Frongoch Lead & Zinc Mine, Pontrhydygroes, Ceredigion.

- Ground Investigation Works -

Archaeological Watching Brief

By

Richard Scott Jones *(BA, MA, MCIfA)*

November 2022

HRS Wales
Report No: 258

DAT Event No.129649

ARCHAEOLOGICAL WATCHING BRIEF

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- Ground Investigation Works -

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Prepared for:

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On behalf of:

The Coal Authority

Date: November 2022

HRSW Report No: 258

*DAT Event No.*129649

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Non Technical Summary

The following report presents the results of an Archaeological Watching Brief during ground investigation works at the Frongoch Lead & Zinc Mine / Wemyss Lead & Zinc Mine– Williams Shaft, Pontrhydygroes, Ceredigion (centered on OS grid reference SN 72066 74424), in advance of and to inform water treatment works.

The specific objective of this work was to undertake an archaeological watching brief during all investigative groundwork for the cutting of four (4) machine dug trial trenches around the scheduled area of the Williams Shaft at the Frongoch Lead Mine.

In summary, the archaeological watching brief during groundwork investigation works in the investigative area surrounding the William's Shaft at the Frongoch Lead & Zinc Mine managed to establish the character of the below ground surface in the targeted areas. Of the four (4) machine dug trial trenches, only one of the trenches exposed a fairly significant amount of ground water at a depth of approximately 1.70m below the surface. An earth bank directly in front of the William's Shaft on the SW side was very likely put here at some time in the past to help direct water away from the shaft. However the excavation of Trench 18 shows that water is percolating through the mine deposits around the shaft, taking with it particles of Iron (Fe) and very likely Zinc (Zn) as well. Other than natural mudstone, all other deposits encountered in the trial trenches were sequential deposits of mining waste. The deepest mining deposits were found in Trench 17, positioned to the SW of the William's Shaft, wherein, mine waste was still continuing even at a depth of 3.60m.

No dateable finds or features other than mining waste were recovered from any of the trial trenches.

Crynodeb Annhechnegol

Mae'r adroddiad a ganlyn yn cyflwyno canlyniadau Briff Gwylio Archaeolegol yn ystod gwaith archwilio tir ym Mwynglawdd Plwm a Sinc Frongoch / Mwynglawdd Plwm a Sinc Wemyss – Siafft Williams, Pontrhydygroes, Ceredigion (yn canolbwyntio ar gyfeirnod grid OS SN 72066 74424), cyn ac hysbysu gwaith trin dŵr.

Amcan penodol y gwaith hwn oedd cynnal brîff gwylio archaeolegol yn ystod yr holl waith ymchwiliol ar gyfer torri pedair (4) ffos dreial a gloddiwyd â pheiriant o amgylch ardal gofrestredig Siafft Williams ym Mwynglawdd Plwm Frongoch.

I grynhoi, llwyddodd y briff gwylio archeolegol yn ystod gwaith ymchwilio i'r ddaear yn yr ardal ymchwiliol o amgylch Siafft William yng Ngwaith Plwm a Sinc Frongoch i sefydlu cymeriad yr arwyneb o dan y ddaear yn yr ardaloedd a dargedwyd. O'r pedair (4) ffos brawf a gloddiwyd â pheiriant, dim ond un o'r ffosydd a ddatgelodd swm eithaf sylweddol o ddŵr daear ar ddyfnder o tua 1.70m o dan yr wyneb. Mae'n debygol iawn bod clawdd pridd yn union o flaen Siafft William ar yr ochr dde-orllewinol wedi'i roi yma rywbryd yn y gorffennol i helpu i gyfeirio dŵr oddi wrth y siafft. Fodd bynnag, mae gwaith cloddio Ffos 18 yn dangos bod dŵr yn trylifo drwy'r dyddodion mwyngloddio o amgylch y siafft, gan fynd â gronynnau o Haearn (Fe) a Sinc (Zn) tebygol iawn hefyd. Heblaw am garreg laid naturiol, roedd yr holl ddyddodion eraill y daethpwyd ar eu traws yn y ffosydd prawf yn ddyddodion dilyniannol o wastraff mwyngloddio. Daethpwyd o hyd i'r dyddodion

mwyngloddio dyfnaf yn Ffos 17, wedi'i lleoli i'r De-orllewin o Siafft William, lle'r oedd gwastraff mwyngloddio yn parhau hyd yn oed ar ddyfnder o 3.60m.

Ni adenillwyd unrhyw ddarganfyddiadau na nodweddion dyddiadwy ar wahân i wastraff mwyngloddio o unrhyw un o'r ffosydd prawf.

1 Introduction

1.1 The following report presents the results of an Archaeological Watching Brief during ground investigation works at the Frongoch Lead & Zinc Mine / Wemyss Lead & Zinc Mine– Williams Shaft, Pontrhydygroes, Ceredigion (centered on OS grid reference SN 72066 74424), in advance of and to inform water treatment works.

1.2 The specific objective of this work was to:

- Undertake an archaeological watching brief during all investigative groundwork for the cutting of four (4) machine dug trial trenches around the scheduled area of the Williams Shaft at the Frongoch Lead Mine

1.3 The Technical Appendices for this report contains the following information:

Appendix I: Figures;
Appendix II: Photographs
Appendix IV: Archive Cover Sheet

Site Location & Description *(see Figures 1 - 4)*

1.4 The Frongoch Lead & Zinc Mine is near the village of Pont-rhyd-y-groes, Ceredigion, and covers approximately 11 hectares. The mine produced lead and zinc ore from the late 1700s until the early 1900s, when it fell into disuse. From 1924 to 1930 the vast waste dumps were reworked to reclaim zinc and lead that had once been deemed uneconomical to recover. The mine is connected to nearby Wemyss Mine which worked the same mineral vein (The Frongoch Lode). The site is privately owned and has in recent years been used as a saw mill and is presently used for the storage of car parts.

