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Pilch Lane, Liverpool

Phase 2 Geo-Environmental Investigation Report

For: Breck Homes



Job Number:		4399
Report Reference:		4399-02A
Issue Status / Revision:	Rev A – Updated with completed gas monitoring results and updated site layout	
Date:	February 2026	
Written By:	Fiona Robson BSc (Hons)	
Checked By:	Liam McMahon MESci, MSc, FGS, CGeol Registered Ground Engineering Professional	
Authorised By:	Andrew Edwards MSc, PIEMA, MEnvSoc, FGS, CEnv	
Previous Revisions and Date:	1st Issue – September 2025	
IGE Consulting Ltd, 1st Floor, 15 Oxford Court, Manchester, M2 3WQ Tel: Email: contact@igeconsulting.co.uk		

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1.0 INTRODUCTION

This Phase 2 Geo-Environmental Investigation Report has been prepared at the request of Breck Homes Ltd. Instructions to proceed were received in March 2025.

This report pertains to a c. 0.70 Ha site located to the south of Pilch Lane, Liverpool, c. 7.00km east of Liverpool City Centre, at the approximate post code L14 0JG. The National Ordnance Survey Grid Reference for the centre of the site is 341850E, 391139N.

The site currently comprises a vacant plot of land which is predominantly grassed save for an area of hardstanding in the north-western site section. The site is bound by Pilch Lane to the north, St Margaret Mary's Church to the west, open land to the south and residential properties to the east. Access to the site is off Pilch Lane along the northern site boundary. A drone image of the site is included below, and a site location plan is contained in Appendix 2.



Figure 1: Drone image of the site dated August 2025, looking south to north. The site boundary is highlighted in pink.

This Phase 2 Geo-Environmental Investigation Report is to be used for submission to the Local Authority as part of a planning application. It is the client's intention to develop the site into a low-rise residential development comprising 34 No. semi-detached, terraced and maisonette dwellings with associated private gardens, soft landscaping and access roads.

A proposed development plan is contained in Appendix 2 and as an extract below.

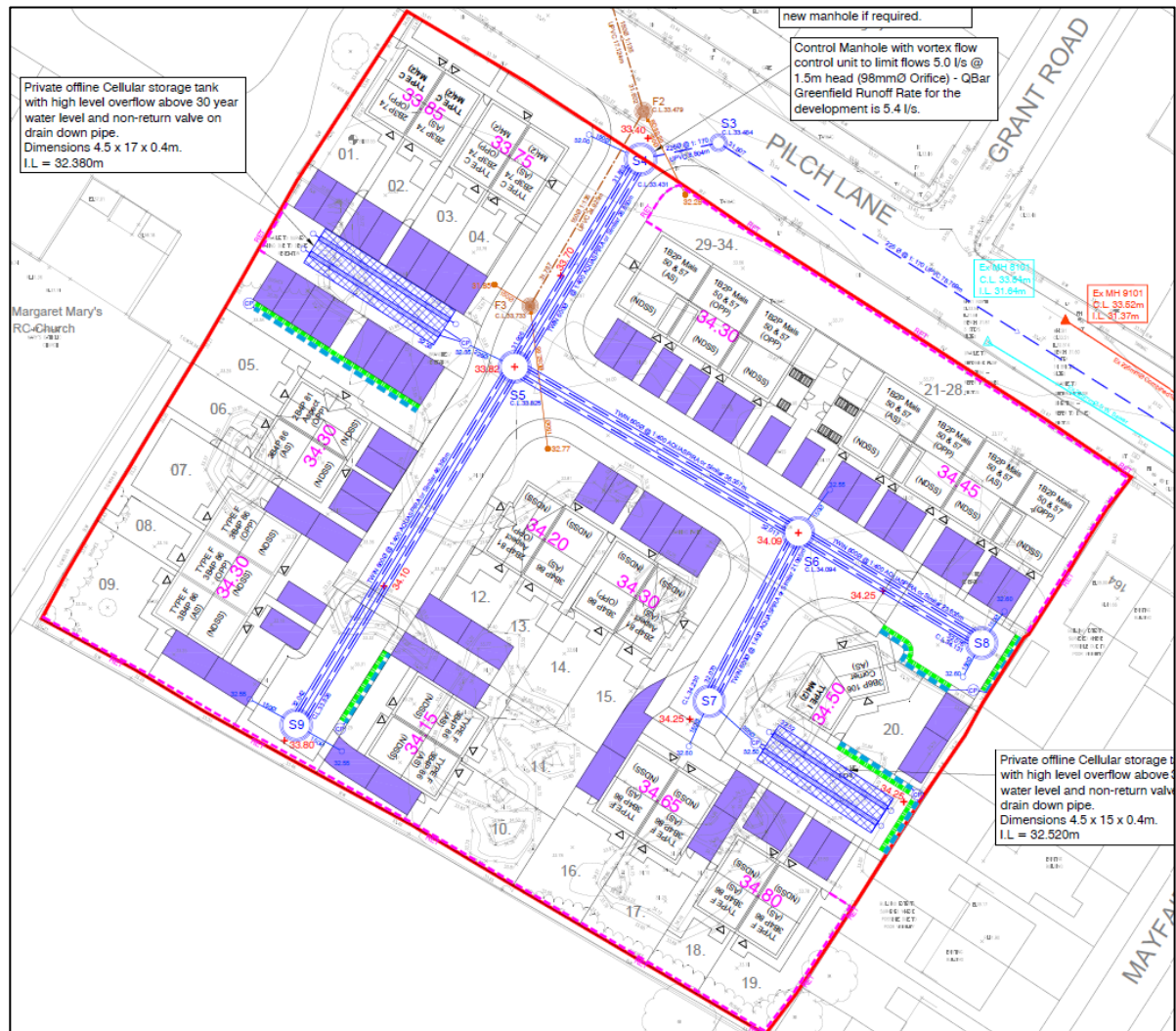


Figure 2: An extract of the proposed development plan '30686_100C Preliminary Drainage Layout'

1.1 Brief

The brief was to carry out an intrusive geo-environmental ground investigation for the site based upon the findings of the IGE Consulting *Phase 1 Geo-Environmental Report* (4399-01, May 2025) and the proposed development outlined in Section 1.0. The investigation was to include the following tasks:

- a) Undertake / install appropriate exploratory holes and collect representative samples from exploratory holes and arrange appropriate chemical testing in accordance with the latest legal framework, record olfactory and / or visual evidence of contamination during intrusive works and undertake on site in-situ and laboratory geotechnical testing;
- b) Refine conceptual models to accommodate the findings of the ground investigation works in terms of the risk to human health, ground gas, controlled waters and the wider environment;
- c) Identify the risks and evaluate whether a Phase 3 numerical risk assessment and / or a Remedial Strategy, is required; and
- d) Undertake an assessment of the ground conditions to provide outline recommendations for the proposed foundations.

A report was to be provided to summarise the findings and recommendations.

2.0 SCOPE OF INVESTIGATION WORK

This Phase 2 Geo-Environmental Investigation has been designed based on the findings of the IGE Consulting *Phase 1 Geo-Environmental Report* (4399-01, September 2025) and the client's requirements in relation to the proposed development outlined in Section 1.0.

The first stage of investigation works was undertaken on 13th August 2025 and comprised 7 No. mechanically excavated trial pits and 6 No dynamic sample boreholes undertaken spatially across the site. Subsequent laboratory testing was undertaken between 13th August and 4th September 2025.

The second stage of ground investigation works was undertaken on 17th September 2025 and comprised 11 No. mechanically excavated trial pits targeting the former Boundary Hotel located in the northern site section and 2 No. soil infiltration tests. 3 No. samples were obtained from stockpiles located in the southeastern site section for chemical testing.

It should be noted that 2 No, cable percussion boreholes were undertaken between 6th and 12th January 2026 to inform pile design, and the findings have been discussed in a separate investigation report (4399-03, dated February 2026). The findings of the cable percussion boreholes have not been discussed within this report.

Excavation of trial pits was undertaken using a JCB 3CX excavator. Drilling of dynamic sampling boreholes was carried out by GP Drilling Ltd. Testing of soil samples for environmental purposes was carried out by i2 Analytical in accordance with the Environment Agency's MCERTS (Monitoring Certification) quality assurance accreditation scheme. Testing of soils for geotechnical laboratory analysis was undertaken by The Testing Lab Ltd, a UKAS accredited laboratory. These organisations were appointed directly by IGE Consulting to carry out these contracting works.

The locations of the exploratory holes were topographically surveyed (X-Y-Z axis) with an accuracy of 20mm.

The ground investigation was undertaken in general accordance with:

- BS 5930 (2015) + A1 (2020) Code of Practice for Ground Investigation;
- BS EN ISO 17892 Geotechnical Investigation and Testing - Laboratory Testing of Soil;
- BS 10175 (2011) + A1 (2017) Investigation of Potentially Contaminated Sites – Code of Practice;
- BS EN 1997-2 (2007) Eurocode 7 – Geotechnical Design – Ground Investigation and Testing;
- BS 8485 (2015) + A1 (2019) Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings;
- BS 8576 (2013) Guidance on Investigations for Ground Gas – Permanent Gases and Volatile Organic Compounds; and
- Land Contamination Risk Management (2025).

BS 10175: Investigation of Potentially Contaminated Sites – Code of Practice was updated in 2026, subsequent to these investigative works. Further details pertaining to the ground investigation works are outlined in the following sections. The limitations of the investigation work and report are included in Appendix 1.

The exploratory holes were undertaken in order to achieve the following:

- to establish the thickness, extent and characteristics of any possible Made Ground and underlying natural superficial deposits;
- to establish the presence of a possible basement in former hotel;
- to undertake in-situ geotechnical testing within these deposits;
- to obtain samples from these deposits for classification and laboratory testing; and
- to allow for the installation of ground gas and groundwater monitoring wells.

The exploratory hole location plan is located in Appendix 2 and an extract is included below:

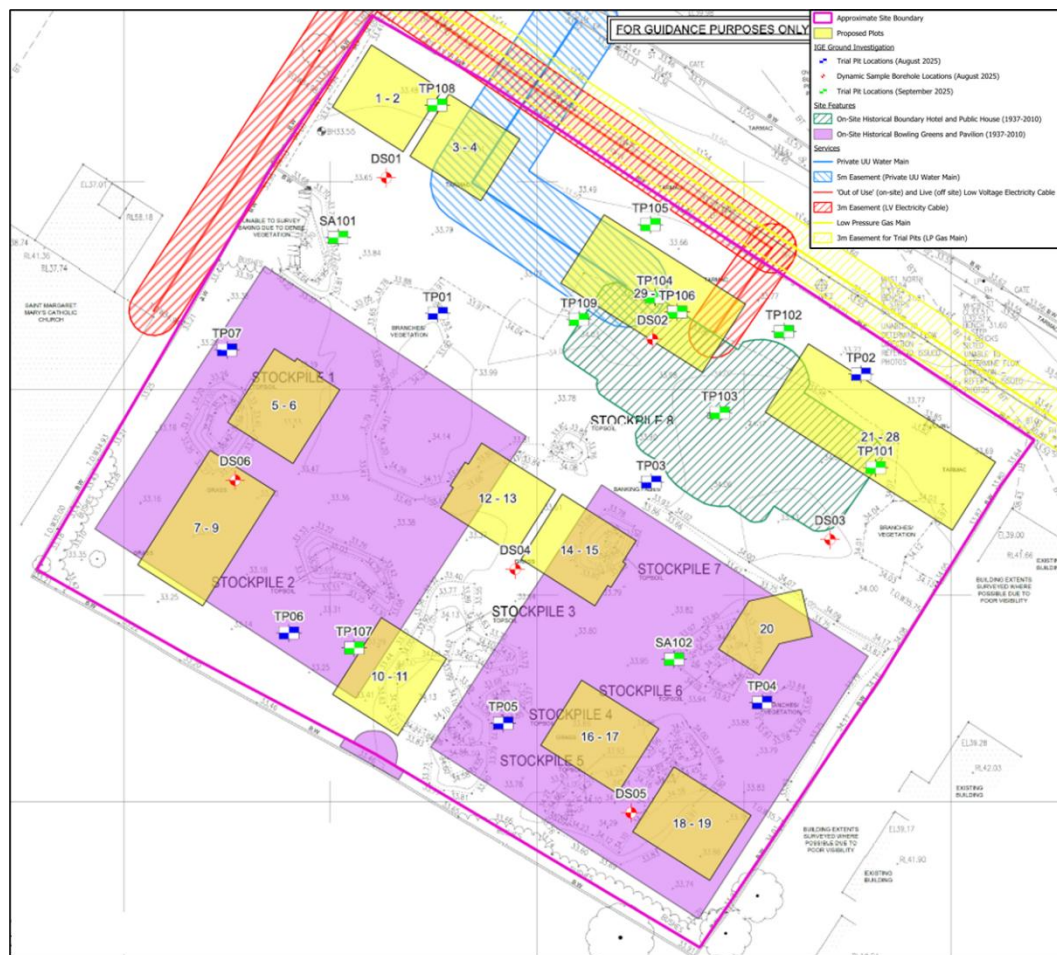


Figure 3: An extract of the exploratory hole location plan.

2.1 Trial Pits

In total, 18 No. trial pits (TP01 to TP07, TP101 to TP109 and SA101 and SA102, inclusive) were mechanically excavated to depths of between 1.80m and 3.40m bgl (32.25m and 30.58m AOD) using a JCB 3CX. In the first phase of works, trial pits TP01 to TP07 were placed spatially across the site to gain a representative view of the ground conditions. During the second phase of ground investigation, trial pits were undertaken targeting the former Boundary Hotel in the northern site section as well as in the southwestern corner of the site to delineate the extents of the deep Made Ground.

2 No. BRE 365 soil infiltration test pits were also constructed during the second phase of ground investigation within areas where Sustainable Drainage Systems (SuDS) may be feasible.

The locations of the trial pits are shown on the exploratory hole location plan in Appendix 2 and trial pit exploratory hole logs and photographs are contained in Appendix 3.

2.2 Dynamic Sampling Boreholes

6 No. dynamic sampling boreholes were constructed spatially across the site to a depth of 5.45m bgl (26.90m to 26.26m AOD). 1 No. dynamic borehole, DS02, was terminated prematurely at 1.38m bgl (32.62m AOD) due to an obstruction within the footprint of the former Boundary Hotel public house building.

The locations of the dynamic sampling boreholes are shown on the exploratory hole location plan in Appendix 2 and the dynamic sampling borehole logs are contained in Appendix 4.

2.3 Site Testing and Sampling

The following site tests and sampling were carried out:

- a) Retrieval of environmental samples and bulk disturbed samples from trial pits, dynamic sampling sleeves and stockpiles for the purposes of chemical and geotechnical laboratory testing and classification;
- b) Where possible, in-situ and ex-situ shear strength testing was undertaken within fine grained material (clay) from the trial pits and from the dynamic sampling borehole sleeve samples using a 19mm hand shear vane in accordance with BS1377-9;
- c) Standard Penetration Tests (SPTs) were undertaken at regular 1.00m intervals between 1.00m and 5.00m bgl within the dynamic sampling boreholes; and
- d) BRE 365 infiltration testing was undertaken in 2 No. trial pits.

2.4 Laboratory Testing

2.4.1 Chemical Laboratory Testing

10 No. soil samples were obtained during exploratory hole construction and 3 No. stockpile samples were taken and sent to i2 Analytical laboratories for chemical testing. These samples were placed into sterile sealed containers to facilitate MCERTS chemical laboratory testing of potential contaminants. Chemical testing suites are outlined below and are based upon a wide range of possible contaminative sources.

Asbestos ID, sulfate, pH, nitrate, total and free cyanide, arsenic, barium, beryllium, boron, cadmium, chromium, chromium (hexavalent), copper, lead, mercury, nickel, selenium, vanadium, zinc, Speciated Total Petroleum Hydrocarbon CWG screen, Speciated Polyaromatic Hydrocarbons and Monochromatics and Oxygenates.

2.4.2 Geotechnical Laboratory Testing

The following geotechnical laboratory tests were carried out on selected samples obtained from across the site:

- a) Determination of moisture content, liquid limit and plastic limit in accordance with BS1377 Part 2, Methods 3.2, 4.4 and 5.0 (1990);
- b) Determination of particle size distribution (PSD) in accordance with BS EN ISO 17892-4 (2016), and determination of water content in accordance with BS EN ISO 17892-1 (2014) (oven dry); and
- c) BRE Special Digest suite for aggressive ground conditions.

3.0 FINDINGS

3.1 Ground Conditions

3.1.1 Ground Surface

The majority of the site was noted to underlain by vegetation with the exception of the northern section of the site which is the former car park associated with the Boundary Hotel and comprises asphalt.

The typical ground conditions encountered across the site are as follows:

- **Made Ground** (northern site section only) comprising asphalt and concrete to a depth of between 0.15m and 0.30m bgl (33.69m to 33.46m AOD), underlain by:
- **Made Ground** comprising soft, dark brown, slightly gravelly, slightly sandy CLAY with cobbles of red brick to a depth of 0.30m to 2.00m (32.99m to 31.32m AOD), **or**:
- **Made Ground** comprising brown, gravelly, clayey, fine to coarse, occasionally ashy SAND to a depth of between 0.30m and 1.38m (33.60m 32.59m AOD), underlain by:
- **Glacial Till** comprising firm to stiff, brown mottled grey, slightly gravelly slightly sandy CLAY with occasional gravel to cobble sized inclusions of brown silty, fine to coarse SAND to a depth of at least 5.45m bgl (27.87m AOD).

Images of the typical Glacial Till are included below:



Figure 4: Typical Glacial Till encountered in TP03.

The cross section presented in Figure 5, below, highlights the recorded depths of Made Ground across the site from northeast to southwest. Deeper Made Ground associated with the former Boundary Hotel public house in the northeastern site section is highlighted below. Detailed cross sections are included in Appendix 2

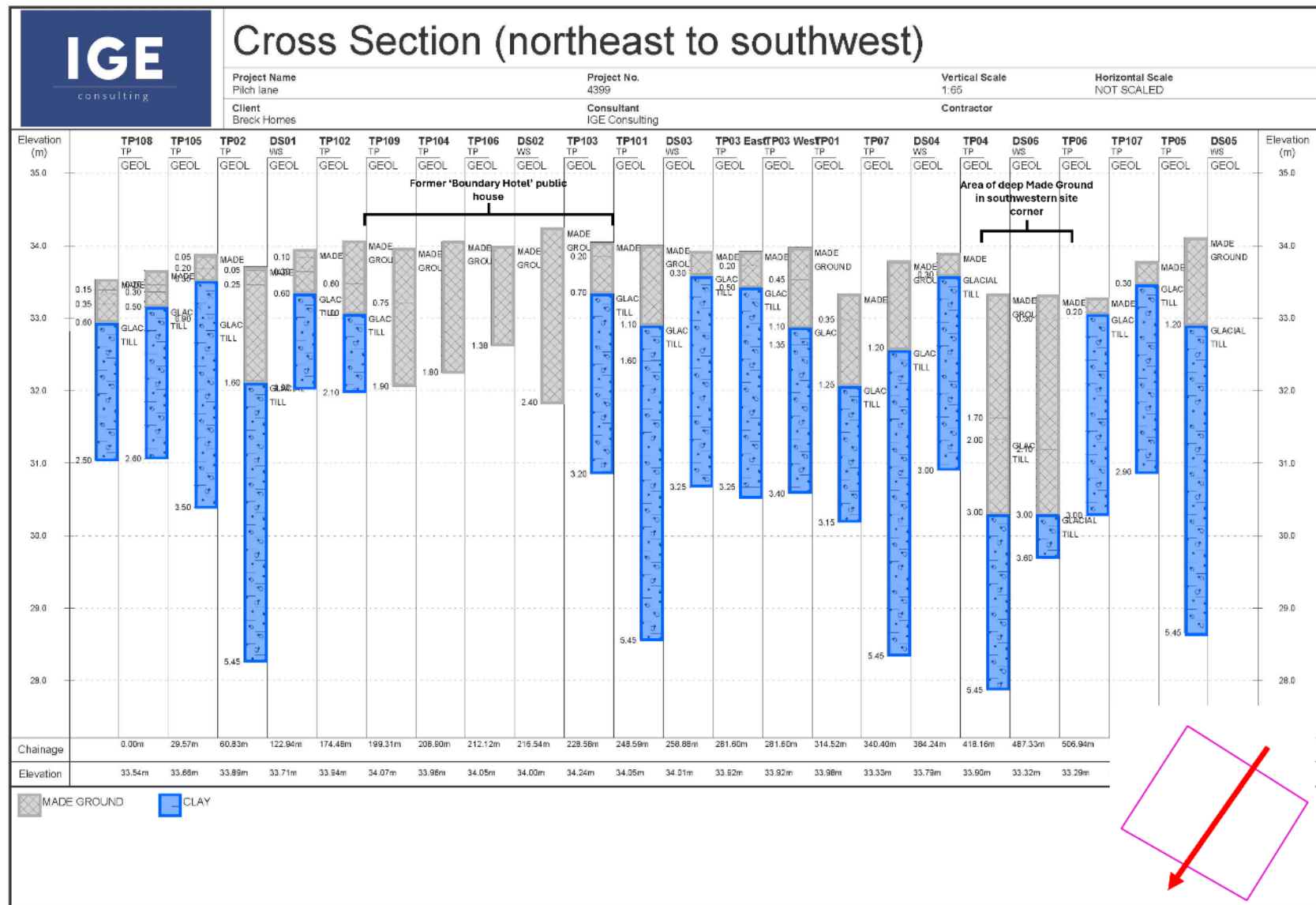


Figure 5: Indicative Cross Section from northeast to southwest.

3.1.2 Notable Exceptions

The following notable exceptions to the aforementioned typical ground conditions were recorded and are highlighted in the plan below:

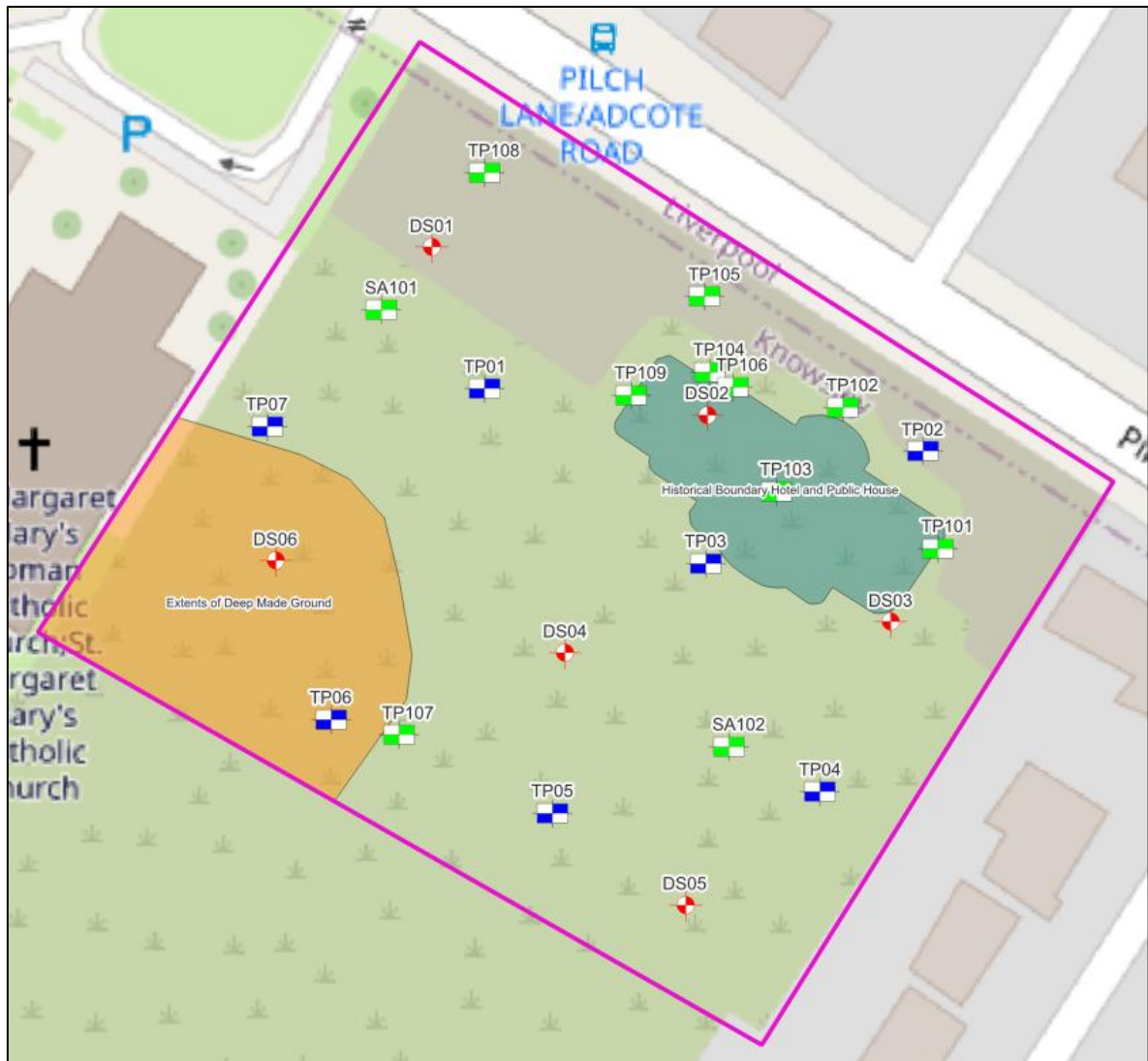


Figure 6: QGIS extract detailing the exploratory hole locations and notable exceptions encountered within the ground conditions.

Southwestern Corner of Site – Orange Area

Within DS06 and TP06 only, **Made Ground** comprising firm, orangish brown mottled grey, slightly gravelly slightly sandy CLAY was encountered to a depth of 2.00m and 2.10m bgl (31.32m and 31.19m AOD) respectively, underlain by soft, dark brown, slightly gravelly, sandy CLAY with occasional plant remains to a depth of 3.00m bgl (30.29m and 30.32m AOD). The Made Ground encountered between 2m and 3m bgl may be associated with the construction of the Former Boundary Hotel, installation

of associated services in the northeastern site section or construction of the bowling greens in the southern site section.



Figure 7: Deep Made Ground with plant remains encountered within TP06 and DS06 only.

Former Boundary Hotel – Blue Area

Within the vicinity of the former Boundary Hotel, Made Ground comprising slightly clayey, very gravelly ashy fine to coarse SAND or sandy, angular to subangular, fine to coarse GRAVEL of red brick, concrete, yellow brick, metal shards, glass and ceramic was encountered. An obstruction was encountered within DS02 at a depth of 1.38m bgl (32.62m AOD) within the former building footprint. TP103 was undertaken in the centre of the building footprint and rebar was encountered at a depth of 2.10m bgl (32.14m AOD). As a result, the base of the Made Ground associated with the former public house was not encountered in the centre of the building footprint. Footings associated with the former building were encountered within TP101 to a depth of 1.40m bgl (33.35m AOD). The footing was underlain by

firm Glacial Till, as encountered across the remainder of the site. A schematic of the encountered foundation is included below:

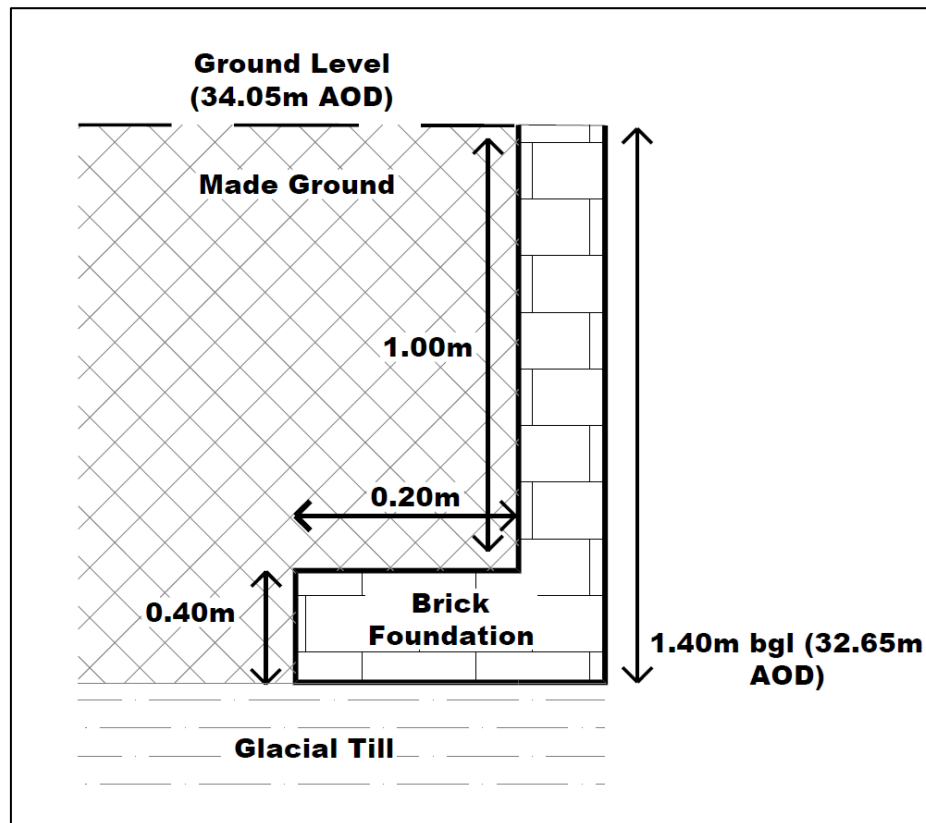


Figure 8: Cross Section of the foundation encountered in TP101.

