the CMU walls (Photo 5).

Also noted during the inspection was the fact that the cover for the building's main electrical distribution panel is missing. In conclusion, it is our opinion that this structure is usable with repairs. The key repair required is an engineering program to assess the lateral support of the CMU walls and provide a lateral anchorage system for the CMU walls, where required. In addition, the corroded webs of the steel columns need to be repaired. Any future use should be consistent with the design, building codes and local ordinances.

If you have any questions or require further clarification, please contact Lee LePage at (617-589-8048).

Sincerely,

Michael J. Davidson, P.E.
Lead Senior Structural Engineer

Lee R. LePage, P. E.
Project Manager

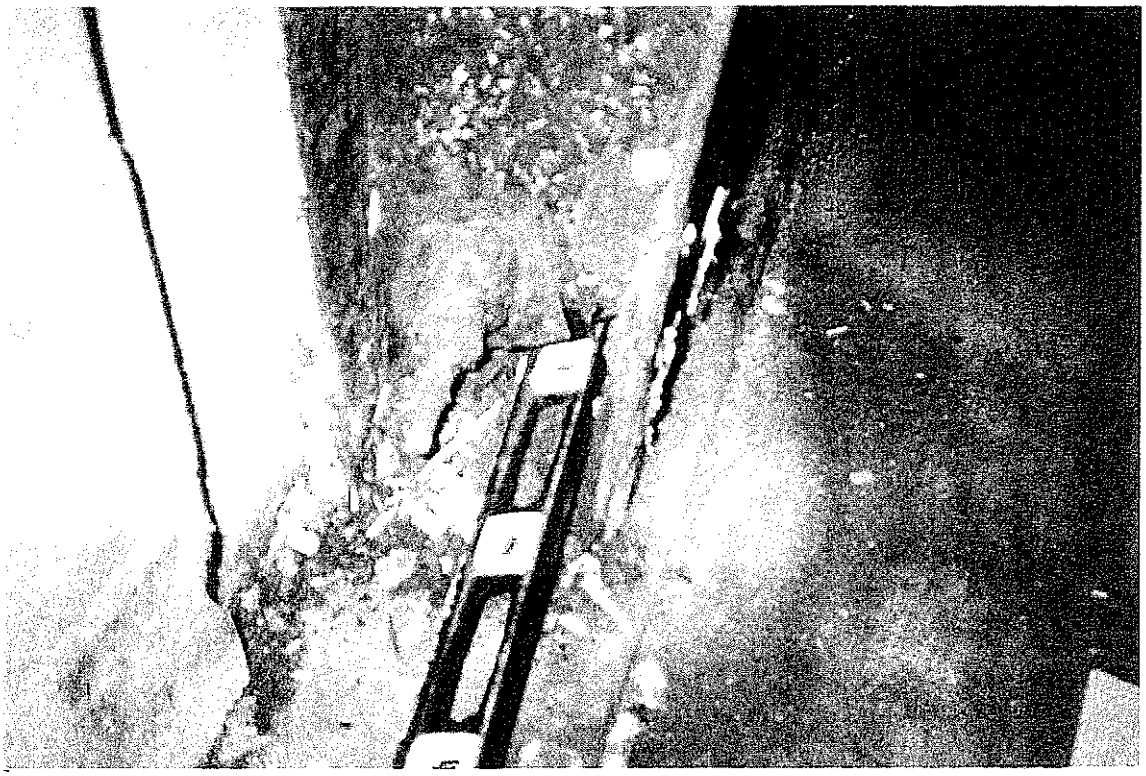

Photo 1 – Corrosion in Column Web

Photo 2 – Vertical Joint at Support Strut

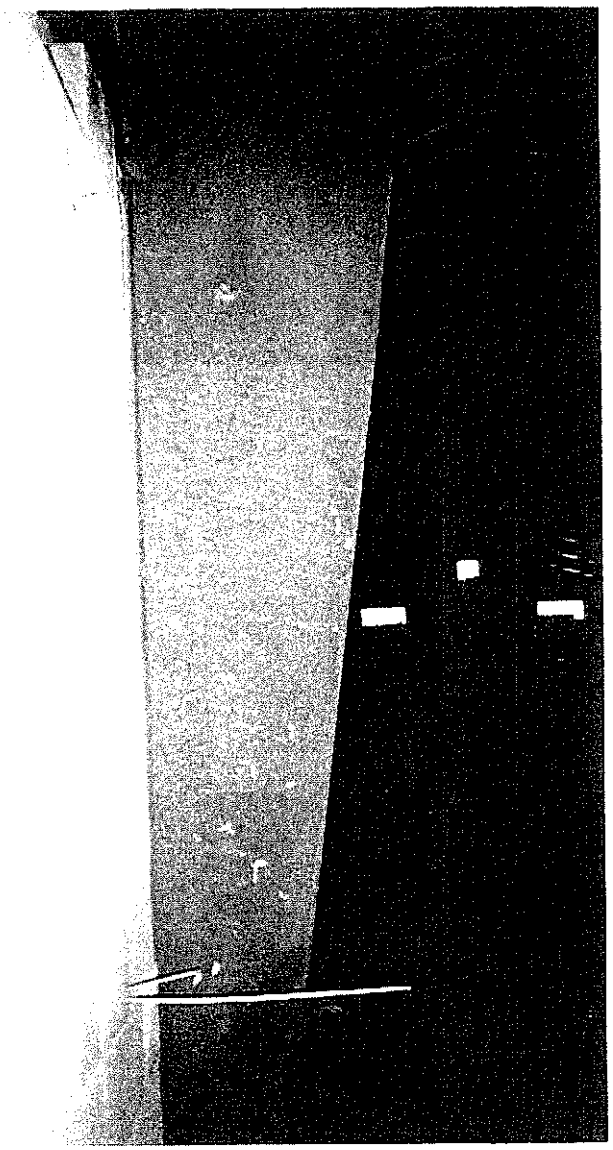

Photo 3 – Non-Plumb CMU Wall

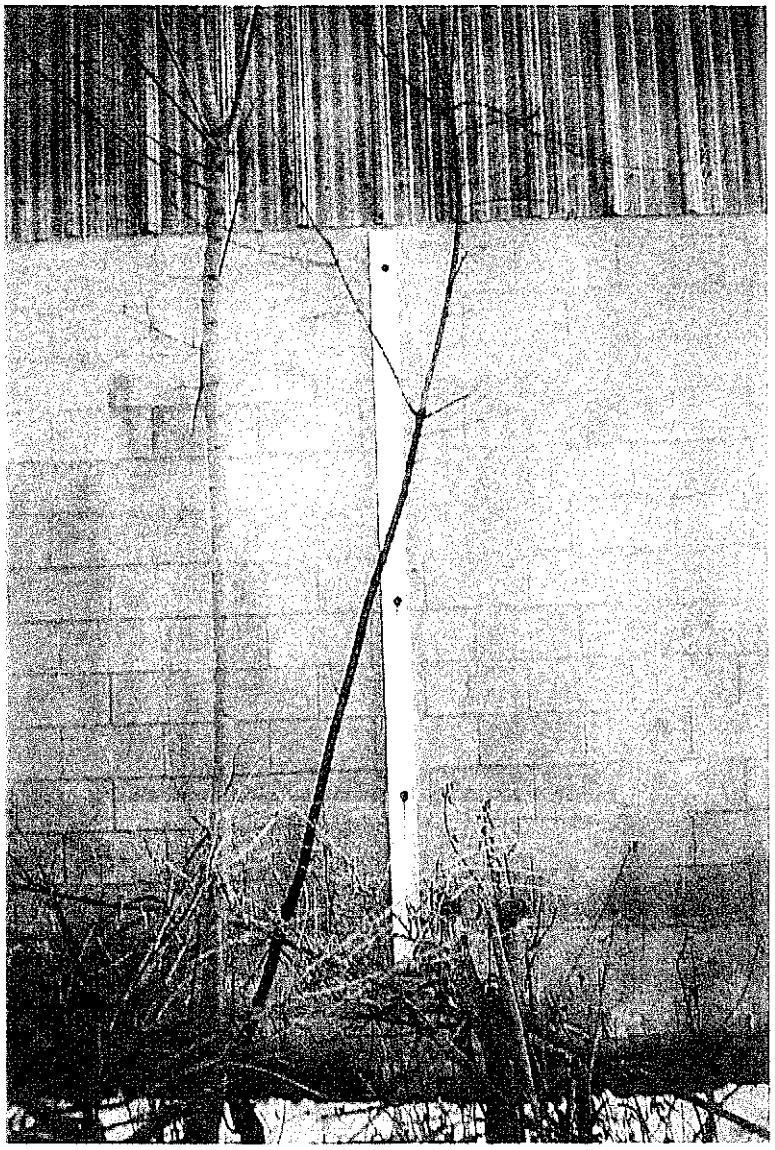

Photo 4 – Channel Lateral Support for CMU Wall

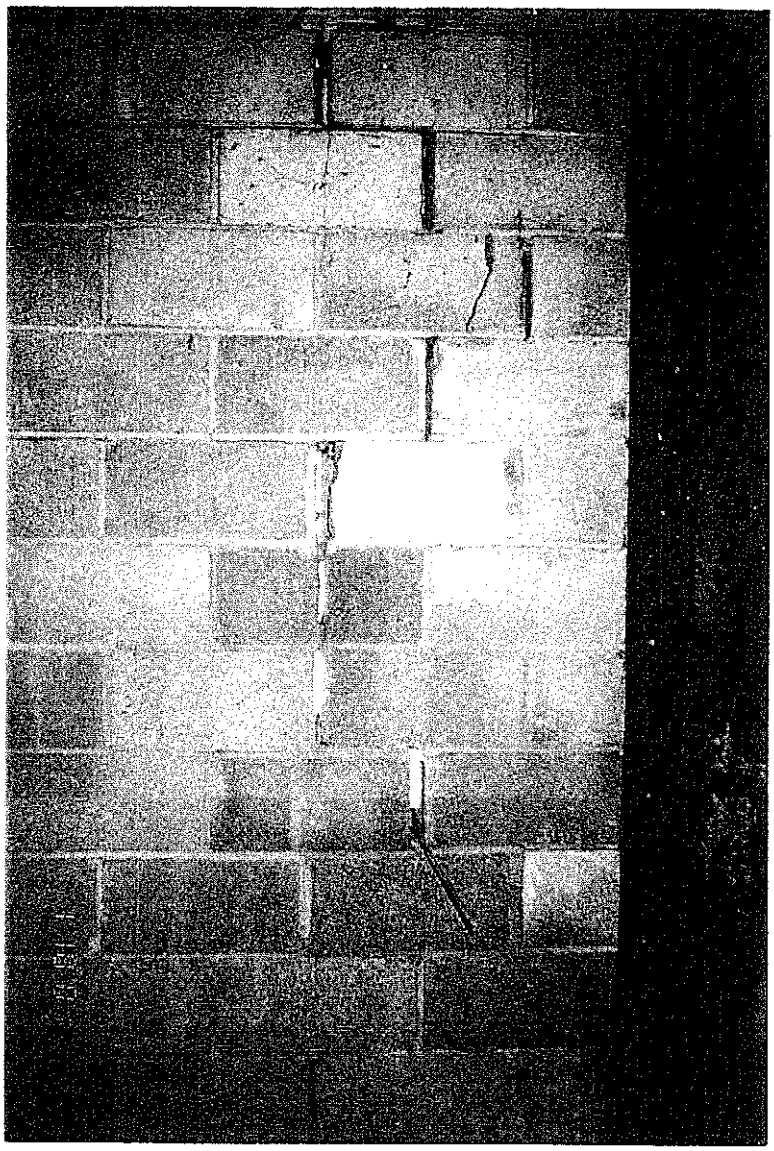

Photo 5 – Step Crack in CMU Wall

APPENDIX H

PHASE I CULTURAL RESOURCE SURVEY FOR POWNAL TANNERY LAGOON AREA

TRC

Customer-Focused Solutions

PHASE I CULTURAL RESOURCE SURVEY FOR POWNAL TANNERY LAGOON AREA, THE TOWN OF POWNAL, BENNINGTON COUNTY, VERMONT

Pownal Tannery Superfund Site
Pownal, Vermont

EPA CONTRACT NO. 68-W6-0042
EPA WORK ASSIGNMENT NO. 052-RICO-01N9

EPA Project Officer: Diana King
EPA Remedial Project Manager: Leslie McVickar

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Nathan Morphew, Principal Investigator

Authored by: Nathan Morphew

January 2001

ABSTRACT

TRC Environmental Corporation was contracted by the Environmental Protection Agency (EPA) to perform a Phase I archaeological investigation of the lagoon area of the former Pownal Tannery site in North Pownal, Bennington County, Vermont (see Figure 1).

The archaeological sensitivity of the Hoosic River Valley is very high. There are several prehistoric archaeological sites located in the immediate vicinity of the project area. Based on the proximity of these sites to the project area, a Phase I survey of the Lagoon Area was undertaken to determine if it is likely that significant cultural deposits exist within the project area.

