

**Wheal Harmony
Redruth
Cornwall**

Archaeological Watching Brief



for
Wheal Harmony Ltd.


CA Project: 4805
CA Report: 14432

October 2014

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SUMMARY

Project Name:	Wheal Harmony
Location:	Redruth, Cornwall
NGR:	SW 6987 4318
Type:	Watching Brief
Date:	13 April 2013 – 15 June 2014
Planning Reference:	PA12/10101, PA12/10102 and PA12/10103
Location of Archive:	To be deposited with Royal Cornwall Museum
Site Code:	PWH14

An archaeological watching brief was undertaken by Cotswold Archaeology during groundworks associated with the remediation of mine works at the site.

A series of mine workings, comprising shafts and lode working trenches, were recorded. These corresponded to known mine workings at the Wheal Harmony or Treleigh Wood Mines. No dating evidence was recovered during the watching brief, however documentary evidence indicates that mining took place on the site since at least the 1760s.

Extant Cornish hedges demarcated a mid-19th century field system across the site. The hedges overlay lode working trenches representing mining activity of the late 18th– early 19th centuries.

Standing remains of structures pertaining to the last phase of mining activity on site in the late 19th century were recorded.



1. INTRODUCTION

1.1 Between April 2013 and June 2014 Cotswold Archaeology (CA) carried out an archaeological watching brief for Wheal Harmony Ltd. at the Wheal Harmony site, Redruth, Cornwall (centred on NGR: SW 6987 4318; Fig. 1). The watching brief was undertaken to fulfil conditions attached to planning consents issued by Cornwall Council (CC) for the remediation of an area of former mining and housing development (CC planning refs: PA12/10101, PA12/10102 and PA12/10103).

1.2 The watching brief was carried out in accordance with a detailed *Written Scheme of Investigation* (WSI) produced by CA (2013) and approved by CC acting on the advice of Phil Markham (Historic Environment Planning Advice Officer); subsequent discussions regarding on site methodology were undertaken with Dan Ratcliffe and Phil Copleston who succeeded Mr Markham in advising CC as their nominated Historic Environment Planning Advice Officer. The fieldwork also followed the *Standard and guidance for an archaeological watching brief* (IfA 2009) the *Management of Archaeological Projects 2* (English Heritage 1991), the *Management of Research Projects in the Historic Environment (MORPHE): Project Manager's Guide* (EH 2006).

The site

1.3 The proposed development site comprises eight fields of varying sizes totalling c. 4.1ha in extent. It is located directly to the east of the junction of the A3047 and the A30, to the north of the town of Redruth, Cornwall. Industrial buildings are situated to the north and east of the site and residential areas to the south. The site is broadly level, varying between 116-119m AOD.

1.4 The underlying solid geology of the area is mapped as Porthtowan Formation - Metamudstone and Metasandstone of the Devonian Period with no overlying superficial deposits (BGS 2014). Natural clay and mudstone was observed across the majority of the site.

Archaeological background

1.5 The site has been subject to an archaeological desk based assessment as part of this planning application (CA 2012). A wider assessment of the historic mining

landscape has also taken place, which included the site (CAU 1999). The following is a summary of those assessments.

- 1.6 There is no evidence for any activity on the site or in the surrounding area that pre-dates the post-medieval period (CA 2012).
- 1.7 The mining area within the site was recorded in 1819 as Wheal Harmony or Treleigh Wood Mine – Wheal Harmony being known to have been in operation since at least the 1760s, though was noted to have been closed in the early 19th century (CAU 1999). It was worked again from between 1819 and 1844 with Wheal Montague as “Montague and Harmony” (Michell 1978) for copper, tin and wolfram.
- 1.8 The mines started to run into trouble by the early 1840s. In 1872 Treleigh Wood Mine (in the southern part of Wheal Harmony) was reopened and remained in operation until 1879 (Michell 1978). The extant structures on the site are likely to have originated at this time.
- 1.9 The 1841 Tithe Map of Redruth shows the site as fields, with two large mounds against the field boundaries in Field 2, one of which is still visible today (Fig. 2, **M**). This field is recorded as “Burrows Field” in the Apportionment Register. These mounds likely represent spoil heaps from early 1800s (or earlier) phase of mining activities. Field 1 is recorded as “Pooder House Field, Burrows”. Field 4 is recorded on the 1841 map as containing two smaller mounds, still visible today (Fig. 2, **N, O**).
- 1.10 A mine plan of Wheal Montague and Wheal Harmony dating to 1871 shows three shafts: the main engine shaft which it named Treleigh Wood Shaft, Windmill Shaft (Fig. 2, **L**) to the south-east of the mine area and Nutwood Shaft, immediately to the south of the mine buildings. One of these buildings was identified as the accounts house (Fig. 2, **C**), which lies outside the proposed development site.
- 1.11 The 1880 OS map shows three engine houses – a pumping engine house beside Engine House Shaft (Fig. 2, **A**), a winding house to the east of that shaft (Fig. 2, **Q**) and the stamps engine house with dressing floors to the north-east (Fig. 2, **R**). The last two engine houses were situated outside of the site and their remains (if any had survived until the 20th century) were presumably demolished during the construction of Jon Davey Drive and the industrial estate to the north.

- 1.12 The 1908 OS map shows three shafts, all disused: Engine, Windmill and to the west, Nut Bottom Shaft (Fig. 2, **B**, **C** and **D** respectively) rather than Nutwood. It also shows an extant rectangular structure (Fig. 2, **K**) to the south of Windmill Shaft.
- 1.13 The assessment of the area by the Cornwall Archaeological Unit (CAU 1999) reviewed the site and nearby area in terms of its importance to the understanding of the historic mining industry. This study established a number of Archaeological Constraint Areas (ACAs) and assessed the historic value of mine shafts (rating them A to C, with A being the highest quality). This highlighted a possible shaft situated directly to the east of Engine House Shaft (Fig. 2, **B**), which was assessed as a Grade C Shaft. Nut Bottom Shaft, situated beside the A3407, was assessed as a Grade B shaft (Fig. 2, **D**), the shaft immediately north of Engine House Shaft as a Grade C shaft and the shaft situated on the northern boundary of Field 2 as a Grade C shaft.

