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PHASE 2: GROUND INVESTIGATION REPORT

VISTRY GROUP

PROPOSED RESIDENTIAL DEVELOPMENT

LAND TO THE NORTH OF SHAW LANE

CARLTON

BARNSLEY

S71 3HH

Project No: 25-899

Prepared by:

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Date: 08/05/2026

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Date: 08/05/2026

The information and / or advice contained in this Phase 2: Ground Investigation Report is based solely on, and is limited to, the boundaries of the site, the immediate area around the site, and the historical use(s) unless otherwise stated. This 'Report' has been prepared to collate information relating to the physical, environmental, and industrial setting of the site, and to highlight, where possible, the likely problems that might be encountered when considering the future development of this site for the proposed end use. All comments, opinions, diagrams, cross sections and / or sketches contained within the report, and / or any configuration of the findings is conjectural and given for guidance only and confirmation of the anticipated ground conditions should be considered before development proceeds. Agreement for the use or copying of this report by any Third Party must be obtained in writing from Arc Environmental Limited (ARC). If a change in the proposed land use is envisaged, then a reassessment of the site should be carried out.

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APPENDICES

Appendix I	Existing Exploratory Hole Location Plan, Existing Exploratory Hole Location Plan, Borehole Record Sheets, Trial Pit Record Sheets and LWD Results
Appendix II	Laboratory Results (Geotechnical & Ground Contamination)
Appendix III	Contamination Assessment, Proposed Foundation Plan, UKWIR Water Pipe Screening and Assessment Sheet

1.0 Introduction

May 2026

As requested by Vistry Group, supplementary Phase 2: Ground Investigation works have been carried out at a parcel of land north of Shaw Lane, Carlton, Barnsley, S71 3HH, where the site is proposed for development of residential housing with associated private gardens, access roads, car parking and soft landscaping.

The intrusive investigation works undertaken comprised 3 no. geobore-s wireline rotary cored boreholes (RBH01 – RBH03), 10 no. windowless sampling boreholes (WS01 to WS10 inclusive) and 30 no. mechanically excavated trial pits (TP01 – TP09, TP11 – TP18, TP20 – TP21, TP23 – TP31 & TP34 – TP36) with associated LWD Testing.

The positions of these investigation locations can be seen on the Existing and Proposed Exploratory Hole Location Plan, copies of which is attached in Appendix I. It should be noted that this plan is for orientating purposes only, as the plan is not to a standard scale.

2.0 Site Details

Table 2.1 N = north, E = east, S = south & W = west.

Site Name & Address:	Land north of Shaw Lane, Carlton, Barnsley, S71 3HH.
National Grid Reference:	437370, 410320 (representative of the central part of the site).
Description of Location:	The site is located within an area of agricultural fields. A railway line is present directly to the east of the site, with industrial land use beyond (scrap yards, etc.) and a canal is located directly to the west. The remaining land surrounding the site is primarily agricultural in nature.

3.0 Scope of Works

Table 3.1

Client:	Vistry Group.
Project type:	Residential housing with associated private gardens, access roads, car parking and soft landscaping.
Investigation Works:	3 no. geobore-s wireline rotary cored boreholes (RBH01 – RBH03), 10 no. windowless sampling boreholes (WS01 to WS10 inclusive), 30 no. mechanically excavated trial pits (TP01 – TP09, TP11 – TP18, TP20 – TP21, TP23 – TP31 & TP34 – TP36) with associated LWD Testing.
Laboratory Testing:	Geotechnical and Supplementary Ground Contamination (PAH & Asbestos screening only).
CLEA End-Use Classification:	Residential with Homegrown Produce
Summary of Historical Site Information:	Historically, the site has generally comprised agricultural land with associated drainage. Between 1979 and 1999, a track and marsh land were identified on-site. Little has changed on-site since.

4.0 Supplementary Investigation Rationale

The information contained in this report is limited to the areas of the site, as indicated on the Site Investigation Location Plan, and to those areas accessible during the ground investigation. The depths of strata on the record sheets are recorded in meters below current ground levels (m bcgl) and above ordnance datum (AOD).

When considering the full scope of the development, any features and / or issues not specifically mentioned in this report cannot be assumed to have been covered. This ground investigation has been designed to provide information on the general ground and groundwater conditions where access would allow, within the boundaries of the site.

4.0 Investigation Rationale (Cont'd): -

The rationale behind the location of each exploratory location in this supplementary investigation is summarised in Table 4.1 below.

Table 4.1

Potential issue	Exploratory Location
Determine the nature of the underlying ground conditions, including shallow groundwater.	RBH01 – RBH03, WS01 – WS10, TP01 – TP09, TP11 – TP18, TP20 – TP21, TP23 – TP31 & TP34 – TP36
Determine the levels of contamination of PAHs and Asbestos present (as initially identified in previous reports) within the initial surface deposits with a view to determining the risks posed towards the future site end users.	WS01 – WS10, TP01 – TP09, TP11 – TP18, TP20 – TP21, TP23 – TP31 & TP34 – TP36
Determine the CBR value of the in-situ strata across the site.	TP01 – TP09, TP11 – TP18, TP20 – TP21, TP23 – TP31 & TP34 – TP36

4.1 Contamination Related Sampling & Site Protocols: -

All works associated with this ground contamination assessment and investigations have generally been completed in accordance with BS10175:2011+A2:2017: Investigation of potentially contaminated sites – Code of practice & Land Contamination Risk Management (LCRM: October 2020) with the following precautions specific to this project.

4.1.1 Ground Contamination Sampling: -

Samples were recovered by a representative of ARC Environmental Ltd. during the intrusive investigation works. All samples were stored at approximately c.2-8^{o}C using cool boxes and ice packs prior to delivery to a UKAS / MCERTS accredited laboratory. Sampling was carried out in accordance with 'Technical Policy Statement 63: UKAS Policy on Deviating Samples'.

4.1.2 Onsite Health & Safety Requirements: -

All site representatives wore relevant and appropriate PPE including (where appropriate) safety footwear, high visibility jacket / vest, hard hat, eye protection and overalls. In addition, disposable latex gloves were used when handling any potentially contaminated materials and when rinsing all sampling tools. Each site vehicle contained a suitable First Aid kit with hand wash station / cleansing products (i.e., sanitary wipes).

4.1.3 Avoiding Cross-Contamination between Sample Locations: -

To avoid cross-contamination of materials between soil horizons, drill casing was used to seal off the made ground. In addition, plastic liners were used to collect samples from the windowless sampling boreholes.

With regards to the trial pits, the samples were recovered manually using dedicated disposable plastic gloves replaced between each sample recovery.

5.0 Ground Conditions

For an accurate description of the ground conditions encountered at each investigation position, reference should be made to the Trial Pit and Borehole Record Sheets attached in Appendix I. It should be noted that there is always the possibility of variation in the ground conditions around and between the exploratory hole locations.

5.0 Ground Conditions (Cont'd): -

5.1 Soil Profile: -

Made ground comprising sandy slightly clayey soil was recorded from ground level (GL) to depths of between c.0.15m and c.0.32m below current ground levels (bcgl) with anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, tile and occasional rare slag-like materials. Deeper made ground (reworked soils) was generally encountered in the central and western portion of the site comprising a combination of slightly sandy slightly gravelly clay and gravelly clayey sand with a low cobble content and with anthropogenic fragments of brick and occasional concrete proven to depth between c.0.60m bcgl to c.2.00m bcgl.

Within TP14, made ground was encountered from c.1.00m bcgl to c.1.50m bcgl comprising black sandy clayey gravel with low to moderate cobble content and anthropogenic fragments of brick, concrete, glass, metal, plastic and tile.

No visual or olfactory evidence of significant contamination (i.e. free product contamination, ash, asbestos etc.) was recorded in any location during the investigation.

Underlying the made ground, natural strata was encountered from between c.0.20m bcgl and c.2.00m bcgl to depths of c.1.10m bcgl to c.3.00m bcgl and generally comprised very soft to soft, becoming firm, and locally stiff, sandy to very sandy, slightly gravelly clay with low cobble content.

In the area surrounding the pond, in the centre of the site, sandy slightly gravelly silty semi-amorphous peat was encountered at depths between c.1.20m bcgl to c.2.50m bcgl (TP04, TP06, TP07, TP09, TP11 & TP13).

Underlying the superficial drift deposits in most locations, the natural solid geology generally comprised brown to grey weathered mudstone bedrock from between c.1.10 to at least c.3.20m, soon transitioning into light brown medium strong sandstone from c.4.00m bcgl. Grey to black shaley mudstone was encountered in TP04 & TP08.

5.2 Groundwater & Stability: -

Groundwater ingress was noted at depths of between c.0.80m bcgl and c.2.90m bcgl within the majority of the trial pits during the investigation. The trial pits were generally terminated due to either instability in the pit walls causing partial structural collapse of the long face of the pit or water strikes filling the base of the pit. A summary can be found in Table 5.1 below and on the following page.

Table 5.1

Location	Total Depth of position (m bcgl)	Depth of Groundwater (m bcgl)	Strata	Comments
TP01	2.70	2.60	Mudstone	Seepage noted.
TP02	2.50	2.40	Mudstone	Seepage noted.
TP03	2.50	2.30	Clay	Long face pit wall collapse. TP Terminated.
TP06	3.20	2.90	Mudstone	Seepage noted.
TP07	2.40	2.30	Mudstone	Seepage noted.
TP08	2.40	2.20	Mudstone	Moderate groundwater flow caused base to pit to be unsighted. TP Terminated.

5.0 Ground Conditions (Cont'd): -

5.2 Groundwater & Stability: -

Table 5.1 (Cont'd)

Location	Total Depth of position (m bcgl)	Depth of Groundwater (m bcgl)	Strata	Comments
TP11	2.20	1.50	Semi-amorphous Peat	Moderate groundwater flow caused base to pit to be unsighted. TP Terminated.
TP12	3.00	2.80	Clay	Seepage noted.
TP13	2.80	2.70	Mudstone	Seepage noted.
TP14	1.50	1.00	Made Ground	Moderate groundwater flow caused base to pit to be unsighted. TP Terminated.
TP15	2.70	2.50	Mudstone	Seepage noted.
TP16	2.30	0.80	Made Ground	Seepage noted.
		2.20	Mudstone	Seepage noted.
TP23	2.30	2.10	Mudstone	Seepage noted.
TP24	2.40	2.30	Mudstone	Moderate groundwater flow caused base to pit to be unsighted. TP Terminated.
TP29	2.50	2.40	Mudstone	Seepage noted.
TP31	2.10	2.10	Clay	Long face pit wall collapse. TP Terminated.
TP36	2.00	2.00	Mudstone	Moderate groundwater flow caused base to pit to be unsighted. TP Terminated.

In addition, it should be noted that the rapid rate of advancement of the exploratory holes may mask minor seepages and consideration should be given fluctuating water levels due to seasonal variations, dewatering and pumping activities.

6.0 In-situ Testing

6.1 In-situ Standard Penetration Tests: -

Standard penetration tests (SPT's) were carried out with the use of a normal split spoon sampler on the made ground and natural drift deposits noted within the boreholes to determine the relative density / strength of the materials tested. The results are shown as uncorrected 'N' values on the borehole record sheets, adjacent to the appropriate sample level. A summary of the results of the tests undertaken can be seen in Table 6.1 below.

Where the full penetration depth, including seating blows (450mm), could not be achieved, the bottom sampling depth is indicated as less than 0.45m from the top (start of test), with the actual depth of penetration and number of blows undertaken also being recorded.

Table 6.1

Type of Strata	Range of SPT 'N' Values	Result details
Cohesive Made Ground	4 to 12	Indicitive of very soft becoming firm (low and medium strength) deposits.
Cohesive Superficial Deposits	5 to 24	Indicative of very soft becoming stiff (low, medium and high strength) deposits.
PMCM – Mudstone	38 to 75+ for 150mm	Indicative of extremely weak weathered mudstone becoming very weak partially weathered mudstone.

6.0 In-situ Testing (Cont'd): -

6.2 In-situ Hand Shear Vane Tests: -

In-situ hand shear vane tests were carried out using a portable in-situ hand shear vane tester on the natural clays encountered in the exploratory location. The in-situ hand vane tester takes direct readings of shear strength, three vane sizes allow for the direct determination of undrained shear strength of extremely low to high strength clays. The peak vane value is determined by a calibrated scale ring built into the head assembly. The cross handle is used both to push the vane to the desired test depth and apply the shearing torque. The results are summarised in Table 6.2 below and can also be found adjacent to the appropriate sample level, on the Trial Pit Sheet attached.

Table 6.2

Type of Strata	Shear Strength (kPa)	Result details
Superficial Deposits - Clays	38 - 105	Low, Medium and High strength
Superficial Deposits – Peat	42	Low to Medium strength

6.3 In-situ LWD Testing: -

The Light Weight Deflectometer (LWD) is a portable device that measures the on-site dynamic modulus (Evd) of subgrade soils and pavements. It is suitable for cohesionless, cohesive and mixed types of soils with a maximum grain size of 63mm. It can be used on natural subgrade and subsoils, unbound base layers, granular layers, soil stabilised with lime or other additives.

The test method was originally designed to measure the dynamic modulus (Evd) of an in-situ material which indicates the material's stiffness. The test method is set out in BS 1924-2:2018, 9.2 "Hydraulically bound and stabilised materials for civil engineering purposes, Part 2, Sample preparation and testing of materials during and after treatment" but is also referenced in ASTM Standard E2583- 07: 2011 "Standard test method for measuring deflections with a light weight deflectometer (LWD)."

The test zone by the LWD is 300mm in diameter and up to 600mm in depth.

Numerous standards have been developed for the LWD and allow the characterisation of various materials based on Evd, including the estimation of the compaction degree of engineered fills, and bearing capacity. The principle of this test was developed in 1981 and simulates a truck with a 10-tonne axle weight travelling on a road at 80km per hour. A steel plate of 300mm diameter is placed on the soil to be tested.

A 10kg weight drops from a height of 0.72m onto the plate. The load pulse creates a soil pressure of 100kN/m^2 under the plate. The approximate duration of the load pulse is around 17ms (+/- 1.5ms) and it is created by means of engineered springs located above the plate. An acceleration sensor is arranged on the load plate and the velocity and the displacement (settlement) of the plate is calculated ranging from 0.1mm to 2mm (+/- 0.02mm).

LWD results can be used for determining dynamic soil modulus (Evd), spring stiffness (K_{300}), bearing capacity, degree of compaction and compaction quality control.

6.0 In-situ Testing (Cont'd): -

6.3 In-situ LWD Testing (Cont'd): -

The LWD field results can be seen in Appendix I, the results were used to give estimates of static soil modulus (Ev1) and spring stiffness (K_{300}) to estimate a CBR value (%) summarised in Table 6.3 below using both typical correlations and the following equations:

Equation 1: $K_{300} = Ev1 / B * (1 - v^2)$,

where B = plate width (0.3m), v = poisson's ratio (0.35 typical for crushed rock or sub-base gravel and 0.4 for clay)

Equation 2: $K_{762} = 0.44 * K_{300}$,

where 0.44 is the conversion factor for smaller plate sizes

Equation 3: $CBR\ (\%) = 6.1x10^{-8} * (K_{762})^{1.733}$

Table 6.3

Position	Depth (mbgl)	Strata	Δ mm	Evd MN/m²	Ev1 MN/m²	K_{300} kN/m²/mm	K_{762} kN/m²/mm	SC	CBR Equivalent %
TP01	0.60	MG	2.37	9.51	7.92	31.4	13.8	Very Soft	<1.0
TP02	0.60	MG	1.64	13.74	11.45	45.4	20.0	Very Soft	1.7
TP03	0.60	MG	4.29	5.24	4.43	16.8	7.4	Very Loose	<1.0
TP04	0.60	MG	1.85	12.16	10.13	40.2	17.7	Very Soft	1.4
TP05	0.60	NS	3.99	5.65	4.70	17.9	7.9	Very Soft	<1.0
TP06	0.60	MG	1.59	14.18	11.82	46.9	20.6	Very Soft	1.8
TP07	0.60	MG	1.40	16.03	13.36	53.0	23.3	Very Soft	2.3
TP08	0.60	MG	1.62	13.91	11.59	46.0	20.2	Very Soft	1.8
TP09	0.60	MG	1.59	14.18	11.82	46.9	20.6	Very Soft	1.8
TP11	0.60	MG	2.36	9.54	7.95	31.6	13.9	Very Soft	<1.0
TP12	0.60	MG	1.32	17.10	14.97	56.9	25.0	Loose	2.6
TP13	0.60	MG	0.85	26.60	22.16	87.9	38.7	Soft	5.4
TP14	0.60	MG	0.99	22.77	18.97	75.3	33.1	Soft	4.2
TP15	0.60	MG	1.73	13.01	10.84	43.0	18.9	Very Soft	1.6
TP16	0.60	MG	1.18	19.15	15.96	63.3	27.9	Very Soft	3.1
TP17	0.60	MG	1.56	14.40	12.00	47.6	21.0	Very Soft	1.9
TP18	0.60	NS	2.33	9.66	8.05	31.9	14.1	Very Soft	<1.0
TP20	0.60	MG	4.00	5.62	4.68	18.6	8.2	Very Soft	<1.0
TP21	0.60	MG	4.19	4.37	4.47	17.4	7.8	Very Soft	<1.0
TP23	0.60	NS	4.10	5.49	4.57	18.1	8.0	Very Soft	<1.0
TP24	0.60	MG	4.11	5.47	4.56	18.1	8.0	Very Soft	<1.0
TP25	0.60	NS	3.57	5.30	5.25	20.8	9.2	Very Soft	<1.0
TP26	0.60	NS	2.56	8.79	7.32	29.1	12.8	Very Soft	<1.0
TP27	0.60	NS	3.07	7.33	6.11	24.3	10.7	Very Soft	<1.0
TP29	0.60	NS	2.49	9.03	7.52	29.8	13.1	Very Soft	<1.0
TP30	0.60	NS	2.59	8.69	7.24	28.7	12.6	Very Soft	<1.0
TP31	0.60	MG	2.50	9.01	7.51	29.8	13.1	Very Soft	<1.0
TP34	0.60	NS	1.80	12.51	10.42	41.4	18.2	Very Soft	1.5
TP35	0.60	NS	2.32	9.70	8.08	32.1	14.1	Very Soft	<1.0
TP36	0.60	NS	3.37	6.68	5.67	22.5	9.9	Very Soft	<1.0

Evd = Dynamic Modulus, Ev1 = Static Soil Modulus (based on a correlation with Evd), SC = Soil Characterisation, K_{300} / K_{762} = Spring Stiffness / Modulus of Sub-grade Reaction (see equations 1 & 2), CBR = Californian Bearing Ratio (see equation 3), MG = Made Ground, NS = Natural Strata

6.0 In-situ Testing (Cont'd): -

6.3 In-situ LWD Testing (Cont'd): -

Due to the CBR values being consistently below 1%, additional sub-grade improvement is required, typically by adding an increased thickness of stone sub-base and geogrid reinforcements followed by rolling until the desired CBR value is met. When constructing the sub-base, should any peat or organic clay materials be encountered, these should be removed and the local thickness of the sub-base increased. It would be beneficial to confirm CBR values following compaction using Plate Load Testing. Any 'soft / loose' zones identified during development should be treated in the same manner.

