Former Gas Works Mount Street Bala Gwynedd

Archaeological Watching Brief

for

WSP Environmental UK

CA Project: 3640 CA Report: 12043

April 2012

Former Gas Works Mount Street Bala Gwynedd

Archaeological Watching Brief

CA Project: 3640 CA Report: 12043

prepared by	Sian Reynish, Project Supervisor		
date	18 April 2012		
checked by	Richard Young, Project Manager		
date	20 April 2012		
approved by	Simon Cox, Head of Fieldwork		
signed	Sur la		
date	20 April 2012		
issue	01		

This report is confidential to the client. Cotswold Archaeology accepts no responsibility or liability to any third party to whom this report, or any part of it, is made known. Any such party relies upon this report entirely at their own risk. No part of this report may be reproduced by any means without permission.

CONTENTS

SUMM	ARY	. 2
1.	INTRODUCTION	.3
2.	RESULTS (FIGS 2-13)	. 6
3.	DISCUSSION	.7
4.	CA PROJECT TEAM	.8
5.	REFERENCES	.8
APPEN	IDIX A: CONTEXT DESCRIPTIONS	. 9
APPEN	IDIX B: LEVELS OF PRINCIPAL DEPOSITS AND STRUCTURES	. 12
ADDEN	IDIY C: OASIS REPORT FORM	12

LIST OF ILLUSTRATIONS

- Fig. 1 Site location plan (1:25,000)
- Fig. 2 The site, showing location of former buildings, groundworks and recorded archaeological features (1:250)
- Fig. 3 Area of groundworks, showing location of former buildings and recorded archaeological features (1:125)

Figs 4-13 Photographs

SUMMARY

Project Name: Former Gas Works, Mount Street

Location:Bala, GwyneddNGR:SH 9284 3608Type:Watching Brief

Date: 9-31 January 2012

Planning Reference: NP5/53/511

Location of Archive: To be deposited with Gwynedd Museum

Site Code: TBG 12

An archaeological watching brief was undertaken by Cotswold Archaeology during groundworks associated with environmental improvement works (remediation) at the Former Gas Works, Mount Street, Bala, Gwynedd.

The watching brief identified a number of brick walls, tar tanks and other industrial features which relate to the former gas works. These features correspond closely to the cartographic evidence from 1888 to 1981 showing the former gas works structures, including the retort and tar pits.

1. INTRODUCTION

- 1.1 In January 2012 Cotswold Archaeology (CA) carried out an archaeological watching brief at the request of WSP Environmental UK at the Former Gas Works, Mount Street, Bala, Gwynedd (centred on NGR: SH 9284 3608; Fig. 1). The watching brief was undertaken to fulfil a condition attached to planning permission for environmental improvement works (remediation) granted by Snowdonia National Park Authority (SNPA; Planning ref: NP5/53/511). The objective of the watching brief was to record all archaeological remains exposed during the development.
- 1.2 The watching brief was carried out in accordance with a recommendation by Mr John G Roberts, Archaeologist, SNPA. A subsequent detailed *Written Scheme of Investigation* (WSI) was produced by CA (2011) and approved by Mr Roberts. The fieldwork also followed the *Standard and Guidance for an archaeological watching brief* (IfA 2008), the *Management of Archaeological Projects* 2 (English Heritage 1991), the *Management of Research Projects in the Historic Environment (MORPHE): Project Manager's Guide* (English Heritage 2006). It was monitored by Mr Roberts, including a site visit on 16 January 2012.

The site

- 1.3 The site lies within the town of Bala and is bordered to the north-east by properties along the B4391, to the north and west by the mound of the Norman motte known as Tomen Y Bala, to the south west by properties along Lon Y Domen and to the south by a car park. The site lies at approximately 165m AOD.
- 1.4 The site is *c.* 0.2ha in size, and is currently predominantly covered in shale, with some hard-standing in the north-eastern corner of the site. The far eastern part of the site is currently being used as an informal garden area and vegetable plot by the adjacent property.
- 1.5 The underlying solid geology of the area is mapped as Moelfryn Mudstone formation of the Ashgill Era, with superficial deposits of Alluvium: clay, silt, sand and gravel, of the Flandrian Era (BGS 2010). A mid yellowish brown alluvial clay was observed over most of the site. Below this in a few places alluvial sand and gravel deposits were observed.

