

4.0 INTRASITE DESCRIPTION AND ANALYSIS – AIRPARK WEST SITE

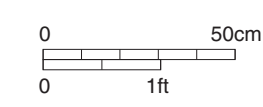
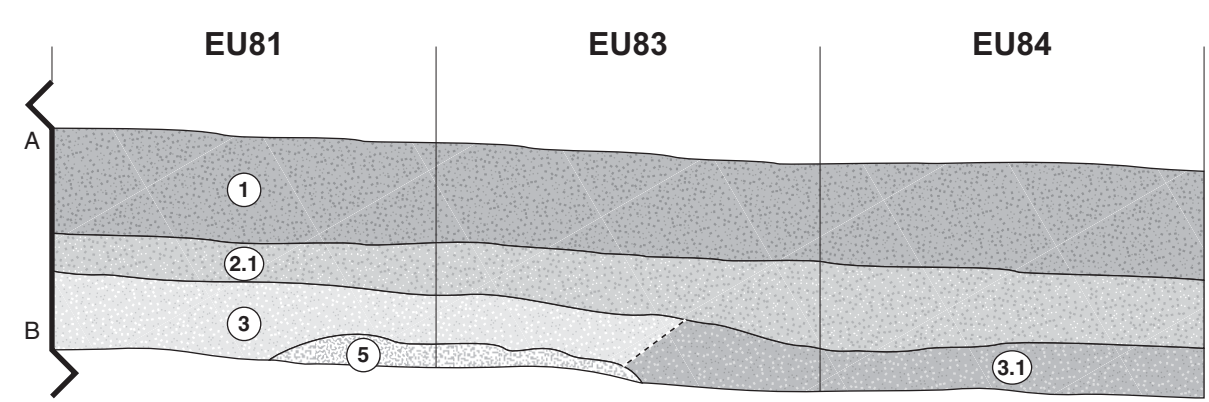
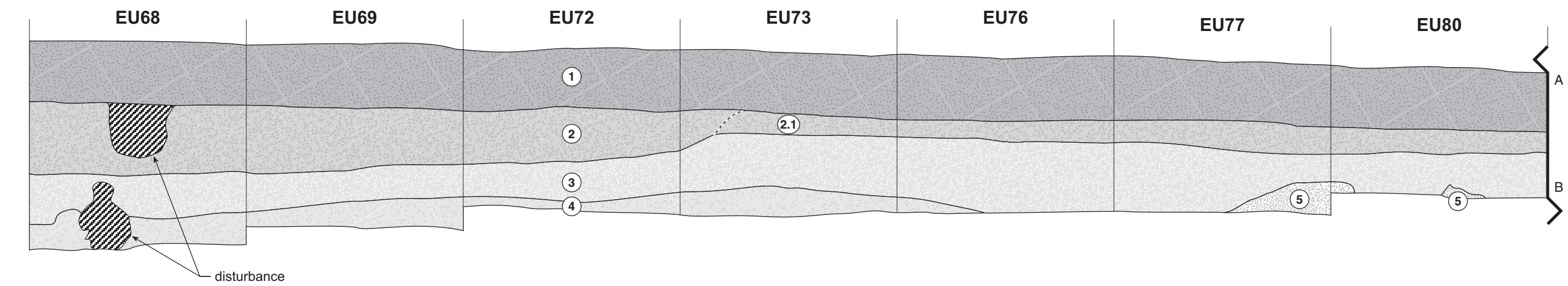
4.1 GEOMORPHOLOGICAL AND PEDOLOGICAL INVESTIGATION

The Airpark West site is located on an upland landform and is bordered by wetlands on the north, south, and west, which historically may have limited the intensity of agricultural activities here because of the relative inaccessibility of the field compared to the nearby field in which the Airpark East site is located. Only minimal evidence of accelerated soil erosion due to year-after-year tillage was documented during pedologist Dr. Daniel P. Wagner’s field investigation in 2005, leading to his conclusion that for most of its agricultural history the field was used primarily for pasturage rather than for cultivation, though the entire site has been plowed (Appendix III).

Most of the soils are very sandy, typically containing at least some gravel, although in the vicinity of Block A, located in the southwestern portion of the site (Figure 10), the soils exhibit a loamier texture. The degree of expressed subsoil development is largely dependent on the texture, with the sandier profiles tending to have more weakly developed, so-called “color-B” subsoil corresponding to cambic (Bw) horizons, or at most, barely identifiable argillic (Bt) horizons with only minimally sufficient clay increase compared to the surface horizons. The finer (more loamy) profiles displayed correspondingly more strongly developed subsoil, constituting argillic horizons in the absence of significant pedoturbation. Despite there being a strong indication of landscape stability over an extended period of time (millennia), which with finer-textured soils would have resulted in very strongly developed argillic horizons, the highly siliceous sands present across most of the site area contain very sparse amounts of weatherable minerals such as the clays that would translocate from the surface layers and accumulate in an argillic horizon. In addition, pedoturbation within the bioturbation, such as tree throws and burrowing animals and insects, is much more prevalent and destructive in sandy soils (see Appendix III for a more detailed discussion).

A plowzone (Ap horizon) is of course evident across the entire site, typically composed of grayish brown (10YR 5/2) loamy sand in Block A (Figure 45), dark yellowish brown (10YR 3/4) and brown (10YR 4/3) loamy sand in Block B, placed in the south-central portion of the site (Figures 46-47), and brown (10YR 4/3) loamy sand in Blocks C and D (Figures 48-50), located in the north-central and eastern portions of the site, respectively. The thickness of the horizon ranged between about 25–30 cm in Block A units, 22–28 cm in Block B units, 17–25 cm in Block C units, and 14–20 cm in Block D units (Figure 10).

The underlying subsoil across the site, as expressed in Blocks A through D, consisted of an uppermost subplowzone layer of yellowish brown (10YR 5/6, 5/4) loamy sand in Block A, which was considerably thicker in the western portion of the block; no lamellae were noted. In Block B the horizon was composed of yellowish brown (10YR 5/6) loamy sand in the western third of the block and dark yellowish brown (10YR 4/6) in the eastern two-thirds, although the yellowish brown soil occurred underneath as Layer 3. Lamellae were few to absent in the dark yellowish brown horizon, whereas their occurrence was much more prevalent in the yellowish brown horizon, along with an estimated 10–30 percent gravels. The horizon was mottled in the Block C units, registering as brownish yellow (10YR 6/6) coarse sand with brown (7.5YR 5/4) redoximorphic features (pedogenic mottles) and minimal gravels. Various soil anomalies, including cultural features, intruded into the horizon. In Block D, the horizon graded from 10YR 5/4 to 10YR 5/6 (both yellowish brown) loamy sand with depth, as in Block C with minimal gravels (Figures 10, 45-50). This uppermost subplowzone layer is interpreted as an eluvial (E) horizon, which has been leached

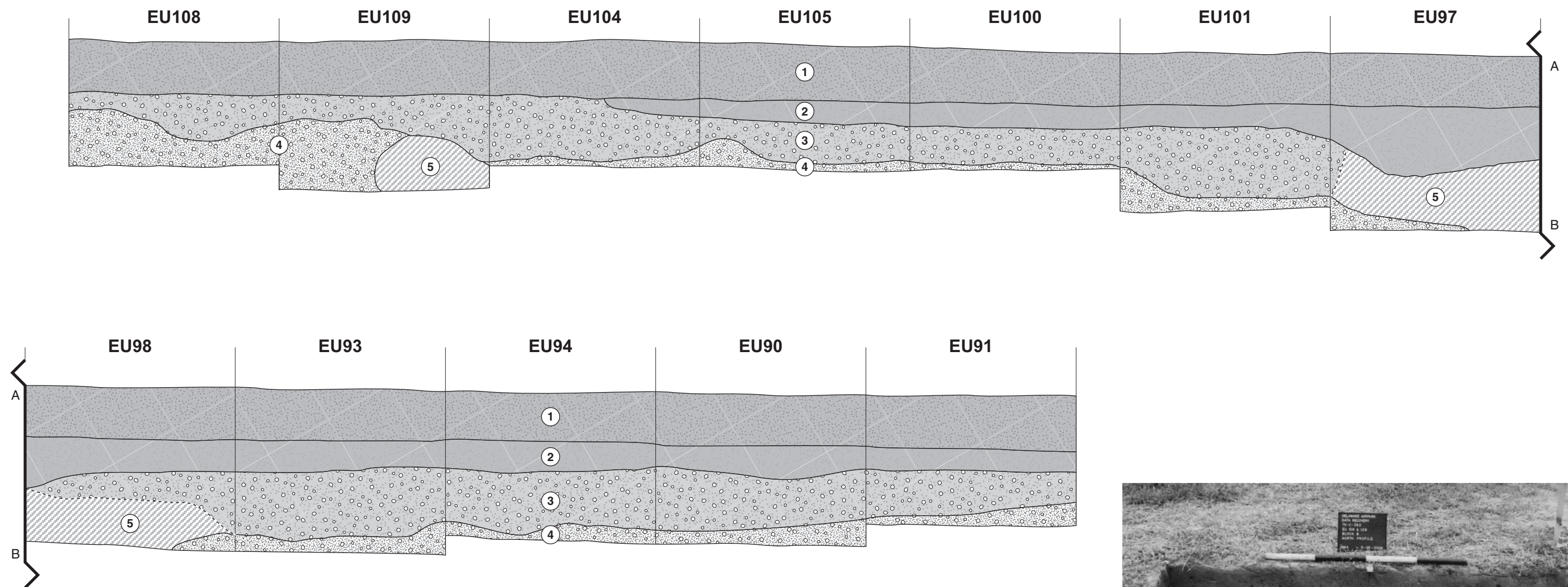


- 1 10YR 5/2 grayish brown loamy sand
- 2 10YR 5/6 yellowish brown loamy sand
- 2.1 10YR 5/4 yellowish brown loamy sand
- 3 10YR 6/4 light yellowish brown loamy sand
- 3.1 10YR 6/6 brownish yellow sandy loam
- 4 10YR 7/3 very pale brown fine sand
- 5 10YR 5/6 yellowish brown sandy loam



Excavation Block A representative profile (north wall of EUs 76 and 77) within 7K-C-382.

