Figure 24. *The lower channel carved into the rock face, Site 2 in Figure 23. The scale measures 10 cm. (Photograph: D. Crook).*

the floodwaters were captured at the point where the wadis break through the surrounding hills, diverted westwards by walls along the contours, and then allowed into the fields below through simple sluices and baffles (Barker *et al.* 1998, figs 7 and 8). In the western extremity of the WF4 system (in WF4.18, for example: Fig. 8) yet further solutions were found, consisting of series of cross-wadi walls built at the confluence of wadis: presumably most floodwater by this time had moved back into the wadi channels from the various diversion systems built upstream, and the priority at this end of the system was to use simple but sturdy barrages at right angles to the floodwaters to stem their flow in the channels and force water out onto the surrounding fields.

Palaeohydrology (DC)

The principal aim of this component of this fieldwork was to reconstruct the hydrological principles of the water diversion systems associated with the wall and field systems. A number of different techniques was used. Water samples were collected from the Wadi Dana and Wadi Ghuwayr springs, for analysis of their alkanility, sodicity and salinity, to allow reconstructions to be made regarding the relative potential impacts of spring-fed irrigation versus rain-fed floodwater farming. The major Roman water structures on the southern side of Wadi Ghuwayr near Khirbat Faynan (the aqueduct, reservoir, and mill) were surveyed using an EDM, cross-sections of the channels linking this system were measured to provide data for reconstructing discharge levels, and the cubic capacity of the reservoir was measured. Infiltration measurements were taken from soils in six zones in a transect from higher to lower ground across the main field system, as follows (Fig. 22): the rock slopes above WF4.3 and WF4.4; within the upper slopes of the field system, in the parallel channel WF 243 in WF4.3 described and illustrated in Barker *et al.* (1998); from ploughed and unploughed land within the bronze age settlement WF100 (unit 4.13 in the field system); and from a lower terrace near the main Wadi Faynan in WF4.16. When combined with present-day flood statistics from the region, these measurements will enable us to calculate a simple measure of the hydrological functioning of floodwater farming within the ancient field systems. However, the infiltration measurements taken in the field were illuminating, indicating that infiltration levels are uniformly low: thus rainwater moves swiftly over the landscape with little loss, making water diversion and trapping systems feasible even in those areas of the WF4 field system where the gradient slope is very slight. The lack of evidence for salinity-related deposits also suggests that the main field system WF4 was fed by floodwater, the Ghuwayr spring only being used for the aqueduct/reservoir/mill system (see below). The study supports the conclusions of the field-system analysis regarding the efficacy of the parallel-wall channels mapped in Figure 19 for moving water onto the extensive lower sections of the WF4 system.

A detailed study was also made of the aqueduct/reservoir/mill system assumed to date to the Roman/Byzantine period (Gardiner and McQuitty 1987; McQuitty 1995; Fig. 23). Sections described by Frank in 1934 were no longer observable, but evidence for the conduit was found much higher up the Wadi Ghuwayr. Headworks would have been located close to the current gauging station where flows are perennial. A large stone-cut channel, now partially filled with a large rock, is the first definite evidence for the start of the conduit sys-

