

British Waterways Scotland
Archaeological Works 2009

Forth and Clyde Canal
Pinkston Basin

Scoping Survey and Trial Trenching
November 2009

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Kirkdale Archaeology
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Report prepared for WYG Group

Site The Pinkston Basin on the Forth and Clyde Canal, Port Dundas, Glasgow.

Project Description An archaeological watching brief was maintained on the excavation of 12 trial trenches and 2 bore holes on the N and E wharfages of the Pinkston Basin. The trenches were dug to ascertain the integrity of the ground make-up ahead of development on the site. A scoping survey was conducted prior to the works to record the trench locations and to place the site in its current context. A study of historical maps held by The National Library of Scotland as well as the map archive of British Waterways was undertaken to establish the development history of the site.

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1 INTRODUCTION

On behalf of British Waterways, Kirkdale Archaeology was asked to undertake an archaeological watching brief during the excavation of 12 trial trenches and 2 bore holes to the N and E of the Pinkston Basin on the Forth and Clyde Canal. The work was undertaken ahead of a planned development, to assess its integrity in a load-bearing capacity, and to check for potential contaminants. The watching brief was a condition of the Scheduled Monument Consent granted by Historic Scotland. The ground-breaking work was carried out by the WYG Group, an environmental and engineering consultancy.

Prior to the work, a scoping survey was undertaken to record the site and the various trench locations in their present settings. A thorough check was undertaken of the archival resources related to the area in order to target possible areas of historical interest. Several phases of activity were noted within the fills of the trenches across the site, indicating high archaeological potential. The trial trenches were excavated by machine, and were generally 2m long x 0.6m wide and at varying depths of up to 3.5m. Where water inundated the trenches (generally to the water level of the surrounding canal) the lower fills could not be recorded; samples of the basal clays were taken from below the water line by the WYG engineer. The boreholes were started manually and then percussion drilled to the required depth. Brief observations of the uppermost fills was all that could be achieved in relation to the content of the boreholes.

The development of the site is best understood by an analysis of the cartographic evidence from the National Library of Scotland, and the British Waterways Map Archive at Applecross Street, Glasgow.

2 SITE DEVELOPMENT

The Pinkston Basin takes its name from the Lands of Pinkston, part of the pre-canal sub-division of rural land into numerous small estates. The site sits on an angled section of the ‘Cut of Junction’ which connected the Glasgow Branch of the Forth and Clyde Canal (with its terminal basins first at Hamiltonhill, then Port Dundas) to the Monkland Canal, which in turn provided lucrative access to the Lanarkshire coalfields.

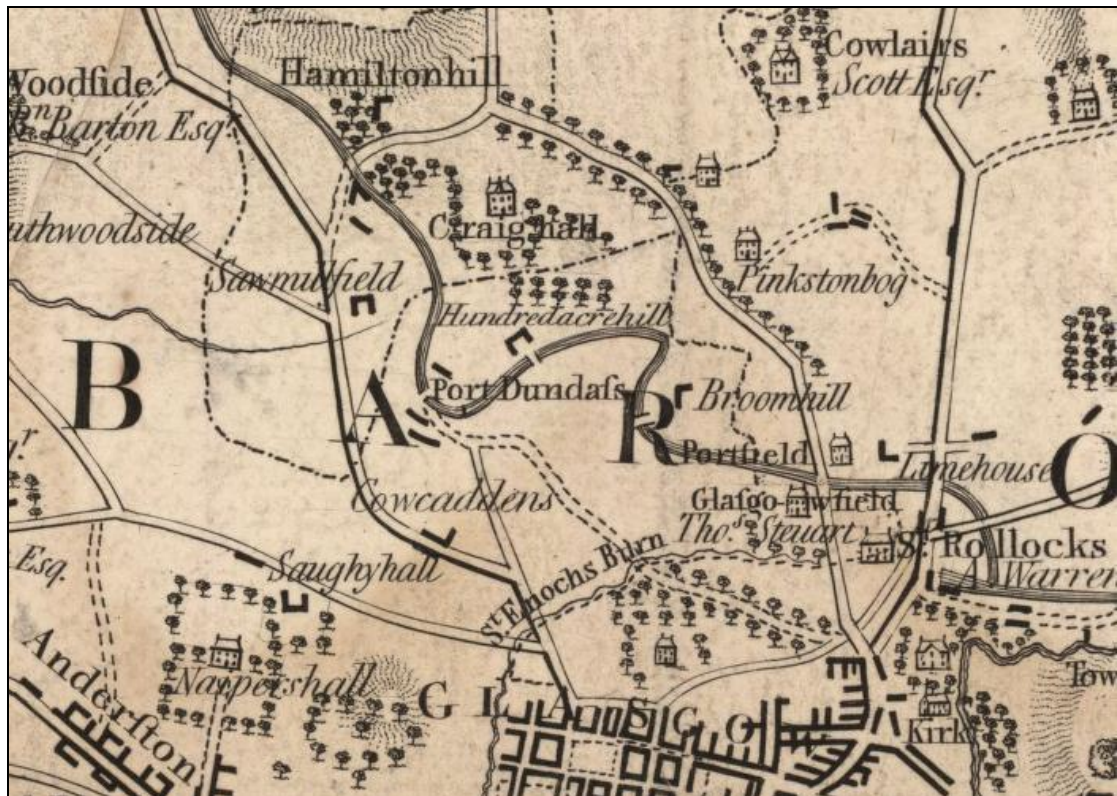


Figure 1: ‘Map of the Town of Glasgow and Country 7 Miles Around’, Thomas Richardson, 1795 (National Library of Scotland)

Figure 1 shows the Cut of Junction shortly after its completion in 1790, along with evidence of the numerous 18th Century land divisions – indicating that this is still very much an agricultural, rural landscape. The present site (constructed in 1842) sits in the angled portion of the Cut of Junction to the E of Port Dundas. The Cut of Junction runs across the S portion of ‘Hundredacrehill’. To the NE is ‘Pinkstonbog’, part of the Lands of Pinkston (derived from local pink sandstone) that the basin later took its name from.

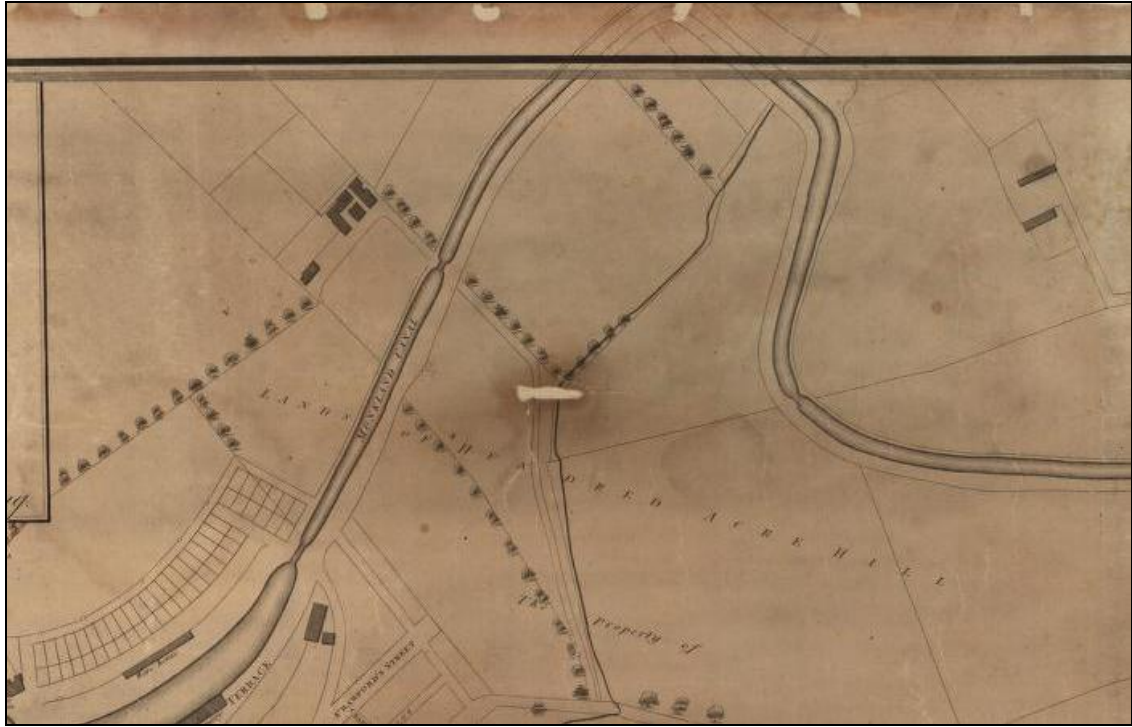


Figure 2: 'Map of the City of Glasgow and Suburbs', by Peter Fleming, 1807 (NLS)

Figure 2 shows another early map with the site visible in the crook of the Cut of Junction. Still largely undeveloped, a diverted burn runs under the canal; to the N is a row of deliberately planted trees.