Figure 45. North profile of Excavation Block A.



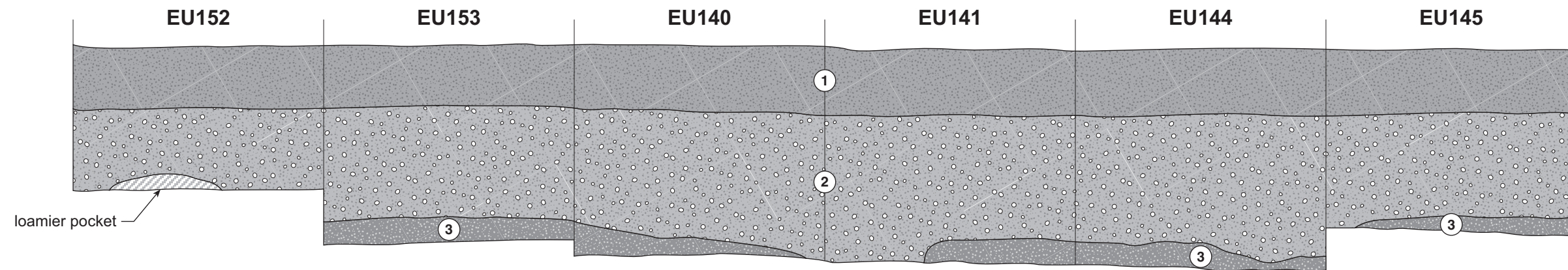
- 1 10YR 3/4 dark yellowish brown loamy sand; Ap horizon
- 2 10YR 4/6 dark yellowish brown loamy fine sand; E horizon
- 3 10YR 5/6 yellowish brown compact loamy coarse sand; heavy lamellae, 20-30% gravels; E/B horizon
- 4 Variable 7.5YR 5/6 to 7.5YR 5/8 strong brown sandy loam; up to 30% gravels
- 5 anomaly; 10YR 4/6 dark yellowish brown loamy sand; absence of lamellae, retains moisture



Excavation Block B representative profile (north wall of EUs 108 and 109) within 7K-C-382, showing lamellae banding.

Figure 46. North profile of Excavation Block B, western portion.

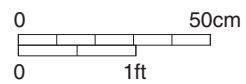
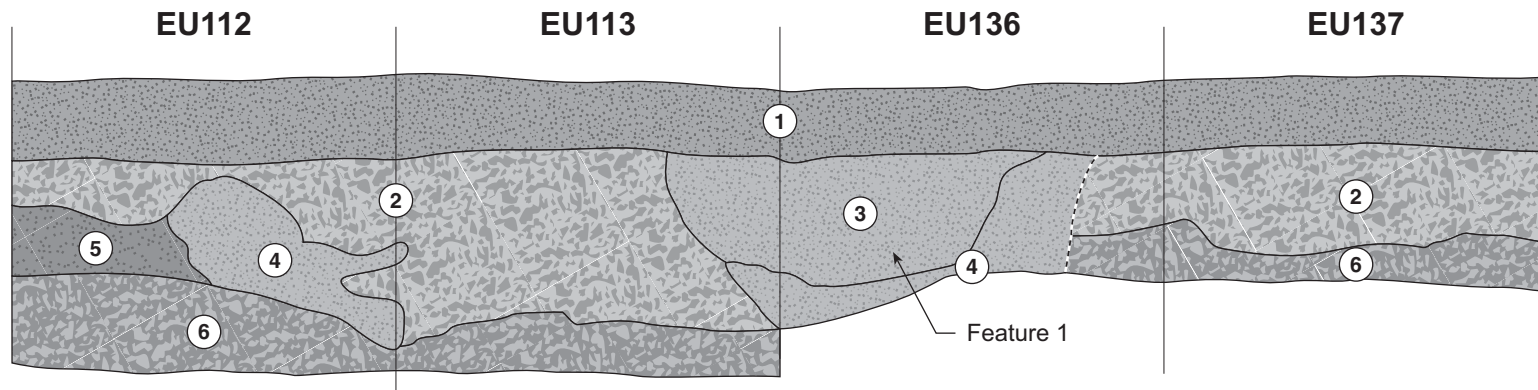
BLOCK B NORTH WALL PROFILES



- 1 10YR 4/3 brown loamy sand; Ap horizon
- 2 10YR 5/6 yellowish brown loamy sand with gravels; E/B horizon
- 3 7.5YR 5/8 to 7.5YR 4/6 strong brown loamy sand; B horizon

Figure 47. North profile of Excavation Block B, eastern portion.

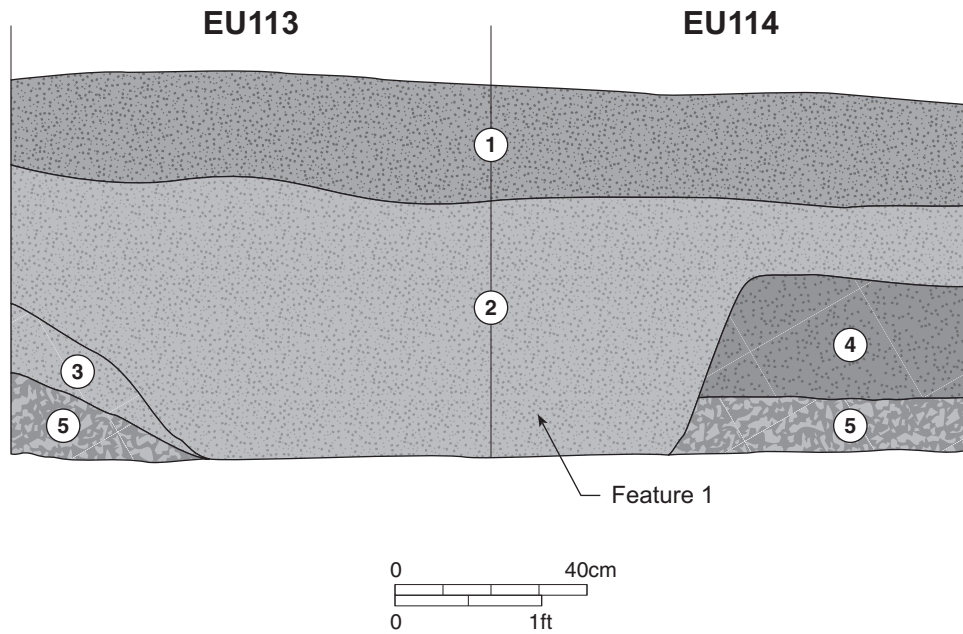
BLOCK C NORTH WALL PROFILES



- 1 10YR 4/3 brown loamy sand; Ap horizon
- 2 10YR 6/6 brownish yellow mottled with 7.5YR 5/4 brown coarse sand
- 3 10YR 5/6 yellowish brown loamy sand (Feature 1)
- 4 10YR 5/4 yellowish brown loamy sand
- 5 7.5YR 5/6 strong brown medium to coarse sand
- 6 7.5YR 5/6 strong brown mottled with 10YR 6/6 brownish yellow medium to coarse sand

Figure 48. North profile of Excavation Block C (EUs 112, 113, 136, and 137), showing Feature 1 location.

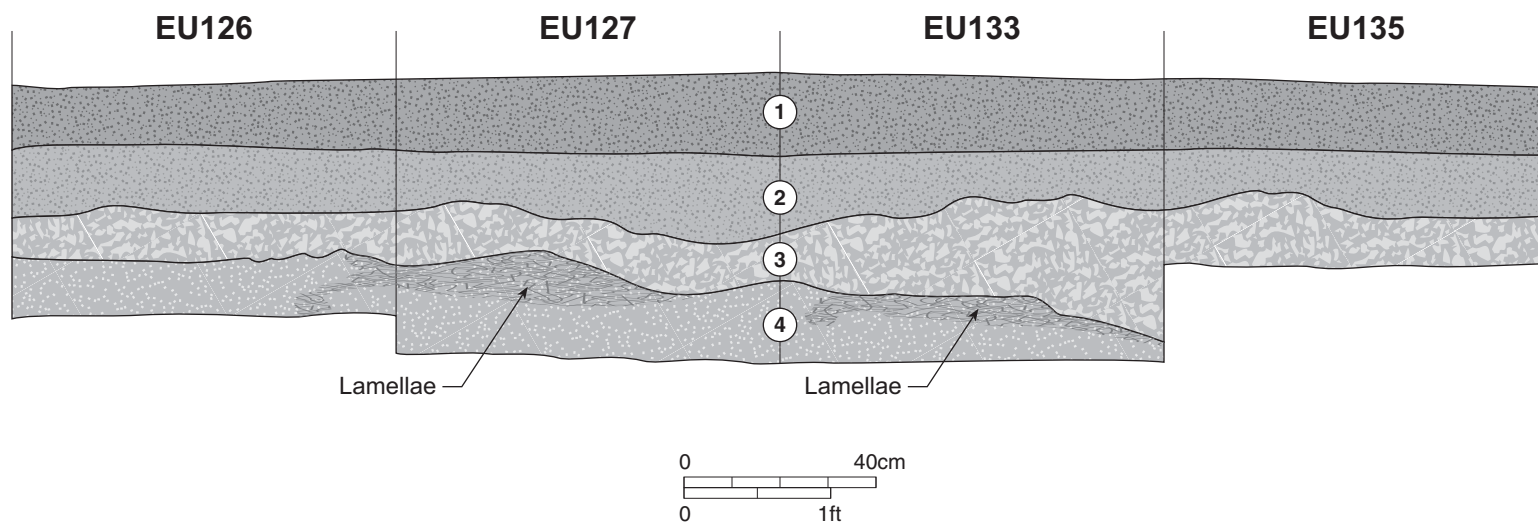
BLOCK C EAST WALL PROFILES



- 1 10YR 4/3 brown loamy sand
- 2 10YR 5/6 yellowish brown loamy sand (Feature 1)
- 3 10YR 5/4 yellowish brown loamy sand
- 4 7.5YR 5/6 strong brown medium to coarse sand
- 5 7.5YR 5/6 strong brown mottled with 10YR 6/6 brownish yellow medium to coarse sand