7.0 Laboratory Testing

7.1 Determination of pH & SO_4: -

Representative samples of the made ground and superficial deposits recovered from the boreholes and trial pits during the investigation were tested to determine their acidic (pH) and soluble sulphate (SO_4) levels. The results are shown in Table 7.1 below and contained within Chemtech Analytical Report (Ref. 26-03051-02).

Table 7.1

Position	Depth (m)	Strata	pH	SO_4(mg/l)	Design SO_4 Class	ACEC Class
TP01	0.90 - 1.00	Made Ground	7.0	96.8	DS-1	AC-1
WS02	0.10 - 0.20	Made Ground	7.6	47.0	DS-1	AC-1
TP06	0.80 - 0.90	Made Ground	8.0	91.4	DS-1	AC-1
TP07	1.80 - 1.90	Peat	8.1	108	DS-1	AC-1
TP09	0.40 - 0.50	Made Ground	8.1	54.0	DS-1	AC-1
TP11	0.90 - 1.00	Made Ground	8.1	41.8	DS-1	AC-1
TP12	1.30 - 1.40	Clay	7.8	53.7	DS-1	AC-1
TP13	0.70 - 0.80	Made Ground	8.0	11.2	DS-1	AC-1
TP17	2.00 - 2.10	Clay	7.9	26.9	DS-1	AC-1
TP18	0.40 - 0.50	Clay	8.1	48.1	DS-1	AC-1
TP24	0.10 - 0.20	Made Ground	7.8	21.7	DS-1	AC-1
TP27	1.00 - 1.10	Clay	7.0	48.7	DS-1	AC-1
TP29	0.80 - 0.90	Clay	7.1	21.1	DS-1	AC-1
TP35	0.40 - 0.50	Clay	8.2	92.8	DS-1	AC-1
TP36	1.50 - 1.60	Clay	7.8	17.5	DS-1	AC-1

ACEC = Aggressive Chemical Environment for Concrete site classification

From these results the pH values for the samples ranges from 7.0 to 8.2, and the amount of soluble sulphate present ranges from 11.2mg/l to 108mg/l.

In addition to the above, as mudstone was encountered within the windowless sampling boreholes and some of the trial pits, 6 no. samples were tested for the BRE Suite D. The results are shown below in Table 7.2 below and are also contained within the Chemtech Analytical Report (Ref. 25-06605).

Table 7.2

Position	Depth (m)	Strata	Mg(g/l)	S(%)	Cl-(g/l)	NO_3(g/l)	SO_4(%)	Design SO_4 Class	ACEC Class
TP04	2.40 - 2.50	Mudstone	<1.00	0.178	341	<3.80	0.20	DS-1	AC-1
TP16	2.20 - 2.30	Mudstone	24.5	0.0371	99.2	<3.80	0.08	DS-1	AC-1
TP23	2.20 - 2.30	Mudstone	7.26	0.0146	16.6	<3.80	0.02	DS-1	AC-1
TP26	1.90 - 2.00	Mudstone	2.96	0.0180	5.19	<3.80	<0.01	DS-1	AC-1
TP30	1.90 - 2.00	Mudstone	5.68	0.0203	3.21	<3.80	0.03	DS-1	AC-1
TP34	1.90 - 2.00	Mudstone	2.88	0.0138	2.51	<3.80	<0.01	DS-1	AC-1

ACEC = Aggressive Chemical Environment for Concrete site classification

7.0 Laboratory Testing (Cont'd): -

7.1 Determination of pH & SO_4 (Cont'd): -

Therefore, in accordance with the BRE Special Digest 1:2005, the site should be given a classification of DS-1. When considering the nature of the natural strata tested and assuming mobile groundwater the assessment of the Chemical Environment for concrete is AC-1.

7.2 Determination of Liquid & Plastic Limits: -

Representative samples of the superficial deposits recorded across the proposed development area were tested to determine their liquid and plastic limits, so these materials could be classified. The results can be seen in Table 7.3 below and within the PSL Analytical Report (Ref. PSL26/2411) copy which is contained in Appendix II.

Table 7.3

Position	Depth(m)	M/C (%)	LL	PL	PI	Class	% Passing 425µm Sieve
WS01	0.90 - 1.00	25.8	45	21	24	ClM	98
WS02	1.00 - 1.10	19.1	38	19	19	ClM	96
WS03	1.90 - 2.00	24.2	47	22	25	ClM	100
WS04	1.30 - 1.40	27.1	46	22	24	ClM	98
WS05	1.50 - 1.60	22.6	45	22	23	ClM	100
WS06	1.00 - 1.10	22.7	54	24	30	ClH	100
WS07	0.70 - 0.80	19.8	38	18	20	ClM	96
WS08	0.70 - 0.80	18.1	37	18	19	ClM	95
WS09	0.75 - 0.90	21.7	43	20	23	ClM	96
WS10	0.80 - 0.90	21.2	32	16	16	ClL	100

M/C = Moisture Content, LL = Liquid Limit, PL = Plastic Limit, PI = Plasticity Index, ClL - Clay Low, ClM = Clay Medium, ClH = Clay High

The ten samples tested, when plotted on the plasticity chart, fall within the low, medium and high plasticity ranges, and from the resulting plasticity indices, has a medium volume change potential, when considering the amount passing the 425µm sieve.

Therefore, these materials may undergo significant changes in volume, if large changes in their natural moisture content were to occur due to seasonal variations or the like. As such, it is anticipated that a minimum founding depth of 0.90m bfgl (below finished ground levels) will be required within any cohesive deposits across the site.

7.3 Earthworks Relationship Testing: -

Representative samples of the sandy to very sandy, occasionally slightly gravelly, occasionally silty clay were subjected to a series of earthworks relationship tests to further assess the suitability of the natural soils for use in 'cut and fill' operations. The samples were tested for the following:

- Determination of dry density / moisture content (4.5kg rammer – standard compaction for fine soils - 5 points).

The graphic earthworks relationship testing summary sheets summarise the laboratory testing and show the relationships between the Moisture Contents and Dry Density. These can be seen in the PSL Analytical Report (Ref. PSL26/2411), a copy of which is contained in Appendix II.

7.0 Laboratory Testing (Cont'd): -

7.3 Earthworks Relationship Testing (Cont'd): -

Representative samples of the natural clays were subject to earthworks relationship testing to determine the performance criteria for achieving adequate compaction. Plots of the recorded relationship testing, comparing the various soil parameters, are attached along with the optimum moisture contents and maximum dry densities.

The relationship testing revealed up to 16.9% variation between natural and optimum moisture content, and the general behaviour of the materials tested under standard compaction (4.5kg rammer) was not significantly different.

It is accepted that the laboratory theoretical maximum parameters (i.e. 100% compaction with no air voids) are impractical to achieve in the field, due mainly to heterogeneities in a large volume of material. It is therefore normal to adopt a field tolerance from this laboratory maximum. This is normally taken as between 90% and 95% of maximum compaction. In this case a conservative value ≥95% has been adopted.

Although ultimately density is an important consideration in re-compacting earthworks materials, this must be taken in the context of workability and traffic-ability, which is assessed using MCV results.

Typically for fine soils to achieve a material that is both workable and trafficable then the MCV value should range from ≥8 to ≤16, with values greater than 16 becoming more difficult to work and values less than 8 being unsuitable to traffic across.

The results have been summarised in Table 7.4 below.

Table 7.4

Position	Depth (m bcgl)	Natural Moisture Content (%)	Optimum Moisture Content (%)	Moisture Content Range to achieve ≥95% compaction & ≤5% air voids (%)
TP05	1.00 - 1.10	22.0	14.0	12.5 - 17.0
TP08	1.40 - 1.50	32.9	16	14.5 - 20.5
TP15	0.90 - 1.00	30.9	24	21.5 - 27.0
TP18	0.90 - 1.00	23.1	11	11.0 - 16.0
TP20	1.40 - 1.50	22.0	13	12.5 - 17.5
TP23	0.90 - 1.00	21.3	14	13.0 - 17.5
TP24	1.50 - 1.60	17.3	11	11.5 - 16.0
TP34	1.40 - 1.50	19.4	14	12.5 - 18.5
WS10	0.80 - 0.90	17.1	12	11.5 - 15.5

From these results, the following observations can be made:

- The moisture content range to achieve ≥95% compaction, ≤5% air voids and workable material is generally between c.13% and c.16.5% for some materials and was noted between c.21.5% to c.27.0% for other materials suggesting at least two types of materials.
- At their current moisture contents (i.e. 'as dug') the natural clay materials are not within the acceptable ranges to achieve ≥95% compaction and ≤5% air voids, whilst also achieving a suitable MCV.

7.0 Laboratory Testing (Cont'd): -

7.3 Earthworks Relationship Testing (Cont'd): -

To achieve ≥95% compaction and ≥5% air voids, the natural in-situ moisture contents will slight adjustments (i.e. drying or wetting) in order that the materials can be suitably compacted. To confirm the preferred compaction properties on-site controls will need to be adopted and any earthworks should be designed in accordance with the Code of Practice for Earthworks (BS6031:2009) and Series 600 Earthworks – Vol. 1 Specification for Highway Works February 2016.

It may be prudent to consider a method earthworks specification rather than a performance earthworks specification to achieve the preferred compaction, given the narrow margins of the performance parameters (i.e. moisture content, shear strength, MCV and CBR) and significant differences in design moisture contents.

7.4 Determination of Unconfined Compressive Strength (UCS): -

The unconfined uniaxial compressive strength of the sandstone and mudstone deposits was determined in the laboratory on suitable samples of intact core taken from the rotary boreholes. A summary of the UCS tests can be seen in Table 7.5 below and a copy of the test results are contained in the G2M analytical report Ref. 25-899 in Appendix II.

Table 7.5

Borehole Number	Depth (m)	Rock Type	Bulk Density (Mg/m^3)	Moisture Content (%)	Maximum Compressive Strength (MPa)	Strength Term
RBH01	6.46	Sandstone	2.51	5.8	25.9	Medium Strong
RBH01	10.50	Sandstone	2.63	4.4	40.7	Medium Strong
RBH01	13.50	Sandstone	2.56	5.6	30.2	Medium Strong
RBH02	8.40	Sandstone	2.55	5.3	27.8	Medium Strong
RBH02	12.64	Sandstone	2.56	5.6	30.2	Medium Strong
RBH02	13.76	Sandstone	2.60	4.6	34.6	Medium Strong
RBH03	7.20	Sandstone	2.55	5.8	12.8	Moderately Weak
RBH03	9.55	Mudstone	2.41	10.7	0.6	Extremely Weak
RBH03	13.52	Sandstone	2.55	5.6	34.9	Medium Strong

ISRM Suggested Methods pp 111 – 116, 1981.

The results obtained indicate the UCS values range from 12.8MPa up to 40.7MPa for the sandstone, indicating moderately weak to medium strong deposits and 0.6MPa for the mudstone, indicating extremely weak deposits.

7.5 Determination of Point Load Strength: -

Numerous selected samples of the intact bedrock recovered from the rotary cores, were dispatched to the laboratory for examination and subsequent testing.

The samples were loaded between two 60^0 steel points with a tip radius of 5mm, to determine their tensile point load strength (I_S), so that they might be classified.

The point load test is ideal for the rapid testing of rock samples, as multiple tests can be undertaken on irregular rock lumps, generally obtained from zones of high weathering (i.e., non-intact zones), as well as intact sections.

The results obtained are shown in Table 7.6 on the following page and are also contained in the G2M analytical report Ref. 25-899 in Appendix II.

7.0 Laboratory Testing (Cont'd): -

7.5 Determination of Point Load Strength (Cont'd): -

Table 7.6

Position	Depth (m)	Rock Type	Type of Test	Point Load Index ($Is_{(50)}$) (MPa)	Equivalent UCS Values (MPa)	Strength Term
RBH01	7.00	Sandstone	Axial	0.52	10.92	Weak
RBH01	7.73	Sandstone	Axial	0.88	18.48	Moderately Weak
RBH01	8.70	Sandstone	Axial	0.80	16.80	Medium Strong
RBH01	9.56	Sandstone	Axial	0.42	8.82	Weak
RBH01	11.40	Sandstone	Axial	0.73	15.33	Moderately Weak
RBH01	12.70	Sandstone	Axial	0.27	5.67	Weak
RBH01	14.00	Sandstone	Axial	0.90	18.90	Moderately Weak
RBH01	14.66	Sandstone	Axial	1.03	21.63	Moderately Weak
RBH02	6.05	Sandstone	Axial	0.23	4.83	Very Weak
RBH02	8.70	Sandstone	Axial	0.73	15.33	Moderately Weak
RBH02	9.19	Sandstone	Axial	1.38	28.98	Medium Strong
RBH02	10.36	Sandstone	Axial	0.91	19.11	Moderately Weak
RBH02	10.85	Sandstone	Axial	0.68	14.28	Moderately Weak
RBH02	11.60	Sandstone	Axial	1.13	23.73	Moderately Weak
RBH02	13.03	Sandstone	Axial	1.42	29.82	Medium Strong
RBH02	14.86	Sandstone	Axial	1.33	27.93	Medium Strong
RBH03	3.91	Sandstone	Axial	0.29	6.09	Weak
RBH03	4.61	Sandstone	Axial	1.04	21.84	Moderately Weak
RBH03	5.56	Sandstone	Axial	1.01	21.21	Moderately Weak
RBH03	7.85	Sandstone	Axial	0.80	16.80	Moderately Weak
RBH03	8.48	Mudstone	Axial	0.13	2.73	Very Weak
RBH03	10.77	Sandstone	Axial	0.69	14.49	Medium Strong
RBH03	11.60	Sandstone	Axial	1.32	27.72	Medium Strong
RBH03	12.64	Sandstone	Axial	0.79	16.59	Moderately Weak
RBH03	14.10	Sandstone	Axial	1.46	30.66	Medium Strong
RBH03	14.85	Sandstone	Axial	0.66	13.86	Moderately Weak

To calculate the equivalent UCS value from the $Is_{(50)}$, a conservative value for coal measure deposits (Carter and Sneddon, 1977) of 21 was used. The results obtained indicate the approximate equivalent UCS values range from 2.73MPa up to 30.66MPa.

The strength values obtained from the point load tests completed generally concur with the UCS testing.

7.6 Contamination Screening / Screening Strategy: -

Representative samples of the made ground were passed onto Chemtech Environmental of Stanley so that soil contamination screening could be carried out to assess any potential risk to human health, controlled waters, and assist with off-site disposal.

The samples were screened using a modified contamination suite as detailed below (based on the historical CLEA SGV listed analytes with additions) at the request of Vistry. The representative samples were tested for Speciated PAH (Polycyclic Aromatic Hydrocarbons) and Asbestos only. The catalogue of testing results can be found in the Chemtech Analytical Report (Ref. 25-09972-01), attached in Appendix II, and the total analysis carried out is summarised on the following page.

7.0 Laboratory Testing (Cont'd): -

7.6 Contamination Screening / Screening Strategy (Cont'd): -

- 24 no. soil samples screened for Speciated Polycyclic Aromatic Hydrocarbons (PAH's)
- 24 no. soil samples screened for Presence of asbestos

In addition, 6 no. samples were also tested for full UKWIR screening, to determine what type of pipe materials can be used for the proposed development.

8.0 Ground Contamination Risk Assessment

8.1 Methodology: -

Following completion of the contamination screening undertaken on various samples from this site, a supplementary Level 1 quantitative ground contamination risk assessments have been undertaken, generally in accordance with BS10175: British Standard Code of Practice for the Investigation of Potentially Contaminated Sites (2011+A2:2017) & Land Contamination Risk Management (LCRM: October 2020).

This quantitative ground contamination risk assessment uses the current UK practice for assessing the risks from land contamination, which is based on the established *source-pathway-receptor* pollutant linkage methodology and 'suitable for use' approach (Part IIA, EPA 1990 - inserted through Section 57 EA 1995).

Based on the results of the contamination screening completed for this site, the risks from potential contaminants have been assessed for Human Health and Controlled Waters. The results of the risk assessments can be found in Sections 8.2 (Human Health) and 8.3 (Controlled Waters), with a summary of the potential contamination sources, migration pathways and sensitive receptors for this site described within the revised CSM in Section 8.4.

8.2 Level 1 Risk Assessment (Human Health): -

The soil screening results from across the site have been assessed by comparing the Maximum Concentration values (C_M) recorded for each analyte to the Critical Concentration (C_C) values chosen for this site (taken as *Residential with Home Grown Produce*). The results of the testing are contained in Appendix II and are summarised in Table 8.1 below and on the following page.

The average TOC percentage across the 24 no. samples tested is 1.67%, which when converted to SOM using a conversion factor of 1.72 is 2.87%. As such it is deemed suitable to adopt Critical Concentrations for the site based on an SOM of 2.5%.