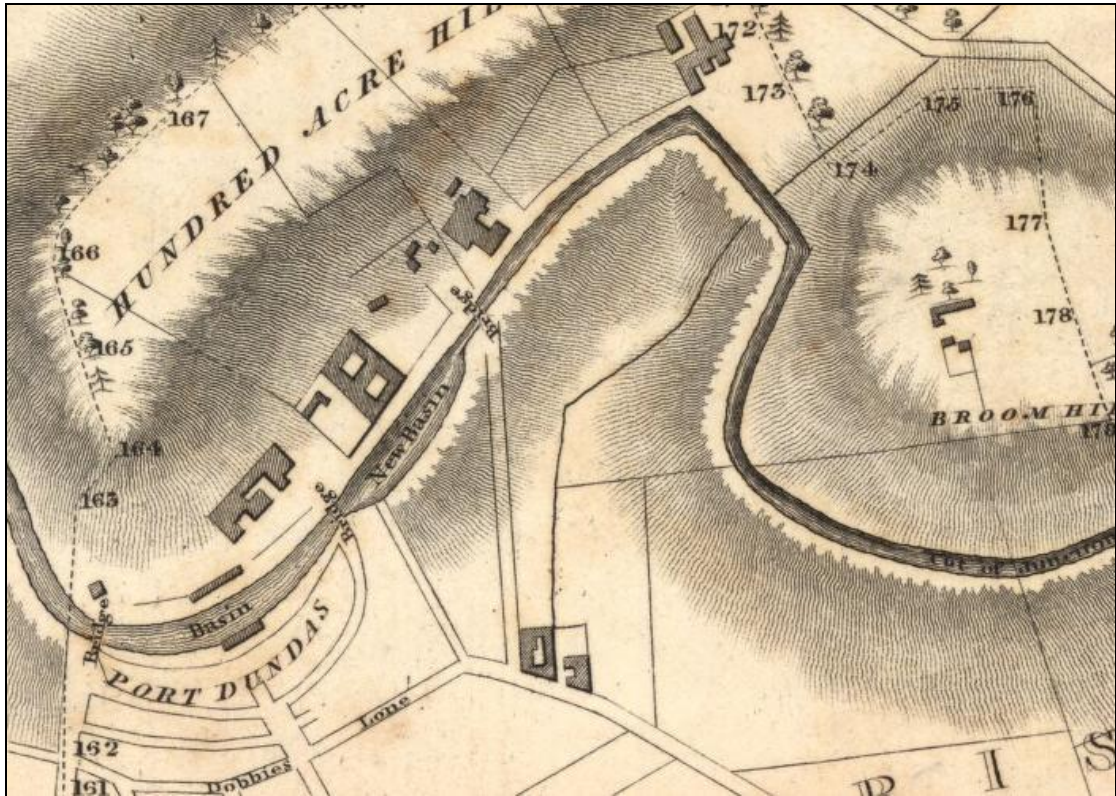


Figure 3: 'This map of the ten parishes within the Royalty and the parishes of Gorbals Barony of Glasgow', by John Wood, 1822 (NLS)

Figure 3 shows a map from 1822 with contour lines; the white areas are flat areas of land from which contours radiate. This map indicates that the sides of the canal are level, but then drop away steeply forming a deep cleft in the crook of the Cut of Junction where the Pinkston Basin was later built. To level the area would clearly have required large amounts of material.



Figure 4: 'Cut of Junction Canal', William Kyle, 1836 (British Waterways Archive, P428)

Figure 4 shows the site in 1836, just prior to the developments of 1842. It shows a 'tunnel' running E-W across the site near to the SE corner of a 'thorn bush' - a planted hedge skirting the 'tracking path'.

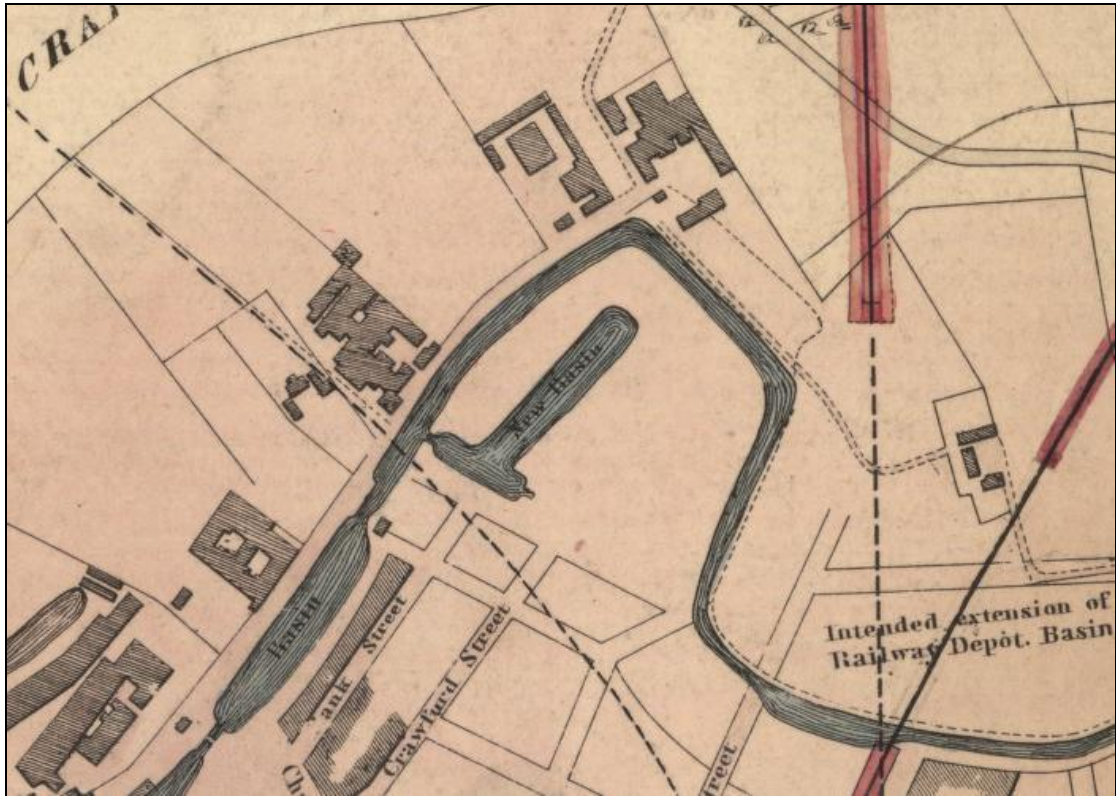


Figure 5: 'Map shewing [sic] the Estate of Milton', Thomas Kyle, 1842 (Nat Map Lib Scotland)

Kyle's map of 1842 (Figure 5) is the first to record the improvement and development of the canal with the insertion of a 'new basin', which was inserted prior to the 'new timber basin' seen in Figure 6 (below), which shows the completed works of 1842.



Figure 6: 'Plan of Part of Port Dundas and Cut of Junction Canal as Improved in 1842', Unknown surveyor, Undated (British Waterways Archive P440)

Figure 6 shows the rectangular 'new basin' with a range of buildings on the wharf to the N. The range of buildings to the E are annotated as 'Mr J Watson's Coke Works', those centrally are 'Mr. J Marshall's Coke Works' while those to the E are 'The Monkland Steel Company's Yard'. At this time there are no buildings to the E of the New Basin recorded. The canal was widened to the N and E during this period, and the original line of the canal is annotated.

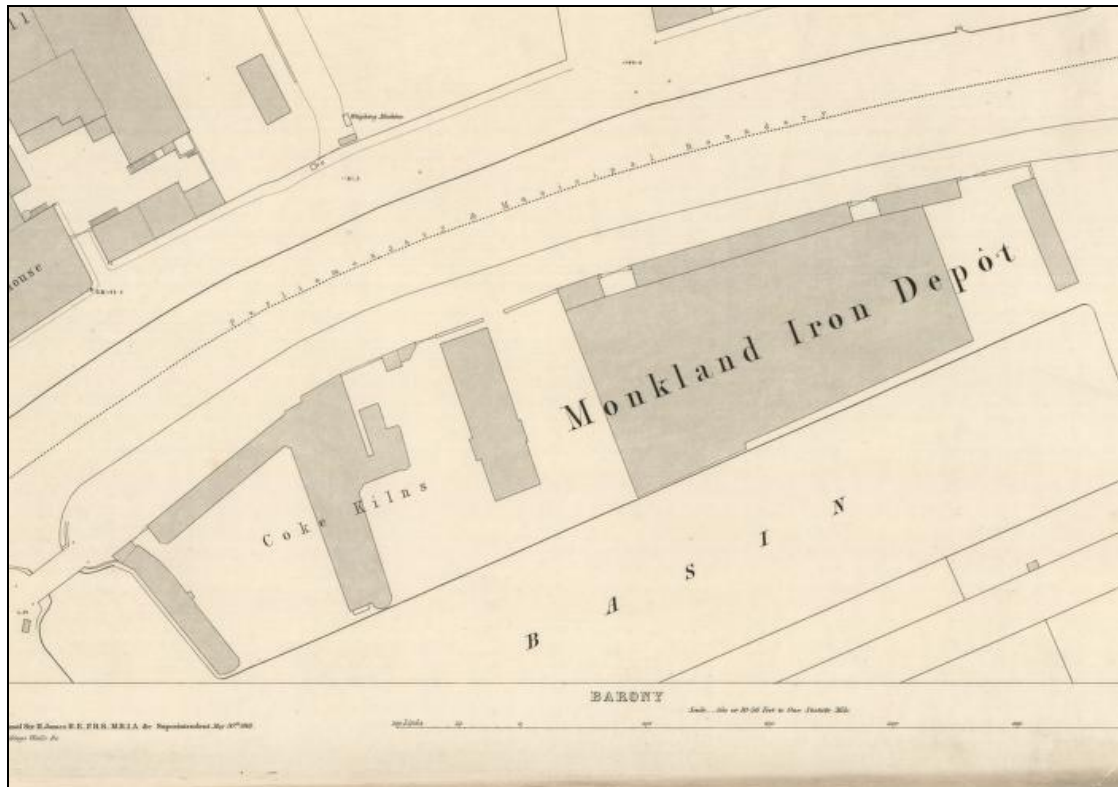


Figure 7: '1st Edition Ordnance Survey 6 inch to a mile Map of Glasgow', 1857
(Nat Map Lib Scotland)

Figure 7 shows a similar arrangement of buildings to the previous map (Figure 6), with some minor additions, and the absence of a building within the 'Coke Kilns' to the E. The 'Monkland Iron Depot' is greatly expanded from the earlier arrangement of 1842. This expansion may mean that the buildings of 1842 were either absorbed or demolished by the expansion of 1857.