Archaeological objectives

- 1.14 The objectives of the archaeological works were:
- to monitor groundworks, and to identify, investigate and record all significant buried archaeological deposits revealed on the site during the course of the development groundworks;
 - at the conclusion of the project, to produce an integrated archive for the project work and a report setting out the results of the project and the archaeological conclusions that can be drawn from the recorded data.

Methodology

- 1.15 The fieldwork followed the methodology set out within the WSI (CA 2013). An archaeologist was present during intrusive groundworks in accordance with the attendance regime specified during consultations with Phil Markham. Due to the depths of the features and the unstable nature of the ground, their excavation was undertaken by machine. Archaeological observations were maintained for the purposes of inspecting exposed sections and spoil.
- 1.16 Where archaeological deposits were encountered written, graphic and photographic records were compiled in accordance with CA Technical Manual 1: *Fieldwork Recording Manual* (2013).

- 1.17 The archive and artefacts from the evaluation are currently held by CA at their offices in Kemble. Subject to the agreement of the legal landowner the site archive will be deposited with Royal Cornwall Museum. A summary of information from this project, set out within Appendix B, will be entered onto the OASIS online database of archaeological projects in Britain.

2. RESULTS (FIGS 2-8)

- 2.1 The natural geological substrate, consisting of laminated mudstone within a silty clay matrix, was typically revealed all the observed locations at a depth of 0.3m below present ground level (bpgl). It was overlain by a clay silt subsoil containing large amounts of mudstone fragments (0.15m in thickness), which was in turn sealed by approximately 0.15m of topsoil.

Mining Activity

- 2.2 Evidence for mining activity was encountered across the site (see Fig. 3 for location and extent). The mining features generally comprised sub-circular shafts, or linear lode working trenches, both of which were used for tin extraction. The sizes of the shafts varied, but were as large as 5m in diameter, with vertical sides. There were three major lode working trenches, all on a broadly east/west alignment, which were up to 20m in width. The full depth of the features was not revealed in any of the investigations, which typically reached up to 4m bpgl.
- 2.3 A number of small, discrete features were recorded in Field 8 to the west of the engine house (Fig. 3). These appeared to be shallower and of different character to the mine shafts; the features are probably test-holes excavated to investigate the potential of the tin-bearing seam in this area.

Mining Structures

- 2.4 A rectangular building corresponding to that depicted on the 1880 Ordnance Survey map was located in the north-west corner of Field 2 (Fig. 2, **K**). Wall 1401 formed the western wall of the building, with walls 1400 and 1402 representing the northern and southern returns. The walls were heavily obscured by foliage and grass and most of the eastern part of the building was demolished prior to the watching brief. The walls were constructed of irregularly mortar bonded rough cut stone.

- 2.5 Two sections of wall relating to the engine pumping house (Fig. 2; **A**) were recorded in Field 8. The walls of the engine house are to be preserved *in situ* as part of the development, therefore the archaeological investigation of the engine pumping house was limited to the removal of covering vegetation and the recording of the standing remains (Figs. 4 and 5).
- 2.6 A 6m long and 1.65m wide surviving stretch of wall, 803, formed the north wall of the engine pumping house. It was constructed of a granite-rubble and mortar core faced by large granite blocks. The ground level surrounding the engine pumping house had been built up and it is likely that the wall was originally visible to a height of in excess of 2.2m. A 1.2m wide slot in the wall probably housed a beam extending from the building to the adjacent engine house shaft. At some time during the life of the building the slot was blocked up with granite blocks, 804 (Fig. 4).
- 2.7 Wall 805 (Fig. 3) extended 5.5m from the western end of wall 803 and formed the western wall of the engine pumping house. It was constructed from granite blocks without a rubble core.
- 2.8 Flue 823 was located 8.3m south-west of the standing walls of the engine pump house (Fig. 3). It was constructed from red bricks, which formed a barrel-vaulted roof, on top of granite-block walls. The interior surface of the structure was plastered.
- 2.9 The area immediately surrounding the engine pumping house had been subject to truncation which precluded the identification of any further archaeological remains associated with the engine pumping house.

Field 1

- 2.10 A Cornish hedge demarcated the southern boundary of Field 1 and the northern boundary of Field 2 (Fig. 7). The base of the hedgebank overlay natural substrate 1104. The hedgebank construction comprised a 0.88m thick earth core 1101, retained by stone revetments: 1102 to the north and 1103 to the south. Topsoil 1100 (typically 0.25m thick) overlay the bank material.

Field 2

- 2.11 A short stretch of Cornish hedge (Fig. 8, Section CC) linked the building to the hedge forming the southern boundary of Field 1. The hedgebank comprised a 2.1m thick core of redeposited natural clay 1406 overlain by clay-silt and rubble deposit 1407. A 0.25m thick layer of topsoil, 1408, overlay the bank material 1407. The hedgebank was revetted to the north by wall 1403, which butted against the southern wall 1402 of building K. There was no visible stone revetment against the southern face of the hedge.
- 2.12 A Cornish hedge comprising two observed phases formed the northern boundary of Field 2 (Fig. 6, Section AA). The base of the hedgebank was not exposed during observations. The first phase of hedgebank construction comprised bank material 1006, typically 1m thick, retained by northern stone revetment 1005 and southern stone revetment 1004. The second phase comprised earth core 1001, which directly overlay the first phase material and was approximately 1m in thickness. This was overlain by topsoil 1000. The second phase was retained by northern revetment 1002, and southern revetment 1005. Hedgebank bank material 1003 and turf/topsoil 1000 continued beyond southern revetment 1002.
- 2.13 A large mound was visible against the western boundary of Field 2 (Fig. 2, **M**). This mound is likely to represent spoil heaps from pre-19th-century mining activities (CA 2012) and was not disturbed.

