

# DISCOVER

THE BAUM PUMPING STATION ROADSITE 36AR0529

# ARCHAEOLOGY

IN ARMSTRONG COUNTY  
BOGGS TOWNSHIP, ARMSTRONG COUNTY, PENNSYLVANIA

## INTRODUCTION

Archaeological remains are the primary means by which we can understand the lives of ancient peoples, such as those who once occupied the Baum Pumping Station Road Site (36AR0529). Sites like this one are important non-renewable resources. Archaeological sites, much like natural resources, are



Archaeologists conducting block excavation.

part of the environment and can be impacted or destroyed by construction or other modern development. However, unlike natural resources, archaeological resources are unique and irreplaceable. Ground-disturbing activities such as roadway improvements or utility line placement can destroy a site without anyone ever knowing it existed; therefore, it is important to identify these sites and retrieve the information before it is destroyed. Once a site has been disturbed, it is nearly impossible to reconstruct what has happened there.

The Pennsylvania Department of Transportation (PennDOT) is bound by Federal and State law and regulations to consider the effects of its actions on all aspects of the environment. PennDOT is committed to the identification, evaluation, and

protection of our cultural resources to ensure that these resources are available for future generations. In addition, PennDOT believes it is important to disseminate the results of this work to both the professional community and to the public.



Archaeologists taking notes on site.

Researchers from A.D. Marble & Company conducted archaeological investigations in Boggs Township, Armstrong County, Pennsylvania, over the course of two years (2011 to 2012) in advance of proposed roadway improvements. The work was conducted in conjunction with SAI Engineers, Inc., for PennDOT Engineering District 10-0 and was sponsored by the Federal Highway Administration (FHWA). Proposed roadway improvements associated with the project included roadway alignment, bridge replacement, embankment fill, wetland mitigation, stream relocation, and the replacement of two culverts.

Due to project design requirements, PennDOT determined that the Baum Pumping Station Road Site (36AR0529) could not be avoided. PennDOT and FHWA consequently funded archaeological investigations to recover some of the artifacts and other important information from the site. Initial investigations determined that the Baum Pumping Station Road Site was eligible for inclusion in the National Register of Historic Places because of its potential to contain important

data. As a result, an intensive data recovery excavation was conducted. Investigations at the site provided a better understanding of Native American life in the region during the Late Archaic and Late Woodland periods, as well as demonstrated the importance of archaeology for studying the past.



Archaeologists excavating a test unit.

## WHAT IS ARCHAEOLOGY?

Prior to discussing the specifics of the Baum Pumping Station Road Site (36AR0529), it is important to talk about the concept of archaeology.

Archaeology is the study of the way people lived years ago by interpreting the clues they left behind. Archaeologists work like modern-day detectives: they gather evidence from the remains of pottery, stone tools, buildings, and bones to carefully build a theory that explains their discoveries. Archaeology is a mixture of physically demanding work, careful observation, recordation, mapping, and analysis.

Archaeological studies in the United States can be broken into two main categories. Precontact archaeology is the study of Native American groups prior to European occupation. This period begins nearly 16,000 years ago and continues into the early part of the eighteenth century. Historic archaeology is the study of people and groups from the Contact period to the present.

### What is an archaeological site?

Sites are places where people lived, worked, or worshiped. Remnants from past activities are present at the site, providing the archaeologist with information that leads to an understanding of the daily lives of those that once occupied the land. Archaeological sites can vary in size and function; they can be as small as a few square feet with some pieces of Precontact pottery scattered in a corn field, or as large as an entire village with thousands of artifacts covering several acres beside a river. An archaeological site can be a forgotten farmstead along an old rural road or the foundation of a buried colonial tavern located in a major city.



Archaeologist surveys a potential site location.

Once a site is discovered, it is given a name that typically corresponds with the project, a local designation (such as the road by which it was discovered), or the landowner's last name. The Baum Pumping Station Road Site (36AR0529) was named for the road nearby the site. In addition to receiving a name, the archaeological site also receives an official designation using the Smithsonian Trinomial System, which for this particular site is 36AR0539. The "36" represents the State of Pennsylvania; "AR" is an abbreviation for Armstrong County, and "0539" means that it is the 539th archaeological site given a designation within the county.

### What do archaeologists do?



Looking for features at 36AR0539.