Survey methods included manual bucket augering of selected locations along the berm areas of the lagoons. Due to the amount of natural and imported stone in the berm areas, attempts at bucket augering proved futile. In order to determine the presence or absence of a buried A horizon under the berms, which might potentially contain cultural remains, 10 backhoe test pits were excavated along selected locations of the lagoon area. None of the excavation units indicated the presence of a buried A horizon. In six of the test pits, fill and sediment covered a former streambed of the Hoosic River. One of the test pits collapsed upon excavation. One test pit contained fill throughout the extent of the depth the backhoe could excavate. Two test pits contained soils that appeared to be similar to waste observed in the lagoons. No non-modern cultural artifacts or archaeological sites, or areas likely to contain cultural deposits, were encountered during the survey. No further cultural resource investigation of the project area is recommended.

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I. INTRODUCTION

Metcalf & Eddy (M&E) received Work Assignment (WA) No. 045-RICO-01N9 under the Environmental Protection Agency (EPA) Response Action Contract No. 68-W6-0042 (RAC) to complete a Remedial Investigation/Feasibility Study (RI/FS) at the Pownal Tannery Superfund (Site) in North Pownal, Vermont. TRC Environmental Corporation (TRC), as a Team Subcontractor, performed a Phase I archaeological investigation of the Lagoon Area of the former Pownal Tannery site on October 31, November 1, and November 13–14, 2000 (Figure 1).

The purpose of this project was to evaluate the potential for buried archaeological deposits in areas not directly impacted by construction of the lagoons. Specific objectives included the following:

- Determine whether there are prehistoric cultural horizons buried in beneath the alluvial deposits in the project area.
- Determine whether there is any potential for intact, buried cultural strata in the Lagoon area given the extensive ground disturbance associated with construction of the Pownal Tannery lagoons.

This report conforms to the Secretary of the Interior's Standards and Guidelines and the State of Vermont's Guidelines for Report Writing. It presents a summary of the Phase I investigation, including background information, survey methods, results, and recommendations. The survey identified no non-modern artifacts, archaeological sites, or areas likely to contain cultural deposits. No further cultural resource investigation of the project area is recommended.