Table 8.1

Bold = Elevated concentrations

Analyte PAHs	Critical Conc. (C_C)	No. of Samples Screened	Max. Conc. (C_M) Recorded	No. of Samples >C_C
Acenaphthene	510[1]	24	8.44	0
Acenaphthylene	420[1]	24	0.384	0
Anthracene	5400[1]	24	18.1	0
Benzo(a)anthracene	11[1]	24	**45**	**1** (TP04)
Benzo(a)pyrene	2.7[1]	24	**38.6**	**7** (TP02, TP03, TP04, TP07, TP12, TP13 & TP24)
Benzo(b)fluoranthene	3.3[1]	24	**43**	**6** (TP02, TP03, TP04, TP07, TP12 & TP13)

[1] = LQM CIEH Suitable 4 Use Levels (S4UL Nov 2014 (Revised August 2015) – Residential with Home Grown Produce – 2.5% SOM), NAD = No asbestos detected

8.0 Ground Contamination Risk Assessment (Cont'd): -

8.2 Level 1 Risk Assessment (Human Health) (Cont'd): -

Table 8.1 (Cont'd) **Bold** = Elevated concentrations

Analyte	Critical Conc. (C_C)	No. of Samples Screened	Max. Conc. (C_M) Recorded	No. of Samples >C_C
PAHs				
Benzo(ghi)perylene	340(1)	24	19.9	0
Benzo(k)fluoranthene	93(1)	24	18.1	0
Chrysene	22(1)	24	**40.4**	**1 (TP04)**
Dibenz(ah)anthracene	0.28(1)	24	**4.63**	**8 (TP02, TP03, TP04, TP07, TP08, TP12, TP13 & TP24)**
Fluoranthene	560(1)	24	130	0
Fluorene	400(1)	24	8.38	0
Indeno(123cd)pyrene	36(1)	24	29.6	0
Naphthalene	5.6(1)	24	0.437	0
Phenanthrene	220(1)	24	98.1	0
Pyrene	1200(1)	24	101	0
Asbestos	Presence	24	NAD	0

(1) = LQM CIEH Suitable 4 Use Levels (S4UL Nov 2014 (Revised August 2015) – Residential with Home Grown Produce – 2.5% SOM), NAD = No asbestos detected

The results have identified the following:

- The Maximum Concentration C_M values for Benzo(a)anthracene exceeded the Critical Concentration C_C values in 1 no. location.
- The C_M values for Benzo(a)pyrene exceeded the C_C values in 7 no. locations.
- The C_M values for Benzo(b)fluoranthene exceeded the C_C values in 6 no. locations.
- The C_M values for Chrysene exceeded the C_C values in 1 no. location.
- The C_M values for Dibenz(ah)anthracene exceeded the C_C values in 8 no. locations.
- No C_M values for any other analytes screened for exceed the C_C values for this site.
- No asbestos fibres have been recorded during the investigation period.

The results of the contamination screening and analysis have confirmed that made ground encountered on-site does not pose a possible risk to Human Health where exposure pathways are available, and therefore no remedial measures and / or further assessments are required to protect future end users.

Consequently, the made ground in the area surrounding TP02, TP03, TP04, TP07, TP08, TP12, TP13 & TP24 represents a potential risk to Human Health where exposure pathways are available, which will require appropriate remediation.

8.3 Level 1 Risk Assessment (Controlled Waters): -

The following hydrogeological and hydrological issues have been taken into consideration when assessing the risks towards Controlled Waters:

- Raised levels of 5 no. analytes above the C_C were recorded.
- There was no 'free product' recorded during the investigation.
- The site is not situated in or within c.1km of a Source Protection Zone.
- There are no Water Abstractions recorded within c.1km of the site.
- The drift deposits (Glaciofluvial) are classified as Secondary Aquifer - A.

8.0 Ground Contamination Risk Assessment (Cont'd): -

8.3 Level 1 Risk Assessment (Controlled Waters) (Cont'd): -

- The solid geology (PMCM) is classified as a Secondary Aquifer - A.
- There are several surface water features recorded within the site boundary.
- The proposed development comprises the addition of several areas of hardcover therefore reducing surface infiltration.

From the results of these intrusive investigation works, the made ground identified does not contain any free product or mobile contamination such as waste oils, fuels, solvents, etc., that could migrate vertically or laterally from the site significantly and impact Controlled Waters.

Consequently, the risk to Controlled Waters from on-site contamination is considered to be low. Although there are some potential pathways and sensitive receptors, there is considered to be a low risk from on-site contamination and no further screening is considered necessary.

8.4 Conceptual Site Model (CSM): -

From the results of the intrusive investigation and contamination testing, a revised Conceptual Site Model (CSM) has been developed for the site and is illustrated in Table 8.2 below.

Table 8.2

	Sources (S)		*Pathways (P)*		*Receptors (R)*
S1	Made ground associated with the infill / build-up of ground levels the centre of the site **Raised levels of 5 no. analytes identified above C_C levels.** **No asbestos detected in 24 no. samples analysed.**	**P1**	Ingestion & Dermal Contact.	**R1**	Human Health End Users: Residential with Homegrown Produce Construction Workforce
		P2	Air – Inhalation of vapours (indoor & outdoors) and contact with dust.		
		P3	Plant uptake and attached soils.		
		P4	Migration through existing services.	**R2**	Controlled Waters: Groundwater: Anticipated within drift deposits (Secondary Aquifer - A) and the underlying bedrock (PMCM) (Secondary Aquifer - A). Surface Water: There are urface water features within a plausible migration distance of the site.
		P5	Direct contact with building materials.		
		P6	Surface run off & Infiltration.	**R3**	Adjacent sites
				R4*	Building materials and protection of water supply pipes.
				R5*	Flora and fauna*

* = Not included in the Human Health & Controlled Waters Risk Assessment.

8.4.1 Sources: -

The site is generally covered by varying thickness of topsoil overlying natural superficial drift deposits. The topsoil contains some anthropogenic debris i.e., ceramics from historic land drains and glass. These materials have been assessed previously using a standard generic soil suite, with the topsoil considered as a single averaging area for these analytes.

8.0 Ground Contamination Risk Assessment (Cont'd): -

8.4 Conceptual Site Model (CSM) (Cont'd): -

Due to the potential made ground present on and adjacent to site, there is the potential for hazardous ground gases to migrate upwards and pose a risk to the proposed development. A Ground Gas Risk Assessment was completed during a previous investigation following CIRIA 665 identified a Characteristic Situation 2 (CS2) ground gas risk.

8.4.2 Pathways: -

When considering the proposed end use, and without considering treatment, removal or protection measures, there are some potential plausible pathways available for direct contact, dermal contact, ingestion, inhalation, wind (dust / particulate), volatilization, and vertical and lateral transportation below the site, where there is no hardcover present.

Within the CLEA Risk Assessment Model for Human Health, there are 3 exposure mediums considered for on-site receptors, comprising ingestion of soil containing contaminants, inhalation of contaminated dust / vapours and dermal contact, with up to 10 no. exposure pathways considered, as shown on the following page.

1. Ingestion of soil and indoor dust 2. Consumption of homegrown produce and attached soil 3. Dermal contact (indoor) 4. Dermal contact (outdoor) 5. Inhalation of dust (indoor) 6. Inhalation of dust (outdoor) 7. Inhalation of vapour (indoor) 8. Inhalation of vapour (outdoor) 9. Oral background intake 10. Inhalation background intake.

Where the future site has hard cover and below new structures, a number of these pathways may not be available. In addition, when considering the potential pathways for leachate migration, where either hard cover and / or future surface water drainage systems are present, the potential effects of surface infiltration or contaminated surface water runoff will be greatly reduced. Similarly, when considering the construction work force, exposure pathways through direct contact, ingestion and dust inhalation will be available during part of the construction process, and therefore adequate PPE should be provided to protect the workforce during this period.

8.4.3 Receptors: -

Within the CLEA Risk Assessment Model for Human Health, the potential receptors are assessed initially on-site end use, followed by a delineation of age category (i.e., child or adult), with default settings for *Residential, Allotment* and *Public Open Space (Park)* end uses based on a child aged 0 to 6 years, *Public Open Space (Residential)* based on a child aged 3 to 9 and *Commercial* end uses based upon a working exposure period of up to 49 years (i.e., 16 to 65). Key generic assumptions for *Residential* and *Public Open Space (Residential)* are based upon a typical residential property, consisting of a two-storey small, terraced house, with private garden, and a *Commercial* end use based upon a typical commercial or light industrial property, consisting of a three-storey office building (pre-1970). No buildings are anticipated for *Allotment* or *Public Open Space (Park)* end uses. Within the CLEA Risk Assessment Model for Human Health there are 6 no. generic end use categories presently in use, as follows on the next page:

1) Residential with Homegrown Produce, 2) Residential without Homegrown Produce, 3) Allotments, 4) Commercial 5) Public Open Space – Residential, 6) Public Open Space - Park

For this Level 1 Risk Assessment when considering the sensitivity of the site the most appropriate end use category for this site has been taken as:

1) Residential with Homegrown Produce

8.0 Ground Contamination Risk Assessment (Cont'd): -

8.4 Revised Conceptual Site Model (CSM) (Cont'd): -

8.4.3 Receptors (Cont'd): -

With regards to Controlled Waters, the primary receptors considered for this site are the surface water features and the both the Solid and Drift Secondary Aquifer - A.

9.0 Conclusions & Recommendations

9.1 Ground Conditions: -

Made ground comprising sandy slightly clayey soil was recorded from ground level (GL) to depths of between c.0.15m and c.0.32m below current ground levels (bcgl). Deeper made ground (reworked soils) was generally encountered in the central and western portion of the site comprising a combination of slightly sandy slightly gravelly clay and gravelly clayey sand with a low cobble content proven to depth between c.0.60m bcgl to c.2.00m bcgl.

Within TP14, made ground was encountered from c.1.00m bcgl to c.1.50m bcgl comprising black sandy clayey gravel with low to moderate cobble content.

No visual or olfactory evidence of significant contamination (i.e. free product contamination, ash, asbestos etc.) was recorded in any location during the investigation.

Underlying the made ground, natural strata was encountered from between c.0.20m bcgl and c.2.00m bcgl to depths of c.1.10m bcgl to c.3.00m bcgl and generally comprised very soft to soft, becoming firm, and locally stiff, sandy to very sandy, slightly gravelly clay with low cobble content.

In the area surrounding the pond, in the centre of the site, sandy slightly gravelly silty semi-amorphous peat was encountered at depths between c.1.20m bcgl to c.2.50m bcgl (TP04, TP06, TP07, TP09, TP11 & TP13).

Underlying the superficial drift deposits in most locations, the natural solid geology generally comprised brown to grey weathered mudstone bedrock from between c.1.10 to at least c.3.20m, soon transitioning into light brown medium strong sandstone from c.4.00m bcgl. Grey to black shaley mudstone was encountered in TP04 & TP08.

9.2 Groundwater & Stability: -

Groundwater ingress was noted at depths of between c.0.80m bcgl and c.2.90m bcgl within the majority of the trial pits during the investigation. The trial pits were generally terminated due to either instability in the pit walls causing partial structural collapse of the long face of the pit or water strikes filling the base of the pit. A summary can be found in Table 5.1.

As such, shallow water ingress is likely during future construction related excavations. It is therefore recommended that allowance is made for groundwater control measures, in order to take care of any localised ingresses of groundwater which may occur during the construction period, especially during the wetter periods of the year.

9.0 Conclusions & Recommendations (Cont'd): -

9.3 Foundation Options: -

When considering the ground conditions identified, as previously identified a combination of shallow strip footings, mass trench fill footings and piling will be required.

Where ground conditions and final ground levels allow, a bearing capacity of 100kN/m^2 has been determined for shallow strip foundations taken fully through made ground deposits and founded wholly within natural clay deposits at a depth of at least c.0.90m below finished ground levels. This will ensure settlements remain within serviceable limits.

Where deep made ground and peat deposits are present, foundations should be based wholly within the underlying weathered mudstone deposits using mass trench fill and designed to a maximum allowable bearing pressure of 200kN/m^2. This will ensure settlements remain within serviceable limits.

Where the areas of deepest made ground have been identified, or areas where finished ground levels make mass trench fill unviable, a piled foundation solution will be required. In this case, this report should be passed to a competent piling contractor for assessment so they can design and price a suitable scheme of works.

A table of proposed foundation solutions and levels related to investigation positions can be found in Table 9.1 below and on the following page. It must be noted that current proposed solutions do not account for any changes to finished ground level and will need to be amended where necessary depending on any cut and fill groundworks operations undertaken across the site. A plan of the current proposed foundation solutions, based on depths below current ground levels, can be found in Appendix III.

Table 9.1

Position	Proposed Foundation Depth (m bcgl)	Proposed Foundation Depth (mAOD)	Proposed Foundation Solution*
TP01	1.40	45.87	Deep trench fill or piled
TP02	2.00	46.14	Deep trench fill or piled
TP03	1.50	46.05	Deep trench fill or piled
TP04	2.30	46.18	Deep trench fill or piled
TP05	0.90	46.32	Shallow or trench fill
TP06	2.00	45.49	Deep trench fill or piled
TP07	2.20	45.07	Deep trench fill or piled
TP08	1.30	46.03	Deep trench fill or piled
TP09	>2.50	Below 45.26	Piled
TP11	2.00	45.25	Deep trench fill or piled
TP12	1.20	45.68	Shallow / Trench Fill
TP13	1.60	45.42	Deep trench fill or piled
TP14	>1.50	Below 45.63	Piled
TP15	0.90	45.91	Shallow or trench fill
TP16	0.90	46.14	Shallow or trench fill
TP17	0.90	45.92	Shallow or trench fill
TP18	0.90	45.53	Shallow or trench fill
TP20	0.90	44.82	Shallow or trench fill
TP21	0.90	45.72	Shallow or trench fill
TP23	0.90	46.56	Shallow or trench fill
TP24	1.00	45.92	Shallow or trench fill
TP25	0.90	45.99	Shallow or trench fill
TP26	0.90	46.00	Shallow or trench fill

*Proposed foundation solution based off current ground levels subject to changes in levels.

9.0 Conclusions & Recommendations (Cont'd): -

9.3 Foundation Options (Cont'd): -

Table 7.6 (Cont'd)

Position	Proposed Foundation Depth (m bcgl)	Proposed Foundation Depth (AOD)	Proposed Foundation Solution*
TP27	0.90	47.49	Shallow or trench fill
TP29	0.90	46.51	Shallow or trench fill
TP30	0.90	46.25	Shallow or trench fill
TP31	0.90	45.64	Shallow or trench fill
TP34	0.90	44.39	Shallow or trench fill
TP35	0.90	43.94	Shallow or trench fill
TP35	0.90	43.22	Shallow or trench fill
WS01	0.90	46.68	Shallow or trench fill
WS02	1.00	46.23	Shallow or trench fill
WS03	1.90	45.12	Deep trench fill or piled
WS04	1.80	46.11	Deep trench fill or piled
WS05	2.80	44.44	Piled
WS06	0.90	45.40	Shallow or trench fill
WS07	0.90	45.69	Shallow or trench fill
WS08	0.90	45.05	Shallow or trench fill
WS09	0.90	45.12	Shallow or trench fill
WS10	0.90	46.65	Shallow or trench fill

*Proposed foundation solution based off current ground levels subject to changes in levels.

When considering the results of the pH and soluble sulphate testing, future foundations and buried concrete on the site can be constructed utilising a concrete design class of DS-1 and ACEC class of AC-1.

Based on modified plasticity indices, the natural clay deposits present beneath the site have a medium volume change potential, and significant volume changes may occur if large changes in their natural moisture content were to occur due to seasonal variations or the like. In areas of cohesive deposits, a minimum founding depth of c.0.90m bfgl is required.

However, an increase in founding depth may be required to reach competent strata if the proposed development is within close proximity to existing or envisaged vegetation. An increase in the minimum foundation depth may also be required, even if trees are to be removed, to ensure no additional future shrinkage and swelling of these materials occurs. Reference should be made to BS5837: 2012, Trees in Relation to Design, Demolition and Construction' along with the NHBC Standards, 'Building near trees'

Due to the CBR values being consistently below 1%, additional sub-grade improvement is required, typically by adding an increased thickness of stone sub-base and geogrid reinforcements followed by rolling until the desired CBR value is met. When constructing the sub-base, should any peat or organic clay materials be encountered, these should be removed and the local thickness of the sub-base increased. It would be beneficial to confirm CBR values following compaction using Plate Load Testing. Any 'soft / loose' zones identified during development should be treated in the same manner. It should be considered that depending on cut and fill operations, any emplaced fill may be suitability engineered to reduce the scope of the required sub-base and subgrade.

9.4 Ground Contamination Assessment: -

From the results of the additional supplementary contamination screening, elevated levels of Benzo(a)anthracene, Benzo(a)pyrene Benzo(b)fluoranthene, Chrysene and Dibenz(ah)anthracene have been recorded and represent a potential risk to human health where exposure pathways are available.

9.0 Conclusions & Recommendations (Cont'd): -

9.4 Ground Contamination Assessment (Cont'd): -

In addition, 2 no past site investigations found elevated levels of PAHs and the presence of asbestos on-site.

A drawing summarising the location of the contamination can be found in Appendix III.

It is recommended that a Phase 3: Remediation Strategy be prepared and submitted as part of the planning application process, which will detail the remedial measures required, as well as a subsequent Phase 4: Validation Report upon completion of the development works. The PAH and Asbestos identified will require remedial measures in the form of a clean cover system (design details to be agreed with the Local Authority / Planning Department).

All the contamination screening results should be provided to the Main Contractor / Project Coordinator, for use in devising an adequate Site Health & Safety Plan, in accordance with current CDM Regulations. For further guidance reference should be made to the Health and Safety Executive (HSE) document EH40 / 2005 Workplace exposure limits.

9.5 UKWIR Water Pipe Material Selection Screening: -

Generally, in accordance with the UKWIR Guidance (Guidance for the selection of water supply pipes to be used in Brownfield sites), 6 no. samples recovered from the trail were screened for the full UKWIR testing suite. The results are contained within the attached Chemtech Environmental Limited Analytical Reports and seen in the UKWIR Water Pipe Screening and Assessment Sheet in Appendix III and are summarised below.

- TP03, TP06, TP12, TP14, TP18 & TP34 – PE, PVC and Barrier Pope (PE - AL - PE)

9.6 General Comments: -

Where we have sampled and tested for asbestos this is discussed in the report. Whilst we would target any asbestos sampling and testing in accordance with a Conceptual Site Model and site findings, there is always the possibility, along with other contamination, that undiscovered asbestos exists between sample locations and the possibility of unknown asbestos exists on all sites.

For future site works, adequate lateral trench support will be required for excavations, to prevent trench wall collapse or over excavations, as well as to create a safe working environment, and any excavations on this site should remain open for as short a period as possible, since some of these materials may be susceptible to deterioration, if left open to the natural elements for any significant period.

In addition, for deeper excavations, drainage, service runs or the like that may pass close to or beneath any proposed new foundations, these should be undertaken with care and completed prior to the preparation of any new foundations, so as not to allow any loose or granular material to move or 'flow', thus causing settlement to occur to any new foundations based at a higher level.

An "observational technique" can be applied to the design and construction of this site, and where ground conditions seem to vary from that indicated from the conceptual ground model derived from works to date, then advice from a suitably qualified Engineer should be sought.

