

CPAT Report No. 1529

The Leete, Loggerheads Country Park




Archaeological Excavation



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Client name: Denbighshire Countryside Service
 CPAT Project No: 2233
 Project Name: Leete, Loggerheads
 Grid Reference: SJ 19310 63303
 County/LPA: Flintshire
 Planning Application: N/A
 CPAT Report No: 1529
 Event PRN: 140201
 Report status: Final
 Confidential: No

Prepared by:	Checked by:	Approved by:
		
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05/10/2017	06/10/2017	06/10/2017

Bibliographic reference: Hankinson, R., 2017. *The Leete, Loggerheads Country Park: Archaeological Excavation*, Unpublished CPAT report No 1529.



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Summary

An excavation was carried out by the Clwyd-Powys Archaeological Trust on the course of 'The Leete', an artificial watercourse (leat) constructed in the 1820s, in the Loggerheads Country Park, near Mold. The work was carried out on behalf of Denbighshire Countryside Service and with funding from Natural Resources Wales as part of the 'Active Alyn' project.

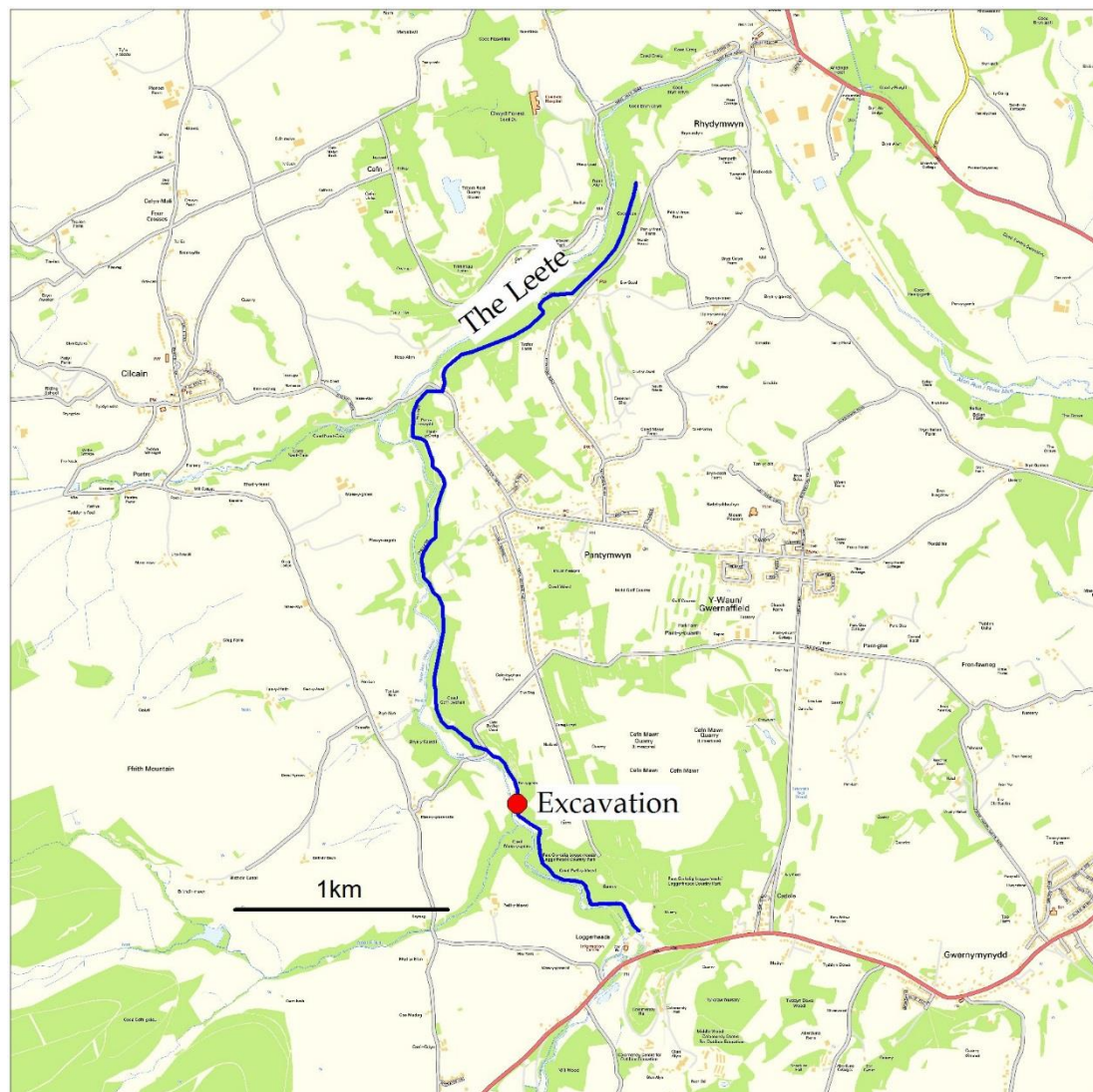
Documentary sources reveal that the leat ran for approximately 3 miles from Loggerheads to the dressing floors at the Pen-y-fron mine, near Rhydymwyn, and formed one of a number of constructions undertaken by the Mold Mines company under the direction of their mining engineer, John Taylor. It was necessary owing to the unreliability of the River Alyn which, depending on the seasonal weather, loses part or all of its flow between Loggerheads and Pen-y-fron to swallow holes in the limestone bedrock. The watercourse appears to have been abandoned in the later 1830s when the mines ceased operation.