Archaeologists dig! They methodically excavate and sift dirt through screens at archaeological sites to recover artifacts. They do not dig up dinosaurs, though paleontologists use similar excavation techniques to recover the fossils of these extinct animals and only in the movies do

archaeologists uncover fantastical magical items, battle gun-toting hoards, or discover secret caches of buried treasure. Modern archaeologists spend a good deal of time on-line and in libraries, museums and archives before excavating a site. This preparation develops research questions that help guide the excavation and interpretation of the site.

Once a site has been excavated and recorded, archaeologists process and analyze the recovered artifacts. Usually, the archaeologists conduct additional archival

studies to aid in understanding the artifacts, which are examined individually and then as a group to answer the research questions.

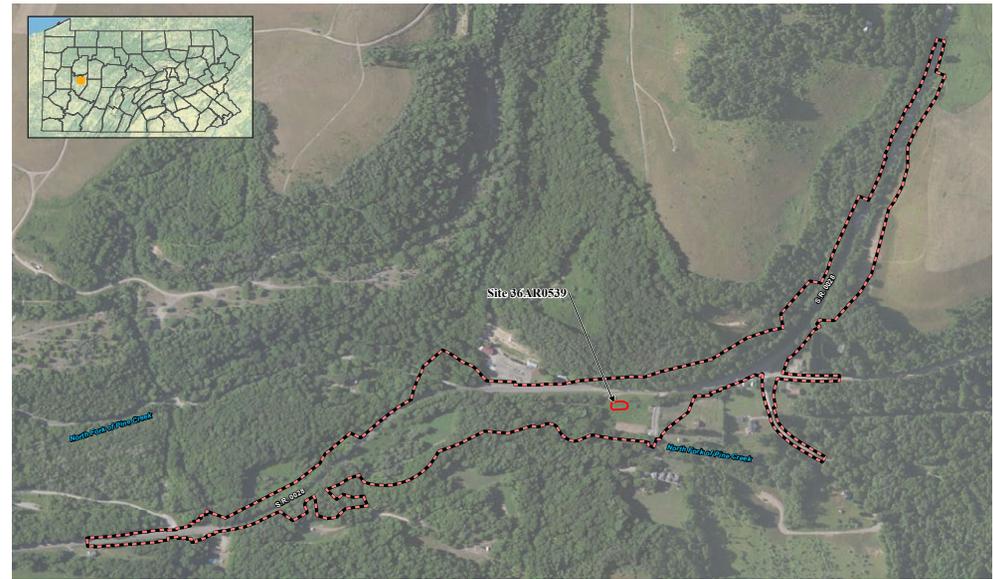
Finally, the archaeologists use the results of the excavations and research to prepare a report that explains and interprets the archaeological site and its contribution to our understanding of the past.



Archaeologist processing artifacts.

## ARCHAEOLOGY AT THE BAUM PUMPING STATION ROAD SITE

The Baum Pumping Station Road Site (36AR0539) was identified south of S.R. 0028 in Boggs Township, Armstrong County, Pennsylvania. The site is located at the base of a steep slope that gently tapers toward a small floodplain to the south and west. The portion of the site with the highest artifact concentration is located on a rise that is slightly higher than the surrounding footslope and floodplain. This slight rise would have made this small area less likely to be flooded during periods of wet weather, as was observed during the site investigations.



Aerial map showing the site location.

Archaeological investigations at the site produced a total of 1,562 artifacts, 1,360 of which are precontact and 202 are historic or modern. Analysis of the artifacts, which concentrated primarily on the precontact lithic (or stone tool) assemblage, revealed that the site was sporadically occupied during at least the Middle to Late Archaic Period and into the Late Woodland Period by small groups of hunter/gatherers.

### Who were the first inhabitants?

Native Americans were the original inhabitants of the Allegheny River Valley and Armstrong County. Archaeological studies suggest that the earliest inhabitants to the continent arrived here during, or near, the end of the last Ice Age, sometime between 25,000 and 14,000 years ago. Archaeologists have termed the part of their history that predates the arrival of the Europeans, the *Precontact Era*.

The Precontact Era is commonly divided into three broader periods characterized by approaches to land use, social groupings, and other aspects of daily life:

Paleoindian, Archaic, and Woodland. The Archaic and Woodland periods are commonly subdivided into early, middle, and late divisions. The Late Woodland Period up to the time of contact with European settlers varies greatly throughout the eastern part of the country. European contact likely occurs in the western part of Pennsylvania sometime during the late-seventeenth or early eighteenth century. The following table describes the precontact periods recognized in Pennsylvania ([www.state.pa.us](http://www.state.pa.us)).

