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Griffe Grange Wind Farm
Derbyshire

Archaeological Test Pitting Report

Ref: 103220.01
March 2014

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Griffe Grange Wind Farm
Derbyshire

Archaeological Test Pitting Report

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Summary

Wessex Archaeology was commissioned by AMEC Environment & Infrastructure UK Ltd on behalf of Njord Energy to carry out a shovel test pitting exercise at Griffe Grange, Derbyshire Dales, Derbyshire (NGR 42465 35583) in advance of a proposed wind farm development (hereafter 'the Development'). A total of five wind turbines are proposed along high ground at Griffe Grange and Griffe Walk farm. Thirty-nine shovel test pits (0.3m x 0.3m) were excavated within the 60m footprints of each of the five turbines.

All worked or unworked flint and chert was collected. Flint/chert was only present in the areas of turbines 3-5 in the south of the Development, and worked lithics only present within one test pit in turbine 4 and four test pits within turbine 5. The lithics comprised one flint blade, three flint flakes, two flint cores and one chert flake. The most significant pieces are the fragment of a flint blade from Test Pit 157 and a possible leaf arrowhead from Test Pit 166. The former is made of fine grained black material and, in all probability came direct from the Chalk Wolds to the east.

The worked lithics have been retained and the unworked stone discarded. The archive is currently held at the offices of Wessex Archaeology in Sheffield, under Wessex Archaeology project code **103220**. The archive will be deposited with Buxton Museum and Art Gallery under accession number DERSB:2014.6. An OASIS form will be submitted at the time of deposition.

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Acknowledgements

This project was commissioned by AMEC Environment & Infrastructure UK Ltd on behalf of Njord Energy, and Wessex Archaeology is grateful to Robert Johns in this regard. The fieldwork was carried out by Ashley Tuck, Matt Weightman, Phil Roberts, Laurence Savage and Charlie Burton. The report was compiled by Ashley Tuck and the illustrations produced by Chris Breeden. The flint was assessed by Phil Harding, and the report edited by Lorraine Mepam. The project was managed for Wessex Archaeology by Andrew Norton.

Griffe Grange Wind Farm
Derbyshire

Archaeological Test Pitting Report

1 INTRODUCTION

1.1 Project background

1.1.1 Wessex Archaeology was commissioned by AMEC Environment & Infrastructure UK Ltd to carry out a shovel test pitting exercise at Griffe Grange, Derbyshire Dales, Derbyshire (NGR 42465 35583) in advance of a proposed wind farm development (hereafter 'the Development'). A total of five wind turbines are to be constructed along high ground at Griffe Grange and Griffe Walk farm. Thirty-nine shovel test pits (0.3m x 0.3m) were excavated within the footprint (60m) of each of the five turbines.

1.1.2 The proposed Development lies within an area of archaeological significance, with the potential for worked chert artefacts, as well as finds and features associated with historic lead and limestone mining, to be encountered during groundworks.

1.1.3 The HER records numerous prehistoric lithic finds entries in close proximity to the Development, and as such a programme of archaeological test pitting was proposed in order to evaluate the archaeological potential across the Development.

1.1.4 All work was carried out in accordance with an agreed Written Scheme of Investigation (WSI) produced by Wessex Archaeology (2014) and approved by AMEC and the planning archaeologist Steve Baker.

1.2 The Development

1.2.1 The Development is situated in the Derbyshire Dales district of Derbyshire, between the villages of Middleton and Brassington, and traverses arable agricultural land (**Figure 1**). The northern end of the Development, north of Griffe Walk Farm, lies at 247m above Ordnance Datum (aOD); with the landscape undulating gently rising 354m aOD to the southern extent, south-east of New Harboro' Farm.

1.2.2 The solid geology of the proposed wind farm corridor consists predominantly of Limestone of the Bee Low and Monsal Dale Formations This is overlain by Quaternary deposits of Mid Pleistocene Till in the south and head, comprised of clay, sand, silt and gravel to the north (British Geological Survey – Sheet 111 Buxton).