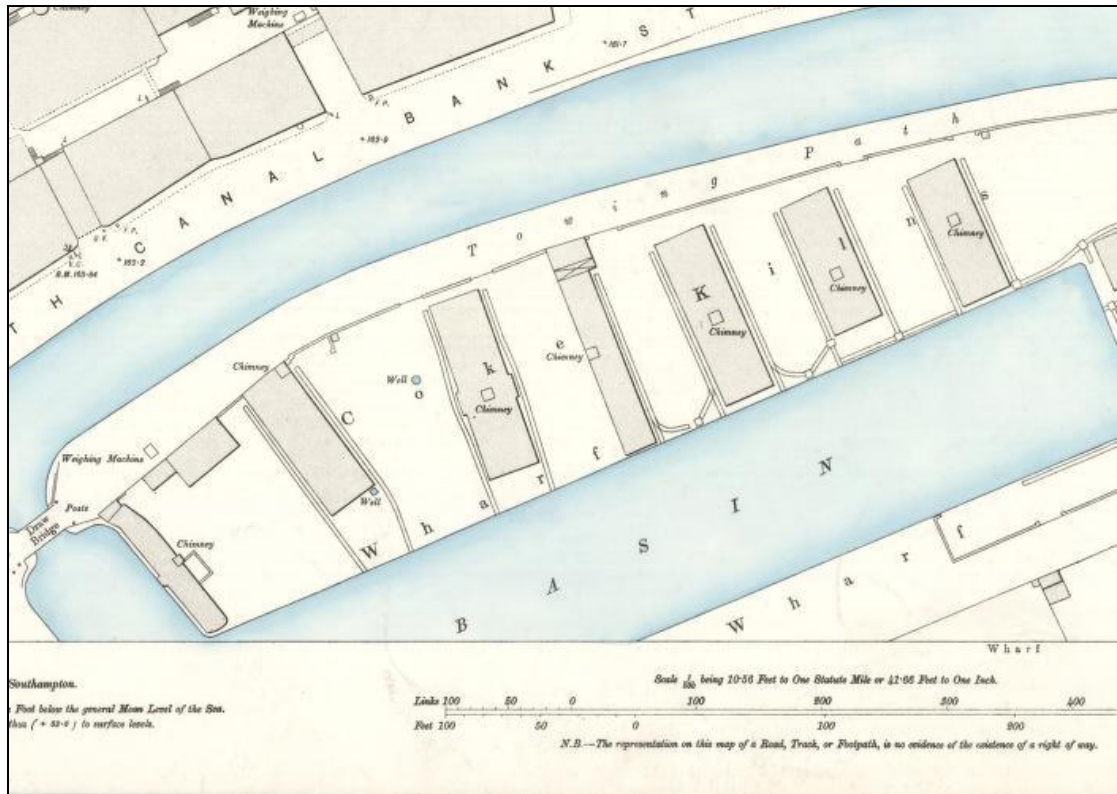


Figure 8: '2nd Edition Ordnance Survey 6 inch to a mile Map of Glasgow', 1892-94 (Nat Map Lib Scotland)

By the 1890s the site is dominated by coke kilns (Figure 8). The Monkland Iron Works complex has been removed (although perhaps the W side of the building may be represented by the long thin central building on the N wharf). Two coke kilns flank the E end of the new basin to the N and S. The buildings in general have central chimneys and are flanked by railway sidings. Two wells are annotated to the W of the N wharf. The building on the extreme W of the N wharf survives from 1842. The kilns at the E end of the new basin were replaced by Carron Company warehouses around 1900.

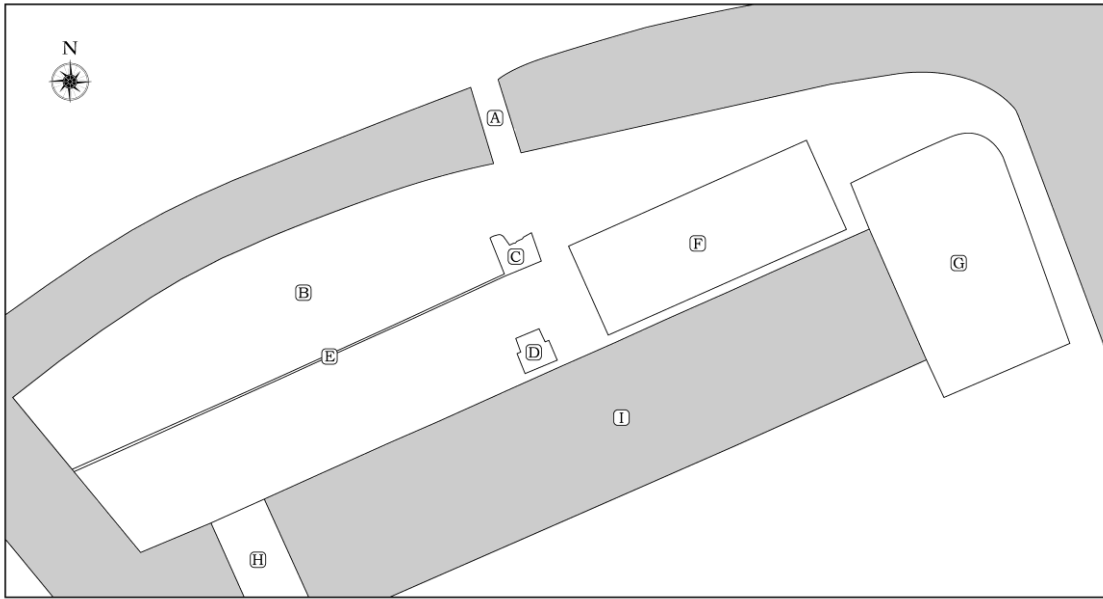


Figure 9: The Pinkston Basin and Cooling Tower, c.1950's

The Pinkston Power Station was built to the E of the Pinkston Basin in 1900. In 1954, a massive cooling tower was added. This was built on the site of the 'new timber basin' of 1842. This photograph shows the N and E wharfs of the basin to the right of the tower. The coke kilns shown on the 1892 OS map have been removed. The three-part Carron Company warehouses are shown at the E end of the basin. The N wharf is occupied by a few buildings to the W. A formal road can be seen running along the S side of the canal E of the N access bridge.

A further building was added at the NE angle of the basin in the 1970's. Both this building and the Carron Company warehouses are now demolished as are the other buildings indicated by this photograph. Traces of these may remain however, along with evidence of the canal infrastructure such as cranes, mooring posts, weighing machines and the towing path.

3 THE PINKSTON BASIN TODAY



These are the main features (A-I) forming the site at present:

A – N Access Bridge - 20thC

B – Raised Tarmacadam Surface – 1970's / 1980's

C – Demolished Building – 1970's / 1980's

D – Demolished Building – 1970's / 1980's

E – Central Slit Drain running W from [C] – 1970's / 1980's

F – Demolished Building – 1970's

G – Demolished Building – c.1900

H – Modern Temporary Bund

I – The 'New Basin' - 1842

4 TRENCHING REPORT

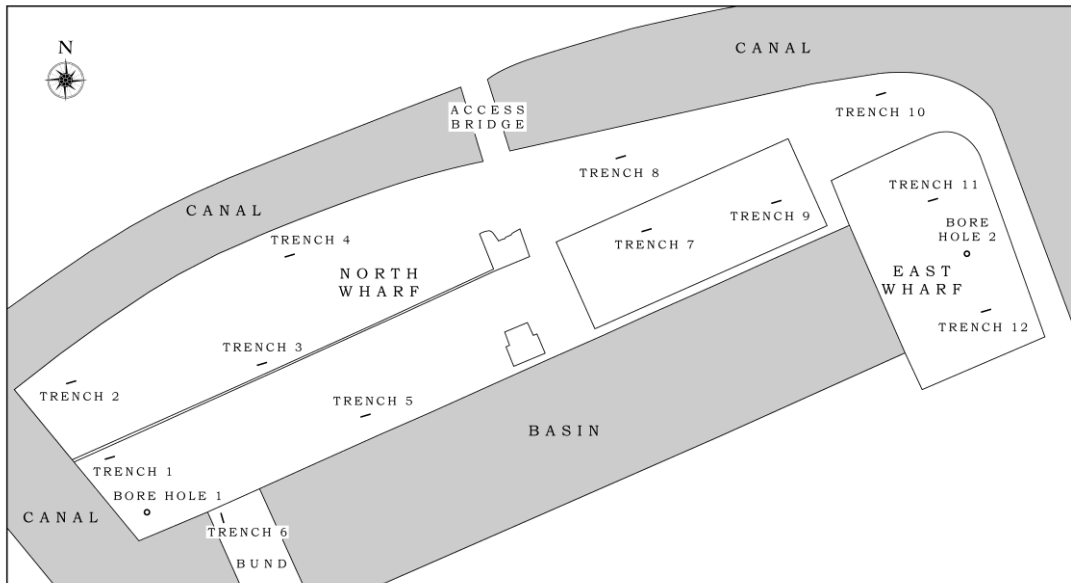


Figure 10: Location map showing Trenches 1-12 and Bore Holes 1-2 mentioned below.

BOREHOLE 1

This trench was initially hand-dug to a depth of 800mm and thereafter a core was bored with a percussion drill. The trench measured 600mm x 600mm and was situated at the SW angle of the N Wharf. The section was composed of a 50mm thick tarmacadam surface **B1001** over a 50mm thick sub-base of grey granular finings **B1002** bedded on a 300mm thick base of pinkish shale and broken pieces of sandstone **B1003**. These upper layers represent the modern raising and levelling of the site. Below these was a layer of laid grey whin setts 180-250mm deep in a grey ash matrix **B1004** sitting on greyish black silt **B1005** visible to 200mm depth where the trench base became inundated with water. Thereafter the percussion drill dug the remaining depth.

BOREHOLE 2

This trench was sited between Trial Trenches 11 and 12 on the footprint of the building at the E end of the basin. It was noted that the section was composed of a top layer of concrete **B2001**, 50mm thick resting on a 300mm thick layer of grubbed up bricks and stone **B2002**. Below this lay a levelling layer of greyish grit and ash **B2003**, 90mm thick. Thereafter the percussion drill dug the remaining depth.

TRIAL TRENCH 1 (See Figure 11, Appendix 2)

This trench was approximately 2m E-W x 0.6m N-S and was dug to a depth of 2.4m. The section was composed of a 50mm thick tarmacadam surface **F101** over a 50mm thick sub-base of grey granular finings **F102** bedded on a 200mm thick base of pinkish shale and broken pieces of sandstone **F103**. These upper layers represent the modern raising and levelling of the site. Below these was a layer of laid grey whin setts up to 280mm deep in a grey ash matrix **F104** sitting on a thick layer of greyish puddle clay **F105** 240mm thick to the E and 900mm thick to the W. The puddle clay was bedded on a layer composed of large angular pieces of whin, bonded in a silty matrix **F106** up to 1m deep. At depth a depth of 2.4m a layer of brick and sandstone levelling material **F107** was encountered but not dug through. **F105-F107** are likely to represent the levelling of the site for the construction of the new basin in 1842.