Archaeological background

- 1.6 The name 'Y Bala' probably signifies an outlet, a name given due to the fact that the town is situated where the River Dee flows out of the lake. Bala lies along the course of the main road from Shrewsbury to Dolgellau and the town is situated at the northern end of Bala Lake (LlynTegid), where the rivers Dee and Tryweryn meet. It represents the finest example of a planned English borough in Meirionnydd. The Roman road from Chester to CaerGai and Brithdir must have passed through the area of modern Bala, and presumably close to Llanfor. It is thought then to run along the north-western shore of LlynTegid.
- 1.7 The presence of a Norman motte at Bala is a fairly certain indication of the existence of a Welsh lordship, perhaps the maerdref of Uwch Tryweryn in the cantref of Penllyn. The timber buildings of a royal llys and possibly the nucleated structures of a dependent bond township might be expected in the immediate vicinity of the motte. Once again the identification and elucidation of the character of a Welsh administrative focus and its relationship to a Norman earthwork castle and (in this case 14th century) planted borough become the key archaeological questions. Tomen y Bala appears briefly in Welsh history; it was held by Elise apMadog, Lord of Penllyn, who refused to back Llywelynablorwerth in his struggle against his kinsman Gwenwynwyn. His reward for this disloyalty was that in 1202 Llywelyn drove him from the site and destroyed the castle. It does not appear to have been re-fortified. When Roger Mortimer laid out the borough it was undoubtedly his intention to defend it with a wall and ditch incorporating this existing fortification. Indeed, the 1324 charter makes special provision for such work, but there is nothing to suggest that his instructions were ever carried out. An earthen bank may have been thrown up at the top of the town, however, parallel to the Afon Tryweryn, but the area has recently been developed and no sections are visible.
- 1.8 The town of Bala consists of a long principal High Street, with parallel back streets running the full length of Arenig Street on the north-west and Plasey Street/Mount Street to the south-east. The High Street is orientated south-west to north-east, and is crossed in the middle of the town by Castle Street and Tegid Street. The three parallel streets form a simple rectangle, the north-east corner of which is occupied by the motte. The motte is sited close to the Afon Tryweryn, and perhaps alongside an early ford. The rectangle occupied by the original town therefore measures 450m by 120m. The location of the motte in the north-west corner would suggest this was deliberately incorporated. It is assumed that the motte had a ditch around it but there

is today no trace of either this or an associated bailey. In the early 1990s Gwynedd Archaeological Trust carried out some work on the site. In the west half of the site this work identified what was interpreted as the remains of a substantial ditch at the base of the motte (J.G. Roberts, pers. comm.).

- 1.9 The site itself lies immediately to the south-west of the motte mound of Tomen Y Bala (a Scheduled Monument; CADW ref. Me016). It comprises the location of a former gas works which was operational from at least 1888 until 1963 when the site was used as a gasholder station. The gasholders were subsequently removed between 1978 and 1981.
- 1.10 An archaeological watching brief was carried out in 2010 during geotechnical works (CA 2010). The watching brief identified a number of modern brick walls and an undated silt layer containing charcoal. The brick walls were thought to relate to the former gas works, including tar pits (CA 2010).

Methodology

- 1.11 The fieldwork followed the methodology set out within the WSI (CA 2011). An archaeologist was present during intrusive groundworks comprising the excavation of REM 1-3 and 7 test pits. Originally the southern circular gas tank was to be removed however this has remained *in situ* (Fig. 2). The heavily contaminated nature of the site precluded close inspection of the structures and deposits encountered; all recording was undertaken from outside the excavations.
- 1.12 Where archaeological deposits were encountered written, graphic and photographic records were compiled in accordance with CA Technical Manual 1: *Fieldwork Recording Manual* (2007).
- 1.13 The archive from the watching brief is currently held by CA at their offices in Kemble. The archive will be deposited with Gwynedd Museum. A summary of information from this project, set out within Appendix C, will be entered onto the OASIS online database of archaeological projects in Britain.