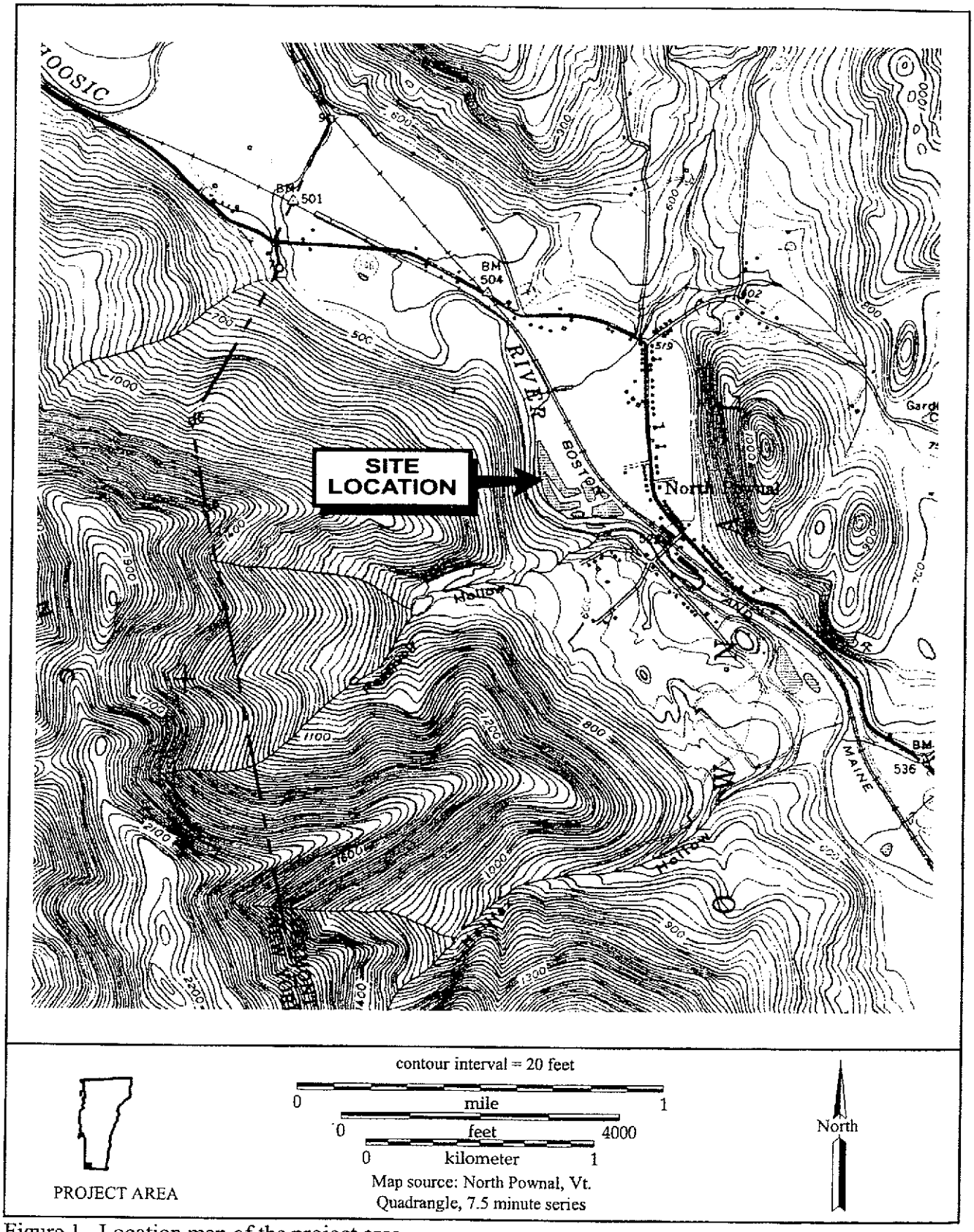


Figure 1. Location map of the project area.

II. ENVIRONMENTAL SETTING

PROJECT SETTING

The project area is located within the Pownal town limits in the village of North Pownal, Bennington County, Vermont. The project area is located on the Hoosic River in the valley lowlands between the Green and Taconic Mountains. The nearly 10-acre site is made up of a series of lagoons and berms. The lagoons were used for process water discharge and sludge settling from the former Pownal Tannery, and raised berms now are used as access roads to the lagoon areas (see Figure 1).

The study area is situated on the Hoosic River, an upper tributary of the Hudson River, between the Green and Taconic Mountain Sections of the New England Province (Fenneman 1938). The site, located on the narrow lowlands of the Vermont Valley physiographic zone, has twice been covered by glacial lakes in the Pleistocene epoch. At the maximum depths of Lakes Bascom and Shaftsbury, the valley was covered to more than 350 m above mean sea level (AMSL) (Stewart and MacClintock 1969). The majority of the subsoil in the project area is derived from silts deposited by the Pleistocene lakes as well as from Holocene alluvial deposits from the Hoosic River. The project area is approximately 20–25 miles east of the Hoosic River's juncture with the Hudson River, near Mechanicville, New York. The Hoosic is more than 50 miles long and drains over 700 square miles (Crock and Peterson 1995).

The climate of Bennington County is characterized by short, warm summers and long, cold winters, with an average growing season of 130 days. The project area falls within the Hemlock-White Pine Northern Hardwoods Region of the Eastern North American Deciduous Forest that stretches from Minnesota to the Atlantic Coast. The region is covered in a mixed community of deciduous and coniferous forest the hillsides in contrast to the more open lowlands. Floral species include hemlock, white pine, sugar maple, beech and yellow birch (Braun 1967). Faunal species available to aboriginal populations include eastern cotton-tailed rabbit, white tailed deer, moose, black bear, eastern gray squirrels, woodchuck, and various songbirds. Anadromous fish species, such as salmon and herring, one of the major food sources of the northeastern Indians, are not found in the Hoosic River due to impassable falls at the mouth of the river (Hasenstab and McArdle 1988).

PALEOENVIRONMENTAL RECONSTRUCTION

The occupation of the New World is known to have occurred from the latter part of the Pleistocene (glacial) epoch into the Holocene (recent) epoch, spanning 13,000 years. The transition between these epochs itself is particularly important because it is at this temporal threshold that some of the most dramatic changes in environmental and ecological conditions occurred. Changes in climate and vegetation have been reconstructed from fossil pollen samples collected from across the northeast (Bernabo and Webb 1977; Davis 1983; Davis et al. 1980; Gaudreau 1988). As the glacial ice receded a cold, dry tundra environment was established. This

persisted until ca. 12,000 years B.P., when the tundra was replaced by spruce woodland (Davis 1983:179). Some researchers have suggested that an unproductive boreal forest environment offered little food resources for humans (e.g., Fitting 1968; Ritchie and Funk 1971), although more recent palynological studies have suggested that the forest was not as unproductive as previously believed, supporting partially open vegetation (Davis 1983:176; Snow 1980:166).

Around 10,000 years B.P., forest diversity increased and new species such as white pine and hemlock migrated north (Davis 1983:176). Modern climatic conditions (but not floral compositions) were approximated. Temperatures warmer than those of today may have persisted until the Little Ice Age (A.D. 1300–1700). Early Holocene forests included white pine, oak, elm, ash, birch, ironwood, and sugar maple (Davis et al. 1980:174). Eventually, species such as hemlock, beech, chestnut, hickory, and red maple migrated to the region. Hickory does not appear to have been present until ca. 5,000 years B.P., and chestnut not until 2,000 years B.P. (Gaudreau 1988).

Modern vegetation patterns in the northeast include a conifer/hardwoods region in the northern sections, and deciduous forests in the southern portions. The border between these two regions is defined by a change from pine dominance to oak dominance. This modern ecotone extends from southern Maine west along the Massachusetts/Vermont border, then southwest across southern New York, and then west across northern Pennsylvania to Lake Erie. Pollen records indicate that the ecotone between the two major zones was established as early as 7,000 B.P. Bernabo and Webb (1977:90) caution that, although the ecotone was stable from that period, the species composition of the forest continued to change.

III. CULTURAL BACKGROUND

PREHISTORIC OVERVIEW

Vermont has been inhabited for over 11,000 years and has experienced several major changes in the cultural traditions of its residents. The discussion that follows is a brief outline of the major recognized prehistoric and historic periods of the region. The prehistory of the project area can be divided into three basic periods: Paleoindian, Archaic, and Woodland.

The prehistoric chronology of the Hoosic Valley is due, in part, to the rather extensive collections of the late Gordon Sweeney of Bennington. Sweeney's knowledge and provenience of collected artifacts aided the Vermont Division for Historic Preservation in identifying 10 sites along the Hoosic River (VT-BE-3, 4, and 12 through 19). Sweeney's collection of diagnostic artifacts provides a temporal chronology for the prehistory of the valley. More information on the Sweeney sites can be found in Hasenstab and McArdle (1988).

Paleoindian Period (ca. 13,500–9,000 B.P.)

Around 15,000 B.P. the southern edge of the glacier extended across Nantucket, Martha's Vineyard, Long Island, and Staten Island. Glacial moraines mark the southern edge of this massive ice sheet. The first indisputable evidence for human occupation in the northeastern United States is during the Paleoindian period, approximately 13,500–9,000 B.P. The period represents adaptation to retreating glaciation conditions at the end of the Pleistocene, most likely focused on Pleistocene megafauna such as mastodon, moose/elk, and caribou (Snow 1980). Paleoindian groups are presumed to have been small and highly mobile hunter-gatherers relying on highly curated stone tool kits manufactured from high-quality local and non-local material.

Diagnostic Paleoindian projectile points include various fluted and unfluted point types, including Clovis and Cumberland-like points. Over the course of the Paleoindian period, point style diversity evidently increased (Snow 1980:143).

Paleoindian sites in the region tend to cluster around waterways formed by glacial melt that offered resource diversity attractive to human populations (Nicholas 1983). The erratic New England shoreline during this period inhibited habitation of the coastal region to some extent (Oldale 1985:45). Excavations at some of the better-documented Paleoindian sites in the region, such as Bull Brook (Massachusetts) and Delbert (Nova Scotia), indicate that sites of this period were placed on well-drained soil close to a freshwater source and high-quality lithic raw material sources.

Currently there is no evidence of Paleoindian occupations in the Hoosic Valley, although there have been finds associated with similar locations to the west (Hasenstab and McArdle 1988).