Stockpiles

A number of stockpiles were encountered in the southeastern site section, with an average height of 1.50m bgl. The stockpiles were noted to contain **Made Ground** comprising dark brown, gravelly, clayey, fine to coarse SAND. 3 No. samples from the stockpiles were obtained by combining material from throughout the stockpile before sampling, ensuring a representative sample.

3.2 Visual and Olfactory Contamination Findings

During the intrusive exploratory hole investigation works, the soils were examined carefully for both visual and olfactory evidence of contamination. Black staining and a mild hydrocarbon odour were observed within the Made Ground encountered in DS06 between 1.20m and 1.40m bgl. A Tiger LT photo-ionisation detector (PID) with a 10.6eV lamp was utilised to determine the presence of volatile organic compounds

within the Made Ground and a peak of 10.20ppm was recorded. No other visual or olfactory evidence of contamination was encountered during the ground investigation.

3.3 Water Strikes

No water strikes were recorded within the underlying strata. During the first stage of ground investigation works, following a period of dry, sunny weather, occasional ingresses were recorded within pockets of sand encountered within the trial pits. The second stage of ground investigation was undertaken following a period of heavy rainfall where numerous water ingresses were recorded. Water ingresses from each ground investigation are detailed in the table below.

Exploratory Hole	Depth m bgl (m AOD)	Comments
TP03 West	2.10 (31.82)	Slight ingress from western pit wall
TP06	2.00 (31.29)	Slight ingress from northeastern pit corner
TP102	0.60 (33.34)	Rapid ingress from eastern pit corner
TP103	2.10 (32.14)	Moderate ingress from eastern pit wall
TP104	1.50 (32.46)	Rapid ingress from eastern pit corner
TP106	1.75 (32.30)	Rapid ingress from all pit walls
TP107	1.30 (31.98)	Slight seepage from ceramic land drain
TP108	0.30 (33.24)	Moderate ingress from all pit walls

Water strikes are detailed on the exploratory hole logs contained in Appendices 3 and 4.

3.4 Conceptual Ground Model

The findings of the Phase 2 ground investigation works have been used to create a conceptual ground model of the site. The conceptual ground model demonstrates the consistent geological strata encountered across the site:

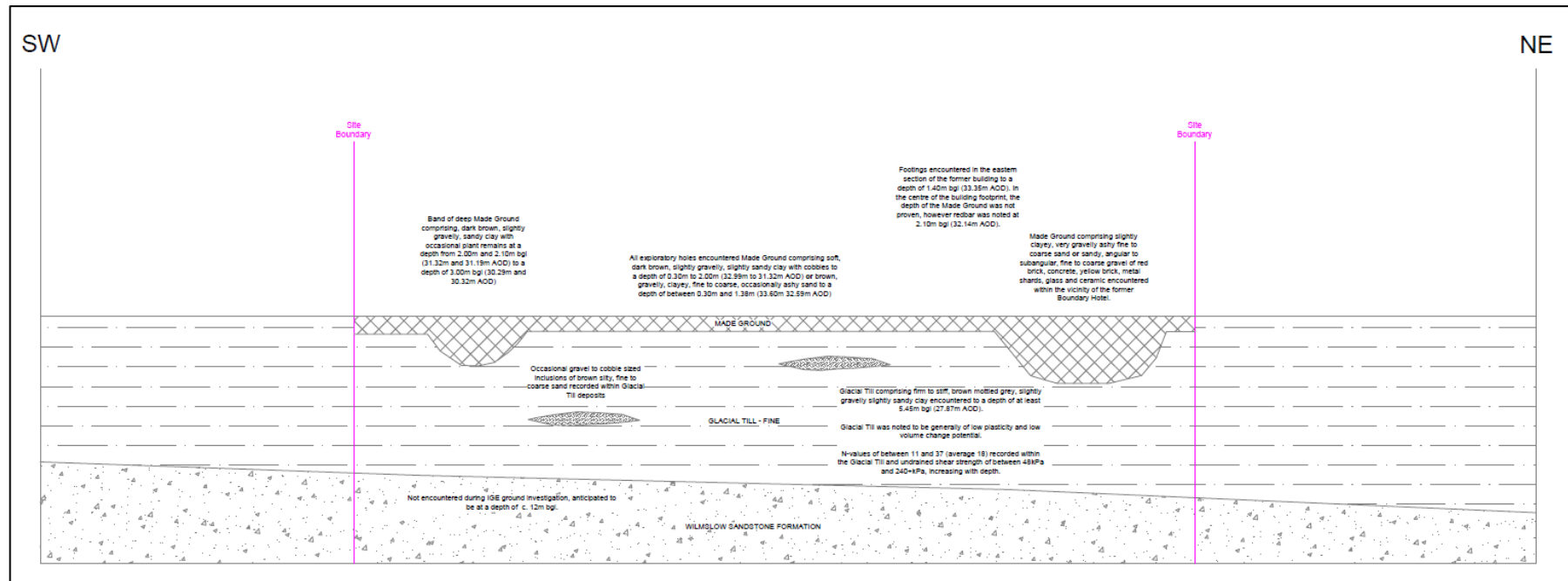


Figure 9: Extract of the conceptual ground model for the site.

The detailed conceptual ground model is included in Appendix 2.

3.5 Infiltration Testing Results

Soil infiltration tests were undertaken at 2 No. locations (SA101 and SA102) in accordance with BRE 365. Only a singular soil infiltration test could be undertaken in each trial pit due to the very slow infiltration rate.

Exploratory Hole	Test Depth (m bgl)	Soil Infiltration Rate (m/sec ²)
SA101	1.15 – 2.15	Infiltration too slow to calculate
SA102	0.90 – 2.90	Infiltration too slow to calculate

The soil infiltration test calculations are contained within Appendix 5.

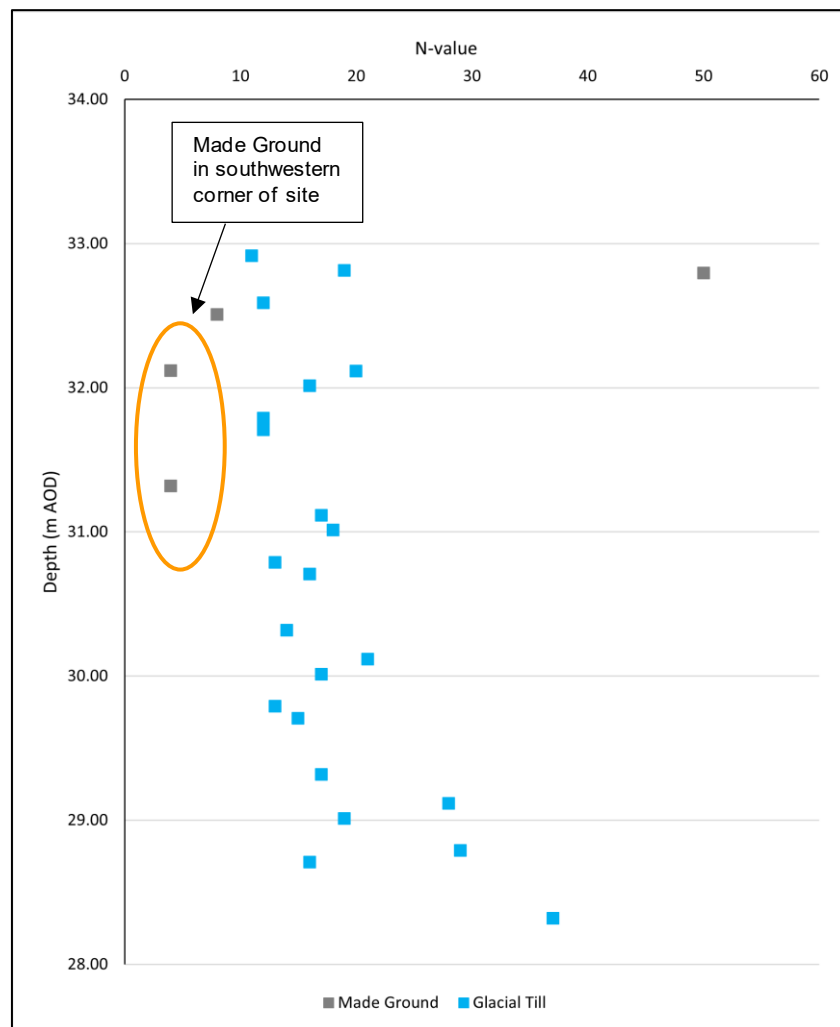
3.6 Geotechnical Site Testing

The results of the geotechnical testing undertaken during the ground investigation are summarised below.

3.6.1 Standard Penetration Tests

Standard penetration tests (SPTs) were undertaken at regular 1.00m intervals during the construction of the dynamic sampling boreholes.

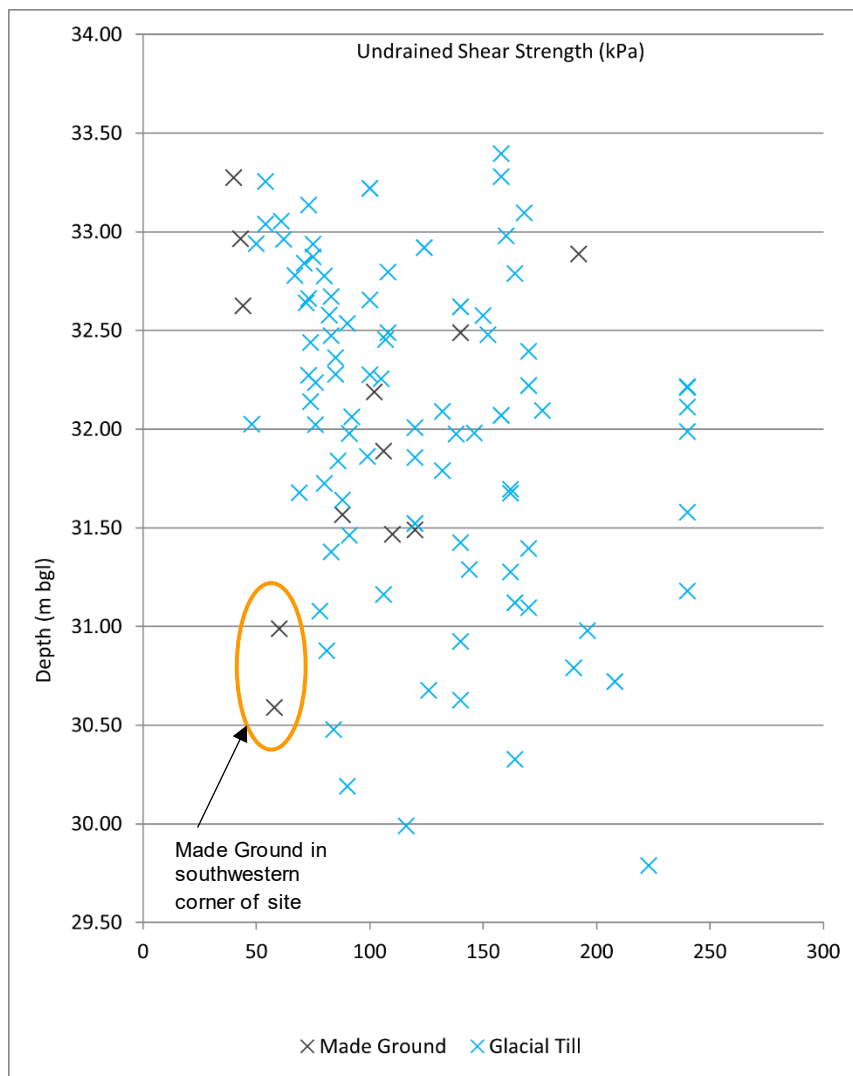
The following scatter graph shows that there was a general positive correlation between increasing uncorrected N-value with depth.



SPT results are included on the dynamic sample borehole logs presented in Appendix 4.

3.6.2 Hand Shear Vane (19mm) Tests

Where possible, both in-situ and ex-situ undrained shear strength testing was undertaken on samples of fine-grained material (clay) within trial pits and dynamic sampling boreholes using a 19mm hand shear vane in accordance with BS1377-9. It should be noted that undertaking hand shear vane tests below 2m bgl within dynamic sample boreholes is considered inappropriate; the increased sampling disturbance at depth can produce unrepresentative results.



The graph indicates that there is generally a positive correlation between hand shear vane reading and depth.

Hand shear vane test results are included on the trial pit logs and dynamic sampling borehole logs, contained within Appendices 3 and 4, respectively.

3.7 Geotechnical Laboratory Testing

The results of the geotechnical laboratory tests undertaken during the ground investigation are summarised below. The full geotechnical laboratory test results are included in Appendix 6.

3.7.1 Atterberg Limit Tests

Atterberg limit tests were undertaken on 1 No. of Made Ground and 4 No. samples of natural Glacial Till. The results of the Atterberg testing are as follows:

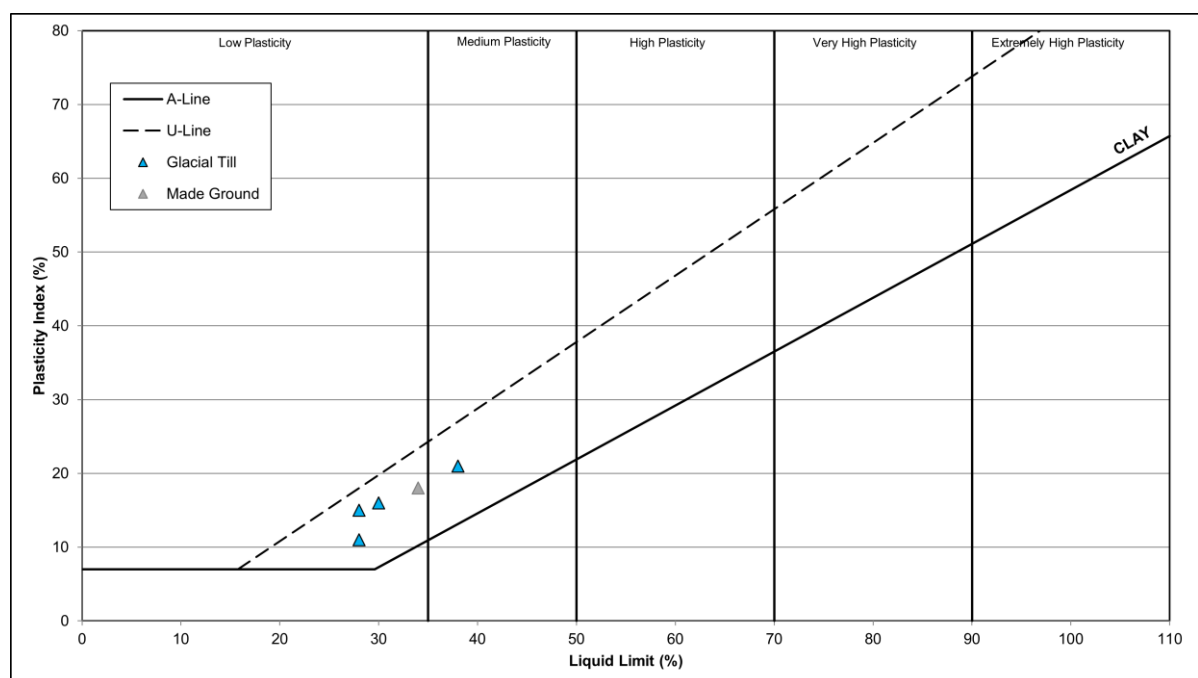
Made Ground

Sample	Sample Depth (m bgl)	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index	Passing through 425 micron (%)	Modified Plasticity Index
DS06	2.50	18.3	34	16	18	98	18

Glacial Till

Sample	Sample Depth (m bgl)	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index	Passing through 425 micron (%)	Modified Plasticity Index
TP04	0.60	15.4	34	17	21	98	21
TP02	0.75	21.9	28	17	11	96	11
TP06	1.80	15.6	30	14	16	99	16
DS01	2.20	8.3	28	13	15	98	15
Average		15	30	15	16	-	-

Green = low volume change potential. Orange = medium volume change potential



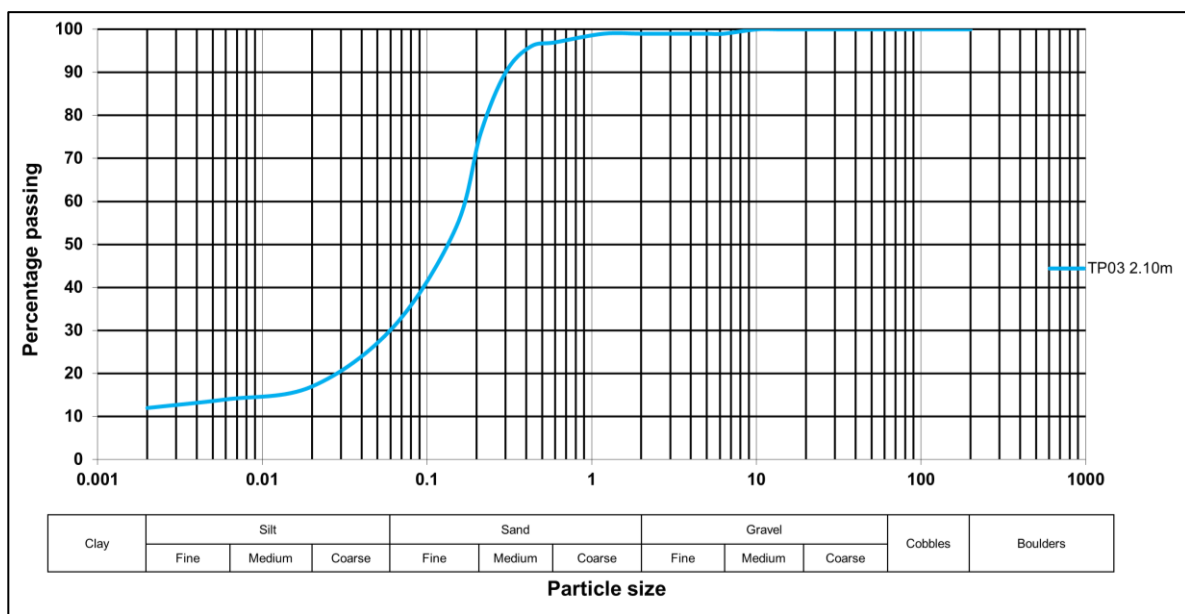
The Atterberg Limit tests indicate that the Made Ground and Glacial Till deposits are generally of low plasticity with the exception of the Glacial Till in the eastern site section (TP04) which is of medium plasticity in-line with BS14688 Part 2.

The Glacial Till and Made Ground are generally of low volume change potential, with the exception of the sample from TP04 in the eastern site section which is of moderate volume change potential in-line with NHBC Chapter 4.2 guidance.

It should be noted that 2 No. samples of Glacial Till (TP04 at 0.60m bgl and DS01 at 2.20m bgl) recorded moisture contents below the plastic limits, indicating that desiccation may be present.

3.7.2 Particle Size Distribution Testing

A single particle size distribution test was undertaken on a sample of Glacial Till from a gravel to cobble sized inclusion within TP03.



Exploratory Hole	Depth (m bgl)	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Description
TP03	2.10	12	19	68	1	Slightly gravelly, silty SAND

The results of the PSD test indicate that the gravel to cobble sized inclusions of coarse Glacial Till typically comprise slightly gravelly, silty SAND.

3.7.3 BRE Special Digest Suite Testing

In accordance with BRE Special Digest 1: Concrete in Aggressive Ground (2005), the site has been classified as brownfield with mobile groundwater. BRE SD1 testing suites were undertaken on 3 No. samples of Made Ground and 4 No. samples of Glacial Till in order to determine the Design Sulfate (DS) levels and the Aggressive Chemical Environment for Concrete (ACEC), with the findings summarised below:

Sample	Depth (m bgl)	Strata	DS Class	ACEC Class
DS06	0.60	Made Ground	1	AC-2z
DS02	0.75		2	AC-2
DS06	2.50		1	AC-1
TP05	0.50	Glacial Till	1	AC-1
DS04	1.20		1	AC-1
DS03	2.00		1	AC-1
DS01	4.00		1	AC-1

3.8 Environmental Laboratory Test Results

The findings of the chemical test results, summarised below, will be assessed against generic assessment criteria (GAC) for the purposes of screening allowable concentrations in comparison to the measured site concentrations. The GAC are defined based on the critical receptors identified at the site, detailed in the Phase 1 Investigation. Receptors are considered in relation to:

- Human health receptors (e.g. end-users, construction workers and the general public) via measured solid concentrations, and;
- Additional receptors which may be relevant e.g. flora/fauna, water, buried concrete.

The GAC adopted for assessment of soils in relation to Human Health are based on published LQM/CIEH S4ULs (2015) for those compounds for which published criteria are available for varying scenarios (residential, commercial, allotment, public open space). In the absence of LQM/CIEH S4ULs (2015) the following GAC defining

documents are adopted - CL:AIRE Soil GAC for Human Health Assessment (2010) and Category 4 Screening Levels (C4SLs) (2014).

The primary risk to human receptors from free cyanide in soils is an acute risk (i.e. a single dose could have a lethal effect as opposed to adverse effects from cumulative intake (chronic effect)). There is no current UK guidance available for calculating acute risks from free cyanide, therefore an in-house methodology has been used to derive an acute GAC of 60 mg/kg for all exposure scenarios. The value is given for Free or Easily Liberatable Cyanide but should be used to assess Total Cyanide in the absence of cyanide speciation. In cases where the Total Cyanide exceeds the GAC then analysis for Free or Easily Liberatable Cyanide should be completed.

Appendix 8 contains the full screening tables for 10 No. samples of Made Ground including 3 No. samples obtained from the southeastern corner of the site, and 3 No. samples of Glacial Till. Any exceedances of GACs are indicated below. All results have been assessed against the relevant GACs for a **residential with home grown produce** scenario based on a measured organic matter content of **2.50%**.

3.8.1 Asbestos

An asbestos screen was performed on all samples. No asbestos was found to be present within any of the samples tested.

3.8.2 Polycyclic aromatic hydrocarbons (PAHs)

Samples of the Made Ground taken from the footprint of the former Boundary Hotel building and southwestern corner of the site recorded numerous PAH exceedances and are detailed in the table below.

Determinand	Location	Depth of Sample (m bgl)	GAC (mg/kg)	Result (mg/kg)
Benzo(a)anthracene	DS06	1.30	11	20
Benzo(b)fluoranthene	DS02	0.75	3.30	5.80
	DS06	1.30		18
Benzo(a)pyrene	DS02	0.75	3.20	4.90
	DS06	1.30		19

Dibenz(a,h)anthracene	DS02	0.75	0.28	0.89
	DS06	1.30		2.00

3.8.3 Metals and metalloids

Exceedances of arsenic and lead were recorded within the Made Ground sampled from the stockpiles on site as well as within DS06 in the southwestern corner and are detailed in the table below.

Determinand	Location	Depth of Sample (m bgl)	GAC (mg/kg)	Result (mg/kg)
Arsenic	SP01	N/A	37	53
	SP03			40
Lead	DS06	1.30	200	250
	SP01	N/A		270
	SP03			230

3.8.4 Total Petroleum Hydrocarbons (TPH)

TPH compounds were recorded in excess of the laboratory detection limit within the Made Ground sampled; speciated TPH (TPH-CWG) analysis was carried out to determine if any GAC exceedances were present. The speciated TPH analysis confirmed that there were no concentrations of TPH compounds present in excess of the residential with homegrown produce GAC.

3.8.5 Monoaromatics and Oxygenates

There were no concentrations of monoaromatics or oxygenates above detection limit within any of the samples tested.

3.9 **Ground Gas Monitoring Results**

The following dynamic sampling boreholes were installed with a standpipe to allow for monitoring of ground gas concentrations and any underlying groundwater which may be present:

Exploratory Hole	Response Zone Stratum	Response Zone Depth m bgl (m AOD)	
		Top of Response Zone	Base of Response Zone
DS03	Made Ground comprising gravelly, very clayey ashy SAND	0.50 (33.51)	1.00 (33.01)
DS05	Glacial Till comprising orangish brown, slightly gravelly, slightly sandy CLAY	3.00 (31.11)	5.00 (29.11)
DS06	Made Ground comprising slightly gravelly, sandy CLAY	2.00 (31.32)	2.70 (30.62)

The monitoring wells are constructed of 51mm diameter HDPE plain pipe to the depth of the response zone. The response zones comprise slotted pipe surrounded by a gravel annulus which are sealed above and below with hydrated bentonite seals. The monitoring wells are topped with a flush lockable cover.

The scheduled programme of 6 No. visits has been completed. It should be noted that the response zones of DS05 and DS06 were flooded during some visits. Consequently, the results for DS05 and DS06 during those monitoring visits are deemed unreliable in accordance with BS8485:2015 + A1:2019 and have been excluded from the ground gas results below and in section 4.3. The results have been summarised below:

Gas Monitoring Well	Steady O ₂ Concentration (%)	Peak CO ₂ Concentration (%)	Peak CH ₄ Concentration (%)	Peak H ₂ S Concentration (ppm)	Atmospheric Pressure (mbar)	Steady Gas Flow (l/hr)
DS03	14.6 – 19.7	0.6 – 1.1	<0.1	1	992 - 1024	<0.1
DS05	20.1 – 20.2	0.6 – 0.7	<0.1	1	992 - 1023	<0.1
DS06	0.1 – 9.3	9.1 – 14.2	<0.1	1	992 - 1023	<0.1

Ground gas monitoring was undertaken utilising a GFM 4300 gas analyser.

The results highlighted in grey indicate that the readings were noted to be below instrument detection limit.

The ground gas monitoring results and calibration certificate are included in Appendix 9.

3.10 Groundwater Depth Monitoring Results

The above wells were also installed for the purposes of groundwater depth monitoring. Upon completion of the 6 No. scheduled visits the following range of results has been recorded:

Groundwater Monitoring Well	Response Zone (m bgl)	Water Level m bgl (m AOD)
DS03	0.50 – 1.00	DRY – 0.95 (33.06)
DS05	3.00 – 5.00	2.78– 4.38 (31.33 – 29.73)
DS06	2.00 – 2.70	DRY – 2.62 (30.70)

The groundwater monitoring results are included with the gas monitoring results in Appendix 9.

4.0 ENVIRONMENTAL CONCLUSIONS

4.1 Assessment of Environmental Results

Soil sample analyses have assessed the presence of contaminants on a spatial basis, and the concentrations at which they occur across the site.

Within the stockpiles, exceedances of lead and arsenic were encountered and therefore the material within the stockpiles is not deemed suitable for reuse on site in areas of private gardens or soft landscaping.

A number of GAC exceedances for PAHs were recorded within the Made Ground associated with the former Boundary Hotel. Within the vicinity of DS06 in the southwestern corner of the site, localised deep Made Ground was encountered and black staining and a hydrocarbon odour was observed. Exceedances of GACs for PAHs and heavy metals were recorded within this Made Ground.

No other visual or olfactory evidence of contamination was present across the site. No GAC exceedances for the '*residential with home grown produce*' land use scenario were recorded for any of the natural samples (Glacial Till) sent for laboratory chemical testing. No asbestos was detected in any of the samples tested.

The original conceptual models produced in the IGE Consulting *Phase 1 Geo-Environmental Investigation Report* have been revised / updated using the findings from the geo-environmental ground investigation.

4.2 Conceptual Model for Human Health Risk

On-site Made Ground and the numerous stockpiles on-site were identified within the Phase 1 report as a potential source of contamination.

The human health pathways identified within the Phase 1 report include:

- Ingestion of dust and soil;
- Dermal contact with dust and soil;

- Inhalation (dust);
- Inhalation (vapours);
- Consumption of homegrown produce; and
- Inhalation and oral backgrounds

The human health receptors identified within the Phase 1 report include:

- End users (residential land use scenario);
- Construction workers; and
- General public and adjacent site users.

4.2.1 Historical Boundary Hotel and Public House

Made Ground was encountered within all exploratory holes to a depth of between 0.30m and 2.00m (32.99m to 31.32m AOD). The deeper Made Ground tested within the vicinity of the former Boundary Hotel in the northern site section recorded GAC exceedances of benzo(b)fluoranthene, benzo(a)pyrene and dibenz(a,h)anthracene, all PAH compounds. The primary migration pathway for PAHs within a residential with homegrown produce scenario is through ingestion of dust and soil and given that the Made Ground was encountered across the footprint of the former public house, feasible migration pathways are present. However, the PAH exceedances were noted to be only marginally in excess of the GAC. After construction, the material will not be used in private gardens or soft landscaping, significantly reducing the primary migratory pathway of ingestion. The presence of cohesive Glacial Till underlying the Made Ground and lack of exceedances within the natural strata will further reduce any vertical migration of contaminants.