2. **RESULTS (FIGS 2-13)**

The natural geological substrate (210 and 308) consisting of bluey grey sand and gravel, was revealed within the internal excavation around sump 106 of REM 1, the south-western end of REM 2, the southern end of REM 3 and within test pits 208, 217 and 218 at an average depth of 1.64m below present ground level (bpgl). This was overlain by a mid yellowish brown alluvial clay (102, 209, 301, 20501, 20803, 21701, 21801 and 22102), which was first observed 0.74m bpgl. This alluvial clay was cut by the construction cuts (106, 211-215, 304, 305, 315, 316, 319 and 323-325) for the mixture of brick and stone structures of the former gas works. The clay was sealed by an average of 0.55m of demolition deposits (101, 200, 300, 20500, 20800, 21900, 22000 and 22100) which formed the current ground surface. The foundations of the circular gas holders, 401, were still partially visible above these deposits.

REM 1 (Figs. 3-5)

2.2 REM 1 contained an ashey bedding layer 105 for brick surface 104, constructed from reused bricks, which covered demolition deposit 101 and in turn was sealed by 0.1m of a further demolition deposit 100 similar to 101.

REM 2 (Figs. 3 and 6-8)

2.3 REM 2 comprised of three tar tanks backfilled with a mixture of tar and demolition deposit 202, 204 and 206, and two concrete pillars 207 and 208. Tar tank 201 was constructed out of brick and stone with three internal divides constructed out of brick and lined with a concrete skim. Within the tree internal divides four small holes were located at the base of each divide to allow the tar to flow. Tar tank 203 was also constructed out of brick with an internal skim of concrete. It had one internal divide in the centre and a partial concrete roof with brick inspection chamber. Tar tank 205 was a large rectangular tank with a concrete base and brick walls with an internal concrete skim.

REM 3 (Figs. 3 and 9-12)

2.4 REM 3 contained a number of stone foundations, 313, 314, 321 and 20801, and stone walls 303 and 306, along with a series of concrete slabs, 311, 312 and 317, and brick structures, 302, 318, 320, 322 and 20801. A further demolition deposit 307 was identified butting concrete slab 312 and covering stone foundation 314. This

was far stonier than the other demolition deposits and was most likely demolition from the wall that would have at one time been erected on top of foundations 314.

Test Pits (Fig.2)

2.5 Within test pits 217-220 a mid greyish brown clayey silt make-up deposit was identified overlaying the alluvium. These test pits were located in areas were there was potentially no evidence of structural remains for the former gas works. It could not be determined if this make-up deposit was formed prior to the gas works being constructed.

3. DISCUSSION

- 3.1 The features exposed during the watching brief correspond with the buildings and structures associated with the former gas works on Mount Street in Bala depicted on the historic mapping. The walls and other structures identified within REM 3 are depicted on the 1888 Ordnance Survey map which relate to the main part of the gas works which comprised the retort house, purifier and condenser buildings (Fig. 2 and 3). The stone walls and foundations seem to relate to the main external structural walls of the buildings, and the brick and concrete structures relating to the internal structures of the gas works. Tanks 1 and 2 within structure 302 (Fig. 3) correspond to the retort house and would relate to the furnaces used in the heating of coal to create gas. This gas would have later been purified and condensed, the structures to the south of tanks 1 and 2 corresponded to the buildings that housed the purifiers and condensers and tar tank 318 would have held the tar by-product of this process with the gas filtering into the circular gas holder to the west of REM 3 (WSP 2010).
- 3.2 As the gas works expanded extra buildings were constructed which included an additional circular gas holder, structure 401 (Fig. 3), first appearing on the 1901 Ordnance Survey map, and additional underground tar storage tanks (201, 203 and 205; Fig. 3) and sump 106 dating from 1953. Sump 106 identified within REM 1 was potentially part of the condensing process as pipes carrying gas would have passed over sumps of water in order to remove the tar by-product which would have been stored within the underground tar storage tanks such as 201, 203 and 205.
- 3.3 By the 1978 Ordnance Survey map the main structures of the gas works were demolished with only the circular gas holders and ancillary building remaining. By

the 1981 Ordnance Survey map these had also been removed. The brick surface 104 within REM 1 constructed out of reused bricks was most likely constructed as an area of hardstanding during the demolition process.

4. CA PROJECT TEAM

4.1 Fieldwork was undertaken by Sian Reynish. The report was written by Sian Reynish. The illustrations were prepared by Pete Moore. The archive has been compiled by Sian Reynish, and prepared for deposition by James Johnson. The project was managed for CA by Richard Young.