**Fieldwork**

Archaeologists planned the excavations at the Baum Pumping Station Road Site (36AR0529) with great care. A series of stages, or phases, are used to identify and investigate sites: Phase I, which began with an initial investigation to identify the presence of any cultural remains; Phase II, which involved evaluation of the site; and Phase III, which involved more intensive excavation and data recovery. The purpose of the staged investigation was to collect sufficient information in each stage to help plan the following stage. Phase I included a geomorphology, or soils study, and the excavation of circular shovel test pits (STPs) spread in 50-foot intervals across the proposed area of construction for the road improvements.



Archaeologists digging shovel test pits.

Once the site had been identified within the project area boundary, the next step was to evaluate the site and determine if it was eligible for inclusion in the National Register of Historic Places. In order to determine its eligibility, archaeologists dug additional STPs in tighter intervals to test more of the site, establish a site boundary, and identify areas of artifact concentration. Following the STP excavations, they placed square test units (TUs) evenly across the site and

CULTURAL PERIODS	OTHER DISTINCTIVE TRAITS
<b>CONTACT</b> (Susquehannocks and other historically recorded tribes) A.D. 1550 - A.D. 1780	This was a period of cultural transition, fragmentation, and eventual collapse. Europeans moved into Pennsylvania and essentially displaced Native American cultures. Native-made objects were replaced by European equivalents such as iron axes, brass kettles, and glass beads. Extensive warfare occurred for control of the fur trade and land acquisition.
<b>LATE WOODLAND</b> (Late Prehistoric) A.D. 800 - A.D. 1550	Horticulture was practiced across the state and, by the end of this period, most groups practiced agriculture and lived in permanent stockaded villages. Native Americans organized into tribes. Numerous pottery shapes and designs were used, along with elaborate clay smoking pipes. Stone celts were common, and the bow and arrow developed as the main mode of weaponry.
<b>EARLY AND MIDDLE WOODLAND</b> (Adena and regional equivalents) (Hopewell and regional equivalents) 1200 B.C. - A.D. 800	Horticulture began in western Pennsylvania, and hamlets became more common. Ceremonialism and widespread trade continued from the Early Woodland period. A variety of cord-marked, stamped, and net-marked pottery styles emerged. This period is poorly known in eastern Pennsylvania, but permanent occupations seem to be more common during this time.  Semipermanent settlements began during this period. Fired-clay pottery was introduced from the south, along with stone gorgets and tube-shaped smoking pipes. Trade was widespread, and burial mounds, burial ceremonialism, and larger semipermanent villages developed in western Pennsylvania.
<b>TRANSITIONAL</b> (Terminal Archaic) 1200 B.C. - 1800 B.C.	A climatic change resulted in less precipitation, and Native Americans focused their activities on floodplains. New tools were developed to adapt to this environment, including soapstone bowls and broad-bladed spear points reworked into a variety of knives, drills, and scrapers. The first evidence of extensive trade is found in the form of highly desired stone used for making tools.
<b>ARCHAIC</b> 1800 B.C. - 8000 B.C.	Hunters and gatherers used a variety of special tools such as axes, atlatl (spear thrower) weights, grinding stones, stone drills, and a diversity of stone spear point styles. They hunted and fished and collected plant foods in an emerging deciduous forest. Native American groups continued to migrate through a cycle of seasonal rounds, but territories became smaller compared to Paleoindian times. The population gradually increased during this period.
<b>PALEOINDIAN</b> 8000 B.C. - 14,000 B.C.	Paleoindians were highly nomadic foragers in a late glacial/early modern environment. They hunted, fished, and collected a variety of animal and plant foods. In the northern parts of the state, their annual migration route covered hundreds of miles. The most distinctive artifact is the fluted spearpoint. Scrapers were used for working hides and making wood and bone tools.

Table courtesy of the Pennsylvania Historical and Museum Commission

then in two excavation blocks where higher concentrations of precontact artifacts were located. TUs allow the archaeologist to more precisely identify the spatial location of the artifacts and better examine the soil layers. The archaeologists at the Baum Pumping Station Road Site (36AR0529) found two distinct layers of plowed soils.



Soil profile recorded at 36AR0539.

Below these plowed soils, archaeologists saw a collection of rounded cobbles in one of the study blocks that were arranged in a semicircular pattern with a large rock in the center, surrounded by burned soil and charcoal. This small pit was filled with fire-cracked-rock (FCR) and is the remains

of a cooking hearth. The hearth, provided a significant amount of information regarding occupation at the site. Areas showing a clear trace of a specific human activity are called features. The information that this feature provided assisted archaeologists in answering a number of important questions, such as when the site was occupied and what types of food they prepared. Excavations at this stage of the investigation helped archaeologists determine which portion of the site could provide the most information regarding occupation.