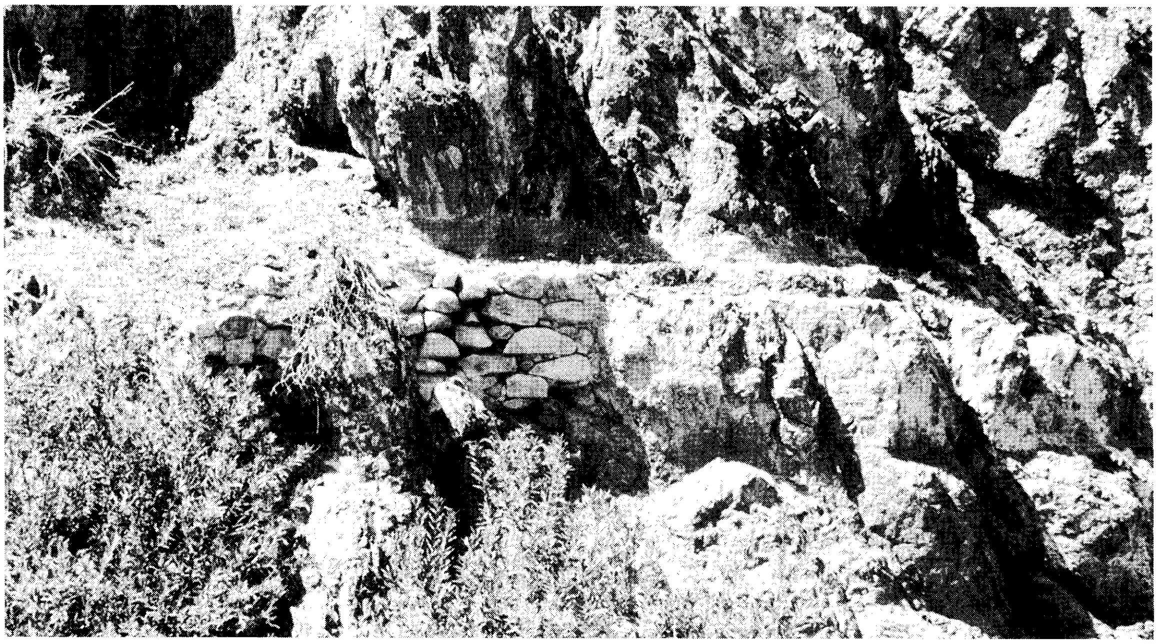

Figure 25. *Stone-faced walls supporting a single plastered channel, Site 3 in Figure 23. (Photograph: D. Crook).*

Figure 26. *The aqueduct channel, showing clearly the two phases of construction, with the 10 cm. scale on the lower channel. (Photograph: D. Crook).*

tem, and a few metres on there is further evidence for this channel and an additional conduit carved into the rock face (Fig. 24), the lower of which appears to be older. Approximately 0.25 km. downstream, there are two locations where stone-faced walls support a single plastered channel (Fig. 25) following a contour along the side of the Wadi Ghuwayr, probably a remnant of the younger higher channel. On the side of a rocky abutment lower down the Wadi Ghuwayr there is evidence for three channels existing, the higher channel 1.5 m. above the middle channel, which in turn is 1.5 m. above the lower channel. The highest channel (width 0.7 m., depth 1 m.) appears to be the oldest and is plaster-lined; the middle channel is the largest (width at base 0.7 m., width at top 0.8 m., depth 1.5 m.) and also contains fragments of plaster; the youngest, lowest, and smallest channel (width at base 0.5 m., width at top 1 m., depth 0.5 m.) has no plaster. It is possible that this channel may have been lined in mud and supplied water to fields in this area. There is a fall of 16 m. on the youngest channel between this point and the headworks, whereas the oldest channel falls 11 m. in the same distance.

The section of conduit leading to the aqueduct described by Frank (1934) is no longer visible. The aqueduct itself was an impressive structure built to span the Wadi Shayqar. It contained a series of arches, the last of which collapsed on the 5 April 1998. The one remaining archway prior to this date had a span of 3 m. and a height of 3 m. The section of conduit still surviving is 31.8 m. in length. The aqueduct has two clear phases of development, with a lower channel replaced by a higher channel (Fig. 26). Both channels were rectangular and lined with *opus signinum* plaster (average thickness 0.01–0.03 m., friction = 0.3 mm.). The higher channel (width 0.52 m., depth 0.2 m., slope 0.0197) lies on top of the cobble-filled lower channel, which has slightly larger dimensions (width 0.55 m., depth 0.25 m., 0.017 slope). In both cases it is probable that the true depth of these channels was in the order of around 0.4 m. From the aqueduct there is little evidence for the course of the conduit, but a line of stones and fragments of plaster suggest that the conduit flowed to the north of the line described by Frank (1934). An EDM survey shot from the Khirbat Faynan demonstrates the shallow drop in altitude (8.1 m.) between the aqueduct, reservoir and mill leat.