2 ARCHAEOLOGICAL BACKGROUND

2.1 General

2.1.1 The HER records a number of entries within the Development. The majority of these are prehistoric lithics finds from Mesolithic onwards, although most are Neolithic or Bronze

Age. The finds are concentrated in the area of Harboro' Rocks and to the northwest of the Development. There is also a potential Bronze Age barrow within the Development.

2.1.2 Griffe Grange was formerly part of Dale Abbey, although the lordship and manor was granted to Ralph Gelle by Henry VIII. The Gell family are recorded in the area around Hopton since the 14th century and the family owned a large part of the Development until 1986; the family were instrumental in the extensive lead mining which has been undertaken on the Site. Griffe Bage Mines, the area of turbine 3 (**Figure 1**), was in operation from at least 1725 when these are shown on a map. Earthworks pertaining to mining (and other causes) have recently been plotted from APs as part of an ASLF-funded project. The Development will be the subject of a more detailed historic review in due course.

3 METHODOLOGY

3.1 Aims and objectives

3.1.1 The aims of the archaeological test pitting were:

- *to identify and record any archaeological features exposed during test pitting;*
- *to clarify the presence/absence and extent of any buried archaeological remains along the Development;*
- *to recover any find artefact evidence during test pitting; and,*
- *to produce a report which will present the results of the archaeological test pitting in sufficient detail, to establish the Development's archaeological potential.*

3.2 Archaeological test pitting

3.2.1 A total of 195 'shovel' pits were excavated, comprising 39 test pits on a 10m grid within the footprint of each turbine, approximately 60m in diameter.

3.2.2 Prior to any excavation each test pit was scanned with a CAT to check for uncharted services.

3.2.3 The test pits were tied into the National Grid using GPS survey equipment to enable the surveyed area to be independently relocated by a third party, using a RTK GPS system to locate the test pits to better than 0.1m.

3.2.4 Each test pit was hand dug and topsoil/overburden was removed in a series of 'shovel' spits down to the level of the natural geology. The test pits typically measured 0.3m x 0.3m x 0.3m, the size of a shovel.

3.2.5 Each hand excavated spit was sieved through a 10mm mesh. All finds from each spit were recovered and bagged by context. All unworked and worked flint and chert was collected in order to establish whether *in situ* chert working was carried out within the Development. A flint specialist (Phil Harding) assessed all the material so that no worked material was overlooked during the test pitting.

3.2.6 All work was carried out in accordance with industry and Wessex Archaeology standards (IfA 2008a).

3.3 Recording

3.3.1 All archaeological features and deposits encountered were recorded using Wessex Archaeology's *pro forma* recording sheets and a continuous unique numbering system. A stratigraphic matrix was compiled to record the relationships between features and deposits.

3.3.2 All test pits were located in relation to the OS grid. The spot height of all levels has been calculated in metres relative to Ordnance Datum, correct to two decimal places. Plans have been annotated with spot heights as appropriate.

3.3.3 A digital photographic record of each test pit was taken, along with supporting shots. No archaeological features suitable for record by archive photography were encountered.

3.4 Finds

3.4.1 Finds were treated in accordance with the relevant guidance (UKIC 2001; IfA 2008b), except where these are superseded by statements made below.

3.4.2 All artefacts (and unworked flint/chert) from excavated contexts were retained, with the exception of a few plastic items.

3.4.3 All retained artefacts were, as a minimum, washed, weighed, counted and identified. Any artefacts requiring conservation or specific storage conditions were dealt with immediately in line with *First Aid for Finds* (Watkinson & Neal 1998). Conservation needs were assessed by Wessex Archaeology's conservator.

3.4.4 All artefacts were recorded by context, with summary listing of artefacts by category to provide simple quantification. Flint and chert artefacts were analysed and reported by a suitable specialist.