1.5 The abandoned Wemyss Mine is located at the head of the Cwmnewydion valley, a tributary of the River Magwr, which joins the River Ystwyth at Abermagwr. The mine worked the Frongoch mineral lode alongside Frongoch and Graig Goch mines. Wemyss became an integral part of the larger Frongoch Mine and cannot be considered in isolation from its more illustrious neighbour. In the 1840s both mines came under the same ownership and the Wemyss drainage adit was extended to also serve the Frongoch workings, becoming the Frongoch Adit we know today.

1.6 The mines continued to be operated together with varying success throughout the latter half of the 19th century until they were acquired by the Belgian company *'Société Anonyme Miniére'* in 1898. The Belgians invested heavily in modernising and electrifying the mining operations, which included constructing a state-of-the-art hydro-electric power station at Pont Ceunant and a large ore dressing mill at Wemyss. However, the venture was short-lived and by 1904 the company were in liquidation and all of the mine's machinery and effects were sold at auction.

1.7 Today, the Wemyss site is dominated by the ruins of the dressing mill and its large spoil tips which are bordered to the south by the Cwmnewydion Stream and to the west by the smaller Mill Race Stream. There are also the remains of the wheel pit for a 56-foot waterwheel, which was fed by a leat from Frongoch.

1.8 Both the Frongoch and Wemyss Mines are a major source of metals pollution, causing a chemical and ecological impact on downstream watercourses. The mines are the primary cause of the Frongoch Stream, Nant Cell, Nant Cwmnewydion and River Magwr failing to achieve the environmental quality standards for zinc, lead and cadmium required by the European Water Framework Directive (WFD). They are also a major source of zinc to the River Ystwyth, contributing to its failure of WFD standards. Fish population surveys carried out on the Nant Cwmnewydion showed the stream to be virtually fishless downstream of the Frongoch Adit to its confluence with the Magwr. The Nant Cell was also shown to be devoid of fish above its confluence with the River Ystwyth.

Background Information

1.9 Abandoned metal mines are the principal cause of failure to achieve Water Framework Directive (WFD) standards in Wales and drainage from underground workings, together with leaching and erosion of waste dumps are the major sources causing zinc, lead and cadmium failures.

1.10 In March 2011 Natural Resources Wales (NRW) diverted the Frongoch Stream to prevent it flowing into the mine and thus reduce the amount of contaminated water discharging from the Frongoch Adit into the Nant Cwmnewydion. This work was funded by the Welsh Government's Contaminated Land Capital Fund. The flow from the adit reduced by approximately 80% and metal loads by approximately 50% after the stream diversion, making future treatment of this discharge more feasible. This work also increased dilution of metals in the Frongoch Stream and Nant Cell, causing zinc concentrations to reduce by over 70%.

1.11 In January 2013 NRW started work on a project to further reduce pollution from the mine. The project was partly funded by the European Regional Development Fund, provided through the Welsh Government, and was delivered with technical support from the Coal Authority. The aim was to prevent rain and surface water from coming into contact with the contaminated mine waste, thus reducing the amount of metals being mobilised and entering the Frongoch Stream.

1.12 The first phase of the project, completed in 2013, involved the construction of a channel around the mine, directing surface water to a lined pond. This reduced the amount of water flowing through the mine waste and controlled the amount of water leaving the site, reducing the risk of flooding downstream.

1.13 In the second and final phase, the waste dumps were re-shaped and capped with clay and soils to prevent water ingress and to encourage re-vegetation. We also built channels to carry the clean surface water into a series of ponds, creating a wetland habitat. The works were designed to be sympathetic to the extensive archaeological remains present at the mine, to preserve its heritage

value for future generations. Dyfed Archaeological Trust carried out investigations at the site and recorded the features discovered during excavation of the mine waste.

1.14 The project was completed in June 2015 and we are currently monitoring its effectiveness. Early results have been encouraging with further reduction in metal concentrations, despite the wettest winter on record in Wales.

1.15 In order to design a suitable treatment system NRW are seeking a methodology to compile a longer term metal mines remediation programme across Wales as a whole. The programme will identify potential annual progression of sites towards remediation over the next fifteen years, incorporating checks at critical decision points to ensure only sites which are technically feasible and pass cost benefit assessments progress.

Development Proposals

1.16 To further inform the design making process a program of ground investigation works was to be undertaken at the Frongoch and Wemyss Mines This program of works for this phase entails the excavation by machine of four (4) trial pits immediately north, northeast, west and southwest of the Williams Shaft surrounding the Hirnant Tips (see attached plan).

1.17 These investigations are to confirm the nature of the material in these areas and to inform any remedial options.

1.18 Machine excavated Trial trenches are to be a maximum of 3 meters in depth and approximately 4m in length and 2m in width. Each trench will be excavated to rockhead. These trial trenches will not undermine any adjacent slopes, tracks or other features. Trial trenches are to be reinstated to match existing levels and finish upon completion. The excavation of each of trenches will be supervised under archaeological watching brief conditions.

Historical Background *(see Figures 5 - 7)*

1.19 Frongoch Lead Mine is an extensive and important lead mine complex, first recorded in 1759 and last noted as a potential going concern in 1903. It was supplied with water for power and processing purposes from at least five reservoirs in the late nineteenth century: Pond Rhos-rhydd (SN 7045 7595), 2.3km to the north west of the mine, with Pond Glan-dwgan (SN 7070 7515) adjacent to its south; Llyn Frongoch (NPRN 32235; SN 7215 7535), 1km north of the mine, with the subsidiary Blaen Pentre Pool (SN 7235 7487) adjacent to its south; and Ty'n-y-bwlch Pool (SN 7285 7470), some 800m to the north east of the mine.