5. REFERENCES

- BGS (British Geological Survey) 2010 *Geology of Britain Viewer* 1:50,000 http://maps.bgs.ac.uk/geologyviewer_google/googleviewer.html accessed 25 October 2010
- CA (Cotswold Archaeology) 2010 Former Gas Works, Mount Street, Bala, Gwynedd:

 Archaeological Watching Brief. CA typescript report 11086
- CA (Cotswold Archaeology) 2011 Former Gas Works, Mount Street, Bala, Gwynedd: Written Scheme of Investigation for an Archaeological Watching Brief
- WSP Environmental UK 2010 Health, Safety and Environment Plan, Former Gas Works,

 Mount Street Bala

APPENDIX A: CONTEXT DESCRIPTIONS

REM 1

No.	Type	Description	Length (m)	Width (m)	Depth (m)	Spot- date
100	Layer	Demolition deposit			0.1	
101	Layer	Demolition deposit			0.9	
102	Layer	Alluvium			0.81	
103	Layer	Natural substrate: gravel				
104	Masonry	Brick surface	3.86	1.82	0.08	
105	Layer	Ash bedding for surface 104	3.86	1.82	0.11	
106	Cut	Rectangular cut of sump	2.07	1.77	0.86	
107	Fill	Backfill of sump 106	2.07	1.77	0.86	

REM 2

No.	Туре	Description	Length	Width	Depth	Spot-
200	Layer	Demolition deposit	(m)	(m)	(m) 1.2	date
	•	·				
201	Masonry	Brick and stone tar tank	2.85	2.07	1.74	
202	Fill	Backfill of tar tank 201	2.26	1.42	1.65	
203	Masonry	Brick tar tank	3.78	1.66	1.74	
204	Fill	Backfill of tar tank 203	3.36	1.23	1.65	
205	Masonry	Brick tar tank	4.66	3.05	1.45	
206	Fill	Backfill of tar tank 205	4.16	2.55	1.34	
207	Masonry	Concrete pillar	1.06	0.7	0.7	
208	Masonry	Concrete pillar	0.6	0.6	0.71	
209	Layer	Alluvium			0.75	
210	Layer	Natural substrate: gravel				
211	Cut	Construction cut for tar tank 201	2.85	2.07	1.74	
212	Cut	Construction cut for tar tank 203	3.78	1.66	1.74	
213	Cut	Construction cut for tar tank 205	4.66	3.05	1.45	
214	Cut	Construction cut for pillar 207	1.06	0.7	0.7	
215	Cut	Construction cut for pillar 208	0.6	0.6	0.71	

REM 3

No.	Туре	Description	Length (m)	Width (m)	Depth (m)	Spot- date
300	Layer	Demolition deposit	(***)	(***)	0.5	
301	Layer	Alluvium			0.83	
302	Masonry	Brick surface and brick tanks 1 and 2	>5.59	>5.67	1	
303	Masonry	Northwest-southeast stone wall	>5.20	0.46	0.89	
304	Cut	Construction cut for northwest-southeast stone wall 303	>5.20	0.46	0.89	
305	Cut	Robber cut for southeastern half of stone wall 303	>5.13	0.82	0.95	
306	Masonry	Short length of northeast-southwest brick and stone wall	>0.63		0.37	
307	Layer	Loose stone deposit	1.64	1.82	0.63	
308	Layer	Natural substrate: gravel				
309	Masonry	Concrete base for tank 1	1.75	1.75		

310	Masonry	Concrete base for tank 2	1.75	1.5		
311	Masonry	Concrete slab	1.45	1.22	0.53	
312	Masonry	Concrete slab	1.94	1.78	0.63	
313	Masonry	Southern northeast-southwest stone foundation	>4.96	0.94	0.9	
314	Masonry	Northern northeast-southwest stone foundation	>5.67	0.62	0.85	
315	Cut	Construction cut for northeast-southwest stone foundation 313	>4.96	0.94	0.9	
316	Cut	Construction cut for northeast-southwest stone foundation 314	>5.67	0.62	0.85	
317	Masonry	Concrete slab	1.11	1.04	0.27	
318	Masonry	Circular brick tar tank		2	1.7	
319	Cut	Construction cut for circular brick tar tank 318		2	1.7	
320	Masonry	Tar pipe manhole	1.60	1.57	0.9	
321	Masonry	Stone foundation same as 20802	>1.88	0.48	0.86	
322	Masonry	Brick wall same as 20801	>0.85	0.33	1.1	
323	Cut	Construction cut for tar pipe manhole 320	1.60	1.57	0.9	
324	Cut	Construction cut for stone foundation 321	>1.88	0.48	0.86	
325	Cut	Construction cut for brick wall 322	>0.85	0.33	1.1	