Figure 49. East profile of Excavation Block C (EUs 113 and 114), showing Feature 1 location.

BLOCK D EAST WALL PROFILES



- 1 10YR 4/3 brown loamy sand; Ap horizon
- 2 10YR 5/4 yellowish brown to 10YR 5/6 yellowish brown loamy sand with 1% gravels; E/B horizon
- 3 10YR 5/6 yellowish brown sandy loam with 1-2% gravels and pockets of 10YR 6/6 brownish yellow or 7.5YR 6/8 brownish yellow fine sandy loam; E/B to B horizon
- 4 7.5YR 6/6 reddish yellow and 10YR 6/6 brownish yellow loamy coarse sand and 7.5YR 5/6 strong brown sandy loam with lamellae of 10YR 4/6 dark yellowish brown loamy very coarse sand

Figure 50. East profile of Excavation Block D.

of a substantial quantity of minerals by the downward percolation of water through the soil profile. However, in the absence of a deeper argillic (Bt) horizon, Wagner identified this layer as a cambic (Bw) horizon, consisting of one or more subhorizons (Bw1, Bw2). A majority of the Phase III units excavated at the site (n=125, EUs 22, 24, 27–31, 35, 36, 38, 39, 41, 46, 48, 49, 51, 54–59, 63, 65, 66, 68–167) produced prehistoric artifacts from a portion of or throughout the horizon, corresponding to Levels 2.1, 2.2, 2.3, and 2.4.

Beneath the E horizon in a majority of units was a deeper subsoil layer transitional between the E and the more stable Bt horizon. Termed a BE horizon, this layer was composed of light yellowish brown (10YR 6/4) to brownish yellow (10YR 6/6) loamy sand in Block A (southwestern portion of the site), yellowish brown (10YR 5/6) loamy sand to gravelly loamy sand with minimally to moderately developed lamellae in Block B (south-central portion of the site), mottled strong brown (7.5YR 5/6) sand to coarse sand and brownish yellow (10YR 6/6) loamy sand with patches of yellowish brown (10YR 5/4) loamy sand in Block C (north-central portion), and yellowish brown (10YR 5/6) sandy loam with small pockets of brownish yellow (10YR 6/6) and reddish yellow (7.5YR 6/8) loam as well as moderately developed, dark yellowish brown (10YR 4/6) lamellae of loamy coarse sand in Block D (eastern portion) (Figures 10, 44-49). Prehistoric artifacts were recovered from this horizon, Level 3, in comparatively fewer units (EUs 65, 68, 70, 88, 89, 97–99, 101, 106, 112, 113, 127, 133, 140–144, 146, 148, 159–167), and in lesser quantities than in the Layer 2 levels. Rather than representing in situ burial via the gradual aggrading of sediment through eolian processes, Wagner (Appendix III) attributes the presence of artifacts in the E/BE and Bw horizons to biomantle processes such as tree throws and burrowing of animals and insects. This is largely a function of the sandy texture of the site's soils, which are much more prone to such pedoturbation than are loamier or siltier soils.

When exposed, the argillic (Bt) horizon underlying the E and BE horizons was recorded as very pale brown (10YR 7/3) loamy fine sand to yellowish brown (10YR 5/6) sandy loam in Block 1, strong brown (7.5YR 5/6–5/8) sandy loam to loamy sand with up to 30 percent gravels (gravelly sandy loam) and occasional dark yellowish brown (10YR 4/6) redoximorphic features in Block B, and strong brown (7.5YR 5/6) sandy loam with dark yellowish brown (10YR 4/6) lamellae of loamy very coarse sand in Block D (Figures 10, 45-50). No artifacts occurred in this horizon, which was notably more structurally developed, with continuous to nearly continuous clay films, than the overlying upper subsoil horizons. The stronger soil development exhibited in the Block A unit profiles, specifically the argillic horizon, provides a good indication of the age of the site landform as a whole, signifying landscape stability that likely extends as far back as the early part of the Holocene if not into the late Pleistocene. The lesser subsoil development documented elsewhere within the site boundaries, in spite of a prolonged weathering history, is attributable to the sandier soils that are present, which has both impeded pedogenesis because of the highly siliceous nature of the parent material and has facilitated a high degree of bioturbation. That the parent material of the site soils is not derived from eolian deposition, in contrast to large portions of Delmarva Peninsula soils, is evident from the relative coarseness of the sand fraction, which is not fine enough to be easily mobilized and transported by wind action. Coarse fragments in the site soils include from a few percent to close to 30 percent pebbles, certainly too large for eolian transport (Appendix III).

4.2 FEATURES

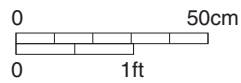
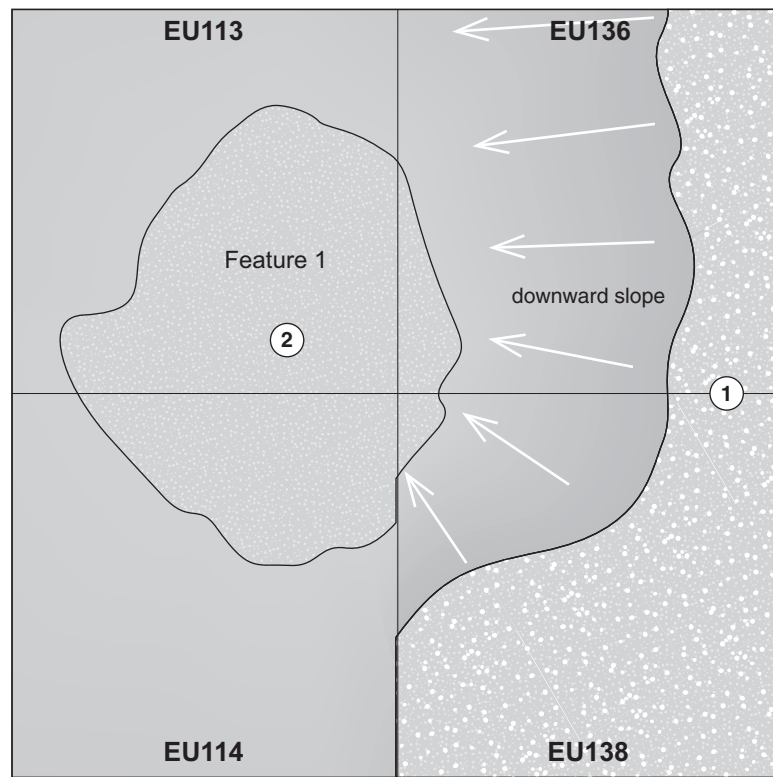
Only one cultural feature, designated Feature 1, was identified during the Phase III data recovery at the Airpark West site, occurring in Block C EUs 113, 114, 136, and 138 within the north-central portion of the site (Figure 10). The soil stain was initially identified as a feature at the top of Layer 4 (Bt horizon) in EUs 113 and 114 as a slightly less red, irregular stain across most of the southeastern

half of EU 113 and the northern third of EU 114 (Figure 51), 59–60 cm below ground surface, and was later delineated at the base of Level 2.2 (30–31 cm below ground surface) across the western two-thirds of EU 136 and the northwestern portion of EU 138, which were placed off the east side of EUs 113 and 114. Subsequent examination of the east wall profile of EUs 113 and 114 as well as the north wall profile of EUs 113 and 136 (Figures 48-49) revealed that the feature originated directly below the plowzone (Ap horizon, Layer 1).

Feature 1 was recorded as yellowish brown (10YR 5/6) loamy sand with some charcoal flecking, in contrast to the generally brown to strong brown (7.5YR 5/4–5/6) medium to coarse sand of the surrounding subsoil, which also contained some brownish yellow (10YR 6/6) coloration. In plan view, an irregular, subrounded outline was distinguished, measuring about 1.03 m east-west by 1.19 m north-south (Figure 51). Higher-lying subplowzone soil off the east side of the previously defined edge of the feature in EUs 113 and 114 was included in the feature fill as excavation proceeded in EUs 136 and 138; this peripheral area bottomed out on intact subsoil at progressively lower depths as the true eastern edge of the feature was defined within 17 cm east of the western edge of these units (Figure 51). A basin-shaped feature cross-section with relatively steeply sloped sides and flat base was evident in the north wall profile of EUs 113 and 136 and the east wall profile of EUs 113 and 114, corresponding to an apparent truncated pit. The pit bottomed out on yellowish brown (10YR 5/4) loamy sand, which also bordered its eastern side, whereas its western and northern edges were bounded by the same brown to strong brown medium to coarse sand noted above (Figures 48-49). A maximum depth of 58 cm below plowzone was recorded, or 82 cm below ground surface. A total of 18 prehistoric lithic artifacts were recovered from the feature within EUs 136 and 138, including nine chert flakes, six jasper flakes, and three quartz flakes derived from Levels 1–4 in EU 136 and Levels 1–3 in EU 138 (Appendix II).