A 6.6 m. section of channel (0.5 m. width, 0.3 m. depth, 0.0126 slope) is preserved at the intake to the reservoir. From here, water was passed through a sediment trap (1.74 m. width, 1.2 m. depth, 1.8 m. length) before entering the principal reservoir which, measuring 31 m. x 22.4 m. [with 0.36 m. of fill] and with a total depth of 4.03 m. to the overflow, had a cubic capacity of 2798 m^3. Lying on top of the west wall of the reservoir is another section of channel (0.4 m. width, 0.3 m. depth, 9.3 m. length, 0.0039 slope) flowing towards the line of a partially-buried reservoir overflow 1 m. below this channel. The purpose of this channel was to provide a greater head of water than derived from the overflow to drive the Roman water mill. This, plus the design of the reservoir, suggests that the water held in the reservoir was not used solely to drive the water mill or to provide water for conduit irrigation but could also have provided water for drinking, industrial processes, and small-scale hand irrigation. The over-the-top watermill has a leat of 15.8 m. (slope 0.0029) and dimensions (width 0.45 m. depth 0.4 m.) similar to the intake of the reservoir. The water ran along a stone-covered leat before dropping through a vertical circular shaft with a diameter of 0.2 m. and a length of *c.* 1.5 m. This narrow shaft opened up into a wider roundish chamber approximately 1.5 m. wide and 2.4 m. deep. It is assumed that the lower chamber is where the water-wheel was housed, as there does not appear to be evidence of further outbuildings.

The evidence for at least three phases/levels of conduits near the headworks and two phases of channel development at the aqueduct, which appear to be from approximately the same era according to construction techniques, suggests that there was a need to make adjustments to the level of the conduit at different sites and at different times. It seems logical to assume that these adjustments would have been made to improve the hydrological efficiency of the channel. Possible reasons to account for these changes could include: neo-tectonic activity producing uplift in the area of the reservoir and mill relative to the headworks; sedimentation upstream of the headworks necessitating raising the headworks and offtake channel; and the need to maximize output by increasing the head of water in the channel, thereby increasing discharge. Although there was the potential to irrigate land upstream of the Wadi Shayqar aqueduct, the majority of water supplied the reservoir and then the mill. The contemporary water quality figures for the Wadi Ghuwayr (pH 8.18–9.11 and conductivity 0.75–1.113 dSm^{-1}) imply that the water, if used for irrigation, would have had to be carefully managed to avoid soil problems associated with alkalinity. There is no contemporary or historical evidence for calcifications occurring in these soils. The indications are that the water collected in the reservoir was not for irrigation, but just to power the watermill. Overflow from the tail race of the mill could have been used to irrigate a small area of fields in WF4, though as described in the previous section the field layout suggests that attempts were made to keep the tail-race water away from the fields immediately below it.

Finds analysis

Lithic analysis (TEGR)

A total of 1,800 pieces was examined during the 1998 field season, from 450 collecting units. The units studied this year comprised WF4.14, 4.15 and 4.16, all the samples from separately-identified 'sites' within the field system such as cairns and enclosures, all the material from the northern wadi field systems (such as WF406, WF407, WF409, and WF410), and the material collected by the geomorphological survey. Of the 1,800 pieces studied, 112 were discarded as natural, and the remaining 1,688 were examined to identify: 1) type piece, 2) blank form, 3) platform type, 4) flaking sequence, 5) edge conditions, and 6) raw material. The collections studied included both 'picked' samples from the systematic line-walking of the field units and 'grab' samples taken from fields after the systematic walking, or from the separately-identified 'sites'. A total of 187 formal and *ad hoc* tool types was identified, 10.5 per cent of the total collection. Some of these have chronological significance, others are informative of activity but are not distinctive enough for identifying sequences. The list is as follows: borers 6; borers, neolithic type 6; hollow scrapers 2; carinate scrapers 5; straight scrapers 2; side scrapers 13; end scrapers 21; tabular scrapers 8; knives 5; projectile point 1; notches 3; denticulates 6; miscellaneous retouched 11; bilaterally-worked blades 2; truncated flakes 3; truncated blades 4; retouched sickles 23; unretouched sickles 15; backed blades 31; blade segments 7; arch-backed blades 2; obliquely-truncated blades 4; microliths 4; serrated bladelet 1; pick 1; handaxe 1.