1.20 In 1899 a Belgian firm, the *Societe Anonyme Metallurgique*, of Liege, took over Frongoch Mine and set about installing new electrically-driven plant. Power was supplied by a Pelton wheel and steam engine in a power house (NPRN 407230) adjacent to the road about 1.6km to the west. A five level

dressing mill (NPRN 33870) was built on the (by then) closed Wemyss Mine (NPRN 33907) and this was served by a 700m-long tramway from Frongoch.

1.21 The Wemyss mine was a lead and zinc mine which operated in conjunction with Frongoch Mine (NPRN 302), working the Frongoch lode intermittently from 1861 to 1899, together with West Frongoch. In 1899 a dressing mill (NPRN 33870) was built on the site to process ore from Frongoch Mine. A fine wheelpit and remains of the dressing mill survive.

Archaeological Background

1.22 In April 2022 an archaeological watching brief was undertaken by HRS Wales as part of the same Phase 1 works at the Frongoch Lead Mine. These works entailed the excavation of ten (10) machine dug trial trenches, six (6) infiltration test pits and six (6) hand excavated trial pits. The excavation of the current proposed trial trenches was not available at the time due to access and other issues.

1.23 In summary, the archaeological watching brief undertaken in April 2022, during groundwork investigation works in the investigative area at the Frongoch Lead & Zinc Mine, managed to establish the character of the below ground surface in the targeted areas. Of the ten (10) machine dug trial trenches, four of the trenches managed to locate the remains of the 19th Century mining leat as marked on the OS first edition map of 1887. Although the leat appeared to have been rock-cut, particularly in the area of the gorse bushes, the excavation did reveal that it appears that the leat may have been lined with peat, which may have helped seal the leat slightly, rather lined with clay, or else a timber built leat was used. No further dateable features or finds were recovered from any of the machine dug trenches, other than from Trial Trench No.16, where 20th Century waste material in the form of plastic and ironwork reached a depth of at least 2.8m directly at the base of the Hirnant Tips. No dateable finds and features were recovered from any of the hand dug trial pits which all revealed geology of sandy gravel and grit overlying a natural sedimentary shale (*see HRSW Rep 251)*.

Geology

1.24 The geology of the area falls within the Undifferentiated Llandovery Rocks consisting of Mudstone, Siltstone and Sandstone.

2 Aims & Objectives

2.1 The aims of the watching brief, as defined by the CIfA (2014) were to:

- Allow a rapid investigation and recording of any archaeological features that are uncovered during the proposed groundwork.

- Provide the opportunity, if needed, for the watching archaeologist to signal to all interested parties, before the destruction of the material in question, that an archaeological find has been made for which the resources allocated to the watching brief are not sufficient to support the treatment to a satisfactory or proper standard.

3 Methodology

Watching Brief

3.1 The archaeological watching brief was undertaken by HRS Wales staff using current best practice from 2nd November 2022.

3.2 All work was carried out by a suitably qualified archaeologist with relevant level membership of the Chartered Institute for Archaeologists (CI*f*A) and followed the CI*f*A Standard and Guidance for an archaeological watching brief (CI*f*A 2014).

3.3 All proposed groundwork was undertaken under close and constant archaeological supervision. All the machine dug groundwork undertaken by the contractor was done using a mechanical digger with a toothless grading bucket.

3.4 All archaeological deposits or features when encountered were investigated and recorded. All finds recovered during the watching brief were to be bagged and a grid coordinate was taken using a handheld GPS device in order to locate the find-spot with the OS national grid.

3.5 Any recording required was to be carried out using HRS Wales recording systems (pro-forma context sheets etc), using a continuous number sequence for all contexts.

3.6 Where considered necessary plans and sections were drawn to a scale of 1:50, 1:20 and 1:10 as required and related to Ordnance Survey datum and published boundaries where appropriate.

3.7 All features identified were tied in to both the OS National Grid and all local site and ground plans.

3.8 Photographs were appropriated in digital format, using a 24 mega-pixel DSLR camera in RAW format, to be exported later to TIFF format.

4 Results of Watching Brief

4.1 The archaeological watching brief was undertaken over a period one day on the 2nd November 2022.

4.2 Groundwork entailed the excavation by machine of four (4) trial trenches Around the Williams shaft, just south of the public highway.

4.3 All number enclosed in ( ) refer to contexts encountered.

4.4 ***Trial Trench 17 (Machine Dug)***

4.5 Trial Trench 17 was positioned approximately 30m southwest of the William's Shaft in an area devoid of gorse. The final trench measured approximately 3m x 0.90m and was aligned NW-SE and reached a maximum depth of 3.80m. Once the turf/top soil had been removed (100) a sub deposit of pale orange dry grit became exposed (101). This deposit was approximately 0.10 – 0.15m in depth. Below this deposit was a mid orange/brown stony grit intermixed with dry earth (102). This deposit

was approximately 0.20m in depth. Directly below this was a pale orange grit intermixed with grey clay. This deposit was approximately 0.30 – 0.40m in depth (103). However, the orange colour of this deposit was likely a consequence of the above deposit containing iron (Fe) which had leached through the deposit. As such, this deposit is very likely the same as the deposit below (104). Below (103) was a light grey grit and mudstone deposit intermixed with a light grey clay. This deposit was approximately 0.25m in depth. Directly below this deposit was a natural grey mudstone to the base of the trench (105), No dateable finds or features were recovered or became exposed within this trench. All of the deposits lying over the natural mudstone were mine waste.