4.2.2 Southwestern Corner

Within DS06 in the southwestern corner of the site, black staining and a mild hydrocarbon odour were recorded within the Made Ground encountered between 1.20m and 1.40m bgl (32.12m and 31.92m AOD). PAH and lead GAC exceedances were recorded within the Made Ground at 1.30m bgl with an associated PID value of 10.20ppm. Despite visual and olfactory evidence of contamination being noted, relatively low PID values were reported and concentrations were reported only

marginally above the GAC. No GAC exceedances were recorded within the stratum tested at 2.40m bgl, suggesting a lack of migration of contaminants.

4.2.3 Stockpiles

A number of stockpiles were encountered within the southern site section, with an estimated total volume of c. 360m³, based on an average height of 1.50m. Exceedances of the residential with homegrown produce scenario GAC for arsenic and lead were recorded within 2 No. stockpile samples tested. The prominent migration pathway for both lead and arsenic is through direct ingestion of dust and soil and therefore feasible migration pathways are present on site. However, as with the material from the historical public house, after construction, the material will not be used in private gardens or soft landscaping, significantly reducing the primary migratory pathway of ingestion. Given the cohesive nature of the Glacial Till underlying the site, vertical migration of contaminants will also be limited.

With the exception of the Made Ground within the vicinity of the former public house and stockpiles, no other exceedances were recorded within the Made Ground across the site. The deep Made Ground with visual and olfactory evidence of contamination was localised to the southwestern corner only. Therefore, the exceedances recorded within the southwestern corner, stockpiles and within the vicinity of the former public house are considered localised. The plan below details the locations of the features on site where exceedances were recorded.

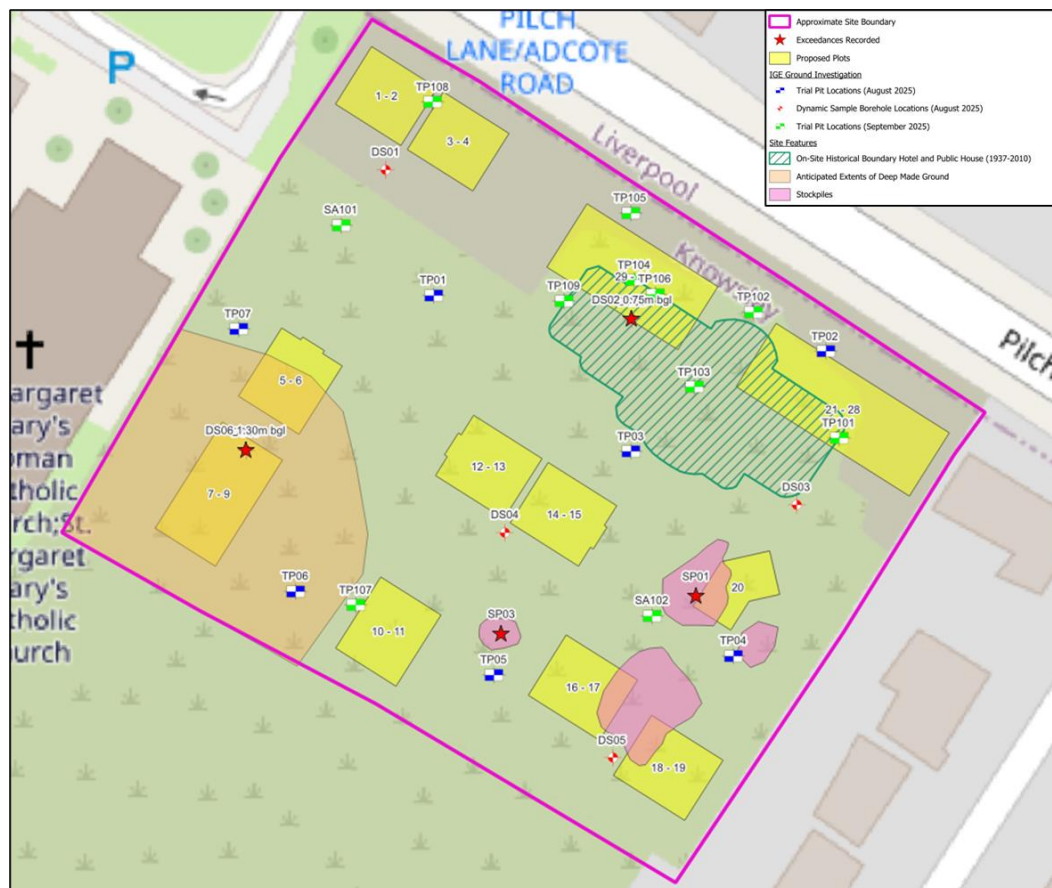


Figure 10: QGIS Extract detailing areas of exceedances: former Boundary Hotel (blue), Stockpiles (pink) and area of deeper Made Ground (orange). Red stars indicate the location of exceedances encountered on site.

4.2.4 Human Health Conclusions

Although PAH and heavy metal exceedances associated with the former Boundary Hotel, stockpiles and deep Made Ground within the southwestern corner of the site have been identified, they were noted to be only slightly in excess of the residential with homegrown produce GAC and relatively low PID readings were recorded within the Made Ground. Given the presence of cohesive Glacial Till underlying the site and lack of exceedances within the underlying deposits, migration of contaminants will be reduced. However, feasible pathways to site users and construction workers exist and therefore the risk to human health is deemed **low to moderate**. A separate stand-alone remedial strategy will be produced.

Any potential increase in risk to construction workers associated with acute interaction with soils can be mitigated with appropriate PPE and health and safety procedures.

4.3 Conceptual Model for Ground Gas Risk

On-site Made Ground was identified within the Phase 1 report as a potential ground gas source.

Potential ground gas pathways identified within the Phase 1 report include:

- Preferential migration along foundations and service ducts;
- Migration within groundwater;
- Ingress through cavity walls and floors; and
- Inhalation.

Potential ground gas receptors identified within the Phase 1 report include:

- Human occupants;
- Site workers; and
- Buildings and structures.

4.3.1 Historical Boundary Hotel and Public House

Made Ground was encountered within all exploratory holes on site. The Made Ground associated with the former Boundary Hotel was noted to predominantly comprise red brick and concrete. A Total Organic Carbon (TOC) concentration of 1.30% was recorded within the Made Ground tested, suggesting a lack of organic or putrescible material. Furthermore, ground gas monitoring results from DS03 screening the Made Ground within the vicinity of the former public house recorded a peak carbon dioxide concentration of 1.10%, with no methane concentrations detected above the instrument detection limit. No flow rates above the instrument detection limit were recorded and therefore the Made Ground within the vicinity of the boundary hotel is not considered a significant source of ground gas.

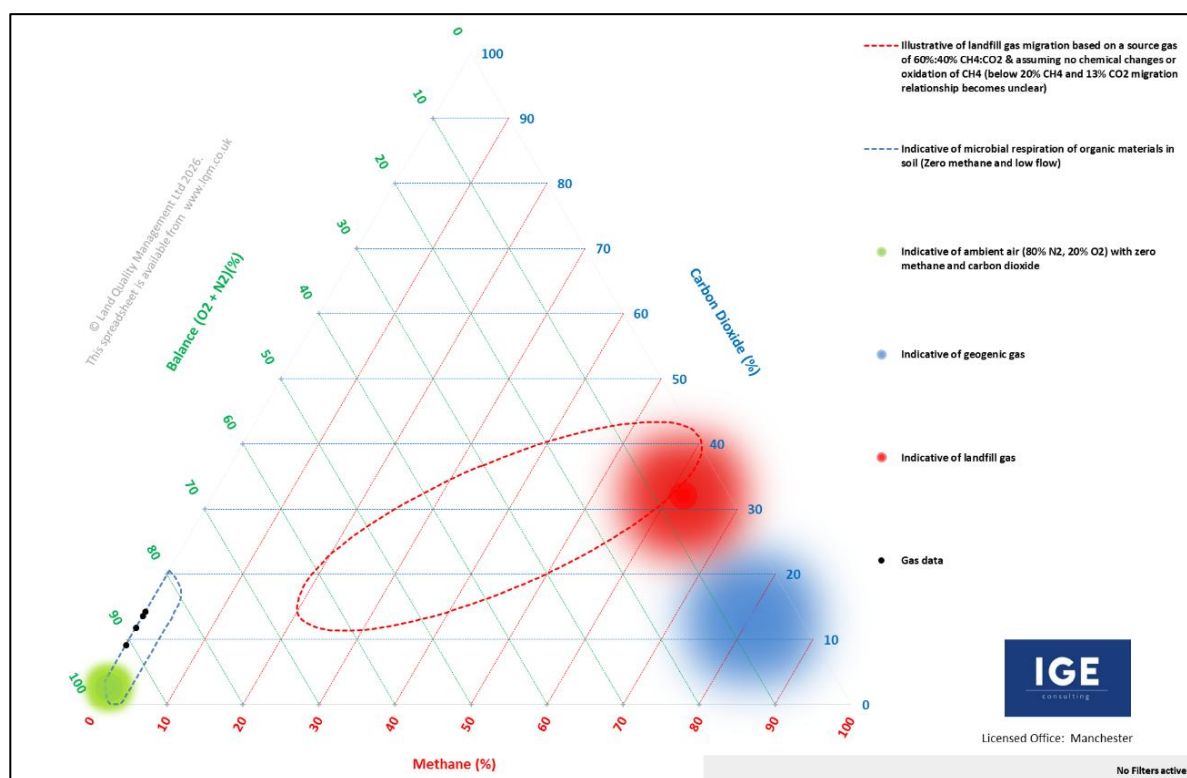
4.3.2 Southwestern Corner of Site

Within the southwestern corner of the site, a band of Made Ground from 2.00m and 2.10m bgl (31.32m and 31.19m AOD) to a depth of 3.00m bgl (30.29m and 30.32m AOD) was encountered and was noted to comprise clay with occasional plant

remains. A ground gas monitoring well was installed within DS06 with the response zone in the band of clay and plant remains. Ground gas monitoring within DS06 recorded methane concentrations and flow rates below the instrument detection limit. Carbon dioxide concentrations of between 9.1% and 14.2% were recorded during monitoring.

1 No. visit was undertaken during falling pressure; a peak carbon dioxide concentration of 14.2% was recorded in DS06 and groundwater was recorded at 2.62m bgl. The elevated carbon dioxide concentration is anticipated to reflect a “worst case” scenario. No methane or flow rates above detection limits were recorded during the visit. The source of the elevated carbon dioxide is likely to be the organic material recorded within DS06 and is a byproduct of installing a ground gas monitoring well and aerating the material, causing a temporary increase in microbial respiration. A temporary increase of ground gas may occur during construction (i.e. through installation of foundations or drainage) but is likely to decrease over time.

The ternary plot below shows the ground gas monitoring data from DS06 and concurs that the ground gas concentrations in DS06 is indicative of microbial respiration of organic material, represented by methane concentrations and flow rates below detection limit.



4.3.3 Remainder of site

The response zone of DS05 was installed within the cohesive Glacial Till in the southeastern site section. A peak carbon dioxide concentration of 0.70% was recorded, with no methane concentrations recorded above the instrument detection limit. The presence of cohesive Glacial Till underlying the site is anticipated to significantly reduce migration pathways from any potential off-site ground gas sources, as well as reduce the migration of ground gas on site.

4.3.4 Gas Screening Value

The results of the 6 No. ground gas monitoring visits have been assessed in accordance with BS 8485 (2015) + A1 (2019). The characteristic Gas Screening Value (GSV) is calculated by dividing the maximum methane or carbon dioxide concentration by 100 and multiplying by the maximum steady flow rate recorded at the same monitoring point (the instrument detection limit of 0.1 l/hr is utilised when below detection limit flow rates are recorded). If required, the worst case GSV can be calculated by dividing the maximum carbon dioxide and methane concentration by 100 and multiplying by the maximum steady flow rate on site.

Ground gas monitoring has recorded a maximum peak carbon dioxide concentration of 14.2% v/v and a methane concentrations below detection limit. No steady flow rates above detection limits were recorded.

As no steady flow rates were recorded on-site, the GSV and the worst case GSV for carbon dioxide at the site can be calculated as $(14.2/100) \times 0.1 = 0.0142 \text{ l/hr}$.

The GSV and the worst case GSV for methane can be calculated as $(0.1/100) \times 0.1 = 0.0001 \text{ l/hr}$.

4.3.5 Ground Gas Conclusions

Although elevated concentrations of carbon dioxide have been recorded, this is attributed to a temporary increase in ground gas production as a byproduct of installing the ground gas monitoring well. A temporary increase may occur during construction, however, this is unlikely to be long term. Additionally, as no steady flow rates have been recorded the ground gas generation is deemed negligible.

Consequently, the site can be classified as a **Characteristic Situation 1 (CS1)** and therefore, no ground gas protection measures are deemed necessary in the proposed development, in-line with BS8485 + A1 (2019).

4.3.6 Radon

The Indicative Atlas of Radon in England and Wales produced by the Health Protection Agency and British Geological Survey indicates that the site lies within a lower probability area, less than 1% of homes are above the action level. Consequently, no radon protection measures are necessary in the construction of new dwellings or extensions.

4.4 **Conceptual Model for Controlled Waters Risk**

On-site Made Ground and stockpiles encountered in the southern site section were identified within the Phase 1 report as potential sources of contamination.

The controlled water pathways identified within the Phase 1 report include:

- Vertical migration through coarse Made Ground and coarse soils;
- Lateral migration along low permeability natural soils & pooling at relative low points;
- Vertical migration along future foundations and pooling at the base;
- Migration through porous bedrock; and
- Overland flow.

The controlled waters receptors identified within the Phase 1 report include:

- Groundwater within Secondary Undifferentiated (Superficial) and Principal (Bedrock) Aquifers; and
- Surface water courses (Court Hey Brook, more than 750m away).

Made Ground was encountered within all exploratory holes on site and localised visual and olfactory evidence was recorded within DS06 located in the southeastern corner of the site. Elevated concentrations of PAHs, lead and arsenic were recorded

within the Made Ground in the vicinity of the historical Boundary Hotel and public house as well as in the southwestern corner of the site, however, migration of contaminants to the underlying aquifers is anticipated to be limited given the low mobility of lead and PAHs. A lack of elevated concentrations within the natural Glacial Till suggests that the cohesive Glacial Till underlying the site is significantly reducing migration to underlying aquifers. Furthermore, across the majority of the site no groundwater strikes were encountered during the ground investigation and groundwater was monitored to be present at a depth of between 1.72m and 4.03m bgl, suggesting an absence of shallow groundwater and therefore lack of migration pathways. In the northern site section in the vicinity of the former Boundary Hotel, moderate and rapid water ingresses were recorded within the coarse Made Ground which may facilitate migration of contaminants. However, the underlying fine Glacial Till will significantly reduce vertical migration to underlying aquifers.

Although areas of hardstanding currently exist on site, and the proposed development will increase hardstanding which would facilitate overland flow of contaminants, the nearest surface water feature is noted to be more than 750m from the site and therefore lateral migration of contaminants is considered unlikely.

4.4.1 Construction Environmental Management Plan

Given the presence of areas of hardstanding, the former public house and stockpiles on site, it is anticipated that earthworks will be required on site. Consequently, it is recommended that a Construction Environmental Management Plan (CEMP) is undertaken for the site.

4.4.2 Controlled Waters Conclusions

The risk to controlled waters is deemed **low** due to a lack of significant contaminative linkages having been identified. No further assessment or remedial measures are considered necessary.

4.5 **Conceptual Model for Building Materials & Services**

In accordance with BRE Special Digest 1: Concrete in Aggressive Ground (2005), the site has been classified as brownfield with mobile groundwater, the soils have

been classified as Design Sulfate level DS-1 and subsequently within the Aggressive Chemical Environment for Concrete (ACEC) classification of AC-1 with the exception of the Made Ground from DS02 within the vicinity of the former Boundary Hotel public house which was classified as DS-2 and AC-2. The Made Ground from DS06 in the southwestern corner was classified as DS-1 and AC-2z. Therefore, all concrete to be used with Made Ground should be designed to meet the requirements of DS-2, AC-2/z.

5.0 GEOTECHNICAL CONCLUSIONS

5.1 Geotechnical Assessment of Ground Conditions

The intrusive investigation works have revealed that the ground conditions at the site generally comprise Made Ground underlain by Glacial Till. The principal strata identified are outlined in further detail below.

5.1.1 Made Ground – Former Boundary Hotel public house

Made Ground was recorded within the vicinity of the former Boundary Hotel public house to a depth of between 1.40m and at least 2.40m bgl (32.65m and 31.84m AOD). The material generally comprised slightly clayey, very gravelly ashy fine to coarse sand or sandy, angular to subangular, fine to coarse gravel of red brick, concrete, yellow brick, metal shards, glass and ceramic. Based on an average thickness of 1.80m, there is anticipated to be c. 1100m³ of material associated with the former 'Boundary Hotel' public house.

1 No. SPT was undertaken in this stratum recording an N-value of 50, anticipated to be the result of an obstruction associated with the former building. 1 No. hand shear vane reading with a result of 43kPa was undertaken in this stratum.

The Made Ground associated with the former Boundary Hotel may be suitable for reuse in less sensitive areas such as beneath plots or roads following processing and further chemical testing but cannot be placed beneath private gardens or areas of soft landscaping.

5.1.2 Made Ground – Southwestern Corner of Site

In the southeastern corner of the site, deep Made Ground comprising firm to stiff orangish brown mottled grey slightly gravelly slightly sandy clay, underlain by soft, dark brown, slightly gravelly, sandy clay with occasional plant remains at a depth from 2.00m and 2.10m bgl (31.32m and 31.19m AOD) to a depth of 3.00m bgl (30.29m and 30.32m AOD). Based on an average thickness of 3.00m, a conservative total volume of 3500m³ of Made Ground is anticipated to be present in the southwestern corner.

2 No. SPTs were undertaken in this stratum recording N-values of 4 down to 2m bgl. 5 No. hand shear vane readings were taken within this stratum with undrained shear strength values of 102kPa and 140kPa, reducing to 58kPa and 60kPa within the soft clay with plant remains.

1 No. Atterberg test was undertaken with the soft clay from DS06 at 2.50m bgl which indicated that the Made Ground is of low plasticity and low volume change potential.

5.1.3 Made Ground – Rest of site

Made Ground was recorded within the remainder of exploratory holes to a depth of between 0.30m and 2.00m bgl (32.99m to 31.32m AOD AOD). The Made Ground across the remainder of the site comprised soft, dark brown, slightly gravelly, slightly sandy clay with cobbles of red brick, or brown, gravelly, clayey, fine to coarse, occasionally ashy sand. Based on an average thickness of 0.95m, there is anticipated to be c. 6800m³ of Made Ground for reuse across the site, subject to further chemical testing.

1 No. SPT was undertaken within the Made Ground across the remainder of the site, recording an N-value of 8. 2 No. hand shear vane readings of 40kPa and 44kPa were recorded at 0.70m bgl within the site wide Made Ground.

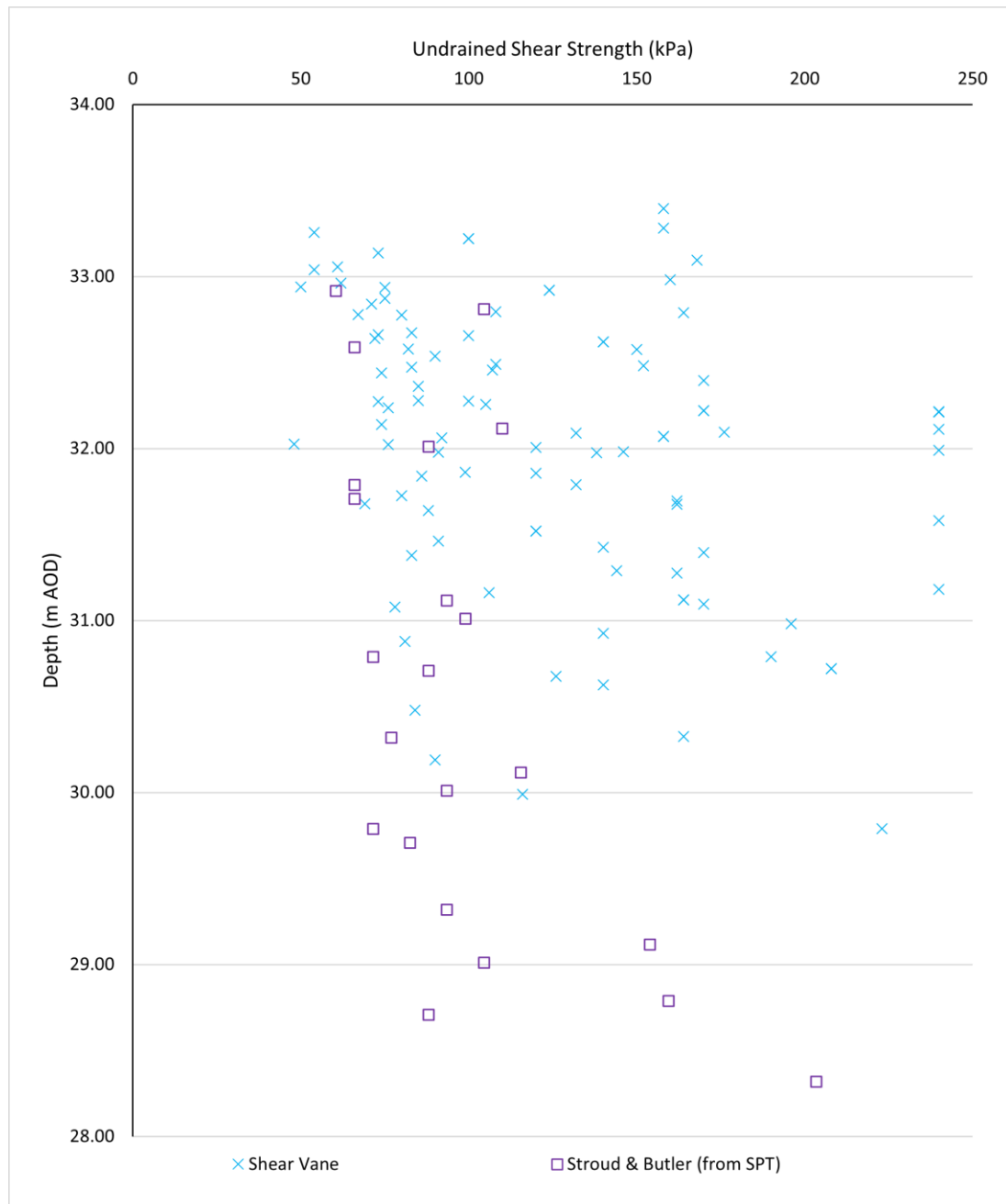
5.1.4 Glacial Till

Glacial Till deposits were encountered in all exploratory holes and were noted to be consistent across the site, comprising firm to stiff, brown mottled grey, slightly gravelly slightly sandy clay with occasional gravel to cobble sized inclusions of brown silty, fine to coarse sand.

97 No. hand shear vane results were undertaken within the Glacial Till which recorded undrained shear strengths of between 48kPa and 240+kPa (average 125kPa). Undrained shear strength was generally noted to increase with depth.

22 No. SPTs were undertaken in this stratum recording N-values between 11 and 37 (average 18). Utilising the empirical correlation of *Stroud & Butler (1975)*, it is estimated that the undrained shear strength of the Glacial Till ranges from 66kPa to

204kPa, with an approximate average of 98kPa. These are slightly lower values than those obtained through direct measurement (shear vane testing), but the graph below shows good general agreement between the two datasets. The graph indicates that there is generally an increase in undrained shear strength with depth.



4 No. Atterberg tests were undertaken on samples of shallow Glacial Till (0.60m – 2.20m bgl), which indicated that typically, the Glacial Till deposits are clays of low plasticity and low volume change potential.

5.2 Groundwater

During the first stage of the ground investigation after a period of dry weather, slight ingresses were recorded in sand inclusions within TP03 West and TP06 at 2.10m and 2.00m bgl (31.82m and 31.29m AOD) respectively. The second stage of ground investigation was undertaken during a period of heavy rainfall and numerous water ingresses were recorded between 0.30m and 2.10m bgl (33.24m and 32.14m AOD) predominantly within coarse Made Ground deposits within the vicinity of the former Boundary Hotel public house building.

During groundwater monitoring visits, 2 No. wells were noted to be dry whilst DS05 in the southeastern corner of the site recorded resting groundwater levels between 3.98m and 4.38m bgl (30.08m and 29.73m AOD).

The lack of water strikes across the majority of the site and groundwater monitoring results suggest there is an absence of shallow groundwater, and therefore large scale temporary works are unlikely to be required for excavation works across the majority of the site. However, the full scale of seasonal and temporal fluctuations are unlikely to have been captured during this ground investigation.

Coarse Made Ground is present underlying the vicinity of the former Boundary Hotel building and numerous water ingresses were recorded at a range of depths within this stratum during heavy rainfall. Furthermore, it is anticipated that the former Boundary Hotel had an associated basement which would facilitate accumulation of groundwater. Therefore, groundwater control will likely be required for excavations within the vicinity of the former public house building.

5.3 Foundations

Due to the variable ground conditions, foundations vary by plot locations. The below are general recommendations. A plot specific foundation zoning plan inclusive of levels and heave precaution has been completed for the site (SI-09 Rev A, dated January 2026) and should be referred to for detailed information regarding the foundation solutions. An extract of the proposed development plan is included below for reference.

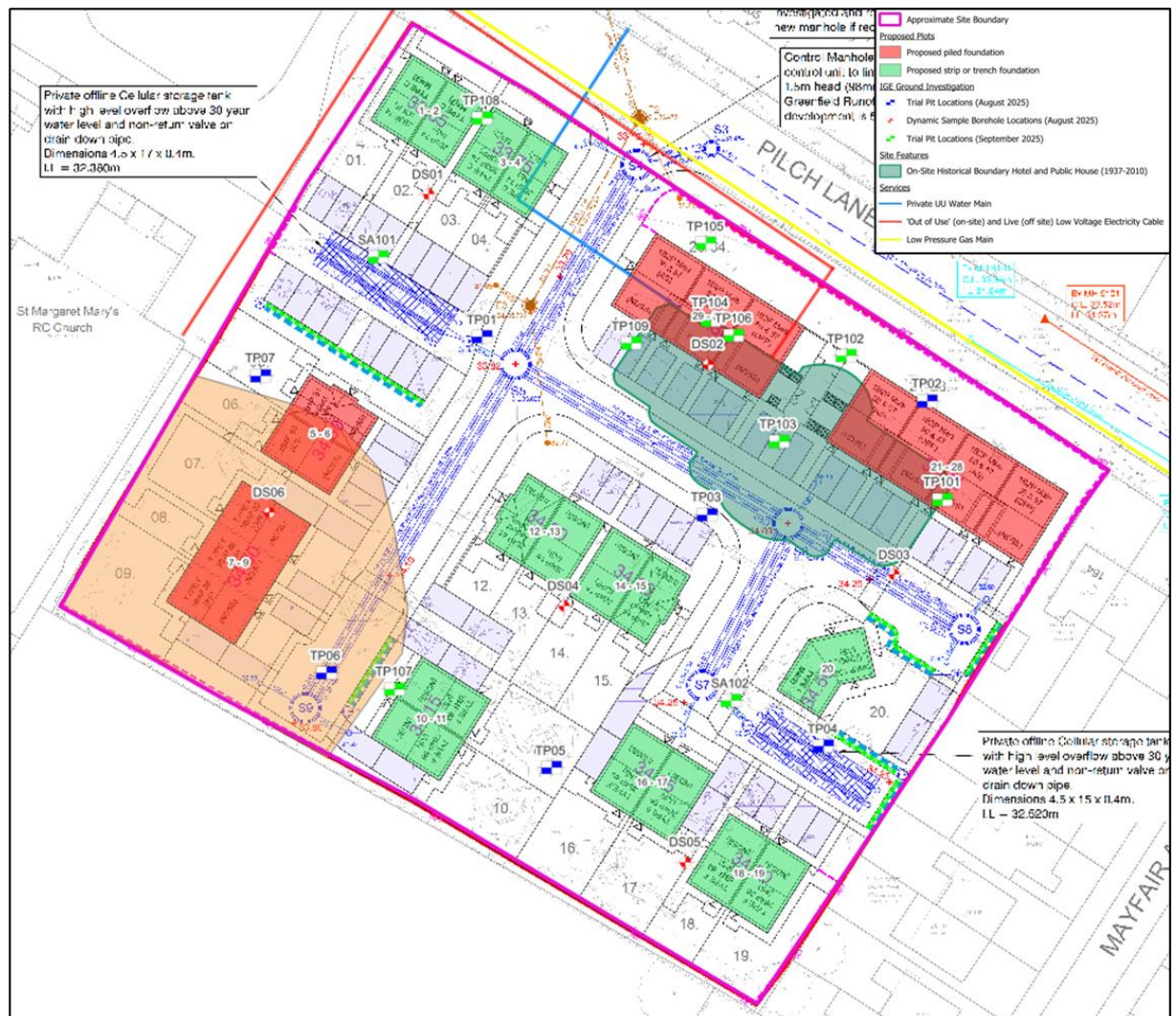


Figure 11: Extract of '30686_100C Preliminary Drainage Layout' including services and historical features including the former Boundary Hotel extents (blue). Orange indicates the approximate area of deep Made Ground in the southwestern section.