The excavation took place at NGR SJ 19310 63303 and showed that this part of the route had first been terraced into the east side of the Alyn valley, with the leat being defined by the rock scarp that had been left on its eastern side and a retaining wall constructed to its west. Within these bounds, the watercourse itself was 2.6m wide and 0.5m deep, with a waterproof lining of puddled clay. Wet weather at the time of the excavation demonstrated that this part of the leat was still capable of functioning as it was intended, though it no longer takes water from the River Alyn.

The Leete path is popular with visitors to the Loggerheads Country Park and the excavation provided an opportunity to involve members of the public with the excavation and explain the origin and function of this important feature of the mining heritage of the district. Over the course of the four days on site, a total of 121 visitors and local residents were engaged in discussion regarding the work that was carried out.

1 Introduction

- 1.1. The Clwyd-Powys Archaeological Trust was invited by Denbighshire Countryside Service to undertake an archaeological excavation across the line of 'The Leete', a former artificial watercourse (leat) within the Loggerheads Country Park which is now used as a footpath. The work was funded by Natural Resources Wales as part of the 'Active Alyn' project.



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Fig. 1 The course of the Leete showing the location excavated

- 1.2. The excavation comprised a single trench across the watercourse, sited at NGR SJ 19310 63303. It was positioned to include a section of extant stone walling that appears to have been built to support the lower side of the channel where it crosses a steep slope above the River Alyn. Close by, to the south, a section of wall forms a stone revetment leading down to the bank of the river.
- 1.3. The excavation was carried out over four days from 11-14 September 2017 and this report compiled at the beginning of October.

2 Archaeological Background

- 2.1. The Leete was constructed under the direction of John Taylor, the mining engineer responsible for managing the Mold Mines enterprise from 1823. It is believed that much of the early expenditure of the company went towards obtaining reliable water supplies and power for the drainage of their workings. The Leete forms one of their earliest and more significant efforts in this regard, having been already begun before the beginning of January 1824, when it was recorded as a 'new watercourse' on a plan of that date.
- 2.2. The leat ran from just downstream of Loggerheads to the dressing floor at the Pen-y-fron mine near Rhydymwyn, a distance of approximately 3 miles (see Figs. 1 and 2). Its primary function was to tap into the more reliable flow of the Alyn, upstream of the point where the river passes over an area of limestone bedrock to the north of Loggerheads. The difficulties in using river water downstream of Loggerheads can be readily appreciated in the summer months when sections of the river bed here are often dry, owing to water sinking into the limestone via a number of swallow holes. Once the water had passed through the dressing floor, it was most probably reused to power a water wheel operating a pump in one of the shafts at Pen-y-fron.

