ArcHeritage

Land off Waterswallows Lane, Buxton

Shovel pit evaluation report

ArcHeritage 2016

Land at Waterswallows Lane, Buxton: Shovel Pit Evaluation

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Key Project Information

Project Name	Land at Waterswallows Lane
Report Title	Land at Waterswallows Lane: Shovel Pit Evaluation Report
Report status	Final
ArcHeritage Project No.	619
Type of Project	Evaluation
Client	Pennine Aggregates Ltd
NGR	SK 07640 75535
OASIS Identifier	archerit1-258491
Author	Rowan May
Illustrations	Rowan May
Editor	Glyn Davies
Report Number and Date	2016/30 27th July 2016
Version and filename	619 waterswallows report v1.docx

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NON-TECHNICAL SUMMARY

This report presents the results of an archaeological evaluation on land at Waterswallows Lane, Buxton, Derbyshire, commissioned by Pennine Aggregates Ltd. The evaluation was undertaken to assess the archaeological potential of the site in line with paragraph 128 of the National Planning Policy Framework (NPPF). The evaluation comprised a shovel pit survey, with 200 pits excavated on a grid at 10m intervals. The shovel pit methodology was designed to assess the potential for the continuation of earlier prehistoric, Mesolithic to Neolithic, artefact scatters previously identified to the east of Waterswallows Lane

The results of the evaluation suggest that there is a low potential for the presence of Mesolithic to Neolithic flint and chert working within the site; only two worked artefacts of flint and chert were recovered with the large majority of chert found being unworked. This indicates that the artefact scatters identified across Waterswallows Lane do not extend into the current site.

No artefactual material of later prehistoric, Roman or medieval date was recovered, again suggesting the potential for buried archaeology associated with these periods is low.

The majority of artefacts recovered were of post-medieval to modern date, and were of low archaeological significance.

On the basis of the evaluation, the archaeological potential for the site is considered to be negligible.

1 INTRODUCTION

This report presents the results of an archaeological evaluation on land at Waterswallows Lane, Buxton, Derbyshire. The evaluation comprised a series of shovel pits to assess the quantities and distribution of prehistoric flint and chert artefacts, and was undertaken to inform a planning application for the construction of a minerals processing, storage and distribution centre. ArcHeritage were commissioned by Pennine Aggregates Ltd to undertake the fieldwork. The evaluation was requested by Steve Baker of Derbyshire County Council's Archaeology Service, in line with paragraph 128 of the National Planning Policy Framework (NPPF).

2 LOCATION, GEOLOGY AND TOPOGRAPHY

The site, centred on NGR SK 07640 75535, is an approximately 2 hectare plot located on the west side of Waterswallows Lane, northeast of Buxton (Figure 1). The site is bounded by Waterswallows Lane to the east, a field and an electricity substation to the south and fields to the north and west. The site is currently a generally flat pasture field with gentle surface undulations.

The underlying bedrock is Carboniferous limestone; the bedrock that dominates the southern Peak District and gives it its distinctive topography and appearance. The limestone is part of the Bee Low Limestone formation a pale grey, pale brownish grey to grey, fine-to medium-grained limestone. Overlying the limestone bedrock is a loess based soil deposit. The wind-blown loess probably originates in the millstone grit from where it was blown as a fine dust at the end of the last glaciation (Buerke 1991). This loess has been added to by the addition of the hard residue left behind as the underlying limestone dissolves leaving non-soluble material behind. This residue material is primarily frost shattered chert that has been incorporated into the loess by cryoturbation. This deposit of loess with chert was first described by Piggott (1962) who referred to it as silty drift. This deposit is relatively common in Derbyshire with loess being blown over much of the limestone Peak District after the last ice age.

3 AIMS AND METHODOLOGY

3.1 Aims

The aims of the evaluation were to:

- determine the extent, condition, character, importance and date of any archaeological remains present;
- investigate the potential for artefact scatters to lie within the site;
- determine if the flint scatters identified to the east of Waterswallows Lane extend into the site;
- provide information that will enable the remains to be placed within their local, regional, and national context and for an assessment of the significance of the archaeology of the proposal area to be made; and to
- provide information to enable the local authority to decide any requirements for further archaeological mitigation for the site.

3.2 Methodology

The evaluation comprised a shovel pit survey, with 200 pits laid out on a grid covering the area of the proposed development, an area of 180m by 110m. The pits were located at 10m intervals within the grid (Figure 2).

The grid and shovel pit locations were laid out by total station survey. Each pit measured 0.25m by 0.25m and was excavated down to the top of the subsoil, with the surface of the subsoil cleaned by hand. The turf was removed separately to enable replacement on completion. The excavated material was broken up and examined for artefacts, then sieved using a mesh of 1cm square. The shovel pits were then backfilled with the spoil and the turfs replaced.

A brief record was made of each shovel pit. This recorded:

- the location (OS) and height (mAOD) for each test pit;
- the soil sequence and depths of soil horizons;
- the presence of finds;
- the presence of any archaeological features, if identified.

Digital photographs were taken to illustrate the range and types of soil profiles, and of any features.

Further details of the methodology used are contained in the WSI in Appendix 3. All fieldwork was undertaken in line with the standards and guidance of the Chartered Institute for Archaeologists (CIfA 2014) and industry best practice.

4 ARCHAEOLOGICAL INTEREST

The site at lies opposite the Buxton Spring Water bottling plant, where a programme of archaeological evaluation and mitigation (trial trenching and open area excavation) undertaken during the construction of the plant identified a series of discrete concentrations of archaeological features and artefact scatters relating to the late Mesolithic and Early Neolithic. Mesolithic remains included a discrete lithics scatter, a knapping floor, and further lithics in a background scatter across the site. Neolithic remains included a probable early Neolithic long house with associated carinated bowl pottery, daub, a possible small post-defined enclosure and lithics scatters. A total of over 800 Mesolithic and early Neolithic lithics were recovered and these were identified as being of regional importance while an early Neolithic long house would be of national importance (Davies *et al.* 2013).

5 RESULTS

The shovel pits were laid out at 10m intervals along the grid. The WSI specified 198 pits, though in the end 200 were excavated, with additional pits located at the end of each of the first two rows. Pits were excavated down to the top of the subsoil, which was cleaned and recorded. Detailed records for each pit are contained in Appendix 1, with pit locations shown on Figure 2, artefact distributions (excluding slag) on Figure 3 and variations in topsoil and subsoil shown on Figure 4.