In the third stage of excavation, archaeologists planned to examine the portion of the site with the highest artifact concentration, as well as the area where the hearth was discovered. More square TUs were added to one of the study blocks, and some were used to examine a second concentration of artifacts. Detailed notes, drawings, and photographs about the soil layers and characteristics of each study block were recorded during the excavations. After the TUs were completed, a backhoe was used to strip the topsoil from the site, and excavators searched

for soil stains that may have avoided the plow and extended into the subsoil. These traces of human habitation could include post remnants, storage pits, and hearths. Unfortunately, no additional features were found. All of the recovered artifacts were bagged according to their vertical and horizontal locations within the site and were transported back to the laboratory for processing and analysis.



Site stripping at 36AR0539.



Archaeologist conducting background research.

### *The Artifacts*

Prior to the arrival of Europeans, Native Americans fashioned many of their tools from a type of stone called chert or flint. In most cases, the only thing that remains at a site for archaeologists to study are the stone tools and the by-products of creating them. Precontact populations used cherts that were locally available to them and also obtained raw materials from distant sources, either directly or through trade with other native groups. Many of their tools were crafted by carefully removing, or flaking, fragments from large blocks of chert or flint called cores. These cores can be river cobbles or pieces of quarried stone. The flakes removed from cores are called debitage. The first steps in making a flaked stone tool involve removing the outer weathered cortex and forming a rough shape of the tool. These flakes, called primary flakes, are typically large. Later steps involve removing smaller, more precise flakes, called tertiary flakes, to give the tool its final shape.



Lithic reduction sequence.

Some tool shapes are indicative of a particular time period and a specific geographic area. Archaeologists often rely on temporally diagnostic flaked stone tools to date archaeological sites. Temporally diagnostic artifacts are defined as a tool of a distinctive style that can be dated through regional comparisons to a specific time period.



Stone tool debitage.

Excavations at the Baum Pumping Station Road Site (36AR0529) produced 1,141 pieces of flaked stone debitage, most of which were made of chert. Archaeologists also recovered 16 pieces of precontact pottery, 13 projectile points, 13 bifaces, seven cores, 38 pieces of FCR, and seven pieces of charred wood.

Refitting studies were conducted on the stone debitage to determine if there were observable patterns of stone tool production at the site. Researchers attempted

to reconstruct the process of stone tool production at the site by matching the debitage with cores. Studies like this are conducted to establish how native groups organized their living space.

Several stone tools were also selected for detailed study by specialists. A micro-use-wear study was conducted on 13 stone tools, including projectile points and scrapers. Micro-use-wear studies use a low-powered microscope to examine small scratches and polish that can indicate whether a tool was used for cutting, scraping, or drilling. They can also tell us upon what types of material the tool may have been used (e.g., soft materials such as plants or meat, or hard materials like bone or wood).

Another study included the examination of ten stone tools for plant and animal residue. Protein residue analysis collects residues that adhere to stone implements and compares them to a reference collection. This provides evidence of the types of animals and plants that were processed at a site.

An additional study was conducted on a large cooking stone and three pieces of FCR recovered from the hearth feature at the site. Fourier Transform Infrared Spectroscopy (FTIR) is a method used to examine fats and lipids that remain on an item recovered at a site. Residue can be taken from vessels, stone tools, soils, and FCR. This type of study tells the archaeologist what was cooked in a vessel, what was processed with a stone tool, and how a hearth was used.

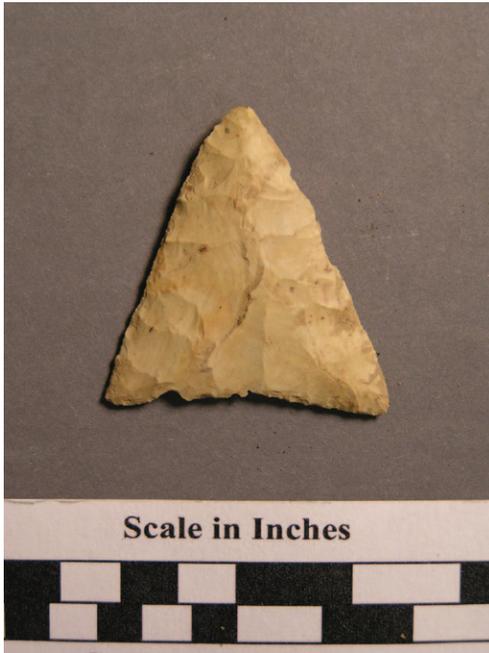


Projectile points from the 36AR0539 site.