4 ARCHAEOLOGICAL RESULTS

4.1 Introduction

4.1.1 The following section provides a summary of the information held in the site archive, with a full list of test pits containing lithics detailed in **Appendix 1**.

4.2 General stratigraphy

4.2.1 The stratigraphy was consistent across the Development. The natural was mid brownish orange clay (**101, 201, 301, 401, 501**; see **101 Plate 1**). Occasionally limestone was seen at the base of the test pits, particularly in the area of Turbine 2, but it was unclear if this was bedrock or medium to large boulders. The topsoil (**100, 200, 300, 400, 500**; see **100 Plate 1**) was mid greyish brown clayey silt across the Development, typically 0.25m deep but of 0.3m depth in the areas of Turbines 1 and 5.

4.3 Post-medieval

4.3.1 A mound of limestone boulders, assumed to be a capped shaft or a spoil heap associated with lead mining, was present at the location of Test Pit 91, Turbine 3. It was not possible to dig this test pit.

5 ARTEFACTUAL EVIDENCE

5.1 Summary

5.1.1 All flint and chert recovered from the shovel test pits was retained, washed and examined for evidence of worked pieces. The collected flint and chert amounted to 10.1kg of material from 64 test pits across turbines 3-5. Examination of this material identified a very small amount of worked chert and flint. Full details of quantities and weight are given in **Appendix 1.**

5.1.2 The sample was sorted using a set of established criteria that are used to identify worked stone. The most common raw material comprised chert fragments with coarse grain and a tabular, blocky structure. These pieces showed no traces of positive or negative flake scars, indicative of conchoidal fracture. A small number of pieces were of finer gained material; experimental flaking using a fragment of this unworked material confirmed that characteristics identical to the material resulted and could be identified easily.

5.1.3 The examination produced six pieces of worked chert and one of worked flint. The worked chert includes a flake and retouched fragment from Test Pit 178, a worked fragment from Test Pit 167, a chip from Test Pit 157 (which also produced a broken flint blade), a doubtful broken flake from Test Pit 154, and a broken fragment from Test Pit 166. Examination of this piece suggests that it might be part of a broken Neolithic leaf arrowhead. All of the material is small; the longest flake in the collection, from Test Pit 178, is made of coarser grained chert and is 33 mm long.

5.1.4 The most significant pieces are the fragment of a flint blade from Test Pit 157 and the possible leaf arrowhead from Test Pit 166. The former is made of fine grained black material and, in all probability came direct from the Chalk Wolds to the east. The arrowhead deserves consideration.

6 DISCUSSION

6.1 Summary

6.1.1 The test pitting demonstrated that unworked flint or chert was only present in the areas of turbines 3-5, and that worked flint or chert only survived within turbines 4 and 5. The single flint flake from turbine 4 was not clearly worked and as no other worked flint was recovered from this area the flake should not be considered indicative of flint working within turbine 4. The material from turbine 5 was concentrated in the western half of the turbine footprint and it is this area that has the highest potential for further finds.

6.1.2 All the material derived from the topsoil and it is uncertain how far it may have moved during more recent ploughing. However, with such a small assemblage it is difficult to make any assumptions based on spatial analysis and any further worked lithics are only likely to survive in small quantities.

6.1.3 The results of the work have demonstrated that there is greatest potential for isolated lithics to survive within the western area of turbine 5, but little potential to the north.

7 STORAGE AND CURATION

7.1 Museum

7.1.1 It is recommended that the project archive resulting from the excavation be deposited with Buxton Museum and Art Gallery. The Museum has agreed in principle to accept the project archive on completion of the project under accession number DERSB:2014.6. Deposition of any finds with the Museum will only be carried out with the full agreement of the landowner.

7.2 Archive

7.2.1 The complete Site archive, which will include paper records, photographic records, graphics, artefacts, ecofacts and digital data, will be prepared following the standard conditions for the acceptance of excavated archaeological material by Buxton Museum and Art Gallery and in general following nationally recommended guidelines (SMA 1995; UKIC 2001; Brown 2011; ADS 2013).