5.1 Soil profile

In the main, the topsoil was uniform across the site, comprising a dark grey-brown silty clay with frequent rootlets and worm activity and occasional sub-rounded to sub-angular small stones. This deposit (101) was observed in the majority of the pits, and varied in depth between 14 and 38cm. There were two areas where the topsoil differed. At the eastern edge of the site, an area of much stonier topsoil (103) was encountered, which contained many sub-angular cobbles and smaller sub-angular to sub-rounded stones. The depth of this topsoil varied from 17 to 28cm. At the western side of the site was an area of disturbance, where the turf immediately overlay a deposit (108) of mixed topsoil and orange clay subsoil. In most of these pits, the disturbed deposit continued down beyond the base of the pits, which ceased when excavation became too restricted. In one of the pits (163), the deposit overlay a concrete slab encountered at a depth of 32cm, whilst in pit 187, plastic sheeting was encountered at a depth of 37cm.

The main subsoil across the site (102) was a mottled mid-yellow- to orange-brown clay silt, which contained occasional small sub-angular stones. A variation noted in pits 54, 61, 141, 151 and 162 comprised a more strongly orange deposit with gritty reddish concretions on the surface and rare small stones (104), which may have been mainly the same as 102 but with a more concentrated iron pan deposit across the surface. Towards the northern side of the site, pits 103 and 115 encountered a very stony subsoil deposit (107); which appeared to lie within or under deposit 102. The stones (sub-rounded to sub-angular limestone pebbles to cobbles) were fairly loose within a matrix similar to 102. Within the area of disturbed topsoil, subsoil 109 was encountered in three pits (164, 175 and 186). This was a compact orange clay similar to that mixed into topsoil 108, and may represent a more homogenous clay layer within the disturbed area rather than a distinct subsoil.

Apart from the pits overlying the stony subsoil 107, pit 51 was the only pit to contain a large stone in the base. As mentioned above, pits 164 and 187 contained modern material at the base of the pits (concrete and plastic respectively). Only one cut feature was recorded within the evaluation: a small stakehole cutting the subsoil 102 within pit 77. This feature (106) was 9cm in diameter and 5cm deep, circular in plan and tapering to a narrow pointed base, in the southeast corner of the pit. It contained a firm greyish-brown sandy silt fill (105), with rare small stones 0.5-1cm in size.

5.2 Artefact distribution

Although 149 of the 200 pits contained one or more small pieces of chert, on assessment only two of these were worked, the remainder being naturally distributed frost-shattered chert. The two worked pieces were recovered towards the southeast side of the field and are likely to be of Mesolithic date. They are discussed in more detail in Section 6 below.

The remainder of artefacts recovered were of post-medieval to modern origin, and comprised a low-density scatter across the site, with a concentration in the eastern half of the field, mainly towards the centre. It is noticeable that five rows to the west of the centre of the field contained only one artefact, which was a piece of plastic.

Material recovered from the pits included seven clay tobacco pipe stem fragments; two small sherds of post-medieval to modern glazed pottery, several small fragments of ceramic building

material, including probable brick and tile; two small iron nails and a piece of iron strap; probably modern bottle glass shards; two plastic beads and a two unidentifiable small objects; and two pieces of wood, one of which was a near complete cutlery/tableware handle.

In addition to these artefacts, there was a scatter of metalworking slag across the site, in no identifiable pattern. Slag was found in 29 of the pits.

6 LITHICS ANALYSIS

By George Loffman BA, MSc, York Archaeological Trust.

6.1 Introduction

A total of 204 shovel pits were excavated by ArcHeritage. At total of 148 test pits contained chert and flint. This resulted in two pieces of lithic material being retained for subsequent specialist lithic analysis (see table in Appendix 2). An initial rapid assessment was undertaken.

The reason for carrying out test pitting in this area is due to the nearby location of significant Late Mesolithic and Neolithic flint scatters, excavated at Waterswallows Lane Buxton (Davies *et al.* 2013).

The initial rapid assessment revealed that the majority (n=743) consisted of unworked material. Most of this material was of the local grey banded chert. The fracturing evident on this material is due to natural processes and or plough damage, and does not exhibit the characteristics of deliberate flaking. There were very few pieces of flint within the assemblage, one of which was deliberately struck. There were also very few pieces of the black chert (Hind 1998) which appears to have been used extensively at the nearby site of Waterswallows Lane, Buxton (Davies *et al.* 2013).

6.2 Methodology

In analysing the typological and technological characteristics of the lithic material I have followed Preston (2012). For the raw material types I have followed the groups set out by Conneller (1999). For each piece information was recorded on blank type, blank integrity, tool type, tool integrity, dimensions, cortex type, termination type, platform type and raw material type.

6.3 Results

A total of two worked lithic artefacts were identified and recorded using the methodology above (Appendix 2). One is a Deepcar-type obliquely blunted microlith manufactured on grey chert, dating to the Early Mesolithic (TP50), whilst the other is a plunging blade manufactured on yellow brown translucent flint, probably dating to the Mesolithic (TP98).

6.4 Conclusions and recommendations

The low number of artefacts recovered suggests that the knapping scatters located on the Buxton Spring Water bottling plant across the road do not extend to the west of Waterswallows Lane within the site investigated during this fieldwork.

No further work is recommended for the lithics assemblage in its current state.

7 CONCLUSION

The methodology for the shovel pit evaluation was designed to assess the potential for the continuation of Mesolithic to Neolithic artefact scatters previously identified to the east of Waterswallows Lane into the site area, as well as for any artefactual material or features of later periods. The results of the evaluation suggest that there is a low potential for the presence of Mesolithic to Neolithic flint and chert working within the site; only two worked artefacts of flint and chert were recovered with the large majority of chert found being unworked. This indicates that the scatters identified on the Buxton Water bottling plant site do not extend into the current site. As a comparison around 16% of the chert pieces recovered east of Waterswallows Lane were worked (c. 800 out of 5000 pieces) while on the current site only 2 out of 743 pieces were worked, approximately 0.25%. No artefactual material of later prehistoric, Roman or medieval date was recovered, again suggesting the potential for buried archaeology associated with these periods is low. The majority of artefacts recovered were of post-medieval to modern date, and were of very low quantities. On the basis of the evaluation, the archaeological potential for the site is considered to be negligible.