TRIAL TRENCH 2 (See Figure 12, Appendix 2)

This trench was approximately 2m E-W x 0.6m N-S and was dug to a depth of 3.4m. The section was composed of a 50mm thick tarmacadam surface **F201** over a 50mm thick sub-base of pink shale **F202** bedded on a 50mm thick base of grey whin dust **F203**. Below this was a 120mm thick base of pinkish shale and broken pieces of sandstone **F204**. These upper layers represent the modern raising and levelling of the site. Below these was a layer of laid grey whin setts up to 280mm deep in a grey ash matrix **F205**. A series of levelling layers sat below the whin setts. **F206** was a layer of bedding sand 80mm thick overlying a 120mm thick layer of crushed grey stone and ash **F207**. Below this was a further layer of yellow sand **F208** 80mm thick over a 220mm thick levelling layer of black ash and red bricks **F209**. These lay over a thick layer of natural grey alluvial clay **F210** exposed to a depth of 2.25m.

TRIAL TRENCH 3 (See Figure 13, Appendix 2)

This trench was approximately 2m E-W x 0.6m N-S and was dug to a depth of 1.25m. The section was composed of a 50mm thick tarmacadam surface **F301** over a 50mm thick sub-base of pink shale **F302** bedded on a 50mm thick base of grey whin dust **F303**. Below this was a 50mm

thick base of pinkish shale and broken pieces of sandstone **F304**. These upper layers represent the modern raising and levelling of the site. Below these was a layer, possibly a floor 120mm thick, composed of red bricks in a black ash matrix **F305**. Below this was an undulating layer (up to 300mm deep) of compact orange brown fused material **F306**, possibly a levelling layer of industrial waste serving as bedding for the brick floor. Below **F306** was a thin layer 50mm thick of grey whin dust **F307** overlying a granular grey layer with moderately (<50mm in diameter) sized pieces of stone within **F308**. This layer was only partially exposed as the water inundated the trench at 1.2m.

TRIAL TRENCH 4 (See Figure 14, Appendix 2)

This trench was approximately 2m E-W x 0.6m N-S and was dug to a depth of 2.04m. The N-facing section was composed of a 50mm thick tarmacadam surface **F401** over a 50mm thick sub-base of pink shale **F402** bedded on a 50mm thick base of grey whin dust **F403**. Below this was a 220mm thick base of pinkish shale and broken pieces of sandstone **F404**. These upper layers represent the modern raising and levelling of the site. Below these was a layer of laid grey whin setts up to 400mm deep in a grey ash matrix **F405**. The setts were sealing a series of levelling layers and a brick structure below. To the E of the brick structure (below the setts) was a layer of broken bricks, bonded together in a black matrix of silt and ash **F406**. This lay over a 330mm thick layer containing large pieces of crudely shaped sandstone in a yellowish brown clay matrix **F407**, which in turn sat on a base of crushed bricks **F408** 80mm thick, atop a layer of natural grey alluvial clay **F410** exposed to a depth of 740mm. Also bedded on **F408** was the bonded remains of a red brick structure **F409** four courses high (430mm). The structure was 600mm wide E-W. The structure may represent the walls of one of the smaller buildings shown on the OS map of 1857 levelled to the E by **F406-F408**. If this is the case then it means that the whin setts post-date the demolition of the building between 1857 and 1892.

TRIAL TRENCH 5 (See Figure 15, Appendix 2)

This trench was approximately 2m E-W x 0.6m N-S and was dug to a depth of 1.30m. The N-facing section was composed of a 50mm thick tarmacadam surface **F501** over a 50mm thick sub-base of pink shale **F502** bedded on a 50mm thick base of grey whin dust **F503**. Below this was a 250mm thick base of pinkish shale and broken pieces of sandstone **F504**. These upper layers represent the modern raising and levelling of the site. Below these was a layer of laid grey whin setts up to 250mm deep in a grey ash matrix **F505**. The setts were bedded on a 300mm thick layer of black granular material **F506** used as levelling over a series of large sandstone slabs **F507**, 1m long x 0.7m wide x up to 0.3m thick. Unfortunately these were only visible briefly as the water level inundated the trench at a depth of 1.10m, but nevertheless they represent a considerable structure which may be of archaeological significance.

TRIAL TRENCH 6 (See Figure 16, Appendix 2)

This trench was situated on the modern temporary bund at the W end of the Pinkston basin and as such is of no archaeological interest. The trench was approximately 2m E-W x 0.6m N-S and was dug to a depth of 1.30m. The top 500mm, **F601**, was Type 2 stone with a mixed fill of silt, clay and brick **F602** below.

TRIAL TRENCH 7 (See Figure 17, Appendix 2)

This trench was sited within the footprint of the large building to the N of the basin and was approximately 2m E-W x 0.6m N-S, and was dug to a depth of 2.60m. The section was composed of a concrete foundation **F701** 180mm thick strengthened with 5mm diameter steel mesh. Below this was a thin plastic membrane **F702** acting as a damp-proof course. Below this was a layer of gritty grey ash **F703**, 100mm thick, covering a layer of red bricks **F704** (although it is unclear whether these were bonded or a levelling layer), sitting on a layer of brick and crushed stone **F705**, 200mm thick. Below this was a layer of laid grey whin setts up to 300mm deep in a grey ash matrix **F706**. The setts were bedded on a 370mm thick layer of black granular material

F707. Under this was a layer of reworked mottled clay **F708** overlying a thick layer of grey alluvial clay natural **F709**, exposed to a depth of 640m.

TRIAL TRENCH 8 (See Figure 18, Appendix 2)

This trench was approximately 2m E-W x 0.6m N-S and was dug to a depth of 1.7m. The S-facing section was composed of a 50mm thick tarmacadam surface **F801**, over a 50mm thick sub-base of grey Type 2 stone **F802**, bedded on a 360mm thick base of angular grey rubble in a gritty ash matrix **F803**. There were numerous roots at the base of this layer suggesting that it sealed an overgrown surface at some point. This surface was formed by **F804**, a layer of laid grey whin setts up to 390mm deep in a grey ash matrix. Below this a yellowish brown granular layer containing sandstone **F805** was noted, but water inundation at a depth of 930mm prevented precise recording of the deposit.

TRIAL TRENCH 9 (See Figure 19, Appendix 2)

This trench was sited within the footprint of the large building to the N of the basin and was approximately 2m E-W x 0.6m N-S, and was dug to a depth of 1m. The section was composed of a concrete foundation **F901**, 180mm thick strengthened with 5mm diameter steel mesh. Below this was a thin plastic membrane **F902** acting as a damp-proof course. Below this was a layer of gritty grey ash **F903**, 100mm thick, covering a layer of red bricks **F904** (although it is unclear whether these were bonded or a levelling layer), sitting on a layer of brick and crushed stone **F905**, 420mm thick. A burst pipe inundated the trench with water; the water line was established at a depth of 820mm.

TRIAL TRENCH 10 (See Figure 20, Appendix 2)

This trench was approximately 2m E-W x 0.6m N-S, and was dug to a depth of 2.5m. The S-facing section was composed of a 50mm thick tarmacadam surface **F1001**, over a 50mm thick sub-base of grey Type 2 stone **F1002**, bedded on a 260mm thick base of angular grey rubble in a gritty ash matrix **F1003**. Below this was a 400mm thick layer of black ash-rich clay **F1004**, sitting

on a 150mm thick layer of crushed sandstone **F1005**. Below this was a 150mm thick layer of reworked mottled greyish brown clay **F1006**, overlying a yellowish brown granular levelling layer containing sandstone and red brick **F1007**. Its full extent was not established as water began to inundate the trench at a depth of 1.25m.

TRIAL TRENCH 11 (See Figure 21, Appendix 2)

This trench was sited within the footprint of the large building to the E of the basin and was approximately 2m E-W x 0.6m N-S, and was dug to a depth of 1.8m. The section was composed of a top layer of concrete **F1101**, 50mm deep, resting on a 250mm thick layer of grubbed up bricks and stone **F1102**. Below this lay a levelling layer of greyish grit and ash **F1103**, 200mm thick. This was levelling over a laid brick surface **F1104**, 120mm thick, lying on a bed of grey gritty ash **F1105**. Below the ash was a 300mm thick layer of black granular material **F1106**. Under this was a layer of grey alluvial clay natural **F1107**, only partially exposed as the water began to inundate the trench at a depth of 1.50m.

TRIAL TRENCH 12 (See Figure 22, Appendix 2)

This trench was sited within the footprint of the large building to the E of the basin and was approximately 2m E-W x 0.6m N-S, and was dug to a depth of 2.04m. The section was composed of a top layer of concrete **F1201**, 50mm thick, resting on a 300mm thick layer of grubbed up bricks and stone, **F1202**. Below this lay a levelling layer of greyish grit and ash **F1203**, 90mm thick. This was levelling over an extremely compact 210mm thick layer of fused, fine-grained material **F1204**, possibly kiln debris. Below this was a 300mm thick layer of black granular material **F1205**. At the base was a layer of grey alluvial clay natural **F1206**, only partially revealed as the water began to inundate the trench at a depth of 1.90m.

5 CONCLUSION AND RECCOMENDATIONS

A study of the cartographic record, complimented by the archaeological watching brief during the excavation of the trial trenches, has confirmed the presence of archaeological deposits and structures at the Pinkston Basin. These features relate to the development of the canal (along with its associated infrastructure) and reflect the various phases of change since the installation of the basin and its wharves in 1842. Unusually for a site constructed with such a large amount of imported material, there were no artefacts recovered.

The future development of the site may have an impact on archaeological features. The buried archaeological resource could encompass traces of the canal infrastructure - such as cranes, mooring posts, weighing machines and the towing path - as well as remnants of the various structures that have occupied the site. It may also contain evidence of how the basin and wharves were constructed; evidence of this could be indicated by the materials comprising the fills of the structures themselves.