## WHAT DID WE LEARN AT THE BAUM PUMPING STATION ROAD SITE?

As part of the final stage of investigation at the Baum Pumping Station Road Site (36AR0529), researchers developed specific questions to help guide the research and provide a framework for the interpretation of the recovered data. It is through the answers to these questions that the archaeologists are able to reconstruct the daily activities of the Native American population of the Allegheny River Valley.

### How old is the site?



A Levanna type projectile point.

places the second occupation between A.D. 800 and A.D. 1550. Precontact pottery pieces recovered at the site also indicate a Woodland period occupation, although they were too small to provide specific information regarding their type. Age can also be determined through radiocarbon dating. A piece of charcoal collected from the hearth yielded a radiocarbon date of 1790 +/- 30 BP, which also places it

Archaeologists can use several techniques to date a site. Archaeologists determined that the Baum Pumping Station Road Site (36AR0529) was occupied from the Middle to Late Archaic periods and again during the Middle to Late Woodland periods. One way to determine the site's age is through the types of projectile points found at the site. The presence of Lamoka, Genesee, Vosberg, and Brewerton type projectile points provide evidence that the site was occupied during the Middle to Late Archaic periods. The recovery of a single Levanna type projectile point

within the Late Woodland period. The higher quantity of Archaic period artifacts, in relation to the fewer number of Late Woodland period artifacts, suggests that the site was more heavily occupied during the Archaic period.



A hearth feature at the 36AR0539 site.

### What were people doing there?

In order to answer this question, archaeologists look for patterns in the way artifacts were distributed across the site. Results of the excavations at the site clearly indicate that the main site activities were concentrated in two distinct locations on the high ground overlooking the floodplain, as evidenced by the high numbers of artifacts and the presence of a hearth feature, or fire pit with cooking stones. One of the areas was used as a brief encampment, as evidenced by the presence of a large quantity of FCR, pottery, burnt earth, charcoal, and a hearth feature.

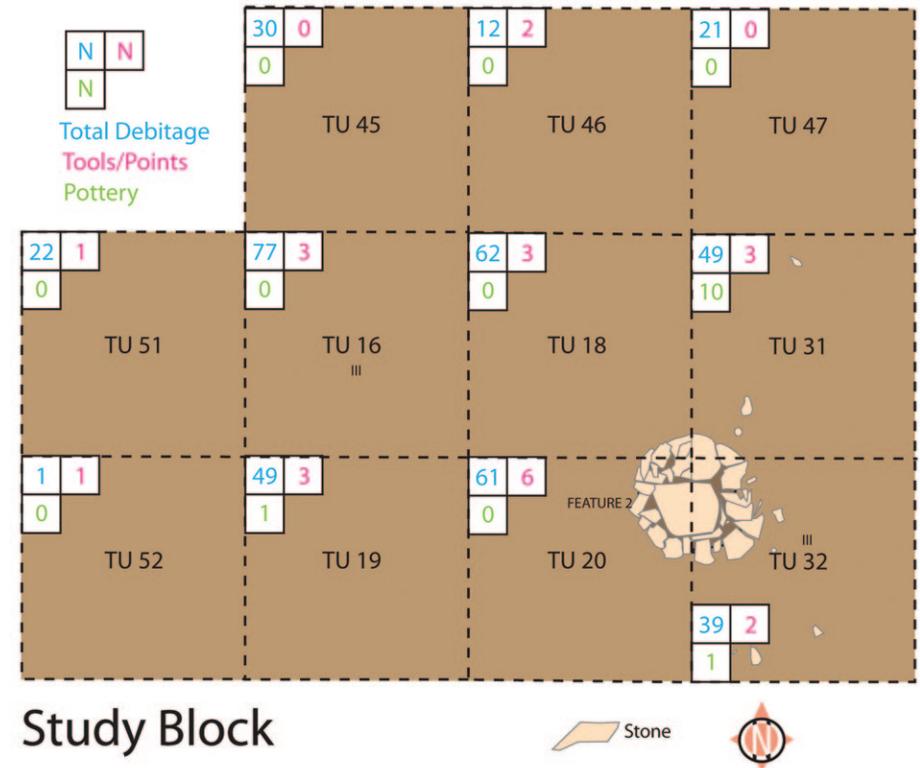


Profile of a hearth feature at 36AR0539.



Pottery sherds from the 36AR0539 site.