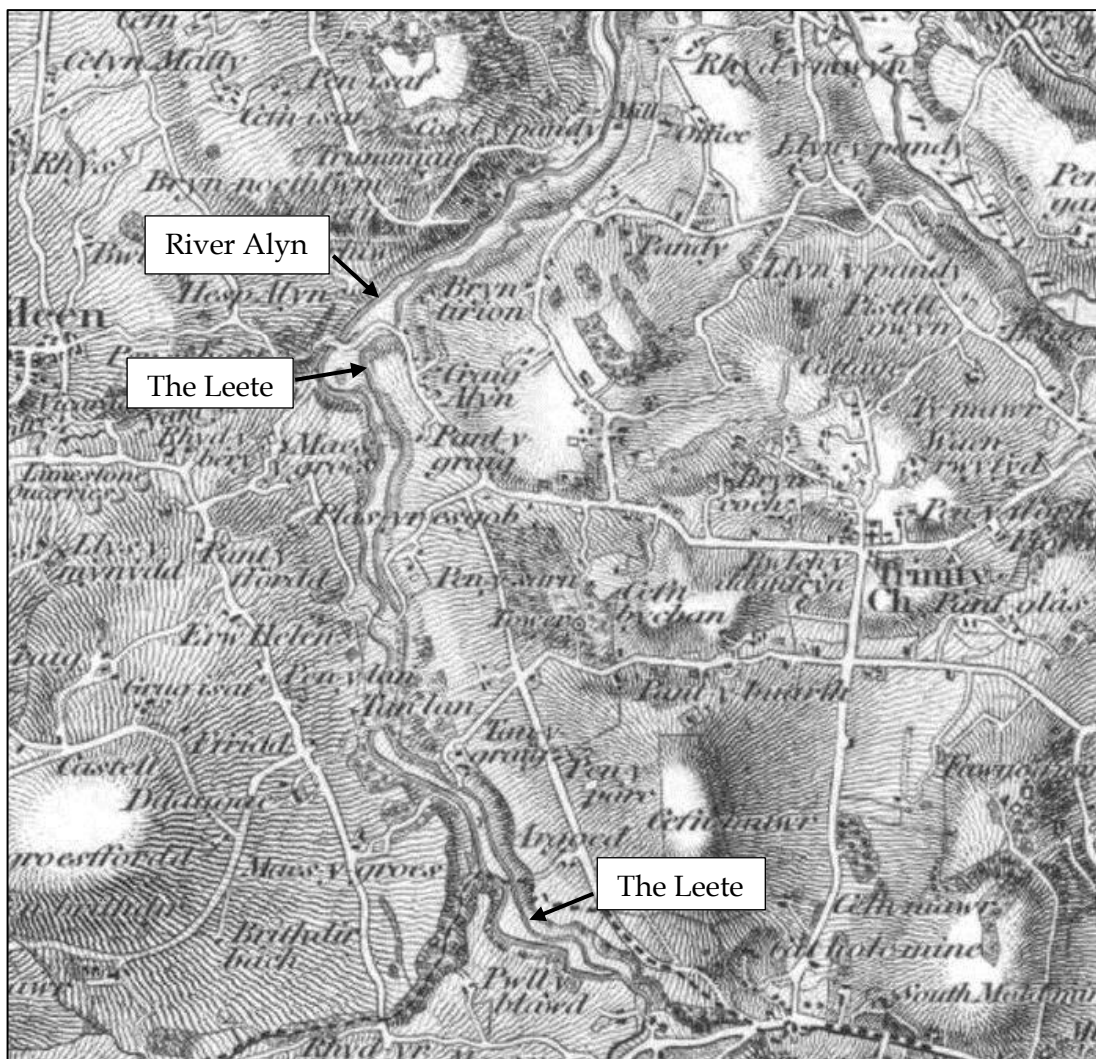


Fig. 2: The 1840 Ordnance Survey 1 inch: 1 mile map

- 2.3. Pen-y-fron mine was subsequently linked underground to the Rhydymwyn mine, but despite the best efforts of the Mold Mines company this was a relatively short-lived enterprise and work ceased in 1837.
- 2.4. All of the information in this section is derived from Williams 1979/80.

3 Excavation

- 3.1. The siting of the excavation was subject to a number of factors, including natural environment constraints relating to the Alyn Valley Woods Special Area of Conservation (SAC), through which this section of the Leete passes. The location finally selected was chosen by Fiona Gale, the Denbighshire County Archaeologist, as being the most representative of the general appearance of the watercourse.