Area 4

No.	Туре	Description	Length (m)	Width (m)	Depth (m)	Spot- date
400	Fill	Shale backfill of circular gas holder		11.4	>0.6	
401	Masonry	Circular brick gas holder		11.4	>0.6	

TP205

No.	Туре	Description	Length (m)	Width (m)	Depth (m)	Spot- date
20500	Layer	Demolition deposit			0.54	
20501	Layer	Alluvium: mid greyish brown silty clay				

TP208

No.	Type	Description	Length	Width	Depth	Spot-
			(m)	(m)	(m)	date
20800	Layer	Demolition deposit			0.4	
20801	Masonry	Northwest-southeast brick wall	>3.12	>0.18	0.77	
20802	Masonry	Northwest-southeast stone wall	>3.12	>0.45	>0.8	
20803	Layer	Alluvium			0.83	
20804	Layer	Natural substrate: gravel				

TP217

No.	Type	Description	Length (m)	Width (m)	Depth (m)	Spot- date
21700	Layer	Make-up deposit			0.58	
21701	Layer	Alluvium			1.19	
21702	Layer	Natural substrate: gravel			0.13	
21703	Layer	Natural substrate: sand				

TP218

No.	Туре	Description	Length	Width	Depth	Spot-
			(m)	(m)	(m)	date
21800	Layer	Make-up deposit			0.73	
21801	Layer	Alluvium			0.92	
21802	Layer	Natural substrate: sand			0.13	

TP219

No.	Type	Description	Length (m)	Width (m)	Depth (m)	Spot- date
21900	Layer	Demolition deposit			0.12	
21901	Layer	Make-up deposit				

TP220

No.	Type	Description	Length (m)	Width (m)	Depth (m)	Spot- date
22000	Layer	Demolition deposit		•	0.46	
22001	Layer	Make-up deposit				

TP221

No.	Туре	Description	Length (m)	Width (m)	Depth (m)	Spot- date
22100	Layer	Modern gravel (backfill of REM 3)			0.3	
22101	Layer	Demolition deposit			0.73	
22102	Layer	Alluvium				

APPENDIX B: LEVELS OF PRINCIPAL DEPOSITS AND STRUCTURES

Levels are expressed as metres below current ground level and as metres Above Ordnance Datum (AOD), calculated using a GPS Rover Station.