8 ACKNOWLEDGEMENTS

ArcHeritage would like to thank Steve Baker of DCC for monitoring the fieldwork, and the client's agent Michael Green for facilitating access to the site. We would also like to thank the landowner for permitting access to the field.

9 REFERENCES

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Preston, P.R. 2012. *Lithics to Landscapes: Hunter Gatherer tool use, resource exploitation and mobility during the Mesolithic of Northwest England*. D.Phil. Thesis, School of Archaeology, University of Oxford.

FIGURES

Figure 1: Site Location

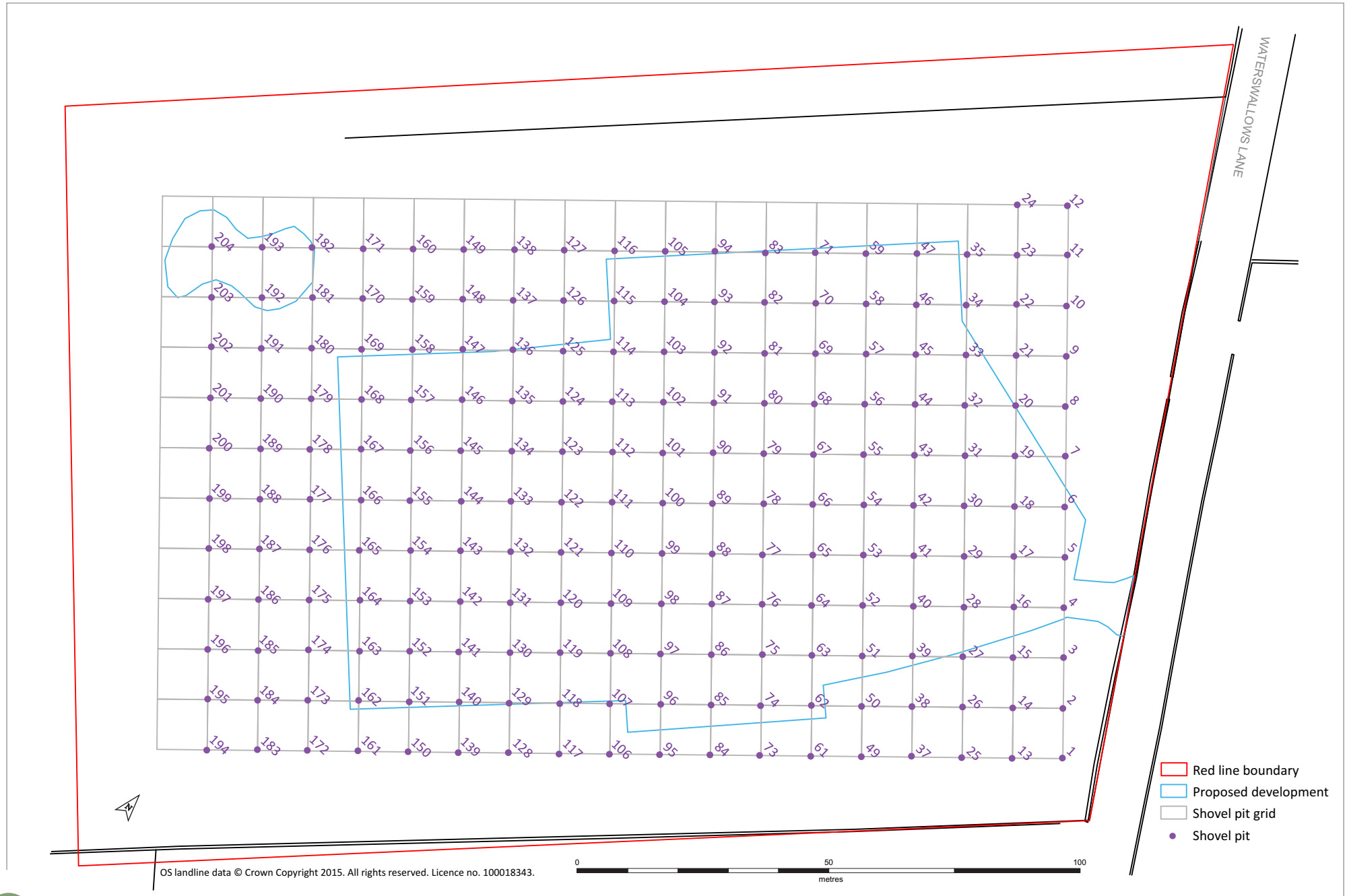

Figure 2: Location of shovel pits

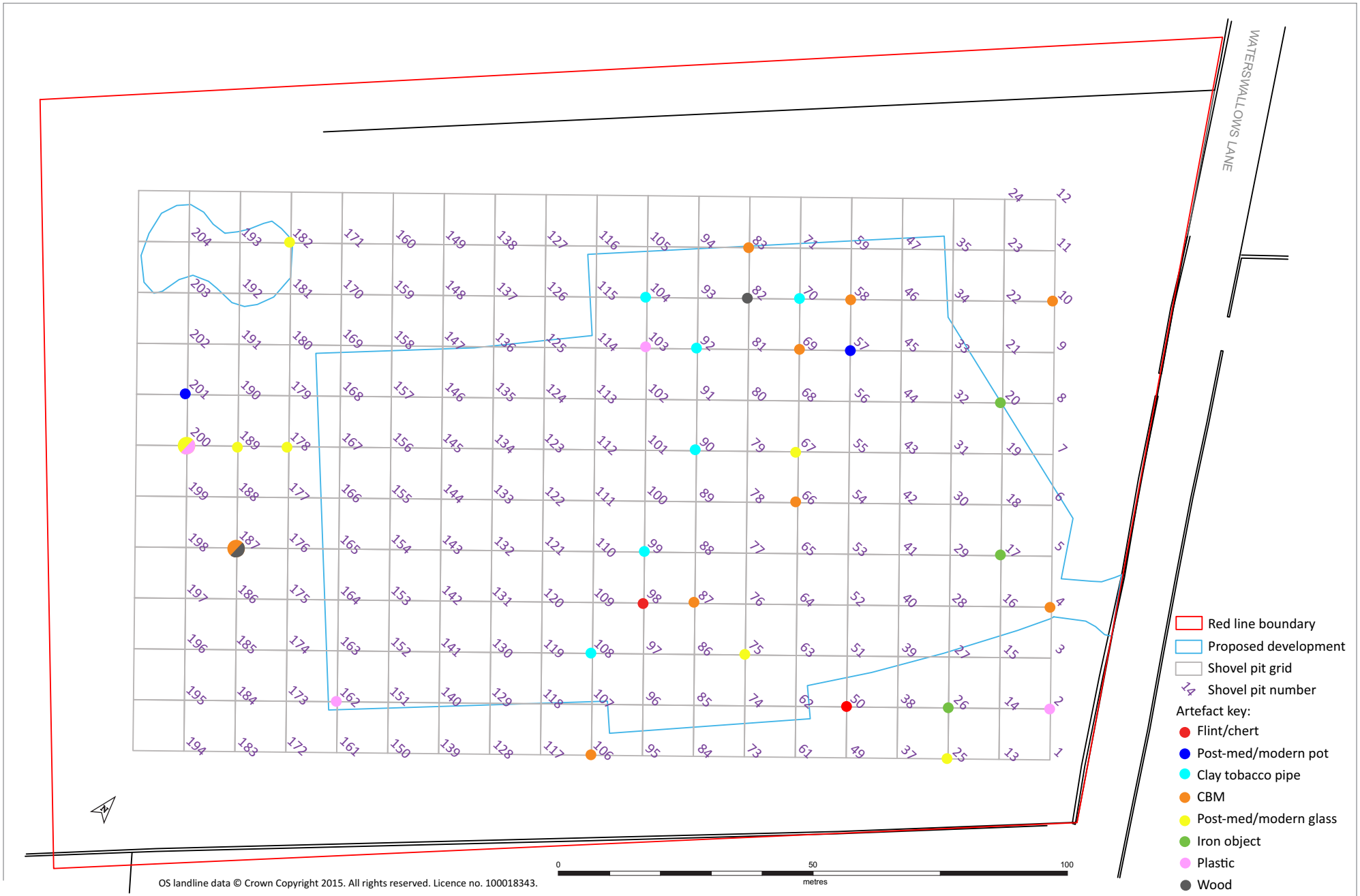

Figure 3: Distribution of artefacts

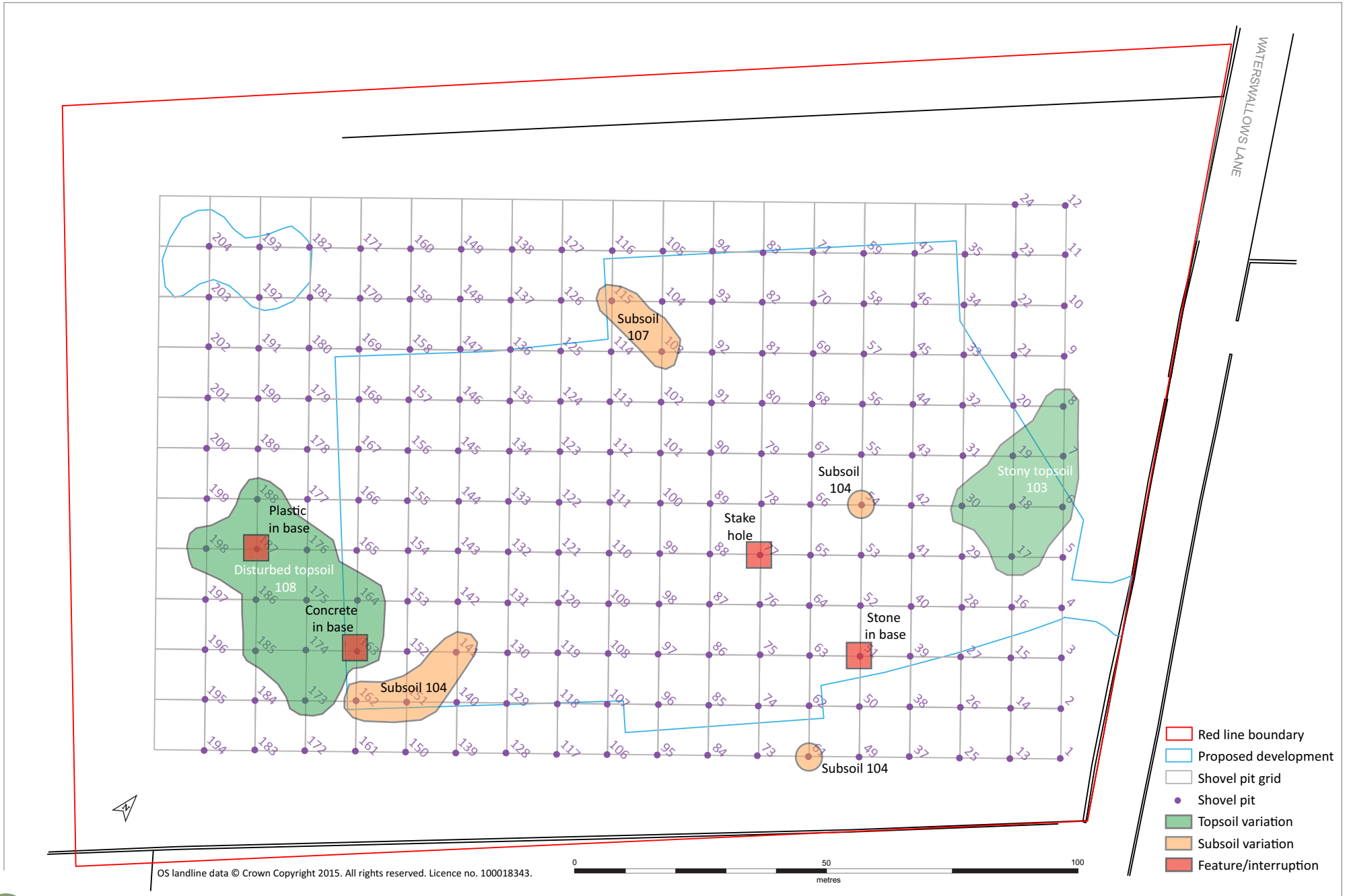

Figure 4: Topsoil & subsoil variations

PLATES

Plate 1: Pit 127, topsoil 101 and subsoil 102

(all scales at 10cm intervals)