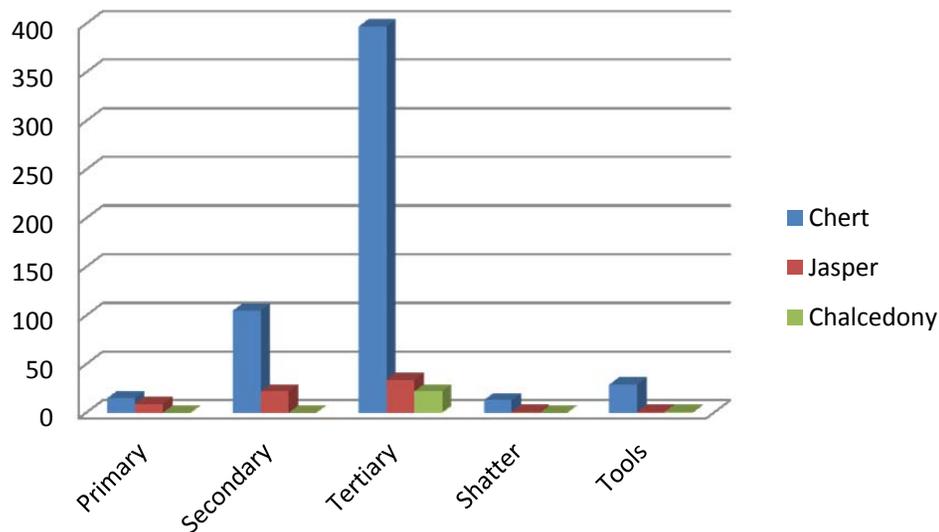
A second area along the western edge of the site appears to have been used as a game processing area. Three stone tools tested positive for deer, bear, rodent, and possibly woodland bison proteins in this part of the site. Both locations had higher quantities of debitage versus cores, which suggests that the inhabitants were probably practicing tool maintenance rather than tool manufacturing at the site.



**What do the artifacts tell us about the resources and the activities at the site?**

The artifacts recovered at the Baum Pumping Station Road Site (36AR0529) demonstrate that the site's occupants had access to high-grade chert resources that were locally available (along the Allegheny River), as well as more exotic materials such as jasper and chalcedony from sources that were farther away (central and eastern Pennsylvania).

Examination of the stone tools suggests that the inhabitants were hunting and processing large, medium, and small animals; cooking tubers over a fire; and conducting tool maintenance rather than tool manufacturing at the site.



Flaked Stone Artifacts by Material Type from Data Recovery Excavations.

Most of the Precontact assemblage is comprised of the locally available chert. The presence of jasper in high concentrations on the eastern edge of the site, around the hearth feature where the only pottery and radiocarbon date (C-14) were recovered, is consistent with Late Woodland occupation when the use of pottery and more extensive trade networks were most common. This suggests that the Woodland occupation was more prominent in this part of the site.

The western edge of the highest artifact concentration appears to be an animal processing area, as evidenced by the results of the protein residue analysis. A single projectile point, a Brewerton type that dates to the Late Archaic period, contained protein residue from the deer and bear family and was recovered in this area. However, projectile points dating to the Archaic period were found throughout the entire site, suggesting more instances of occupation across the entire site during that time.

### How do the excavations at the site contribute to our understanding of Native American lifeways in Armstrong County and the greater Allegheny River Valley?

There are currently 329 precontact Native American sites recorded within Watershed E of the Central Allegheny River Subbasin, and there are currently 451 sites of this type recorded within Armstrong County. Of the 451 sites, more than three-quarters have no site function listings. The Baum Pumping Station Road Site (36AR0539) is by no means an isolated site. It is set among a small cluster of nine precontact sites identified at the time of this study, all of which are located along or in close proximity to the North Fork of Pine Creek and within the North Fork of Pine Creek drainage area.

Beyond the immediate vicinity of the Baum Pumping Station Road Site (36AR0539) are a relatively large number of precontact sites that are predominately located along the Allegheny River, Crooked Creek, and their minor tributaries. Site data highlights the importance of access to water when selecting a location for a camp site, whether it is used temporarily or for longer periods of occupation.

The Baum Pumping Station Road Site (36AR0539) is the first site of its type in the area to be excavated at the Phase III level. While sites in similar settings have been identified, none of these upland sites has been subject to data recovery. These sites were either avoided or were found to be unlikely to yield intact features or deposits.