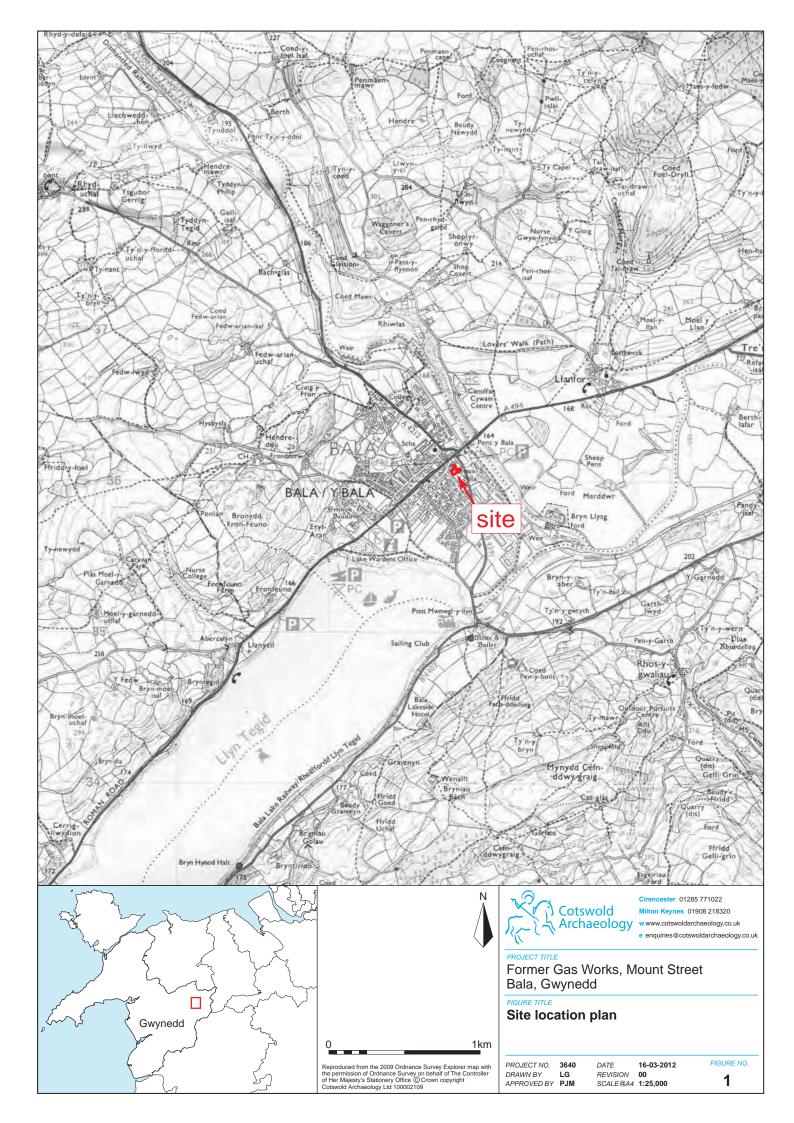
	REM 1	REM 2	REM 3
Current ground level	0.00m	0.00m (164.87m)	0.00m
	(164.53m)	(104.67111)	(164.91m)
Top of Gas works	0.26m	0.28m	0.28m
structures	(164.27m)	(164.59m)	(164.63m)
Top of alluvium	1.19m	1.2m	0.5m