During the subsequent Phase II archeological evaluation of the potential eighteenth-century historical component in the southwestern portion of the site, completed in 2007, two possible prehistoric features were identified among the total of 19 delineated features within the area that was mechanically stripped (Benedict et al. 2008). These included Feature 6, which lay in the southeastern corner of the stripped area (Figure 52) and consisted of an outer area approximately 140 x 128 cm composed of mottled yellowish brown (10YR 5/4) and brown (10YR 4/3) sandy loam intermixed with charcoal (Figure 53; Plate 12). Larger ceramic sherds were predominant in this outer area. The inner area measured approximately 70 x 40 cm and consisted of brown (10YR 4/3) mottled with yellowish brown (10YR 5/4) sandy loam with a concentration of charcoal in the southern portion. The entire feature was excavated, and 317 ceramic sherds, all classified as Wolf Neck Cordmarked and derived from a single vessel, were recovered as well as charcoal and fire-cracked rock. Excavation of Feature 6 revealed a shallow profile approximately 10 cm below the stripped surface (Figure 53; Plate 13). No other prehistoric or historical artifacts were recovered from Feature 6. This feature was initially interpreted as a possible prehistoric living floor due to its horizontal extent and vertical shallowness (Plate 14). However, the presence of a single broken pottery vessel and no other associated artifacts argues that this is in fact not the case. The Wolfe Neck sherds recovered from Feature 6 indicate an early Woodland I date of between 2,950–2,550 years BP. Unfortunately, in addition to charcoal, unburned and partially-burned wood fragments were present as well; due to the presence of the unburned wood, the charcoal sample was considered to be contaminated by the historic occupation, thus precluding meaningful radiocarbon dating.

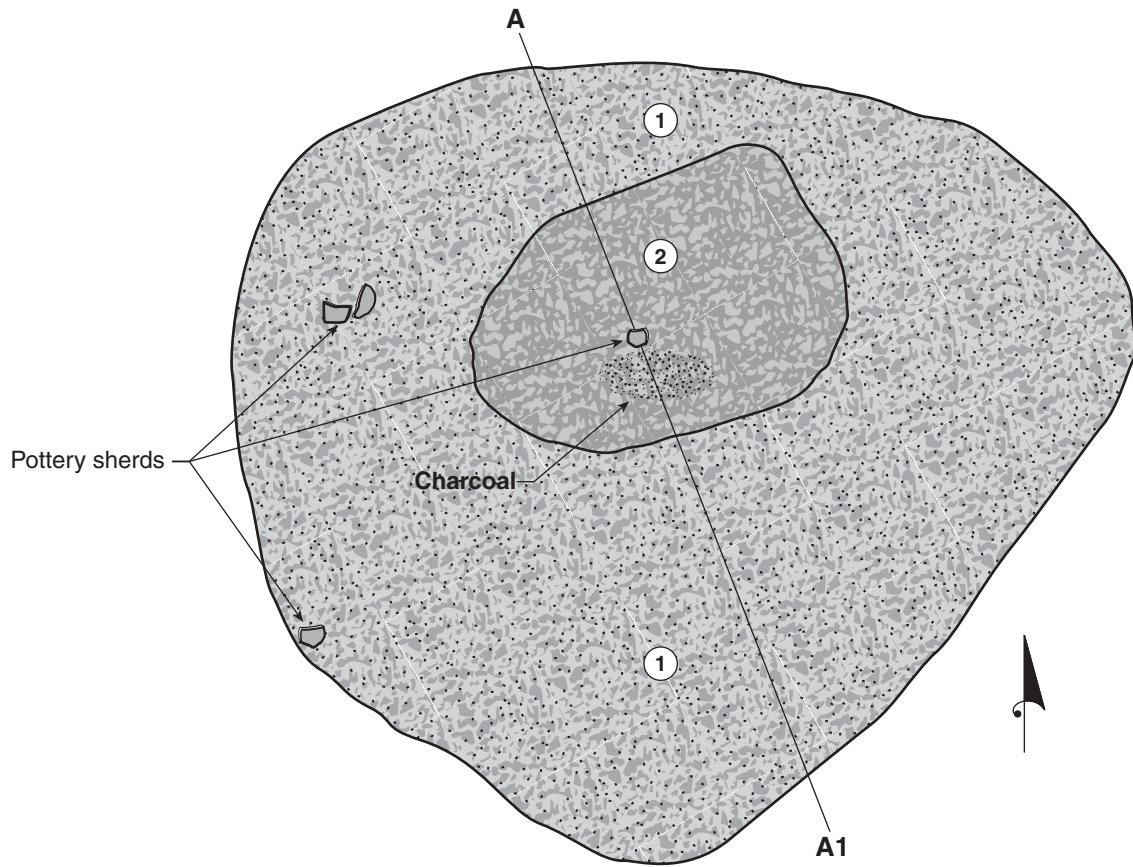
The second possible feature from the Phase II evaluation of the site's historical component, Feature 18, was located in the direct center of the stripped area (Figure 54) and measured approximately 15x19 cm, consisting of two fire-reddened rocks flanked on the west by two ceramic sherds (Figure 55; Plate 15). The immediate area was probed, but no other rocks were found, and no other



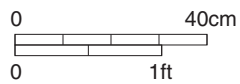
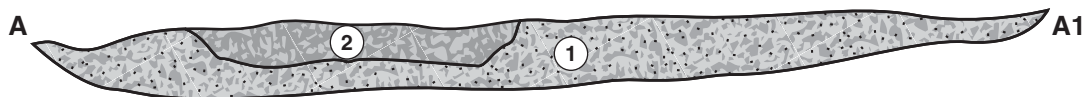
- 1 10YR 5/6 yellowish brown loamy sand grading to 7.5YR 5/6 strong brown coarse sand with 6-10% gravels
- 2 10YR 5/6 yellowish brown loamy sand (Feature 1)

Figure 51. Plan view of Feature 1 (Excavation Block C).

Feature 6 Plan




Feature 6 East Profile

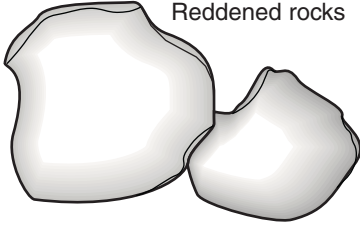


- 1 10YR 5/4 yellowish brown loamy sand mottled with 10YR 4/3 brown, with some charcoal; ceramic sherds throughout
- 2 10YR 4/3 brown loamy sand mottled with 10YR 5/4 yellowish brown

Figure 53. Plan view and profile of Feature 6.

Feature 18 Plan

Ceramic sherd 

Reddened rocks 


Ceramic sherd 



Figure 55. Plan view of Feature 18.



Plate 12. Feature 6, opening plan, view north.



Plate 13. Feature 6, east profile.

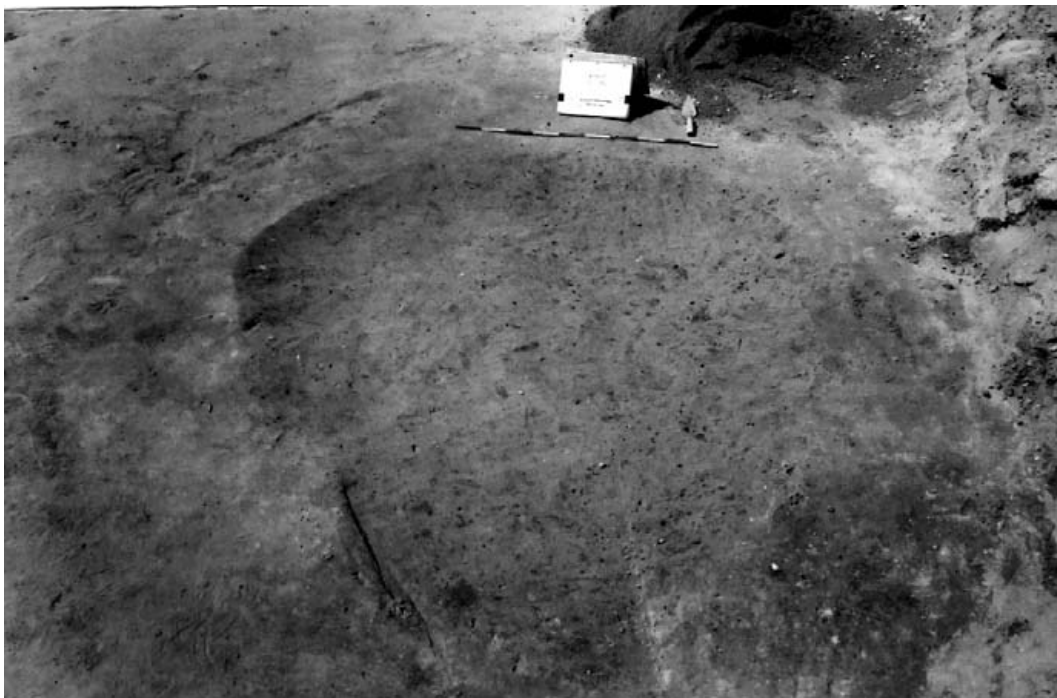


Plate 14. Feature 6, closing plan, view north.