A1. APPENDIX 1: LIST OF DIGITAL PHOTOGRAPHS

SCOPING SURVEY AND MAPS IN BW ARCHIVES (18-11-2009)

No.	Description	From	Date
1	General Shot looking SW	NE	18/11/09
2	General Shot looking SE	NW	18/11/09
3	General Shot looking S	N	18/11/09
4	Location Shot for Trench 6 looking W	E	18/11/09
5	Location Shot for Bore Hole 1 looking W	E	18/11/09
6	Location Shot for Trench 1 looking W	E	18/11/09
7	Location Shot for Trench 2 looking W	E	18/11/09
8	Location Shot for Trench 3 looking W	E	18/11/09
9	Location Shot for Trench 5 looking W	E	18/11/09
10	Location Shot for Trench 4 looking W	E	18/11/09
11	Location Shot for Rotary Bore Hole looking E	W	18/11/09
12	Location Shot for Trench 7 Looking E	W	18/11/09
13	Location Shot for Trench 8 Looking E	W	18/11/09
14	Location Shot for Trench 9 Looking E	W	18/11/09
15	Location Shot for Trench 10 Looking E	W	18/11/09
16	Location Shot for Trench 11 looking W	E	18/11/09
17	Location Shot for Bore Hole 2 looking W	E	18/11/09
18	Location Shot for Trench 12 looking W	E	18/11/09
19	General Shot of Basin looking SW	NE	18/11/09
20	General Shot of Basin looking W	E	18/11/09
21	General Shot of Basin looking NW	SE	18/11/09
22	General Shot of Basin looking SE	NW	18/11/09
23	General Shot of demolished E building looking S	N	18/11/09
24	General Shot of demolished N building looking W	E	18/11/09
25	Shot of W Tarmacadam and drain looking W	E	18/11/09
26	Detail shot of drain looking W	E	18/11/09
27	Shot of entry bridge and manholes looking NNE	SSW	18/11/09
28	General Shot of site looking SE	NW	18/11/09
29	General Shot of site looking SW	NE	18/11/09
30	General Shot of site looking S	N	18/11/09
31	Map P432	-	18/11/09
32	Top part of Map 440	-	18/11/09
33	Bottom Part of Map 440	-	18/11/09
34	Detail of N bank of New Basin in Map 440	-	18/11/09
35	Detail of sluice running to E of new basin in Map 440	-	18/11/09
36	Map P200 W side	-	18/11/09
37	Map P200 E side	-	18/11/09
38	Elevation of 1899 shed on Map P195	-	18/11/09
39	Map P428	-	18/11/09
40	Map P428	-	18/11/09

TRIAL TRENCHING (19-11-2009)

No.	Description	From	Date
1	Looking S at Boring Rig at SW Bore Hole	N	19/11/09
2	Laid whin surface in SW Bore Hole looking W	E	19/11/09
3	Whin block from SW Bore Hole	-	19/11/09
4	Depth of Water Line in SW Borehole	E	19/11/09
5	Trench 1 looking SE at N-Facing Section	NW	19/11/09
6	Trench 1 S-Facing Section	N	19/11/09
7	Trench 1 N-facing Section with inundated base	S	19/11/09
8	Trench 2 N-Facing Section	S	19/11/09
9	Trench 2 N-Facing Section	S	19/11/09
10	Trench 2 S-Facing Section	N	19/11/09
11	Trench 3 S-Facing Section	N	19/11/09
12	Trench 3 N-Facing Section	S	19/11/09
13	Trench 3 looking E	W	19/11/09
14	Trench 3 N-Facing Section	S	19/11/09
15	Trench 3 N-facing Section with inundated base	S	19/11/09
16	Trench 3 S-facing Section with inundated base	N	19/11/09
17	Trench 4 N-Facing Section	S	19/11/09
18	Trench 4 N-Facing Section	S	19/11/09
19	Trench 5 large sandstone block from base of trench	SW	19/11/09
20	Water inundation in Trench 5 at the level of the sandstone blocks	W	19/11/09
21	Trench 5 N-Facing Section	S	19/11/09
22	Trench 6 looking NW	SE	19/11/09
23	Trench 6 looking N	S	19/11/09
24	Looking E at Bore Hole 2	W	20/11/09
25	Trench 7 N-Facing Section	NW	20/11/09
26	Trench 7 looking E	W	20/11/09
27	Trench 7 S-Facing Section	S	20/11/09
28	Trench 7 N-Facing Section	NW	20/11/09
29	Trench 7 S-Facing Section	S	20/11/09
30	Trench 7 S-Facing Section	S	20/11/09
31	Trench 7 S-Facing Section	S	20/11/09
32	Trench 8 N-Facing Section	NW	20/11/09
33	Trench 8 S-Facing Section	SW	20/11/09
34	Trench 9 N-Facing Section	NW	20/11/09
35	Trench 9 S-Facing Section	S	20/11/09
36	Trench 9 looking E	W	20/11/09
37	Trench 9 S-Facing Section	SW	20/11/09
38	Trench 10 N-Facing Section	NW	20/11/09
39	Trench 10 looking E	W	20/11/09
40	Trench 10 S-Facing Section	SW	20/11/09
41	Trench 11 S-Facing Section	SE	20/11/09
42	Trench 11 looking W	E	20/11/09
43	Trench 11 N-Facing Section	NE	20/11/09
44	Looking W at Bore Hole 2	E	20/11/09
45	Trench 12 S-Facing Section	SE	20/11/09
46	Trench 12 N-Facing Section	NE	20/11/09

A2. APPENDIX 2: DRAWING LIST AND ACCOMPANYING ILLUSTRATIONS

No.	Description
1	Trench Location Plan
2	Annotated Sketch of Layers within Trench 1
3	Annotated Sketch of Layers within Trench 2
4	Annotated Sketch of Layers within Trench 3
5	Annotated Sketch of Layers within Trench 4
6	Annotated Sketch of Layers within Trench 5
7	Annotated Sketch of Layers within Trench 6
8	Annotated Sketch of Layers within Trench 7
9	Annotated Sketch of Layers within Trench 8
10	Annotated Sketch of Layers within Trench 9
11	Annotated Sketch of Layers within Trench 10
12	Annotated Sketch of Layers within Trench 11
13	Annotated Sketch of Layers within Trench 12