END OF REPORT

APPENDIX I



ARC ENVIRONMENTAL LTD
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Tel: (0191) 378 6380
e-mail: admin@arc-environmental.com
web: www.arc-environmental.com

The contractor shall check all dimensions on site before commencement of any works. No dimensions to be scaled off this drawing.
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LEGEND

	APPROXIMATE SITE BOUNDARY

rev.	date	amendments	drawn	chckd

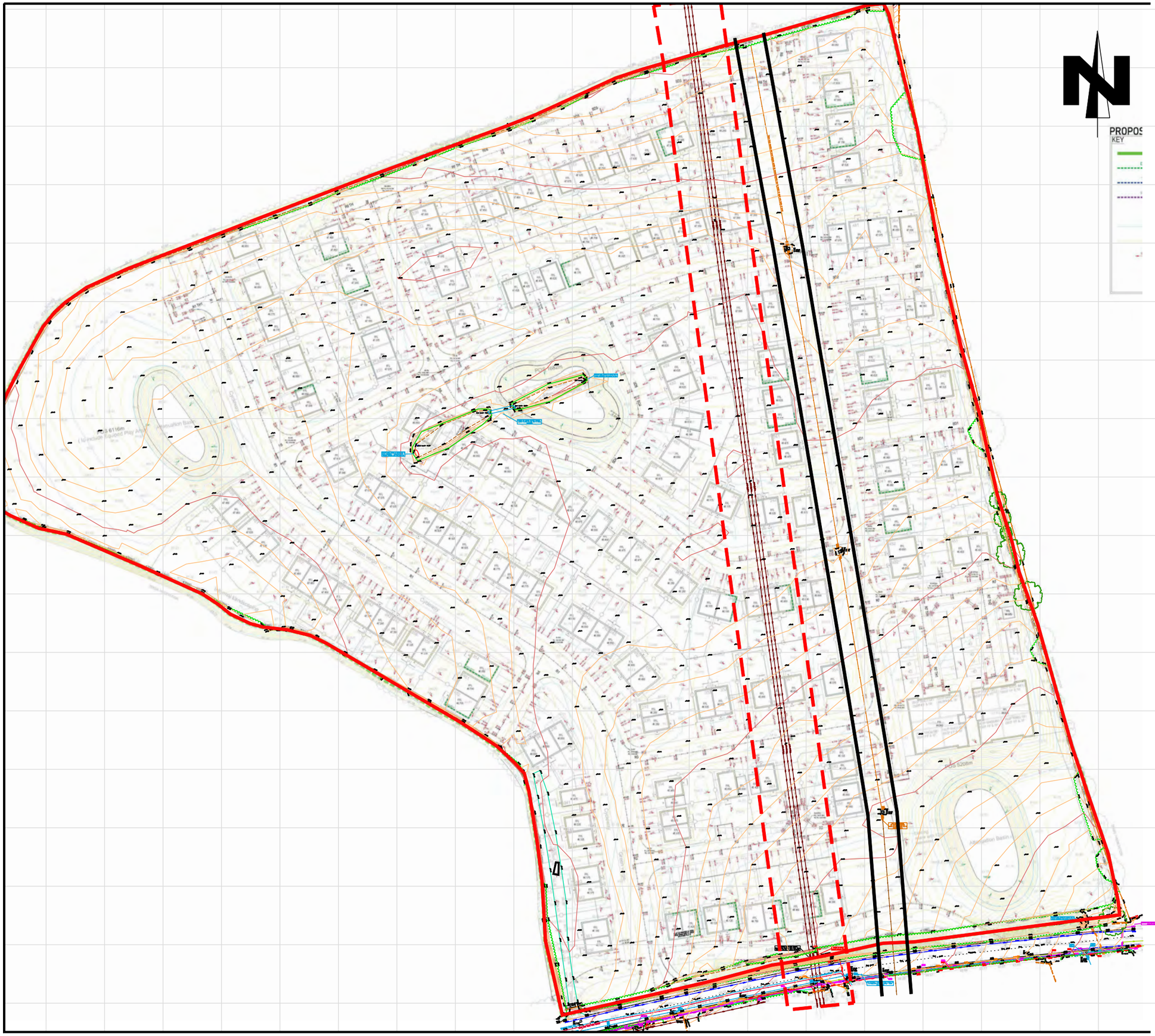
Client:
VISTRY WEST YORKSHIRE

Project Title:
Proposed Residential Development
Shaw Lane
Carlton

Drawing Title:
Existing Site Layout Plan

Scale at A3:	Date:	Drawn by:	Approved by:
NTS @ A3	24.06.26	P.D	S.D

Job Ref:	Drg no:	Rev:
25-899	–	–



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LEGEND

	APPROXIMATE SITE BOUNDARY

rev.	date	amendments	drawn	chckd

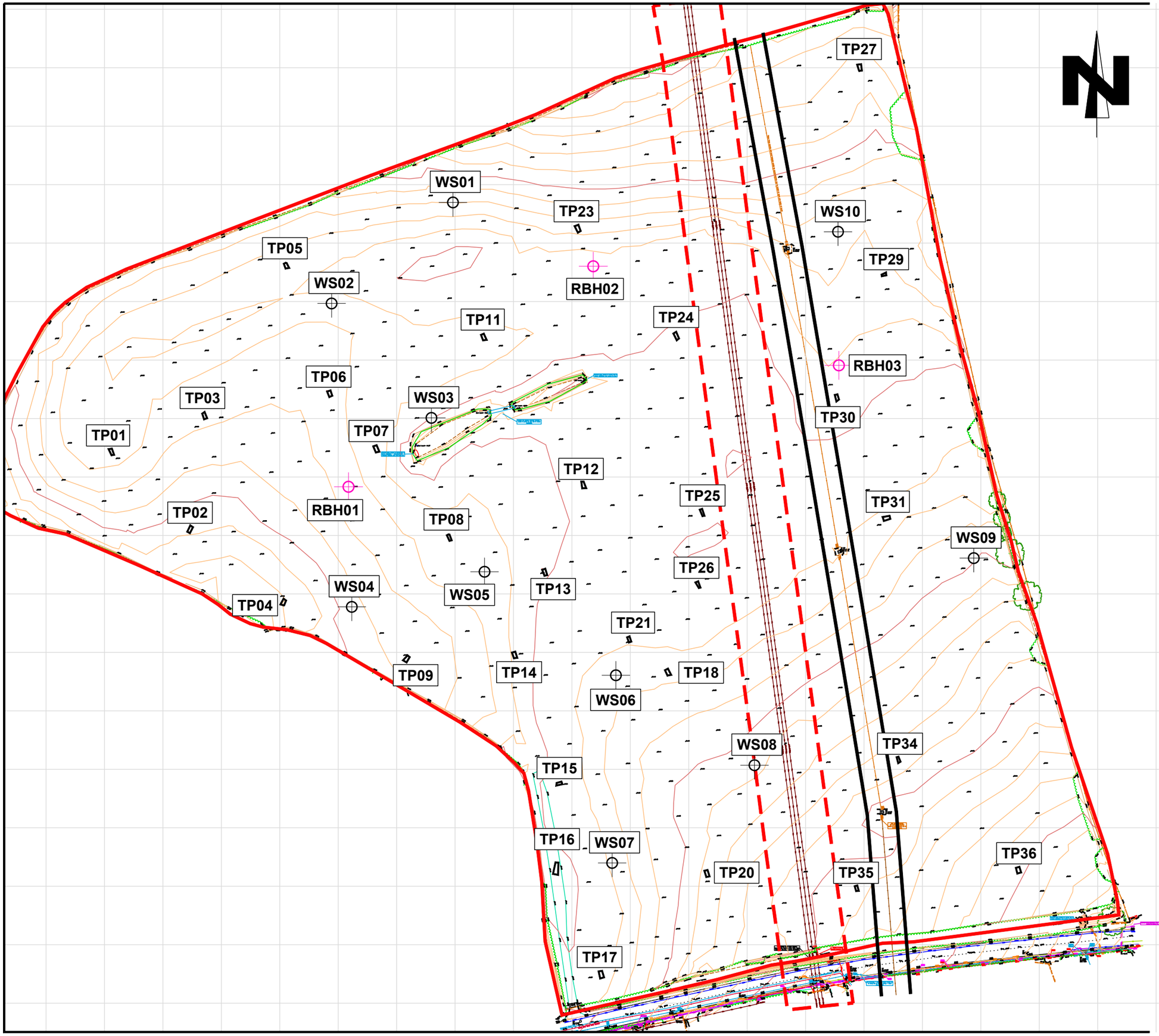
Client:
VISTRY WEST YORKSHIRE

Project Title:
Proposed Residential Development
Shaw Lane
Carlton

Drawing Title:
Proposed Development Layout Plan

Scale at A3:	Date:	Drawn by:	Approved by:
NTS @ A3	24.06.26	P.D	S.D

Job Ref:	Drg no:	Rev:
25-899	–	–



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LEGEND

	APPROXIMATE SITE BOUNDARY
	WINDOWLESS SAMPLING BOREHOLE POSITION
	MECHANICALLY EXCAVATED TRIAL PIT POSITION
	ROTARY BOREHOLE LOCATION

rev.	date	amendments	drawn	chckd

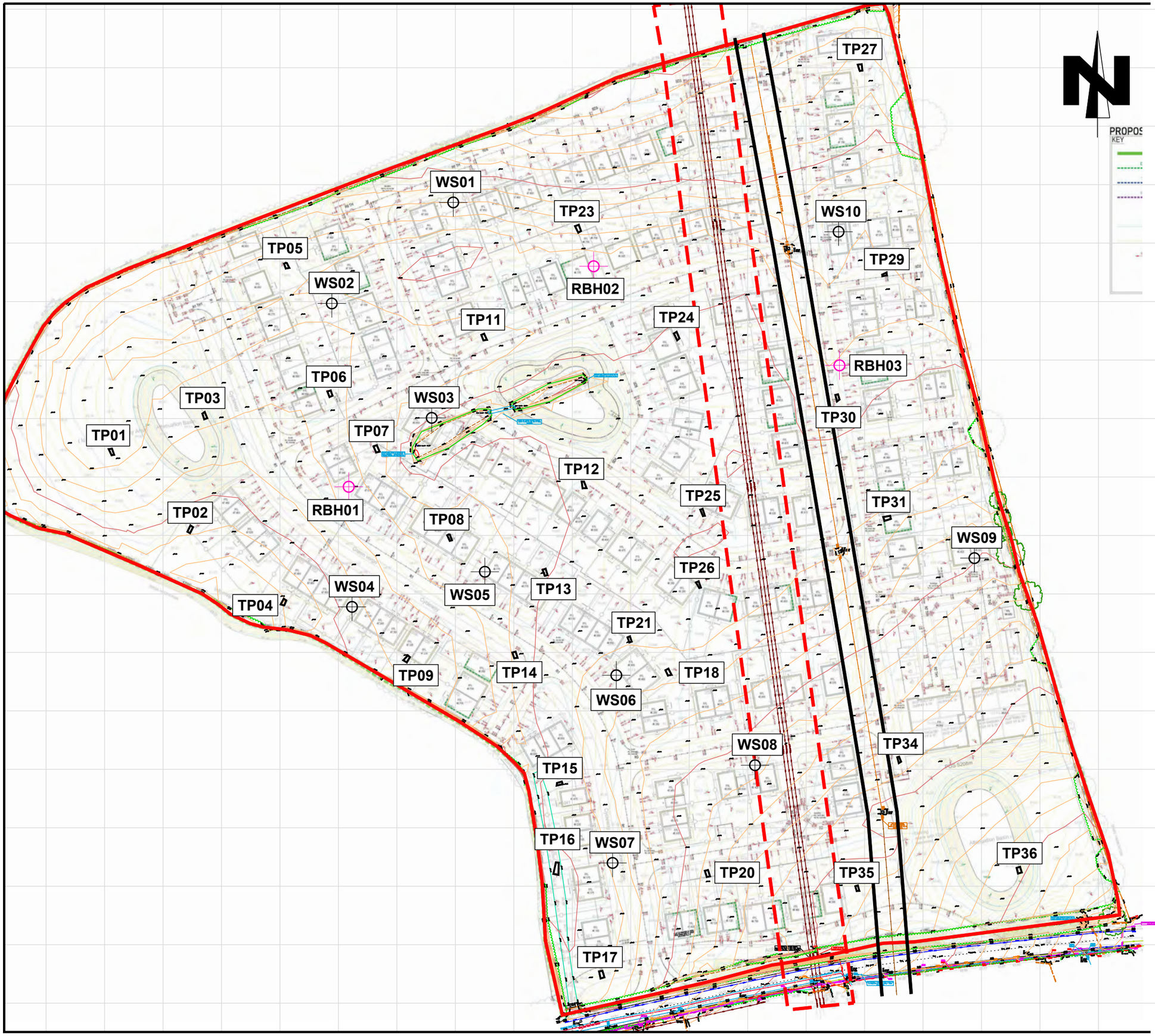
Client:
VISTRY WEST YORKSHIRE

Project Title:
Proposed Residential Development
Shaw Lane
Carlton

Drawing Title:
Exploratory Hole Location Plan (Existing Layout)

Scale at A3:	Date:	Drawn by:	Approved by:
NTS @ A3	24.06.26	P.D	S.D

Job Ref:	Drg no:	Rev:
25-899	–	–



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LEGEND

	APPROXIMATE SITE BOUNDARY
	WINDOWLESS SAMPLING BOREHOLE POSITION
	MECHANICALLY EXCAVATED TRIAL PIT POSITION
	ROTARY BOREHOLE LOCATION

rev.	date	amendments	drawn	chckd

Client:
VISTRY WEST YORKSHIRE

Project Title:
Proposed Residential Development
Shaw Lane
Carlton

Drawing Title:
Exploratory Hole Location Plan (Proposed Layout)

Scale at A3:	Date:	Drawn by:	Approved by:
NTS @ A3	24.06.26	P.D	S.D

Job Ref:	Drg no:	Rev:
25-899	–	–

Key to exploratory hole symbols and abbreviations

SAMPLE TYPES

ACM - Asbestos sample
AMAL - Amalgamated sample
B - Bulk disturbed sample
BLK - Block sample
C - Core sample
CBR - CBR test sample
D - Disturbed sample
ES - Environmental sample
EW - Environmental water sample
G - Gas sample
J - Jar sample
L - Liner sample
TW - Pushed thin wall sample
U - Undisturbed sample
UT - Undisturbed thin wall sample
W - Water sample

IN-SITU TESTS

HV - Hand shear vane
HV(r) - Hand shear vane residual
PID - Photo ionisation detector
PP - Hand penetrometer
SPT - Standard penetration test
SPT(C) - SPT using cone

GROUNDWATER

Groundwater strike
Groundwater rest level

ROTARY CORE DETAILS

TCR - Total core recovery (%)
SCR - Solid core recovery (%)
RQD - Rock quality designation (%)
FI - Fracture index
NI - Non-intact core
AZCL - Assumed zone of core loss

LEGEND

Topsoil
Peat
Made ground [cohesive]
Concrete
Wood
Brick
Bituminous material
Gypsum
Coal
Void
Clay
Silt
Sand
Gravel
Cobbles
Boulders
Mudstone
Siltstone
Sandstone
Limestone
Chalk
Breccia
Conglomerate
Metamorphic
Igneous
Sand backfill
Gravel backfill
Arisings
Bentonite
Concrete
Grout
Plain pipe
Slotted pipe

Trial Pit

TP01

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437203.25	410347.67	47.27	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	09/03/2026	09/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20	B			(0.20)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
		0.10-0.20	ES		47.07	0.20		
		0.30-0.40	B					Very soft becoming firm brown to grey mottled slightly sandy slightly gravelly Clay with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick. [MADE GROUND]
		0.30-0.40	ES					
		0.60	CBR	0.9%				
						(1.20)		
		0.90-1.00	B					
		0.90-1.00	ES					
		1.40-1.50	B		45.87	1.40		Soft becoming firm (medium strength) brown to orange very sandy silty CLAY. [GLACIAL TILL]
		1.70	HV	54 (kPa)				
		1.90-2.00	B			(1.10)		
	▽	2.50-2.60	B		44.77	2.50		Extremly weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
						(0.20)		
					44.57	2.70		*End of Trial Pit at 2.70m*

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.70m TP JCB 8ton 360 Ex
Stable
L = 2.10m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP01

PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437203.25	410347.67	47.27	1:20
Project Name		**Project No.**	**Start Date**	**End Date**
Shaw Lane, Carlton		25-899	09/03/2026	09/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.70m TP JCB 8ton 360 Ex
Stable
L = 2.10m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP02

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437229.15	410320.62	48.14	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	09/03/2026	09/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20 0.10-0.20	B ES			(0.20)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
					47.94	0.20		
		0.30-0.40 0.30-0.40	B ES			(0.30)		Dark brown gravelly clayey Sand with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. Cobbles are angular of anthropogenic brick, concrete. [MADE GROUND]
					47.64	0.50		
		0.60 0.60-0.70 0.60-0.70	CBR B ES	1.7%				
		0.90	D					Very soft becoming firm brown to grey mottled slightly sandy slightly gravelly Clay with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick. [MADE GROUND]
		1.10-1.20 1.10-1.20	B ES			(1.50)		
		1.60-1.70 1.60-1.70	B ES					
					46.14	2.00		
		2.10 2.10-2.20	HV B	52 (kPa)		(0.40)		Soft becoming firm (medium strength) brown to orange very sandy silty CLAY. [GLACIAL TILL]
	▽	2.40-2.50	B		45.74	2.40		
						(0.10)		Extreamly weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
					45.64	2.50		
								End of Trial Pit at 2.50m

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.50m TP JCB 8ton 360 Ex
Stable
L = 2.20m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Created using Pebble Geo

Trial Pit

TP02

PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437229.15	410320.62	48.14	1:20
Project Name		**Project No.**	**Start Date**	**End Date**
Shaw Lane, Carlton		25-899	09/03/2026	09/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.50m TP JCB 8ton 360 Ex
Stable
L = 2.20m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP03

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437234.13	410359.63	47.55	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	09/03/2026	09/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20 0.10-0.20	B ES			(0.30)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
					47.25	0.30		
		0.40-0.50 0.40-0.50	B ES			(0.35)		Very loose dark brown gravelly clayey Sand with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. Cobbles are angular of anthropogenic brick, concrete and tyres. [MADE GROUND]
		0.60	CBR	0.3%				
					46.90	0.65		
		0.80-0.90 0.80-0.90	B ES			(0.85)		Very soft becoming firm brown to grey mottled slightly sandy slightly gravelly Clay with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick. [MADE GROUND]
		1.30-1.40 1.30-1.40	B ES					
		1.50	HV	89 (kPa)	46.05	1.50		Firm becoming stiff (high strength) brown to orange sandy silty CLAY. [GLACIAL TILL]
		1.60-1.70	B					
		2.00	HV	100 (kPa)		(1.00)		
	▽	2.20-2.30	B					
					45.05	2.50		*End of Trial Pit at 2.50m*

Remarks
Machine Excavated Trial Pit.
TP Terminated due to pit wall instability.