The note of caution in the 1997 lithics report (Reynolds 1998) must be re-emphasized: the nature of depositional contexts and the limitations of sampling inhibit the identification of sites in terms of identifiable activity or habitation units. However, several units produced material which can be dated with reasonable confidence, demonstrating the exploitation of the study area through the major periods of prehistory. The find of the single handaxe from the Fass Yad raised river terrace deposit in Wadi Dana shows a Pleistocene presence, probably dating between 210,000 and 90,000 years ago (Fig. 1). There was a scarcity of other palaeolithic or epipalaeolithic material apart from this; the microliths and backed blade elements found could date from the Epipalaeolithic into the Neolithic, and so have not been used for dating purposes here. Borers found in six units are likely to indicate neolithic presence (though they do also occur in chalcolithic and early bronze age contexts): fields 5, 44 and 66 in WF4.15, field 6 in WF406, WF137 (an area of boulder walls and a cairn within WF4.13), and 5500 (a geomorphological site). Tools of classic chalcolithic type such as adzes, axes and chisels are absent, but arch-backed blades indicative of chalcolithic/early bronze age activity were found in fields 41 and 20 of WF4.15. Bronze age activity is suggested by the presence of a pick at WF406.2 and tabular fan-like scrapers at fifteen other locations both within WF4.13, the main identified focus of bronze age activity, and the units to its north: boulder structures WF106, WF136, WF144, and WF157, and cairns WF68, WF81, and WF117 in WF4.13; fields 2, 6 and 20 in WF4.14; and fields 1, 24, 26, 57 and 66 in WF4.15. The projectile point found was broken during manufacture and so cannot be used for dating; it was partially bifacial and pressure-flaked into a point, but it had been discarded after suffering a transverse snap.

In terms of moving beyond identifying a period-based presence, sample sizes are limiting, the largest single sample being 44 pieces from unit WF161 (this is 2.4 per cent of the total collection), a midden of bronze age material immediately west of WF4.13; the largest unit in the 1997 survey had *c.* 70 pieces. The next largest units were 5021 (a geomorphological site) with *c.* 35 pieces and WF385, a collection of *c.* 30 pieces from the far western end of the WF4 field system. Units WF137 (a boulder structure in WF4.13) and 5500 (another geomorphological site) both had *c.* 25 pieces. There is then a gap in the collection sample size until *c.* 10 pieces, at 23 units. This gap may have real significance for identifying 'sites', an hypothesis to be investigated in future years with revisits to the richer units.

It has not yet been possible to analyze all the data collected with respect to blank form and technology, but a brief examination of the cores recovered (37 in total) shows that 23 were for the production of flakes, three for the production of bladelets and three for 'flakelets'. A further six were merely flaked lumps. This, however, runs counter to the impression gained from the study of blanks, where blade-flakes and blades were thought to dominate. It is clear that the northern wadi margin (WF406, WF409 and so on) does show preference for blades. Use of core tablets and core edge rejuvenation flakes has been identified but in low frequency, whilst the consistent use of hard hammers and informal flaking is attested by platform types and the number of Siret, plunged, and hinged blanks. Edge conditions overall are similar to the 1997 collection, but there is a contrast between the collections from the northern wadi margin and the main field systems. In the latter, heavy impacts, rolling, edge notching and crushing are relatively common; on the former, edges are less damaged and have been subject to different damaging factors – snapping and trampling. The potential of the northern fringe material for insights into the behaviours of the peoples discarding lithics in Wadi Faynan would appear to be much greater than that of the main field system.