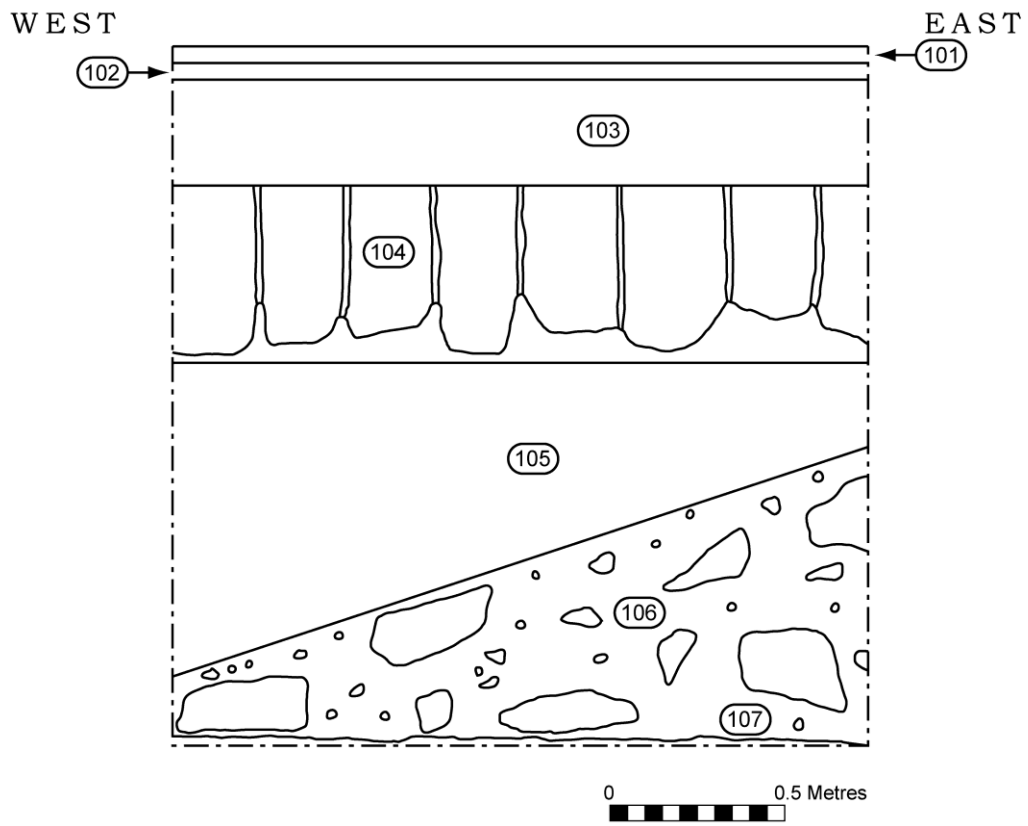


Figure 11: Trial trench 1

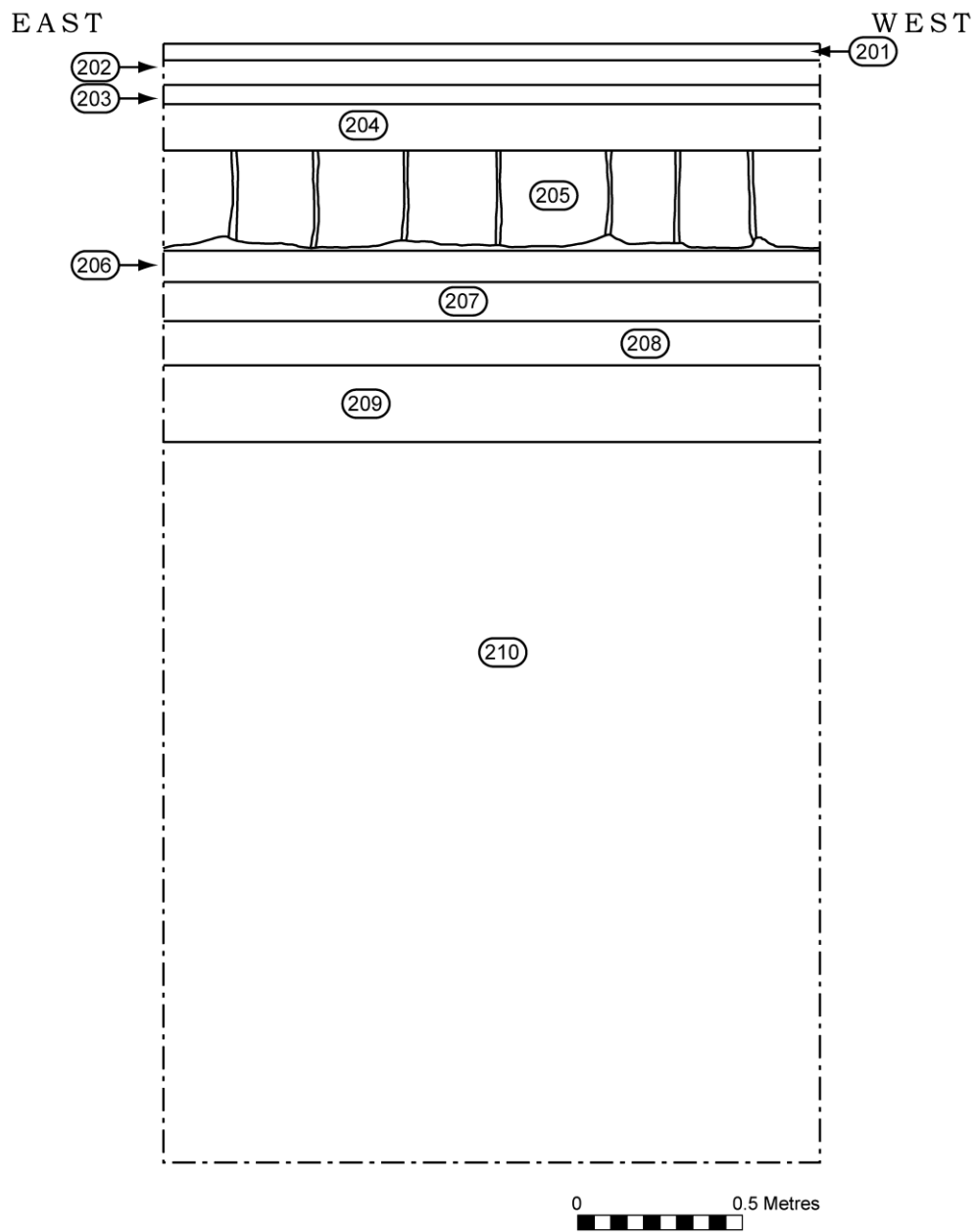


Figure 12: Trial trench 2

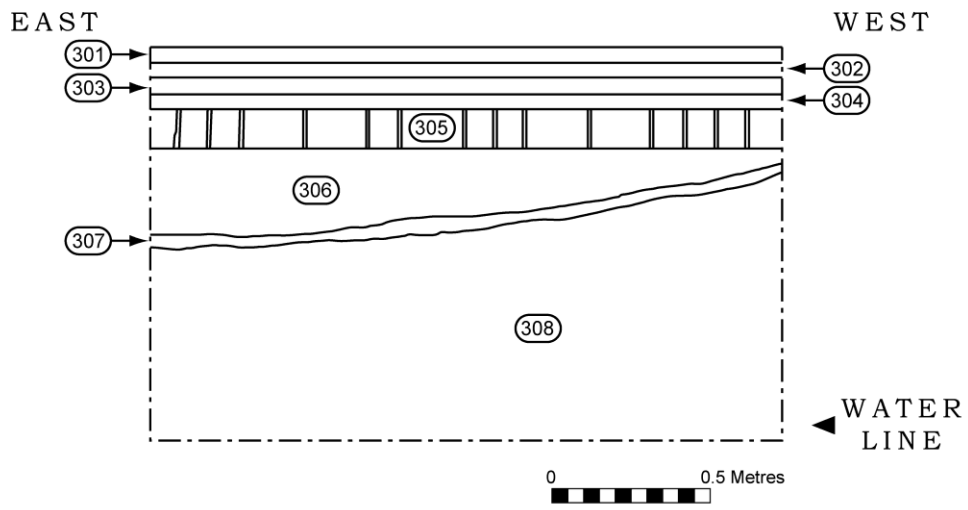


Figure 13: Trial trench 3

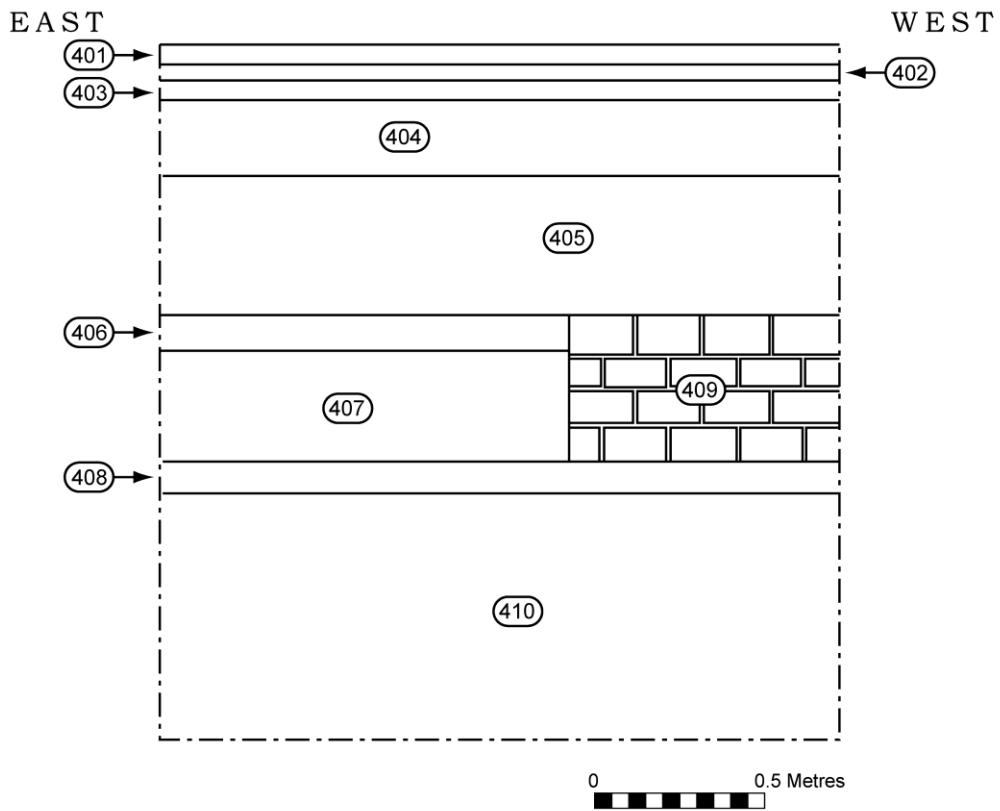


Figure 14: Trial trench 4

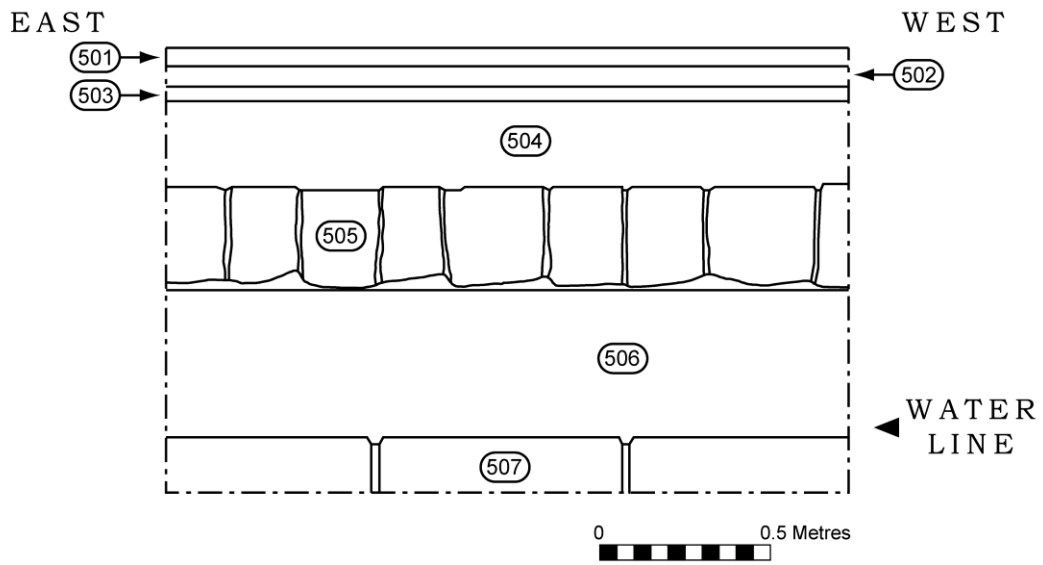


Figure 15: Trial trench 5

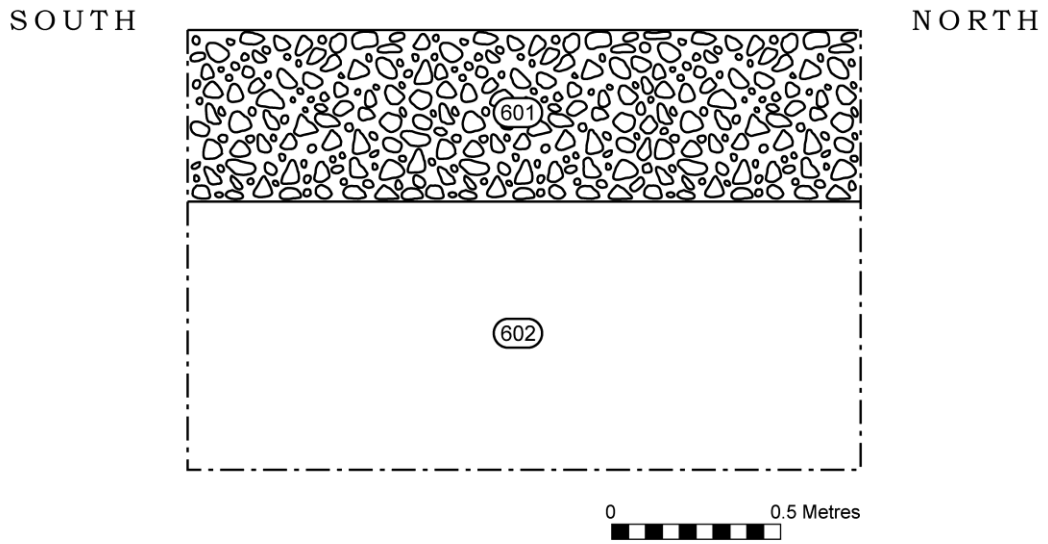


Figure 16: Trial trench 6

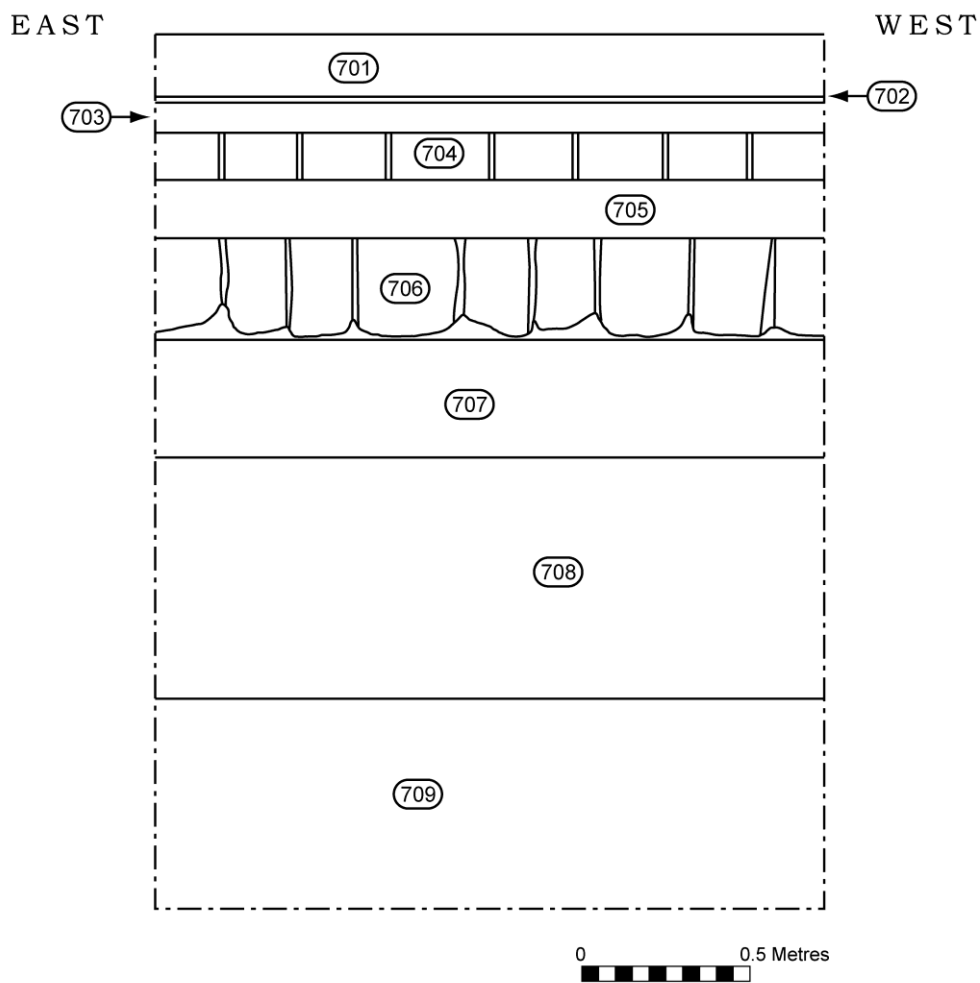


Figure 17: Trial trench 7

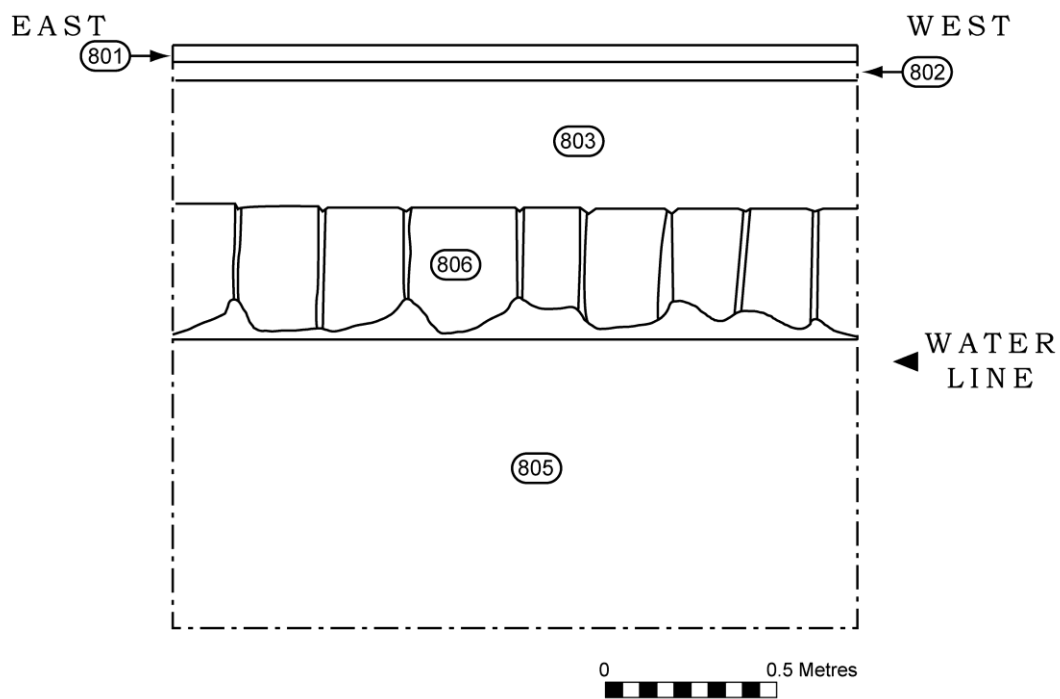


Figure 18: Trial trench 8

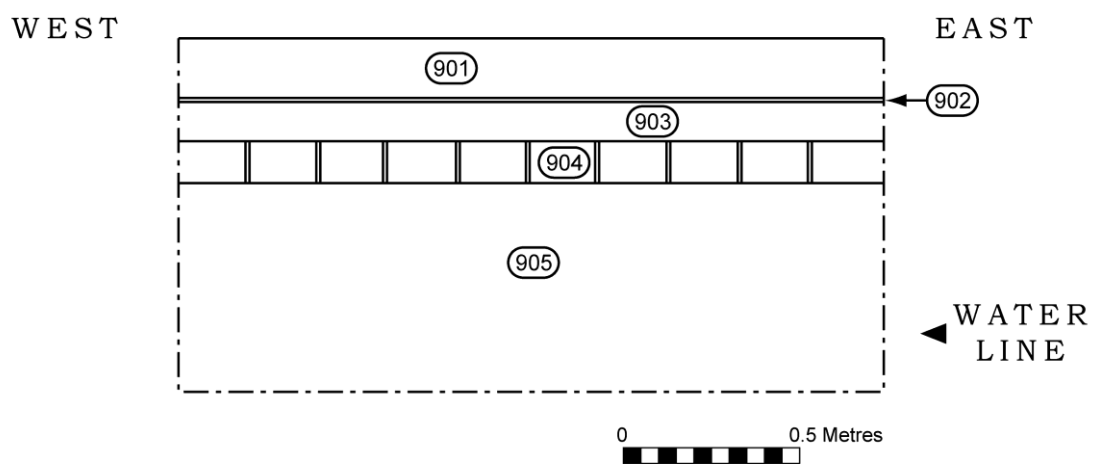


Figure 19: Trial trench 9

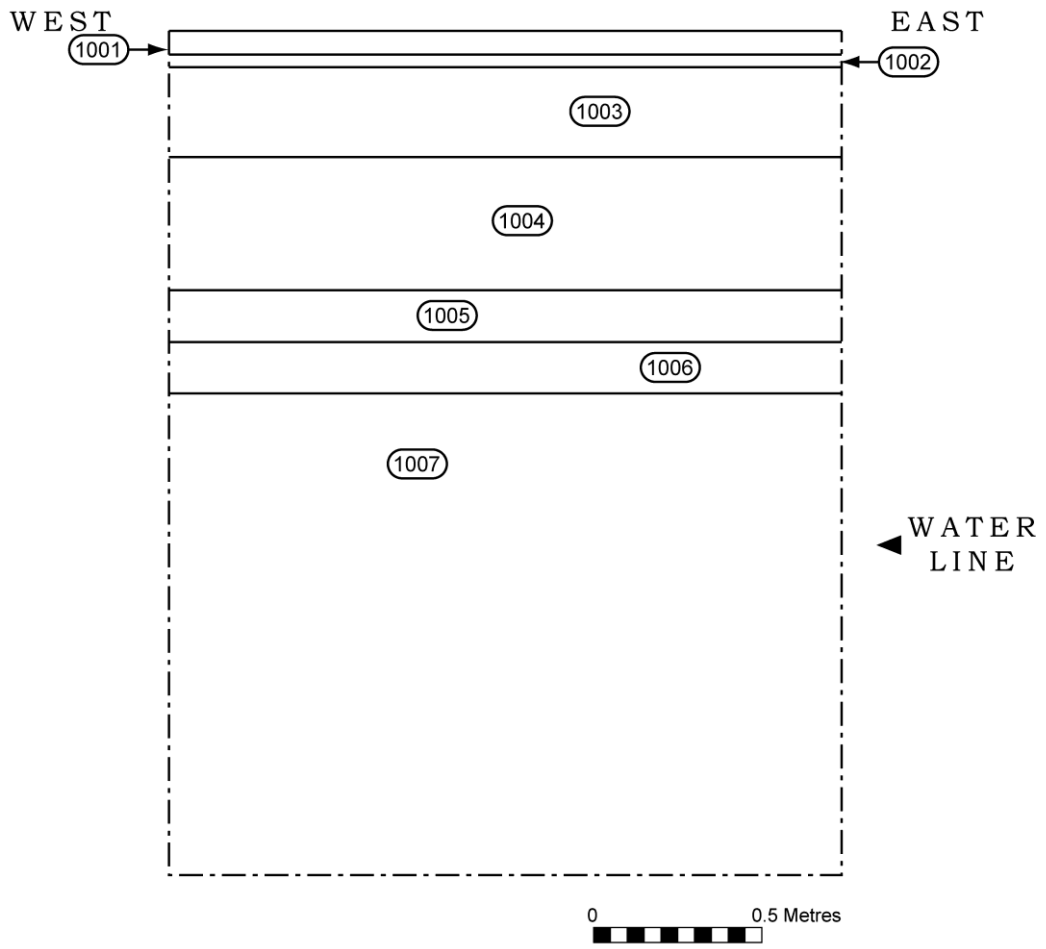


Figure 20: Trial trench 10

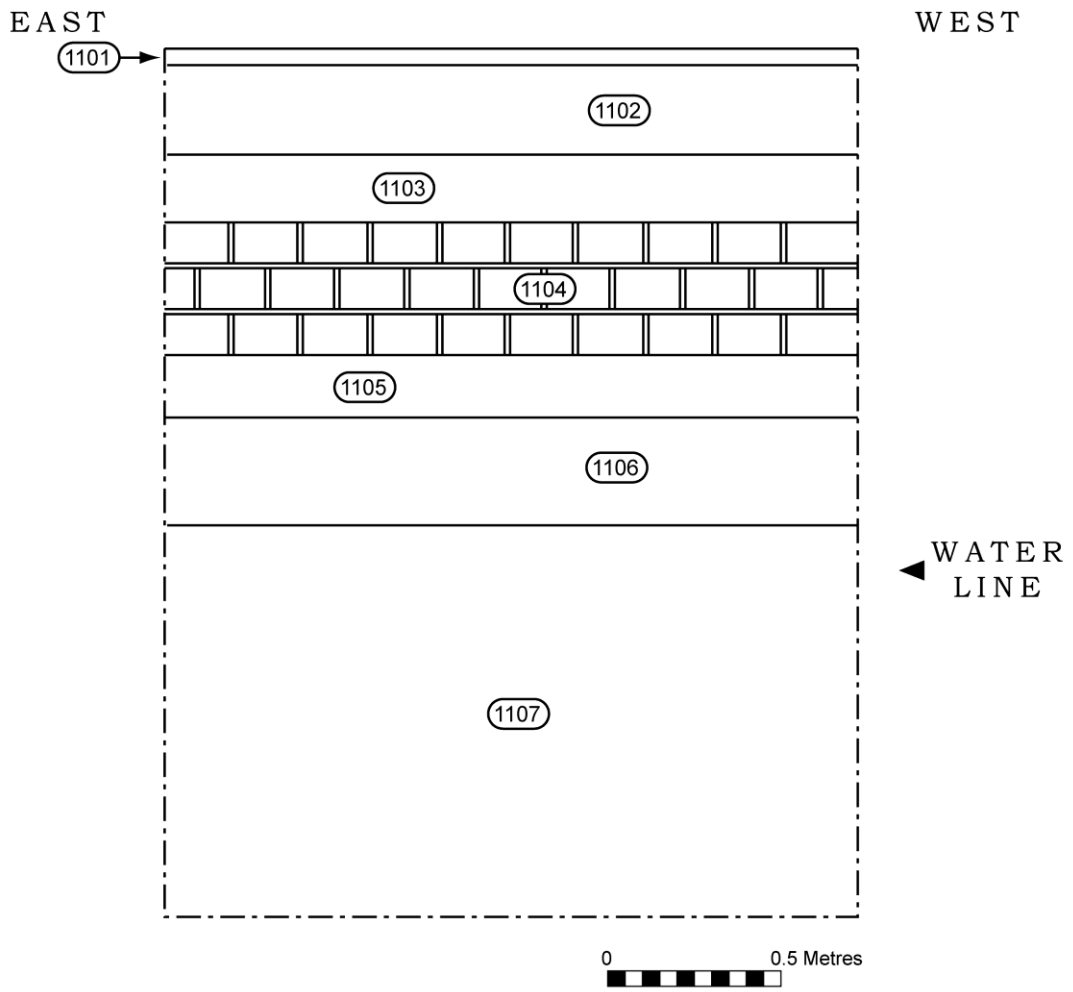


Figure 21: Trial trench 11

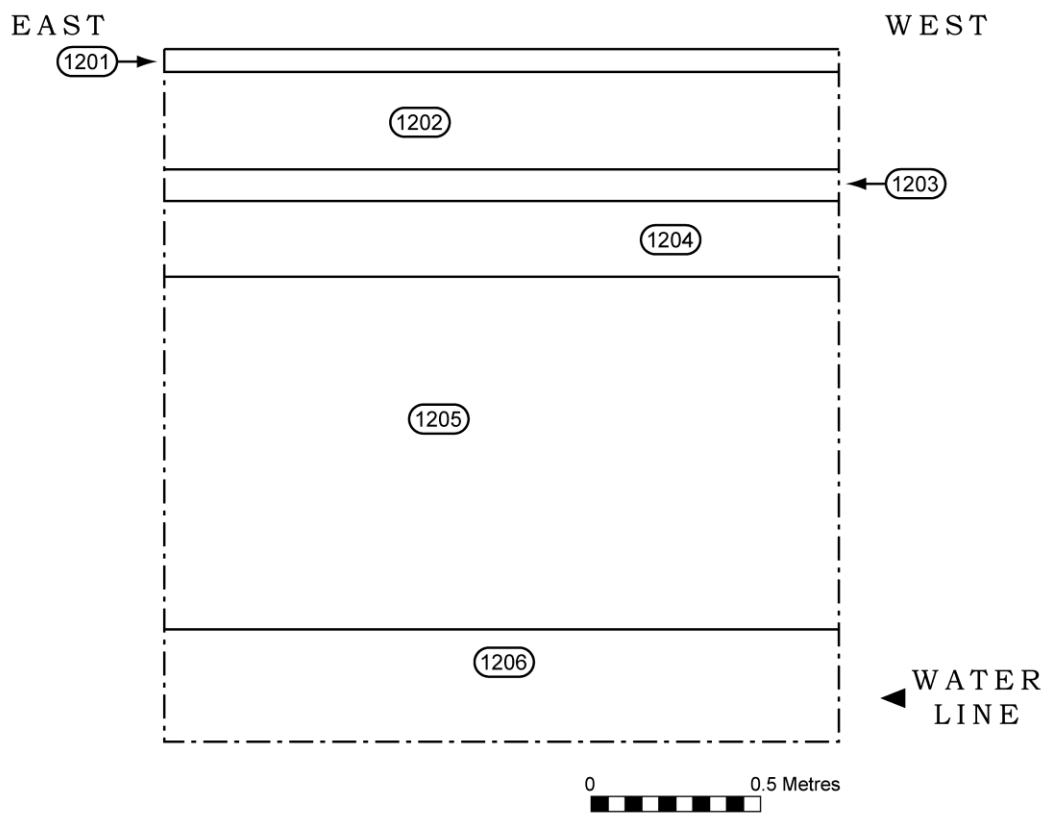


Figure 22: Trial trench 12

A3. APPENDIX 3: LIST OF CONTEXTS

No.	Description
B1001	Tarmac
B1002	Grey Granular Finings
B1003	Shale and Sandstone
B1004	Whin Setts in Ash