Method, Plant, Stability, Dimensions
0.00 - 2.50m TP JCB 8ton 360 Ex
Unstable
L = 2.40m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP03

PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437234.13	410359.63	47.55	1:20
Project Name		**Project No.**	**Start Date**	**End Date**
Shaw Lane, Carlton		25-899	09/03/2026	09/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.
TP Terminated due to pit wall instability.

Method, Plant, Stability, Dimensions
0.00 - 2.50m TP JCB 8ton 360 Ex
Unstable
L = 2.40m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP04

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437261.48	410296.09	48.48	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	09/03/2026	09/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20 0.10-0.20	B ES			(0.20)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
					48.28	0.20		
		0.30-0.40 0.30-0.40	B ES			(0.30)		Dark brown gravelly clayey Sand with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. Cobbles are angular of anthropogenic brick, concrete and tyres. [MADE GROUND]
					47.98	0.50		
		0.60 0.60-0.70 0.60-0.70	CBR B ES	1.4%				Very soft becoming firm brown to grey mottled slightly sandy slightly gravelly Clay with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick. [MADE GROUND]
		1.00-1.10 1.00-1.10	B ES			(1.30)		
		1.50-1.60 1.50-1.60	B ES					
					46.68	1.80		
		1.90-2.00	B			(0.50)		Dark brown to black sandy slightly gravelly silty semi-amorpheus PEAT with occasional lenses of dark brown sandy silty Clay. Gravel is fine to coarse grained, angular to sub-rounded of mudstone, rootlets and wood. [GLACIOLACUSTERINE DEPOSITS]
					46.18	2.30		
		2.40-2.50	B			(0.20)		Extreamly weak dark grey to black destructed organic MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
					45.98	2.50		*End of Trial Pit at 2.50m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.50m TP JCB 8ton 360 Ex
Stable
L = 1.90m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP04

PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437261.48	410296.09	48.48	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	09/03/2026	09/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.50m TP JCB 8ton 360 Ex
Stable
L = 1.90m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP05

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437262.02	410413.26	47.22	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	11/03/2026	11/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20	ES			(0.30)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
		0.20	B		46.92	0.30		Very soft becoming firm (medium to high strength) brown to orange very sandy silty CLAY. [GLACIAL TILL]
		0.50	B					
		0.60	CBR	0.3%				
		0.80	HV	74 (kPa)				
		1.00	HV	90 (kPa)				
		1.00	B			(1.50)		
		1.50	B					
					45.42	1.80		Extreamly weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
		2.00	B			(0.30)		
					45.12	2.10		*End of Trial Pit at 2.10m*

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.10m TP JCB 8ton 360 Ex
Stable
L = 1.80m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP05
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437262.02	410413.26	47.22	1:20
Project Name		**Project No.**	**Start Date**	**End Date**
Shaw Lane, Carlton		25-899	11/03/2026	11/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.10m TP JCB 8ton 360 Ex
Stable
L = 1.80m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP06

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437276.08	410369.56	47.49	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	09/03/2026	09/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Legend	Description
		0.10-0.20 0.10-0.20	B ES			(0.30)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
					47.19	0.30		
		0.40-0.50 0.40-0.50	B ES			(0.30)		Dark brown gravelly clayey Sand with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. Cobbles are angular of anthropogenic brick, concrete. [MADE GROUND]
		0.60	CBR	1.8%	46.89	0.60		
		0.80-0.90 0.80-0.90	B ES			(0.90)		Very soft becoming firm brown to grey mottled slightly sandy slightly gravelly Clay with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick. [MADE GROUND]
		1.30-1.40 1.30-1.40	B ES					
					45.99	1.50		
		1.60-1.70	B			(0.50)		Dark brown to black sandy slightly gravelly silty semi-amorpheus PEAT with occasional lenses of dark brown sandy silty Clay. Gravel is fine to coarse grained, angular to sub-rounded of mudstone, rootlets and wood. [GLACIOLACUSTERINE DEPOSITS]
					45.49	2.00		
		2.10-2.20	B					Soft becoming firm (medium strength) brown to orange very sandy silty CLAY. [GLACIAL TILL]
		2.20	HV	56 (kPa)				
		2.60	HV	43 (kPa)		(0.90)		
	▽				44.59	2.90		
		3.00	HV	45 (kPa)				Extreamly weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
		3.10-3.20	B			(0.30)		
					44.29	3.20		*End of Trial Pit at 3.20m*

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 3.20m TP JCB 8ton 360 Ex
Stable
L = 2.00m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP06

PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437276.08	410369.56	47.49	1:20
Project Name		**Project No.**	**Start Date**	**End Date**
Shaw Lane, Carlton		25-899	09/03/2026	09/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 3.20m TP JCB 8ton 360 Ex
Stable
L = 2.00m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP07

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437292.03	410350.40	47.27	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20 0.10-0.20	B ES			(0.30)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
					46.97	0.30		
		0.40-0.50 0.40-0.50	B ES			(0.30)		Dark brown gravelly clayey Sand with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. Cobbles are angular of anthropogenic brick, concrete. [MADE GROUND]
		0.60	CBR	2.3%	46.67	0.60		
		0.80-0.90 0.80-0.90	B ES					Very soft becoming firm brown to grey mottled slightly sandy slightly gravelly Clay with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick. [MADE GROUND]
						(1.10)		
		1.30-1.40 1.30-1.40	B ES					
					45.57	1.70		
		1.80-1.90	B			(0.50)		Soft (medium strength) dark brown to black sandy slightly gravelly silty semi-amorpheus PEAT with occasional lenses of dark brown sandy silty Clay. Gravel is fine to coarse grained, angular to sub-rounded of mudstone, rootlets and wood. [GLACIOLACUSTERINE DEPOSITS]
		2.10	HV	41 (kPa)				
					45.07	2.20		
	▽	2.30-2.40	B			(0.20)		Extreamly weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
					44.87	2.40		*End of Trial Pit at 2.40m*

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.30m TP JCB 8ton 360 Ex
Stable
L = 2.10m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP07

PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437292.03	410350.40	47.27	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.30m TP JCB 8ton 360 Ex
Stable
L = 2.10m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP08

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437317.77	410320.35	47.33	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20 0.10-0.20	B ES			(0.30)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
					47.03	0.30		
		0.40-0.50 0.40-0.50	B ES			(0.30)		Dark brown gravelly clayey Sand with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. Cobbles are angular of anthropogenic brick, concrete. [MADE GROUND]
		0.60	CBR	1.8%	46.73	0.60		
		0.90-1.00 0.90-1.00	B ES			(0.70)		Very soft becoming firm brown to grey mottled slightly sandy slightly gravelly Clay with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick. [MADE GROUND]
					46.03	1.30		
		1.40-1.50	B					Soft becoming firm (medium strength) brown to orange very sandy silty CLAY. [GLACIAL TILL]
		1.50	HV	54 (kPa)				
						(0.90)		
		1.90 1.90-2.00	HV B	48 (kPa)				
	▽				45.13	2.20		
		2.30-2.40	B			(0.20)		Extreamly weak dark grey to black destructed organic MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
					44.93	2.40		*End of Trial Pit at 2.40m*

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.40m TP JCB 8ton 360 Ex
Stable
L = 2.00m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP08
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437317.77	410320.35	47.33	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.40m TP JCB 8ton 360 Ex
Stable
L = 2.00m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP09

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437303.42	410276.61	47.76	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	09/03/2026	09/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Samples and Tests: Type/ Ref	Samples and Tests: Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Strata: Description
		0.10-0.20 0.10-0.20	B ES			(0.20)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
					47.56	0.20		
		0.40-0.50 0.40-0.50	B ES			(0.30)		Dark brown gravelly clayey Sand with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. Cobbles are angular of anthropogenic brick, concrete and tyres. [MADE GROUND]
					47.26	0.50		
		0.60	CBR	1.8%				
		0.70-0.80 0.70-0.80	B ES					Very soft becoming firm brown to grey mottled slightly sandy slightly gravelly Clay with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick. [MADE GROUND]
						(1.40)		
		1.40-1.50 1.40-1.50	B ES					
		1.90-2.00	B		45.86	1.90		Dark brown to black sandy slightly gravelly silty semi-amorpheus PEAT with occasional lenses of dark brown sandy silty Clay. Gravel is fine to coarse grained, angular to sub-rounded of mudstone, rootlets and wood. [GLACIOLACUSTERINE DEPOSITS]
						(0.60)		
		2.40-2.50	B					
					45.26	2.50		*End of Trial Pit at 2.50m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.50m TP JCB 8ton 360 Ex
Stable
L = 2.60m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP09
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437303.42	410276.61	47.76	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	09/03/2026	09/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.50m TP JCB 8ton 360 Ex
Stable
L = 2.60m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP11

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437328.86	410388.69	47.25	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	09/03/2026	09/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20 0.10-0.20	B ES			(0.30)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
					46.95	0.30		
		0.40-0.50 0.40-0.50	B ES					Very soft becoming firm brown to grey mottled slightly sandy slightly gravelly Clay with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick. [MADE GROUND]
		0.60	CBR	0.9%				
		0.90-1.00 0.90-1.00	B ES			(1.20)		
	▽	1.50-1.60	B		45.75	1.50		Dark brown to black sandy slightly gravelly silty semi-amorpheus PEAT with occasional lenses of dark brown sandy silty Clay. Gravel is fine to coarse grained, angular to sub-rounded of mudstone, rootlets and wood. [GLACIOLACUSTERINE DEPOSITS]
						(0.50)		
		2.00-2.10	B		45.25	2.00		Extreamly weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
						(0.20)		
					45.05	2.20		*End of Trial Pit at 2.20m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

Remarks
Machine Excavated Trial Pit.
TP terminated due to water strike.

Method, Plant, Stability, Dimensions
0.00 - 2.20m TP JCB 8ton 360 Ex
Stable
L = 2.10m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Created using Pebble Geo

Trial Pit

TP11
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437328.86	410388.69	47.25	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	09/03/2026	09/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.
TP terminated due to water strike.

Method, Plant, Stability, Dimensions
0.00 - 2.20m TP JCB 8ton 360 Ex
Stable
L = 2.10m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP12

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437364.86	410336.14	46.88	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20	B					Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
		0.10-0.20	ES			(0.30)		
					46.58	0.30		
		0.40-0.50	B					Loose dark brown gravelly clayey Sand with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. Cobbles are angular of anthropogenic brick, concrete. [MADE GROUND]
		0.40-0.50	ES			(0.40)		
		0.60	CBR	2.6%				
					46.18	0.70		
		0.80-0.90	B					Firm brown to grey mottled slightly sandy slightly gravelly Clay with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick. [MADE GROUND]
		0.80-0.90	ES			(0.50)		
					45.68	1.20		
		1.30-1.40	B					Soft becoming firm (medium strength) brown to orange very sandy silty CLAY. [GLACIAL TILL]
		1.50	HV	56 (kPa)				
		1.80-1.90	B					
		2.00	HV	52 (kPa)				
						(1.80)		
		2.30-2.40	B					
		2.60	HV	47 (kPa)				
	▽	2.80-2.90	B					
					43.88	3.00		*End of Trial Pit at 3.00m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 3.00m TP JCB 8ton 360 Ex
Stable
L = 2.10m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP12
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437364.86	410336.14	46.88	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 3.00m TP JCB 8ton 360 Ex
Stable
L = 2.10m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP13

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437349.76	410308.45	47.02	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client Vistry

Consultant SD & SW

Contractor Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Legend	Strata: Description
		0.10-0.20 0.10-0.20	B ES			(0.30)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
					46.72	0.30		
		0.40-0.50 0.40-0.50	B ES			(0.30)		Dark brown gravelly clayey Sand with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. Cobbles are angular of anthropogenic brick, concrete. [MADE GROUND]
		0.60	CBR	5.4%	46.42	0.60		
		0.70-0.80 0.70-0.80	B ES			(0.60)		Soft becoming firm brown to grey mottled slightly sandy slightly gravelly Clay with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick. [MADE GROUND]
		1.20-1.30	B		45.82	1.20		Dark brown to black sandy slightly gravelly silty semi-amorpheus PEAT with occasional lenses of dark brown sandy silty Clay. Gravel is fine to coarse grained, angular to sub-rounded of mudstone, rootlets and wood. [GLACIOLACUSTERINE DEPOSITS]
						(0.40)		
		1.70 1.70-1.80	HV B	52 (kPa)	45.42	1.60		Soft becoming firm (medium strength) brown to orange very sandy silty CLAY. [GLACIAL TILL]
		2.10	HV	54 (kPa)		(1.10)		
		2.20-2.30	B					
	▽	2.70-2.80	B		44.32	2.70		
						(0.10)		Extreamly weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
					44.22	2.80		*End of Trial Pit at 2.80m*

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.80m TP JCB 8ton 360 Ex
Stable
L = 2.30m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP13
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437349.76	410308.45	47.02	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.80m TP JCB 8ton 360 Ex
Stable
L = 2.30m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP14

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437341.28	410278.15	47.13	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client Vistry

Consultant SD & SW

Contractor Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20 0.10-0.20	B ES			(0.30)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
					46.83	0.30		
		0.40-0.50 0.40-0.50	B ES					Soft to firm brown to grey mottled slightly sandy slightly gravelly Clay with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick. [MADE GROUND]
		0.60	CBR	4.2%		(0.70)		
		0.80-0.90 0.80-0.90	B ES					
	▽	1.00-1.10 1.00-1.10	B ES		46.13	1.00		Dark brown to black sandy clayey Gravel with moderate to high cobble content. Sand is fine to coarse grained with ash. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic and tile. Cobbles are angular of anthropogenic brick and concrete. [MADE GROUND]
						(0.50)		
		1.40-1.50 1.40-1.50	B ES					
					45.63	1.50		*End of Trial Pit at 1.50m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

Remarks
Machine Excavated Trial Pit.
TP terminated due to water strike.

Method, Plant, Stability, Dimensions
0.00 - 1.50m TP JCB 8ton 360 Ex
Unstable
L = 2.40m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP14
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437341.28	410278.15	47.13	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.
TP terminated due to water strike.

Method, Plant, Stability, Dimensions
0.00 - 1.50m TP JCB 8ton 360 Ex
Unstable
L = 2.40m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP15

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437356.77	410234.91	46.81	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.00-0.10 0.00-0.10	B ES			(0.15)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
					46.66	0.15		
		0.40-0.50 0.40-0.50	B ES			(0.75)		Very soft becoming firm brown to grey mottled slightly sandy slightly gravelly Clay with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick. [MADE GROUND]
		0.60	CBR	1.6%				
		0.90 0.90-1.00	HV B	65 (kPa)	45.91	0.90		Soft becoming firm (medium strength) brown to orange very sandy silty CLAY. [GLACIAL TILL]
		1.40 1.40-1.50	HV B	61 (kPa)		(1.50)		
		1.90-2.00	B					
		2.00	HV	75 (kPa)				
	▽	2.40-2.50	B		44.41	2.40		Extreamly weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
						(0.30)		
					44.11	2.70		*End of Trial Pit at 2.70m*

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.70m TP JCB 8ton 360 Ex
Stable
L = 1.80m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Created using Pebble Geo

Trial Pit

TP15
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437356.77	410234.91	46.81	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.70m TP JCB 8ton 360 Ex
Stable
L = 1.80m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP16

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437349.70	410308.57	47.04	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	11/03/2026	11/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20	B			(0.20)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
		0.10-0.20	ES		46.84	0.20		
		0.40-0.50	B					Very soft to firm brown to grey mottled slightly sandy slightly gravelly Clay with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick. [MADE GROUND]
		0.40-0.50	ES			(0.60)		
		0.60	CBR	3.1%				
	▽				46.24	0.80		Firm (medium strength) brown to orange sandy silty CLAY. [GLACIAL TILL]
		0.90-1.00	B					
		1.10	HV	82 (kPa)				
		1.40-1.50	B					
		1.50	HV	72 (kPa)		(1.40)		
	▽	2.20-2.30	B		44.84	2.20		Extremely weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
						(0.20)		
					44.64	2.40		*End of Trial Pit at 2.40m*

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.40m TP JCB 8ton 360 Ex
Stable
L = 1.90m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP16
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437349.70	410308.57	47.04	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	11/03/2026	11/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.40m TP JCB 8ton 360 Ex
Stable
L = 1.90m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP17

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437369.15	410170.87	46.82	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	11/03/2026	11/03/2026

Client Vistry

Consultant SD & SW

Contractor Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20	B		46.62	(0.20) 0.20		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
		0.10-0.20	ES					
		0.40-0.50	B					Very soft becoming firm brown to grey mottled slightly sandy slightly gravelly Clay with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick. [MADE GROUND]
		0.40-0.50	ES			(0.60)		
		0.60	CBR	1.9%				
		0.90-1.00	B		46.02	0.80		Dark brown to black sandy slightly gravelly organic Clay. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal, rootlets and anthropogenic fragments of brick and concrete. [MADE GROUND]
		0.90-1.00	ES			(0.60)		
		1.50-1.60	B		45.42	1.40		Firm (medium to high strength) brown to orange sandy silty CLAY. [GLACIAL TILL]
		1.70	HV	80 (kPa)				
		2.00	HV	93 (kPa)				
		2.00-2.10	B			(1.40)		
		2.50-2.60	B					
					44.02	2.80		*End of Trial Pit at 2.80m*

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.80m TP JCB 8ton 360 Ex
Stable
L = 2.00m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Created using Pebble Geo

Trial Pit

TP17
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437369.15	410170.87	46.82	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	11/03/2026	11/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.80m TP JCB 8ton 360 Ex
Stable
L = 2.00m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP18

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437393.17	410272.17	46.43	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20	B			(0.30)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
		0.10-0.20	ES		46.13	0.30		
		0.40-0.50	B					Very soft becoming firm brown to orange very sandy silty CLAY. [GLACIAL TILL]
		0.60	CBR	0.9%				
		0.90-1.00	B			(1.50)		
		1.40-1.50	B					
		1.90-2.00	B		44.63	1.80		Extreamly weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
						(0.30)		
					44.33	2.10		*End of Trial Pit at 2.10m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.10m TP JCB 8ton 360 Ex
Stable
L = 2.00m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP18
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437393.17	410272.17	46.43	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.10m TP JCB 8ton 360 Ex
Stable
L = 2.00m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP20