Plots 1 – 4 and 12 – 20 (Green on plan)

Made Ground was encountered within all exploratory holes typically to a depth of between 0.30m and 1.25m and was noted to comprise either soft clay or sand. Given the variability and low strength nature of the Made Ground, it is not considered a suitable founding stratum for even lightly loaded structures.

The underlying Glacial Till recorded firm to stiff clay with average N-values of 14 from 1.20m bgl and average undrained shear strength values of 133kPa from 1.40m bgl. Therefore, the Glacial Till at c. 1.40m bgl is considered a suitable founding stratum for proposed plots 1 – 6 and 11 – 21 (highlighted in green on the plan above). Given

the depth of the Made Ground present across the site, mass-fill trench foundations are likely to be feasible for the aforementioned plots.

Assuming a traditional (shallow) mass fill foundation of 600mm width lain at least 200mm into the suitable founding strata, a minimum allowable net bearing pressure in excess of 125kN/m² with differential settlement less than 25mm should be readily achievable.

Plots 5 – 9 (Red on plan)

Deep Made Ground was encountered within the southwestern corner of the site and comprised firm, orangish brown mottled grey, slightly gravelly, slightly sandy clay, underlain by a band of soft, dark brown, slightly gravelly, sandy CLAY with occasional plant remains to a depth of 3.00m bgl (30.29m and 30.32m AOD). The deep Made Ground in this area is anticipated to be associated with construction of the bowling green and former public house and is shown in the plan above in orange. N-values below 5 were recorded within this stratum. As a result, the Made Ground is not considered to be a suitable founding stratum for the proposed structures.

Given that the depth of the Made Ground extends beyond 2.50m bgl, a traditional foundation solution is unlikely to be suitable for plots 7 – 12 in the southwestern site section. The underlying Glacial Till was noted to be firm to stiff with an N-value of 14 at 3.00m bgl and undrained shear strength values from hand shear vane testing of 90kPa at 3.10m, increasing to 223kPa at 3.50m bgl in TP06. Therefore, the underlying Glacial Till is deemed a suitable founding stratum for a deep (piled) foundation solution (highlighted in red above).

Plots 21 – 34 (Red on plan)

Proposed plots 22 – 35 are located within the footprint of the former Boundary Hotel public house where brick footings to a depth of 1.40m bgl (32.65m AOD) were encountered around the perimeter of the former building. The extents of the former building are shown in blue on Figure 11. Deep coarse Made Ground to a depth of at least 2.40m bgl (31.84m AOD) was encountered in the centre of the building footprint and it is anticipated that the basement of the former building has been infilled with demolition material. The extents of this material should be proven as part of the site

preparation and any potential obstructions removed. Given that the variable depth and composition of the Made Ground associated with the former building extends to a depth of at least 2.40m bgl (31.84m AOD), a traditional strip or mass-fill trench will not be suitable for plots 22 – 35.

The relict footing was underlain by firm to stiff Glacial Till with hand shear vane results of 87kPa at 1.50m bgl, increasing to 125 kPa at 2.50m bgl. It is therefore recommended that a piled foundation solution is utilised for these plots, extending into the underlying Glacial Till (highlighted in red above). Given the close proximity of adjacent properties along the eastern site boundary, consideration of the piling methodology should be given to reduce vibratory disturbance.

An arboricultural survey has been undertaken and a number of plots require heave precaution and foundation deepening in-line with NHBC Guidance given the presence of low volume change potential soils across the majority of the site and medium volume change potential soils in TP04 at 0.60m bgl. Detailed information on plot specific heave precaution is included in the separate Foundation Zoning Plan.

It is recommended that any localised 'soft spot' areas encountered during excavation works should be removed and foundations extended down to suitable formation strata. To minimise issues with potential differential settlement of the foundation structure, it is recommended that foundations are not constructed upon more than one stratum type, as delineated within the exploratory hole logs.

Though not encountered during the ground investigation, the absence of any large cobbles or boulders within the Glacial Till should not be assumed at depth.

For detailed information regarding the foundation solutions, reference should be made to the separate Foundation Zoning Plan (SI-09 Rev A, dated January 2026).

5.4 Floor Slabs

Given the presence of numerous trees along the site boundaries, low to medium volume change potential clays, and Made Ground in excess of 600mm across the site, it is envisaged that in line with NHBC Guidance, ground bearing floor slabs will not be suitable across the majority of the proposed development.

5.5 Earthworks and External Areas

5.5.1 Highways and External areas

Given the cohesive nature of the Glacial Till, it is envisaged that any soft spots can be re-engineered, therefore the hard-surfaced external works including the access road and pavements may be constructed on proof-rolled natural sub-grade formations across the site. Following completion of an engineering earthworks specification, it is recommended that CBR determinations are undertaken for detailed design of the highway / external areas.

5.5.2 Earthworks

A full earthworks programme should be designed and completed for the works once finalised levels are known. Based on the presence of deep Made Ground deposits associated with the former Boundary Hotel building, it is considered likely at this stage that re-engineering will be necessary. Furthermore, the stockpiles noted in the southeastern site section will be transported around or off site and therefore an earthworks programme will be required. Protection from seasonal variations including groundwater and excess trafficking will be paramount in determining the success of the earthworks.

Recommend that once finalised drainage design is completed that an assessment of ground conditions to support manholes and drains in the south western section is undertaken. At present, it is anticipated the materials will be suitable based upon traditional building techniques.

5.5.3 Stockpile Management

A number of stockpiles were noted on site during ground investigation. Chemical testing of the stockpiles identified exceedances of the residential with homegrown produce scenario for arsenic and lead and therefore the material is not suitable for reuse within private gardens or areas of soft landscaping, but may be suitable for use elsewhere, such as beneath plots or highways.

During the course of the development there will also be areas of stockpiled soils intended for use within the proposed gardens. These will have been subjected to off-site testing and approved for use on site. It is imperative that the stockpiles are well managed to avoid inadvertent mixing or depositing of surplus or deleterious materials that would compromise the continued use. We would recommend that the site management reviews the proposed positions for placement of stockpiles and places either fencing or warning signs to ensure compliance.

5.5.4 Export of Materials

Any soils to be removed from site must be classified in accordance with WM3 under the definition of waste and chemically tested to determine their destination, i.e. reuse or landfill. Waste ticket records must also be retained as proof of the export of materials from site.

6.0 RECOMMENDATIONS

- Following any variation in a finalised proposed development detailed design including earthworks design, proposed levels and arboricultural survey (tree survey) it is recommended that the above conclusions are re-appraised to determine the suitability.
- The conclusions of this report should be agreed with relevant regulatory authorities prior to the commencement of works.
- No ground gas protection measures are deemed necessary.
- The use of soakaways is not considered feasible in line with BRE 365 guidance.
- A clean cover system is required in areas of private gardens and soft landscaping to break contaminative linkages between the Made Ground in the vicinity of the former Boundary Hotel and the southwestern site corner. A stand alone remedial strategy report will be produced including further details.
- The extent of Made Ground within the former Boundary Hotel footprint should be ascertained and obstructions removed.
- If any hereto unidentified visual or olfactory evidence of contamination is encountered during earthworks or construction work, then the Local Authority Environmental Health Officer and Environment Agency should be contacted immediately to determine appropriate mitigation measures.
- It is recommended that plate bearing tests should be undertaken to obtain CBR values following completion of the earthworks activity at the proposed formation level for highway design.
- For detailed information regarding the foundation solutions, reference should be made to the separate Foundation Zoning Plan (SI-09 Rev A, dated January 2026).
- It is recommended that the presence and associated constraints of all site services are established prior to significant intrusive works beginning.



APPENDIX 1

LIMITATIONS OF INVESTIGATION WORK AND REPORT



LIMITATIONS OF REPORT

This consultancy report was compiled and carried out by IGE Consulting Limited ('IGE') for the client, as defined in the main report (the 'client'), on the basis of a defined programme and scope of works and the terms of a contract between IGE and the client. IGE undertook this with all reasonable skill and care, taking into account the limits of the scope of works required by the client, the prevailing site conditions, the time scale involved and the resources, including financial and manpower resources, agreed between IGE and the client. IGE cannot accept responsibility to any parties whatsoever, following the issue of this report, for any matters arising which may be considered outwith the agreed scope of works.

Unless otherwise agreed this report has been prepared exclusively for the use and reliance of the client in accordance with generally accepted consulting practices. This report may not be relied upon, or transferred to, by any other party without the written agreement of its author. If a third party relies on this report, it does so wholly at its own and sole risk and IGE disclaims any liability to such parties.

It is IGE's understanding that this report is to be used for the purpose described in the 'Brief' section of this report. That purpose was a significant factor in determining the scope and the services to be provided. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of, or reliance upon the report in those circumstances by the client without IGE's review and advice shall be at the client's sole and own risk.

The information contained in this report is protected by disclosure under Part 3 of the Environmental Information Regulations 2004 pursuant to the provisions of Regulation 12(5) without the consent in writing of a Director of IGE.

This report is a function of the date it was written and should be read in light of any subsequent changes in legislation, statutory requirements and industry practices. Ground conditions can also change over time and further investigations or assessment should be made if there is any significant delay in acting on the findings of this report. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of IGE. In the absence of such written advice of IGE, reliance on the report in the future shall be at the client's own and sole risk. Should IGE be requested to review the report in the future, IGE shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between IGE and the client.

The observations and conclusions described in this report are based solely upon the scope of works agreed between the client and IGE. IGE has not performed any observations, investigations, studies or testing not specifically set out or mentioned within this report. IGE is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the agreed scope of works. For the avoidance of doubt, this report is strictly limited to the nature of contamination contained within the ground and groundwater at the site. The report does not cover environmental aspects such as air or noise pollution and ground vibrations and the like. In addition, ecological matters relating to wildlife, flora and fauna have not been investigated as part of this report. In particular, the site has not been inspected for the presence or otherwise of invasive species (e.g. Japanese Knotweed). It is recommended that the client appoints a specialist in this subject to carry out a detailed inspection / survey of the site if its presence is suspected. Where mention has been made to the identification of asbestos or asbestos-containing materials this is for indicative purposes only and does not constitute or replace full and proper surveys.

LIMITATIONS OF INVESTIGATION WORK

Where field investigations have been carried out these have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions can also be variable and as investigation excavations only allow examination of the ground at discrete locations, the potential exists for ground conditions to be encountered which are different to those considered in this report. The explored extent of the site area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition, chemical analysis was carried

out for a limited number of parameters, based on an understanding of the available operational and historical information, and it should not be inferred that other chemical species are not present.

The groundwater conditions entered on the exploratory hole records are those observed at the time of investigation. The normal speed of investigation usually does not permit the recording of an equilibrium water level for any one water strike. Moreover, groundwater levels are subject to seasonal variation or changes in local drainage conditions and higher groundwater levels may occur at other times of the year than were recorded during this investigation.

Exploratory Holes

Where exploratory holes have been carried out as part of this investigation, the spacing has been determined to provide a reasonable indication of the general ground conditions across the site, but the number has ultimately been limited by commercial constraints. The findings of the exploratory holes relate specifically to the exploratory hole locations and are no absolute guarantee of the ground conditions between such locations. Due allowance should be made for the possibility of variation in conditions between exploratory hole locations.

Extent of Contamination Testing

The extent of contaminated land testing carried out on samples obtained from the site has been determined in accordance with the latest legal guidance issued by the government to provide, with reasonable certainty, the probable general levels of contamination present on site that could pose a significant hazard to human health or waters. The extent of site investigation works including chemical testing has also been limited by reasonable commercial constraints. Although extensive testing of samples has been carried out, the volume of samples taken for testing are a minute fraction of the total volume of soils and groundwater present on site. Therefore, there is a residual risk that undetected pockets of contamination may be present on site, situated between testing locations.

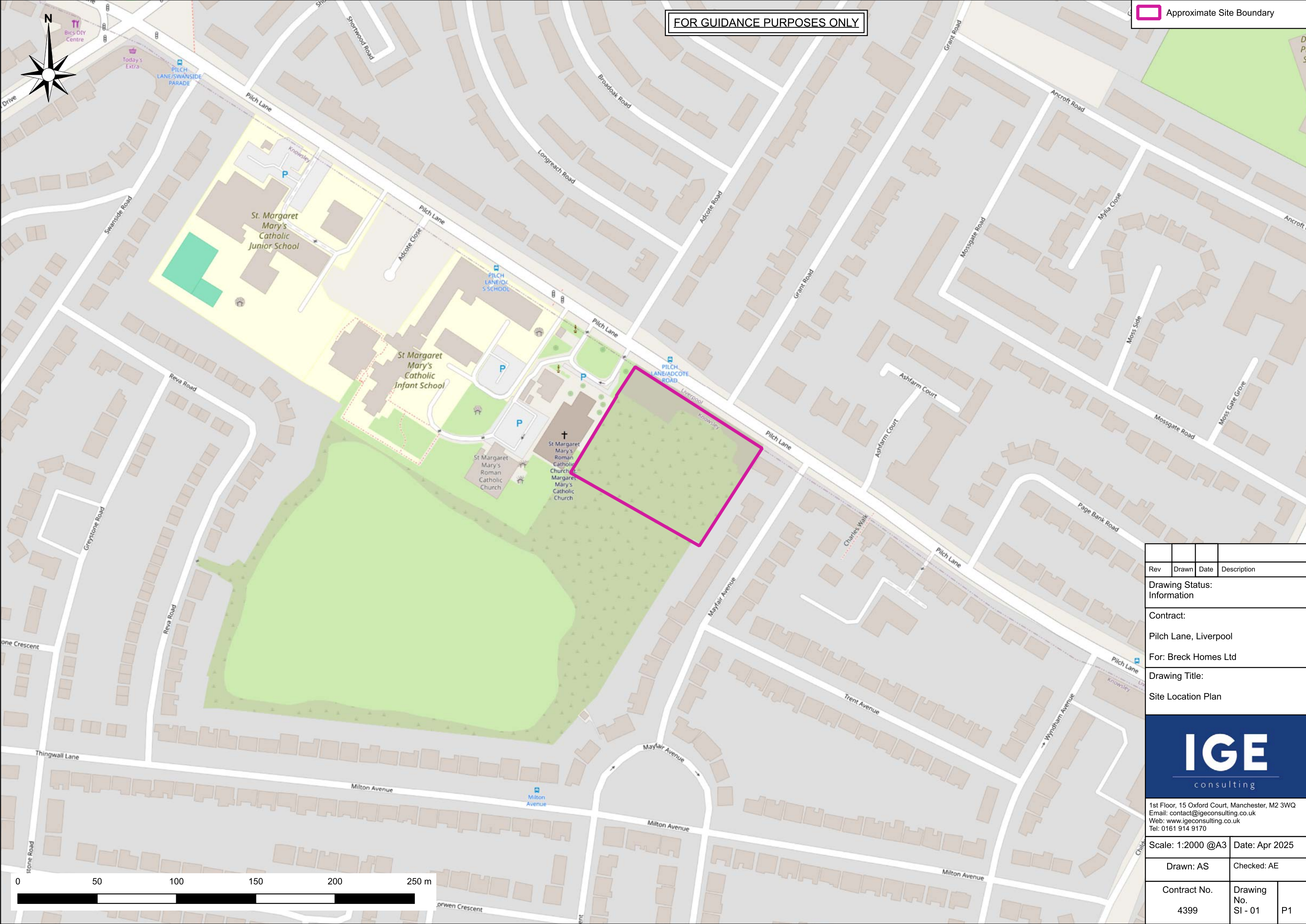
When investigating or developing potentially contaminated land it is important to recognise that sub-surface conditions may vary spatially and temporally. The absence of certain ground, ground gas, contamination or groundwater conditions at the positions tested is not a guarantee that such conditions do not exist anywhere across the site. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities. The conclusions resulting from this study are not necessarily indicative of future conditions or operating practices at or adjacent to the site.

Extent of Geo-Environmental Studies

This report is strictly limited to the nature of contamination contained within the ground and groundwater at the site. The report does not cover environmental aspects such as air or noise pollution and ground vibrations and the like. In addition, ecological matters relating to wildlife, flora and fauna have not been investigated as part of this report. In particular, the site has not been inspected for the presence or otherwise of invasive species e.g. Japanese Knotweed. It is recommended that the Client appoints a specialist in this subject to carry out a detailed inspection / survey of the site if its presence is suspected. Where mention has been made to the identification asbestos or asbestos-containing materials this is for indicative purposes only and does not constitute or replace a full and proper survey. If an Unexploded Ordnance (UXO) report has been obtained within the report, it has been so on the basis of Health and Safety concerns and no assessment has been made other than transcribing the recommendations of the sub-contractor contained within the report. In terms of a potential contaminative source, unless ordnance has been manufactured / stored on site, UXOs will only be determined as a contaminative source following a positive identification on site.

APPENDIX 2

FIGURES AND DRAWINGS



FOR GUIDANCE PURPOSES ONLY

 Approximate Site Boundary

Rev	Drawn	Date	Description
-----	-------	------	-------------

Drawing Status:
Information

Contract:

Pilch Lane, Liverpool

For: Breck Homes Ltd

Drawing Title:

Site Location Plan



1st Floor, 15 Oxford Court, Manchester, M2 3WQ
Email: contact@igeconsulting.co.uk
Web: www.igeconsulting.co.uk
Tel: 0161 914 9170

Scale: 1:2000 @A3 Date: Apr 2025

Drawn: AS Checked: AE

Contract No.	Drawing No.	
4399	SI - 01	P1

KEY

- S.W. Foul
- Proposed Sewer
- Proposed Disconnection Manhole
- Proposed Finished Floor Level
- Proposed Level
- Existing Level
- Existing Combined Sewer
- Existing Surface Water Sewer
- Permeable private driveway construction
- Denotes possible retaining wall locations (above 600mm).
- Denotes possible SUDs feature location (Filter Drain)
- Denotes possible SUDs feature location (Grass filter strip)

All individual private drives to have permeable construction. Drive areas have been included in impermeable areas/ hydraulic calculations

Ground conditions to be investigated for infiltration potential with testing in accordance with BRE 365

Current Drainage Drainage Hierarchy Considerations:

1. Site investigation confirms infiltration will not be suitable.
2. No known watercourses, ditches or waterbodies within vicinity of site. Nearest Main River is 770m to the South of the site.
3. SW Sewer in Pilch Lane is the most suitable discharge location for SW.

Proposed Surface Water Sewer connection to Ex MH 9106. Ex MH arrangement to be investigated and replaced with new manhole if required.

Existing Sewer depths to be confirmed on site to ensure proposed sewer crossings have sufficient clearance.

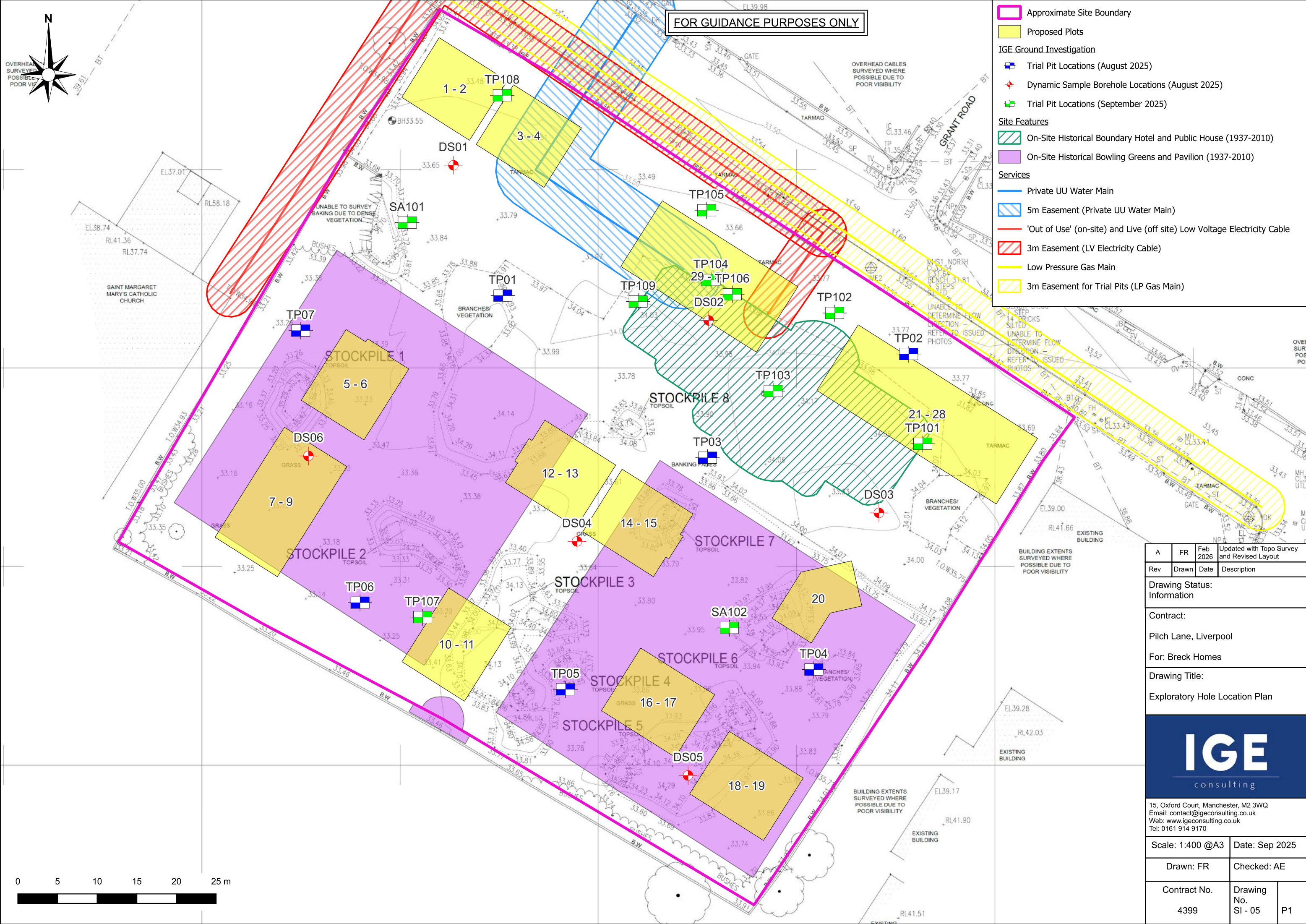
Proposed Foul Sewer connection to Existing 225mmØ Combined Sewer at Ex MH 8201. Ex MH arrangement to be investigated and replaced with new manhole if required.

Control Manhole with vortex flow control unit to limit flows 5.0 l/s @ 1.5m head (98mmØ Orifice) - QBar Greenfield Runoff Rate for the development is 5.4 l/s.

Private offline Cellular storage tank with high level overflow above 30 year water level and non-return valve on drain down pipe. Dimensions 4.5 x 17 x 0.4m. I.L = 32.380m

Private offline Cellular storage tank with high level overflow above 30 year water level and non-return valve on drain down pipe. Dimensions 4.5 x 15 x 0.4m. I.L = 32.520m

C	16/12/25	BK	Updated to latest Architects Layout.
B	16/09/25	BK	Drainage revised to suit UU discharge rate.
A	05/06/25	RDE	Drainage hierarchy note added
Rev	Date	Initials	Details
Drawing Revisions			
North Point	Pilch Lane Liverpool		
Quality Ass.	Breck Homes		
UKAS 005 Quality Assurance	Preliminary Drainage Layout		
ISO 9001:2015 SGS Certificate GB02/54539	3 Worsley Court MANCHESTER M28 3NU Tel. 0161 703 8801 Fax. 0161 703 8279 manchester@ironsidefarrar.com		
Original Set	Copyright, Acknowledgment	Drawn	Checked By
A1	©Crown Copyright. All rights reserved. Licence No. AL100017966.	NE	RDE
	Date	Scale	
	April 25	1:250	
Drawing No.	Revision		
30686/100	C		



FOR GUIDANCE PURPOSES ONLY

- Approximate Site Boundary
- Proposed Plots
- IGE Ground Investigation
 - Trial Pit Locations (August 2025)
 - Dynamic Sample Borehole Locations (August 2025)
 - Trial Pit Locations (September 2025)
- Site Features
 - On-Site Historical Boundary Hotel and Public House (1937-2010)
 - On-Site Historical Bowling Greens and Pavilion (1937-2010)
- Services
 - Private UU Water Main
 - 5m Easement (Private UU Water Main)
 - 'Out of Use' (on-site) and Live (off site) Low Voltage Electricity Cable
 - 3m Easement (LV Electricity Cable)
 - Low Pressure Gas Main
 - 3m Easement for Trial Pits (LP Gas Main)

A	FR	Feb 2026	Updated with Topo Survey and Revised Layout
Rev	Drawn	Date	Description

Drawing Status:
Information

Contract:
Pilch Lane, Liverpool

For: Breck Homes

Drawing Title:
Exploratory Hole Location Plan

IGE
consulting

15, Oxford Court, Manchester, M2 3WQ
Email: contact@igeconsulting.co.uk
Web: www.igeconsulting.co.uk
Tel: 0161 914 9170

Scale: 1:400 @A3	Date: Sep 2025
Drawn: FR	Checked: AE
Contract No. 4399	Drawing No. SI - 05 P1

Cross Section (northeast to southwest)

Project Name
Pilch lane

Project No.
4399

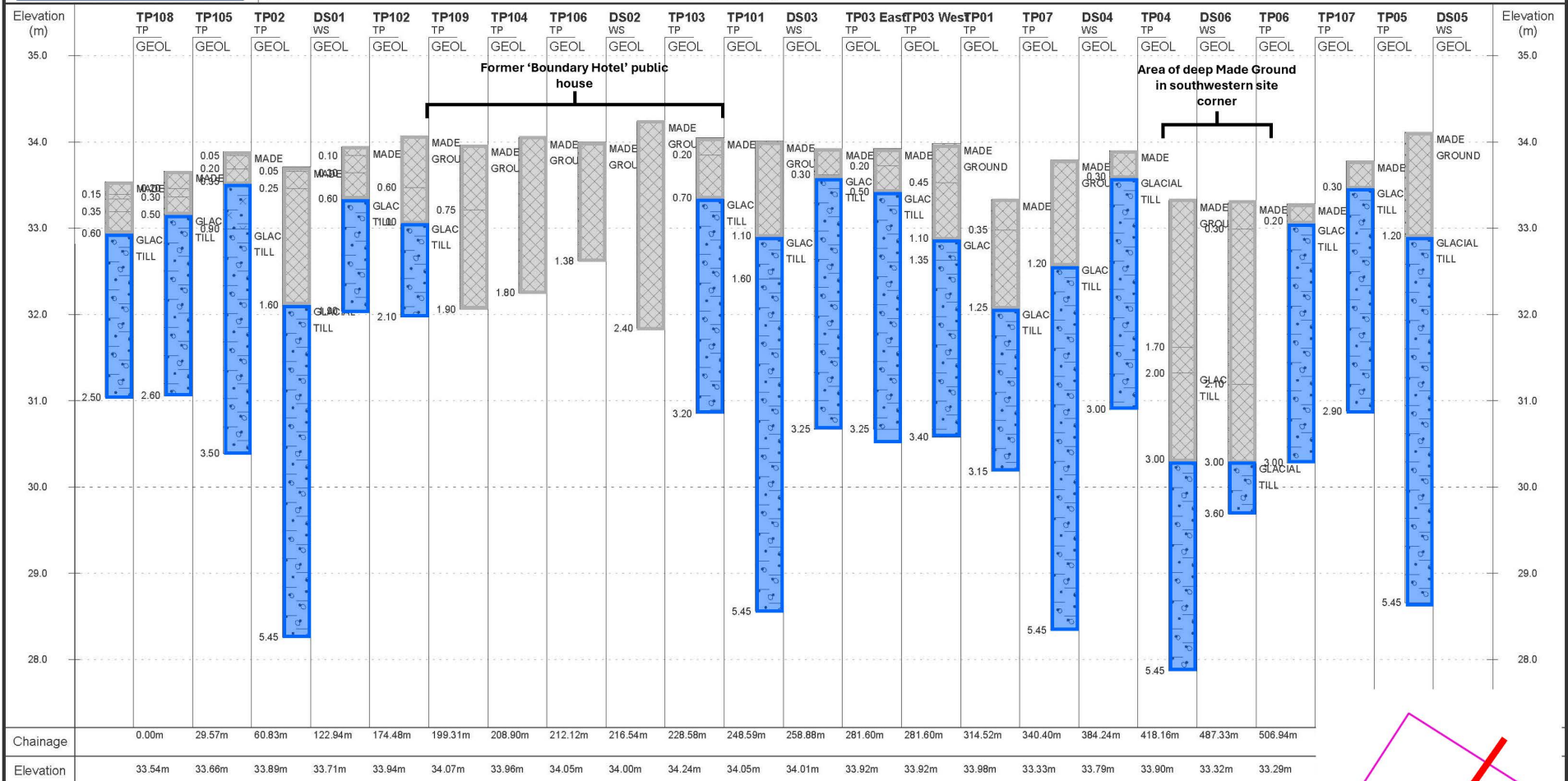
Vertical Scale
1:65

Horizontal Scale
NOT SCALED

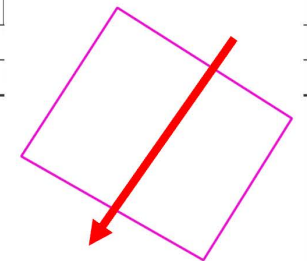
Client
Breck Homes

Consultant
IGE Consulting

Contractor



MADE GROUND CLAY



Notes

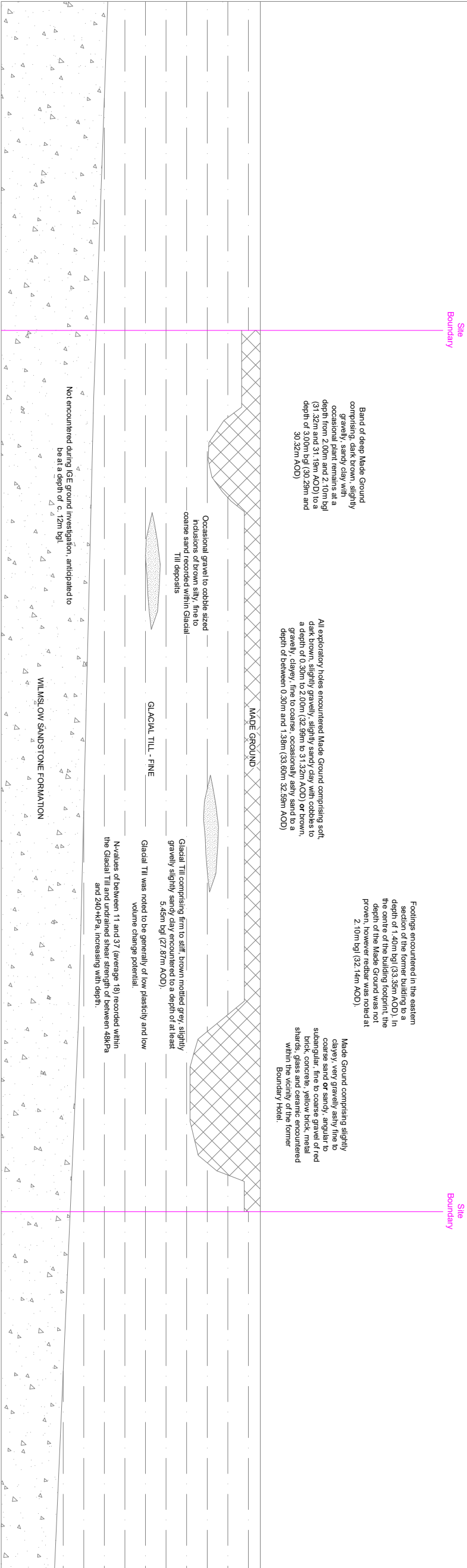
- 1 This drawings is indicative and not to scale.
- 2 This drawing is to be read in conjunction with all relevant Architects and Service Engineers drawings.