Archaic Period (ca. 9,000–2,500 B.P.)

The Early Archaic period (ca. 9,000–7,000 B.P.) is marked by the end of the Pleistocene glacial climate and extinction of migratory megafauna. The period is characterized by greater diversity in projectile point forms and reliance on diverse species of Holocene fauna, including white-tailed deer, anadromous fish, birds, and turtles (Petersen et al. 1986:9). Sites tend to occur near major inland bodies of water, and netsinkers occur at some Early Archaic sites. Projectile point forms include Kirk side- and corner-notched, Kanawha, Palmer corner-notched, Hardaway stemmed, and various bifurcates. Sites from this time period are rare in the tributaries of the Hudson; there are few in the Hudson Valley. Only one Early Archaic artifact, a bifurcate base, has been identified in Hoosic Valley (Hasenstab and McArdle 1988).

The Middle Archaic, ca. 7,000–5,000 B.P., is associated with warmer and drier climatic conditions. By this period modern floral communities were established, characterized by mast-producing hardwoods. Rivers stabilized during this time, and wetland and lake areas were reduced in size. Hunting continued to be important, and fish may have become a more predictable resource. There is evidence for shellfish exploitation during this period. In the project region, diagnostic point forms include Neville and Stark forms, which are very similar to contemporary tool types found much further south (Dincauze 1971). Dincauze (1971:197–198) has inferred a general adaptation for the Atlantic Slope during the Middle Archaic, evinced by similar formal tool types. Evidence for upland mast forest exploitation is documented at the Smolt site in the Merrimack River valley (Kenyon 1983), and abundant evidence for hide and wood processing has been inferred from several Middle Archaic sites (Starbuck 1983). Otter Creek points (6,500–5,700 B.P.) make up the largest percentage of Middle Archaic points from the Sweeney collection (Thomas et al. 1979).

The Late Archaic period is generally dated ca. 5,000–2,500 B.P. Site density increases from the preceding Middle Archaic, although there is no substantial shift in site location (Bunker 1988:11). Extensive salt marshes developed along the coast and at river mouths and provided a stable environment for shellfish. Population of coastal areas appears to have increased dramatically at this time, particularly near the end of the Late Archaic period. Within the Hudson Valley and the upland drainages, the Late Archaic is made up of four distinct cultures: the Laurentian tradition (Brewerton and other points), the River Phase and related Sylvan Lake Complex (small, narrow-stemmed points such as Lamoka and Normanskill), the Snook Kill Phase (Genesse points), and Hudson Orient Phase and related Susquehanna Tradition (a variety of broad stemmed points) (Funk 1976). Lamoka and Normanskill points make up the highest percentage of points from the Sweeney Collection. Genesse and Orient Fishtail points are represented as well as one Snook Kill broad point from VT-BE-12.

Woodland Period (ca. 2,500–300 B.P.)

The Woodland period begins with the introduction of ceramic vessel use, an innovation that may have spread from southern to northern New England. Early ceramic vessels tend to be thin and grit tempered. Shell tempering occurs much later in the Woodland period. Settlement patterns, at least in the earliest portion of the Woodland period, exhibit little variation from preceding archaic patterns (Kenyon and McDowell 1983:21). Adena artifacts occasionally are found in the

region (including a tubular pipe from Weirs Beach, New Hampshire), but it appears that the region lay on the margins of the Adena network (Snow 1980:291). Ceramic styles and traditions of manufacture exhibit increased differentiation during the Middle and Late Woodland periods. Seasonal shifts in settlement and subsistence may have characterized much of New England. Inhabitants may have alternated between collecting of coastal resources (fish and shellfish) in the fall, winter, and spring, and exploiting streams and lakes in the interior during the summer months (Bourque 1973; Snow 1980:301). In the Hudson Valley, little is known of the Early and Middle Woodland periods. Sites are rare and poorly represented (Funk 1976; Hasenstab and McArdle 1988). Early and Middle Woodland diagnostic artifacts are uncommon in Hoosic Valley collections as well.

Local quartz was commonly used for stone tools throughout the Woodland period, but non-local materials such as jasper and chalcedony also were used. Evidence for maize horticulture in New England coastal regions is scarce (Sanger 1988), and local populations may have used cultigens only as a supplement to abundant natural resources such as fish and shellfish. The size of shell middens appears to have increased during the Early and Middle Woodland periods (Braun 1974:583). Triangular points, Levanna and later Madison, began to be used ca. A.D. 1000, although some stemmed points appear to have continued in use. Settlements in the later Woodland appear to have been localized, and there is no evidence for long-distance trade (with the possible exception of lithic raw material) until the arrival of the Europeans (Snow 1980:319). A slow trend toward population nucleation and increased sedentism characterizes the Woodland period, especially near the coast and along estuary heads (Lavin 1988:110, 114). Late Woodland points are well represented in the Sweeney Collection. Levanna points have been found at a number of sites on the Hoosic. Levanna and Madison points and Late Woodland pottery were recovered from VT-BE-15.

HISTORIC OVERVIEW

Little is know of the Hoosic River valley at the time of European Contact. In fact, few cultural remains dating to this time have been found in the valley. Historical documentation indicates the Mahican Indians, who primarily lived in the Hudson River valley, used the Hoosic Valley as a hunting ground prior to the seventeenth century. During the seventeenth century the Mahicans, retreating from the pressure of colonists and the Mohawks, moved into the Hoosic Valley and central Vermont (Hasenstab and McArdle 1988).

Early in the eighteenth century (as early as 1728), records indicate Dutch settlements along the Hoosic River. These settlements rapidly forced remaining native populations, who had been all but eradicated, out of the Hoosic Valley (Crock and Peterson 1995).

During the nineteenth century, industry began to compete with agriculture as the driving force of the economy in towns throughout Vermont. Mills were constructed along most major watercourses in nearly ever community. Several mills have existed in the vicinity of the project area. The mill directly associated with the project area, constructed in 1866 as a cotton mill, was originally owned and operated by the Plunket and Barber Company. The mill was later operated by A. C. Houghton Company but ceased operation as a cotton mill in 1931. The mill later was refurbished by the Pownal Tanning Company and opened as a sheep and cow tannery in 1937. In

1962 a lagoon system, consisting of two unlined lagoons, was constructed to precipitate solids out of the waste water before its discharge into the Hoosic. In 1971, three lagoons were added to the system. By the early 1980s, most of the lagoons were filled with sludge. In 1988 the Pownal Tanning Company closed and filed for bankruptcy. Recently, in 2000, the Pownal Tannery buildings were demolished by the EPA as part of site-wide environmental investigation and cleanup activities.

IV. METHODS

The primary goal of the survey was to determine the probability of cultural resources within the project area. An intensive background literature and map search was conducted, and the proposed project area was investigated with techniques designed to assess the likelihood of buried cultural deposits within the project area.

BACKGROUND RESEARCH

Before field investigation began, a background search of documentation housed at the Vermont Division for Historic Preservation in Montpelier was performed to identify previously recorded prehistoric and historic cultural resources in the vicinity of the project area. Eighteen prehistoric sites and five historic/prehistoric sites are located within an approximate 4-mile stretch of the Hoosic River valley from the Vermont/New York border to Pownal. These sites are listed in Table 1. All of the sites are located within the alluvial plain of the Hoosic River within the same topographical area of the project site. No documented archaeological sites are located within the boundaries of the project area.

Table 1. Prehistoric Sites along the Hoosic River in the Vicinity of the Project Area.