Field 8

- 2.14 A Cornish hedge formed the north-eastern boundary of Field 8 (Fig. 8, section BB and CC). The base of the hedgebank overlay natural substrate 1214. The hedgebank construction comprised a 1.2m thick mixed bank core comprising stone layer 1206 overlain by deposits of sandy clay 1207 and 1208: both contained large amounts of stone. The core was retained by stone revetments 1211 to the south and 1210 to the north. The core was sealed by a 0.25m thick topsoil layer, 1209. At the northern and southern extents of the hedgebank, redeposited topsoil (1212 and 1213) was observed overlying the revetments



3. DISCUSSION

- 3.1 The watching brief observations identified archaeological remains across the area of observed groundworks. However, no dating evidence was recovered which consequently limits the extent to which the archaeological remains may be interpreted. Standing structures were also subject to visual inspection.
- 3.2 Tin mining within the site is first recorded in 1819 as Wheal Harmony or Treleigh Wood Mine; however Wheal Harmony mine is known to have been in operation since at least the 1760s. Following a period of disuse it was reopened, along with Treleigh Wood Mine in the southern part of the site, during the nineteenth-century. The mine shafts and lode working trenches encountered during the watching brief corresponded closely in position with the locations of former mine workings (Cornwall Mining Services 2005). Due to health and safety considerations the mining features were excavated by machine. Despite visual scanning of all resulting spoil, no dating evidence was recovered from any of the features. It is therefore unclear to what period of operation the mine locations correspond to. They could equally be of 18th or 19th century date.
- 3.3 The Cornish hedges were all of similar construction, being retained at either side by stone revetment walls and it is probable that all were constructed at the same time. The 1841 Tithe Map of the Redruth shows that the site had been subdivided into the field system that was visible in the present day. The site is known to have been converted to agricultural use in the early 1840s, after a downturn in the mining industry in Cornwall forced the closure of the mine (CA 2012). It is therefore likely that the Cornish hedges date to the early 1840s and mark the end of the second phase of mining activity on the site.
- 3.4 The hedges forming the southern boundaries of Fields 1 and 3 were to overlie a large east/west aligned lode working trench. This working must therefore have been redundant and backfilled before the field system was established. If the dating of the 1840s is accurate, they and the lode workings would consequently belong to an earlier phase of mining activity, either in the late 18th century or as part of the Wheal Montague and Harmony works of 1819–44 (CA 2012).
- 3.3 The engine pumping house in Field 8 and the rectangular building in Field 2 first appear on the 1880 OS map (CA 2012). The buildings are likely to the latest phase

of mining on the site (1870s), and were part of a small complex of mine buildings at the north-east of the site (Fig. 2, **A**, **C**, **G**, **Q** and **R**). The engine pump house building is related to the engine house shaft to its north and further shafts in Fields 1 and 3 are marked on the OS map; however it was not possible to determine whether any of the other shafts recorded during the watching brief were also active in the late 19th century phase of operation.

4. CA PROJECT TEAM

Fieldwork was undertaken by Greg Crees, Chris Leonard, Rebecca Riley and Sian Reynish. The report was written by Christopher Leonard. The illustrations were prepared by Rosanna Price. The archive has been compiled and prepared for deposition by Hazel O'Neil. The project was managed for CA by Ian Barnes.

5. REFERENCES

BGS (British Geological Survey) 2014 <http://mapapps.bgs.ac.uk/geologyofbritain/home.html> accessed 14 October 2014.

CA (Cotswold Archaeology) 2012 *Wheal Harmony, Redruth, Cornwall. Heritage Desk-Based Assessment*. CA Report No. **12361**.

CA 2013 *Wheal Harmony, Redruth, Cornwall. Written Scheme of Investigation for an Archaeological Watching Brief*.

CAU (Cornwall Archaeological Unit) 1999 *Shaft Capping Contract 13 Archaeological Assessment*

Cornwall Mining Services 2005 *Drilling Investigation Report*.

Michell F. 1978 *Annals Of A Cornish Town*

APPENDIX A: CONTEXT DESCRIPTIONS

Field No	Context	Type	Fill of	Context Interpretation	Context Description	Length (m)	Width (m)	Depth/thickness (m)	Spot-date
1	100	Layer		Topsoil	Dark greyish brown clayey silt			0.23	
1	101	Layer		Subsoil	Mid yellowish/ reddish brown clayey silt			0.12	
1	102	Layer		Natural	Mid yellowish brown silty clay			>0.35	
1	103	Cut		Industrial working	Lode working trench. Same as 309				
1	104	Fill	Fill of 103	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces				
1	105	Cut		Industrial working	Mine shaft				
1	106	Fill	Fill of 105	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces				
1	107	Cut		Industrial working					
1	108	Fill	Fill of 107	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces				
1	109	Cut		Industrial working	Mine shaft				
1	110	Fill	Fill of 109	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces				
1	111	Cut		Industrial working	Mine shaft				
1	112	Fill	Fill of 111	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces				
1	113	Cut		Industrial working	Mine shaft				
1	114	Fill	Fill of 113	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces				
1	115	Cut		Industrial working	Shaft or expanded natural hollow		4.16d	0.12	
1	116	Fill	Fill of 115	Industrial working backfill	Black silty sand with slag lump inclusions		4.16d	0.12	
1	117	Cut		Industrial working	Shaft or expanded natural hollow				
1	118	Fill	Fill of 117	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces				
1	119	Cut		Industrial working	Lode working trench				
1	120	Fill	Fill of 119	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces				
1	121	Masonry		Culvert	Stone lined culvert				
1	122	Masonry			Building in disrepair				
2	200	Layer		Topsoil	Dark greyish brown clayey silt			0.3	
2	201	Layer		Subsoil	Mid yellowish/reddish brown clayey silt			0.12	