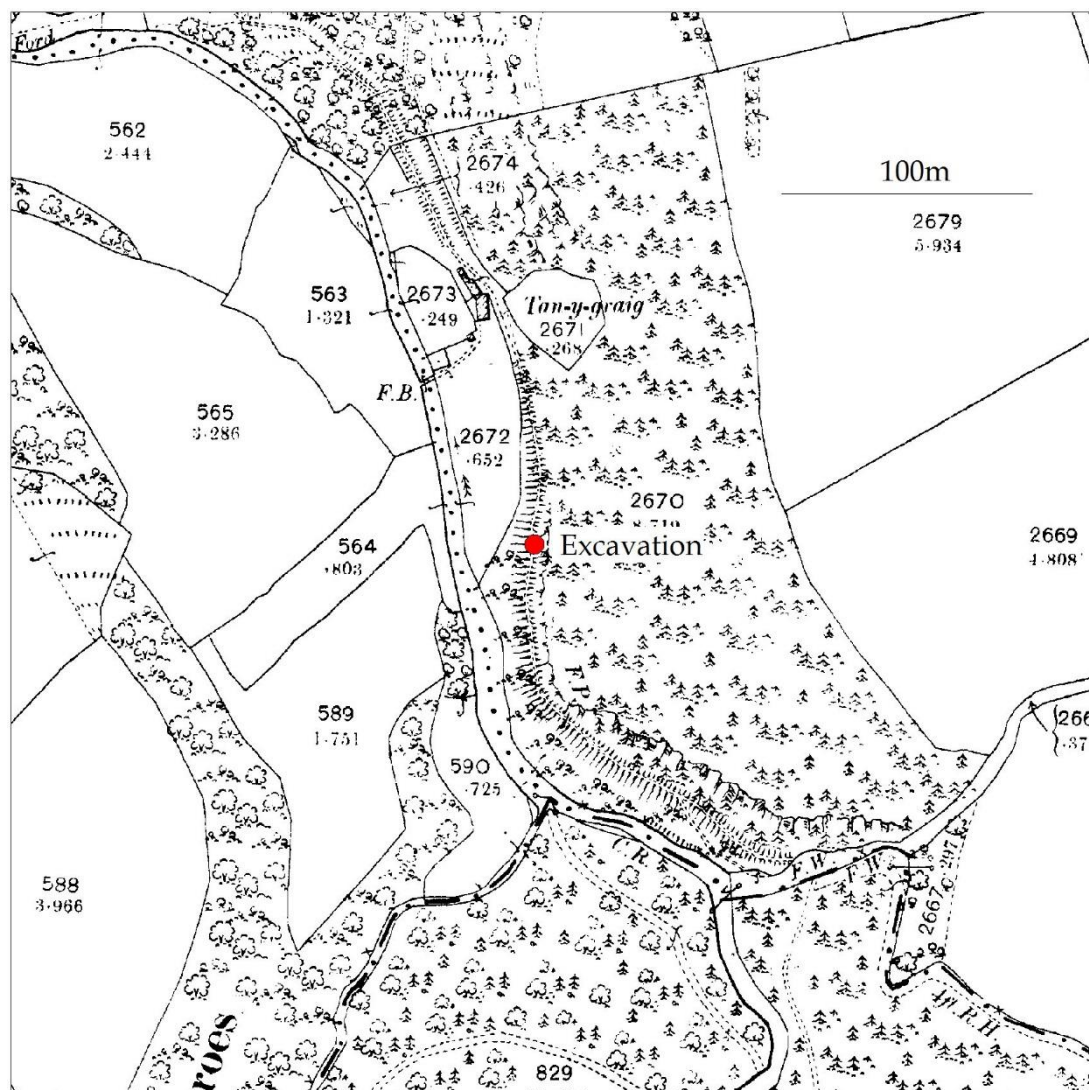


Fig. 3: 1899 Ordnance Survey 1:2500 map (Flintshire 13.10)

- 3.2. Visual examination of the site at the excavation location demonstrated that it lay on what appeared to be a rock-cut shelf, terraced into the west-facing hillslope above the River Alyn to a depth of perhaps 5m, though this varies depending on the local topography. The excavation was essentially non-destructive, with work being

limited to the removal of later fills down to the clay lining that had been put in place when the watercourse was constructed. In the text that follows the numbers in brackets relate to the contexts given to features recorded during the excavation, as depicted on Fig. 5.