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437407.16	410203.27	45.72	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Samples and Tests: Type/ Ref	Samples and Tests: Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Strata: Description
		0.10-0.20 0.10-0.20	B ES			(0.30)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
					45.42	0.30		
		0.40-0.50 0.40-0.50	B ES					Very soft becoming firm brown to grey mottled slightly sandy slightly gravelly Clay with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick. [MADE GROUND]
		0.60	CBR	0.4%		(0.50)		
					44.92	0.80		Firm to stiff brown to orange very sandy silty CLAY. [GLACIAL TILL]
		1.00-1.10	B					
		1.50-1.60	B			(1.30)		
		2.10-2.20	B		43.62	2.10		Extreamly weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
						(0.30)		
					43.32	2.40		*End of Trial Pit at 2.40m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.50m TP JCB 8ton 360 Ex
Stable
L = 2.00m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP20

PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437407.16	410203.27	45.72	1:20
Project Name		**Project No.**	**Start Date**	**End Date**
Shaw Lane, Carlton		25-899	10/03/2026	10/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.50m TP JCB 8ton 360 Ex
Stable
L = 2.00m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP21

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437379.53	410283.39	46.62	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20	B					Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
		0.10-0.20	ES			(0.30)		
					46.32	0.30		
		0.40-0.50	B					Very soft becoming firm brown to grey mottled slightly sandy slightly gravelly Clay with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick. [MADE GROUND]
		0.40-0.50	ES					
		0.60	CBR	0.3%		(0.60)		
					45.72	0.90		
		1.00-1.10	B					Firm to stiff brown to orange very sandy silty CLAY. [GLACIAL TILL]
						(1.10)		
		1.50-1.60	B					
					44.62	2.00		Extreamly weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
		2.10-2.20	B			(0.30)		
					44.32	2.30		*End of Trial Pit at 2.30m*

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.30m TP JCB 8ton 360 Ex
Stable
L = 2.30m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP21

PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437379.53	410283.39	46.62	1:20
Project Name		**Project No.**	**Start Date**	**End Date**
Shaw Lane, Carlton		25-899	10/03/2026	10/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.30m TP JCB 8ton 360 Ex
Stable
L = 2.30m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP23

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437362.22	410426.28	47.46	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	09/03/2026	09/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20	B					Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
		0.10-0.20	ES			(0.30)		
					47.16	0.30		
		0.40-0.50	B					Very soft becoming firm (medium strength) brown to orange very sandy silty CLAY. [GLACIAL TILL]
		0.50	HV	50 (kPa)				
		0.60	CBR	0.4%				
		0.70	HV	42 (kPa)				
		0.90	HV	46 (kPa)				
		0.90-1.00	B					
		1.20	HV	42 (kPa)		(1.80)		
		1.90-2.00	B					
	▽				45.36	2.10		Extreamly weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
		2.20-2.30	B			(0.20)		
					45.16	2.30		*End of Trial Pit at 2.30m*

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.30m TP JCB 8ton 360 Ex
Stable
L = 2.40m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP23
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437362.22	410426.28	47.46	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	09/03/2026	09/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.30m TP JCB 8ton 360 Ex
Stable
L = 2.40m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP24

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437395.76	410389.59	46.92	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	09/03/2026	09/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20 0.10-0.20	B ES			(0.30)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
		0.30-0.40 0.30-0.40	B ES		46.62	0.30 (0.30)		Dark brown gravelly clayey Sand with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. Cobbles are angular of anthropogenic brick, concrete. [MADE GROUND]
		0.60	CBR	0.4%	46.32	0.60		
		0.70-0.80 0.70-0.80	B ES			(0.40)		Very soft becoming firm brown to grey mottled slightly sandy slightly gravelly Clay with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick. [MADE GROUND]
		1.00 1.00-1.10	HV B	62 (kPa)	45.92	1.00		Firm (medium strength) brown to orange very sandy silty CLAY. [GLACIAL TILL]
		1.20	HV	57 (kPa)				
		1.50 1.50-1.60	HV B	61 (kPa)		(1.30)		
		2.00-2.10	B					
	▽	2.30-2.40	B		44.62	2.30		
						(0.10)		Extreamly weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
					44.52	2.40		*End of Trial Pit at 2.40m*

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.40m TP JCB 8ton 360 Ex
Stable
L = 2.30m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Created using Pebble Geo

Trial Pit

TP24
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437395.76	410389.59	46.92	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	09/03/2026	09/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.40m TP JCB 8ton 360 Ex
Stable
L = 2.30m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP25

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437404.78	410326.64	46.89	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20 0.10-0.20	B ES		46.59	(0.30) 0.30		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
		0.40-0.50	B					Very soft becoming firm (low to medium strength) brown to orange very sandy silty CLAY. [GLACIAL TILL]
		0.60 0.60	CBR HV	0.4% 42 (kPa)				
		0.90 0.90-1.00	HV B	51 (kPa)		(1.50)		
		1.40 1.40-1.50	HV B	39 (kPa)				
		1.90-2.00	B		45.09 44.89	1.80 (0.20) 2.00		Extremally weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES] *End of Trial Pit at 2.00m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.00m TP JCB 8ton 360 Ex
Stable
L = 2.10m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP25
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437404.78	410326.64	46.89	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.00m TP JCB 8ton 360 Ex
Stable
L = 2.10m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP26

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437403.36	410302.00	46.90	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20 0.10-0.20	B ES			(0.30)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
					46.60	0.30		
		0.40-0.50	B					Very soft becoming firm brown to orange very sandy silty CLAY. [GLACIAL TILL]
		0.60	CBR	0.8%				
		0.90-1.00	B					
						(1.50)		
		1.40-1.50	B					
					45.10	1.80		
		1.90-2.00	B			(0.20)		Extreamly weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
					44.90	2.00		*End of Trial Pit at 2.00m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.00m TP JCB 8ton 360 Ex
Stable
L = 2.20m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP26
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437403.36	410302.00	46.90	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.00m TP JCB 8ton 360 Ex
Stable
L = 2.20m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP27

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437458.38	410478.89	48.34	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	11/03/2026	11/03/2026

Client Vistry

Consultant SD & SW

Contractor Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20	ES			(0.25)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
		0.20	B		48.09	0.25		Very soft becoming stiff (medium to high strength) brown to orange very sandy silty CLAY. [GLACIAL TILL]
		0.50	B					
		0.60	CBR	0.6%				
		0.60	HV	75 (kPa)				
						(1.35)		
		1.00	B					
		1.20	HV	105 (kPa)				
		1.50	B					
					46.74	1.60		Extreamly weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
		1.70	HV	102 (kPa)				
						(0.50)		
		2.00	B					
					46.24	2.10		*End of Trial Pit at 2.10m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.10m TP JCB 8ton 360 Ex
Stable
L = 2.60m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP27

PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437458.38	410478.89	48.34	1:20
Project Name		**Project No.**	**Start Date**	**End Date**
Shaw Lane, Carlton		25-899	11/03/2026	11/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.10m TP JCB 8ton 360 Ex
Stable
L = 2.60m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP29

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437466.00	410409.34	47.41	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	11/03/2026	11/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20	B					Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
		0.10-0.20	ES			(0.30)		
					47.11	0.30		
		0.40-0.50	B					Firm brown to grey mottled slightly sandy slightly gravelly Clay with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick. [MADE GROUND]
		0.40-0.50	ES			(0.30)		
		0.60	CBR	0.8%	46.81	0.60		
		0.70	HV	62 (kPa)				Very soft becoming firm (medium strength) dark brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse grained, angular to sub-rounded of sandstone, limestone and mudstone. [GLACIAL TILL]
		0.80-0.90	B					
						(1.00)		
		1.20	HV	70 (kPa)				
		1.30-1.40	B					
					45.81	1.60		
		1.70	HV	58 (kPa)				Soft becoming firm (medium strength) brown to orange very sandy silty CLAY. [GLACIAL TILL]
		1.70-1.80	B					
						(0.60)		
					45.21	2.20		
		2.30-2.40	B					Extreamly weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
▽						(0.30)		
					44.91	2.50		*End of Trial Pit at 2.50m*

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.50m TP JCB 8ton 360 Ex
Stable
L = 2.40m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP29
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437466.00	410409.34	47.41	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	11/03/2026	11/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.50m TP JCB 8ton 360 Ex
Stable
L = 2.40m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP30

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437450.86	410368.43	47.15	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	11/03/2026	11/03/2026

Client Vistry

Consultant SD & SW

Contractor Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.00-0.10	B			(0.20)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
		0.00-0.10	ES		46.95	0.20		
		0.40-0.50	B					Very soft becoming stiff (medium strength) brown to orange very sandy silty CLAY. [GLACIAL TILL]
		0.60	CBR	0.8%				
		0.90-1.00	B					
		1.00	HV	76 (kPa)		(1.70)		
		1.40-1.50	B					
		1.90-2.00	B		45.25	1.90		Extreamly weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
						(0.30)		
					44.95	2.20		*End of Trial Pit at 2.20m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.20m TP JCB 8ton 360 Ex
Stable
L = 2.20m
W = 0.60m

Logger SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP30
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437450.86	410368.43	47.15	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	11/03/2026	11/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 2.20m TP JCB 8ton 360 Ex
Stable
L = 2.20m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP31

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437466.60	410325.67	46.54	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	11/03/2026	11/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20	B					Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
		0.10-0.20	ES			(0.30)		
					46.24	0.30		
		0.40-0.50	B					Very soft becoming firm brown to grey mottled slightly sandy slightly gravelly Clay with low cobble content. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick. [MADE GROUND]
		0.40-0.50	ES					
		0.60	CBR	0.8%		(0.50)		
					45.74	0.80		
		0.90-1.00	B					Firm becoming stiff brown to orange very sandy silty CLAY. [GLACIAL TILL]
		1.40-1.50	B			(1.30)		
		1.90-2.00	B					
	▽				44.44	2.10		*End of Trial Pit at 2.10m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

Remarks
Machine Excavated Trial Pit.
Terminated due to pit wall collapse.

Method, Plant, Stability, Dimensions
0.00 - 2.10m TP JCB 8ton 360 Ex
Unstable
L = 2.10m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Created using Pebble Geo

Trial Pit

TP31
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437466.60	410325.67	46.54	1:20
Project Name		**Project No.**	**Start Date**	**End Date**
Shaw Lane, Carlton		25-899	11/03/2026	11/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.
Terminated due to pit wall collapse.

Method, Plant, Stability, Dimensions
0.00 - 2.10m TP JCB 8ton 360 Ex
Unstable
L = 2.10m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP34

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437471.80	410244.32	45.29	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	11/03/2026	11/03/2026

Client Vistry

Consultant SD & SW

Contractor Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20	B			(0.30)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
		0.10-0.20	ES		44.99	0.30		
		0.40-0.50	B					Very soft becoming firm brown to orange very sandy silty CLAY. [GLACIAL TILL]
		0.60	CBR	1.5%				
		0.90-1.00	B			(1.30)		
		1.40-1.50	B					
		1.70-1.80	B		43.69	1.60		Extreamly weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
						(0.30)		
					43.39	1.90		*End of Trial Pit at 1.90m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 1.90m TP JCB 8ton 360 Ex
Stable
L = 1.90m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP34
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437471.80	410244.32	45.29	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	11/03/2026	11/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 1.90m TP JCB 8ton 360 Ex
Stable
L = 1.90m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP35

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437458.21	410198.54	44.84	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	11/03/2026	11/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20	B			(0.25)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
		0.10-0.20	ES		44.59	0.25		
		0.40-0.50	B					Very soft becoming firm (medium strength) brown to orange sandy silty CLAY. [GLACIAL TILL]
		0.60	CBR	0.9%				
		0.80	HV	68 (kPa)				
		0.90-1.00	B			(1.30)		
		1.00	HV	80 (kPa)				
		1.40-1.50	B					
		1.60-1.70	B		43.29	1.55		Extreamly weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
						(0.15)		
					43.14	1.70		*End of Trial Pit at 1.70m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 1.70m TP JCB 8ton 360 Ex
Stable
L = 1.90m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP35
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437458.21	410198.54	44.84	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	11/03/2026	11/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.

Method, Plant, Stability, Dimensions
0.00 - 1.70m TP JCB 8ton 360 Ex
Stable
L = 1.90m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP36

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437513.15	410206.74	44.12	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	11/03/2026	11/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.00-0.10	B					
		0.00-0.10	ES			(0.20)		Dark brown sandy slightly gravelly clayey Soil. Gravel is fine to coarse grained, angular to sub-angular of sandstone, limestone, mudstone, coal and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, slag-like material and tile. [MADE GROUND]
					43.92	0.20		
		0.40-0.50	B					Very soft becoming firm (medium strength) brown to orange very sandy silty CLAY. [GLACIAL TILL]
		0.60	CBR	0.5%				
		0.80	HV	68 (kPa)				
		0.90-1.00	B			(1.50)		
		1.00	HV	78 (kPa)				
		1.20	HV	82 (kPa)				
		1.50-1.60	B					
					42.42	1.70		Extreamly weak dark brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
		1.90-2.00	B			(0.30)		
	▽				42.12	2.00		*End of Trial Pit at 2.00m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

Remarks
Machine Excavated Trial Pit.
Terminated due to water strike.

Method, Plant, Stability, Dimensions
0.00 - 2.00m TP JCB 8ton 360 Ex
Stable
L = 2.00m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Trial Pit

TP36
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	437513.15	410206.74	44.12	1:20

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	11/03/2026	11/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services





Remarks
Machine Excavated Trial Pit.
Terminated due to water strike.

Method, Plant, Stability, Dimensions
0.00 - 2.00m TP JCB 8ton 360 Ex
Stable
L = 2.00m
W = 0.60m

Logger
SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Key to exploratory hole symbols and abbreviations

SAMPLE TYPES

ACM - Asbestos sample
AMAL - Amalgamated sample
B - Bulk disturbed sample
BLK - Block sample
C - Core sample
CBR - CBR test sample
D - Disturbed sample
ES - Environmental sample
EW - Environmental water sample
G - Gas sample
J - Jar sample
L - Liner sample
TW - Pushed thin wall sample
U - Undisturbed sample
UT - Undisturbed thin wall sample
W - Water sample

IN-SITU TESTS

HV - Hand shear vane
HV(r) - Hand shear vane residual
PID - Photo ionisation detector
PP - Hand penetrometer
SPT - Standard penetration test
SPT(C) - SPT using cone

GROUNDWATER

Groundwater strike
Groundwater rest level

ROTARY CORE DETAILS

TCR - Total core recovery (%)
SCR - Solid core recovery (%)
RQD - Rock quality designation (%)
FI - Fracture index
NI - Non-intact core
AZCL - Assumed zone of core loss

LEGEND

Topsoil
Peat
Made ground [cohesive]
Concrete
Wood
Brick
Bituminous material
Gypsum
Coal
Void
Clay
Silt
Sand
Gravel
Cobbles
Boulders
Mudstone
Siltstone
Sandstone
Limestone
Chalk
Breccia
Conglomerate
Metamorphic
Igneous
Sand backfill
Gravel backfill
Arisings
Bentonite
Concrete
Grout
Plain pipe
Slotted pipe

Window Sampler

WS01

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS	437319.83	410433.91	47.58	1:25

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	09/03/2026	09/03/2026

Client Vistry

Consultant SW

Contractor Taylor Drilling

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20	ES			(0.21)		Soft dark brown very sandy slightly gravelly clayey Soil with rootlets. Gravel is fine to coarse grained, angular to sub angular of sandstone, limestone, mudstone and anthropogenic fragments of brick. [MADE GROUND]
		0.21-0.35	B		47.37	0.21		
						(0.69)		Firm becoming Stiff (0.40) orange brown to grey mottled silty CLAY with suspected cobble content. Rootlets to 0.80 [GLACIAL TILL]
		0.90-1.00	B		46.68	0.90		Stiff orange brown to grey mottled silty sandy gravelly CLAY. Gravel is fine to coarse grained, angular to sub angular of mudstone. Clay was noted as friable. [GLACIAL TILL]
		1.00	SPT	N=10 (1,2/3,3,2,2)				
		1.40-1.50	B			(0.90)		
		1.80-1.90	B		45.78	1.80		Extremly weak brown to grey completly weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
		2.00	SPT	N=50 for 150mm (9,8/17,30)		(0.50)		
					45.28	2.30		*End of Borehole at 2.30m*

Remarks

1.0 bgl hand dug service inspection pit completed.
BH terminated due to refusal on bedrock.
No water observed during or on completion of the bh.