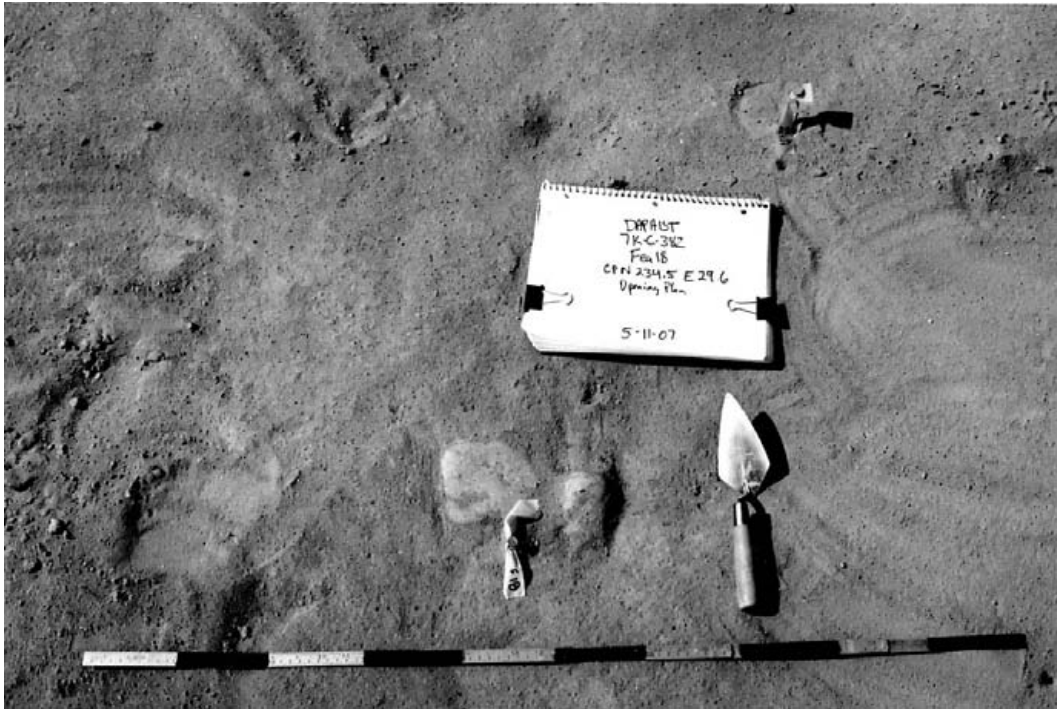


Plate 15. Feature 18, opening plan, view north.

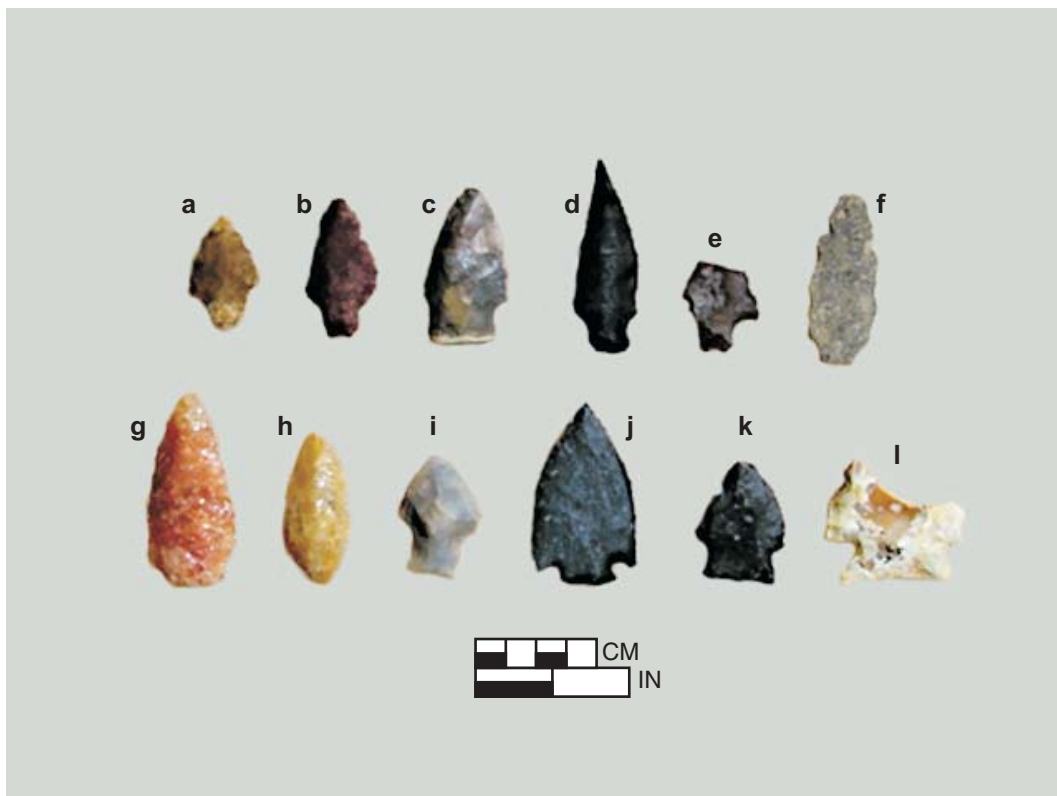


Plate 16. Airpark West site, projectile points. Top: a–e, Piscataway-like; f, Untyped Stemmed; Bottom: g–h, Rossville-like; i, Untyped Side-notched; j–l, Untyped Corner-notched.

prehistoric or historical artifacts were recovered. This feature was interpreted in the field as a cache; however, lab interpretation of this feature was speculative at best due to its minimal extent and lack of organic staining (Benedict et al. 2008). It is entirely possible that this is not in fact a prehistoric feature.

4.3 LITHIC ANALYSIS

4.3.1 Lithic Raw Materials

The lithic assemblage from the Airpark West site encompasses 5,537 chipped stone specimens, just under half of the Airpark East sample. The same eight raw material types as Airpark East are present: jasper (n=3,005; 54%), chert (n=765; 14%), quartz (n=1,148; 21%), quartzite (n=260; 5%), argillite (n=25; 0.5%), chalcedony (n=47; 0.81%), rhyolite (n=281; 5%), and unidentified (n=6) (see Table 4).

Table 4. Frequencies of chipped-stone raw material types at the Airpark West Site.

	Raw Material								
	Jasper	Chert	Quartz	Quartzite	Argillite	Chalcedony	Rhyolite	Unidentified	Total
Quantity	3,005	765	1,148	260	25	47	281	6	5,537
%	54	14	21	5	0.5	0.8	5	0.1	100

As at Airpark East, jasper again predominates in the assemblage, though not to the same degree. Chert falls to quartz to take third place. As before, chalcedony and argillite are relative rarities; rhyolite is much more frequent than at Airpark East but remains a minority type, and no tools were manufactured from this material. In short, the Airpark West lithic assemblage generally conforms to that at Airpark East, with the noted exceptions. None of the raw materials from the site varied appreciably from Airpark East with regard to overall quality, or lack thereof.

4.3.2 Typology and Classification

4.3.2.1 Chipped Stone Tools

1. Piscataway-like (Plate 16a-e)
n=5
Raw Material: Jasper=2
Chert=3

Description: Unlike the case with Piscataway points at Airpark East, this group from Airpark West is rather heterogeneous, hence the qualifier “-like”. The two jasper specimens resemble their Airpark East counterparts, while a chert example has the common retention of cortex at the base of the stem. One chert point is badly heat-damaged, while the third chert piece shows an asymmetrical blade, somewhat resembling a modern steak knife blade.

2. Rossville-like (Plate 16g-h)
n=2
Raw Material: Quartz=1
Quartzite=1

Description: The smaller of these two artifacts appears to fit the Rossville type, albeit on the small side. The larger specimen is equivocal; this finely worked point is made from a red-brown quartzite and approximates the Rossville type. The contracting stem is broken.

3. Untyped Corner-notched (Plate 16j-l)
 n=4
 Raw Material: Chert=3
 Chalcedony=1

Description: Only one of these chert specimens resembles its named counterparts at Airpark East. The second chert artifact is very finely flaked from a dull blue-black chert and has diminutive corner notches; a portion of the base may be broken. This is the most well-made artifact at the site. An unusual example is a large, broken point made of very poor-quality chalcedony. The material has cleavage planes and step fractures abound.

4. Bifurcate-base (Plate 17a-b)
 n=2
 Raw Material: Chert=2

Description: These two examples have beveled blades, the shorter one markedly so, indicating resharpening while still hafted. A Middle Archaic temporal placement is suggested for these tools.

5. Untyped Stemmed (Plate 16f)
 n=1
 Raw Material: Argillite=1

Description: As usual, this argillite artifact is very eroded and is barely recognizable as a projectile point. It resembles similar examples from Airpark East.

6. Untyped Side-notched (Plate 16i)
 n=1
 Raw Material: Chert=1

Description: This point is unique in having wide side notches and a concave base. It does not closely resemble its counterparts at Airpark East. The material is excellent, consisting of a fine, semi-translucent light gray chert.