Plate 2: Pit 185, mixed topsoil and subsoil 108

Plate 3: Pit 163, mixed topsoil/subsoil 108 with concrete slab in base

Plate 4: Pit 54, topsoil 101 and subsoil 104

Plate 5: Pit 103, topsoil 101, stony subsoil 107

Plate 6: Pit 77, topsoil 101, subsoil 102, stakehole 106 in base

APPENDIX 1: SHOVEL PIT RECORDS

Pit no	Topsoil type	Topsoil depth (cm)	Subsoil type	Depth into subsoil (cm)	Unworked chert	Worked lithics	Pot	Slag	Clay pipe	CBM	Glass	Other	Artefact comment	Pit comment
1	101	22	102	3										
2	101	20	102	2								1	1 plastic bead?	
3	101	22	102	1										
4	101	19	102	1						1				
5	101	36	102	1										
6	103	17	102	1										
7	103	28	102	2										
8	103	17	102	1	3									
9	101	18	102	2	5									
10	101	19	102	2	7					1				
11	101	25	102	1	1									
12	101	22	102	2	2									
13	101	25	102	1										
14	101	28	102	2										
15	101	25	102	1										
16	101	24	102	2										
17	103	21	102	1								1	1 fe strap fragment	
18	103	19	102	1										
19	103	28	102	1										
20	101	14	102	1	1							1	1 small fe nail	
21	101	22	102	2	3			1						
22	101	17	102	1	7									
23	101	22	102	2	1									

Pit no	Topsoil type	Topsoil depth (cm)	Subsoil type	Depth into subsoil (cm)	Unworked chert	Worked lithics	Pot	Slag	Clay pipe	CBM	Glass	Other	Artefact comment	Pit comment
24	101	25	102	1										
25	101	20	102	1	3			2			1			
26	101	20	102	1	2							1	1 fe nail	
27	101	22	102	2										
28	101	21	102	1	1									
29	101	18	102	1										
30	103	17	102	2										
31	101	23	102	1										
32	101	17	102	1	1									
33	101	19	102	1	1									
34	101	18	102	1	5									
35	101	25	102	1	4									
36	VOID													
37	101	19	102	1										
38	101	24	102	1	2									
39	101	26	102	1	2									
40	101	28	102	2	3									
41	101	21	102	1										
42	101	24	102	3	3									
43	101	23	102	2	4									
44	101	20	102	1	5									
45	101	20	102	1	3									
46	101	16	102	2	3									
47	101	19	102	1	6									
48	VOID													

Pit no	Topsoil type	Topsoil depth (cm)	Subsoil type	Depth into subsoil (cm)	Unworked chert	Worked lithics	Pot	Slag	Clay pipe	CBM	Glass	Other	Artefact comment	Pit comment
49	101	17	102	1	5									
50	101	25	102	1	2	1								
51	101	21	102		3									Hit large stone at 21cm
52	101	23	102	2	3									
53	101	18	102	2	10			1						
54	101	16	104	2	7									
55	101	19	102	1	5									
56	101	25	102	1	3									
57	101	18	102	1	9		1						1 x sliver of white glaze	
58	101	21	102	1	5					1			1 small brick fragment	
59	101	18	102	1	2									
60	VOID													
61	101	21	104	1	4									
62	101	24	102	1	7									
63	101	22	102	1	13									
64	101	23	102	1	2									
65	101	20	102	1	8									
66	101	22	102	2	8					5			5 small brick fragments	
67	101	20	102	1	3						1			
68	101	20	102	1	9			1						
69	101	20	102	1	10			2		1			1 small possible brick/pot fragment	
70	101	17	102	1	1				1					
71	101	21	102	1	7									
72	VOID													

Pit no	Topsoil type	Topsoil depth (cm)	Subsoil type	Depth into subsoil (cm)	Unworked chert	Worked lithics	Pot	Slag	Clay pipe	CBM	Glass	Other	Artefact comment	Pit comment
73	101	22	102	1	5									
74	101	25	102	2	1									
75	101	21	102	1	9						1			
76	101	19	102	1	3									
77	101	26	102	1	7			1						Small stakehole in base
78	101	24	102	1										
79	101	28	102	1	1									
80	101	22	102	1	9									
81	101	21	102	1	12									
82	101	21	102	2	6							1	1 thin varnished wood fragment	
83	101	20	102	1	2					1				
84	101	22	102	2	9									
85	101	21	102	1	1									
86	101	18	102	1	9									
87	101	21	102	1	11					1			1 small brick fragment	
88	101	18	102	1	5									
89	101	21	102	1	9			2						
90	101	20	102	1	6			2	1					
91	101	22	102	1	5									
92	101	33	102	1	9			1	2					
93	101	19	102	1	9									
94	101	19	102	1	6									
95	101	20	102	1										
96	101	19	102	1										

Pit no	Topsoil type	Topsoil depth (cm)	Subsoil type	Depth into subsoil (cm)	Unworked chert	Worked lithics	Pot	Slag	Clay pipe	CBM	Glass	Other	Artefact comment	Pit comment
97	101	20	102	1	7			1						
98	101	23	102	1		1								
99	101	20	102	2	6				1					
100	101	21	102	1	4									
101	101	22	102	1	5									
102	101	22	102	1	7									
103	101	23	102/107	1	2								1 plastic bead (green)	Total pit depth 48cm
104	101	22	102	2	14				2					
105	101	22	102	1	1									
106	101	23	102	1	4					2			1 x glazed tile	
107	101	20	102	1	1									
108	101	21	102	1	7				1					
109	101	20	102	1										
110	101	20	102	3	4			6						
111	101	21	102	1	6			1						
112	101	21	102	1	2			1						
113	101	21	102	1	10			1						
114	101	24	102	2	8									
115	101	23	102/107	1	3									107 possibly under 102
116	101	28	102	1										
117	101	23	102	1	3									
118	101	27	102	1										
119	101	23	102	1	6			1						
120	101	24	102	1	3									
121	101	20	102	1										