Whilst the 1997 study indicated that a large number of raw materials appeared to have been used, some of these have now been identified as weathered versions of the same material. In general, there are four main forms of material used (in order of frequency from most to least common): brown flint, grey flint, brecciated flint and black flint. A local source of the brown and grey flint was identified in the WF406 area, whereas we had formerly assumed that wadi cobbles provided the material. It can now be suggested that much of the material in the WF406 field system and some from the main WF4 system comes from the outcrops found on the northern fringe of the Wadi Faynan. There is wider variation in both raw material used and its weathered state in the field system, suggesting the more frequent use of wadi cobbles there. Raw materials are not a limiting factor and local sources always dominate. There is one exception to this, which is a brown tabular flint with a thin orange cortex which appears to be solely present in definable bronze age collections: its use may be characteristic of bronze age people in Wadi Faynan (though this hypothesis needs to be confirmed by pottery studies and further work) – no cores, shatter, or fragments of it have been found within the areas so far studied, suggesting that it may have been imported in the form of finished artefacts. Maloney (1998) comes to the same conclusion in her study of the WF100 material, and it seems to be the case at other bronze age sites in Israel and Jordan (Rosen 1997). The occasional use of quartz and red ?jasper seen in the 1997 collection is not repeated in the material studied in 1998. Once again, this probably reflects use of the most locally-available raw material sources. The amount of shatter recovered (30 pieces) is very small and is probably the result of both sample bias and susceptibility to post-depositional weathering.

In summary, the continuation of the lithic study has identified an area of greater information potential on the northern wadi fringes, where the material is in better condition and there are larger numbers of formal tool types, especially sickles and backed blades. Raw materials can be shown to reflect the locally-available sources closely and do not seem to be a limiting factor in lithic production, with the single exception of the tabular brown flint that may be a bronze age import. In terms of chronology, the palaeolithic handaxe shows the potential longevity of use of the study area, and a number of neolithic and early bronze age sites has been tentatively recognized. Bronze age material is certainly concentrated close to the known bronze age sites in the main field system such as WF100 in Unit 4.13. At the same time, however, the frequency of bronze age and earlier material present in the northern wadi fringes, including numbers of tool types which relate to harvesting, suggest that these localities offer the greatest potential for improved understanding of the human exploitation of the wadi system from lithic data.

The prehistoric pottery (RA)

Examination of further collections of prehistoric pottery was limited this season due to time constraints. Preliminary sorting was undertaken of prehistoric pottery from WF406, WF408, WF409 and WF411–416, but effort was concentrated on the examination of the pottery from the WF424 settlement and its associated fields (Fig. 16). The pottery from this unit was sorted and counted; of a total of 857 sherds collected from the unit, 123 sherds (14.4 per cent) could be positively identified as belonging to the Iron Age, and 94 sherds (11 per cent) to the Early Bronze Age. A significant portion of the pottery (228 sherds: 26.6 per cent) was unidentifiable as to period. If these unidentifiable sherds are removed from the counts, the percentage of iron age and early bronze age pottery is a more significant proportion of the total identifiable assemblage, at 19.5 per cent and 15 per cent respectively. Although the number of prehistoric and Iron Age sherds may still seem a small fraction of the overall pottery from the area, it is worth noting the close proximity of Khirbat Faynan, which presumably accounts for the still overwhelmingly large percentage of classical and later pottery in this area.

The majority of the early bronze age pottery from WF424 is comprised of non-diagnostic body sherds, and the few diagnostics pieces found add little to the discussion of the Early Bronze Age in the Faynan area. In general, these sherds appear to belong to the early phase of the Early Bronze Age (EBA I) and support previous interpretations of the early bronze age landscape in the immediate vicinity of the Khirbat. These sherds are consistent with the findings at the site of WF100 in unit 13 of the WF4 field system (Wright *et al.* 1998) and with those from Wadi Fidan 4 (Adams and Genz 1995, Levy and Adams, in prep.). A few sherds were identified belonging to the later Early Bronze Age, which probably relate to the late EBA III–EBA IV period, and this is also consistent with previous findings in the region.

Of the identifiable iron age pottery, there were 46 good diagnostic sherds, which represent one of the largest concentrations of iron age pottery from surface survey in the region to date – previous surveys of the region have produced little in the way of concentrations of iron age pottery. Until recently, the majority of iron age finds has come from the few iron age sites which have been excavated in the region, which include Barqa al-Hatiya (Fritz nd., and 1994) and Khirbat al-Nahas (Fritz 1996). In addition to these sites, a significant new body of iron age data from the Wadi Fidan has recently come to light through both excavation and surface survey, which includes evidence of both metallurgical as well as funerary activities (see Levy *et al.*, 1999). Overall, the evidence for iron age occupation in this part of Jordan is a comparatively recent finding, and although the overall extent of occupation in the region is still largely unknown, the increasingly well documented exploitation of copper at sites such as Khirbat al-Nahas and Khirbat al-Jariya probably means that iron age occupation in the region was substantial. Mines of the Iron Age are well documented from the work of the Bochum team, and are spread throughout the eastern Faynan region (G. Weisgerber, pers. com.).