7. Graver (Plate 17h)
 n=1
 Raw Material: Jasper=1

Description: This artifact was broken but a refit of the two pieces was accomplished. Fine retouch occurs along the entire margin of a thin flake, produced a fine graving spur at the center of a straight margin; the two sharp corners could have served as graving spurs as well, though they show no evidence of such.

8. Rough Bifaces
 n=11
 Raw Material: Jasper=2
 Chert=5
 Quartz=3
 Argillite=1

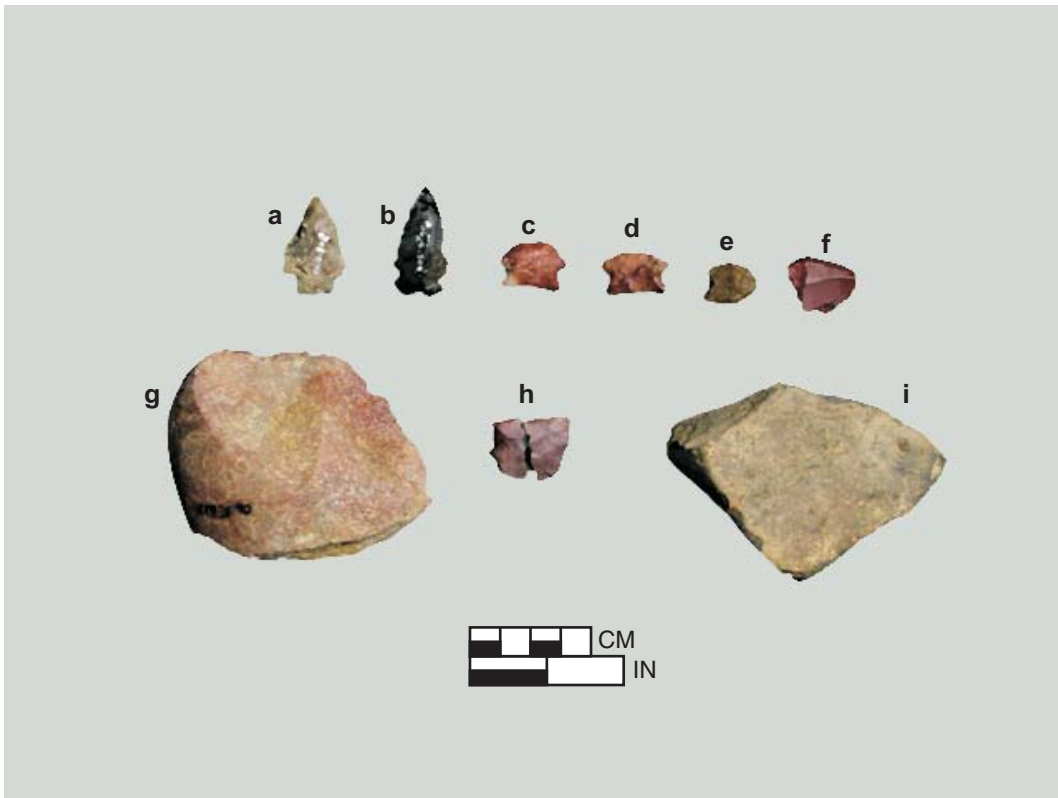


Plate 17. Airpark West site, projectile point and other tools. Top: a-b, Bifurcate-base; c-f, hafted scrapers; Bottom: g and i, chopping tools; h, scraper-graver.



Plate 18. Airpark West site, ironstone chopping tool (obverse and reverse).

Description: Rough bifaces are artifacts that have been bifacially flaked but not finished into formal tools. Most of these specimens likely represent discarded knapping failures. Others may be remnant flake cores, in particular, the argillite specimen. One chert and one jasper example are clearly tested cobbles. As a group, these artifacts vary greatly in morphology.

9. Biface Fragments (Broken Finished Tools)
n=3
Raw Material: Jasper=2
Chert=1

Description: This category consists of bifacial tools that were broken subsequent to finishing, likely from use. Most are blade fragments and biface margins; one thick blade fragment might have once been a drill.

10. Bases
n=2
Raw Material: Chert=2

Description: One artifact is a thick, wide base from a stemmed point, the other appears to be the base of some kind of triangular point.

11. Tips
n=6
Raw Material: Jasper=3
Chert=2
Quartz=1

Description: These artifacts appear to derive from finished tools. One jasper specimen may have been a drill; it is fractured from exposure to heat.

12. Steep-retouch End Scrapers
n=1
Raw Material: Jasper=1

Description: This tool exhibits steep retouch along a convex margin.

13. Hafted Scrapers (Plate 17c-f)
n=3
Raw Material: Jasper=3

Description: These hafted scrapers are nearly identical to their counterparts at Airpark East. The bases approximate the Untyped Corner-notched points in that assemblage. Two specimens show moderate use-wear while the third is worn down to a barely recognizable stub.

14. “Other” Scrapers
n=2
Raw Material: Chert=1
Argillite=1

Description: As with Airpark East, these tools are varied and may represent utilized flakes. The chert tool is a blade-like flake with unifacial and bifacial retouch along both long margins; this appears to

be a failed biface attempt that was later used as a scraper. The second tool is a large argillite flake with retouch or use-wear along one convex margin.

15. Pieces esquilles
n=1
Raw Material: Chert=1

Description: This specimen is a small stream cobble that has been worked in bipolar fashion. It is uncertain if it represents a tool or simply a tested cobble.

4.3.2.2 Ground and Pecked Stone Tools

1. Chopping Tools (Plate 18)
n=5
Raw Material: Argillite=1
Quartzite=3
Ironstone=1

Description: The quartzite tools are cobble choppers displaying varying degrees of wear and breakage. The argillite piece shows apparent edge damage that may be the result of use as a chopping tool. The ironstone (or hematite?) specimen is impressive, being made from a large slab of stone; flaking occurs along all margins and on both faces. A large expanse of apparent cortex covers most of one face.

2. Hammerstones
n=6
Raw Material: Dense Sandstone=5
Quartzite or Gneiss=1

Description: These hammerstones range from large to small fractured cobbles and pebbles; each shows characteristic pecking and pitting on one or more margin or surface. Five of the six tools are of a similar hard sandstone, possibly suggesting that this material was selected for this purpose. The sixth specimen may also have seen use as a chopper.

4.3.2.3 Discussion

As a general observation, the Airpark West lithic assemblage does not possess the same kind of typological homogeneity seen in the Airpark East sample. More variability is evident and it is difficult to assign some artifacts to established types. The Piscataway category illustrates this phenomenon, and encompasses far more variability than these points at Airpark East; indeed, some of these assignments should be considered tentative at best. Only one example exhibits cortex at the base, and the base is rather wide for the type.

The pair of Rossville points matches the established type rather well. By contrast, the Untyped Corner-notched points only loosely resemble their counterparts at Airpark East. The black chert specimen with the small notches should probably be a type unto itself, as it obviously stands out as unique. The large, broken chalcedony point is unique as well. Nonetheless, they are all classified as “untyped corner-notched”.

The bifurcate base points are not unexpected finds, as discussed previously. Little can be said regarding the Untyped Stemmed and Untyped Side-notched other than they are different from all the

other points. The graving tool is interesting, as it is unifacially retouched along all margins; this may represent a woodworking tool.

Though less numerous than at Airpark East, the rough bifaces, broken finished tools, tips, and bases indicate that the approximate range of lithic-related activity as seen at Airpark East occurred here too. Tool maintenance and replacement seems to have been the order of the day. Apparently rather less important were activities associated with scraping tools, since only four steep-retouch end scrapers (3 hafted) were recovered. The relative dearth of these tools compared to Airpark East suggests that the activities conducted at these sites were not identical.

Chopping tools were also present at Airpark West, and it may be conjectured that they were used for some kind of heavy-duty task. The apparent ironstone example is remarkable though its precise function is not understood. The stone is presumed to be imported into the area, but from where is unknown.

Finally, while Airpark West possesses less than half the amount of debitage as Airpark East, it possesses twice as many hammerstones. Sampling bias doubtless accounts for this anomaly.

4.3.3 Debitage Analysis

The sorting and analysis of the Airpark West debitage proceeded in like manner as at Airpark East (Table 5). Jasper is the most common stone, and flakes (n=2,875; 96%) substantially outnumber shatter (n=130; .04%) in the assemblage. Flakes and shatter without cortex (n=4,025; 76%) outnumber flakes and shatter with cortex (n=1,290; 24%), though not nearly to such a pronounced degree. Flake sizes tend toward the small side, though not dramatically, with 1,895 or 66 percent measuring less than 15 millimeters in greatest dimension. Tentatively, these data collectively might suggest that the reduction of jasper primary cores was somewhat more frequent at Airpark West than at Airpark East, where plainly such was not common. However, the sample size is not large and sample bias must be considered.

For chert, flakes (n=732; 96%) radically outnumber shatter (n=33; 4%) in the assemblage. Flakes and shatter without cortex (n=642; 84%) greatly predominate over flakes and shatter with cortex (n=123; 6%). These proportions argue for relatively little primary core reduction at the site. Yet, flakes measuring less than 15 millimeters in greatest dimension number 489, or 67 percent which, like jasper, is considerably less than at Airpark East. The relatively low proportion of “smaller” to “larger” flakes does not strongly support the flake/shatter and cortex/no cortex data suggesting that little primary reduction was conducted. It may suggest that the parent cores were larger on average than at Airpark East, but this seems unlikely; no significant differences in the nature of the raw material at either site were noted.