	(163.34m)	(163.67m)	(164.41m)
Limit of excavation	2.00m	2.50m	3.17m
	(162.53m)	(162.37m)	(161.74m)

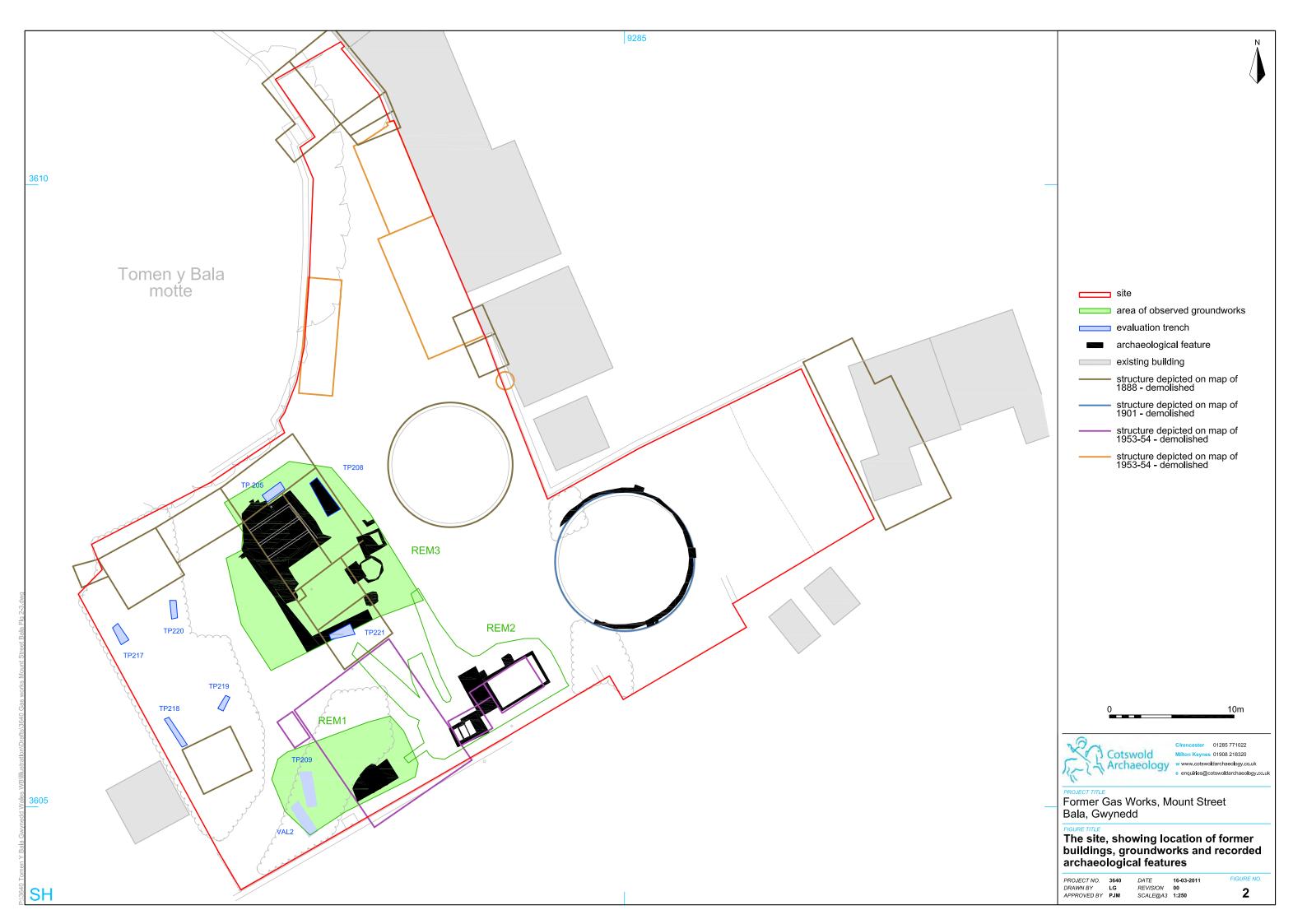
Upper figures are depth below modern ground level; lower figures in parentheses are metres AOD.