7.3 Discard policy

7.3.1 Wessex Archaeology follows the guidelines set out in Selection, Retention and Dispersal (SMA 1993), which allows for the discard of selected artefact and ecofact categories which are not considered to warrant any future analysis. Any discard of artefacts will be fully documented in the project archive.

7.3.2 The discard of environmental remains and samples follows nationally recommended guidelines (SMA 1993; 1995; English Heritage 2011).

7.4 Security copy

7.4.1 In line with current best practice (e.g. Brown 2011), on completion of the project a security copy of the written records will be prepared, in the form of a digital PDF/A file. PDF/A is an ISO-standardised version of the Portable Document Format (PDF) designed for the digital preservation of electronic documents through omission of features ill-suited to long-term archiving.

8 REFERENCES

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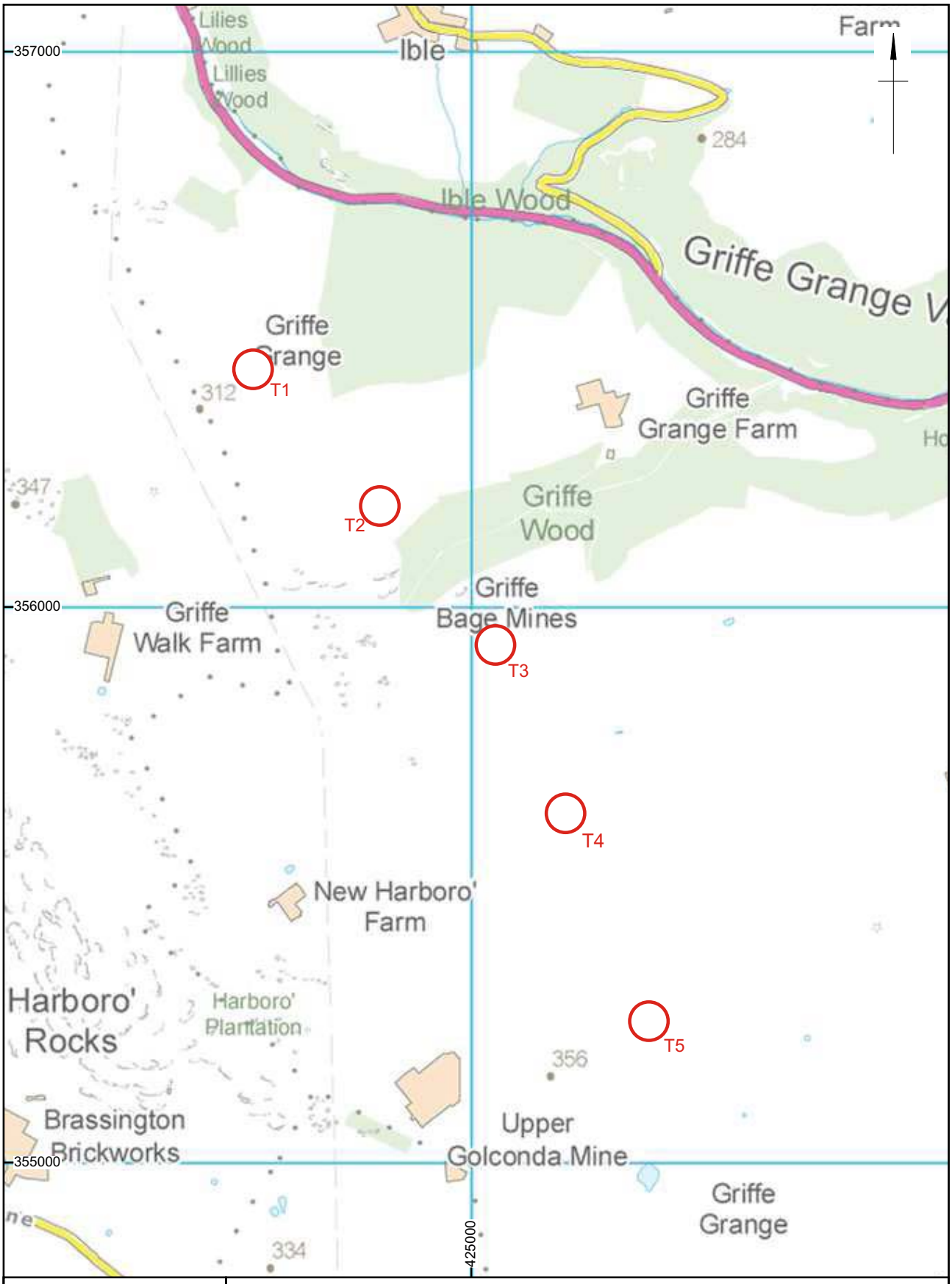
9 APPENDICES