Site Number	Age/Cultural Affiliation	Description
VT-BE-3	Prehistoric	Small area of scattered worked flint. Located on the banks of the Hoosic River.
VT-BE-4	Prehistoric	Possible Campsite. Scrappers, possible hammerstones, FCR.
VT-BE-12	Early, Late Archaic; Middle, Late Woodland	Large site, both Archaic and Woodland period diagnostic artifacts present
VT-BE-13	Late Archaic	Multi-component site with a large range of Late Archaic points.
VT-BE-14	Late Archaic	Multiple Loci/various artifact classes.
VT-BE-15	Early, Late Archaic; Middle, Late Woodland	Recurrent Base Camp. Numerous lithic tools (including PP/Ks), 42 kg of FCR, 118 flakes.
VT-BE-16	Late Archaic	Concentrations of triangular points and Late Archaic points. Late Archaic points dominate. Site possibly bisected by Railroad.
VT-BE-17	Prehistoric	May be part of VT-BE-16, separated by Hogs Back Road.
VT-BE-18	Late Archaic	Two fire hearths, which contained pottery, possible Late Woodland triangular points. Late Archaic Normanskill points.
VT-BE-119	Prehistoric	Flakes, FCR.
VT-BE-122	Prehistoric	Chert projectile point tip, 3 FCR.
VT-BE-123	Prehistoric	FCR.
VT-BE-124	Prehistoric	FCR.
VT-BE-126	Prehistoric	Flakes, FCR.
VT-BE-127	Prehistoric	Flakes, FCR.
VT-BE-130	Prehistoric	Flakes, FCR.
VT-BE-138	Middle Woodland	Possible Fox Creek point fragment, cobble cores, flakes, FCR.
VT-BE-139	Prehistoric	Flakes, FCR.
VT-BE-120	Prehistoric/Historic	Heavily disturbed site, flakes, FCR.
VT-BE-121	Prehistoric/Historic	4 lithic tools, FCR, flakes.
VT-BE-125	Prehistoric/Historic	Flakes, FCR, one PP/K tip.
VT-BE-214	Archaic–Woodland/Historic	1 corner-notched point, 1 point fragment, core, flakes.
VT-BE-215	Prehistoric/ historic	Lithic scatter.

Jim Gilbert, a resident of Pownal and a local artifact collector, was contacted about the project area. Mr. Gilbert has been collecting artifacts in the Pownal area for nearly 20 years. He has an extensive collection of projectile points, tools, and flakes gathered from sites in the vicinity of the project area. In his years of collecting Mr. Gilbert has never discovered an artifact within the boundaries of the project area (Jim Gilbert, personal communication 2000).

Nevertheless, based on the location of the project area, and the number of documented sites within its immediate vicinity, there is a high probability for significant archaeological deposits within the project area.

FIELD METHODS

The purpose of the fieldwork was to locate all archaeological resources present in the study area that might be impacted by the future environmental/hazardous waste mitigation. The field methodology was established based on guidelines set forth in the State of Vermont's *Guidelines for Archaeological Studies*. Subsurface testing was employed as feasible based on the local topography and ground cover. Subsurface testing was conducted in all the berm areas surrounding the lagoons. The lagoons were not examined due to the known presence of hazardous waste and the apparent construction activity undertaken to create the lagoons, which resulted in disturbance to buried soil horizons. Survey methods included manual bucket augering of selected locations along the berm area of the lagoons. Due to the amount of natural and imported stone in the berm area, attempts at bucket augering proved futile. In order to determine the presence, or absence, of a buried A horizon under the berms, 10 backhoe test pits were excavated along selected locations of the lagoon area (see Figure 2).

Detailed notes on the survey methods, any sites or cultural material identified during the survey, and relevant environmental factors were recorded. Representative photographs of the project area were taken in color print format to document the general topography and stratigraphy of excavated test pits.

V. RESULTS

RESULTS

Twenty bucket auger tests and 10 backhoe test pits were excavated in the project area to evaluate the presence or potential for buried cultural deposits in the lagoon area of the former Pownal Tannery site in North Pownal, Bennington County, Vermont.

The bucket augers were manually excavated to depths ranging from 1.67 to 10.6 feet below the surface. Table 2 provides a description of each auger test, and their locations are illustrated in Figure 2. The augers encountered a good deal of rock, both natural and imported, making it difficult to assess the deposits within the project area. The only artifacts encountered during the auger testing were leather fragments, bottle glass, and a piece of wire—all relatively recent material.

Ten backhoe test pits, labeled TP500–TP509, were excavated. Each of the test pits is described below. Investigations located no non-modern cultural material and no evidence of buried A horizons. The locations of the areas investigated are depicted in Figure 2.

TP500

TP500 is located west of the Boston and Maine Railroad at the southern extent of the project area on the berm between the Hoosic River and Lagoon 1 (see Figure 2). TP500 was excavated to a depth of 4 m. The top 1.5 m consisted of mixed fill dirt containing several machine-made brick fragments. At 1.5 m there was a very distinct stratigraphic change from relatively clean fill to dark, stained, contaminated soils (Figure 3). From 1.5 m to the extent of the test pit excavation, TP500 was filled with contaminated soils and refuse (leather scraps, hair, wood, molded bottles, etc.) from the tannery. Excavation was stopped a 4 m. No visible A horizons or subsoils were observed.

TP501

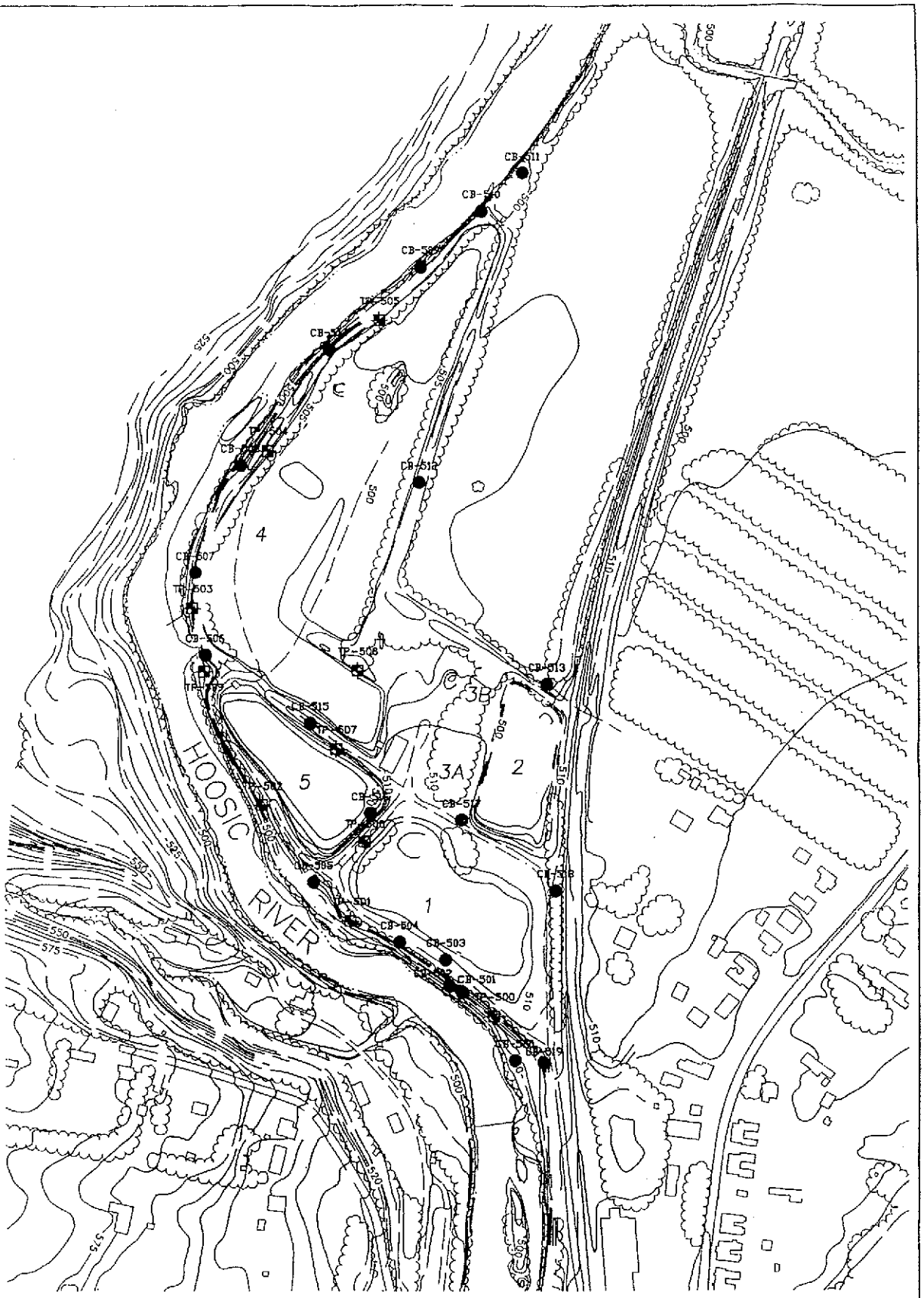
TP501 is located west of TP500 on the berm between the Hoosic River and Lagoon 1 (see Figure 2). TP501 was excavated to a depth of 3.7 m, which was the extent of the reach of the backhoe at this location. TP501 soils consisted of fill material associated with the construction of the berm (Figure 4). No A horizon was visible, and no cultural material was recovered.