- 3.3. A rock-cut scarp formed the east side of the excavation, where the original slope had been quarried to create a terrace. It seemed most likely that stone from this work was then utilised to create the retaining wall (6), averaging 1.5m wide, that defined the west side of the watercourse; this was left in-situ.



Fig. 4: The watercourse as excavated with the retaining wall in the foreground and the rock-cut scarp in the background, from the west. Photo CPAT 4398-0010

- 3.4. The base of the feature appeared to have been constructed using orange gravelly silt (5) on the west and grey-brown silt (8) on the east to create a shallow and broadly V-shaped linear gully. It seems likely that the two layers represent a single event with the variation owing to these being topsoil and subsoils that were removed early in the terracing process and stored for later reuse. These soils would not have been able to hold water, so orange-yellow puddled clay (4) was used to provide a waterproof lining, giving rise to a conduit (7), measuring up to 2.6m wide and 0.5m deep. A single fragment of clay pipe was revealed in the surface of the puddled clay.
- 3.5. After the watercourse was abandoned, it appears to have become gradually filled with a layer of grey-brown stony silt (3), up to 0.25m thick, containing a large proportion of limestone fragments. Fragments of a 'Codd'-type bottle, made for a business in Mold, were found in this layer of fill, indicating that the upper part, at least, post-dates 1872, when this type of glass container was invented. Overlying layer 3 was a very loose layer of dark grey-brown loamy silt (2), up to 0.25m thick, which had formed a thicker accumulation on the east side and therefore clearly represented detritus from the forest floor upslope. A thin layer of grey gravel (1)

covered the layers on the west side of the trench and seemed to have been material of relatively recent origin used to level the footpath.