Key

- Made Ground
- Glacial Till (fine)
- Glacial Till (coarse)
- Winslow Sandstone Formation

SW

NE



1st Floor, 15 Oxford Court, Manchester, M2 3WQ
Tel: 0161 275 2600
Web: www.igeconsulting.co.uk

Scale	NTS	Date	September 2025
Drawn	FR	Checked	AE
Contract No.	Drawing No.		
4399	SI-06	P1	

Notes

- 1 This drawings is indicative and not to scale
- 2 This drawing is to be read in conjunction with all relevant Architects and Service Engineers drawings.

Key

- Made Ground
- Glacial Till (fine)
- Glacial Till (coarse)
- Wimslow Sandstone Formation

SOURCES

- Sources
1. On-site Made Ground
- Secondary Sources
2. Pooling beneath current and / or future foundations
3. Pooling in relative low points above low permeability deposits
4. Pooling within granular lenses within low permeability deposits
- Ground Gas Sources
1. On-site Made Ground

PATHWAYS

- Pathways To Human Health
- A. Ingestion of dust and soil
- B. Dermal contact with dust and soil
- C. Inhalation (dust)
- D. Inhalation (vapours)
- E. Consumption of homegrown produce
- F. Inhalation and oral backgrounds
- Pathways To Controlled Waters
- A. Vertical migration through coarse Made Ground and coarse soils
- B. Lateral migration along low permeability natural soils & pooling at relative low points
- C. Vertical migration along future foundations and pooling at base
- D. Migration through porous bedrock
- E. Overland flow

RECEPTORS

- Receptors
1. End user
2. Construction workers
3. General public / adjacent site users
4. Secondary undifferentiated aquifer in superficial deposits
5. Principal aquifer in bedrock
6. Surface water - off-site Court Hey Brook (757m south)
7. Buildings and services

SW

Within the deep Made Ground in the southwestern corner ground gas monitoring recorded a carbon dioxide concentration of between 9.1% and 13.6% and methane concentrations below detection limit. Although no flow rates above detection limit were encountered, the elevated concentrations of carbon dioxide have been encountered and therefore Made Ground within the southeastern corner cannot be discounted as a ground gas source.

Based on the GSV, the site can be classified as a Characteristic Situation 1 (CS1). However, due to the elevated concentrations of carbon dioxide recorded in the initial 3 No. monitoring visits, it is deemed necessary to increase the designation to Characteristic Situation 2.

A number of stockpiles were encountered within the southern site section and exceedances of the residential with homegrown produce scenario for arsenic and lead were recorded within 2 No. stockpile samples tested.

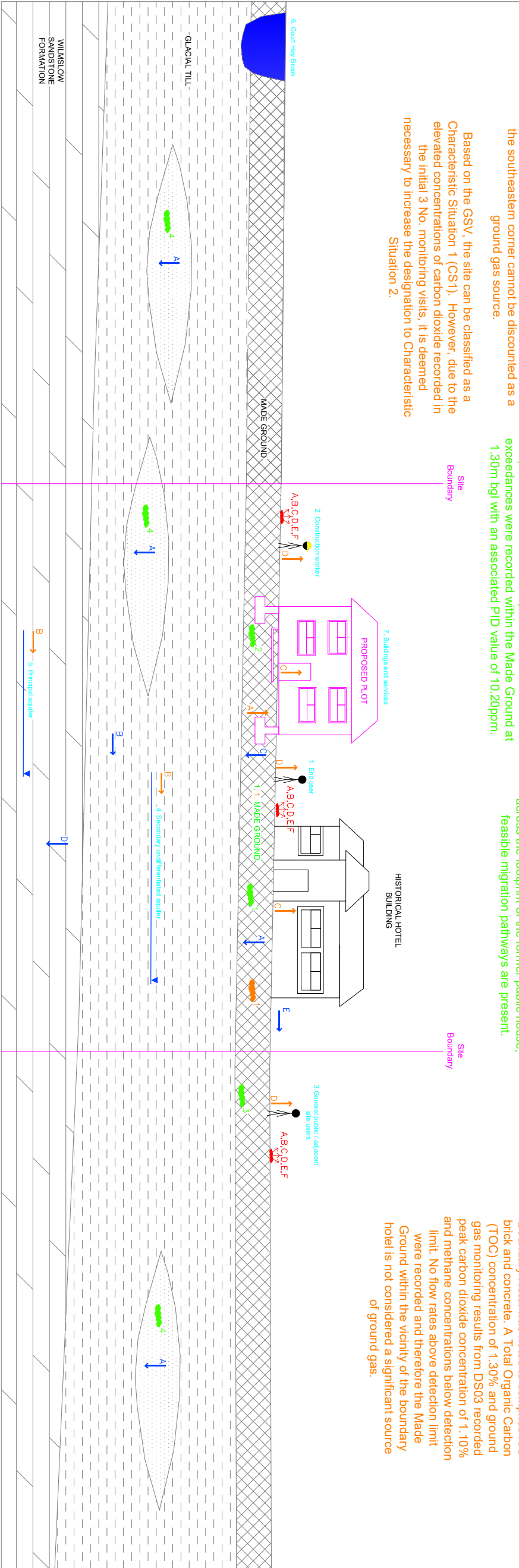
Within the southwestern corner of the site, black staining and a mild hydrocarbon odour were recorded within the Made Ground encountered between 1.20 and 1.40m bgl (32.12m and 31.92m AOD). PAH and lead GAC exceedances were recorded within the Made Ground at 1.30m bgl with an associated PID value of 10.20ppm.

Made Ground within the vicinity of the former Boundary Hotel recorded PAH exceedances of benzo(b)fluoranthene, benzo(a)pyrene and dibenz(a,h)anthracene. Prominent migration pathway for PAHs within a residential with homegrown produce scenario is ingestion of dust and soil. Given that the Made Ground is encountered across the footprint of the former public house, feasible migration pathways are present.

Elevated concentrations of PAHs, lead and arsenic were recorded within the Made Ground across the site, however, migration of contaminants to the underlying aquifers is anticipated to be limited given the low mobility of lead and PAHs and low permeability of Glacial Till. Furthermore, no groundwater strikes were encountered during the ground investigation and groundwater was monitored to be present at a depth of 4.03m bgl, suggesting an absence of shallow groundwater and therefore lack of migration pathways

Made Ground associated with the former Boundary Hotel was noted to comprise red brick and concrete. A Total Organic Carbon (TOC) concentration of 1.30% and ground gas monitoring results from DS03 recorded peak carbon dioxide concentration of 1.10% and methane concentrations below detection limit. No flow rates above detection limit were recorded and therefore the Made Ground within the vicinity of the boundary hotel is not considered a significant source of ground gas.

NE



Rev		Drawn	Date
Drawing Status		Description	
Information			
Contract			
Pitch Lane, Liverpool			
For: Breck Homes Ltd			
Drawing Title			
Updated Conceptual Site Model			
1st Floor, 15 Oxford Court, Manchester, M2 3WQ www.igecconsulting.co.uk			
Scale	Date		
NTS	September 2025		
Drawn	FR	Checked	AE
Contract No.	Drawing No.		
4399	SI-07		P1

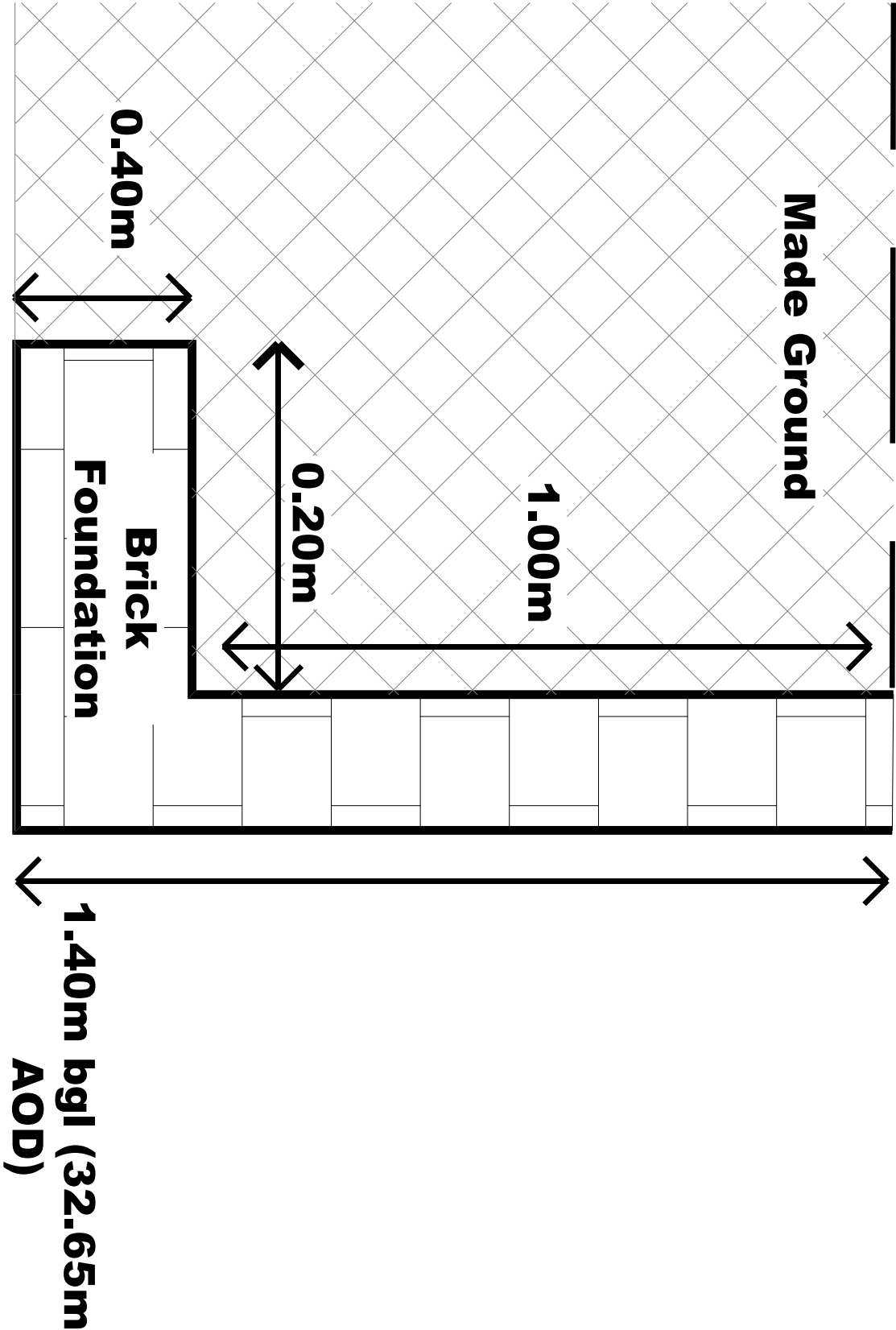
Notes

- 1 This drawings is indicative and not to scale.
- 2 This drawing is to be read in conjunction with all relevant Architects and Service Engineers drawings.

Key

- Made Ground
- Glacial Till (fine)

Ground Level
(34.05m AOD)



Rev	Drawn	Date	Description
Drawing Status Information			

Contract
Pilch Lane, Liverpool
For: Breck Homes Ltd

Drawing Title
Foundation Sketch1



1st Floor, 15 Oxford Court, Manchester, M2 3WQ
www.igeconsulting.co.uk

Scale	Date
NTS	September 2025
Drawn	FR
Checked	AE
Contract No.	Drawing No.
4399	SI - 08
	P1

APPENDIX 3

TRIAL PIT LOGS AND PHOTOGRAPHS

IGEconsulting		Trial Pit				TP01				
		Sheet 1 of 1								
		Hole Type TP	Easting 341837.93	Northing 391159.11	Ground Level (m) 33.98	Scale 1:25				
Project Name Pilch lane		Project No. 4399		Start Date 2025-08-13		End Date 2025-08-13				
Client Breck Homes				Consultant IGE Consulting		Contractor				
Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m)	Strata			
		Depth (m)	Type/ Ref	Results			Legend	Description		
		0.20	ES		33.53	(0.45)		Dark brown gravelly clayey fine to coarse SAND. Gravel is angular to subangular fine to coarse of mudstone, sandstone, red brick, concrete and ceramic. [MADE GROUND]		
		0.55	ES			0.45		Soft dark brown mottled black slightly gravelly sandy CLAY with occasional rootlets. Gravel is angular to subangular fine to coarse of mudstone, red brick, ceramic and glass. [MADE GROUND]	0.5	
		0.70	HV	40 (kPa)		(0.65)			1.0	
		1.20	HV	80 (kPa)		1.10				
		1.25	ES		32.88	(0.25)		Soft to firm greyish brown mottled orange and grey slightly gravelly sandy CLAY. Mild humic odour. Gravel is angular to subangular fine to coarse of mudstone and sandstone. [GLACIAL TILL]		
		1.40	HV	150 (kPa)	32.63	1.35			1.5	
		1.50	B							
		1.70	HV	100 (kPa)					2.0	
			2.00	HV	138 (kPa)				Firm brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is angular to subangular fine to coarse of sandstone, mudstone, quartz and coal. [GLACIAL TILL]	2.5
		2.30	HV	162 (kPa)		(2.05)				
		2.60	B							
		2.70	HV	162 (kPa)			3.0			
			3.20	B					Spoil becoming wet during excavation (3.00m) Becoming stiff. (3.10m) Cobble sized inclusions of soft brown very sandy SILT. (3.20m) Excavating as gravel to cobble sized pieces. (2.90 - 3.40m)	
		3.30	HV	126 (kPa)						
				30.58	3.40					
								End of Trial Pit at 3.40m	3.5	
									4.0	
									4.5	
									5.0	
Remarks Terminated at target depth. No strike.							Method, Plant, Stability, Dimensions 0.00 - 3.40m TP JCB 3CX Stable during excavation Orientation: 0° L = 2.50m W = 0.60m		Logger FR/AH	
Checked By: LM										

Hole Type TP	Easting 341837.93	Northing 391159.11	Ground Level (m) 33.98	Scale 1:25
Project Name Pilch lane	Project No. 4399	Start Date 2025-08-13	End Date 2025-08-13	

Client
Breck Homes

Consultant
IGE Consulting

Contractor



Remarks
Terminated at target depth. No strike.

Method, Plant, Stability, Dimensions

0.00 - 3.40m TP JCB 3CX
Stable during excavation
Orientation: 0°

L = 2.50m
W = 0.60m

Logger
FR/AH

Checked By: LM

IGEconsulting		Trial Pit			TP02					
		Sheet 1 of 1								
		Hole Type TP	Easting 341889.10	Northing 391151.75	Ground Level (m) 33.89	Scale 1:25				
Project Name Pilch lane		Project No. 4399		Start Date 2025-08-13		End Date 2025-08-13				
Client Breck Homes				Consultant IGE Consulting		Contractor				
Inst/ Backfill	Water Levels	Samples and Tests			Level	Depth (thickness)	Strata			
		Depth (m)	Type/ Ref	Results	(m)	(m)	Legend	Description		
					33.84	(0.05) 0.05 (0.15)		ASPHALT. [MADE GROUND]		
		0.30	ES		33.69	0.20 (0.15)		CONCRETE. [MADE GROUND]		
		0.45	ES		33.54	0.35		Dark brown gravelly slightly clayey fine to coarse ashy SAND. Gravel is angular to subangular fine to coarse of clinker, concrete, red brick and ceramic. [MADE GROUND]	0.5	
		0.75	B			(0.55)		Soft dark brown slightly sandy silty CLAY with occasional rootlets and plant remains. [MADE GROUND]		
		0.95	HV	50 (kPa)	32.99	0.90		Soft to firm organgish brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is angular to subangular fine to medium of mudstone, sandstone, quartz and coal. [GLACIAL TILL]	1.0	
		1.00	ES					Occasional cobble sized inclusions of light brown, clayey fine to coarse SAND. (1.00m)		
		1.10	HV	164 (kPa)				Becoming firm to stiff (1.20m)	1.5	
		1.40	HV	108 (kPa)						
		1.40	B							
		1.80	HV	132 (kPa)					2.0	
		2.10	HV	132 (kPa)		(2.60)			2.5	
		2.60	HV	144 (kPa)				No longer mottled (2.50m)		
		2.60	B						3.0	
		3.10	HV	190 (kPa)				Becoming stiff and excavating as cobble sized pieces. (3.20m)		
	3.40	B						3.5		
					30.39	3.50	End of Trial Pit at 3.50m			
									4.0	
									4.5	
									5.0	
Remarks Terminated at target depth. No strike.						Method, Plant, Stability, Dimensions 0.00 - 3.50m TP JCB 3CX Stable during excavation Orientation: 90° L = 2.70m W = 0.60m			Logger FR/AH	
Checked By: LM										

Hole Type TP	Easting 341889.10	Northing 391151.75	Ground Level (m) 33.89	Scale 1:25
Project Name Pilch lane	Project No. 4399	Start Date 2025-08-13	End Date 2025-08-13	

Client
Breck Homes

Consultant
IGE Consulting

Contractor



Remarks
Terminated at target depth. No strike.

Method, Plant, Stability, Dimensions

0.00 - 3.50m TP JCB 3CX
Stable during excavation
Orientation: 90°

L = 2.70m
W = 0.60m

Logger
FR/AH

Checked By: LM

IGEconsulting		Trial Pit			TP03 East				
		Sheet 1 of 1							
		Hole Type TP	Easting 341863.74	Northing 391138.68	Ground Level (m) 33.92	Scale 1:25			
Project Name Pilch lane		Project No. 4399		Start Date 2025-08-13		End Date 2025-08-13			
Client Breck Homes				Consultant IGE Consulting		Contractor			
Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m)	Strata		
		Depth (m)	Type/ Ref	Results			Legend	Description	
					33.62	(0.30)		Orange angular to subangular COBBLES of red brick and ceramic. [MADE GROUND]	
						0.30		Firm orangish brown slightly gravelly slightly sandy CLAY. Gravel is angular to subangular fine to medium of sandstone, mudstone, quartz and coal. [GLACIAL TILL]	0.5
		0.70	HV	100 (kPa)					
		0.85	ES						
		0.90	B						
		1.00	HV	124 (kPa)					1.0
		1.30	HV	140 (kPa)					
		1.70	HV	170 (kPa)		(2.95)			
		1.85	HV	158 (kPa)					
		2.10	B				Occasional gravel to cobble sized inclusions of brown, slightly gravelly, silty, fine to coarse SAND (1.90m) Excavating as gravel to cobble sized pieces. (2.00m)	2.0	
		2.40	HV	120 (kPa)					
		2.60	B				Becoming stiff. (2.60m)	2.5	
		2.80	HV	164 (kPa)					3.0
		3.20	HV	208 (kPa)					
		3.20	B		30.67	3.25	End of Trial Pit at 3.25m		
								4.0	
								4.5	
								5.0	
Remarks Terminated at target depth. No strike.						Method, Plant, Stability, Dimensions 0.00 - 3.25m TP JCB 3CX Occasional moderate collapses in all trial pit walls from ground level to 0.30m bgl. Orientation: 90° L = 3.10m W = 0.60m		Logger FR/AH	
Checked By: LM									

Hole Type TP	Easting 341863.74	Northing 391138.68	Ground Level (m) 33.92	Scale 1:25
Project Name Pilch lane	Project No. 4399	Start Date 2025-08-13	End Date 2025-08-13	

Client
Breck Homes

Consultant
IGE Consulting

Contractor



Remarks
Terminated at target depth. No strike.

Method, Plant, Stability, Dimensions
0.00 - 3.25m TP JCB 3CX
Occasional moderate collapses in all trial pit walls from ground level to 0.30m bgl.
Orientation: 90°

Logger
FR/AH

L = 3.10m
W = 0.60m

Checked By: LM

IGEconsulting		Trial Pit			TP03 West					
					Sheet 1 of 1					
		Hole Type TP	Easting 341863.74	Northing 391138.68	Ground Level (m) 33.92	Scale 1:25				
Project Name Pilch lane		Project No. 4399		Start Date 2025-08-13		End Date 2025-08-13				
Client Breck Homes				Consultant IGE Consulting		Contractor				
Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m)	Strata			
		Depth (m)	Type/ Ref	Results			Legend	Description		
		0.25	ES		33.72	(0.20)		Red angular to subangular COBBLES of red brick and ceramic. [MADE GROUND]	0.5	
						(0.30)				Brown slightly gravelly slightly clayey fine to coarse SAND with high cobble content. Gravel is angular to subangular fine to course of red brick, ceramic, plastic wrapper, mudstone and sandstone. Cobbles are angular to subangular of red brick. [MADE GROUND]
		0.70	HV	100 (kPa)	33.42	(0.50)		Firm orangish brown slightly gravelly slightly sandy CLAY. Gravel is angular to subangular fine to medium of sandstone, mudstone, quartz and coal. [GLACIAL TILL]	1.0	
		0.85	ES	124 (kPa)				Ceramic land drain encountered running north to south in eastern wall of pit, 100mm diameter. (1.00m)	1.5	
		1.00	HV	140 (kPa)					2.0	
		1.30	HV	170 (kPa)					2.5	
1.70	HV	158 (kPa)					3.0			
1.85	HV	208 (kPa)					3.5			
2.10	B		30.67	3.25			End of Trial Pit at 3.25m	4.0		
2.40	HV						4.5			
2.60	B						5.0			
2.80	HV									
3.20	HV									
3.20	B									

Remarks

Terminated at target depth. Slight ingress in western pit wall from 2.10m bgl.

Method, Plant, Stability, Dimensions

0.00 - 3.25m TP JCB 3CX
Occasional moderate collapses in all trial pit walls from
ground level to 0.30m bgl.
Orientation: 90°
L = 3.10m
W = 0.60m

Logger

FR/AH

Checked By: LM

Created using Pebble Geo

Hole Type TP	Easting 341863.74	Northing 391138.68	Ground Level (m) 33.92	Scale 1:25
Project Name Pilch lane	Project No. 4399	Start Date 2025-08-13	End Date 2025-08-13	

Client
Breck Homes

Consultant
IGE Consulting

Contractor



Remarks

Terminated at target depth. Slight ingress in western pit wall from 2.10m bgl.

Method, Plant, Stability, Dimensions

0.00 - 3.25m TP JCB 3CX
Occasional moderate collapses in all trial pit walls from ground level to 0.30m bgl.
Orientation: 90°

L = 3.10m



W = 0.60m

Logger

FR/AH

Checked By: LM

IGE consulting				Trial Pit TP04 Sheet 1 of 1																																																																																																																																																																																								
Hole Type TP		Easting 341877.14		Northing 391111.98		Ground Level (m) 33.90		Scale 1:25																																																																																																																																																																																				
Project Name Pilch lane				Project No. 4399		Start Date 2025-08-13		End Date 2025-08-13																																																																																																																																																																																				
Client Breck Homes				Consultant IGE Consulting				Contractor																																																																																																																																																																																				
<table><tr><td rowspan="2">Inst/ Backfill</td><td rowspan="2">Water Levels</td><td colspan="3">Samples and Tests</td><td rowspan="2">Level (m)</td><td rowspan="2">Depth (m)</td><td colspan="2">Strata</td><td rowspan="2"></td></tr><tr><td>Depth (m)</td><td>Type/ Ref</td><td>Results</td><td>Legend</td><td>Description</td></tr><tr><td rowspan="14"> </td><td></td><td>0.10</td><td>ES</td><td></td><td rowspan="14">33.60</td><td>(0.30)</td><td> </td><td>Dark brown gravelly clayey fine to coarse SAND. Gravel is angular to subangular fine to coarse of red brick, glass, ceramic and plastic. [MADE GROUND]</td><td></td></tr><tr><td></td><td>0.50</td><td>HV</td><td>158 (kPa)</td><td>0.30</td><td> </td><td>Stiff orangish brown slightly gravelly slightly sandy CLAY. Gravel is angular to subangular fine to coarse of sandstone, mudstone, coal and quartz. [GLACIAL TILL]</td><td>0.5</td></tr><tr><td></td><td>0.60</td><td>B</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>0.80</td><td>HV</td><td>168 (kPa)</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>0.90</td><td>ES</td><td></td><td></td><td></td><td>Occasional gravel to cobble sized inclusions of brown, slightly gravelly, silty, fine to coarse SAND. (0.90m)</td><td>1.0</td></tr><tr><td></td><td>1.10</td><td>HV</td><td>108 (kPa)</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>1.30</td><td>B</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>1.50</td><td>HV</td><td>170 (kPa)</td><td></td><td>(2.70)</td><td></td><td></td></tr><tr><td></td><td>1.80</td><td>HV</td><td>176 (kPa)</td><td></td><td></td><td>Excavating as gravel to cobble sized pieces. (1.80m)</td><td>2.0</td></tr><tr><td></td><td>2.20</td><td>HV</td><td>162 (kPa)</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>2.30</td><td>B</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>2.50</td><td>HV</td><td>170 (kPa)</td><td></td><td></td><td></td><td>2.5</td></tr><tr><td></td><td>2.80</td><td>HV</td><td>170 (kPa)</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>2.80</td><td>B</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>30.90</td><td>3.00</td><td colspan="2">End of Trial Pit at 3.00m</td><td>3.0</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>3.5</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>4.0</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>4.5</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>5.0</td></tr></table>										Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m)	Strata			Depth (m)	Type/ Ref	Results	Legend	Description			0.10	ES		33.60	(0.30)		Dark brown gravelly clayey fine to coarse SAND. Gravel is angular to subangular fine to coarse of red brick, glass, ceramic and plastic. [MADE GROUND]			0.50	HV	158 (kPa)	0.30		Stiff orangish brown slightly gravelly slightly sandy CLAY. Gravel is angular to subangular fine to coarse of sandstone, mudstone, coal and quartz. [GLACIAL TILL]	0.5		0.60	B							0.80	HV	168 (kPa)						0.90	ES				Occasional gravel to cobble sized inclusions of brown, slightly gravelly, silty, fine to coarse SAND. (0.90m)	1.0		1.10	HV	108 (kPa)						1.30	B							1.50	HV	170 (kPa)		(2.70)				1.80	HV	176 (kPa)			Excavating as gravel to cobble sized pieces. (1.80m)	2.0		2.20	HV	162 (kPa)						2.30	B							2.50	HV	170 (kPa)				2.5		2.80	HV	170 (kPa)						2.80	B											30.90	3.00	End of Trial Pit at 3.00m		3.0										3.5										4.0										4.5										5.0
Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m)	Strata																																																																																																																																																																																					
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Remarks Terminated at target depth. No strike.						Method, Plant, Stability, Dimensions 0.00 - 3.00m TP JCB 3CX Stable during excavation Orientation: 0° L = 2.40m W = 0.60m			Logger FR/AH																																																																																																																																																																																			
Checked By: LM																																																																																																																																																																																												

Hole Type TP	Easting 341877.14	Northing 391111.98	Ground Level (m) 33.90	Scale 1:25
Project Name Pilch lane	Project No. 4399	Start Date 2025-08-13	End Date 2025-08-13	

Client
Breck Homes

Consultant
IGE Consulting

Contractor



Remarks
Terminated at target depth. No strike.