Pit no	Topsoil type	Topsoil depth (cm)	Subsoil type	Depth into subsoil (cm)	Unworked chert	Worked lithics	Pot	Slag	Clay pipe	CBM	Glass	Other	Artefact comment	Pit comment
122	101	23	102	2										
123	101	21	102	3	7									
124	101	21	102	1	6									
125	101	22	102	1	13									
126	101	22	102	1										
127	101	21	102	1	5									
128	101	21	102	1	3									
129	101	28	102	1										
130	101	23	102	1	5									
131	101	25	102	1										
132	101	23	102	2										
133	101	21	102	1	5									
134	101	23	102	1	6			1						
135	101	23	102	1	1									
136	101	23	102	1	4									
137	101	22	102	1										
138	101	22	102	2	9			1						
139	101	24	102	1	2									
140	101	22	102		2			1						
141	101	20	104	1	2									
142	101	23	102	1	3			1						
143	101	21	102	1										
144	101	29	102	1	3									
145	101	27	102	1	12									
146	101	37	102	1										

Pit no	Topsoil type	Topsoil depth (cm)	Subsoil type	Depth into subsoil (cm)	Unworked chert	Worked lithics	Pot	Slag	Clay pipe	CBM	Glass	Other	Artefact comment	Pit comment
147	101	21	102	1	4									
148	101	20	102	1										
149	101	31	102	1	6									
150	101	20	102	1										
151	101	19	104	1	2			2						
152	101	20	102	1	1									
153	101	19	102		1									
154	101	24	102											
155	101	23	102	1										
156	101	23	102	2	6			1						
157	101	19	102	1	7									
158	101	25	102	1	8			1						
159	101	20	102		8									
160	101	22	102	1	7									
161	101	24	102	1										
162	101	20	104	1	4							1	Plastic ?bottle fragment	
163	108	32	n/a		1									Hit concrete slab at 0.32m
164	108	17	109	2	1									
165	101	23	102	1										
166	101	38	102	1										
167	101	26	102	2	5									
168	101	23	102	2	2			2						
169	101	21	102	1	6									
170	101	17	102	2	4									
171	101	25	102	1	14									

Pit no	Topsoil type	Topsoil depth (cm)	Subsoil type	Depth into subsoil (cm)	Unworked chert	Worked lithics	Pot	Slag	Clay pipe	CBM	Glass	Other	Artefact comment	Pit comment
172	101	22	102	2										
173	108	30	102	1	1			2						
174	108	37	n/a											
175	108	27	109		1									
176	108	36	102	1	1									
177	101	23	102	1										
178	101	28	102	1	8						1			
179	101	20	102	1	1									
180	101	24	102	1	8			1						
181	101	23	102	2	22									
182	101	19	102	1	7						1			
183	101	19	102	2										
184	101	27	102	1	2									
185	108	43	n/a		1									
186	108	17	109		3									
187	108	37	n/a					1		1		1	Wooden handle (cutlery)	Plastic sheeting at base of pit
188	108	33	102	2										
189	101	25	102		3			2			1			
190	101	22	102	1	2									
191	101	23	102	1	11			1						
192	101	26	102	2	13									
193	101	24	102	1	9									
194	101	19	102	2	1									
195	101	18	102	1										
196	101	22	102	1										

Pit no	Topsoil type	Topsoil depth (cm)	Subsoil type	Depth into subsoil (cm)	Unworked chert	Worked lithics	Pot	Slag	Clay pipe	CBM	Glass	Other	Artefact comment	Pit comment
197	101	24	102	1	1			4						
198	108	33	102	1	2									
199	101	28	102	2										
200	101	22	102		2						2	1	Small unidentified plastic item	
201	101	21	102	1	3		1						Modern white-glazed rim	
202	101	24	102	2	8									
203	101	25	102	1	8									
204	101	24	102		9									

APPENDIX 2: WORKED LITHICS CATALOGUE

Pit no.	Blank Type	Blank Integrity	Tool Type	Tool Integrity	Length (mm)	Width (mm)	Depth (mm)	Termination Type	Platform Type	Cortex Group	Raw Material	Date
50	Bladelet	Medial Fragment	Obliquely truncated (left) microlith	Broken (tip)	24	6	3			Tertiary	Grey Banded Chert	Early Mesolithic
98	Plunging blade	Complete			33	10	3	Plunging	Abraded	Secondary	Yellow brown translucent flint	Mesolithic

APPENDIX 3: WSI

WRITTEN SCHEME OF INVESTIGATION FOR ARCHAEOLOGICAL SHOVEL PITTING, LAND OFF WATERSWALLOWS LANE, BUXTON, DERBYSHIRE

Site Location: Waterswallows Lane, Buxton

NGR: SK 07640 75535

Proposal: Development of the site for aggregates processing and storage

Prepared for: Pennine Aggregates Ltd

Status of WSI: Final (V2)

1 SUMMARY

1.1 Pennine Aggregates Limited are applying for planning consent for a site off Waterswallows Lane, Buxton, Derbyshire. The proposed scheme is for a site for the processing and storage of sand and gravel aggregates. The development (Figure 1) includes two buildings with a total area of 2240m2 for storage and processing of sand and stone aggregate products including preparation for onward transportation to customers; ancillary office space; vehicular access and circulation/turning space for HGV's; parking space for staff and visitors; landscape planting and drainage pond.

1.2 The Derbyshire Development Control Archaeologist has advised that in order to assess the archaeological potential of the site and advise that planning authority on the archaeological implications of the development an archaeological field evaluation is required in line with paragraph 128 of National Planning Policy Framework. It is proposed that a shovel pit survey is undertaken to investigate for the presence of, and distribution off artefact scatters in particular lithic scatters.

1.3 This Written Scheme of Investigation (WSI) has been prepared in response to discussions with Steve Baker the Derby and Derbyshire Development Control Archaeologist The work will be carried out in accordance with this WSI, and according to the principles of the Institute for Archaeology (IfA) Code of Conduct and all relevant standards and guidance.

2 SITE LOCATION & DESCRIPTION

2.1 The site, centred on NGR SK 07640 75535, is an approximately 2 hectare plot located on the west side of Waterswallows Lane, north east of Buxton (Figure 2). The site is bounded by Waterswallows Lane to the east, an electricity substation is located to the south and fields to the north and west.