Method, Plant, Stability, Dimensions — **Logger**

0.00 - 1.00m Stable	IP	Hand Tools	SW
1.00 - 2.30m Stable	WLS	Windowless Sampling Rig	SW

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Window Sampler

WS02

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS	437277.74	410399.35	47.23	1:25

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	09/03/2026	09/03/2026

Client Vistry

Consultant SW

Contractor Taylor Drilling

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.15-0.25	B			(0.29)		Soft dark brown very sandy slightly gravelly clayey Soil with rootlets.Gravel is fine to coarse grained, angular to sub angular of sandstone, limestone, mudstone and anthropogenic brick, slate, slag like materials [MADE GROUND]
					46.94	0.29		
		0.40-0.50	ES					Compact dark brown sandy anthropogenic fragments of brick, concrete sandstone, plastic, slag like materials [MADE GROUND]
	▽					(0.71)		
		1.00	SPT	N=7 (3,2/1,2,2,2)	46.23	1.00		Firm becoming Stiff (1.20) orange brown to grey mottled silty CLAY with suspected cobble content. [GLACIAL TILL]
		1.00-1.10	B					
						(0.60)		
		1.60-1.70	B		45.63	1.60		Stiff brown to grey silty sandy CLAY. Clay was noted as friable. [GLACIAL TILL] *Some organic remains, possibly decomposed rootlets (1.60 - 2.60m)*
		1.90-2.00	B					
		2.00	SPT	N=14 (3,3/2,4,4,4)				
						(1.00)		
		2.50-2.60	B					
		2.60	SPT	N=50 for 175mm (8,10/14,20,16 for 25mm)	44.63	2.60		Extremely weak grey to brown completely weathered MUDSTONE [PENNINE MIDDLE COAL MEASURES]
						(0.32)		
					44.31	2.92		*End of Borehole at 2.92m*

Remarks

1.0 bgl hand dug service inspection pit completed

BH terminated due to refusal on bedrock

Method, Plant, Stability, Dimensions — **Logger**

0.00 - 1.00m IP Hand Tools — SW
Stable

1.00 - 2.92m WLS Windowless Sampling Rig — SW
Stable

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Created using Pebble Geo

Window Sampler

WS03

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS	437311.92	410360.21	47.02	1:25

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	09/03/2026	09/03/2026

Client Vistry

Consultant SW

Contractor Taylor Drilling

Inst/ Backfill	Water Levels	Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Legend	Description
		0.05-0.15	B			(0.21)		Soft dark brown very sandy slightly gravelly clayey Soil with rootlets. Gravel is fine to medium grained, angular to sub angular of sandstone, limestone and anthropogenic fragments of brick [MADE GROUND]
					46.81	0.21		
		0.40-0.50	ES			(0.59)		Firm locally soft dark brown sandy gravelly Clay. Gravel is fine to medium grained, aungular to sub angular of mudstone and anthropogenic fragments of brick, ash,coal. [MADE GROUND]
		0.80-0.90	B		46.22	0.80		
	▽	1.00	SPT	N=4 (1,1/1,1,1,1)		(0.60)		Soft locally firm grey to brown to orange brown, silty, gravelly Clay. Gravel is fine to medium grained, angular to sub angular of mudstone. [MADE GROUND]
		1.30-1.40	B					
					45.62	1.40		
		1.90-2.00	B			(0.50)		Soft greeny grey, black silty, sandy,silty, slightly gravelly Clay. {MADE GROUND} *Pockets of soft black organic remains (peat like) very slight organic odour. (1.40 - 1.90m)*
		2.00	SPT	N=8 (2,2/2,2,2,2)	45.12	1.90		Firm becoming stiff (2.40) grey to brown silty sandy CLAY [GLACIAL TILL] *Grey only from 2.40. Some organic remains, possibly decomposed rootlets (1.90 - 3.00m)*
		2.40-2.50	B			(1.10)		
		2.80-2.90	B					
		3.00	SPT	N=50 for 260mm (4,8/12,14,14,10 for 35mm)	44.02	3.00		Extremely weak brown to grey completely weathered MUDSTONE [PENNINE MIDDLE COAL MEASURES]
		3.00-3.41	B			(0.41)		
					43.61	3.41		*End of Borehole at 3.41m*

Remarks

1.0 bgl hand dug service inspection pit completed

BH terminated due to refusal on bedrock

Method, Plant, Stability, Dimensions — **Logger**

0.00 - 1.00m IP Hand Tools — SW
Stable

1.00 - 3.41m WLS Windowless Sampling Rig — SW
Stable

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Created using Pebble Geo

Window Sampler

WS04

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS	437284.65	410295.56	47.91	1:25

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client Vistry

Consultant SW

Contractor Taylor Drilling

Inst/ Backfill	Water Levels	Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Legend	Description
		0.05-0.15	ES			(0.19)		Soft dark brown sandy, slightly gravelly clayey Soil with rootlets. Gravel is fine to medium grained, angular to sub angular of sandstone, limestone, mudstone and anthropogenic fragments of brick, pot. [MADE GROUND]
					47.72	0.19		
		0.60-0.70	ES			(0.71)		Firm dark brown to dark grey sandy gravelly Clay.Gravel is fine coarse grained, aungular to sub angular of sandstone, limestone, mudstone and anthropogenic fragements of brick, slag like material. *Brick Rubble (0.19 - 0.90m)*
		0.90-1.00	B		47.01	0.90		Stiff orange brown to grey mottled silty CLAY with suspected cobble content. [GLACIAL TILL]
		1.00	SPT	N=10 (1,2/2,2,3,3)				
		1.30-1.40	B			(0.90)		
		1.80-1.90	B		46.11	1.80		Stiff dark grey to orange brown mottled sandy, slightly gravelly CLAY. Gravel is fine to coarse grained, angular to sub angular of mudstone. Clay was noted as friable. [GLACIAL TILL]
		2.00	SPT	N=14 (2,2/3,3,3,5)				
		2.30-2.40	B			(0.70)		
		2.80-2.90	B		45.41	2.50		Extremely weak black shaley completely weathered MUDSTONE [PENNINE MIDDLE COAL MEASURES]
		3.00	SPT	N=40 (5,9/10,10,10,10)				
						(1.20)		
		3.70-3.80	B		44.21	3.70		Etremely weak grey completely weathered MUDSTONE [PENNINE MIDDLE COAL MEASURES]
		4.00	SPT	N=50 for 260mm (11,11/13,13,14,10 for 35mm)		(0.71)		
					43.50	4.41		*End of Borehole at 4.41m*

Remarks

1.0 bgl hand dug service inspection pit completed
BH terminated due to refusal on bedrock
No water observed during or on completion of the bh

Method, Plant, Stability, Dimensions — **Logger**

0.00 - 1.00m IP Hand Tools — SW
Stable

1.00 - 4.41m WLS Windowless Sampling Rig — SW
Stable

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Created using Pebble Geo

Window Sampler

WS05

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS	437330.10	410307.57	47.24	1:25

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	3/10/26

Client Vistry

Consultant SW

Contractor Taylor Drilling

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.20-0.30	B			(0.32)		Soft dark brown sandy gravelly clayey Soil with rootlets. Gravel is fine to medium grained angular to sub angular of sandstone, limestone and anthropogenic frafgments of brick, pot, slag like material. [MADE GROUND]
					46.92	0.32		Compact dark brown sandy occasionally clayey Gravel. Gravel is fine to coarse grained, sub rounded, rounded to angular, of sandstone, limestone and anthropogenic fragments of brick, ash, wood [MADE GROUND]
		0.80-0.90	ES			(0.98)		
		1.00	SPT	N=12 (3,4/4,3,3,2)				
	▽	1.30-1.40	ES		45.94	1.30		
						(0.20)		Soft greeny grey to black silty, sandy, gravelly Clay. Gravel is fine to medium angular to sub angular of sandstone, mudstone. [MADE GROUND]
		1.50-1.60	B		45.74	1.50		Firm becoming soft (1.90) orange brown to grey sandy silty CLAY. [GLACIAL TILL]
								Some organic remains possibly decomposed rootlets (1.50 - 2.80m)
		2.00	SPT	N=5 (1,1/1,1,1,2)				
		2.00-2.10	B			(1.30)		
		2.80-2.90	B		44.44	2.80		Extremely weak grey to orange brown completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
		3.00	SPT	N=50 for 295mm (8,10/12,12,13,13 for 70mm)				
		3.00-3.44	B			(0.64)		
					43.80	3.44		*End of Borehole at 3.44m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0

Remarks

1.0 bgl hand dug service inspection pit completed

BH terminated due to refusal on bedrock

Method, Plant, Stability, Dimensions — **Logger**

0.00 - 1.00m IP Hand Tools — SW
Stable

1.00 - 3.44m WLS Windowless Sampling Rig — SW
Stable

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Created using Pebble Geo

Window Sampler

WS06

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS	437375.07	410272.17	46.30	1:25

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client Vistry

Consultant SW

Contractor Taylor Drilling

Inst/ Backfill	Water Levels	Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Legend	Description
		0.10-0.20	ES			(0.29)		Soft dark brown sandy slightly gravelly clayey Soil with rootlets. Gravel is fine to coarse grained of sandstone, limestone, mudstone and anthropogenic fragments of brick, slate pot, slag like material [MADE GROUND]
	▽	0.29-0.39	B		46.01	0.29		
						(0.71)		Firm becoming stiff (0.40) orange brown to grey mottled silty CLAY with suspected cobble content [GLACIAL TILL]
		1.00	SPT	N=14 (2,2/3,3,4,4)	45.30	1.00		
		1.00-1.10	B			(0.35)		Stiff grey to orange brown sandy slightly gravelly CLAY. Gravel is fine to coarse grained of angular to sub angular of mudstone. Clay was noted as friable. [GLACIAL TILL]
		1.35-1.45	B		44.95	1.35		Extremely weak grey to orange brown completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
		1.90-2.00	B			(1.07)		
		2.00	SPT	N=50 for 270mm (8,11/13,13,14,10 for 45mm)				
					43.88	2.42		*End of Borehole at 2.42m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0

Remarks

1.0 bgl hand dug service inspection pit completed

BH terminated due to refusal on bedrock

Method, Plant, Stability, Dimensions — **Logger**

0.00 - 1.00m IP Hand Tools — SW
Stable

1.00 - 2.42m WLS Windowless Sampling Rig — SW
Stable

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Created using Pebble Geo

Window Sampler

WS07

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS	437373.78	410207.97	46.59	1:25

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	09/03/2026	09/03/2026

Client Vistry

Consultant SW

Contractor Taylor Drilling

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.20	ES			(0.25)		Soft dark brown sandy slightly gravelly clayey Soil with rootlets. Gravel is fine to coarse grained, angular to sub angular of sandstone, limestone, mudstone and anthropogenic fragments of brick, concrete, glass, metal, plastic, pot, and occasional slag like material [MADE GROUND]
		0.30-0.40	ES		46.34	0.25		
						(0.45)		Firm dark brown very sandy gravelly Clay. Gravel is fine to coarse grained, angular to sub angular of sandstone, limestone, mudstone and anthropogenic fragments of brick, concrete, pot. [MADE GROUND]
		0.70-0.80	B		45.89	0.70		
		1.00	SPT	N=10 (1,2/2,2,3,3)				Stiff orange brown to grey mottled silty CLAY with suspected cobble content. [GLACIAL TILL]
		1.00-1.10	B			(0.70)		
		1.40-1.50	B		45.19	1.40		Stiff dark brown to grey sandy slightly gravelly CLAY. Gravel is fine to coarse grained, angular to sub angular of mudstone. Clay was noted as friable [GLACIAL TILL]
						(0.70)		
		2.00	SPT	N=18 (3,3/3,5,5,5)				
		2.10-2.20	B		44.49	2.10		Extremely weak brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES] *Mudstone was noted as friable. (2.10 - 3.38m)*
						(1.28)		
		2.90-3.10	B					
		3.00	SPT	N=50 for 235mm (9,10/14,14,18,4 for 10mm)				
					43.21	3.38		*End of Borehole at 3.38m*

Remarks
1.0 bgl hand dug service inspection pit completed
BH terminated on suspected bedrock

Method, Plant, Stability, Dimensions — **Logger**

0.00 - 1.00m Stable	IP	Hand Tools		SW
1.00 - 3.38m Stable	WLS	Windowless Sampling	Rig	SW

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Window Sampler

WS08

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS	437422.50	410241.40	45.95	1:25

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	10/03/2026	10/03/2026

Client Vistry

Consultant SW

Contractor Taylor Drilling

Inst/ Backfill	Water Levels	Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Legend	Description
		0.15-0.25	ES			(0.25)		Soft dark brown sandy slightly gravelly clayey Soil with rootlets. Gravel is fine to medium grained angular to sub angular of sandstone, limestone, mudstone and anthropogenic fragments of brick, pot, concrete. [MADE GROUND]
		0.25-0.35	B		45.70	0.25		
						(0.45)		Firm becoming stiff (0.425) orange brown to grey mottled sandy, gravelly CLAY. Gravel is fine to medium rounded to sub rounded of sandstone. {GLACIAL TILL}
		0.70-0.80	B		45.25	0.70		
		1.10	SPT	N=11 (2,2/3,3,3,2)		(0.90)		Stiff grey to brown sandy gravelly CLAY. Gravel is fine to coarse grained of mudstone. Clay was noted as friable [GLACIAL TILL]
		1.60-1.70	B		44.35	1.60		
		2.00	SPT	N=24 (4,4/6,6,6,6)		(0.70)		Stiff grey to orange brown sandy slightly gravelly CLAY. Gravel is fine to coarse angular to sub angular of mudstone. Clay noted as friable.
		2.00-2.10	B					
		2.30-2.40	B		43.65	2.30		Extremely weak brown to orange brown completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES] *Mudstone was noted as friable. (2.30 - 3.15m)*
		2.75-2.85	B			(0.85)		
		2.80	SPT	N=50 for 150mm (11,14)				
		2.95	SPT	N=50 for 55mm (17,19/14 for 55mm)				
					42.80	3.15		*End of Borehole at 3.15m*

Remarks

1.0 bgl hand dug service inspection pit completed

BH terminated on suspected bedrock

Method, Plant, Stability, Dimensions — **Logger**

0.00 - 1.00m IP Hand Tools — SW
Stable

1.00 - 3.15m WLS Windowless Sampling Rig — SW
Stable

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Created using Pebble Geo

Window Sampler

WS09

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS	437497.57	410312.24	46.02	1:25

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	09/03/2026	09/032026

Client Vistry

Consultant SW

Contractor Taylor Drilling

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.00-0.27	B			(0.27)		Soft dark brown very sandy slightly gravelly clayey Soil with rootlets. Gravel is fine to coarse grained angular to sub angular of sandstone limestone, mudstone and anthropogenic fragments of brick, pot, concrete, glass. [MADE GROUND]
		0.27-0.35	B		45.75	0.27		Firm beoming stiff (0.350) orange brown to grey mottled silty CLAY with suspected cobble content. {GLACIAL TILL}
		0.60-0.70	B			(0.51)		
		0.78-0.90	B		45.24	0.78		Stiff brown to grey sandy gravelly CLAY. Gravel is fine to coarse grained, angular to sub angular of mudstone. Clay was noted as friable. [GLACIAL TILL]
		1.00	SPT	N=12 (2,2/3,3,3,3)		(0.32)		
		1.20-1.30	B		44.92	1.10		Extremely weak brown to grey completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES] *Mudstone was noted as friable. (1.10 - 2.39m)*
		1.90-2.00	B			(1.29)		
		2.00	SPT	N=50 for 235mm (6,10/14,15,16,5 for 10mm)				
					43.63	2.39		*End of Borehole at 2.39m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0

Remarks

1.0 bgl hand dug service inspection pit completed

BH terminated on suspected bedrock

Method, Plant, Stability, Dimensions — **Logger**

0.00 - 1.00m IP Hand Tools — SW
Stable

1.00 - 2.38m WLS Windowless Sampling Rig — SW
Stable

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Window Sampler

WS10

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS	437451.10	410423.88	47.55	1:25

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	09/10/2026	09/03/2026

Client Vistry

Consultant SW

Contractor Taylor Drilling

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.00-0.32	B			(0.32)		Soft dark brown sandy slightly gravelly clayey Soil with rootlets. Gravel is fine to coarse grained, angular to sub angular of sandstone, limestone, mudstone and anthropogenic fragments of brick, concrete, pot, slag like material. [MADE GROUND]
		0.32-0.45	B		47.23	0.32		Firm becomimg stiff (0.50) dark brown silty, sandy, slightly gravelly Clay. Gravel is fine to medium grained, angular to sub angular of sandstone. [GLACIAL TILL]
						(0.48)		*Some organic remains possibly decomposed rootlets (0.32 - 0.80m)*
		0.80-0.90	B		46.75	0.80		Stiff brown to grey sandy slightly gravelly CLAY. Gravel is fine to coarse grained, angular to sub angular of mudstone. Clay was noted as friable. [GLACIAL TILL]
		1.00	SPT	N=8 (1,1/2,2,2,2)				
						(1.00)		
		1.50-1.60	B					
		1.80-2.00	B		45.75	1.80		Extremely weak grey to orange brown completely weathered MUDSTONE. [PENNINE MIDDLE COAL MEASURES]
		2.00	SPT	N=38 (6,9/9,9,10,10)				*Mudstone was noted as friable. (1.80 - 3.32m)*
						(1.52)		
		2.80-2.90	B					
		3.00	SPT	N=50 for 170mm (11,12/14,22,14 for 20mm)				
					44.23	3.32		*End of Borehole at 3.32m*

Remarks

1.0 bgl hand dug service inspection pit completed

BH terminated on suspected bedrock

Method, Plant, Stability, Dimensions — **Logger**

0.00 - 1.00m Stable	IP	Hand Tools	SW
1.00 - 3.32m Stable	WLS	Windowless Sampling Rig	SW

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Created using Pebble Geo

Key to exploratory hole symbols and abbreviations

SAMPLE TYPES

ACM - Asbestos sample
AMAL - Amalgamated sample
B - Bulk disturbed sample
BLK - Block sample
C - Core sample
CBR - CBR test sample
D - Disturbed sample
ES - Environmental sample
EW - Environmental water sample
G - Gas sample
J - Jar sample
L - Liner sample
TW - Pushed thin wall sample
U - Undisturbed sample
UT - Undisturbed thin wall sample
W - Water sample

IN-SITU TESTS

HV - Hand shear vane
HV(r) - Hand shear vane residual
PID - Photo ionisation detector
PP - Hand penetrometer
SPT - Standard penetration test
SPT(C) - SPT using cone

GROUNDWATER

Groundwater strike
Groundwater rest level

ROTARY CORE DETAILS

TCR - Total core recovery (%)
SCR - Solid core recovery (%)
RQD - Rock quality designation (%)
FI - Fracture index
NI - Non-intact core
AZCL - Assumed zone of core loss

LEGEND

Topsoil
Peat
Made ground [cohesive]
Concrete
Wood
Brick
Bituminous material
Gypsum
Coal
Void
Clay
Silt
Sand
Gravel
Cobbles
Boulders
Mudstone
Siltstone
Sandstone
Limestone
Chalk
Breccia
Conglomerate
Metamorphic
Igneous
Sand backfill
Gravel backfill
Arisings
Bentonite
Concrete
Grout
Plain pipe
Slotted pipe

Borehole Log

RBH01

Hole Type	Easting	Northing	Ground Level (m)	Scale
BH	437282.00	410329.00	47.30	1:25

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	19/03/2026	20/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Samples and Tests: Type/ Ref	Samples and Tests: Results	Coring: Core Run	Coring: TCR (%)	Coring: SCR (%)	Coring: RQD (%)	Frac: FI	Level: m	Depth (thickness): m	Strata: Legend	Strata: Description
										47.00	(0.30) 0.30		Topsoil (Driller Description) [MADE GROUND]
											(2.70)		Firm Clay (Driller Description) [GLACIAL TILL]
										44.30	3.00		Extremly weak thickly laminated, dark brown to grey distinctly to completely weathered MUDSTONE. F1 - Sub-planar sub-horizontal (5-15°), extremly closely spaced (<20mm), closed (<1mm) with occasional silt and clay infill. F2 - Sub-planar sub-vertical (70-85°), extremly closely spaced (<20mm), closed (<1mm) with occasional silt and clay infill. [PENNINE MIDDLE COAL MEASURES]
					3.00 4.50	35	0	0	NI		(3.20)		
					4.50 6.00	42	0	0	NI				

Continued on next page

Remarks
1.20m Hand-Dug Service Inspection Pit Completed.