Field No	Context	Type	Fill of	Context Interpretation	Context Description	Length (m)	Width (m)	Depth/thickness (m)	Spot-date
2	202	Layer		Natural	Mid yellowish brown silty clay			>0.21	
2	203	Cut		Industrial working	Mine shaft		0.86d		
2	204	Fill	Fill of 203	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces		0.86d		
2	205	Cut		Industrial working	Mine shaft		1.19d		
2	206	Fill	Fill of 205	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces		1.19d		
2	207	Cut		Industrial working	Mine shaft				
2	208	Fill	Fill of 207	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces				
2	209	Cut		Industrial working	Lode working trench				
2	210	Fill	Fill of 209	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces				
2	211	Cut		Industrial working	Mine shaft				
2	212	Fill	Fill of 211	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces				
2	213	Cut		Industrial working	Mine shaft				
2	214	Fill	Fill of 213	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces				
3	300	Layer		Topsoil	Dark greyish brown clayey silt			0.17	
3	301	Layer		Subsoil	Mid yellowish/reddish brown clayey silt			0.21	
3	302	Layer		Natural	Mid yellowish brown silty clay			>0.38	
3	303	Cut		Industrial working	Mine shaft		5.0 dia	>4.5	
3	304	Fill	Fill of 303	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces		5.0 dia	>4.5	
3	305	Cut		Industrial working	Mine working		4.0 dia	>5.7	
3	306	Fill	Fill of 305	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces		4.0 dia	>5.7	
3	307	Cut		Industrial working	Mine working			3	
3	308	Fill	Fill of 307	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces			3	
3	309	Cut		Industrial working	Lode working trench				
3	310	Fill	Fill of 309	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces				

Field No	Context	Type	Fill of	Context Interpretation	Context Description	Length (m)	Width (m)	Depth/thickness (m)	Spot-date
3	311	Cut		Industrial working	Mine working		5.5 dia	>0.6	
3	312	Fill	Fill of 311	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces		5.5 dia	>0.6	
3	313	Cut		Industrial working	Mine working		3.0 dia	>3.5	
3	314	Fill	Fill of 313	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces		3.0 dia	>3.5	
3	315	Cut		Industrial working	Mine working (Nut Bottom)		5.0 dia	unexcavated	
3	316	Fill	Fill of 305	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces		5.0 dia	unexcavated	
3	317	Cut		Industrial working	Mine working		3.0 dia	>1	
3	318	Fill	Fill of 317	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces		3.0 dia	>1	
3	319	Cut		Industrial working	Mine shaft	5.0	3.0	3.8	
3	320	Fill	Fill of 319	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces			3.8	
3	321	Cut		Industrial working	Mine shaft				
3	322	Fill	Fill of 321	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces				
3	323	Fill	Fill of 321	Industrial working backfill	Concrete plug				
3	324	Fill	Fill of 311	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces		5.5 dia	>4	
4	400	Layer		Topsoil	Dark greyish brown clayey silt			0.28	
4	401	Layer		Subsoil	Mid yellowish/reddish brown clayey silt			0.11	
4	402	Layer		Natural	Mid yellowish brown silty clay			>0.03	
5	500	Layer		Topsoil	Dark greyish brown clayey silt			0.26	
5	501	Layer		Subsoil	Mid yellowish/reddish brown clayey silt			0.14	
5	502	Layer		Natural	Mid yellowish brown silty clay			>0.04	
6	600	Layer		Topsoil	Dark greyish brown clayey silt			0.18	
6	601	Layer		Subsoil	Mid yellowish/reddish brown clayey silt			0.07	
6	602	Layer		Natural	Mid yellowish brown silty clay			>0.05	
6	603	Cut		Industrial working	Mine workings				
6	604	Fill	Fill of 603	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces				
6	605	Cut		Industrial working	Mine workings				

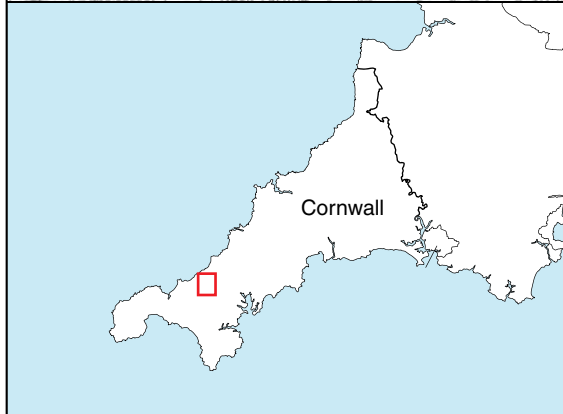
Field No	Context	Type	Fill of	Context Interpretation	Context Description	Length (m)	Width (m)	Depth/thickness (m)	Spot-date
6	606	Fill	Fill of 605	Industrial working backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces				
7	700	Layer		Topsoil	Dark greyish brown clayey silt			0.28	
7	701	Layer		Subsoil	Mid yellowish/reddish brown clayey silt			0.14	
7	702	Layer		Natural	Mid yellowish brown silty clay			>0.03	
8	800	Layer		Topsoil	Dark greyish brown clayey silt				
8	801	Layer		Subsoil	Mid yellowish/reddish brown clayey silt				
8	802	Layer		Natural	Mid yellowish brown silty clay				
8	803	Masonry		North wall of Engine House	Main structure	6.0	1.65	2.2	
8	804	Masonry		North wall of Engine House	Stones blocking beam slot in 803	1.2	1.65	1.0	
8	805	Masonry		West wall of Engine House	Main structure	>5.5	0.75	0.5	
8	806	Cut		Truncation event	Over wide part of Area 8				
8	807	Fill	Fill of 808-822	Modern backfill	Mid orange grey sandy silt with frequent mudstone and shale pieces				
8	808	Cut		Industrial working	Mine working - test pit	15.4	1.6	0.5	
8	809	Cut		Industrial working	Mine working - test pit	10.2	502	2.1	
8	810	Cut		Industrial working	Mine working - test pit	3.4	3.2	1	
8	811	Cut		Industrial working	Mine working - test pit	4	1.8	1.3	
8	812	Cut		Industrial working	Mine working - test pit	7.2	3.5	1.65	
8	813	Cut		Industrial working	Mine working - test pit	5.4	2.6	0.5	
8	814	Cut		Industrial working	Mine working - test pit	4	2.7	2.3	
8	815	Cut		Industrial working	Mine working - test pit	2.2	1.6	0.6	
8	816	Cut		Industrial working	Mine working - test pit	3.6	2	1	
8	817	Cut		Industrial working	Mine working - test pit	5.6	4	2	
8	818	Cut		Industrial working	Mine working - test pit	14	9	2.5	
8	819	Cut		Industrial working	Mine working - test pit	5.6	3.7	>2	
8	820	Cut		Industrial working	Mine working - test pit	2.5	2	2.25	
8	821	Cut		Industrial working	Mine working - test pit	3.8	1.6	1	
8	822	Cut		Industrial working	Mine working - test pit	3.8	2.4	>0.9	
8	823	Masonry		Flue	Stone built structure				
8	824	Masonry		Flue	Masonry walls				
8	825	Masonry		Flue	Barrel vaulted roof				
8	826	Fill	Fill of 823	Backfill within 823					
8	827	Fill	Fill of	Modern test pit	Modern mixed backfill				
8	828	Layer		Flue	Flue lining				