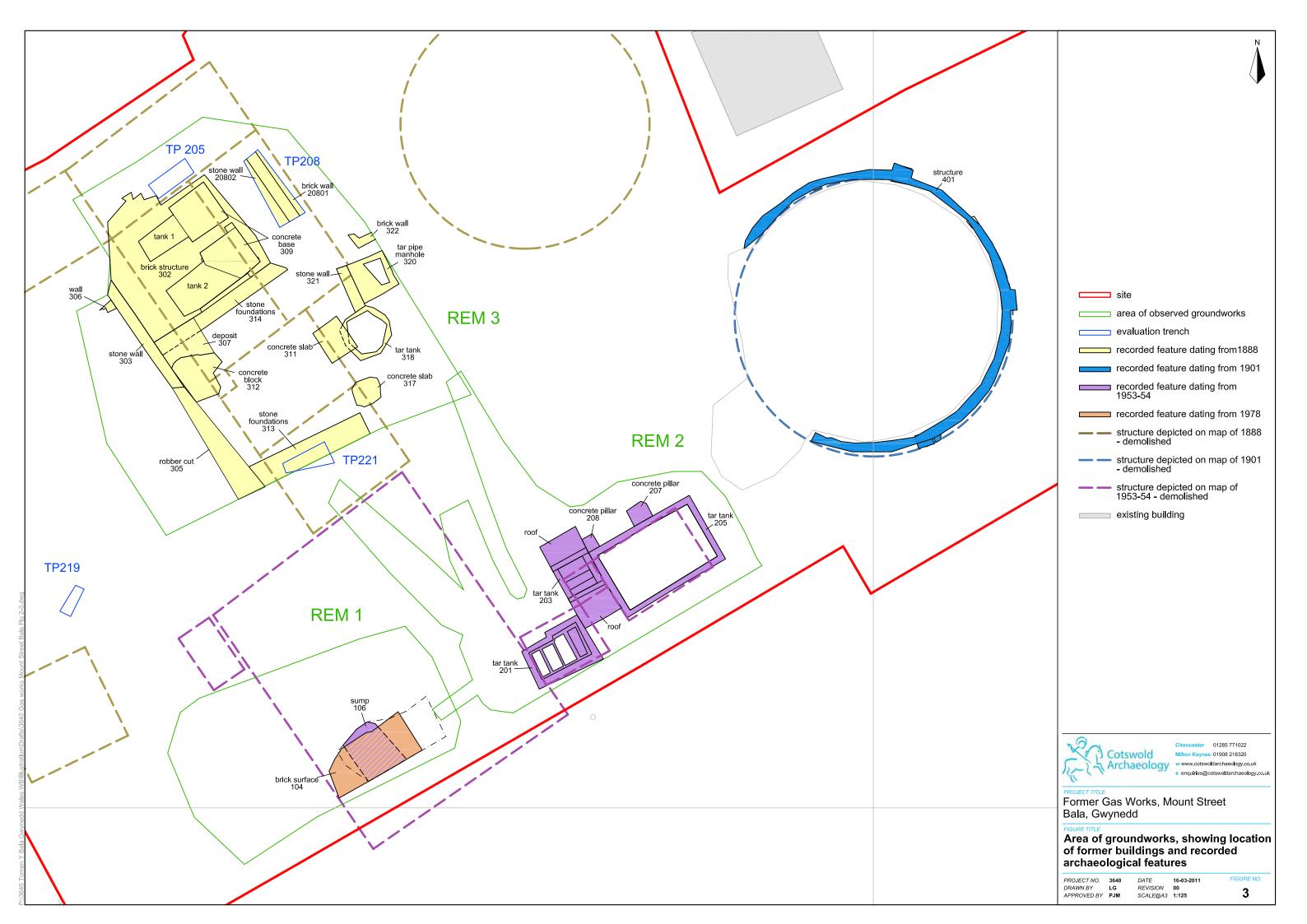
APPENDIX C: OASIS REPORT FORM

Project Name	Former Gas Works, Mount Street, Bala, Gwynedd			
Short description	An archaeological watching brief was undertaken by Cotswold Archaeology during groundworks associated with environmental improvement works (remediation) at the Former Gas Works, Mount Street, Bala, Gwynedd. The watching brief identified a number of brick walls, tar tanks and other industrial features which relate to the former gas works. These features correspond closely to the cartographic evidence from 1888 to 1981 showing the former gas works structures, including the retort and tar pits.			
Project dates	9-31 January 2012	9-31 January 2012		
Project type	Watching Brief			
Previous work	2010 WSP and CA geotechnical works/archaeological watching brief.			
Future work	Unknown			
PROJECT LOCATION				
Site Location	Former Gas Works, Mount Street, Bala, Gwynedd			
Study area (M ² /ha)	0.2ha			
Site co-ordinates	SH 9284 3608			
PROJECT CREATORS				
Name of organisation	Cotswold Archaeology			
Project Brief originator	Snowdonia National Park Authority			
Project Design (WSI) originator	Cotswold Archaeology			
Project Manager	Richard Young			
Project Supervisor	Sian Reynish			
MONUMENT TYPE	Industrial gas works			
SIGNIFICANT FINDS	None			
PROJECT ARCHIVES	Intended final location of archive	Content		
Physical	N/A	N/A		
Paper	Gwynedd Museum	Trench sheets, context sheets, drawn elevations and plan, photographic registers and annotated developers plans.		
Digital	Gwynedd Museum	Digital plan and digital photos.		

CA (Cotswold Archaeology) 2012 Former Gas Works, Mount Street, Bala, Gwynedd: Archaeological Watching Brief. CA typescript report **12043**















- 4 Brick surface 104, looking west. (Scales 1m)
- Section of brick surface 104 and sump 106, looking south. (Scale 1m)
- 6 Tar tank 201, looking south-west. (Scale 1m)
- 7 Tar tank 203, with tar tank 206 to left and tar tank 201 to right.



Former Gas Works, Mount Street Bala, Gwynedd

Photographs

4-7









- 8 Tar tank 206, looking south-west. (Scale 1m)
- 9 Brick structure 302 and tanks, looking north-east. (Scales 1m)
- 10 Stone wall 303, looking north-east. (Scales 1m)
- 11 Tar tank 318, looking north-east. (Scale 1m)



Former Gas Works, Mount Street Bala, Gwynedd

Photographs

8-11





- 12 Tar tank 318 and tar pipe manhole 320, looking south-east. (Scales 1m)
- 13 Structure 401, looking north. (Scales 1m)



Cirencester 01285 771022 Milton Keynes 01908 218320 w www.cotswoldarchaeology.co.uk

Former Gas Works, Mount Street Bala, Gwynedd

FIGURE TITLE Photographs

DATE 16-03-2012
REVISION 00
SCALE@A4 N/A PROJECT NO. 3640 DRAWN BY LG APPROVED BY PJM

FIGURE NO. 12&13