Quartz flakes (n=910; 79%) are more plentiful than shatter (n=283; 21%), though not nearly as much as jasper and chert. Flakes and shatter without cortex (n=947; 82%) outnumber the same with cortex (n=195; 17%). Only 45 percent of quartz flakes measure under 15 millimeters in greatest dimension. This suite of attributes – 21 percent shatter and less than half of the flakes measuring “smaller” than “larger” – indicate the nature of quartz technology and mirrors the same at the Airpark East site. Again, no large-scale or intensive reduction of quartz cobbles or cores is in evidence.

The sample sizes for quartzite, rhyolite, chalcedony, and argillite are too small for meaningful analysis. Suffice to say, study of Table 5 reveals the same overall patterns as described for the materials above: considerably more flakes than shatter, considerably more flakes without cortex than

Table 5. Airpark West Site debitage frequencies by raw material, size category, and presence/absence of cortex.

	Raw Material								Total
	Jasper	Chert	Quartz	Quartzite	Rhyolite	Chalcedony	Argillite	Unidentified	
Flake without cortex, <6 mm	14	1							15
Flake without cortex, 6–10 mm	460	131	124	15	62	7	2		801
Flake without cortex, 11–15 mm	1232	313	360	59	91	18	3		2076
Flake without cortex, 16–20 mm	503	110	162	34	58	12	6	2	887
Flake without cortex, 21–25 mm	173	48	76	15	31	2		1	346
Flake without cortex, 26–30 mm	53	14	38	11	11	1	1		129
Flake without cortex, 31–35 mm	19	4	8	3	8	1	2		45
Flake without cortex, 36–40 mm	10	6	14	8	2		2		42
Flake without cortex, 41–45 mm	4	3	6	2			1		16
Flake without cortex, >45 mm	2	3	5	5	1		5		21
Total without cortex	2470	633	793	152	264	41	22	3	4378
Flake with cortex, <6 mm									0
Flake with cortex, 6–10 mm	21	9	5	1	2	1			39
Flake with cortex, 11–15 mm	168	35	22	12	3	1		1	242
Flake with cortex, 16–20 mm	87	26	32	6	4			2	157
Flake with cortex, 21–25 mm	48	10	21	13					92
Flake with cortex, 26–30 mm	48	11	10	7	2	3	1		82
Flake with cortex, 31–35 mm	21	2	9	6	1		1		40
Flake with cortex, 36–40 mm	7	4	8	3					22
Flake with cortex, 41–45 mm	3	2	2	1					8
Flake with cortex, >45 mm	2		8	13	1		1		25
Total with cortex	405	99	117	62	13	5	3	3	707
GrandTotal	2875	732	910	214	277	46	25	6	5085

Table 5 continued. Airpark West Site debitage frequencies by raw material, size category, and presence/absence of cortex.

	Raw Material								
	Jasper	Chert	Quartz	Quartzite	Rhyolite	Chalcedony	Argillite	Unidentified	Total
Blocky Fragment without cortex, <6 mm									0
Blocky Fragment without cortex, 6–10 mm			6						6
Blocky Fragment without cortex, 11–15 mm	17	1	32		1				51
Blocky Fragment without cortex, 16–20 mm	14	3	36	2		1			56
Blocky Fragment without cortex, 21–25 mm	1	1	39	4					45
Blocky Fragment without cortex, 26–30 mm	6		10	2					18
Blocky Fragment without cortex, 31–35 mm	3		11	2					16
Blocky Fragment without cortex, 36–40 mm	1	1	10	1					13
Blocky Fragment without cortex, 41–45 mm	1	1	4						6
Blocky Fragment without cortex, >45 mm	1	2	6	4					13
Blocky Fragment with cortex, <6 mm									0
Blocky Fragment with cortex, 6–10 mm	6	5							11
Blocky Fragment with cortex, 11–15 mm	17	1	5	1					24
Blocky Fragment with cortex, 16–20 mm	20	2	17						39
Blocky Fragment with cortex, 21–25 mm	11	1	8	7	1				28
Blocky Fragment with cortex, 26–30 mm	11	3	12	4	1				31
Blocky Fragment with cortex, 31–35 mm	9	5	11	2					27
Blocky Fragment with cortex, 36–40 mm	8	4	13	7					32
Blocky Fragment with cortex, 41–45 mm	2	2	6	1					11
Blocky Fragment with cortex, >45 mm	2	1	12	9	1				25
Total	130	33	238	46	4	1	0	0	452

with, and flake sizes trend toward small. Once again, lithic reduction activities at this site seem to have been limited in scope and scale.

It can be concluded that the lithic assemblage at the Airpark West site parallels that at Airpark East in most respects. Primary core reduction and tool production were not important activities here. Rather, tool maintenance and replacement are suggested, though the evidence for this is not as strong as from Airpark East. Some differences in debitage raw material proportions and nature of the debitage were noted, but these do not greatly detract from the overall pattern. In short, the nature of lithic tool production at Airpark West and Airpark East is very similar. Differences in the kinds of tools produced are in evidence (e.g. a dearth of scraping tools), however, which will be further explored below.

4.4 CERAMIC ANALYSIS

Approximately 993 ceramic artifacts were recovered from the Airpark West site. In sorting the Airpark East ceramic assemblage, a curious phenomenon was encountered. A sizable portion of the larger sherds (larger than one centimeter in greatest dimension) displayed odd shapes that might be described as anomalous “lumps” or “chunks”, and did not resemble typical potsherds. Typical “real” sherds appeared to be present as well, and the paste, temper, and color characteristics of both lumps and sherds were identical. After a period of puzzled hand-wringing, it was concluded that the ceramic assemblage likely represented fired daub. This interpretation did not readily present itself, since no evidence of prehistoric structures was found anywhere on the site. However, a small historical component was present at the site that appears to be the evident source of the daub. The historical component is discussed elsewhere (Catts et al. 2009), but suffice to say plowzone stripping did not identify an historical structure or many architectural elements or artifacts.

The interpretation is that the daub may have served as chinking for a structure built of logs that did not survive or preserve to modern times. That the daub is fired suggests that the log structure was destroyed by fire. The lack of even possible architectural features in turn suggests that the structure, whatever it was, was not very substantial. While speculative, this scenario is offered as a possible explanation for the numerous fired “anomalous lumps” in the Airpark West ceramic assemblage. The identification of daub versus sherds in the assemblage is based principally on the fact that the daub and presumed potsherds share identical paste, temper, and color characteristics. Given this, the apparent prehistoric potsherds were reclassified as historical daub. It is highly unlikely that prehistoric pottery and historical daub would share identical paste, temper, and color characteristics. An analogous situation was encountered at Bloomsbury in Kent County, where architectural evidence was slight but the former existence of a structure at the location was determined by spatial relationships among various artifact groups, including daub (Heite and Bloom 2000:187-190). A similar situation is posited here.

The ceramics are classified as follows:

1. Wolfe Neck Cordmarked
n=311

Description: All but one of these 310 sherds were discovered in Feature 6, which was uncovered during machine stripping during the excavation of the historical component at the site. Based on paste and temper characteristics, all sherds appear to derive from the same vessel. No rimsherds are present. Seventeen sherds displayed characteristic interior/exterior cordmarking and crushed quartz temper; one of these was found on the surface of the stripped area. An additional 59 sherds displayed

exterior cordmarking only (interiors are exfoliated), and fully 233 sherds were identifiable solely by the presence of crushed quartz temper. Most of the latter were very small. The 17 sherds still possessing both faces are cordmarked vertically on the exterior and horizontally on the interior; the latter is finer in texture than the former.

2. Daub
n=682

Description: As discussed above, the daub fragments are believed to derive from the historic-period component of the site and are not aboriginal. For the record, these fragments range from small to fairly large and are generally irregular in shape, though a sizeable portion does indeed look like “real” prehistoric potsherds. As noted, paste and temper characteristics of the obvious daub and “real looking” ceramics are identical.

It should be noted that no unequivocal or suspected shell-tempered sherds were identified. The only typological assignment to be made is the Wolfe Neck Ware from Feature 6, which possesses all of the diagnostic attributes of that ware. Wolfe Neck is generally dated to the early Woodland I period, ca. 700-400 B.C. (Custer 1989:171-173).

4.5 SOIL CHEMICAL ANALYSIS

Twenty-five samples were taken from Airpark West excavation units, including 11 Stage 1 units (EUs 29, 34, 40, 43, 47–49, 58, 61, 64, and 67), 2 Block A units (EUs 70 and 80), 3 Block B units (EUs 88, 108, and 140), 3 Block C units (Feature 1 in EUs 113 and 138; EU 139), and 1 Block D unit (EU 131). All samples from non-feature contexts derived from Levels 2.1 or 2.2, and those from Feature 1 derived from six arbitrary 10-cm levels measured from the base of the plowzone (0–10 cm to 50–60 cm) as well as from the base of the feature.

The pH of the 25 submitted samples from Airpark West ranged from a low of 5.1 in EU 70 (Block A) to a high of 6.4 in EU 49 (Table 3). The arithmetic mean was 5.7, which added to the standard deviation of 0.3 indicates statistical significance for those readings of 6.0 or more, occurring in EUs 29 (6.1), 40 (6.2), 49 (6.4), 64 (6.0), and 67 (6.0).