The collection of lithic debitage and tools recovered from the site provides additional cultural materials that expand upon the database of archaeological evidence for those periods represented at the site. The evidence of tuber preparation during the Woodland period and evidence of protein residues from deer, bear, bison, and small rodents on tools recovered at the site strengthens our conceptions of subsistence during those periods.

Analysis of the artifacts and spatial information from the site indicates that the area was used sporadically as a small camp site during the Archaic period and on at least one occasion during the Late Woodland period. During both periods, a group of Native Americans conducted daily activities related to the collection and processing of natural resources. Given the relatively small size of the site, the groups were likely small family-sized units practicing seasonal resource collection away from their main habitation area.

Archaeologists were able to gain information of two distinct periods of occupation regarding the early inhabitants of Armstrong County and the Allegheny River Valley. Data recovery at the Baum Pumping Station Road Site (36AR0539) has demonstrated that similar upland lithic sites are valuable cultural resources and should be protected either through avoidance or data recovery research. Important information was obtained through excavation and analysis at the site that can assist archaeologists in the interpretation of future sites in the county and local region and help in the understanding of our shared past. The Phase III excavation of the site has also conclusively established that plowed sites in this area have the potential to contain intact cultural deposits that can yield important data concerning Pennsylvania's Precontact past.

## SUGGESTED READING

A.D. Marble & Company

2012 *Phase IB Archaeological Investigation and Phase II Evaluation Report, S.R. 0028, Section 164 Improvement Project, Boggs Township, Armstrong County, Pennsylvania.* Report on file at the PHMC-BHP offices in Harrisburg, Pennsylvania.

2014 *Phase III Data Recovery, Baum Pumping Station Road Site (36AR0539) Report, S.R. 0028, Section 164 Improvement Project, Boggs Township, Armstrong County, Pennsylvania.* Report on file at the PHMC-BHP offices in Harrisburg, Pennsylvania.

## GLOSSARY OF TERMS

**Archaic Period** | The period in Pennsylvania dating from 8000-1000 B.C. The people of this period perfected the art of intensive hunting and plant gathering, supporting substantial populations living in groups of various sizes. These groups moved regularly throughout the year among a series of campsites within a well-defined boundary.

**Artifact** | Any portable object, made, altered, or used by humans.

**Brewerton Complex Projectile Points** | Consists of a series of four projectile point types (Corner-Notched, Eared-Notched, Eared-Triangle and Side-Notched) related to the Archaic Brewerton Complex of the Laurentian Complex of New York. These point types are typically found throughout central and western New York, New Jersey, Eastern Indiana, and Pennsylvania (see definition of projectile point below).

**Chalcedony** | A cryptocrystalline form of silica, composed of very fine intergrowths of the minerals quartz and moganite, used by Precontact people to make stone tools.

**Chert** | A fine-grained stone comprised mostly of quartz that can be broken to form a very sharp edge. Chert occurs in sedimentary rocks, such as limestone and dolomite. It varies greatly color (from white to black), but most often manifests as gray, brown, and light green to rusty red.

**Contact Period** | The period in Pennsylvania dating from 1600-1750 A.D., which is marked by the arrival of European settlers and their accompanying trade items.

**Data Recovery** | Archaeological data recovery excavations are large-scale excavations designed to recover the information a site contains before a project proceeds, and the site is lost. Data recovery projects generally include excavations in study blocks when sites are deeply buried or on surfaces where features are present.

**Debitage** | Waste material or debris (flakes or chips) that results from the manufacture of stone tools. The term is derived from the French word *debit*, which means “to cut up or saw.”

**Diagnostic Artifact** | A tool of a distinctive style that can be dated through regional comparisons to a specific time period.

**Ecofacts** | Any flora or fauna material found at an archaeological site; non-artifactual evidence that has not been technologically altered but that has cultural relevance, such as a shell carried from the sea to an inland settlement. The category includes both inorganic and organic ecofacts (e.g., seeds, pollen, animal bones, insects, fish bones, and mollusks).

**Faunal** | Animals, or the remains thereof, of a particular region or group.

**Feature** | A product of human activity that is fixed in place, such as a trash pit, fire pit, or a hole dug for a fence post or foundation wall. Features can be comprised of a combination of artifacts and/or ecofacts, but they may not contain either one; instead, they may contain evidence that humans disturbed the soil in a particular area.

**Fire-cracked rock (FCR)** | Any type of rock that has been broken or altered by deliberate heating. Rocks were often heated in fires and used for stone boiling or

as platforms for roasting. When placed in a fire, the heat sometimes reddens the rock and often cracks it. This rock is a common occurrence on Native American sites where fire has been made.