Method, Plant, Stability, Dimensions

0.00 - 3.00m TP JCB 3CX
Stable during excavation
Orientation: 0°

L = 2.40m

W = 0.60m

Logger

FR/AH

Checked By: LM

Hole Type TP	Easting 341845.83	Northing 391109.48	Ground Level (m) 33.78	Scale 1:25
Project Name Pilch lane	Project No. 4399	Start Date 2025-08-13	End Date 2025-08-13	

Client
Breck Homes

Consultant
IGE Consulting

Contractor



Remarks
Terminated at target depth. No strike.

Method, Plant, Stability, Dimensions

0.00 - 2.90m TP JCB 3CX
Stable during excavation
Orientation: 90°

L = 2.90m

W = 0.60m

Logger

FR/AH

Checked By: LM

Hole Type TP	Easting 341819.92	Northing 391120.41	Ground Level (m) 33.29	Scale 1:25
Project Name Pilch lane	Project No. 4399	Start Date 2025-08-13	End Date 2025-08-13	

Client
Breck Homes

Consultant
IGE Consulting

Contractor



Remarks

Terminated at target depth. Slight ingress in northeastern trial pit corner from 2.00m bgl.

Method, Plant, Stability, Dimensions

0.00 - 3.60m TP JCB 3CX
Stable during excavation
Orientation: 0°

L = 3.60m



W = 0.60m

Logger

FR/AH

Checked By: LM

IGEconsulting		Trial Pit				TP07			
		Sheet 1 of 1							
		Hole Type TP	Easting 341812.43	Northing 391154.70	Ground Level (m) 33.33	Scale 1:25			
Project Name Pilch lane		Project No. 4399		Start Date 2025-08-13		End Date 2025-08-13			
Client Breck Homes		Consultant IGE Consulting		Contractor					
Inst/ Backfill	Water Levels	Samples and Tests			Level	Depth (thickness)	Strata		
		Depth (m)	Type/ Ref	Results	(m)	(m)	Legend	Description	
		0.20 0.25	ES B		32.98	(0.35)		Dark brown gravelly slightly clayey fine to coarse SAND with frequent rootlets. Gravel is angular to subangular fine to coarse of mudstone, sandstone, red brick, ceramic and glass. [MADE GROUND]	
	0.40	ES		0.35		Soft to firm dark brown slightly gravelly sandy CLAY with frequent rootlets. Gravel is subangular to subrounded fine to coarse of mudstone, sandstone and red brick. [MADE GROUND]			
	0.70	HV	44 (kPa)	(0.90)	32.08	1.25		Gravel sized inclusion of orange fine to coarse SAND. (1.20m)	
	1.30 1.30 1.30	HV ES B	48 (kPa)					Firm brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is subangular to rounded fine to coarse of mudstone, sandstone, coal and quartz. [GLACIAL TILL]	
	1.60	HV	80 (kPa)	(1.90)	30.18	3.15		Excavating as gravel to cobble sized pieces and no longer mottled. (2.10m)	
	1.90	HV	140 (kPa)						
	2.40 2.40	HV B	140 (kPa)						
	2.70 2.80	HV B	140 (kPa)						
	3.00	HV	164 (kPa)						
									End of Trial Pit at 3.15m
Remarks Terminated at target depth. No strike.								Method, Plant, Stability, Dimensions 0.00 - 3.15m TP JCB 3CX Stable during excavation Orientation: 0° L = 2.35m W = 0.60m	Logger FR/AH
Checked By: LM									

Hole Type TP	Easting 341812.43	Northing 391154.70	Ground Level (m) 33.33	Scale 1:25
Project Name Pilch lane	Project No. 4399	Start Date 2025-08-13	End Date 2025-08-13	

Client
Breck Homes

Consultant
IGE Consulting

Contractor



Remarks
Terminated at target depth. No strike.

Method, Plant, Stability, Dimensions

0.00 - 3.15m TP JCB 3CX
Stable during excavation
Orientation: 0°

L = 2.35m



W = 0.60m

Logger

FR/AH

Checked By: LM

IGEconsulting		Trial Pit				SA101		
						Sheet 1 of 1		
		Hole Type TP	Easting 341825.88	Northing 391168.30	Ground Level (m) 33.78	Scale 1:25		
Project Name Pilch lane		Project No. 4399		Start Date 2025-09-17		End Date 2025-09-17		
Client Breck Homes			Consultant IGE Consulting			Contractor		
Inst/ Backfill	Water Levels	Samples and Tests			Level	Depth	Strata	
		Depth (m)	Type/ Ref	Results	(m)	(m)	Legend	Description
					33.63	(0.15) 0.15		CONCRETE. [MADE GROUND]
						(1.00)		
					32.63	1.15		Firm orangish brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is subangular to rounded fine to coarse of mudstone, sandstone, coal and quartz. [GLACIAL TILL]
						(1.05)		
					31.58	2.20		End of Trial Pit at 2.20m

IGE consulting		Trial Pit				SA102 Sheet 1 of 1			
		Hole Type TP		Easting 341866.50	Northing 391117.23	Ground Level (m) 33.95	Scale 1:25		
		Project Name Pilch lane		Project No. 4399	Start Date 2025-09-17	End Date 2025-09-17			
Client Breck Homes				Consultant IGE Consulting		Contractor			
Inst/ Backfill	Water Levels	Samples and Tests			Level	Depth (thickness)	Strata		
		Depth (m)	Type/ Ref	Results	(m)	(m)	Legend	Description	
					33.10	(0.85)		Dark brown gravelly slightly clayey fine to coarse SAND. Gravel is angular to subangular fine to coarse of red brick, coal, clinker, sandstone and mudstone. [MADE GROUND]	0.5
						0.85		Firm orangish brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is subangular to rounded fine to coarse of mudstone, sandstone, coal and quartz. [GLACIAL TILL]	1.0
						(1.05)		No longer mottled (1.40m)	1.5
					32.05	1.90	End of Trial Pit at 1.90m		2.0
									2.5
									3.0
									3.5
									4.0
									4.5
									5.0
Remarks Terminated at target depth. No strike.							Method, Plant, Stability, Dimensions 0.00 - 1.90m TP JCB 3CX Stable during excavation Orientation: 0° L = 1.80m W = 0.60m		Logger FR
Checked By: LM									

Hole Type TP	Easting 341866.50	Northing 391117.23	Ground Level (m) 33.95	Scale 1:25
Project Name Pilch lane	Project No. 4399	Start Date 2025-09-17	End Date 2025-09-17	

Client
Breck Homes

Consultant
IGE Consulting

Contractor



Remarks
Terminated at target depth. No strike.

Method, Plant, Stability, Dimensions

0.00 - 1.90m TP JCB 3CX
Stable during excavation
Orientation: 0°

L = 1.80m



W = 0.60m

Logger

FR

Checked By: LM

Hole Type TP	Easting 341890.88	Northing 391140.43	Ground Level (m) 34.05	Scale 1:25
Project Name Pilch lane	Project No. 4399	Start Date 2025-09-17	End Date 2025-09-17	

Client
Breck Homes

Consultant
IGE Consulting

Contractor



Remarks
Terminated at target depth. No strike.

Method, Plant, Stability, Dimensions

0.00 - 3.20m TP JCB 3CX
Stable during excavation
Orientation: 0°

L = 2.40m

W = 0.80m

Logger

FR

Checked By: LM

IGE consulting		Trial Pit				TP102						
		Sheet 1 of 1										
		Hole Type TP	Easting 341879.78	Northing 391156.92	Ground Level (m) 33.94	Scale 1:25						
Project Name Pilch lane		Project No. 4399		Start Date 2025-09-17		End Date 2025-09-17						
Client Breck Homes		Consultant IGE Consulting		Contractor								
Inst/ Backfill	Water Levels	Samples and Tests			Level	Depth	Strata					
		Depth (m)	Type/ Ref	Results	(m)	(m)	Legend	Description				
		0.50	B		33.84	(0.10) 0.10		ASPHALT. [MADE GROUND]				
					33.64	(0.20) 0.30		CONCRETE. [MADE GROUND]				
					33.34	0.60		Soft dark brown slightly sandy gravelly CLAY with moderate cobble content. Gravel is angular to subangular, fine to coarse of sandstone, mudstone, red brick, ceramic and concrete. Cobbles are angular to subangular of red brick. [MADE GROUND]				
									Firm brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is subangular to rounded fine to coarse of mudstone, sandstone, coal and quartz. [GLACIAL TILL]			
									32.04	1.90	End of Trial Pit at 1.90m	
					Remarks				Method, Plant, Stability, Dimensions			Logger
					Terminated at 1.90m bgl due to rapid water ingress in eastern trial pit corner from 0.60m bgl.				0.00 - 1.90m TP JCB 3CX Stable during excavation Orientation: 90° L = 2.10m W = 0.60m			FR
Checked By: LM												

Hole Type TP	Easting 341879.78	Northing 391156.92	Ground Level (m) 33.94	Scale 1:25
Project Name Pilch lane	Project No. 4399	Start Date 2025-09-17	End Date 2025-09-17	

Client
Breck Homes

Consultant
IGE Consulting

Contractor



Remarks

Terminated at 1.90m bgl due to rapid water ingress in eastern trial pit corner from 0.60m bgl.

Method, Plant, Stability, Dimensions

0.00 - 1.90m TP JCB 3CX
Stable during excavation
Orientation: 90°

L = 2.10m



W = 0.60m

Logger

FR

Checked By: LM

Hole Type TP	Easting 341872.01	Northing 391147.08	Ground Level (m) 34.24	Scale 1:25
Project Name Pilch lane	Project No. 4399	Start Date 2025-09-17	End Date 2025-09-17	

Client
Breck Homes

Consultant
IGE Consulting

Contractor



Remarks

Terminated at 2.40m bgl due to excavator struggling to gain depth and moderate water ingress from eastern trial pit wall at 2.10m bgl.

Method, Plant, Stability, Dimensions

0.00 - 2.40m TP JCB 3CX
Stable during excavation
Orientation: 90°

L = 2.40m
W = 0.80m

Logger

FR

Checked By: LM

Hole Type TP	Easting 341864.18	Northing 391161.08	Ground Level (m) 33.96	Scale 1:25
Project Name Pilch lane	Project No. 4399	Start Date 2025-09-17	End Date 2025-09-17	

Client
Breck Homes

Consultant
IGE Consulting

Contractor



Remarks

Terminated at 1.90m bgl due to rapid water ingress from eastern trial pit corner at 1.50m bgl.

Method, Plant, Stability, Dimensions

0.00 - 1.90m TP JCB 3CX
Stable during excavation
Orientation: 90°

L = 2.10m



W = 0.80m

Logger

FR

Checked By: LM

IGEconsulting		Trial Pit			TP105								
		Sheet 1 of 1											
		Hole Type TP	Easting 341863.63	Northing 391169.87	Ground Level (m) 33.66	Scale 1:25							
Project Name Pilch lane		Project No. 4399		Start Date 2025-09-17		End Date 2025-09-17							
Client Breck Homes				Consultant IGE Consulting		Contractor							
Inst/ Backfill	Water Levels	Samples and Tests			Level	Depth	Strata						
		Depth (m)	Type/ Ref	Results	(m)	(m)	Legend	Description					
						(0.20)		CONCRETE. [MADE GROUND]					
					33.46	0.20							
					33.36	(0.10)							
						0.30		Red angular to subangular COBBLES of red brick. [MADE GROUND]					
						(0.20)		Soft dark brown slightly gravelly slightly sandy CLAY. Gravel is angular to subangular fine to coarse of sandstone, mudstone and red brick. [MADE GROUND]	0.5				
					33.16	0.50		Firm brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is subangular to rounded fine to coarse of mudstone, sandstone, coal and quartz. [GLACIAL TILL]					
								No longer mottled (1.20m)	1.0				
		0.70	HV	62 (kPa)									
		1.00	HV	73 (kPa)									
		1.30	HV	85 (kPa)									
		1.60	HV	92 (kPa)		(2.10)			1.5				
		1.75	B										
		1.80	HV	99 (kPa)					2.0				
		2.20	HV	91 (kPa)									
		2.50	HV	106 (kPa)					2.5				
		2.50	B		31.06	2.60	End of Trial Pit at 2.60m						
Remarks Terminated at 2.60m bgl at target depth. No strike.									3.0				
													3.5
													4.0
													4.5
													5.0
Checked By: LM					Method, Plant, Stability, Dimensions 0.00 - 2.60m TP JCB 3CX Stable during excavation Orientation: 90° L = 1.90m W = 0.70m				Logger FR				

Hole Type TP	Easting 341863.63	Northing 391169.87	Ground Level (m) 33.66	Scale 1:25
Project Name Pilch lane	Project No. 4399	Start Date 2025-09-17	End Date 2025-09-17	

Client
Breck Homes

Consultant
IGE Consulting

Contractor



Remarks
Terminated at 2.60m bgl at target depth. No strike.

Method, Plant, Stability, Dimensions

0.00 - 2.60m TP JCB 3CX
Stable during excavation
Orientation: 90°

L = 1.90m

W = 0.70m

Logger

FR

Checked By: LM

IGEconsulting		Trial Pit				TP106			
						Sheet 1 of 1			
		Hole Type TP	Easting 341866.86	Northing 391159.28	Ground Level (m) 34.05	Scale 1:25			
Project Name Pilch lane		Project No. 4399		Start Date 2025-09-17		End Date 2025-09-17			
Client Breck Homes				Consultant IGE Consulting		Contractor			
Inst/ Backfill	Water Levels	Samples and Tests			Level	Depth	Strata		
		Depth (m)	Type/ Ref	Results	(m)	(m)		Legend	Description
		1.40	B			(1.80)		Light greyish brown sandy angular to subangular fine to coarse GRAVEL of red brick, concrete, yellow brick, plastic, metal shards, glass and ceramic with moderate cobble content. Cobbles are angular to subangular of red brick. [MADE GROUND]	0.5
									1.0
									1.5
									2.0
									2.5
									3.0
									3.5
									4.0
									4.5
									5.0
Remarks Terminated at 1.80m bgl due to rapid water ingress from all trial pit walls from 1.75m bgl.								Method, Plant, Stability, Dimensions 0.00 - 1.80m TP JCB 3CX Occasional small collapses in all trial pit walls at 1.60m bgl. Orientation: 90° L = 1.90m W = 0.70m	Logger FR
Checked By: LM									

Hole Type TP	Easting 341866.86	Northing 391159.28	Ground Level (m) 34.05	Scale 1:25
Project Name Pilch lane	Project No. 4399	Start Date 2025-09-17	End Date 2025-09-17	

Client
Breck Homes

Consultant
IGE Consulting

Contractor



Remarks

Terminated at 1.80m bgl due to rapid water ingress from all trial pit walls from 1.75m bgl.

Method, Plant, Stability, Dimensions

0.00 - 1.80m TP JCB 3CX
Occasional small collapses in all trial pit walls at 1.60m bgl.
Orientation: 90°

L = 1.90m



W = 0.70m

Logger

FR

Checked By: LM

IGEconsulting		Trial Pit				TP107		
		Sheet 1 of 1						
		Hole Type TP	Easting 341827.81	Northing 391118.59	Ground Level (m) 33.28	Scale 1:25		
Project Name Pilch lane		Project No. 4399		Start Date 2025-09-17		End Date 2025-09-17		
Client Breck Homes		Consultant IGE Consulting		Contractor				
Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m)	Strata	
		Depth (m)	Type/ Ref	Results			Legend	Description
					33.08	(0.20) 0.20		Dark brown slightly gravelly slightly clayey fine to coarse SAND with low cobble content. Gravel is angular to subangular fine to coarse of red brick, coal, clinker, sandstone and mudstone. Cobbles are angular to subangular of red brick. [MADE GROUND]
		0.50	HV	67 (kPa)				Firm brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is subangular to rounded fine to coarse of mudstone, sandstone, coal and quartz. [GLACIAL TILL]
		0.70	HV	82 (kPa)				
		0.80	B					
		1.00	HV	85 (kPa)				
		1.30	HV	91 (kPa)				Ceramic land drain encountered running east to west in northern wall of pit, 100mm diameter. Slight seepage. (1.30m)
		1.60	HV	69 (kPa)		(2.80)		No longer mottled (1.50m)
		1.90	HV	83 (kPa)				
		2.10	B					
		2.20	HV	78 (kPa)				
		2.40	HV	81 (kPa)				
		2.70	B					
		2.80	HV	84 (kPa)				
						30.28	3.00	
Remarks Terminated at 3.00m bgl at target depth. Slight seepage in eastern trial pit wall from ceramic land drain encountered at 1.30m bgl.							Method, Plant, Stability, Dimensions 0.00 - 3.00m TP JCB 3CX Stable during excavation Orientation: 0° L = 2.10m W = 0.60m	
Checked By: LM							Logger FR	

Created using Pebble Geo

Hole Type TP	Easting 341827.81	Northing 391118.59	Ground Level (m) 33.28	Scale 1:25
Project Name Pilch lane	Project No. 4399	Start Date 2025-09-17	End Date 2025-09-17	

Client
Breck Homes

Consultant
IGE Consulting

Contractor



Remarks

Terminated at 3.00m bgl at target depth. Slight seepage in eastern trial pit wall from ceramic land drain encountered at 1.30m bgl.

Method, Plant, Stability, Dimensions

0.00 - 3.00m TP JCB 3CX
Stable during excavation
Orientation: 0°

L = 2.10m



W = 0.60m

Logger

FR

Checked By: LM

Hole Type TP	Easting 341837.85	Northing 391184.35	Ground Level (m) 33.54	Scale 1:25
Project Name Pilch lane	Project No. 4399	Start Date 2025-09-17	End Date 2025-09-17	

Client
Breck Homes

Consultant
IGE Consulting

Contractor



Remarks

Terminated at 2.50m bgl at target depth. Moderate water ingress from 0.30m bgl.

Method, Plant, Stability, Dimensions

0.00 - 2.50m TP JCB 3CX
Stable during excavation
Orientation: 0°

L = 2.20m



W = 0.60m

Logger

FR

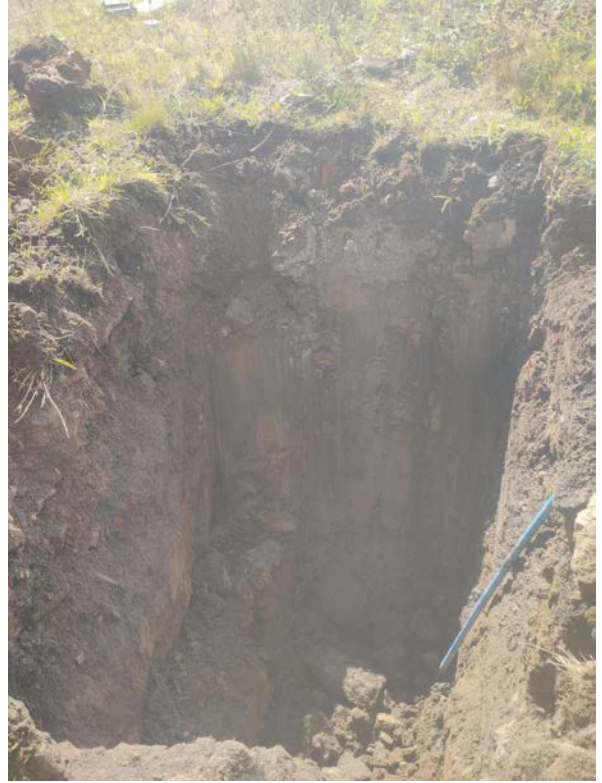
Checked By: LM

Hole Type TP	Easting 341854.99	Northing 391158.36	Ground Level (m) 34.07	Scale 1:25
Project Name Pilch lane		Project No. 4399	Start Date 2025-09-17	End Date 2025-09-17

Client
Breck Homes

Consultant
IGE Consulting

Contractor



Remarks
Terminated at 2.10m bgl at target depth. No strike.

Method, Plant, Stability, Dimensions

0.00 - 2.10m TP JCB 3CX
Stable during excavation
Orientation: 0°

L = 1.90m
W = 1.00m

Logger
FR

Checked By: LM

APPENDIX 4

DYNAMIC SAMPLE LOGS AND PHOTOGRAPHS

IGE consulting	Window Sampler				DS01	
					SUPPLEMENTARY INFO	
	Hole Type WS	Easting 341831.73	Northing 391175.56	Ground Level (m) 33.71	Scale 1:50	
Project Name Pilch Lane		Project No. 4399		Start Date 2025-08-13	End Date 2025-08-13	
Client Breck Homes		Consultant IGE Consulting Ltd.		Contractor		
SPT - Details						
Top Depth (m) (Type)	Casing Depth (m)	Water Depth (m)	Hammer Serial No.	Energy Ratio (%)	Results	
1.20 (S)			DART 334	67	N=8 (1,1/2,2,2,2)	
2.00 (S)			DART 334	67	N=12 (2,2/2,3,3,4)	
3.00 (S)			DART 334	67	N=16 (2,2/3,4,3,6)	
4.00 (S)			DART 334	67	N=15 (3,3/3,4,3,5)	
5.00 (S)			DART 334	67	N=16 (2,2/3,4,4,5)	
Sample Details						
Sample ID	Type	Water Level (m)	Remarks			
	ES					
	B					
	ES					
	D					
	ES					
	D					
	B					
	D					
	D					
	B					
	D					
Depth Related Remarks						
Top Depth (m)	Base Depth (m)	Remarks				
1.20	2.00	87mm 80% recovery				
2.00	3.00	77mm 90% recovery				
3.00	4.00	67mm 70% recovery				
4.00	5.00	57mm 65% recovery				
Remarks Borehole terminated at 5.45m bgl at target depth. Well dipped upon completion of borehole, water at 4.42m bgl, base 4.47m bgl.			Method, Plant, Stability, Dimensions 0.00 - 1.20m IP Hand tools 1.20 - 5.45m DS DART 334		Logger FR FR	
Checked By: LM						

Hole Type WS	Easting 341831.73	Northing 391175.56	Ground Level (m) 33.71	Scale 1:50
Project Name Pilch Lane	Project No. 4399		Start Date 2025-08-13	End Date 2025-08-13

Client
Breck Homes

Consultant
IGE Consulting Ltd.

Contractor



Remarks

Borehole terminated at 5.45m bgl at target depth. Well dipped upon completion of borehole, water at 4.42m bgl, base 4.47m bgl.

Method, Plant, Stability, Dimensions

0.00 - 1.20m IP Hand tools
1.20 - 5.45m DS DART 334

Logger

FR
FR

Checked By: LM

IGEconsulting		Window Sampler				DS02				
						Sheet 1 of 1				
		Hole Type WS	Easting 341863.91	Northing 391156.00	Ground Level (m) 34.00	Scale 1:50				
Project Name Pilch Lane		Project No. 4399		Start Date 2025-08-13		End Date 2025-08-13				
Client Breck Homes				Consultant IGE Consulting Ltd.		Contractor				
Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m)	Strata			
		Depth (m)	Type/ Ref	Results			Legend	Description		
		0.70 0.75	B ES	N=50 for 100mm (16,9/34,16 for 25mm)	32.62	(1.38)		Brown slightly clayey very gravelly ashy fine to coarse SAND with low cobble content. Gravel is angular to subangular fine to coarse of sandstone, mudstone, red brick, concrete, glass and ceramic. Cobbles are angular to subangular of red brick. [MADE GROUND]	0.5	
		1.20	SPT			1.38			1.0	
								Obstruction encountered (1.37m)	1.5	
									End of Borehole at 1.38m	2.0
										2.5
										3.0
										3.5
										4.0
										4.5
										5.0
										5.5
										6.0
										6.5
										7.0
										7.5
										8.0
										8.5
										9.0
										9.5
										10.0
Remarks Borehole terminated at 1.38m bgl due to refusal. Well dipped upon completion of borehole, dry, base at 1.35m bgl.							Method, Plant, Stability, Dimensions 0.00 - 1.20m IP Hand tools 1.20 - 1.38m DS DART 334		Logger FR FR	
Checked By: LM										

Window Sampler

Hole Type WS	Easting 341863.91	Northing 391156.00	Ground Level (m) 34.00	Scale 1:50
Project Name Pilch Lane	Project No. 4399		Start Date 2025-08-13	End Date 2025-08-13

Client Breck Homes	Consultant IGE Consulting Ltd.	Contractor
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Remarks Borehole terminated at 1.38m bgl due to refusal. Well dipped upon completion of borehole, dry, base at 1.35m bgl.	Method, Plant, Stability, Dimensions 0.00 - 1.20m IP Hand tools 1.20 - 1.38m DS DART 334	Logger FR FR
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Checked By: LM



IGE consulting	Window Sampler				DS03	
					SUPPLEMENTARY INFO	
	Hole Type WS	Easting 341885.38	Northing 391131.74	Ground Level (m) 34.01	Scale 1:50	
Project Name Pilch Lane		Project No. 4399		Start Date 2025-08-13	End Date 2025-08-13	
Client Breck Homes		Consultant IGE Consulting Ltd.		Contractor		
SPT - Details						
Top Depth (m) (Type)	Casing Depth (m)	Water Depth (m)	Hammer Serial No.	Energy Ratio (%)	Results	
1.20 (S)			DART 334	67	N=19 (23,2/9,5,3,2)	
2.00 (S)			DART 334	67	N=16 (2,2/3,4,4,5)	
3.00 (S)			DART 334	67	N=18 (3,2/4,4,4,6)	
4.00 (S)			DART 334	67	N=17 (3,3/3,4,4,6)	
5.00 (S)			DART 334	67	N=19 (3,4/3,4,6,6)	
Sample Details						
Sample ID	Type	Water Level (m)	Remarks			
	ES					
	ES					
	D					
	B					
	D					
	D					
	B					
	D					
	B					
	D					
Depth Related Remarks						
Top Depth (m)	Base Depth (m)	Remarks				
1.20	2.00	87mm 70% recovery				
2.00	3.00	77mm 96% recovery				
3.00	4.00	67mm 100% recovery				
4.00	5.00	57mm 65% recovery				
Remarks Borehole terminated at 5.45m bgl at target depth. Well dipped upon completion of borehole, dry, base at 5.31m bgl.			Method, Plant, Stability, Dimensions		Logger	
			0.00 - 1.20m		IP Hand tools	
			1.20 - 5.45m		DS DART 334	
Checked By: LM						

Hole Type WS	Easting 341885.38	Northing 391131.74	Ground Level (m) 34.01	Scale 1:50
Project Name Pilch Lane	Project No. 4399		Start Date 2025-08-13	End Date 2025-08-13

Client
Breck Homes

Consultant
IGE Consulting Ltd.

Contractor



Remarks

Borehole terminated at 5.45m bgl at target depth. Well dipped upon completion of borehole, dry, base at 5.31m bgl.