4.6 ***Trial Trench 18 (Machine Dug)***

4.7 Trial Trench 18 was positioned approximately 30m west of the William's Shaft in an area dense gorse at the base of the southern slope adjacent to the road and just north of an earth bank that appears to form an arc on the west side of the Williams shaft, the bank seemingly positioned to help guide water away from the Williams Shaft. The final trench measured approximately 2m x 0.90m and was aligned NE - SW and reached a maximum depth of 2.40m. Once the turf/top soil had been removed (200) a sub deposit of crushed mudstone grit became exposed (201). This deposit was approximately 0.20m in depth. Directly below this sub deposit was pale orange dry grit intermixed with clay became exposed (202). This deposit was approximately 0.40m – 0.50m in depth. Below this deposit was a mudstone deposit intermixed with grit and clays. An iron (Fe) stain was leaching through this deposit at its upper levels. This mudstone deposit continued to the depth of the trench, a further 1.70m. Within this deposit, at its lower level, water began to flow into the trench at the height of approximately 1.70 from the top of the trench, suggesting that water run-off from the SE facing slope was running toward the William's Shaft at this point and percolating through the ground surface at the approximate 1.70m depth. No dateable finds or features were recovered or became exposed within this trench. All of the deposits overlying the mudstone appeared to be mine waste.

4.8 ***Trial Trench 19 (Machine Dug)***

4.9 Trial Trench 19 was positioned approximately 30m north of the William's Shaft in an area dense gorse at the base of the southern slope adjacent to the road and just northeast of an earth bank that forms an arc on the west side of the Williams shaft. The final trench measured approximately 1.75m x 0.90m and was aligned NW - SE and reached a maximum depth of 2.60m. Once the turf/top soil had been removed (300) a sub deposit of mid brown earth intermixed with mudstone grit became exposed (301). This deposit was approximately 0.30m in depth. Directly below this sub deposit was a light grey mudstone grit intermixed with a light grey clay became exposed (302). This deposit was approximately 0.40m – 0.50m in depth. Directly below this deposit was what appeared to be a natural light grey mudstone (303). This mudstone layer continued to the base of the trench. No dateable finds or features were recovered or became exposed within this trench. All of the deposits overlying the mudstone appeared to be mine waste.

4.9 ***Trial Trench 20 (Machine Dug)***

4.10 Trial Trench 20 was positioned approximately 25m east of the William's Shaft in an area devoid of gorse and grass and toward the base of the bank surrounding the Williams shaft. The final trench measured approximately 2m x 0.90m and was aligned NE - SW and reached a maximum depth of 3m. Once the thin surface grass shrubs had been removed (400) a sub deposit of light grey mudstone grit became exposed (401). This deposit was approximately 0.50m in depth. Directly below this sub deposit was a fine iron (Fe) stained mudstone grit (402). The iron stain leaching averaged a depth of approximately 0.50m. Directly below this deposit was what appeared at first to be a natural light grey mudstone (403), but on continued excavation appeared to actually be mine waste material. This mudstone deposit continued to the base of the trench at a depth of 3m. At this depth larger mudstone pieces were encountered, but still appearing to be re-deposited mine waste material. No dateable finds or features were recovered or became exposed within this trench. All of the deposits encountered appeared to be mine waste.

5. Conclusion & Recommendations

5.1 The archaeological watching brief during groundwork investigation works in the investigative area surrounding the William's Shaft at the Frongoch Lead & Zinc Mine managed to establish the character of the below ground surface in the targeted areas. Of the four (4) machine dug trial trenches, only one of the trenches exposed a fairly significant amount of ground water at a depth of approximately 1.70m below the surface. An earth bank directly in front of the William's Shaft on the SW side was very likely put here at some time in the past to help direct water away from the shaft. However the excavation of Trench 18 shows that water is percolating through the mine deposits around the shaft, taking with it particles of Iron (Fe) and very likely Zinc (Zn) as well. Other than natural mudstone, all other deposits encountered in the trial trenches were sequential deposits of mining waste. The deepest mining deposits were found in Trench 17, positioned to the SW of the William's Shaft, wherein, mine waste was still continuing even at a depth of 3.60m.

5.2 No dateable finds or features other than mining waste were recovered from any of the trial trenches.

6 Acknowledgements

Thanks to; All at Soil Engineering for their time and patience and understanding during the groundwork.

7 Bibliography

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Other References

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Soils of England and Wales 1983. Sheet 2: Wales, 1:25000