Field No	Context	Type	Fill of	Context Interpretation	Context Description	Length (m)	Width (m)	Depth/thickness (m)	Spot-date
2	1000	Layer		Topsoil	Dark greyish brown clayey silt			0.2	
2	1001	Bank		Bank material (Phase 2)				1	
2	1002	Masonry		Northern revetment (Phase 2)			0.28	0.62	
2	1003	Bank		Slump (Phase 2)				0.26	
2	1004	Masonry		Northern revetment (Phase 1)			0.24	1	
2	1005	Masonry		Southern revetment			0.22	1.36	
2	1006	Bank		Bank material (Phase 1)					
1	1100	Layer		Topsoil	Dark greyish brown clayey silt			0.25	
1	1101	Bank		Bank material				0.88	
1	1102	Masonry		Northern revetment	stone		0.26	0.88	
1	1103	Masonry		Southern revetment	stone		0.3	0.88	
1	1104	Layer		Natural					
8	1200	Layer		Modern surface	stone			0.05	
8	1201	Layer		Topsoil	Dark greyish brown clayey silt			0.1	
8	1202	Layer		Made ground	Mid orange brown clay silt with CBM inclusions			0.24	
8	1203	Layer		Made ground	Dark black grey sand gravel with CBM and ceramic inclusions			0.11	
8	1204	Layer		Made ground	Mid grey loam clay			0.35	
8	1205	Layer		Made ground	Orange brown silt clay with stone/gravel inclusions			0.2	
8	1206	Bank		Bank layer?	Rough cut limestone blocks				
8	1207	Bank		Bank layer?	Mid orange brown sandy clay			1.2	
8	1208	Bank		Bank layer?	Orange pink sand clay with sandstone block inclusions				
8	1209	Bank		Bank layer?	Dark brown topsoil/turf surface			0.25	
8	1210	Masonry		Bank layer?	Rough cut irregular stone revetment				
8	1211	Masonry		Bank layer?	Revetment on northern side of hedgebank				
8	1212	Bank		Bank layer?	Dark brown silt (upcast from 1211)				
8	1213	Bank		Bank layer?	Mid to dark brown silt (upcast from 1210)				
8	1214	Layer		Natural	Orange yellow sandy clay with gravel/pebble inclusions			N/E	
8	1300	Layer		Topsoil	Dark greyish brown clayey silt				
8	1301	Fill	Fill of 1303	Industrial working	Yellow pink sand clay				

Field No	Context	Type	Fill of	Context Interpretation	Context Description	Length (m)	Width (m)	Depth/thickness (m)	Spot-date
8	1302	Fill	Fill of 1303	Industrial working	Yellow pink sand clay				
8	1303	Cut		Industrial working	Mine workings				
2	1400	Masonry		Wall	E-W aligned wall, stone not defined but mortar bonded (DBA: Fig 7, K)			0.5	
2	1401	Masonry		Wall	N-S aligned wall. Limited exposure (DBA: Fig. 7, K).	5			
2	1402	Masonry		Wall	E-W aligned wall, stone not defined but mortar bonded (DBA: Fig 7, K)				
2	1403	Masonry		Bank layer?	Revetment supporting hedgebank against wall 1102				
2	1404	Layer		Made ground	Mid orange brown sandy clay with stone and CBM inclusions			0.15	
2	1405	Layer		Natural	Orange yellow sandy clay with gravel/pebble inclusions				
2	1406	Bank		Bank layer	Inner core of bank comprising redeposited natural, topsoil and subsoil.			1.7	
2	1407	Bank		Bank layer	Upper bank deposit comprising redeposited topsoil and subsoil			0.4	
2	1408	Bank		Bank layer	Mid brown silt (redeposited topsoil) and turf			0.25	