B1005	Grey-Black Silt and Ash
B2001	Concrete
B2002	Grubbed-Up Bricks and Stone
B2003	Gritty Grey Ash
F101	Tarmac
F102	Grey Granular Finings
F103	Shale and Sandstone
F104	Whin Setts in Ash
F105	Puddle Clay
F106	Angular Stone and Silt
F107	Brick and Sandstone levelling
F201	Tarmac
F202	Shale
F203	Grey Granular Finings
F204	Shale and Broken Stone
F205	Whin Setts in Ash
F206	Bedding Sand
F207	Crushed Grey Stone and Ash
F208	Sand Layer
F209	Black Ash and Red Brick
F210	Natural Clay
F301	Tarmac
F302	Shale
F303	Grey Granular Finings
F304	Shale and Broken Stone
F305	Red Bricks in Black Ash
F306	Compact Fused Material
F307	Whin Dust
F308	Grey Granular Layer
F401	Tarmac
F402	Shale
F403	Grey Granular Finings
F404	Shale and Broken Stone
F405	Whin Setts in Ash
F406	Silt and Ash
F407	Sandstone and Clay
F408	Crushed Bricks
F409	Brick Structure
F410	Natural Clay
F501	Tarmac
F502	Shale
F503	Grey Granular Finings
F504	Shale and Broken Stone
F505	Whin Setts in Ash
F506	Black Granular Layer