TP502

TP502 is located west of TP501 on the berm between the Hoosic River and Lagoon 5 (see Figure 2). TP502 was excavated to a depth of 4.1 m. An irremovable buried timber was encountered approximately 1 m below the surface. TP502 was moved to the southeast side of the timber and continued to 4.1 m. A former streambed of the Hoosic River was encountered at 3.5 m below the surface (Figure 5). No A horizons or cultural material were observed in TP502.

Table 2. Summary of Bucket Auger Tests.

Auger Test	Depth	Soil Type/Description	Artifacts
CB-501	3.4 ft.	Fill: sandy loam. Stopped at large gravel.	1 green bottle base at 2.5 ft.; leather fragments
CB-502	3.4 ft.	Fill: sandy loam. Stopped at large gravel.	Leather fragments upper portion
CB-503	3.1 ft.	Fill: sandy loam. Stopped at large gravel.	Leather fragments
CB-504	5.4 ft.	Fill: sandy loam. Stopped at gravel.	None
CB-505	10.6 ft.	Coarse sandy loam—may be fill in upper 2 ft.	None
CB-506	4.5 ft.	Coarse sandy loam with gravel at 3 ft. and at base.	None
CB-507	3.4 ft.	Sandy clay loam, organic litter layer at bottom. Stopped because LEL at bottom reached 38%.	None
CB-508	6.6 ft.	On "Terrace"; Still had leather pieces for several ft. Sandy loam.	Leather fragments
CB-509	7.4 ft.	On "Terrace"; sandy loam to sandy clay loam at very base	None
CB-510	5.3 ft.	A horizon in upper 2 ft., turns to B horizon below that; sandy loam. •Undisturbed creek bank outside of lagoon berm area •A is 10YR 3/2, moist •B is 10YR 4/3, moist	None
CB-511	6.0 ft.	Similar to CB-510 in setting. A in upper 18cm, B below that sandy loam.	None
CB-512	15.1 ft.	Sandy fill: no changes, water at bottom.	None
CB-513	7.1 ft.	Sandy fill stopped at auger refusal.	None
CB-514	7.3 ft.	Sandy fill stopped at auger refusal.	None
CB-515	2.3 ft.	On access road (between lagoon); very gravelly with loamy sand fill. Stopped on coarse gravels.	None
CB-516	2.0 ft.	Coarse gravel and boulders in sandy loam matrix; fill (road bed).	None
CB-517	1.0 ft.	Solid coarse gravel-impenetrable with shovel or auger.	None
CB-518	1.67 ft.	Coarse gravel at sandy loam; fill material.	Green glass bottle fragments; 1 piece of wire
CB-519	4.1 ft.; stopped at gravel	Sandy loam: weak A horizon in upper 6 inches; low terrace.	
CB-520	3.3 ft.; stopped at gravel	Sandy loam: weak A horizon in upper 6 inches; low terrace.	None



0 50 100 150 200
SCALE IN FEET

LEGEND

TEST PIT LOCATION

CULTURAL BORING LOCATION

TRC — Boott Mills South, Foot of John Street, Lowell, MA 01852, 978-970-5800	FIGURE 2 CULTURAL BORING AND TEST PIT LOCATIONS LAGOON AREA
TRC PROJ. NO.: 02136-0220-01N93	POWNAL TANNERY POWNAL, VERMONT
EPA CONTRACT NO.: 68-W5-0042	
RAC SUBCONTRACTOR NO.: 107081	M&E Metcalf & Eddy

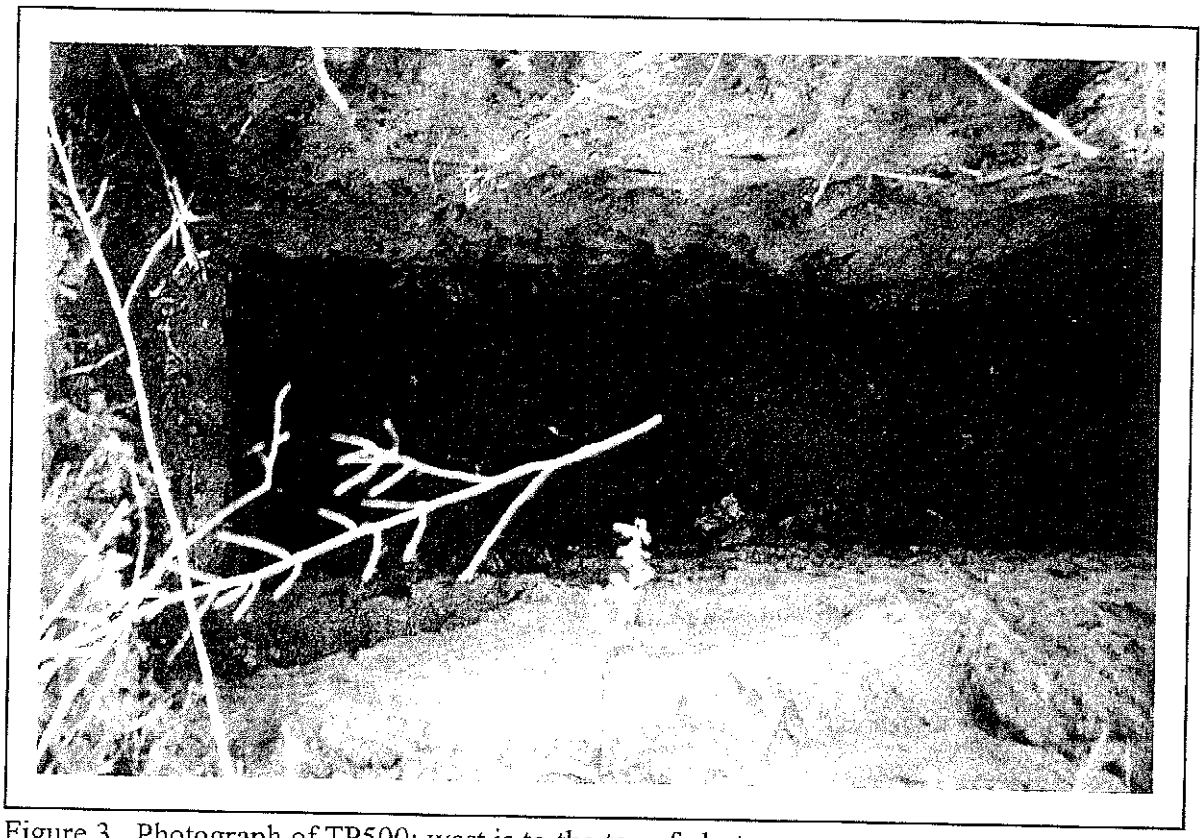


Figure 3. Photograph of TP500; west is to the top of photo.

Figure 4. Photograph of TP501; west is to the top of photo.