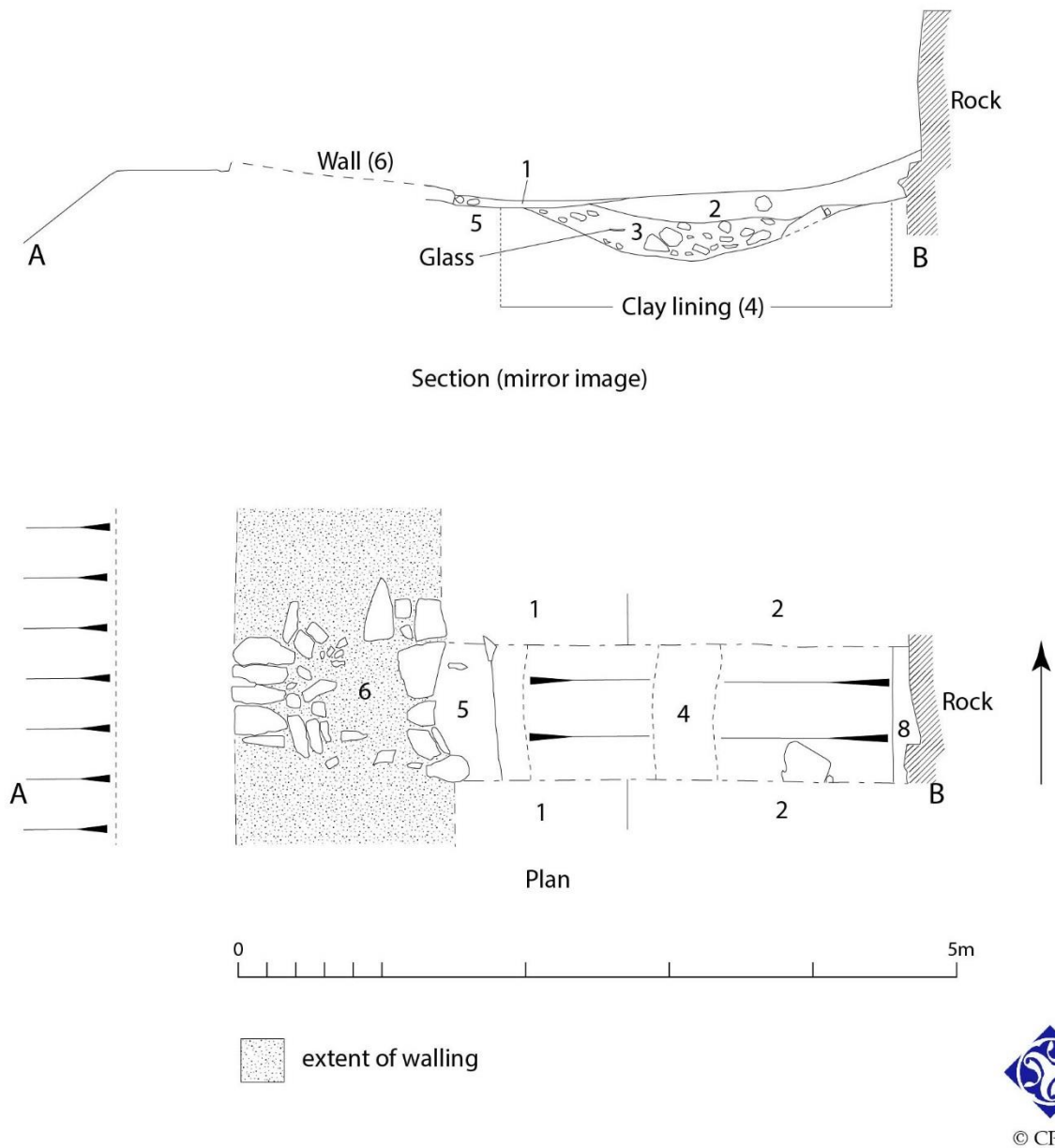


Fig. 5: Plan and section of the excavation trench

- 3.6. Heavy rain during the final phase of work led to the trench becoming flooded and clearly showed that the waterproof clay lining of the leat was still capable of fulfilling its original function (see Fig. 6).



Fig. 6: The waterlogged trench clearly demonstrating that the waterproof lining of the leat was still functioning, from the north. Photo CPAT 4398-0020

4 Conclusions

- 4.1. The excavations have provided the required information on the methods and materials that were used when The Leete was constructed in the 1820s. The section of the leat that was examined revealed a conduit 2.6m wide and 0.5m deep with a puddled clay lining. It is apparent that this waterproof layer is still functioning as it was originally intended.
- 4.2. The Leete is a popular path with visitors to the Loggerheads Country Park and the excavation provided an opportunity to involve members of the public with the work and explain the origin and function of this important feature of the mining heritage of the district. Over the course of four days of excavation, a total of 121 visitors and local residents were engaged in discussion regarding the site.

5 Acknowledgements

- 5.1. The writer would like to thank the staff of Denbighshire Countryside Service for their help and assistance with the work, and particularly Fiona Gale, the Denbighshire County Archaeologist. CPAT would also like to thank Richard May of Natural Resources Wales for the relevant permission to work in the Alyn Valley Woods SAC.

6 Sources

Written

Williams, C. J., 1979/80. 'The Lead Mines of the Alyn Valley', *Flintshire Historical Society Journal*, 29, 51-87.

Cartographic

1834 Ordnance Surveyors Drawing No 341

1840 Ordnance Survey 1 inch: 1 mile map, Sheet 79

1872 Ordnance Survey 1:2500 first edition map Flintshire 13.02

1872 Ordnance Survey 1:2500 first edition map Flintshire 13.06

1879 Ordnance Survey 1:2500 first edition map Flintshire 13.10

1899 Ordnance Survey 1:2500 second edition map Flintshire 13.02

1899 Ordnance Survey 1:2500 second edition map Flintshire 13.06

1899 Ordnance Survey 1:2500 second edition map Flintshire 13.10

7 Archive deposition Statement

- 7.1. The project archive has been prepared according to the CPAT Archive Policy and in line with the CIfA *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives guidance* (2014). The digital archive only will be deposited with the Historic Environment Record, Clwyd-Powys Archaeological Trust and the paper/drawn/digital archive with the National Monuments Record (RCAHMW). No artefacts were retained. A summary of the archive is provided in Appendix 1.

8 Site Archive

CPAT Event PRN: 140201

22 digital photographs, CPAT film No 4398

2 A4 site drawings

8 context record forms

Finds (not retained)

Context 3

10 fragments of a single glass 'Codd'-type bottle, made for a business in Mold.

Context 4

1 fragment of clay pipe stem