F507	Sandstone Slabs

No.	Description
F601	Type 2 stone
F602	Silt, Clay and Brick make-up
F701	Concrete
F702	Plastic Membrane
F703	Grey Gritty Ash
F704	Red Bricks
F705	Crushed Stone and Bricks
F706	Whin Setts in Ash
F707	Black Granular Layer
F708	Re-worked Clay
F709	Natural Clay
F801	Tarmac
F802	Type 2
F803	Rubble and Ash
F804	Whin Setts in Ash
F805	Yellowish-Brown Granular Layer
F901	Concrete
F902	Plastic Membrane
F903	Grey Gritty Ash
F904	Red Bricks
F905	Crushed Stone and Bricks
F1001	Tarmac
F1002	Type 2
F1003	Rubble and Ash
F1004	Ash-rich Clay
F1005	Crushed Sandstone
F1006	Re-worked Clay
F1007	Yellowish brown granular levelling layer containing sandstone and red brick
F1101	Concrete
F1102	Grubbed-Up Bricks and Stone
F1103	Gritty Grey Ash
F1104	Brick Surface
F1105	Gritty Grey Ash
F1106	Black Granular Layer
F1107	Natural Clay
F1201	Concrete
F1202	Grubbed-Up Bricks and Stone
F1203	Gritty Grey Ash
F1204	Compact Fused Material
F1205	Black Granular Layer
F1206	Natural Clay