Phosphorus counts ranged from 2.24 mg/kg in EU 47 to 35.44 mg/kg in EU 70, Block A, averaging 9.91. Adding the standard deviation of 7.7376 gives a statistically significant reading of 8.7286 mg/kg, which was exceeded in the upper five arbitrary levels (0–50 cm below plowzone) of Feature 1 in EU 138 and the base of the feature in EU 113 (Block C), as well as in EUs 29, 49, 67, 70 (Block A), 80 (Block A), and 88 (Block B) (Table 3).

Potassium levels varied from 24.13 mg/kg in EU 70 (Block A) to 87.21 mg/kg in EU 139 (Block C). The mean was 45.82 mg/kg and the standard deviation was 15.43, the sum of which was surpassed in only three samples: EUs 40 (66.53 mg/kg), 47 (69.80 mg/kg), and 139 (87.21 mg/kg) (Table 3).

The calcium totals ranged from 75.52 mg/kg in EU 70 (Block A) to 535.75 mg/kg in EU 47, averaging 249.77 mg/kg (Table 3). A statistically significant level of 361.82 mg/kg results when the standard deviation of 112.05 is added, which the samples from EUs 43, 47, 64, and 131 (Block D) exceeded.

Magnesium counts ranged from 13.90 mg/kg in EU 70 (Block A) to 142.85 mg/kg in EU 47, with a mean of 49.49 mg/kg. Adding the standard deviation produces a statistically significant level of 80.55 mg/kg, which the samples collected from EUs 47, 64, and 131 (Block D) surpassed (Table 3).

Manganese levels averaged 4.02 mg/kg, with extremes of 1.71 mg/kg in EU 108 (Block B) and 8.09 mg/kg in the 20–30-cm level of Feature 1 in EU 138. The upper four 10-cm levels of Feature 1 were higher than 5.72 mg/kg, the calculated level of statistical significance; in addition, the sample from EU 47 surpassed this level (Table 3).

Lastly, zinc ranged from 0.14 mg/kg in EUs 108 and 140 (Block B) to 0.34 mg/kg in the upper 10-cm level of Feature 1 in EU 138 (Block C), averaging 0.21 mg/kg (Table 3). Four proveniences yielded zinc levels higher than the statistically significant minimum of 0.26 mg/kg: in addition to the sample from Level 1 of Feature 1, Levels 3 (20–30 cm below plowzone) and 4 (30–40 cm) from the feature (in EU 138) also were above 0.26, and the sample from EU 58 likewise was significantly high (Table 3).

Based on these results, Feature 1 may have been a storage or trash pit in which organic refuse was disposed of, accumulating as a midden deposit, given the elevated counts of phosphorus, manganese, and zinc. Areas of refuse disposal are also indicated in EUs 29, 47, 49, 67, 70, 80, and 88, and the presence of fire associated with hearths or firepits is suggested in EUs 40, 47, 64, 131, and 139, which may contain elevated levels of wood ash. Decayed bone and/or shell may be present in EUs 43, 47, 64, and 131, based on calcium content; note that EU 47 exhibited elevated levels for four of the tested elements (potassium, calcium, magnesium, and manganese), as well as a slightly elevated reading for pH (Table 3).

4.6 SPATIAL ANALYSIS

4.6.1 Lithic Artifacts

For purposes of analysis and discussion, the Airpark West site was separated into three arbitrary sections: the eastern, central, and western areas. A smaller lithic artifact assemblage was recovered from the site than at Airpark East.

Figure 56 shows the spatial distributions of bifurcate-based, Piscataway-like, and Rossville-like points. The single bifurcate, indicative of the early Archaic period, derived from Block B. The five Piscataway-like points occurred in Blocks B, C, and D in the eastern portion. Likewise, the two Rossville-like points derive from adjacent units in Block B. The Piscataway-like and Rossville-like points indicate occupation sometime during the early Woodland I period.

Three untyped projectile point classes were excavated at the site. The chert Untyped Side-notched point was found in Block B in the eastern area (Figure 57). The single argillite Untyped Stemmed projectile point was found here as well. One chalcedony Untyped Corner-notched point was found in a single excavation unit in the eastern area; two chert Untyped Corner-notched points were found, one recovered from Block B and one from a single excavation unit within the central area (Figure 57).

Projectile point tips are concentrated in the eastern area with five out of the six being recovered in the blocks (1 chert, 1 quartz, and 3 jasper); the sixth tip was recovered from a single excavation unit in the western area of the site (Figure 58). Two projectile point bases were recovered from Block A in

the western area (1 rhyolite and 1 jasper) (Figure 58). Broken finished tools were found only in the eastern area in two blocks, one chert and 2 jasper pieces (Figure 58).

Scraping tools also tend to congregate in the eastern area. With the exception of a single hafted scraper from Block A in the western area, the remaining hafted scraper, steep retouch end scraper, and the graver/scraper refit derived from the eastern units (Figure 59). The two “other” scrapers were found in Block B (Figure 59).

Twelve of thirteen rough bifaces were recovered from the eastern area, and 11 of these occurred in Block B; the final piece was found in the western area at the very edge of the site. Of six hammerstones four were found in Block B and one in Block D. The last derived from Block A. The single pieces esquille was recovered from Block B. Finally, all five chopping tools were also found in Block B.

4.6.2 Debitage

The debitage distribution at the Airpark West site was conducted in like manner to that at Airpark East. However, fewer debitage classes could be mapped by the Surfer program due to small sample sizes of many of the classes.

Figure 60 depicts the distribution of all debitage across the site. Figure 61 shows the distribution of jasper flakes (bottom) and shatter (top) across the site. The distributions are similar to the debitage as a whole. Blocks B and D display the densest concentrations, somewhat less in Block C. Figure 62 depicts flakes measuring 10-30 millimeters in size both with (bottom) and without (top) cortex. Again, a similar pattern is revealed, particularly in Block D, where a concentration of flakes without cortex is evident, and in Block B, where a concentration of flakes with cortex is evident.

Figure 63 displays the distributions of all chert flakes (bottom) and flakes without cortex measuring 10-30 millimeters (top); the small amount of chert shatter and chert flakes with cortex precludes mapping these classes. The patterning is clear: chert tends to concentrate in Blocks B and C, and somewhat less in Block A. A similar distribution is seen for quartz flakes (bottom) and shatter (top) in Figure 64. Again, quartz tends to concentrate in Blocks B and C, less so in Block A. The pattern is also reflected in Figure 65, which depicts quartz flakes without cortex, 10-30 millimeters in size.

Quartzite distributions are shown in Figure 66. This relatively rare material also tends to cluster in and around Blocks B, C, and A. Meaningful maps for rhyolite, chalcedony, and argillite could not be accommodated by the mapping program, suffice to say that the highest concentrations of rhyolite occur in Block A, and chalcedony and argillite focus on Block B.

To summarize, the distribution of debitage is not even across the Airpark West site. A fairly consistent pattern can be seen for chert, quartz, and quartzite, which tend to concentrate in and around Blocks B and C near the east-central part of the site. Similarly, small amounts of all materials occur in and around Block A in the southwestern area. Jasper, however, is somewhat different. While concentrating in the eastern portion of Block B, jasper is the only material to occur in any quantity in Block D at the eastern end of the site. These differences suggest spatial patterning and perhaps activity areas within the site. This observation will be further explored below.

4.6.3 Ceramics

The Airpark West site yielded 992 pieces of fired ceramic. As discussed previously, the ceramic assemblage from the site consists mostly of “lumps” that appear to be fired daub from the historical component at the site. Corroboration of this interpretation was found in the spatial analysis: all of the fired ceramic specimens from the Airpark West site derive from the southwest portion, which is the locus of the historical component. No ceramic artifacts were found elsewhere on the site.

The only genuine prehistoric pottery from the site was found in Feature 6, in the far southern end of the site. Here, 310 sherds of Wolfe Neck Cordmarked were found in a feature interpreted as a possible living floor or midden. As noted, all sherds appear to derive from the same ceramic vessel.

4.6.4 Fire-Cracked Rock

A total of 501 fragments of FCR were recovered during the Phase III data recovery at the Airpark West site (Appendix I). Of these, the great majority consists of quartzite (n=459; 91.6%), followed by quartz (n=26; 5.2%) and sandstone (n=16; 3.2%). The count in those units that produced FCR ranged from one to 15 fragments (Figure 67), occurring in the plowzone (Layer 1), Levels 2.1–2.4 of the underlying E/BE horizon, and, in two cases, Level 3.1 of the BE horizon in EUs 140 and 144 of Block B. The higher counts (11–15 fragments per unit) were concentrated within Block B and, to a much lesser extent, in Block C, both in the central portion of the site (Figure 67).

4.6.5 Discussion

Block B was a busy place on the Airpark West site. As discussed, all lithic raw material types are clustered here. Most projectile points and tools also focus on Block B. Eleven of 13 rough bifaces and four of six hammerstones were recovered from Block B. That, along with the occurrence of tips, bases, and broken finished tools in Block B, dovetails nicely with the high frequency of debitage, suggesting that bifacial reduction and tool maintenance and replacement took place here. The two Rossville-like points were found in Block B. Rossville points are often found with Wolfe Neck ceramics; Wolfe Neck ceramics were found in Feature 6, which is located at the southern margin of the site. Any potential relationship with the points and pottery is not compelling.

All but two of the scraping tools occur in Block B, as well as all five chopping tools. Clearly, the greater Block B area was a focus of several different activities. Significant amounts of jasper debitage also occur in Block D, along with two Piscataway-like points (1 jasper, 1 chert) and a hammerstone. Blocks B and D may represent activity areas of some kind. The southwestern area of the site, around Block A, appears to have been only lightly used.