Method, Plant, Stability, Dimensions

0.00 - 1.20m IP Hand tools
1.20 - 5.45m DS DART 334

Logger

FR
FR

Checked By: LM

IGEconsulting		Window Sampler				DS04 Sheet 1 of 1			
		Hole Type WS	Easting 341847.31	Northing 391128.14	Ground Level (m) 33.79	Scale 1:50			
		Project Name Pilch Lane	Project No. 4399	Start Date 2025-08-13	End Date 2025-08-13				
Client Breck Homes		Consultant IGE Consulting Ltd.			Contractor				
Inst/ Backfill	Water Levels	Samples and Tests			Level	Depth (thickness)	Strata		
		Depth (m)	Type/ Ref	Results	(m)	(m)	Legend	Description	
		0.40 0.40	ES B			(1.20)		Dark brown gravelly clayey fine to coarse SAND with rare rootlets. Gravel is angular to subangular fine to coarse of red brick, ceramic, plastic, sandstone, mudstone and plant remains. [MADE GROUND]	0.5 1.0
		1.20 1.20 1.50	SPT D ES	N=12 (3,2/2,3,3,4)	32.59	1.20		Firm to stiff orangish brown slightly gravelly slightly sandy CLAY. Gravel is angular to subangular fine to coarse of mudstone and sandstone. [GLACIAL TILL]	1.5 2.0
		1.80 2.00 2.00 2.20	HV SPT D B	240 (kPa) N=12 (3,2/3,3,3,3)				Becomes mottled grey (1.50m)	2.0 2.5
		3.00 3.00 3.30	SPT D B	N=13 (2,2/3,3,3,4)		(4.25)		No longer mottled (3.30m)	3.0 3.5
		4.00 4.00 4.40	SPT D B	N=13 (2,2/2,3,3,5)					4.0 4.5
		5.00 5.00	SPT D	N=29 (3,4/6,6,7,10)					5.0
					28.34	5.45		End of Borehole at 5.45m	5.5
									6.0
									6.5
									7.0
								7.5	
								8.0	
								8.5	
								9.0	
								9.5	
								10.0	
Remarks Borehole terminated at 5.45m bgl at target depth. Well dipped upon completion of borehole, dry, base at 5.42m bgl.						Method, Plant, Stability, Dimensions			Logger
						0.00 - 1.20m	IP	Hand tools	FR
						1.20 - 5.45m	DS	DART 334	FR
Checked By: LM									

	Window Sampler				DS04
					SUPPLEMENTARY INFO
	Hole Type WS	Easting 341847.31	Northing 391128.14	Ground Level (m) 33.79	Scale 1:50
Project Name Pilch Lane		Project No. 4399	Start Date 2025-08-13	End Date 2025-08-13	
Client Breck Homes		Consultant IGE Consulting Ltd.	Contractor		
SPT - Details					
Top Depth (m) (Type)	Casing Depth (m)	Water Depth (m)	Hammer Serial No.	Energy Ratio (%)	Results
1.20 (S)			DART 334	67	N=12 (3,2/2,3,3,4)
2.00 (S)			DART 334	67	N=12 (3,2/3,3,3,3)
3.00 (S)			DART 334	67	N=13 (2,2/3,3,3,4)
4.00 (S)			DART 334	67	N=13 (2,2/2,3,3,5)
5.00 (S)			DART 334	67	N=29 (3,4/6,6,7,10)
Sample Details					
Sample ID	Type	Water Level (m)	Remarks		
	ES				
	B				
	D				
	ES				
	D				
	B				
	D				
	B				
	D				
	B				
	D				
Depth Related Remarks					
Top Depth (m)	Base Depth (m)	Remarks			
1.20	2.00	87mm 100% recovery			
2.00	3.00	77mm 90% recovery			
3.00	4.00	67mm 90% recovery			
4.00	5.00	57mm 95% recovery			
Remarks Borehole terminated at 5.45m bgl at target depth. Well dipped upon completion of borehole, dry, base at 5.42m bgl.			Method, Plant, Stability, Dimensions		Logger
			0.00 - 1.20m IP Hand tools		FR
			1.20 - 5.45m DS DART 334		FR
Checked By: LM					

Hole Type WS	Easting 341847.31	Northing 391128.14	Ground Level (m) 33.79	Scale 1:50
Project Name Pilch Lane	Project No. 4399		Start Date 2025-08-13	End Date 2025-08-13

Client
Breck Homes

Consultant
IGE Consulting Ltd.

Contractor



Remarks

Borehole terminated at 5.45m bgl at target depth. Well dipped upon completion of borehole, dry, base at 5.42m bgl.

Method, Plant, Stability, Dimensions

0.00 - 1.20m IP Hand tools
1.20 - 5.45m DS DART 334

Logger

FR
FR

Checked By: LM

IGE consulting		Window Sampler				DS05			
		Sheet 1 of 1							
		Hole Type WS	Easting 341861.31	Northing 391098.64	Ground Level (m) 34.11	Scale 1:50			
Project Name Pilch Lane		Project No. 4399		Start Date 2025-08-13		End Date 2025-08-13			
Client Breck Homes			Consultant IGE Consulting Ltd.			Contractor			
Inst/ Backfill	Water Levels	Samples and Tests			Level	Depth	Strata		
		Depth (m)	Type/ Ref	Results	(m)	(m)	Legend	Description	
						(1.20)		Dark brown gravelly clayey fine to coarse SAND with rare rootlets. Gravel is angular to subangular fine to coarse of red brick, ceramic, plastic, sandstone, mudstone and plant remains. [MADE GROUND]	0.5
	0.80	ES							1.0
	1.00	B							
	1.20	SPT	N=11 (2,2/2,3,3,3)	32.91	1.20		Firm to stiff orangish brown slightly gravelly slightly sandy CLAY. Gravel is angular to subangular fine to coarse of mudstone and sandstone. [GLACIAL TILL]	1.5	
	1.20	D							2.0
	1.90	HV	240 (kPa)						2.5
	2.00	SPT	N=20 (2,3/4,4,5,7)						3.0
	2.00	ES						Becoming brown mottled grey (2.10m)	3.5
	2.00	D							4.0
	2.70	B						Gravel sized inclusion of yellowish brown fine to coarse SAND (2.65m)	4.5
	3.00	SPT	N=17 (3,3/3,3,4,7)			(4.25)			5.0
	3.00	D							5.5
	3.50	B						No longer mottled (3.40m)	6.0
	4.00	SPT	N=21 (3,3/4,4,6,7)						6.5
	4.00	D							7.0
	4.50	B							7.5
	5.00	SPT	N=28 (4,5/5,6,7,10)						8.0
5.00	D							8.5	
				28.66	5.45	End of Borehole at 5.45m			9.0
									9.5
									10.0
Remarks Borehole terminated at 5.45m bgl at target depth. Well dipped upon completion of borehole, water at 5.10m bgl, base at 5.41m bgl.							Method, Plant, Stability, Dimensions		Logger
							0.00 - 1.20m IP Hand tools 1.20 - 5.45m DS DART 334		
Checked By: LM									

IGE consulting	Window Sampler				DS05	
					SUPPLEMENTARY INFO	
	Hole Type WS	Easting 341861.31	Northing 391098.64	Ground Level (m) 34.11	Scale 1:50	
Project Name Pilch Lane		Project No. 4399		Start Date 2025-08-13	End Date 2025-08-13	
Client Breck Homes		Consultant IGE Consulting Ltd.		Contractor		
SPT - Details						
Top Depth (m) (Type)	Casing Depth (m)	Water Depth (m)	Hammer Serial No.	Energy Ratio (%)	Results	
1.20 (S)			DART 334	67	N=11 (2,2/2,3,3,3)	
2.00 (S)			DART 334	67	N=20 (2,3/4,4,5,7)	
3.00 (S)			DART 334	67	N=17 (3,3/3,3,4,7)	
4.00 (S)			DART 334	67	N=21 (3,3/4,4,6,7)	
5.00 (S)			DART 334	67	N=28 (4,5/5,6,7,10)	
Sample Details						
Sample ID	Type	Water Level (m)	Remarks			
	ES					
	B					
	D					
	ES					
	D					
	B					
	D					
	B					
	D					
	B					
	D					
Depth Related Remarks						
Top Depth (m)	Base Depth (m)	Remarks				
1.20	2.00	87mm 100% recovery				
2.00	3.00	77mm 100% recovery				
3.00	4.00	67mm 85% recovery				
4.00	5.00	57mm 70% recovery				
Remarks Borehole terminated at 5.45m bgl at target depth. Well dipped upon completion of borehole, water at 5.10m bgl, base at 5.41m bgl.				Method, Plant, Stability, Dimensions		Logger
				0.00 - 1.20m IP Hand tools		FR
				1.20 - 5.45m DS DART 334		FR
Checked By: LM						

Hole Type WS	Easting 341861.31	Northing 391098.64	Ground Level (m) 34.11	Scale 1:50
Project Name Pilch Lane	Project No. 4399		Start Date 2025-08-13	End Date 2025-08-13

Client
Breck Homes

Consultant
IGE Consulting Ltd.

Contractor



Remarks

Borehole terminated at 5.45m bgl at target depth. Well dipped upon completion of borehole, water at 5.10m bgl, base at 5.41m bgl.

Method, Plant, Stability, Dimensions

0.00 - 1.20m IP Hand tools
1.20 - 5.45m DS DART 334

Logger

FR
FR

Checked By: LM

IGE consulting		Window Sampler				DS06					
						Sheet 1 of 1					
		Hole Type WS		Easting 341813.44	Northing 391138.92	Ground Level (m) 33.32	Scale 1:50				
Project Name Pilch Lane			Project No. 4399		Start Date 2025-08-13	End Date 2025-08-13					
Client Breck Homes			Consultant IGE Consulting Ltd.			Contractor					
Inst/ Backfill	Water Levels	Samples and Tests			Level	Depth	Strata				
		Depth (m)	Type/ Ref	Results	(m)	(m)	Legend	Description			
		0.40	B					Soft dark brown slightly gravelly sandy CLAY with occasional rootlets. Gravel is angular to subangular fine to coarse of red brick, ceramic, clinker and plant remains. [MADE GROUND]	0.5		
		0.60	ES						No rootlets (0.85m)	1.0	
		1.20	SPT	N=4 (1,2/1,1,1,1)		(1.70)		Mild hydrocarbon odour (1.20 - 1.40m)	1.5		
		1.20	PID	10.20 (ppmv)							
		1.20	D								
		1.20	B								
		1.30	ES			31.62		1.70			
		1.75	HV	88 (kPa)		(0.30)					
		1.85	HV	110 (kPa)							
		1.90	ES			31.32		2.00			
		2.00	SPT	N=4 (1,1/1,1,1,1)							
		2.00	D								
		2.40	ES			(1.00)		Soft dark brown slightly gravelly sandy CLAY with occasional plant remains. Gravel is angular to subangular fine to coarse of mudstone and sandstone. [MADE GROUND]	2.5		
		2.50	B								
		3.00	SPT	N=14 (3,3/3,3,4,4)		30.32		3.00			
		3.00	D						No longer gravelly and very sandy (2.65m)	3.0	
		4.00	SPT	N=17 (3,3/3,4,4,6)						Stiff brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is subangular to rounded fine to coarse of mudstone, sandstone, coal and quartz. [GLACIAL TILL]	3.5
		4.00	D								
		4.20	B			(2.45)			No longer mottled (4.10m)	4.0	
											4.5
		5.00	SPT	N=37 (4,5/7,9,9,12)				Gravel sized inclusion of brown fine to coarse SAND (4.90m)	5.0		
		5.00	D			27.87		5.45			
							End of Borehole at 5.45m		5.5		
									6.0		
									6.5		
									7.0		
									7.5		
									8.0		
									8.5		
									9.0		
									9.5		
									10.0		
Remarks Borehole terminated at 5.45m bgl at target depth. Well dipped upon completion of borehole, dry, base at 5.44m bgl.						Method, Plant, Stability, Dimensions 0.00 - 1.20m IP Hand tools 1.20 - 5.45m DS DART 334			Logger FR FR		
Checked By: LM											

IGE consulting	Window Sampler				DS06	
					SUPPLEMENTARY INFO	
	Hole Type WS	Easting 341813.44	Northing 391138.92	Ground Level (m) 33.32	Scale 1:50	
Project Name Pilch Lane		Project No. 4399		Start Date 2025-08-13	End Date 2025-08-13	
Client Breck Homes		Consultant IGE Consulting Ltd.		Contractor		
SPT - Details						
Top Depth (m) (Type)	Casing Depth (m)	Water Depth (m)	Hammer Serial No.	Energy Ratio (%)	Results	
1.20 (S)			DART 334	67	N=4 (1,2/1,1,1,1)	
2.00 (S)			DART 334	67	N=4 (1,1/1,1,1,1)	
3.00 (S)			DART 334	67	N=14 (3,3/3,3,4,4)	
4.00 (S)			DART 334	67	N=17 (3,3/3,4,4,6)	
5.00 (S)			DART 334	67	N=37 (4,5/7,9,9,12)	
Sample Details						
Sample ID	Type	Water Level (m)	Remarks			
	B					
	ES					
	D					
	B					
	ES					
	ES					
	D					
	ES					
	B					
	D					
	D					
	B					
	D					
Depth Related Remarks						
Top Depth (m)	Base Depth (m)	Remarks				
1.20	2.00	87mm 100% recovery				
2.00	3.00	77mm 80% recovery				
3.00	4.00	67mm 30% recovery				
4.00	5.00	57mm 100% recovery				
Remarks Borehole terminated at 5.45m bgl at target depth. Well dipped upon completion of borehole, dry, base at 5.44m bgl.			Method, Plant, Stability, Dimensions		Logger	
			0.00 - 1.20m		IP Hand tools	
			1.20 - 5.45m		DS DART 334	
Checked By: LM						

Hole Type WS	Easting 341813.44	Northing 391138.92	Ground Level (m) 33.32	Scale 1:50
Project Name Pilch Lane	Project No. 4399		Start Date 2025-08-13	End Date 2025-08-13

Client
Breck Homes

Consultant
IGE Consulting Ltd.

Contractor



Remarks

Borehole terminated at 5.45m bgl at target depth. Well dipped upon completion of borehole, dry, base at 5.44m bgl.

Method, Plant, Stability, Dimensions

0.00 - 1.20m IP Hand tools
1.20 - 5.45m DS DART 334

Logger

FR
FR

Checked By: LM

APPENDIX 5

SOIL INFILTRATION TESTING RESULTS

**DETERMINATION OF SOIL INFILTRATION RATE (f)**

15 Oxford Court
Manchester
M2 3WQ

Site Name: Pilch Lane, Huyton
Job Number: 4399
Date: 17/09/2025
Exploratory Hole: SA101

Tel: 0161 914 9171
Email: contact@igeconsulting.co.uk
Web: www.igeconsulting.co.uk

Effective depth (m)	100% Full	75% Full	50% Full	25% Full
1.03	1.17	1.43	1.69	1.94

Time (mins)	Depth (m bgl)
0	1.17
1	1.17
2	1.17
3	1.17
4	1.17
5	1.17
10	1.17
30	1.17
55	1.17
70	1.17
120	1.17
160	1.17
195	1.17
225	1.17
295	1.17

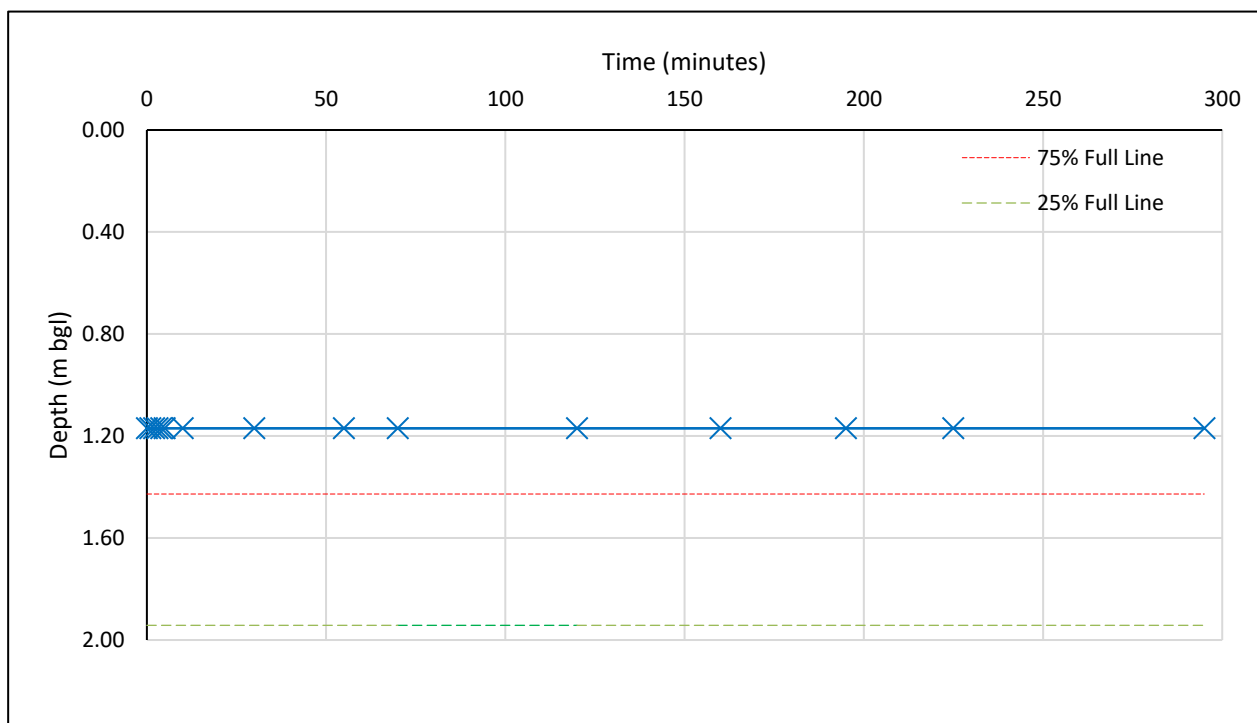
Pit dimensions (m):	
Length:	1.70
Width:	0.65
Depth:	2.20

Gravel used?	Yes
Void ratio of gravel fill =	0.3

Vp75-25 (m ³) =	0.57
ap50 (m ²) =	1.05765
tp75-25 (secs) =	N/A
f (m/s) =	N/A

Calculations carried out in accordance with
BRE 365

Infiltration too slow to calculate



IGE Consulting Ltd
Registered in England No 10780128



**DETERMINATION OF SOIL INFILTRATION RATE (f)**

15 Oxford Court
Manchester
M2 3WQ

Site Name: Pilch Lane, Huyton
Job Number: 4399
Date: 17/09/2025
Exploratory Hole: SA102

Tel: 0161 914 9171
Email: contact@igeconsulting.co.uk
Web: www.igeconsulting.co.uk

Effective depth (m)	100% Full	75% Full	50% Full	25% Full
1.04	0.86	1.12	1.38	1.64

Time (mins)	Depth (m bgl)
0	0.86
1	0.86
2	0.86
3	0.86
4	0.86
5	0.86
10	0.86
20	0.87
30	0.87
55	0.87
75	0.87
105	0.87
135	0.87
230	0.87
270	0.87

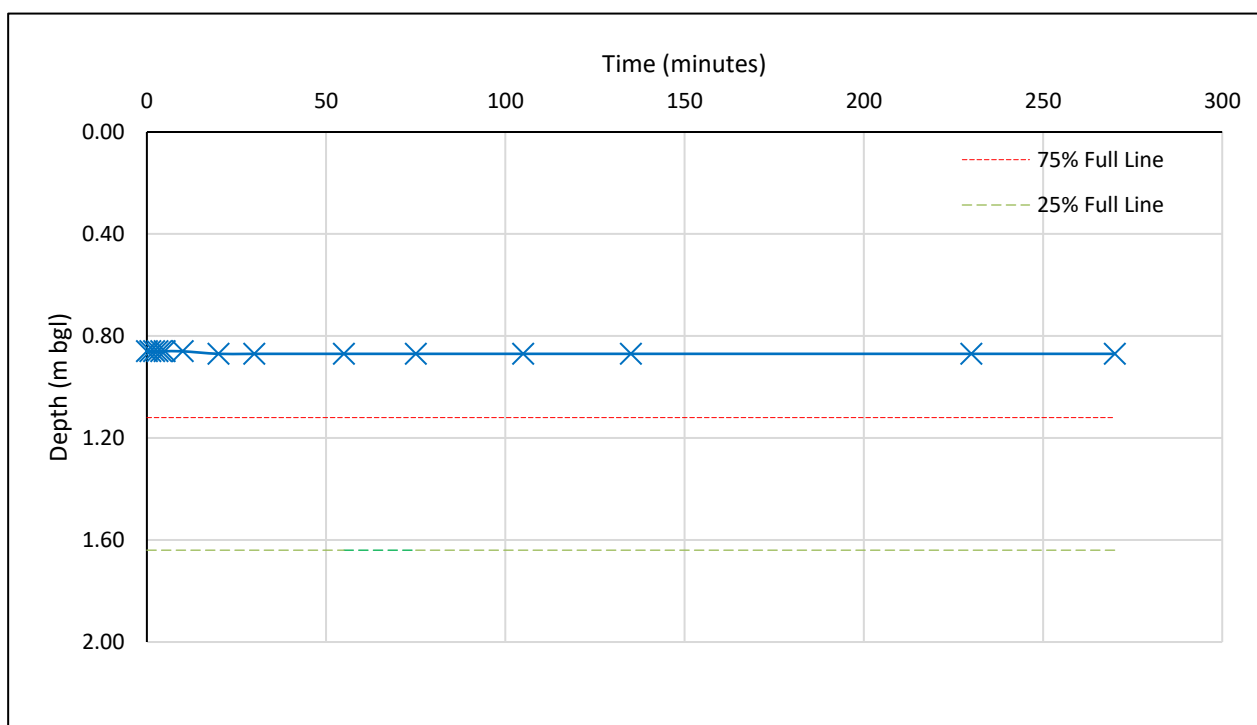
Pit dimensions (m):	
Length:	1.70
Width:	0.60
Depth:	1.90

Gravel used?	Yes
Void ratio of gravel fill =	0.3

Vp75-25 (m ³) =	0.53
ap50 (m ²) =	1.0236
tp75-25 (secs) =	N/A
f (m/s) =	N/A

Calculations carried out in accordance with
BRE 365

Infiltration too slow to calculate



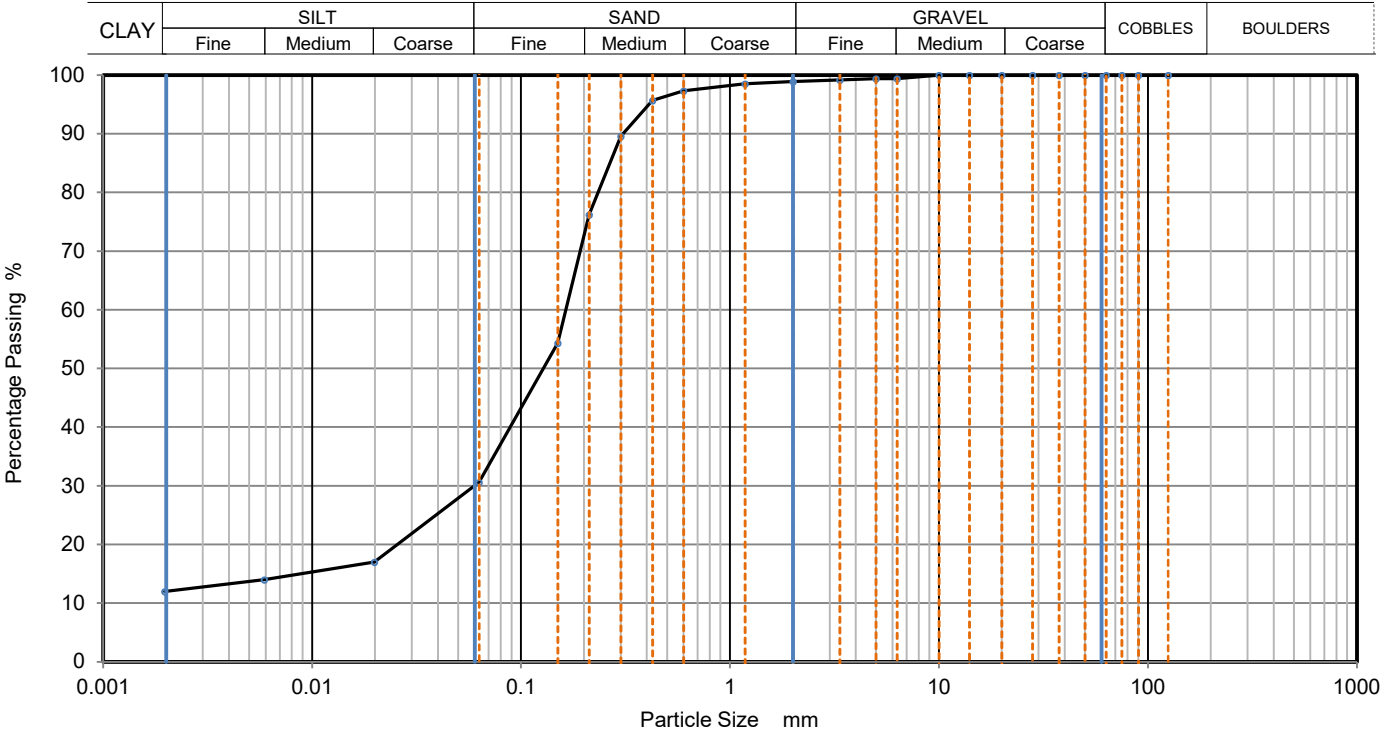
IGE Consulting Ltd
Registered in England No 10780128



APPENDIX 6

GEOTECHNICAL LABORATORY TEST RESULTS

GFQ-008-77 Issue 02 - Nov 23	Determination of Particle Size Distribution (ISO 17892-4:2016)			Job Ref	J322006
				Borehole/Pit No.	TP03
Project Name	Pilch Lane			Sample No.	
Soil Description	Brown clayey very sandy SILT			Depth, m	2.10
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	ISO 17892 -4, by sieving and pipette sedimentation			KeyLAB ID	TTLP2025090416



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0198	17
90	100	0.0059	14
75	100	0.0020	12
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	99		
5	99		
3.35	99		
2	99		
1.18	99		
0.6	97	Particle density (assumed) 2.65 Mg/m3	
0.425	96		
0.3	90		
0.212	76		
0.15	54		
0.063	31		

Dry Mass of sample, g		1126
Sample Proportions		% dry mass
Very coarse		0
Gravel		1
Sand		69
Silt		18
Clay		12
Grading Analysis		
D ₁₀₀	mm	10
D ₆₀	mm	0.164
D ₃₀	mm	0.0598
D ₁₀	mm	
Uniformity Coefficient		
Curvature Coefficient		
Pretreatment Method (If Applicable)		
Remarks		
Preparation and testing performed to BS EN ISO 17892-4 unless noted below		

Date Printed:
04/09/2025



ISO PSD

Project Name	Pilch Lane
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Key			Test Standards:		
Density tests:	Atterberg:		Bulk Density Tests - BS EN ISO 17892-2:2014		
Linear measurement unless :	4pt cone unless :	Particle density:	Water Content - BS EN ISO 17892-1:2014+A1:2022		
wd - water displacement	cas - Casagrande method	sp - fluid pycnometer	Liquid & Plastic Limits - BS EN ISO 17892-12:2018+A2:2022		
wi - immersion in water	1pt - single point test		Particle Density - BS EN ISO 17892-3:2015		
w - water content	CF - Correlation Factor		Date Printed:		
	Liquid limit test: i - increasing moisture content, d - decreasing moisture content		04/09/2025		ISO INDX
	Atterberg sample prep: n - Natural, HP - Hand Picked, w - Washed				



APPENDIX 7

CHEMICAL LABORATORY TEST RESULTS



IGE Consulting
Office 11
Bartle House
Oxford Court
Manchester
M2 3WQ

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

e: fionarobson@igeconsulting.co.uk

Analytical Report Number : 25-043766

Project / Site name:	Pilch Lane	Samples received on:	14/08/2025
Your job number:	4399	Samples instructed on/ Analysis started on:	15/08/2025
Your order number:	4399 FR	Analysis completed by:	22/08/2025
Report Issue Number:	1	Report issued on:	25/08/2025
Samples Analysed:	10 soil samples		

Signed:

Joanna Wawrzeczko
Senior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

Excel copies of reports are only valid when accompanied by this PDF certificate.