9.1 Appendix 1: Incidence of collected stone by test pit

Turbine	TP	Spit	Wt	Wt kept	No. kept	Comments
Turbine 3	100	2	43	0		
Turbine 3	101	2	28	0		
Turbine 3	103	2	4	0		
Turbine 3	105	2	24	0		
Turbine 3	109	2	1	0		
Turbine 3	110	2	3	0		
Turbine 3	112	2	24	0		
Turbine 3	118	2	6	0		
Turbine 4	121	2	17	0		
Turbine 4	122	2	28	0		
Turbine 4	126	2	5	0		
Turbine 4	127	2	127	0		
Turbine 4	128	2	4	0		
Turbine 4	133	2	78	0		
Turbine 4	134	2	12	0		
Turbine 4	140	2	290	0		
Turbine 4	141	2	45	0		
Turbine 4	142		33	0		
Turbine 4	147	2	460	0		
Turbine 4	148	2	88	0		
Turbine 4	149	2	18	0		
Turbine 4	150		21	0		
Turbine 4	152	2	95	0		
Turbine 4	153	2	232	0		
Turbine 4	154	2	205	2	1	?flake
Turbine 4	155		28	0		
Turbine 5	157	2	872	3	2	1 flint blade (broken); 1 chert ?flake
Turbine 5	158	2	296	0		
Turbine 5	159	2	132	0		
Turbine 5	160		154	0		
Turbine 5	161		459	0		
Turbine 5	162		460	0		
Turbine 5	163		316	0		
Turbine 5	164		910	0		
Turbine 5	165		142	0		
Turbine 5	166		110	1	1	?flake
Turbine 5	167		100	23	1	?core
Turbine 5	168		95	0		
Turbine 5	169		71	0		
Turbine 5	170		35	0		
Turbine 5	171		56	0		
Turbine 5	173		175	0		

Turbine 5	174		108	0		
Turbine 5	175		267	0		
Turbine 5	176		98	0		
Turbine 5	177		120	0		
Turbine 5	178		74	31	2	?core; ?flake
Turbine 5	179		339	0		
Turbine 5	180	2	188	0		
Turbine 5	181	2	119	0		
Turbine 5	182	2	250	0		
Turbine 5	183	2	90	0		
Turbine 5	184	2	251	0		
Turbine 5	185	2	59	0		
Turbine 5	186		10	0		
Turbine 5	187		630	0		
Turbine 5	188		242	0		
Turbine 5	189	2	78	0		
Turbine 5	190		396	0		
Turbine 5	191		79	0		
Turbine 5	192	2	140	0		
Turbine 5	193	2	50	0		
Turbine 5	194	2	31	0		
Turbine 5	195	2	192	0		