APPENDIX B: OASIS REPORT FORM

PROJECT DETAILS		
Project Name	Wheal Harmony, Redruth, Cornwall	
Short description	<p>An archaeological watching brief was undertaken by Cotswold Archaeology during groundworks associated with the remediation of mine works at the site.</p> <p>A series of mine workings, comprising shafts and lode working trenches, were recorded, corresponding to known mine workings at the Wheal Harmony or Treleigh Wood Mines. No dating evidence for the features was recovered during the watching brief, however documentary evidence indicates that mining took place on the site since at least the 1760s.</p> <p>Cornish hedges demarcating a mid-19th century field system were extant across the site. The hedges overlay lode working trenches belonging to the earlier phases of mining activity in the late 18th–early 19th centuries.</p> <p>Standing remains of structures pertaining to the last phase of mining activity on site in the late 19th century were recorded.</p>	
Project dates	13 March– 15 June 2014	
Project type	Watching brief	
Previous work	DBA (Cotswold Archaeology 2012) Drilling Investigation (Cornwall Mining Services 2005) Evaluation (Cornwall Mining Services 1990)	
Future work	Unknown	
PROJECT LOCATION		
Site Location	Wheal Harmony, Redruth, Cornwall	
Study area	4.1ha	
Site co-ordinates	SW 6987 4318	
PROJECT CREATORS		
Name of organisation	Cotswold Archaeology	
Project Brief originator	Cornwall Council	
Project Design (WSI) originator	Cotswold Archaeology	
Project Manager	Ian Barnes	
Project Supervisor	Christopher Leonard	
MONUMENT TYPE	None	
SIGNIFICANT FINDS	None	
PROJECT ARCHIVES		
	Intended final location of archive	Content
Physical	-	-
Paper	Royal Cornwall Museum	Context sheets, etc
Digital	Royal Cornwall Museum	Database, digital photos etc
BIBLIOGRAPHY		
CA (Cotswold Archaeology) 2014 <i>Wheal Harmony, Redruth, Cornwall: Archaeological Watching Brief</i> . CA typescript report 14432		



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PROJECT TITLE

Wheal Harmony, Redruth, Cornwall

FIGURE TITLE

Site location plan



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PROJECT NO. 4805 DATE 03.10.14
 DRAWN BY RP REVISION 00
 APPROVED BY JB SCALE@A4 1:25,000

FIGURE NO.

1



- Scheme boundary
- Possible Minshaft Location
- Location of mine buildings recorded on 1880 1st edition Ordnance Survey map
- Archaeological Constraint Areas

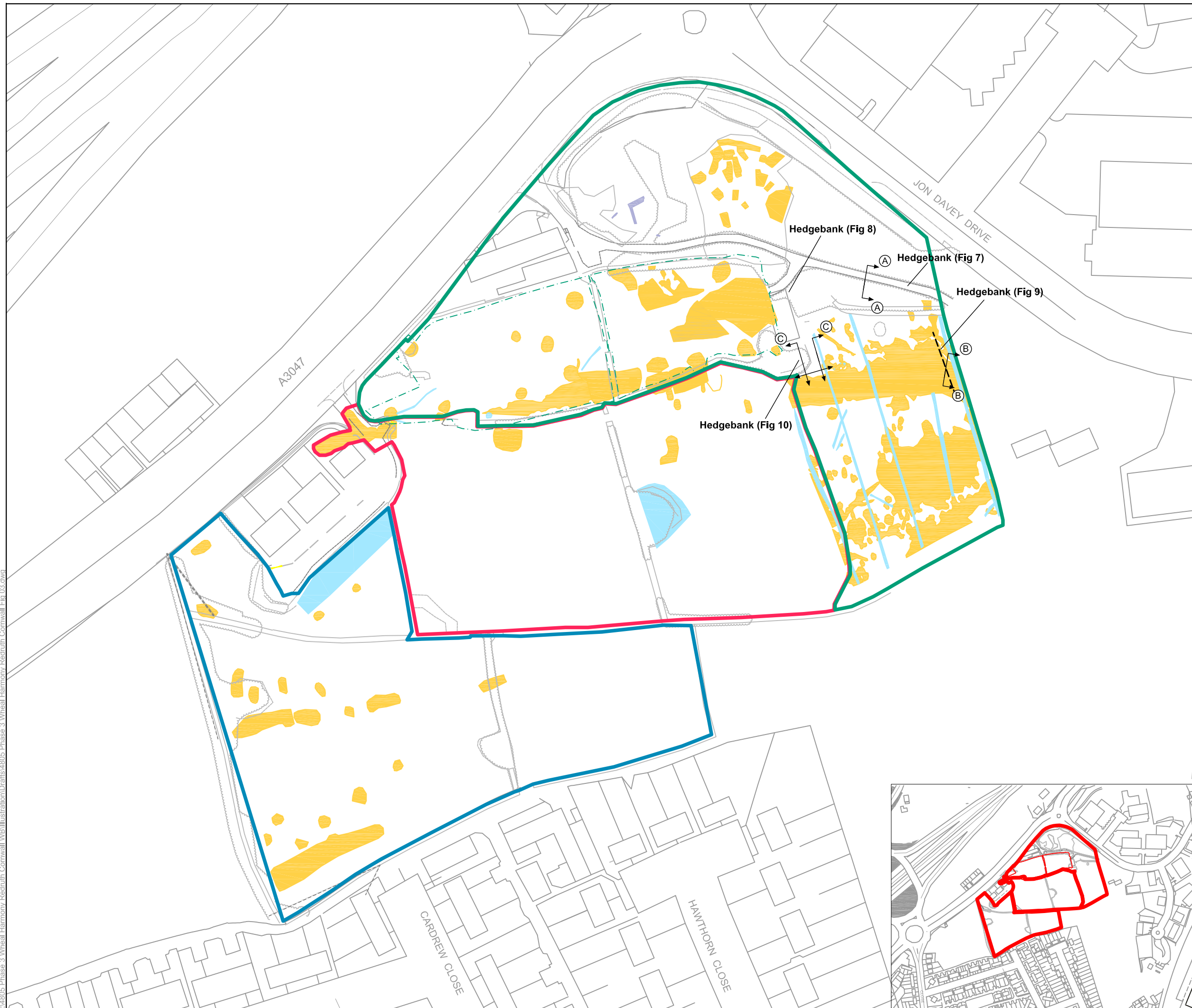
- A Pumping Engine House
- B Engine House Shaft
- C Accounts House
- D Nut Bottom Shaft
- E Boiler Pond
- F Boiler Pond
- G Balance Bob Pit
- H Capstan
- I Ruined 20th century building
- J Ruined 20th century building
- K Extant structure shown on 1880 1st Edition Ordnance Survey map
- L Windmill Shaft
- M Spoil Heap
- N Spoil Heap
- O Spoil Heap
- P Ancillary Mine Building
- Q Location of Engine House
- R Location of Engine House