Cartographic Sources

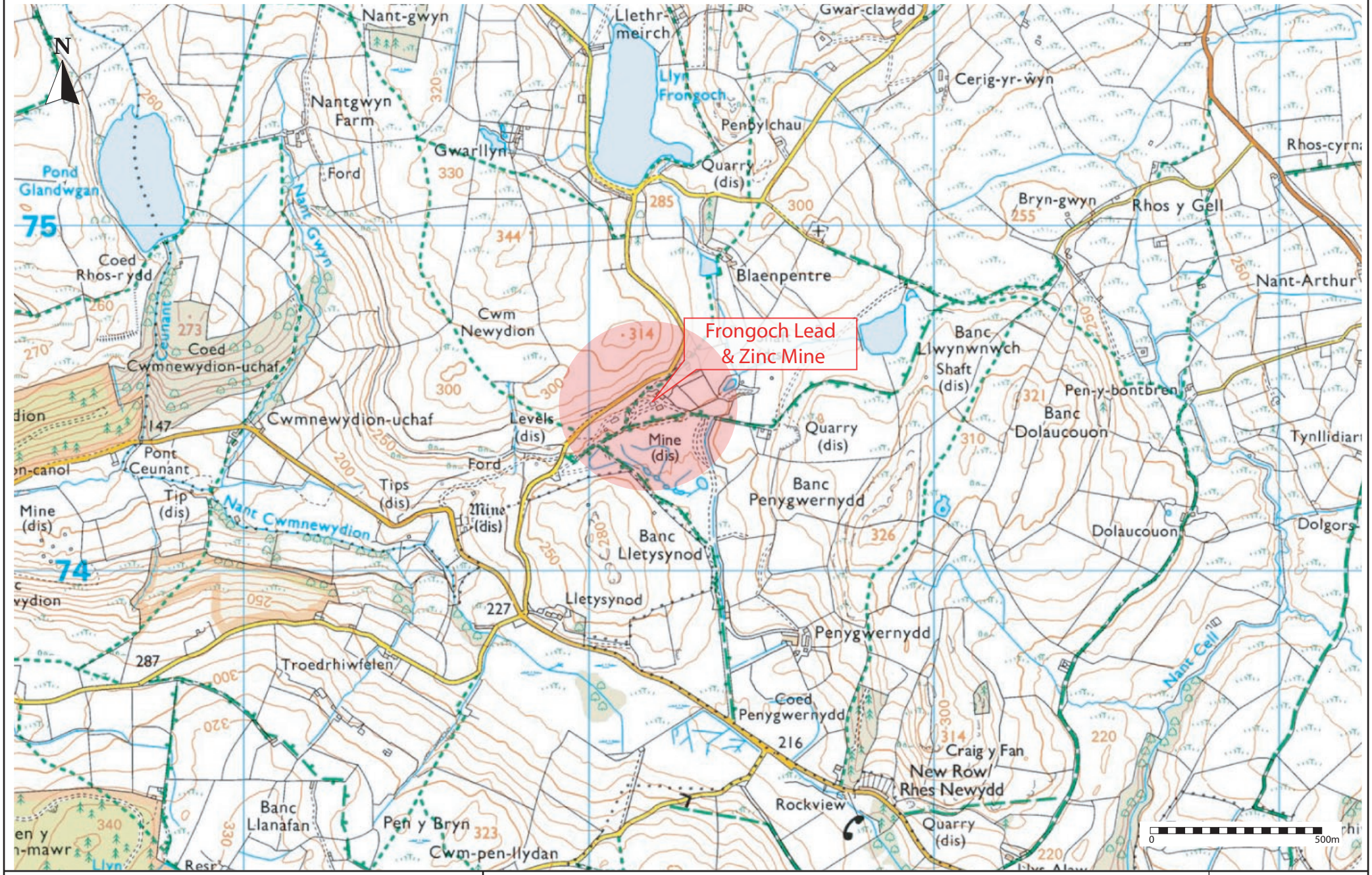
- *Tithe Map for Llanfiangel Creuddyn Parish (1848)*
- *Ordnance Survey 1st Edition map of 1887 (1:10560);*
- *Ordnance Survey 2nd Edition map of 1906 (1:10560);*
- *Ordnance 1953 (1:10560);*

APPENDIX I:
Figures

Project Title:	Frongoch Lead & Zinc Mine, Pontrhydygroes.		
Date:	15th November 2022	**Approx. Scale** (@ A4):	
Drawn by:		**Drawing No.**	

Figure 1.

Location Map (OS 1:50,000 Landranger)



Project Title:	Frongoch Lead & Zinc Mine, Pontrhydygroes.		
Date:	15th November 2022	**Approx. Scale** (@ A4)**:**	
Drawn by:		**Drawing No.**	

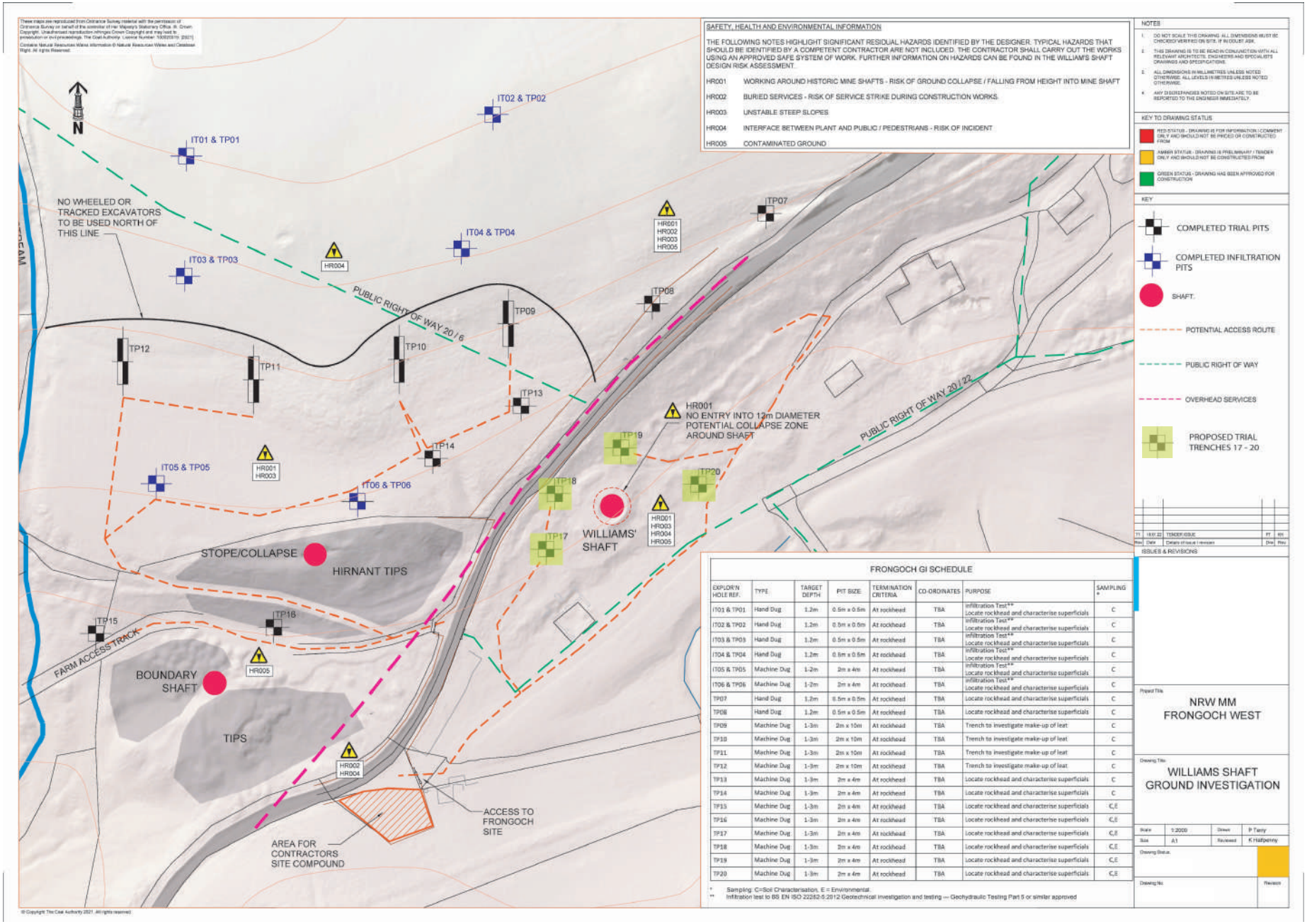
Figure 2.