There has been some previous assessment of the iron age pottery of the region: Knauf was perhaps the first to suggest an early iron age date for this pottery (in Hauptmann *et al.* 1985, pl. 29:1–6). Since then, more cautious readings (Hart and Knauf 1986) have suggested that the pottery of the region should be grouped into three main categories: 1. standard Edomite pottery (i.e. seventh-sixth centuries BC), similar to that found at excavated sites on the plateau; 2. 'Negebite' pottery: a coarse handmade ware common to the Wadi Arabah and Negev; and 3. non-Edomite iron age pottery, of an iron age fabric and similar to later Edomite typologies, but not easily related to typologies from either the Jordanian plateau or western Palestine. According to Hart and Knauf, Type 1 and Type 3 pottery are often found in association, suggesting some overlap of these forms, although in the case of some of the Wadi Khalid mines, Type 1 pottery is found in isolation. Hart and Knauf therefore prefer to call the Type 3 pottery 'pre-Edomite iron age' rather than early iron age, and therefore provide a relative rather than absolute dating for this range of pottery, which suggests that it is at least partially earlier than the main body of Edomite pottery.

To date, our conclusions from preliminary analysis of the surface survey collections support this reading of the iron age pottery, with both definite and 'Edomite' and 'generic' iron age pottery found in several areas, notably WF4.1–4.6 (Barker *et al.* 1998, 20–21). The new findings from WF424, however, suggest that this Type 3 pottery may upon further investigation actually be found in isolation from Edomite pottery of Type 1, since no definite later iron age 'Edomite') sherds were observed in the collection; these findings would therefore suggest a clear chronological distinction between the two types. It is too early to make any definitive conclusions regarding the presence of a clearly pre-Edomite phase at Faynan, but future investigation of the buried landscape of WF424 may yield evidence for the earliest iron age exploitation of copper in the Faynan area.

The pottery from WF424 includes a total of 46 diagnostic pieces, including a variety of rims, bases and handles from a number of vessels. The most common vessel forms from the collection are jars, which include both large storage jars or pithoi (Fig. 27: 4–7, and Table 2) as well as several smaller jars styles (Fig. 27: 2–3). Also present were a variety of handles (not illustrated), which probably also belong to larger storage jars. Kraters and larger bowls (Fig. 27: 1, 8–9) are also present. In general the fabric is fine to medium-coarse grit tempered and evenly fired. The non-plastic element in the fabric is usually composed of reasonably well-sorted wadi sand of local types, commonly dominated by quartz sand and limestone, but also including fragments of sandstone and shale. Also present is evidence of both basalt and the local plutonic rocks of the Faynan area, including granites, dolerite and andesite.

Due to the limited assemblage so far examined, it is not yet possible to make any extensive observations on typology, but it is fair to say that Hart and Knauf's (1986) observations on the somewhat variant forms of the region seem to be upheld by the pottery examined to date. It is anticipated that future extensive collections will allow a more detailed understanding of how this assemblage fits into the regional sequences and contributes to our understanding of iron age settlement in the southern Levant.