Method, Plant, Stability, Dimensions — **Logger**

0.00 - 1.20m Stable	IP	Hand Tools	SD
1.20 - 3.00m Stable	RO	Geobore NCA	SD
3.00 - 15.00m Stable	RC	Geobore-S	SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Created using Pebble Geo

Borehole Log

RBH01

Hole Type	Easting	Northing	Ground Level (m)	Scale
BH	437282.00	410329.00	47.30	1:25

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	19/03/2026	20/03/2026

Client Vistry

Consultant SD & SW

Contractor Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Frac FI	Level m	Depth (thickness) m	Strata: Legend	Description
													As previous page.
					6.00 7.50	89	55	31	NI	41.10	6.20		Medium strong thickly laminated to thinly bedded, grey fine and medium grained partially weathered SANDSTONE. F1 - Sub-planar sub-horizontal (5-15°), medium spaced (150-500mm), tight (1-3mm) with brown staining. F2 - Sub-planar sub-vertical (80-90°), widely spaced(750-1500mm), open (>5mm) with brown staining. [PENNINE MIDDLE COAL MEASURES]
					7.50 9.00	92	82	47	NI		(8.80)		
					9.00 10.50	97	93	73	15				
													Continued on next page

5.5 6.0 6.5 7.0 7.5 8.0 8.5 9.0 9.5 10.0

Remarks
1.20m Hand-Dug Service Inspection Pit Completed.

Method, Plant, Stability, Dimensions			Logger
0.00 - 1.20m Stable	IP	Hand Tools	SD
1.20 - 3.00m Stable	RO	Geobore NCA	SD
3.00 - 15.00m Stable	RC	Geobore-S	SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Created using Pebble Geo

Borehole Log

RBH01

Hole Type	Easting	Northing	Ground Level (m)	Scale
BH	437282.00	410329.00	47.30	1:25

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	19/03/2026	20/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Samples and Tests: Type/ Ref	Samples and Tests: Results	Coring: Core Run	Coring: TCR (%)	Coring: SCR (%)	Coring: RQD (%)	Frac: FI	Level: m	Depth (thickness): m	Strata: Legend	Strata: Description
													As previous page.
					10.50 12.00	100	100	90	6				
					12.00 13.50	100	30	0	NI				
					13.50 15.00	100	100	100	5				
										32.30	15.00		*End of Borehole at 15.00m*

10.5
11.0
11.5
12.0
12.5
13.0
13.5
14.0
14.5
15.0

Remarks
1.20m Hand-Dug Service Inspection Pit Completed.

Method, Plant, Stability, Dimensions			Logger
0.00 - 1.20m Stable	IP	Hand Tools	SD
1.20 - 3.00m Stable	RO	Geobore NCA	SD
3.00 - 15.00m Stable	RC	Geobore-S	SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Borehole Log

RBH01
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
BH	437282.00	410329.00	47.30	1:25
Project Name		**Project No.**	**Start Date**	**End Date**
Shaw Lane, Carlton		25-899	19/03/2026	20/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services



Remarks
1.20m Hand-Dug Service Inspection Pit Completed.

Method, Plant, Stability, Dimensions			Logger
0.00 - 1.20m Stable	IP	Hand Tools	SD
1.20 - 3.00m Stable	RO	Geobore NCA	SD
3.00 - 15.00m Stable	RC	Geobore-S	SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Borehole Log

RBH01
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
BH	437282.00	410329.00	47.30	1:25
Project Name		**Project No.**	**Start Date**	**End Date**
Shaw Lane, Carlton		25-899	19/03/2026	20/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services



Remarks
1.20m Hand-Dug Service Inspection Pit Completed.

Method, Plant, Stability, Dimensions			Logger
0.00 - 1.20m Stable	IP	Hand Tools	SD
1.20 - 3.00m Stable	RO	Geobore NCA	SD
3.00 - 15.00m Stable	RC	Geobore-S	SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Borehole Log

RBH01

PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
BH	437282.00	410329.00	47.30	1:25
Project Name		**Project No.**	**Start Date**	**End Date**
Shaw Lane, Carlton		25-899	19/03/2026	20/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services



Remarks
1.20m Hand-Dug Service Inspection Pit Completed.

Method, Plant, Stability, Dimensions			Logger
0.00 - 1.20m Stable	IP	Hand Tools	SD
1.20 - 3.00m Stable	RO	Geobore NCA	SD
3.00 - 15.00m Stable	RC	Geobore-S	SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Borehole Log

RBH02

Sheet 1 of 3

Hole Type	Easting	Northing	Ground Level (m)	Scale
BH	437371.00	410408.00	47.40	1:25

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	20/03/2026	23/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Samples and Tests: Type/ Ref	Samples and Tests: Results	Coring: Core Run	Coring: TCR (%)	Coring: SCR (%)	Coring: RQD (%)	Frac: FI	Level m	Depth (thickness) m	Strata: Legend	Strata: Description
											(0.30)		Topsoil (Driller Description) [MADE GROUND]
										47.10	0.30		Firm Clay (Driller Description) [GLACIAL TILL]
											(2.20)		
										44.90	2.50		Stiff Clay (Driller Description) [GLACIAL TILL]
											(2.00)		
					4.50 6.00	87	0	0	NI	42.90	4.50 (3.00)		Extremely weak thickly laminated, dark brown to grey distinctly to completely weathered MUDSTONE. F1 - Sub-planar sub-horizontal (5-15°), extremely closely spaced (<20mm), closed (<1mm) with occasional silt and clay infill.

Continued on next page

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0

Remarks
1.20m Hand-Dug Service Inspection Pit Completed.

Method, Plant, Stability, Dimensions — **Logger**

0.00 - 1.20m Stable	IP	Hand Tools	SD
1.20 - 3.00m Stable	RO	Geobore NCA	SD
3.00 - 15.00m Stable	RC	Geobore-S	SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Created using Pebble Geo

Borehole Log

RBH02

Hole Type	Easting	Northing	Ground Level (m)	Scale
BH	437371.00	410408.00	47.40	1:25

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	20/03/2026	23/03/2026

Client Vistry

Consultant SD & SW

Contractor Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Frac FI	Level m	Depth (thickness) m	Strata: Legend	Description
													F2 - Sub-planar sub-vertical (70-85°), extreamly closely spaced (<20mm), closed (<1mm) with occasional silt and clay infill. [PENNINE MIDDLE COAL MEASURES]
					6.00 7.50	95	0	0	NI				
										39.90	7.50		Medium strong thickly laminated to thinly bedded, grey fine and medium grained partialy weathered SANDSTONE. F1 - Sub-planar sub-horizontal (5-15°), medium spaced (150-500mm), tight (1-3mm) with brown staining. F2 - Sub-planar sub-vertical (80-90°), widely spaced(750-1500mm), open (>5mm) with brown staining. [PENNINE MIDDLE COAL MEASURES]
					7.50 9.00	90	90	84	12		(7.50)		
					9.00 10.50	97	93	59	16				
													Continued on next page

Remarks
1.20m Hand-Dug Service Inspection Pit Completed.

Method, Plant, Stability, Dimensions — **Logger**

0.00 - 1.20m Stable	IP	Hand Tools	SD
1.20 - 3.00m Stable	RO	Geobore NCA	SD
3.00 - 15.00m Stable	RC	Geobore-S	SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Borehole Log

RBH02

Sheet 3 of 3

Hole Type	Easting	Northing	Ground Level (m)	Scale
BH	437371.00	410408.00	47.40	1:25

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	20/03/2026	23/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Samples and Tests: Type/ Ref	Samples and Tests: Results	Coring: Core Run	Coring: TCR (%)	Coring: SCR (%)	Coring: RQD (%)	Frac FI	Level m	Depth (thickness) m	Strata: Legend	Strata: Description
					10.50 12.00	95	95	71	13				*Zone of fracturing noted with heavy brown staining. (11.00 - 11.20m)*
					12.00 13.50	100	97	97	9				
					13.50 15.00	95	89	89	6				
										32.40	15.00		*End of Borehole at 15.00m*

10.5
11.0
11.5
12.0
12.5
13.0
13.5
14.0
14.5
15.0

Remarks
1.20m Hand-Dug Service Inspection Pit Completed.

Method, Plant, Stability, Dimensions — **Logger**

0.00 - 1.20m Stable	IP	Hand Tools	SD
1.20 - 3.00m Stable	RO	Geobore NCA	SD
3.00 - 15.00m Stable	RC	Geobore-S	SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Created using Pebble Geo

Borehole Log

RBH02
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
BH	437371.00	410408.00	47.40	1:25

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	20/03/2026	23/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services



Remarks
1.20m Hand-Dug Service Inspection Pit Completed.

Method, Plant, Stability, Dimensions			Logger
0.00 - 1.20m Stable	IP	Hand Tools	SD
1.20 - 3.00m Stable	RO	Geobore NCA	SD
3.00 - 15.00m Stable	RC	Geobore-S	SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Borehole Log

RBH02
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
BH	437371.00	410408.00	47.40	1:25
Project Name		**Project No.**	**Start Date**	**End Date**
Shaw Lane, Carlton		25-899	20/03/2026	23/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services



Remarks
1.20m Hand-Dug Service Inspection Pit Completed.

Method, Plant, Stability, Dimensions | **Logger**

0.00 - 1.20m Stable	IP	Hand Tools	SD
1.20 - 3.00m Stable	RO	Geobore NCA	SD
3.00 - 15.00m Stable	RC	Geobore-S	SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Borehole Log

RBH02
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
BH	437371.00	410408.00	47.40	1:25
Project Name		**Project No.**	**Start Date**	**End Date**
Shaw Lane, Carlton		25-899	20/03/2026	23/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services



Remarks
1.20m Hand-Dug Service Inspection Pit Completed.

Method, Plant, Stability, Dimensions			Logger
0.00 - 1.20m Stable	IP	Hand Tools	SD
1.20 - 3.00m Stable	RO	Geobore NCA	SD
3.00 - 15.00m Stable	RC	Geobore-S	SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Borehole Log

RBH02
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
BH	437371.00	410408.00	47.40	1:25

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	20/03/2026	23/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services



Remarks
1.20m Hand-Dug Service Inspection Pit Completed.

Method, Plant, Stability, Dimensions

			Logger
0.00 - 1.20m Stable	IP	Hand Tools	SD
1.20 - 3.00m Stable	RO	Geobore NCA	SD
3.00 - 15.00m Stable	RC	Geobore-S	SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Borehole Log

RBH03

Hole Type	Easting	Northing	Ground Level (m)	Scale
BH	437453.00	410387.00	47.35	1:25

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	23/03/2026	23/03/2026

Client
Vistry

Consultant
SD & SW

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Frac FI	Level m	Depth (thickness) m	Strata: Legend	Description
											(0.30)		Topsoil (Driller Description) [MADE GROUND]
										47.05	0.30		Firm Clay (Driller Description) [GLACIAL TILL]
											(2.70)		
										44.35	3.00		Extremly weak thickly laminated, distinctly to completely weathered, dark brown to grey MUDSTONE. F1 - Sub-planar sub-horizontal (5-15°), extreamly closely spaced (<20mm), closed (<1mm) with occasional silt and clay infill. F2 - Sub-planar sub-vertical (70-85°), extreamly closely spaced (<20mm), closed (<1mm) with occasional silt and clay infill. [PENNINE MIDDLE COAL MEASURES]
					3.00 4.50	100	0	0	NI		(1.55)		
										42.80	4.55		Very weak thickly laminated, partially weathered dark brown to grey SILTSONE with mudstone inclusions approximatly 2-5mm thickness. F1 - Sub-planar sub-horizontal (10-15°), very closely to closely spacted (40-100mm), open (>5mm) with silt infill.
					4.50 6.00	97	29	17	NI		(0.82)		

Continued on next page

Remarks
1.20m Hand-Dug Service Inspection Pit Completed.

Method, Plant, Stability, Dimensions			Logger
0.00 - 1.20m Stable	IP	Hand Tools	SD
1.20 - 3.00m Stable	RO	Geobore NCA	SD
3.00 - 15.00m Stable	RC	Geobore-S	SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Borehole Log

RBH03

Hole Type	Easting	Northing	Ground Level (m)	Scale
BH	437453.00	410387.00	47.35	1:25

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	23/03/2026	23/03/2026

Client Vistry

Consultant SD & SW

Contractor Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Frac FI	Level m	Depth (thickness) m	Strata: Legend	Description
													[PENNINE MIDDLE COAL MEASURES]
										41.98	5.37		
											(0.17)		Extremely weak thickly laminated, distinctly to completely weathered, dark brown to grey MUDSTONE. F1 - Sub-planar sub-horizontal (5-15°), extremely closely spaced (<20mm), closed (<1mm) with occasional silt and clay infill. F2 - Sub-planar sub-vertical (70-85°), extremely closely spaced (<20mm), closed (<1mm) with occasional silt and clay infill.
										41.81	5.54		[PENNINE MIDDLE COAL MEASURES]
													Medium strong thickly laminated to thinly bedded, grey fine and medium grained partialy weathered SANDSTONE. F1 - Sub-planar sub-horizontal (5-15°), closely to medium spaced (120-250mm), tight (1-3mm) with brown staining.
											(1.58)		[PENNINE MIDDLE COAL MEASURES]
					6.00 7.50	97	50	40	NI				
										40.23	7.12		Very weak thickly laminated, partially weathered dark brown to grey SILTSONE with mudstone inclusions approximatly 2-5mm thickness. F1 - Sub-planar sub-horizontal (10-15°), very closely to closely spacted (40-100mm), open (>5mm) with silt infill. [PENNINE MIDDLE COAL MEASURES]
					7.50 9.00	97	74	35	NI		(2.28)		
					9.00 10.50	100	67	49	NI	37.95	9.40		Extremely weak thickly laminated, distinctly to completely weathered, dark brown to grey MUDSTONE. F1 - Sub-planar sub-horizontal (5-15°), extremely closely spaced (<20mm), closed (<1mm) with occasional silt and clay infill. F2 - Sub-planar sub-vertical (70-85°), extremely closely spaced (<20mm), closed (<1mm) with occasional silt and
											(0.80)		

Continued on next page

Remarks
1.20m Hand-Dug Service Inspection Pit Completed.

Method, Plant, Stability, Dimensions — **Logger**

0.00 - 1.20m Stable	IP	Hand Tools	SD
1.20 - 3.00m Stable	RO	Geobore NCA	SD
3.00 - 15.00m Stable	RC	Geobore-S	SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Borehole Log

RBH03

Sheet 3 of 3

Hole Type	Easting	Northing	Ground Level (m)	Scale
BH	437453.00	410387.00	47.35	1:25

Project Name	Project No.	Start Date	End Date
Shaw Lane, Carlton	25-899	23/03/2026	23/03/2026

Client
Vistry

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Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Frac FI	Level m	Depth (thickness) m	Strata: Legend	Description
										37.15	10.20		clay infill. [PENNINE MIDDLE COAL MEASURES]
					10.50 12.00	83	30	17	NI				Medium strong thickly laminated to thinly bedded, grey fine and medium grained partially weathered SANDSTONE. F1 - Sub-planar sub-horizontal (5-15°), medium spaced (150-500mm), tight (1-3mm) with brown staining. F2 - Sub-planar sub-vertical (80-90°), widely spaced(750-1500mm), open (>5mm) with brown staining. [PENNINE MIDDLE COAL MEASURES]
					12.00 13.50	87	87	72	NI		(4.80)		*Zone of fracturing noted with heavy brown staining. (11.67 - 12.20m)*
					13.50 15.00	100	97	80	9				
										32.35	15.00		*End of Borehole at 15.00m*

Remarks
1.20m Hand-Dug Service Inspection Pit Completed.

Method, Plant, Stability, Dimensions — **Logger**

0.00 - 1.20m Stable	IP	Hand Tools	SD
1.20 - 3.00m Stable	RO	Geobore NCA	SD
3.00 - 15.00m Stable	RC	Geobore-S	SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Created using Pebble Geo

Borehole Log

RBH03
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
BH	437453.00	410387.00	47.35	1:25
Project Name		**Project No.**	**Start Date**	**End Date**
Shaw Lane, Carlton		25-899	23/03/2026	23/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services



Remarks
1.20m Hand-Dug Service Inspection Pit Completed.

Method, Plant, Stability, Dimensions			Logger
0.00 - 1.20m Stable	IP	Hand Tools	SD
1.20 - 3.00m Stable	RO	Geobore NCA	SD
3.00 - 15.00m Stable	RC	Geobore-S	SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Borehole Log

RBH03
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
BH	437453.00	410387.00	47.35	1:25
Project Name		**Project No.**	**Start Date**	**End Date**
Shaw Lane, Carlton		25-899	23/03/2026	23/03/2026

Client
Vistry

Consultant
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Taylor Drilling Services



Remarks
1.20m Hand-Dug Service Inspection Pit Completed.

Method, Plant, Stability, Dimensions			Logger
0.00 - 1.20m Stable	IP	Hand Tools	SD
1.20 - 3.00m Stable	RO	Geobore NCA	SD
3.00 - 15.00m Stable	RC	Geobore-S	SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Borehole Log

RBH03

PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
BH	437453.00	410387.00	47.35	1:25
Project Name		**Project No.**	**Start Date**	**End Date**
Shaw Lane, Carlton		25-899	23/03/2026	23/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services



Remarks
1.20m Hand-Dug Service Inspection Pit Completed.

Method, Plant, Stability, Dimensions			Logger
0.00 - 1.20m Stable	IP	Hand Tools	SD
1.20 - 3.00m Stable	RO	Geobore NCA	SD
3.00 - 15.00m Stable	RC	Geobore-S	SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL

Borehole Log

RBH03
PHOTO PAGE

Hole Type	Easting	Northing	Ground Level (m)	Scale
BH	437453.00	410387.00	47.35	1:25
Project Name		**Project No.**	**Start Date**	**End Date**
Shaw Lane, Carlton		25-899	23/03/2026	23/03/2026

Client	Consultant	Contractor
Vistry	SD & SW	Taylor Drilling Services



Remarks
1.20m Hand-Dug Service Inspection Pit Completed.

Method, Plant, Stability, Dimensions			Logger
0.00 - 1.20m Stable	IP	Hand Tools	SD
1.20 - 3.00m Stable	RO	Geobore NCA	SD
3.00 - 15.00m Stable	RC	Geobore-S	SD

Checked By: S.D **Approved By:** S.D **Status:** FINAL