Location Map (OS 1:25,000 Explorer)

Project Title:	Frongoch Lead & Zinc Mine, Pontrhydygroes.		
Date:	15th November 2022	**Approx. Scale** (@ A4)**:**	
Drawn by:		**Drawing No.**	

Figure 3.

OS Aerial Photo (2016)



Project Title:	Frongoch Lead & Zinc Mine, Pontrhydygroes.		
Date:	15th November 2022	**Approx. Scale** (@ A4):	
Drawn by:		**Drawing No.**	

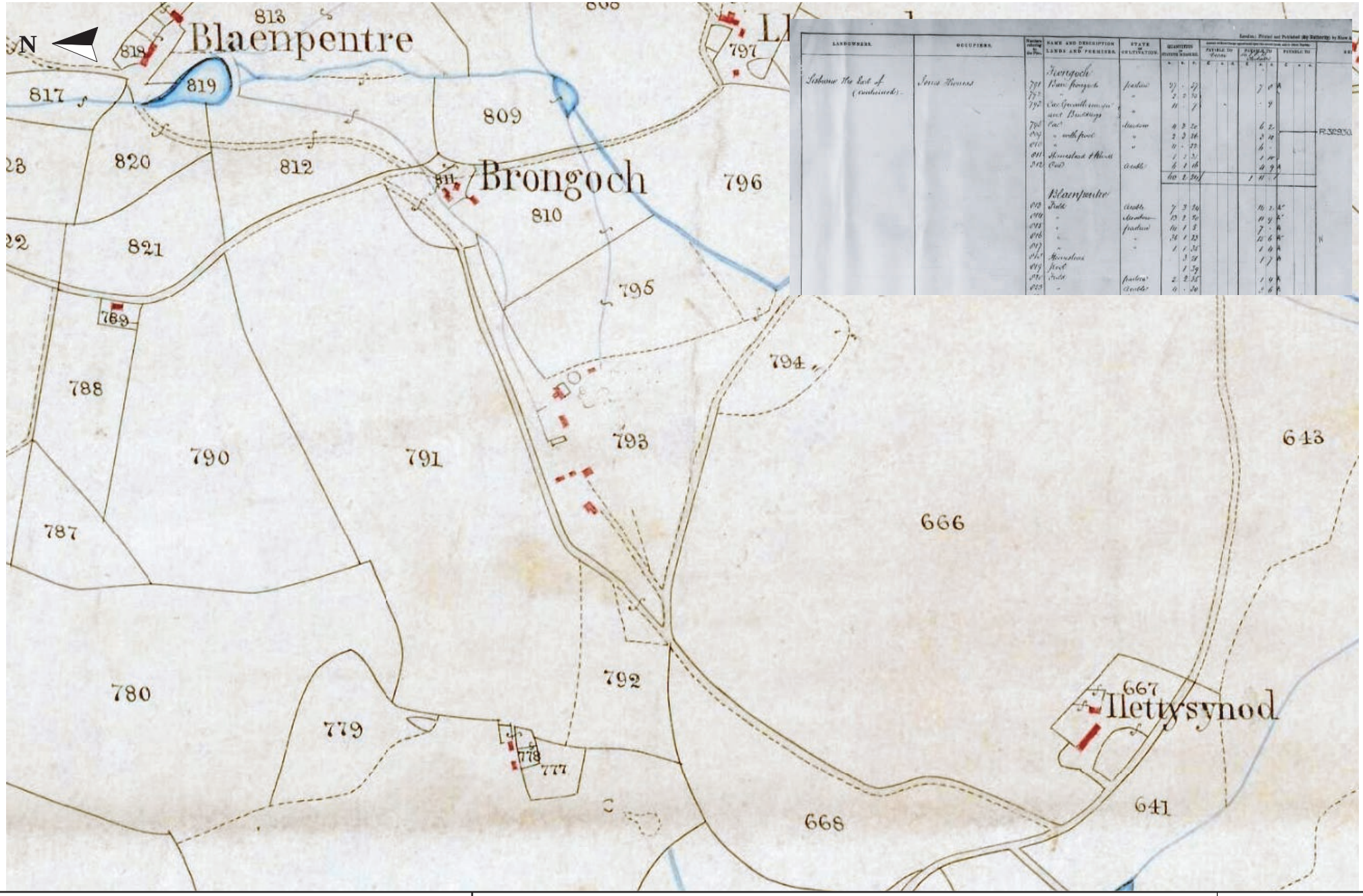
Figure 4.

Proposed trial trenches 17 - 20 locations south of road around William's Shaft (Machine dug - Highlighted in yellow).

Project Title:	Frongoch Lead & Zinc Mine, Pontrhydygroes.		
Date:	15th November 2022	**Approx. Scale** (@ A4):	
Drawn by:		**Drawing No.**	

Figure 5.