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 25-043766

Project / Site name: Pilch Lane

Your Order No: 4399 FR

Lab Sample Number	650791	650792	650793	650794	650795
Sample Reference	TP02	DS03	TP06	DS05	DS01
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	1.00	1.15	2.10	2.00	1.10
Date Sampled	13/08/2025	13/08/2025	13/08/2025	13/08/2025	13/08/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	17	7.3	7.8	8.7	3.1
Total mass of sample received	kg	0.1	NONE	0.6	0.6	0.8	0.6	0.6

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	-	-	-	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	-	-	-	-	PDO
Analysis completed	N/A	N/A	N/A	-	-	-	-	21/08/2025

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	7.7	8	7.3	7.8	7.5
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	69	120	230	56	420
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	34.5	61.3	117	28.1	209
Organic Matter (automated)	%	0.1	MCERTS	1.1	0.7	2.4	0.7	2.7
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.6	0.4	1.4	0.4	1.6
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	2	< 2.0
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	-	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.08
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.08
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.12	< 0.05	0.61
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.2
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.26	< 0.05	1.1
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.24	< 0.05	1
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.12	< 0.05	0.42
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.14	< 0.05	0.5
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	0.16	< 0.05	0.47
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	0.21
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.1	< 0.05	0.39
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.06	< 0.05	0.22
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.06
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.07	< 0.05	0.28

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	< 0.80	1.28	< 0.80	5.68
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Analytical Report Number: 25-043766

Project / Site name: Pilch Lane

Your Order No: 4399 FR

Lab Sample Number				650791	650792	650793	650794	650795
Sample Reference				TP02	DS03	TP06	DS05	DS01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				1.00	1.15	2.10	2.00	1.10
Date Sampled				13/08/2025	13/08/2025	13/08/2025	13/08/2025	13/08/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.5	8.5	11	7.4	7.1
Barium (aqua regia extractable)	mg/kg	1	MCERTS	71	130	69	77	71
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.61	1.1	0.88	0.81	0.7
Boron (water soluble)	mg/kg	0.2	MCERTS	0.4	0.4	0.7	< 0.2	0.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent) Low Level	mg/kg	1.2	NONE	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	39	40	29	33	22
Copper (aqua regia extractable)	mg/kg	1	MCERTS	15	18	33	21	26
Lead (aqua regia extractable)	mg/kg	1	MCERTS	10	9.3	59	9.2	33
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	24	37	22	31	18
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	45	40	34	35	25
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	36	40	55	46	43

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	-	-	-	-	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	-	-	-	-	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	-	-	-	-	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	-	-	-	-	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	-	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	-	< 8.0
TPHCWG - Aliphatic >EC35 - EC44 EH_CU_1D_AL	mg/kg	8.4	NONE	-	-	-	-	< 8.4
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	-	-	-	-	< 10
TPHCWG - Aliphatic >EC5 - EC44 EH_CU+HS_1D_AL	mg/kg	10	NONE	-	-	-	-	< 10

TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	-	-	-	-	< 0.010
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	-	-	-	-	< 0.010
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	-	-	-	-	< 0.020
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	-	-	-	-	< 2.0
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	-	-	-	-	< 10
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	-	-	-	-	11
TPHCWG - Aromatic >EC35 - EC44 EH_CU_1D_AR	mg/kg	8.4	NONE	-	-	-	-	< 8.4
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	-	-	-	-	11
TPHCWG - Aromatic >EC5 - EC44 EH_CU+HS_1D_AR	mg/kg	10	NONE	-	-	-	-	11

TPH Total >EC6 - EC40 EH_CU+HS_1D_TOTAL	mg/kg	10	NONE	< 10	< 10	< 10	< 10	-
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Petroleum Range Organics (EC6 - EC10) HS_1D_TOTAL	mg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
TPH (EC10 - EC40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	-

VOCs

Chloromethane	µg/kg	5	MCERTS	-	-	-	-	-
Chloroethane	µg/kg	5	MCERTS	-	-	-	-	-
Bromomethane	µg/kg	5	MCERTS	-	-	-	-	-

Analytical Report Number: 25-043766

Project / Site name: Pilch Lane

Your Order No: 4399 FR

Lab Sample Number				650791	650792	650793	650794	650795
Sample Reference				TP02	DS03	TP06	DS05	DS01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				1.00	1.15	2.10	2.00	1.10
Date Sampled				13/08/2025	13/08/2025	13/08/2025	13/08/2025	13/08/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	5	MCERTS	-	-	-	-	-
1,1-Dichloroethene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	MCERTS	-	-	-	-	-
Trans 1,2-dichloroethylene	µg/kg	5	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	-	-	-	-	< 5.0
1,1-Dichloroethane	µg/kg	5	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	-	-
Chloroform	µg/kg	5	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	7	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	5	MCERTS	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	MCERTS	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	-	-	-	-	< 5.0
Carbontetrachloride	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	6	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	10	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	5	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	5	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	MCERTS	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	10	MCERTS	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-	< 5.0
1,1,2-Trichloroethane	µg/kg	6	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	5	MCERTS	-	-	-	-	-
Dibromochloromethane	µg/kg	5	MCERTS	-	-	-	-	-
Tetrachloroethene	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dibromoethane	µg/kg	5	MCERTS	-	-	-	-	-
Chlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	-	-	-	-	< 8.0
Styrene	µg/kg	5	MCERTS	-	-	-	-	-
Bromoform	µg/kg	5	MCERTS	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	-	-	-	< 5.0
Isopropylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromobenzene	µg/kg	5	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
2-Chlorotoluene	µg/kg	5	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	5	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
tert-Butylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
sec-Butylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
p-Isopropyltoluene	µg/kg	5	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	5	MCERTS	-	-	-	-	-

Analytical Report Number: 25-043766

Project / Site name: Pilch Lane

Your Order No: 4399 FR

Lab Sample Number				650791	650792	650793	650794	650795
Sample Reference				TP02	DS03	TP06	DS05	DS01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				1.00	1.15	2.10	2.00	1.10
Date Sampled				13/08/2025	13/08/2025	13/08/2025	13/08/2025	13/08/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
1,2-Dibromo-3-chloropropane	µg/kg	8	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	5	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 25-043766

Project / Site name: Pilch Lane

Your Order No: 4399 FR

Lab Sample Number	650796	650797	650798	650799	650800
Sample Reference	DS02	DS04	TP05	DS06	DS06
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.75	0.40	0.15	1.30	2.40
Date Sampled	13/08/2025	13/08/2025	13/08/2025	13/08/2025	13/08/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	26.8	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	6.4	6.7	9.4	14	14
Total mass of sample received	kg	0.1	NONE	0.7	0.7	0.7	0.7	0.7

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	PDO	PDO	PDO	PDO	-
Analysis completed	N/A	N/A	N/A	21/08/2025	21/08/2025	21/08/2025	21/08/2025	-

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8	6.8	6.7	7.3	7.2
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	640	75	30	150	490
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	319	37.6	15.2	75.5	247
Organic Matter (automated)	%	0.1	MCERTS	2.2	3.7	3.3	3.8	2.6
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1.3	2.1	1.9	2.2	1.5
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	< 2.0	3.5	< 2.0	7.5	< 2.0
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	< 1.0	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.17	< 0.05	0.06	3.2	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.15	< 0.05	< 0.05	0.97	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.99	< 0.05	0.11	9.3	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.57	< 0.05	0.1	8.6	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	6.4	0.76	0.67	53	0.15
Anthracene	mg/kg	0.05	MCERTS	1.2	0.26	0.12	14	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	9.8	2.4	0.67	54	0.21
Pyrene	mg/kg	0.05	MCERTS	9.3	2.2	0.61	48	0.23
Benzo(a)anthracene	mg/kg	0.05	MCERTS	4.5	1.1	0.24	20	0.15
Chrysene	mg/kg	0.05	MCERTS	4.9	1.2	0.3	20	0.17
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	5.8	1.6	0.29	18	0.26
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	2.4	0.51	0.1	10	0.09
Benzo(a)pyrene	mg/kg	0.05	MCERTS	4.9	1.1	0.23	19	0.24
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	2.7	0.65	0.12	8.8	0.13
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.89	0.19	< 0.05	2	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	3.3	0.73	0.15	11	0.17

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	57.8	12.9	3.76	299	1.81
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Lab Sample Number	650796	650797	650798	650799	650800
Sample Reference	DS02	DS04	TP05	DS06	DS06
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.75	0.40	0.15	1.30	2.40
Date Sampled	13/08/2025	13/08/2025	13/08/2025	13/08/2025	13/08/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	19	31	19	10
Barium (aqua regia extractable)	mg/kg	1	MCERTS	220	85	83	150	120
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.58	0.86	0.95	1.3	0.81
Boron (water soluble)	mg/kg	0.2	MCERTS	0.8	0.8	0.4	1.1	1.1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.3	0.3	< 0.2
Chromium (hexavalent) Low Level	mg/kg	1.2	NONE	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	19	24	24	30	23
Copper (aqua regia extractable)	mg/kg	1	MCERTS	35	57	39	300	33
Lead (aqua regia extractable)	mg/kg	1	MCERTS	62	100	110	250	71
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.5	0.7	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	14	19	22	31	20
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	25	30	31	46	29
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	170	65	77	200	68

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	2	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	4	< 2.0	< 2.0	2.6	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	49	< 8.0	< 8.0	16	< 8.0
TPHCWG - Aliphatic >EC35 - EC44 EH_CU_1D_AL	mg/kg	8.4	NONE	27	< 8.4	< 8.4	< 8.4	< 8.4
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	55	< 10	< 10	19	< 10
TPHCWG - Aliphatic >EC5 - EC44 EH_CU+HS_1D_AL	mg/kg	10	NONE	82	< 10	< 10	19	< 10

TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	1.5	< 1.0	< 1.0	1.6	< 1.0
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	3.3	< 2.0	< 2.0	31	< 2.0
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	22	< 10	< 10	190	< 10
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	97	15	< 10	200	< 10
TPHCWG - Aromatic >EC35 - EC44 EH_CU_1D_AR	mg/kg	8.4	NONE	70	< 8.4	< 8.4	33	< 8.4
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	120	15	< 10	420	< 10
TPHCWG - Aromatic >EC5 - EC44 EH_CU+HS_1D_AR	mg/kg	10	NONE	190	15	< 10	450	< 10

TPH Total >EC6 - EC40 EH_CU+HS_1D_TOTAL	mg/kg	10	NONE	-	-	-	-	-
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Petroleum Range Organics (EC6 - EC10) HS_1D_TOTAL	mg/kg	1	ISO 17025	-	-	-	-	-
TPH (EC10 - EC40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	-	-	-	-	-

VOCs

Chloromethane	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Chloroethane	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Bromomethane	µg/kg	5	MCERTS	-	-	-	< 5.0	-

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Project / Site name: Pilch Lane

Your Order No: 4399 FR

Lab Sample Number				650796	650797	650798	650799	650800
Sample Reference				DS02	DS04	TP05	DS06	DS06
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.75	0.40	0.15	1.30	2.40
Date Sampled				13/08/2025	13/08/2025	13/08/2025	13/08/2025	13/08/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Vinyl Chloride	µg/kg	5	NONE	-	-	-	< 5.0	-
Trichlorofluoromethane	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,1-Dichloroethene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Trans 1,2-dichloroethylene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethane	µg/kg	5	MCERTS	-	-	-	< 5.0	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	< 5.0	-
Chloroform	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,1,1-Trichloroethane	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,2-Dichloroethane	µg/kg	7	MCERTS	-	-	-	< 7.0	-
1,1-Dichloropropene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Cis-1,2-dichloroethene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbontetrachloride	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,2-Dichloropropane	µg/kg	6	MCERTS	-	-	-	< 6.0	-
Trichloroethene	µg/kg	10	MCERTS	-	-	-	< 10	-
Dibromomethane	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Bromodichloromethane	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Cis-1,3-dichloropropene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Trans-1,3-dichloropropene	µg/kg	10	MCERTS	-	-	-	< 10	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	6	MCERTS	-	-	-	< 6.0	-
1,3-Dichloropropane	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Dibromochloromethane	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Tetrachloroethene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,2-Dibromoethane	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Chlorobenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,1,1,2-Tetrachloroethane	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
Styrene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Bromoform	µg/kg	5	MCERTS	-	-	-	< 5.0	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	< 5.0	-
Bromobenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
n-Propylbenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
2-Chlorotoluene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
4-Chlorotoluene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,3,5-Trimethylbenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
tert-Butylbenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,2,4-Trimethylbenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
sec-Butylbenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,3-Dichlorobenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
p-Isopropyltoluene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,4-Dichlorobenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,2-Dichlorobenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Butylbenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-

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Lab Sample Number				650796	650797	650798	650799	650800
Sample Reference				DS02	DS04	TP05	DS06	DS06
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.75	0.40	0.15	1.30	2.40
Date Sampled				13/08/2025	13/08/2025	13/08/2025	13/08/2025	13/08/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
1,2-Dibromo-3-chloropropane	µg/kg	8	MCERTS	-	-	-	< 8.0	-
1,2,4-Trichlorobenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Hexachlorobutadiene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,2,3-Trichlorobenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 25-043766
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* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
650791	TP02	None Supplied	1	Brown clay and sand with gravel
650792	DS03	None Supplied	1.15	Brown clay and sand with gravel and vegetation
650793	TP06	None Supplied	2.1	Brown clay and sand with gravel
650794	DS05	None Supplied	2	Brown clay and sand with gravel
650795	DS01	None Supplied	1.1	Brown clay and sand with gravel
650796	DS02	None Supplied	0.75	Brown sand with stones
650797	DS04	None Supplied	0.4	Brown sand with gravel
650798	TP05	None Supplied	0.15	Brown loam and clay with gravel and vegetation
650799	DS06	None Supplied	1.3	Brown loam and clay with gravel
650800	DS06	None Supplied	2.4	Brown loam and clay with gravel

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Project / Site name: Pilch Lane

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
Total petroleum hydrocarbons by GC-FID in soil	Determination of total petroleum hydrocarbons in soil by GC-FID	In-house method	L076B	D	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil (Summed Bands)	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS (Summed Bands).	Calculation	L076B/L088-PL	D/W	NONE
Water Soluble Nitrate (leachate equivalent)	Determination of nitrate by reaction with sodium salicylate and colorimetry	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08, 2:1 extraction	L078-PL	W	NONE
Nitrate, water soluble, in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08, 2:1 extraction	L078-PL	W	NONE
Hexavalent chromium in soil (low level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total petroleum hydrocarbons by HS-GC-MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC-MS	In-house method	L129-PL	W	ISO 17025

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Project / Site name: Pilch Lane

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID in soil	Determination of total petroleum hydrocarbons in soil by GC-FID with carbon banding aliphatic and aromatic	In-house method	L076B	D	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil (Summed Bands)	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic (Summed Bands).	Calculation	L076B/L088-PL	D/W	NONE
Total petroleum hydrocarbons with carbon banding by HS-GC/MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC/MS with carbon banding aliphatic and aromatic	In-house method	L088-PL	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution



Sample Deviation Report



Analytical Report Number : 25-043766

Project / Site name: Pilch Lane

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container/Insufficient material provided c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
DS01	N/A	S	650795	b	Asbestos identification in Soil	A001B	b

IGE Consulting
Office 11
Bartle House
Oxford Court
Manchester
M2 3WQ

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

e: fionarobson@igeconsulting.co.uk

Analytical Report Number : 25-044288

Project / Site name:	Pilch Lane	Samples received on:	19/08/2025
Your job number:	4399	Samples instructed on/ Analysis started on:	20/08/2025
Your order number:	4399 FR	Analysis completed by:	27/08/2025
Report Issue Number:	1	Report issued on:	27/08/2025
Samples Analysed:	7 soil samples		

Signed:

Rafał Szczepańczyk
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

Excel copies of reports are only valid when accompanied by this PDF certificate.

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 25-044288

Project / Site name: Pilch Lane

Your Order No: 4399 FR

Lab Sample Number				653705	653706	653707	653708	653709
Sample Reference				DS06	DS02	DS06	TP05	DS03
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				2.50	0.75	0.60	0.50	2.00
Date Sampled				13/08/2025	14/08/2025	15/08/2025	16/08/2025	17/08/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	46.3	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	19	7.4	15	13	4.4
Total mass of sample received	kg	0.1	NONE	0.5	0.5	0.5	0.5	0.5

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	7	8.9	6	8.1	8.5
Total Sulphate as SO ₄	%	0.005	MCERTS	0.049	0.311	0.013	0.013	0.042
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	490	900	17	17	180
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	247	450	8.26	8.49	90.2
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	2.7	3.7	5.7	1.4	2.2
Total Sulphur	mg/kg	50	MCERTS	740	1400	64	79	150
Total Sulphur	%	0.005	MCERTS	0.074	0.145	0.006	0.008	0.015
Ammoniacal Nitrogen as NH ₄ ⁺	mg/kg	0.5	MCERTS	11	< 0.5	< 0.5	< 0.5	6.9
Ammonium as NH ₄ ⁺ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	0.7	< 0.05	< 0.05	< 0.05	0.51
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	18
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	8.9

Heavy Metals / Metalloids

Magnesium (leachate equivalent)	mg/l	2.5	NONE	8.5	5.5	< 2.5	5	7.3
Magnesium (water soluble)	mg/kg	5	NONE	17	11	< 5.0	10	15

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 25-044288

Project / Site name: Pilch Lane

Your Order No: 4399 FR

Lab Sample Number				653710	653711
Sample Reference				DS01	DS04
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				4.00	1.20
Date Sampled				18/08/2025	19/08/2025
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	4.7	4.9
Total mass of sample received	kg	0.1	NONE	0.5	0.5

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	7.7	7.2
Total Sulphate as SO ₄	%	0.005	MCERTS	0.035	0.012
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	78	43
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	38.9	21.4
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	2.5	0.9
Total Sulphur	mg/kg	50	MCERTS	360	68
Total Sulphur	%	0.005	MCERTS	0.036	0.007
Ammoniacal Nitrogen as NH ₄ ⁺	mg/kg	0.5	MCERTS	< 0.5	< 0.5
Ammonium as NH ₄ ⁺ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	< 0.05	< 0.05
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	< 2.0	< 2.0
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	< 5.0	< 5.0

Heavy Metals / Metalloids

Magnesium (leachate equivalent)	mg/l	2.5	NONE	8.5	5.5
Magnesium (water soluble)	mg/kg	5	NONE	17	11

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 25-044288
Project / Site name: Pilch Lane

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
653705	DS06	None Supplied	2.5	Brown sandy clay
653706	DS02	None Supplied	0.75	Brown loam and sand with vegetation and stones
653707	DS06	None Supplied	0.6	Brown clay and sand with gravel and vegetation
653708	TP05	None Supplied	0.5	Brown clay and sand with gravel
653709	DS03	None Supplied	2	Brown clay with gravel
653710	DS01	None Supplied	4	Brown clay with gravel
653711	DS04	None Supplied	1.2	Brown clay with gravel

Analytical Report Number : 25-044288

Project / Site name: Pilch Lane

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES	In-house method based on TRL 447	L038B	D	NONE
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES	In-house method	L038B	D	MCERTS
Water Soluble Nitrate (leachate equivalent)	Determination of nitrate by reaction with sodium salicylate and colorimetry	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08, 2:1 extraction	L078-PL	W	NONE
Nitrate, water soluble, in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08, 2:1 extraction	L078-PL	W	NONE
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser	In-house method	L082B	D	MCERTS
Ammonium as NH ₄ in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

IGE Consulting
Office 11
Bartle House
Oxford Court
Manchester
M2 3WQ

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

e: fionarobson@igeconsulting.co.uk

Analytical Report Number : 25-045070

Project / Site name:	Pilch Lane	Samples received on:	22/08/2025
Your job number:	4399	Samples instructed on/ Analysis started on:	22/08/2025
Your order number:	4399 FR	Analysis completed by:	03/09/2025
Report Issue Number:	1	Report issued on:	03/09/2025
Samples Analysed:	3 soil samples		

Signed:

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting
	air	- once the analysis is complete

Excel copies of reports are only valid when accompanied by this PDF certificate.

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 25-045070
Project / Site name: Pilch Lane
Your Order No: 4399 FR

Lab Sample Number				657811	657812	657813
Sample Reference				SP01	SP02	SP03
Sample Number				None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				21/08/2025	21/08/2025	21/08/2025
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status			

Stone Content	%	0.1	NONE	35.5	3.6	< 0.1
Moisture Content	%	0.01	NONE	5.3	7.5	1.7
Total mass of sample received	kg	0.1	NONE	0.7	0.7	0.7

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	WEM	WEM	WEM
Analysis completed	N/A	N/A	N/A	28/08/2025	28/08/2025	28/08/2025

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	7.6	7.6	6.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	1000	140	3800
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	521	67.5	1900
Organic Matter (automated)	%	0.1	MCERTS	10	1.2	9.3
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	6	0.7	5.4
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	10	< 2.0	< 2.0
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	5.1	< 5.0	< 5.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.06	0.1	0.29
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.07	< 0.05	0.15
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.11
Phenanthrene	mg/kg	0.05	MCERTS	0.58	0.24	0.96
Anthracene	mg/kg	0.05	MCERTS	0.13	0.05	0.24
Fluoranthene	mg/kg	0.05	MCERTS	1.6	0.3	2.1
Pyrene	mg/kg	0.05	MCERTS	1.6	0.3	2.1
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.88	0.16	1.1
Chrysene	mg/kg	0.05	MCERTS	1.1	0.17	1.4
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	1.4	0.21	1.7
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.65	0.06	0.74
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.2	0.15	1.5
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.76	0.1	0.85
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.13	< 0.05	0.2
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.89	0.13	1

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	11	1.96	14.5
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Analytical Report Number: 25-045070
Project / Site name: Pilch Lane
Your Order No: 4399 FR

Lab Sample Number	657811	657812	657813
Sample Reference	SP01	SP02	SP03
Sample Number	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A
Depth (m)	None Supplied	None Supplied	None Supplied
Date Sampled	21/08/2025	21/08/2025	21/08/2025
Time Taken	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	53	14	40
Barium (aqua regia extractable)	mg/kg	1	MCERTS	120	100	180
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.55	0.81	0.62
Boron (water soluble)	mg/kg	0.2	MCERTS	2.3	0.7	3.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.5	< 0.2	0.5
Chromium (hexavalent) Low Level	mg/kg	1.2	NONE	< 1.2	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	25	34	23
Copper (aqua regia extractable)	mg/kg	1	MCERTS	45	27	66
Lead (aqua regia extractable)	mg/kg	1	MCERTS	270	30	230
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	4.2	< 0.3	2.8
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	17	29	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	23	36	25
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	150	64	180

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	0.021
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	3.2	< 2.0	4.1
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	13	< 8.0	43
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	< 8.4	< 8.4	27
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	16	< 10	47
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	16	< 10	74

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	1.2
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	2.8	< 2.0	3.9
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	14
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	29	< 10	57
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	12	< 8.4	37
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	32	< 10	75
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	44	< 10	110

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 25-045070

Project / Site name: Pilch Lane

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
657811	SP01	None Supplied	None Supplied	Brown loam and clay with gravel and stones
657812	SP02	None Supplied	None Supplied	Brown clay and sand with gravel and stones
657813	SP03	None Supplied	None Supplied	Brown loam and clay with gravel and vegetation

Analytical Report Number : 25-045070

Project / Site name: Pilch Lane

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID in soil	Determination of total petroleum hydrocarbons in soil by GC-FID with carbon banding aliphatic and aromatic	In-house method	L076B	D	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil (Summed Bands)	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic (Summed Bands).	Calculation	L076B/L088-PL	D/W	NONE
Water Soluble Nitrate (leachate equivalent)	Determination of nitrate by reaction with sodium salicylate and colorimetry	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08, 2:1 extraction	L078-PL	W	NONE
Nitrate, water soluble, in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08, 2:1 extraction	L078-PL	W	NONE
Hexavalent chromium in soil (low level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry	In-house method	L080-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS

Analytical Report Number : 25-045070

Project / Site name: Pilch Lane

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total petroleum hydrocarbons with carbon banding by HS-GC/MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC/MS with carbon banding aliphatic and aromatic	In-house method	L088-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution



APPENDIX 8

CHEMICAL LABORATORY SCREENING TABLES



IGE consulting															Project: Pilch Lane																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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APPENDIX 9

GROUND GAS AND GROUNDWATER MONITORING RESULTS



Gas & Groundwater Monitoring

Site: Pilch Lane

Job No.: 4399



Exploratory Hole	Date	Time	Engineer	Response zone range	Water level	Base level	Atm. pressure	Pressure Trend	Flow		CH ₄		LEL		Hex		CO ₂		O ₂			H ₂ S	CO	Total Volatiles (PID)		Remarks
				(m bgl)	(m bgl)	(m bgl)	(mbar)		(l/hr)		(%)		(%)		(%)		(%)		(%)			(ppm)	(ppm)	(ppm)		
									peak	steady	peak	steady	peak	steady	peak	steady	peak	steady	high	steady	low	peak	peak	peak	steady	
DS03	21/08/2025	10:58	LL	0.50 - 1.00	Dry	0.99	1020	Rising	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	1.1	1.1	20.5	14.6	14.6	1	1	2.6	0.8	-
	29/08/2025	09:50	LL		Dry	0.99	992	Rising	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	1.0	1.0	20.3	15.8	15.8	1	1	1.1	0.1	-
	12/09/2025	14:45	AH		Dry	0.99	1003	Rising	-1.6	0.1	0.1	0.1	0.1	0.1	0.001	0.001	0.9	0.9	20.6	17.6	17.6	1	1	0.1	0.1	-
	03/10/2025	13:02	AH		Dry	0.99	996	Falling	0.8	0.1	0.1	0.1	0.1	0.1	0.001	0.001	0.8	0.8	20.9	19.2	19.2	1	1	-	-	-
	17/10/2025	13:43	LG		Dry	1.03	1024	Falling	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	1.1	1.1	20.4	19.1	19.1	1	1	-	-	-
	31/10/2025	12:33	AH		0.95	1.00	990	Falling	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	0.6	0.6	20.5	19.7	19.7	1	1	-	-	-
DS05	21/08/2025	11:15	LL	3.00 - 5.00	4.38	4.59	1019	Rising	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	0.7	0.7	20.6	20.2	20.2	1	1	0.8	0.1	-
	29/08/2025	10:08	LL		4.03	4.59	992	Rising	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	0.6	0.6	20.6	20.1	20.1	1	1	1.2	1.2	Bailed Dry at 10:20; Redipped at 10:35 to 4.59m bgl.
	12/09/2025	14:58	AH		3.98	4.59	1003	Rising	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	0.7	0.6	20.8	20.1	20.1	1	1	0.1	0.1	Bailed Dry at 15:06; Redipped at 15:26 to 4.59m bgl.
	03/10/2025	13:10	AH		3.57	4.59	996	Falling	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	0.6	0.6	20.7	20.1	20.1	1	1	-	-	-
	17/10/2025	13:52	LG		2.78	4.62	1023	Falling	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	0.2	0.2	20.6	20.5	20.5	1	1	-	-	Bailed to 4.53m bgl at 14:01; redipped to 4.47m bgl at 14:18.
	31/10/2025	12:39	AH		3.17	4.60	989	Falling	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	0.7	0.3	20.6	20.2	19.9	1	1	-	-	-
DS06	21/08/2025	11:30	LL	2.00 - 2.70	Dry	2.66	1018	Rising	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	13.6	13.6	20.6	0.8	0.8	1	1	2.2	0.1	-
	29/08/2025	10:25	LL		Dry	2.66	992	Rising	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	11.8	11.8	20.4	3.7	3.7	1	1	2.1	2.0	-
	12/09/2025	15:14	AH		Dry	2.66	1005	Rising	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	9.1	9.1	20.7	9.3	9.2	1	1	0.1	0.1	-
	03/10/2025	13:21	AH		2.62	2.66	994	Falling	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	14.2	14.2	20.6	0.1	0.1	1	1	-	-	-
	17/10/2025	14:08	LG		1.87	2.67	1023	Falling	0.1	0.1	0.1	0.1	0.1	0.1	0.004	0.004	11.9	11.8	20.6	3.9	3.9	1	1	-	-	Bailed to 2.41m bgl at 14:15; redipped to 1.90m bgl at 14:20.
	31/10/2025	12:43	AH		1.72	2.66	989	Falling	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	3.3	3.2	20.4	17.2	17.1	1	1	-	-	Bailed to 1.76m bgl at 12:49; redipped to 1.73m bgl at 13:11 - Attempted to bail further but recharge rate was too quick.

Response zone flooded. Results considered unreliable in accordance with BS8485:2015 + A1 2019

Values recorded below instrument detection limit

TEST DATE AND CONDITIONS			
Date	3.12.24		
Atmospheric Pressure	1005	mb	
Ambient Temperature	21.6	°C	
EnviroNics Serial No.	5089		

GAS DATA LTD Unit D Earlplace Business Park Fletchamstead Highway Coventry CV4 9XL UK +44 (0) 24 7630 3311	 GAS DATA LISTEN · ANALYSE · INFORM
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GFM436-1 OUTWARD INSPECTION & QUALITY CHECK SHEET

INSTRUMENT DETAILS			
SO Number	Instrument Type	Instrument Serial Number + SW Version	Job Number(s)
340542	GFM436	13397 G436-27/10	125752

Calibration Technician *[Signature]* Date 3.12.24

Inspection Technician *[Signature]* Date 4.12.24

INSTRUMENT CHECKS		Pass (P), Fail (F) or not applicable (NA)	INSTRUMENT PACKING LIST		Tick if included
Function Tests	Dust Caps Fitted	P	Instrument		✓
	Keyboard Test (All Keys)	P	Leather Case		✓
	Backlight	P	Instrument Strap		✓
	Clock Set / Running	P	AC Battery Charger (UK)		✓
	Comms Test	P	AC Battery Charger (EURO)		X
	Pump Flow Test (In & Out)	P	AC Battery Charger (US)		X
	Overall Leak Test (30mB)	n/a	AC Battery Charger (AUS)		X
	Battery Charge Test	P	Gas Sample Pipe - (new issue)		✓
	Service Date set to?	3.12.25	Flow Sample Pipe - (new issue)		✓
Channel Tests	Data Logging Enabled?	P	Hard Carry Case		✓
	Verify CH4/LEL/Hexane/PID	P	Spares Pot		✓
	Verify CO2	P	Allen Key		X
	Verify O2	P	Temperature Probe		X
	Verify H2S	P	Vane Anemometer		X
	Verify CO	P	USB Cable		✓
	Verify LEL	P	USB Memory stick		X
	Verify 1 st Option Gas	N/A	SM V5 Software	Ver 6.5	X
	Verify Atmospheric pressure	P	Internal Filter Pack	Qty	X
	Verify differential pressure	P	External Filter Pack	Qty	X
	Verify flow	P	Field Guide		X
	Verify temperature probe input	P	Extra Items: Sample Tube Honey		
	Verify vane anemometer input	P			
	DataBase Checks	Jobcard(s) completed and signed	P	Comments:	
Jobcard(s) booked off database		P			
Calibration certificate completed		P			
Complete & print QI record		n/a			
Label Checks	No. of Calibration label fitted	GDC 13640			
	MCERTS label displayed	N/A			
	Warranty label fitted	P			
H2S Range	H2S Range from Sales Order	5000 ppm			
	H2S Range from Cal Cert	5000 ppm			
	Over-range value correct?	P			
QA Cylinders Used	No. of High Range CH4/CO2	60194			
	No. of Low Range CH4/CO2/O2	56840			
	No. of H2S	6037292			
	No. of CO	56836			
	No. of Optional Cylinder	N/A			

IGE

consulting

IGE Consulting Ltd, 1st Floor, 15 Oxford Court, Manchester, M2 3WQ Tel:

0161 914 9170

Email: contact@igeconsulting.co.uk