Turbine base

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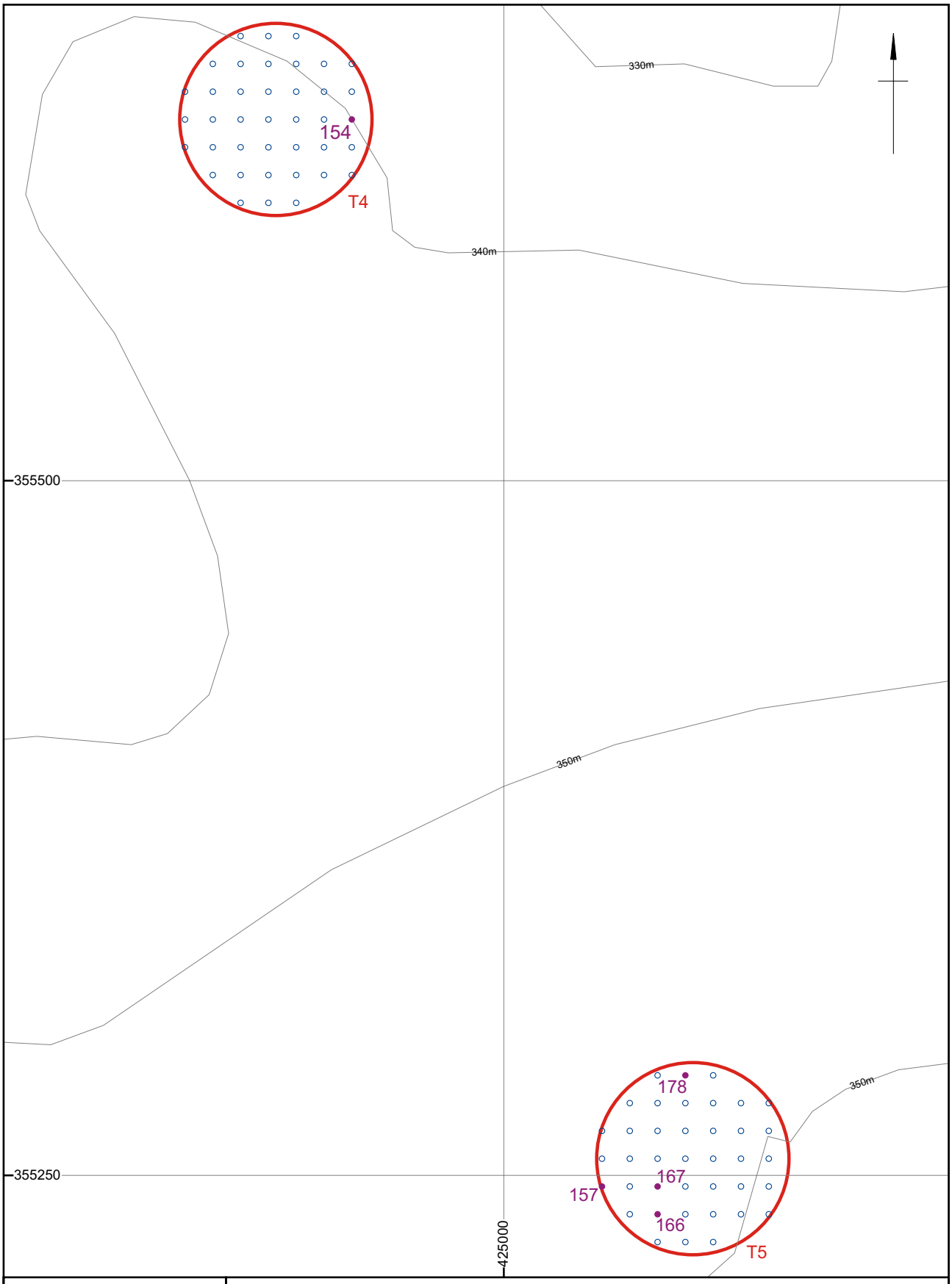
Turbine locations

Figure 1



Turbine base

Empty test pit

Test pit with finds

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Test pit locations

Figure 2

Plate 1: Example of a test pit: Test Pit 138, Turbine 4

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