The classical pottery (RT)

This season provided the first opportunity to study the classical and Byzantine pottery collected from Wadi Faynan during 1996-1998. The main objectives were to establish the range of pottery types present and to provide a provisional dating framework

Table 2. *Iron age pottery from site WF424 illustrated in Figure 27. (* according to Orton* et al. *1993: 231 – 42).*

Fig No.	*Unit*	*Form*	*Characteristics**	*Dominant non-plastic fraction*	*Colour and decorative features*
1	424.3.13 P	Bowl	Ext. feel: rough Int. feel: rough Hardness: hard Texture: irregular	sub-rounded – angular quartz with sandstone, basalt and shale fragments	Interior: 5YR 7/4 pink Exterior: 5YR 7/3 pink Core: 5 YR 6/1 light gray-gray
2	424.2.3 P	Jar	Ext. feel: rough Int. feel: rough Hardness: hard Texture: fine	sub-rounded quartz limestone and basalt sand	Interior: 5 YR 8/2 pinkish-white Exterior: 5YR 8/3 pink Core: 5YR 7/1 light gray
3	424.1.4 G	Jar	Ext. feel: rough Int. feel: rough Hardness: hard Texture: irregular	sub-rounded quartz/basalt sand	Interior: 5YR 6/2 pinkish-gray Exterior: 5 YR 6/2 pinkish-gray Core: 5YR 5/1 gray
4	424.3.22 G	Pithos	Ext. feel: rough Int. feel: rough Hardness: hard Texture: fine	fine rounded quartz and limestone sand with angular shales	Interior: 5YR 7/2 pinkish-gray Exterior: 7.5 YR 8/4 pink Core: 7.5 YR N6/ light gray-gray
5	424.3.7 G	Pithos	Ext. feel: rough Int. feel: rough Hardness: hard Texture: fine	sub-rounded quartz, sandstone and basalt sand with angular shales	Interior: 2.5 YR 6/4 light reddish brown Exterior: 2.5 YR 6/4 light reddish brown Core: 2.5 YR N5/ gray
6	424.1.5 P	Pithos	Ext. feel: rough Int. feel: rough Hardness: hard Texture: fine	very well rounded, fine quartz, limestone and basalt sand	Interior: 5YR 7/3 pink Exterior: 5YR 7/3 pink Core: 2.5 YR N5/ gray
7	424.4.4 P	Pithos	Ext. feel: rough Int. feel: rough Hardness: hard Texture: fine	well-rounded, fine quartz, limestone and basalt sand, with angular shales	Interior: 5YR 7/1 light gray Exterior: 5YR 7/2 pinkish-gray Core: 2.5 YR N5/ gray
8	424.2.3 G	Krater Bowl	Ext. feel: rough Int. feel: rough Hardness: hard Texture: irregular	sub-rounded to well-rounded quartz, limestone and basalt sand	Interior: 2.5 YR 6/4 light reddish-brown Exterior: 2.5 YR 6/4 light reddish brown Core: 2.5 YR N4/ dark gray
9	424.3.13 P	Krater Bowl	Ext. feel: rough Int. feel: rough Hardness: hard Texture: irregular	sub-rounded to well-rounded quartz, limestone and basalt sand, with granite fragments	Interior: 7.5 YR 8/2 pinkish-white Exterior: 7.5 YR 8/2 pinkish-white Core: 7.5 YR 6/2 pinkish-gray

for the different field systems identified. To this end, the pottery from a sample of units and features was examined, to include different functional and geographical locations: Units WF4.3 (southern half), 4, 6, 13, 19 and selected fields from WF4.12 and WF4.15; unit WF406 and associated areas, sites WF21, WF148, WF233 and WF424, and the geomorphological sites 5500, 5501, 5502, 5512 and 5021. Of the different units examined, most contained some element of prehistoric pottery, frequently with the entire range of classical and Byzantine pottery also present, but some biases were evident: for example, Units 4.13 and 4.19 are primarily prehistoric with some Nabatean or early Roman pottery, while WF424, the iron age settlement and associated field system discussed above, had a significant late Roman through Byzantine element.

Nabatean finewares and imported wares provide the best dating evidence for the classical and later pottery. Local or regional ceramics dominate all collection units, and comparative excavated assemblages therefore must be consulted in conjunction with the surface material to establish the dating of these types. Brown (1991) has published a useful series of ceramic horizons spanning the Chalcolithic through to the Ottoman/modern period, while published site assemblages from the Limes Arabicus (Parker 1987), for example, provide additional evidence. Of particular importance, in refining the dating for Nabatean wares, are recent findings from Petra (e.g. Stucky *et al.* 1994). In future seasons the understanding of the local wares will take priority, but at present the discussion must be limited to well-known types.