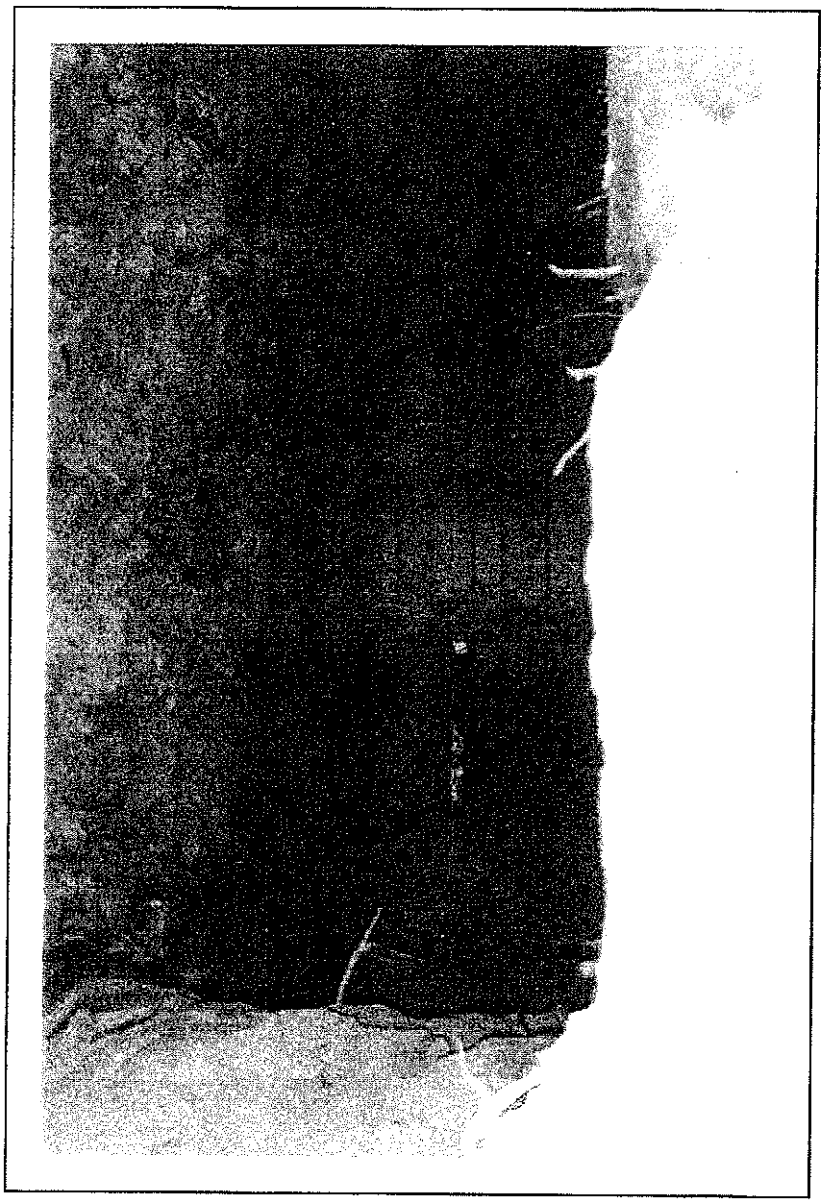


Figure 5. Photograph of TP502; northwest is to the top of photo.

TP503

TP503 is located northwest of TP503 on the berm between the Hoosic River and Lagoon 4 (see Figure 2). TP503 was excavated to a dept of approximately 3 m, at which depth the walls of TP503 collapsed. Attempts to continue the excavation caused further collapse of the test pit. No further excavation of TP503 was possible.

TP504

TP504 is located approximately halfway between TP503 and TP505 on the lagoon side of the berm between the Hoosic River and Lagoon 4 (see Figure 2). TP504 was excavated from the Lagoon 4 side of the berm, allowing for a greater depth of excavation than the test pits excavated from the tops of the berms. The test pit was excavated to a depth of 5.5 m. The test pit consisted of approximately 4.3 m of fill, measured from the top of the berm. Immediately below the surface of the berm was a stratum of gray, fine silt subsoil (Figure 6). The water table was reached at approximately 5.3 m. Almost immediately, the walls of the test pit began to collapse around the water table. No A horizons or cultural material were encountered in TP504.

TP505

TP505 is located north of TP504 on the lagoon side of the berm between the Hoosic River and Lagoon 4 (see Figure 2). The dept and profile of TP505 is almost identical to TP504. The test pit was excavated to a depth of 5.5 m. The test pit consisted of approximately 4.3 m of fill, measured from the top of the berm. Immediately below the surface of the berm was a stratum of gray, fine silt subsoil (Figure 7). The water table was reached at approximately 5.3 m. Almost immediately the walls of the test pit began to collapse around the water table. No A horizons or cultural material were observed in TP505.

TP506

TP506 is located on a berm in Lagoon 4 (see Figure 2). The berm is used as an access road into the interior of the lagoon. TP506 was excavated to a depth of 4.5 m. The test pit consisted of approximately 3.8 m of mixed fill over a layer of gray, fine silt subsoil (Figure 8). The water table was reached at 4 m. Almost immediately the test pit began to fill with water and the lower portions of the test pit began to collapse. No A horizons or cultural material were encountered in TP505.

TP507

TP507 is located on the berm separating Lagoons 5 and 4 (see Figure 2). TP507 was excavated to a depth of 4.5 m. The top 2.5 m of the test pit consisted of mixed fill material over a stratum of gray silt subsoil. A former streambed of the Hoosic River was encountered at 3.5 m below the surface (Figure 9). The current water table was reached at approximately 4 m. No A horizons or cultural material were identified in TP507.

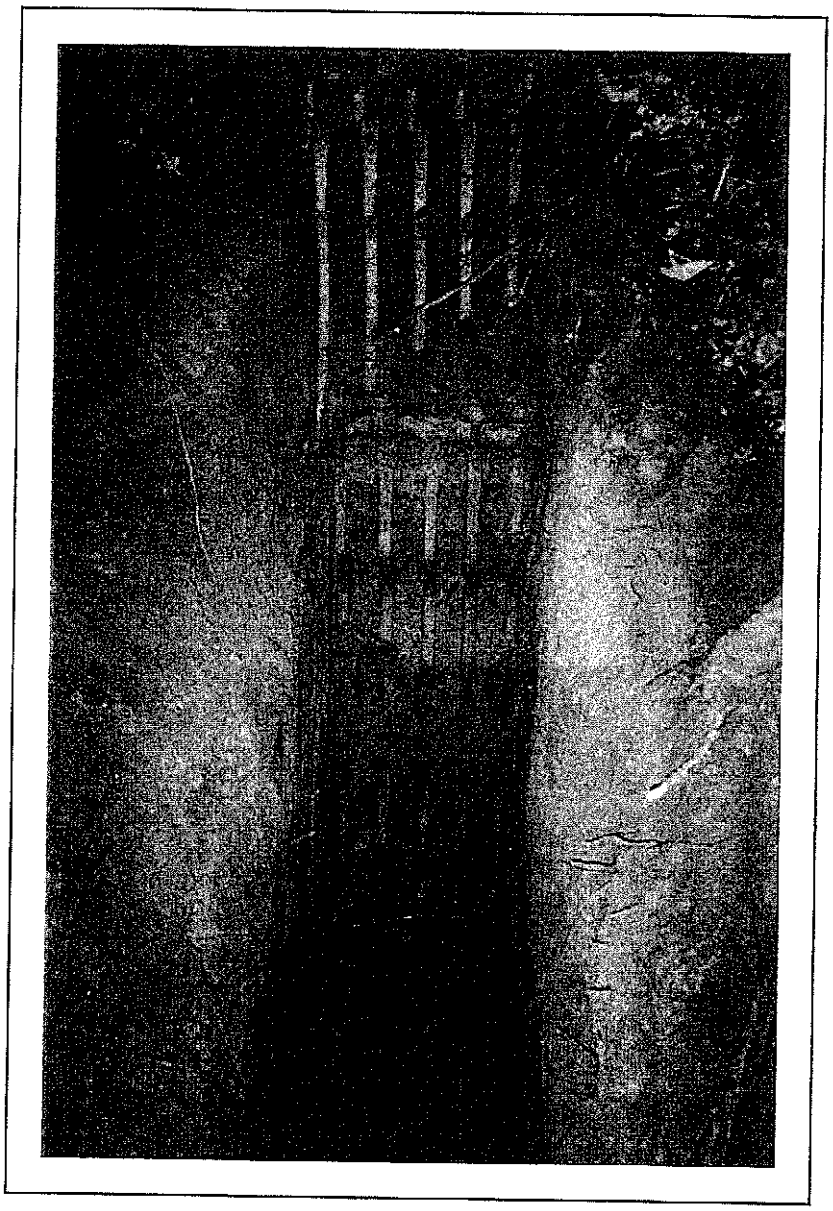


Figure 6. Photograph of TP504, view west.

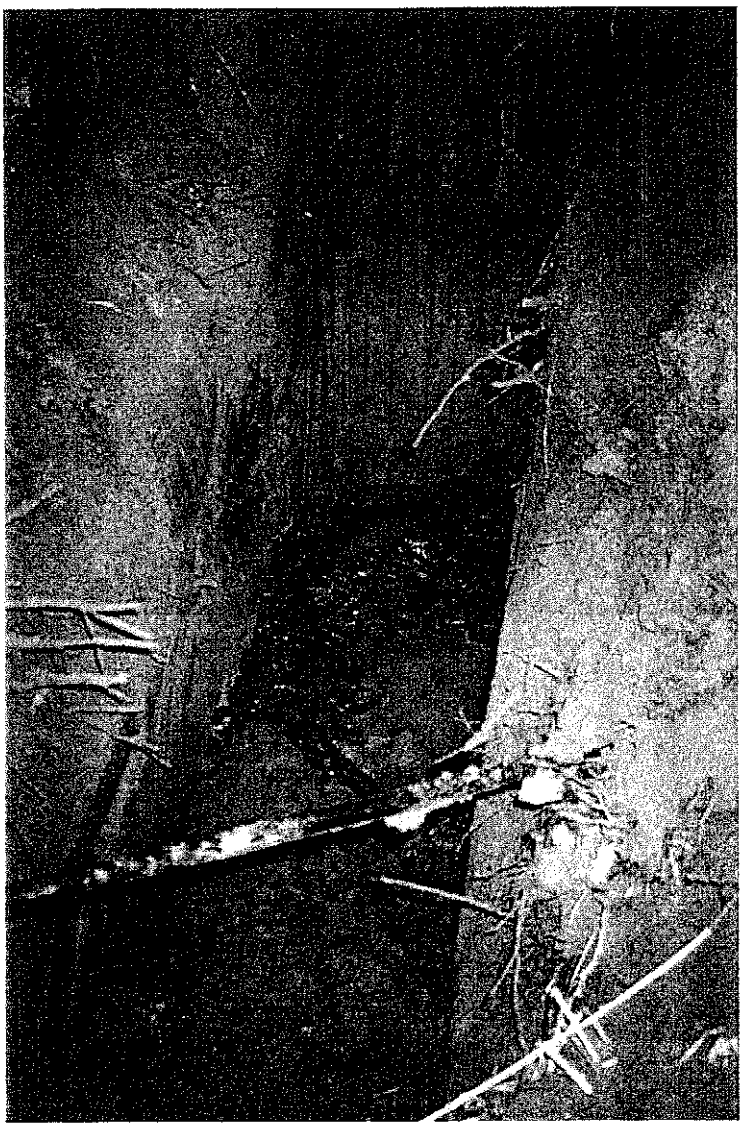


Figure 7. Photograph of TP505, view west.