2.2 The site is currently a generally flat pasture field with gentle surface undulations.

2.3 The underlying bedrock is Carboniferous limestone; the bedrock that dominates the southern peak district and gives it its distinctive topography and appearance. The limestone is part of the Bee Low Limestone formation a pale grey, pale brownish grey to grey, fine-to medium-grained limestone. Overlying the limestone bedrock is a loess based soil deposit. The windblown loess probably originates in the millstone grit from where it was blown as a fine dust at the end of the last glaciation (Buerke 1991). This loess has been added to by the addition of the hard residue left behind as the underlying limestone dissolves leaving non-soluble material behind. This residue material is primarily frost shattered chert that has been incorporated into the loess by cryoturbation. This deposit of loess with chert was first described by Piggott (1962) who referred to it as silty drift. This deposit is relatively common in Derbyshire with loess being blown over much of the limestone Peak District after the last ice age.

3 DESIGNATIONS & CONSTRAINTS

3.1 The site does not contain any designated Scheduled Ancient Monuments or Listed Buildings and does not lie within a conservation area or The Peak District National Park. However, Batham Gate that runs north east to south-west approximately 200m north of the site is on the line of a Roman Road.

4 ARCHAEOLOGICAL INTEREST

4.1 The site at lies opposite the Buxton Spring Water bottling plant. A programme of archaeological evaluation and mitigation was undertaken on this site during the construction of the bottling plant.

4.2 The fieldwork, trial trenching and open area excavation, identified a series of discrete concentrations of archaeological features and artefact scatters relating to the late Mesolithic and Early Neolithic. Mesolithic remains included a discrete lithics scatter, a knapping floor, and further lithics in a background scatter across the site. Neolithic remains included a probable early Neolithic long house with associated carinated bowl pottery, daub, a possible small post-defined enclosure and lithics scatters. A total of over 800 Mesolithic and early Neolithic lithics were recovered and these were identified as being of regional importance while an early Neolithic long house would be of national importance.

5 AIMS

5.1 The aims of the evaluation are:

- to determine the extent, condition, character, importance and date of any archaeological remains present
- to investigate the potential for artefact scatters to lie within the site
- to determine if the flint scatters identified to the east of Waterswallows Lane extend into the site
- to provide information that will enable the remains to be placed within their local, regional, and national context and for an assessment of the significance of the archaeology of the proposal area to be made
- to provide information to enable the local authority to decide any requirements for further archaeological mitigation for the site

6 FIELDWORK METHODOLOGY

6.1 The evaluation will comprise a programme of shovel pitting.

Please note that further stages of work or mitigation measures could be required by the local authority, depending upon the results of the evaluation.

6.2 A total of 198 shovel pits will be excavated on a 10m grid across the site. The grid will extend across the parts of the site where ground works will take place during the development (Figure 3) this is approximately 180m by 110m. The grid and shovel pit locations will be established by GPS or total station survey. The pits will each measure 0.25m x 0.25m and will be excavated down to the top of the subsoil, around 0.3m, and the surface of the subsoil will be cleaned. The turf will be removed separately to enable replacement on completion.

6.3 The excavated material will be broken up and examined for artefacts with the spoil being sieved using a mesh of 1cm square.

6.4 The shovel pits will be backfilled with the spoil removed from them and turfs will be replaced.

6.5 There is a contingency of 10 further pits that can be used to further define artefact scatters if identified. These will be used to positioned at 5m intervals along the lines of the grid to provide better definition of the extent of artefact scatters.

Recording

6.6 A brief record will be made of each shovel pit. This will note:

- the location (OS) and height (mAOD) for each test pit
- the soil sequence and depths of soil horizons
- the presence of finds
- the presence of any archaeological features, if identified

6.7 Digital photographs will be taken to illustrate the range and types of soil profiles seen in the shovel pits. If archaeological features are identified the photographic record will comprise black and white film and digital photography. All site photography will adhere to accepted photographic record guidelines.

Finds

6.8 All finds will be collected and handled following the guidance set out in the IfA guidance for archaeological materials. All Prehistoric, Roman, Medieval and post-medieval finds will be collected. Modern (19th and 20th century) material will not be kept unless it is of exceptional intrinsic interest. Finds will be bagged by shovel pit and material type.

6.9 All artefacts and ecofacts will be appropriately packaged and stored under optimum conditions, as detailed in the RESCUE/UKIC publication First Aid for Finds, and recording systems must be compatible with the recipient museum. All finds that fall within the purview of the Treasure Act (1996) will be reported to HM Coroner according to the procedures outlined in the Act, after discussion with the client and the local authority.

6.10 In the unlikely event of human remains being discovered during the evaluation these will be left in-situ, covered and protected, in the first instance. The removal of human remains will only take place in compliance with environmental health regulations and following discussions with, and with the approval of, the Ministry of Justice. If human remains are identified, the Ministry of Justice, the local Coroner, and curatorial archaeologist will be informed immediately. An osteoarchaeologist will be available to give advice on site.

- If disarticulated remains are encountered, these will be identified and quantified on site. The remains will be left in the ground and backfilled.
- If articulated remains are encountered, these will be left in the ground and reburied.

6.11 Where a licence is issued, all human skeletal remains must be properly removed in accordance with the terms of that licence. Where a licence is not issued, the treatment of human remains will be in accordance with the requirements of Civil Law, IfA Technical Paper 13 (1993) and English Heritage guidance (2005).

7 SPECIALIST ASSESSMENT

7.1 All recovered finds will be assessed as to their potential and significance for further analysis and study. All finds will be cleaned prior to assessment. The material will be quantified (counted and weighted). Specialists will undertake a rapid scan of all excavated material.

7.2 All lithics will be scanned by the lithics specialist and unworked local chert separated off. Counts will be made of worked flints and the range of cherts and flints within the assemblages noted. Diagnostic pieces will be noted where they provide information on the periods represented in the lithic assemblage.

7.3 All collected ceramics will be quantified and the range of periods represented identified. For ceramic assemblages, any recognised local pottery reference collections and relevant fabric Codes will be used.