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PROJECT TITLE
Wheal Harmony, Redruth, Cornwall

FIGURE TITLE
Satellite image of site showing archaeological monuments and events

PROJECT NO. 4805	DATE 03.10.14	FIGURE NO.
DRAWN BY RP	REVISION 00	2
APPROVED BY JB	SCALE@A3 1:1250 (approx)	



- area of observed groundworks (March 2014)
- area of observed groundworks (June 2013)
- area of observed groundworks (April 2013)
- identified mine workings
- modern
- structure

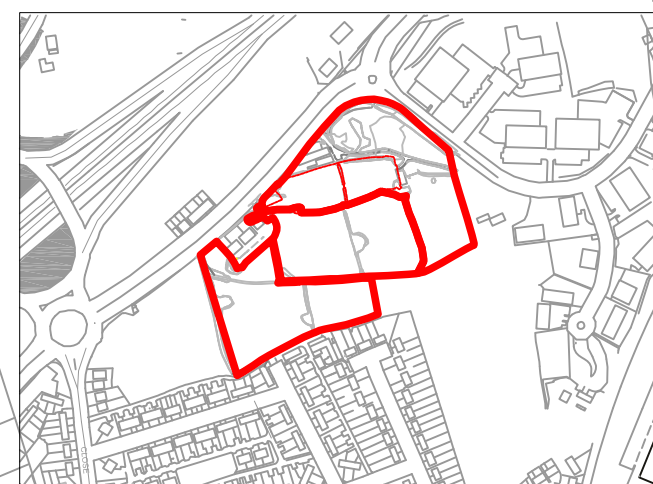
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PROJECT TITLE
Wheal Harmony, Redruth, Cornwall

FIGURE TITLE
Locations of identified mine workings

PROJECT NO.	4805	DATE	03.10.14	FIGURE NO.
DRAWN BY	RP	REVISION	00	3
APPROVED BY	JB	SCALE@A3	1:1250	



P:\4805 Phase 3 Wheal Harmony Redruth Cornwall\WB\Illustration\Drafts\4805 Phase 3 Wheal Harmony Redruth Cornwall Fig 03.dwg



4 Photograph of north facing elevation of Engine House (scales 1m)



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Wheal Harmony, Redruth, Cornwall

FIGURE TITLE

Photograph

PROJECT NO.	4805	DATE	03.10.14	FIGURE NO.	4
DRAWN BY	RP	REVISION	00		
APPROVED BY	JB	SCALE@A4	N/A		



5 Photograph of south facing elevation of Engine House (scale 1m)



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Wheal Harmony, Redruth, Cornwall

FIGURE TITLE

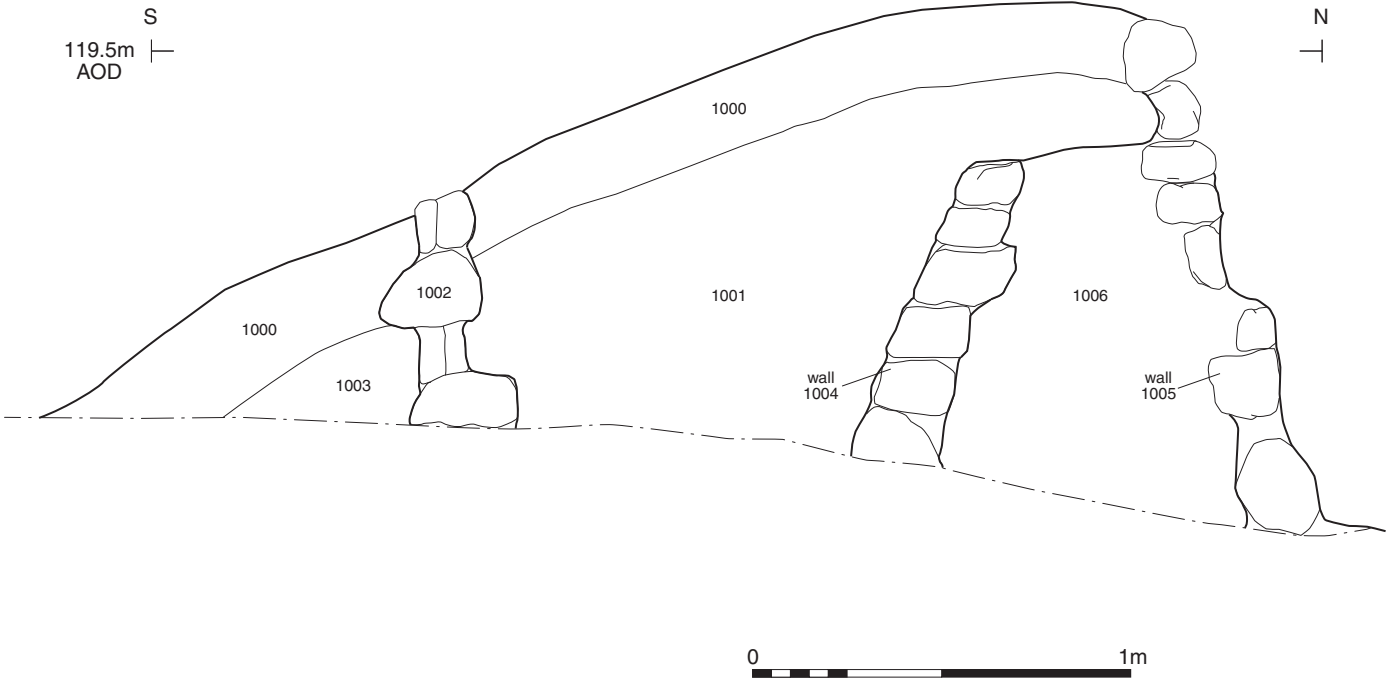
Photograph

PROJECT NO. 4805 DATE 03.10.14
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FIGURE NO.