Figure 8. Photograph of TP506, view north.

Figure 9. Photograph of TP507, view south.

TP508

TP508 is located on the berm separating Lagoons 5 and 1 (see Figure 2). TP508 was excavated to a depth of 4.5 m. The top 1.8 m consisted of fill material. At 1.8 m there was a very distinct stratigraphic change from relatively clean fill to dark, stained, contaminated soils and refuse from the tannery. The contaminated soils continued for another 2 m. Directly beneath the contaminated soils was a stratum of native silt subsoil stained an unnatural bluish-gray color from the tannery chemicals leaching into the soil (Figure 10). No A horizons or cultural material were observed in TP508.

TP509

TP509 was on the Hoosic River bank, off the berm, south of TP503 (see Figure 2). TP509 was excavated to a depth of 1.7 m. The water table was reach approximately 1.5 m and the test pit began to fill rapidly with water (Figure 11). Within a few minutes the walls of the test pit began to collapse. Attempts to continue the excavation caused further collapse of the test pit walls. No further excavation of TP509 was possible. No cultural material or evidence of buried A horizons was noted prior to the walls collapsing.

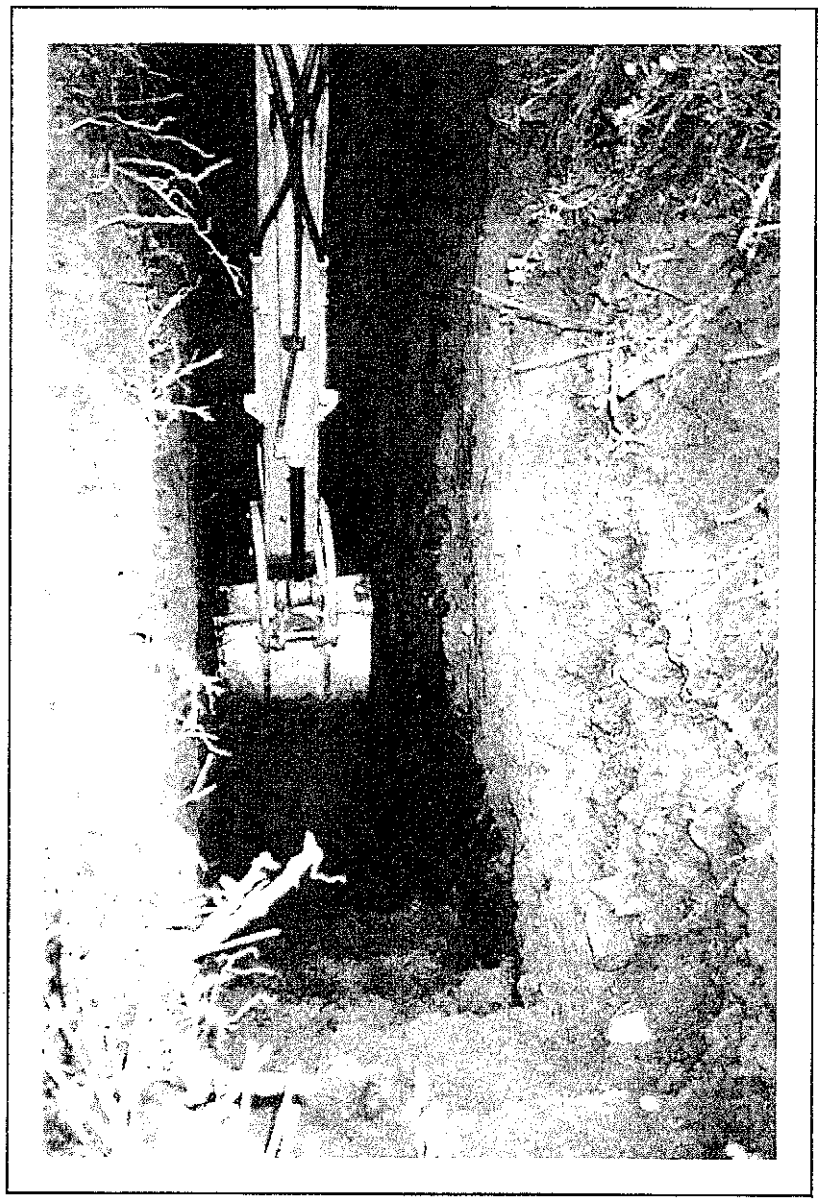


Figure 10. Photograph of TP508, view south.

Figure 11. Photograph of TP509, view west.

VI. SUMMARY AND RECOMMENDATIONS

During October and November 2000, TRC performed a Phase I archaeological investigation of the Lagoon Area of the former Pownal Tannery site in North Pownal, Bennington County, Vermont. The purpose of the survey was to determine whether significant cultural deposits may exist within the project area.

Hand-excavated auger tests and a series of backhoe test pits revealed no evidence for buried archaeological sites or potential cultural strata (e.g., A horizons). Based on these findings, TRC recommends no additional cultural resource investigations within the project area.

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APPENDIX I

REFERENCES

TOWN OF POWNAL
POWNAL TANNERY SUPERFUND
REUSE ASSESSMENT REPORT

REFERENCES:

1. EPA Assistance Agreement, 9/28/99.
   Assistance ID No. BP981097-01-0.
   Project Title: "Pilot Reuse Assessment and Public Outreach Study for Recycling the Pownal Tanning Company Superfund".

2. Pownal Zoning Bylaw Pownal, Vermont, Adopted April 1st, 1991, Amended, 2/23/95.

3. Town of Pownal, Vermont, Draft Wastewater Facilities Planning Preliminary Engineering Report, August 2000, Volumes 1 and 2. By Forcier Aldrich & Associates.

4. Phase IA Archeological Investigations for the proposed Pownal Wastewater Facilities Planning Upgrade, Town of Pownal, Bennington County, Vermont, June 2000. Prepared by Hartgen Archeological Associates, Inc., Certified WBE/DBE. PO Box 81, Putney, Vermont 05346.

5. Draft of EPA Phase I Data Summary Report for Remedial Investigation, 2 Volumes, Pownal Tannery Superfund Site, Pownal, Vermont, August 2000, Prepared by: Metcalf & Eddy, Inc. And Team Subcontractor TRC Environmental Corporation.

6. This Reuse Report, page V-1, V-2 & V-3 provide a number of specific references for the identified specific copies.

7. Ms. Siri Newman
   Outreach and Training Coordinator
   Vermont Tourism Data Center

8. Mr. William B. Colvin
   Community Development Director
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9. Mr. Lance Matteson
   Executive Director
   Bennington County Industrial Corporation

9. Mr. Gregory Burke
   Executive Director
   Bennington County Regional Commission

10. Mr. Michael Card
    Town Planner
    Williamstown, Massachusetts

12. Ms. Janet Weyers
    Executive Director
    Bennington Area Chamber of Commerce

APPENDIX I

REFERENCES (Continued):

13. U.S. Census Data

14. Vermont Department of Employment and Training, Labor Market Information

15. Vermont Department of Tourism

16. "A Guide for Recreation Planning at Public Works Facilities in Vermont", October 1981, by Phillips & Emberley, Inc.

17. "Reuse Possibilities for the Former Pownal Tannery Site in North Pownal, Vermont", Fall 1999, by Connolly, Leibler, Silver and Spense, Williams College, MA.