**Flakes** | Distinctively shaped pieces of debitage removed in making a chipped stone tool.

**Fourier Transform Infrared Spectroscopy (FTIR)** | Artifact analysis that uses infrared spectroscopy to identify archaeological food remains and organic components in sediments and on artifacts or ecofacts found at archaeological sites. Each organic material leaves a specific chemical signature that can be used to identify what it was.

**Geomorphology** | The scientific study of the origin and evolution of topographic features created by physical or chemical processes operating at or near the Earth’s surface. Includes the specializations of sedimentology, which is the study of how sediments (e.g., sand, silt, and clay) are formed and deposited. Geomorphologists determine which sediments are most likely to contain artifacts and features.

**Genesee Projectile Points** | Hefty, sturdy, medium- to large-sized points with tapered shoulders and a small square base. These projectile points date to the Archaic period and derive their name from specimens found in the Genesee Valley of New York.

**Hunter-Gatherers** | A way of life, as well as the person who practices it, that involves hunting game and gathering wild plant foods, such as nuts and berries. Hunter-gatherers move their camps periodically to be close to seasonally available foods and other survival needs.

**Jasper** | A type of chert with a very high iron content, making it brown, yellow, or red in appearance.

**Lamoka Projectile Points** | Are narrow and thick, with straight or slightly notched stems. These projectile points date to the Archaic Period and derive their name from the specimens found at the Lamoka site in Schuyler County, New York.

**Late Woodland Period** | In Pennsylvania, a period of time dating from A.D. 900 to A.D. 1600. The period is characterized by the use of ceramic vessels, agricultural production, and permanent settlement in floodplain settings along larger drainage systems.

**Levanna Projectile Points** | Are generally thin and triangular and about as wide as they are long, and usually have a concave base. This projectile point dates to the Woodland Period and derives its name from specimens found at the Levanna site in Cayuga County, New York.

**National Register of Historic Places** | The official list of the nation's historic places worthy of preservation, as administered by the National Park Service.

**Paleoindian Period** | The earliest well-known precontact period in Pennsylvania. The accepted date range for this period is from 13,000-8,000 B.C., although archaeologists continue to discover older artifacts and features.

**Physiographic Province** | The division of land masses based on similar landscape features (hills, coastal flats, mountains), rock types, and geological history. The boundaries separating these provinces are marked by abrupt changes in the topography of the land and its underlying geology.

**Precontact Era** | The period that predates the arrival of European settlers, typically pre-A.D. 1600.

**Projectile Points** | Commonly called arrowheads, projectile points is a general term used for chipped-stone tools used as penetrating tips for spears and arrows.

**Protein Residue Analysis** | A study used to identify the presence of prehistoric, historic, or even modern proteins, both plant and animal, on artifacts found on archaeological sites.

**Radiocarbon dating** | A chemical analysis used to determine the age of dead organic materials based on the amount of the radioactive isotope carbon (Carbon 14) that they contain.

**Sedentism** | People living in groups in a permanent place. This term is applied to the transition from a nomadic lifestyle to a society that remains permanently in one place.

**Shovel Test Pits- Shovel Test Pits (STPs)** | Round holes approximately 2 feet in diameter. This standard archaeological technique is used to discover and pinpoint areas worth investigating in the early part of an archaeological excavation and study.

**Stratigraphy** | The observable natural and/or man-made layers, or strata of soil, identified during archaeological excavation. Generally, the oldest layers are at the bottom, and the more recent layers are at the top.

**Study Block** | An arrangement of test units (TUs) placed within a site to expose a large area where high concentrations of artifacts have been identified, to examine a feature, or expose additional features.

**Subsurface Sampling or Testing** | Testing of an area that includes the excavation of shovel test pits (STPs) or test units (TUs). This is often done to determine if sites are present or done on a known site to assess whether the site is significant.

**Test Units** | Test units (TUs) are square holes that are approximately 3.3 feet by 3.3 feet. Like shovel test pits, this standard archaeological technique is used to discover and pinpoint areas worth investigating in the early part of an archaeological excavation and study.

**Vosberg Projectile Points** | These points are typically small to medium, triangular in shape, with a straight to concave base and small narrow corner notches. This point dates to the Archaic Period and derives its name from specimens found at the Robinson site in New York.

**Woodland Period** | The period in Pennsylvania dating from 1000 B.C.-A.D. 1600. This period is characterized by longer periods spent at base camps and the emergence of pottery.



U.S. Department of Transportation  
**Federal Highway Administration**



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