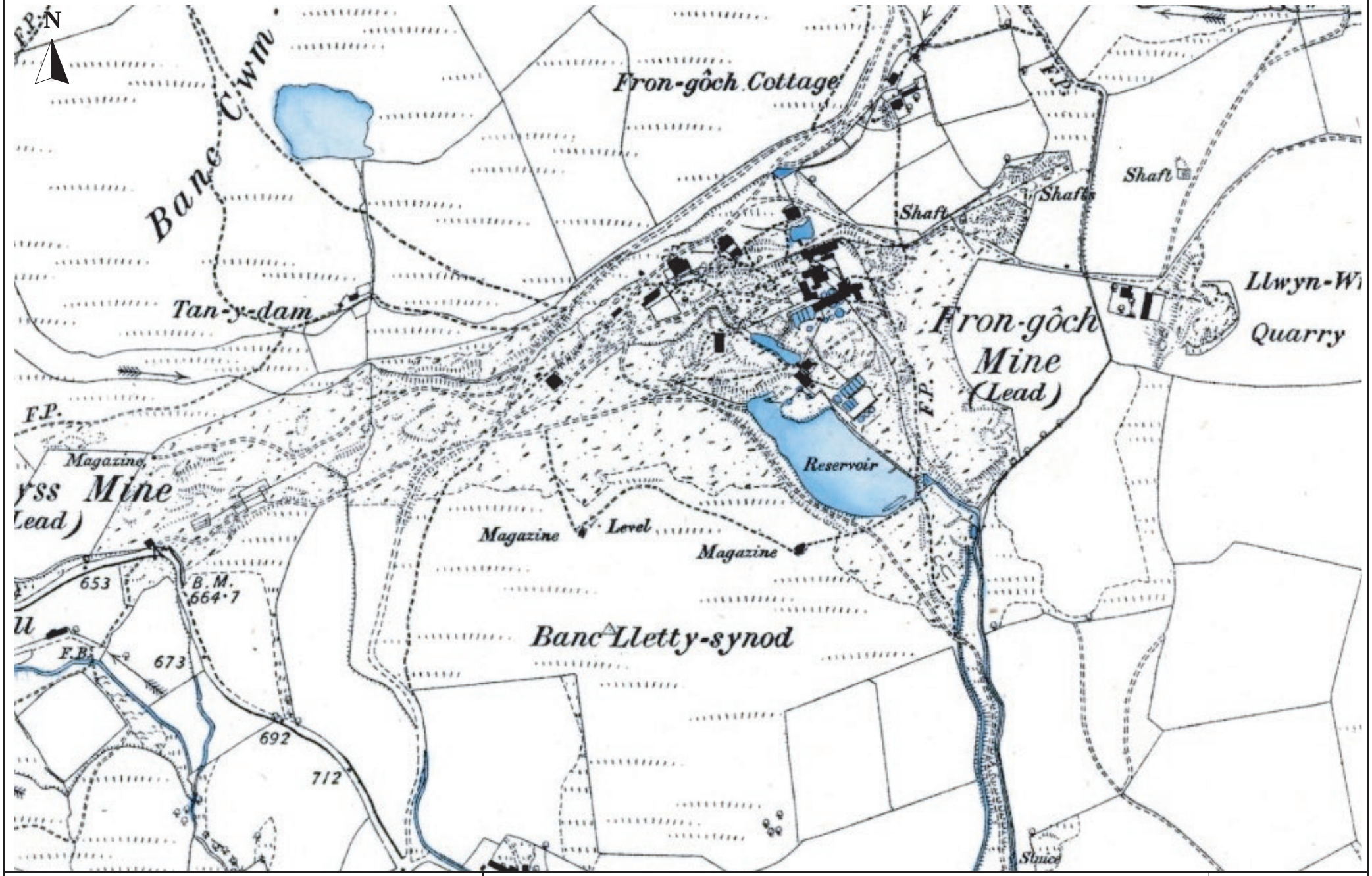
Proposed Ground Investigation trench locations (No's. 17 - 20) overlying OS Aerial Photo (2016)