7.4 Materials considered vulnerable should be selected for stabilisation after specialist recording. Where intervention is necessary, consideration must be given to possible investigative procedures (e.g. glass composition studies, residues on or in pottery, and mineral-preserved organic material). Once assessed, all material will be packed and stored in optimum conditions, in accordance with Watkinson and Neal (1998), IfA (2007) and Museums and Galleries (1992).

8 REPORT & ARCHIVE PREPARATION

8.1 Upon completion of the site work, a report will be prepared to include the following:

a) A non-technical summary of the results of the work.
b) An introduction which will include the planning reference number, grid reference and dates when the fieldwork took place.
c) An account of the methodology and detailed results of the operation, describing structural data, archaeological features, associated finds and environmental data, and a conclusion and discussion.
d) A selection of photographs and drawings, including a plan of the site showing the location of the shovel pits. Distribution maps of finds recovered will be produced showing the quantity, date and type of artefacts as is appropriate based on the specialist assessments.
e) Specialist artefact and environmental reports where undertaken.
f) Details of archive location and destination (with accession number, where known), together with a context list and catalogue of what is contained in that archive.
g) A copy of the key OASIS form details
h) Copies of the WSI
i) Additional photographic images may be supplied on a CDROM appended to the report

8.2 Three copies of the report will be submitted to the commissioning body. A bound and digital copy of the report will be submitted to the Derby and Derbyshire Development Control Archaeologist for planning purposes, and subsequently for inclusion into the Derbyshire SMR.

8.3 A field archive will be compiled consisting of all primary written documents, plans, sections and photographs. Catalogues of shovel pits, finds, samples, plans and photographs will be produced. ArcHeritage will liaise with the Buxton Museum prior to the commencement of fieldwork to establish the detailed curatorial requirements of the museum and discuss archive transfer and to complete the relevant museum forms. The relevant museum curator would be afforded access to visit the site and discuss the project results.

8.4 The owner of the Intellectual Property Rights (IPR) in the information and documentation arising from the work, would grant a licence to the Local Authority and the museum accepting the archive to use such documentation for their statutory functions and provide copies to third parties as an incidental to such functions. Under the Environmental Information Regulations (EIR), such documentation is required to be made available to enquirers if it meets the test of public interest. Any information disclosure issues would be resolved between the client and the archaeological contractor before completion of the work. EIR requirements do not affect IPR.

8.5 Upon completion of the project an OASIS form will be completed at http://ads.ahds.ac.uk/project/oasis/.

9 POST EXCAVATION ANALYSIS & PUBLICATION

9.1 The information contained in the evaluation report will enable decisions to be taken regarding the future treatment of the archaeology of the development site and any material recovered during the evaluation.

9.2 If further archaeological investigations (mitigation) take place, any further analyses (as recommended by the specialists, and following agreement with the Development Control Archaeologist may be incorporated into the post-excavation stage of the mitigation programme unless such analysis are required to provide information to enable a suitable mitigation strategy to be devised. Such analysis will form a new piece of work to be commissioned.

9.3 In the event that no further fieldwork takes place on the site, a full programme of post excavation analysis and publication of artefactual and scientific material from the evaluation may be required by the development Control Archaeologist. If this is required, this work will be a new piece of work to be commissioned.

9.4 If further site works do not take place, allowance will be made for the preparation and publication in a local and/or national journal of a short summary on the results of the evaluation and of the location and material held within the site archive.

9.5 The results of the work will be publicised locally e.g. by presenting a paper at the Derbyshire Archaeology Day and talking to local societies, as appropriate.

10 HEALTH AND SAFETY

10.1 Health and safety issues will take priority over archaeological matters and all archaeologists will comply with relevant Health and Safety Legislation.

10.2 A Risk Assessment will be prepared prior to the start of site works.

11 PRE-START REQUIREMENTS

11.1 The client will be responsible for ensuring site access has been secured prior to the commencement of site works, and that the perimeter of the site is secure.

11.2 The client will provide ArcHeritage with up to date service plans and will be responsible for ensuring services have been disconnected, where appropriate.

11.3 The client will be responsible for ensuring that any existing reports (e.g. ground investigation, borehole logs, contamination reports) are made available to ArcHeritage prior to the commencement of work on site.

12 REINSTATEMENT

12.1 Following excavation and recording the spoil from the shovel pits will be backfilled unless requested otherwise. The backfill material will be levelled and the turf replaced. ArcHeritage are not responsible for reinstating any surfaces, including reseeding, unless specifically commissioned by the client who will provide a suitable specification for the work.

13 TIMETABLE & STAFFING

13.1 The fieldwork is programmed for one week commencing 9th September and post-excavation analysis and reporting is programmed for three weeks from completion of the fieldwork.

13.2 The project will be managed by Glyn Davies (ArcHeritage Acting Operations Manager) and supervised in the field by Gary Millward (ArcHeritage Field Officer)

13.2 Specialist staff available for this work are as follows:

- Human Remains - Malin Holst (York Osteoarchaeology Ltd)
- Head of Curatorial Services - Christine McDonnell
- Finds Researcher – Nienke Van Doorn
- Lithics – Dr Andy Myers and George Loffman

- Medieval Pottery Researcher - Anne Jenner
- Archaeometallurgy & Industrial Residues - Dr Rod Mackenzie
- Conservation - Ian Panter

14 MONITORING OF ARCHAEOLOGICAL FIELDWORK

14.1 As a minimum requirement, the Derby and Derbyshire Development Control Archaeologist curator will be given one week's notice of work commencing on site, and will be afforded the opportunity to visit the site during and prior to completion of the on-site works so that the general stratigraphy of the site can be assessed and to discuss the requirement any further phases of archaeological work. ArcHeritage will notify the curator of any discoveries of archaeological significance so that site visits can be made, as necessary. Any changes to this agreed WSI will only be made in consultation with the curator.

14.2 With the client's agreement illustrated notices will be displayed on site to explain the nature of the works.

15 COPYRIGHT

15.1 ArcHeritage retain the copyright on this document. It has been prepared expressly for the named client, and may not be passed to third parties for use or for the purpose of gathering quotations.

16 KEY REFERENCES

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See also the HELM website for a full list of English Heritage Guidance documents:

<http://www.helm.org.uk/server/show/nav.19701>

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