5

Section AA



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PROJECT TITLE

Wheal Harmony, Redruth, Cornwall

FIGURE TITLE

West facing section of hedgebank
along the boundary of fields 1 & 2

PROJECT NO. 4805 DATE 03.10.14
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FIGURE NO.

6



7

7 Field boundary 1 & 2 - hedgebank: southwest facing section (scale 1m)



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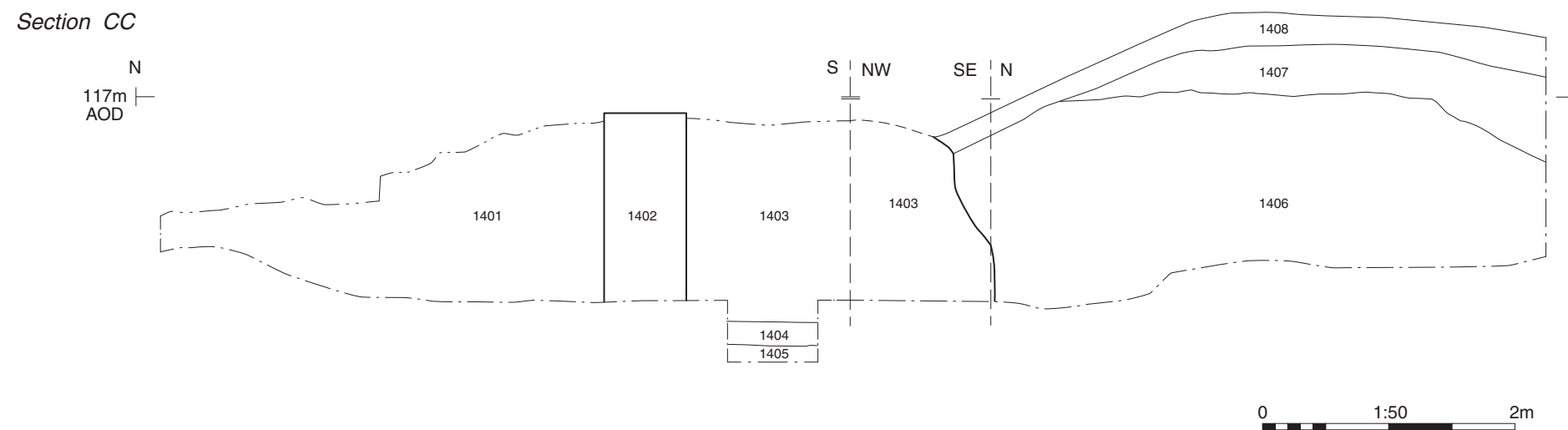
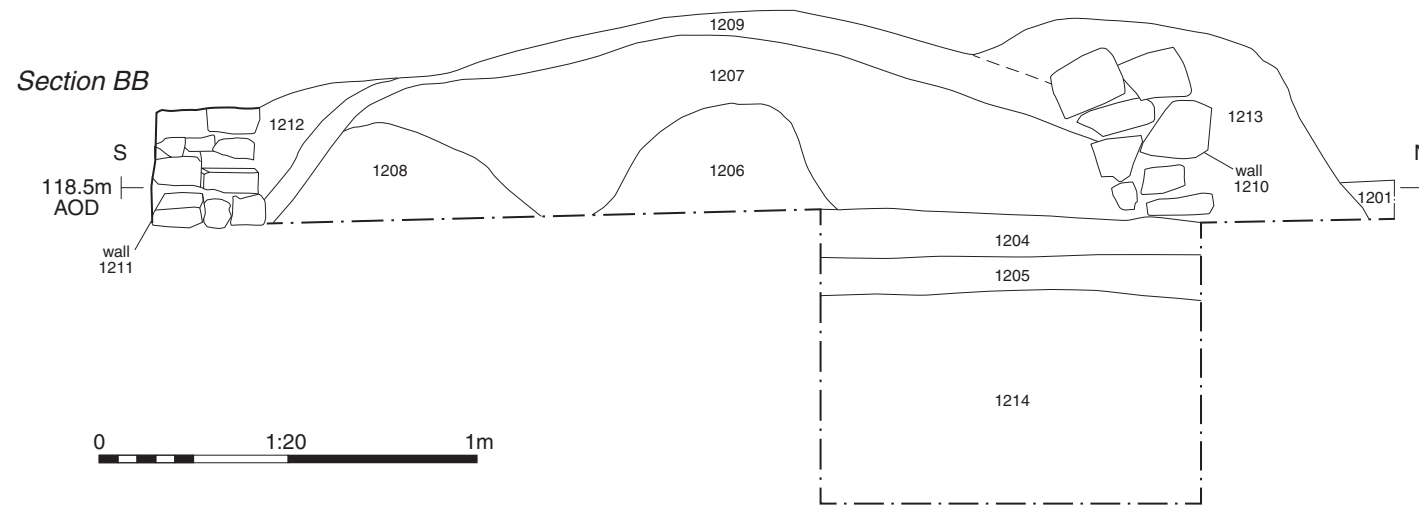
PROJECT TITLE

Wheal Harmony, Redruth, Cornwall

FIGURE TITLE

Photograph

PROJECT NO.	4805	DATE	03.10.14	FIGURE NO.	7
DRAWN BY	RP	REVISION	00		
APPROVED BY	JB	SCALE@A4	N/A		



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PROJECT TITLE
 Wheal Harmony, Redruth, Cornwall

FIGURE TITLE
 Sections of hedgebanks along the boundaries of field 2

PROJECT NO. 4805	DATE 15.10.14	FIGURE NO. 8
DRAWN BY RP	REVISION 00	
APPROVED BY JB	SCALE@A3 1:20 and 1:50	