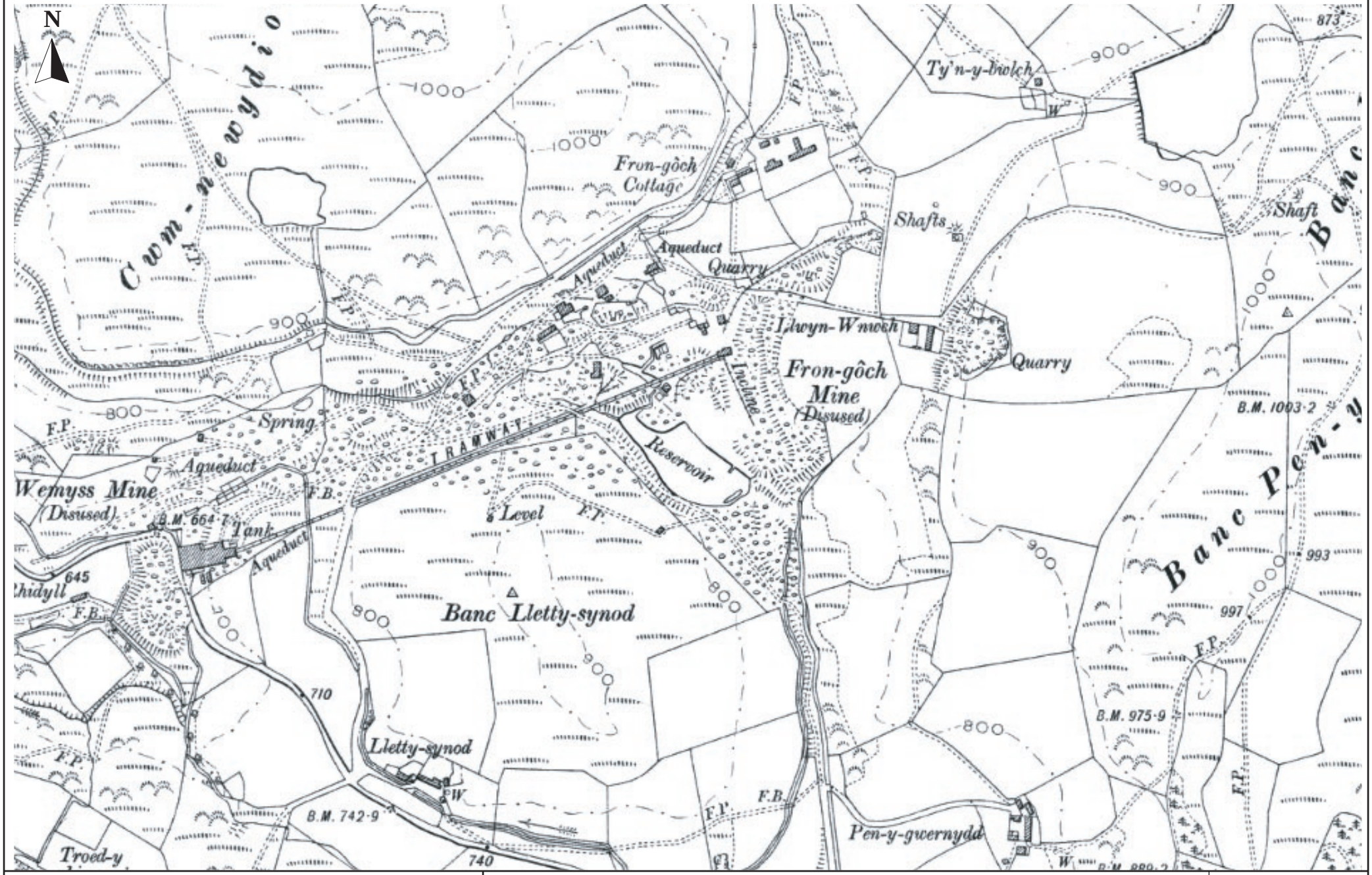
Project Title: Frongoch Lead & Zinc Mine, Pontrhydygroes.		
Date: 15th November 2022	**Approx. Scale** (@ A4)**:**	
Drawn by:	**Drawing No.**	

Figure 6.

Tithe Map and apportionmenbt details for Llanfiangel y Creiddyn parish (1848)



Project Title: Frongoch Lead & Zinc Mine, Pontrhydygroes.		**Figure 7.** Ordnance Survey First Edition Map (1887)
Date: 15th November 2022	**Approx. Scale** (@ A4)**:**	
Drawn by:	**Drawing No.**	



Project Title: Frongoch Lead & Zinc Mine, Pontrhydygroes.		**Figure 8.** Ordnance Survey Second Edition Map (1906)
Date: 15th November 2022	**Approx. Scale** (@ A4)**:**	
Drawn by:	**Drawing No.**	

Project Title:	Frongoch Lead & Zinc Mine, Pontrhydygroes.	
Date:	15th November 2022	**Approx. Scale** (@ A4)**:**
Drawn by:		**Drawing No.**

Figure 9.

Ordnance Survey 1953 Edition Map

APPENDIX II:
Photo plates

Plate 01. Spliced view of area of proposed ground investigation trenches around Williams Shaft at the Frongoch Lead Mine. Looking northward.

Project Title: Frongoch Lead & Zinc Mine, Pontrhydygroes.		**Photo Plate No.** 01	HRS
Date Taken: 2nd November 2022	**Approx. Scale** (@ A4)**:**		
Appropriated by: RSJ	**Drawing No.**		

Plate 02. View of area of proposed Trench 19 within gorse. Looking northeast.

Plate 03. View of area of proposed Trench 19. Looking northeast.

Plate 04. View of area of Trench 19 following groundwork. Looking northwest.

Plate 05. Area of proposed Trench 18 within gorse. Looking southwards.

Plate 06. Working shot during excavation of Trench 18. Looking southwest.

Plate 07. Trench 18 excavation completed. Looking northwards

Plate 08. Working shot during excavation of Trench 17. Looking northwards.

Plate 09. Working shot during excavation of Trench 17. Looking northwest.

Plate 10. Excavation of Trench 17 complete. Looking northwest.

Project Title: Frongoch Lead & Zinc Mine, Pontrhydygroes.		**Photo Plate No's.** 02 - 10
Date Taken: 2nd November 2022	**Approx. Scale** (@ A4):	
Appropriated by: RSJ	**Drawing No.**	

Plate 11. Trench 17 completed. Looking northwest.

Plate 12. Area of proposed Trench 20 toward base of Williams Shaft. Looking southwest.

Plate 13. Trench 20 groundwork complete. Looking west.

Plate 14. Trench 20 excavation completed. Looking northeast.

Project Title: Frongoch Lead & Zinc Mine, Pontrhydygroes.		**Photo Plate No's.** 11 - 14	HRS
Date Taken: 2nd November 2022	**Approx. Scale** (@ A4):		
Appropriated by: RSJ	**Drawing No.**		

APPENDIX III:
Archive Cover Sheet

ARCHIVE COVER SHEET

Frongoch Lead & Zinc Mine, Pontrhydygroes, Ceredigion

ARCHIVE DESTINATION - RCAHMW

Site Name:	Frongoch Lead & Zinc Mine, Pontrhydygroes, Ceredigion
Site Code:	FLM2/2022/WB
PRN:	-
NPRN:	302
SAM No.	
Other Ref No.	HRSW Rpt No. 258
NGR:	SN 72066 74424
Site Type:	Lead & Zinc Mine.
Project Type:	Archaeological Watching Brief
Project Manager:	Richard Scott Jones
Project Date(s):	2nd November 2022
Categories Present:	None
Location of Original Archive:	HRSW
Location of Duplicate Archive:	RCAHMW
Number of Find Boxes:	N/A
Location of Finds:	N/A
Museum Ref:	N/A
Copyright:	HRS Wales
Restrictions to Access:	None

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