IGSL Ltd

Gas to Bord na Mona, Edenderry Phase 1 GI

Geotechnical Interpretative Report

Project No. 25882

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FOREWORD
The following conditions and notes on the geotechnical site investigation procedures should be read in conjunction with this report.

Standards
The ground investigation works for this project (**Gas to Bord na Mona, Edenderry, Phase 1 GI**) have been carried out by IGSL in accordance with Eurocode 7 – Part 2: Ground Investigation & Testing (EN 1997-2:2007). This has been used together with complementary documents such as Engineers Ireland Specification for Ground Investigation (2nd Ed, 2016), BS 5930 (2015+A1:2020) and BS 1377 (Parts 1 to 9) and the following European Norms:

- EN 1997-2 Eurocode 7: 2007 – Geotechnical Design – Part 2: Ground Investigation & Testing
- EN ISO 22475-1:2006 Geotechnical Investigation and Sampling – Sampling Methods & Groundwater Measurements
- EN ISO 14688-1:2017 Geotechnical Investigation and Testing – Identification and Classification of Soil, Part 1: Identification and Description
- EN ISO 14688-2:2017 Geotechnical Investigation and Testing – Identification and Classification of Soil, Part 2: Principles for a classification
- EN ISO 14689-1:2017 Geotechnical Investigation and Testing – Identification, description & classification of rock

The Eurocode 7, Part 2 – Ground Investigation and Testing GI specification shall be read in conjunction with the Specification and Related Documents for Ground Investigation in Ireland, 2nd Edition, published by Engineers Ireland in 2016.

Reporting
No responsibility can be held by IGSL Ltd for ground conditions between exploratory hole locations. The engineering logs provide ground profiles and configuration of strata relevant to the investigation depths achieved and caution should be taken when extrapolating between exploratory points. No liability is accepted for ground conditions extraneous to the investigation points. Unless specifically stated, no account has been taken of possible subsidence due to mineral extraction, mining works or karstification below or close to the site.

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Boring Procedures
Where required, 'shell and auger' or cable percussive boring technique is employed as defined by Section 6.3 of IS EN ISO 22475-1:2006. The boring operations, sampling and in-situ testing meet with the recommendations set out in IS EN 1997-2:2007 and BS 1377:1990 and EN ISO 22476-3:2005. The shell and auger boring technique allows for continuous sampling in clay and silt above the water table and sand and gravel below the water table (Table 2 of IS EN ISO 22475-1:2006).

It is highlighted that some disturbance and variation is unavoidable in particular ground (e.g. blowing sands, gravel / cobble dominant glacial deposits etc). Attention is drawn to this condition, whenever it is suspected. Where cobbles and boulders are recorded, no conclusion should be drawn concerning the size, presence, lithological nature, or numbers per unit volume of ground.

In-Situ Testing
Where required, Standard Penetration Tests (SPT's) are conducted strictly in accordance with Section 4.6 of IS EN 1997-2:2007. The SPT equipment (hammer energy test) has been calibrated

in accordance with EN ISO 22476-3:2005 and the Energy Ratio (E_r). A calibration certificate is available upon request. The E_r is defined as the ratio of the actual energy E_{meas} (measured energy during calibration) delivered to the drive weight assembly into the drive rod below the anvil, to the theoretical energy (E_{theor}) as calculated from the drive weight assembly. The measured number of blows (N) reported on the engineering logs are uncorrected. In sands, the energy losses due to rod length and the effect of the overburden pressure should be taken into account (see IS EN ISO 22476-3:2005).

Soil Sampling

Three categories of sampling methods are outlined in EN ISO 22475-1:2006. The categories are referenced A, B and C for any given ground conditions and are shown in Tables 1 and 2 of EN ISO 22475-1:2006. Reference should be made to EN 1997-2:2002 for guidelines on sample class and quality for strength and compressibility testing. Samples of quality classes 1 or 2 can only be obtained by using Category A sampling methods.

Class 1 thin wall undisturbed tube samples (UT100) are obtainable in fine grained soils. They strictly meet the requirements of EN 1997-2:2002 and EN ISO 22475-1:2006. Soil samples for laboratory tests are divided into five classes with respect to the soil properties that are assumed to remain unchanged during sampling, handling transport and storage. The minimum sample quality required for testing purposes to Eurocode 7 compatibility (EN 1997-2:2002) is shown in Table A.

Table A – Details of Sample Quality Requirements

EN 1997 Clause	Test	Minimum Sample Quality Class
5.5.3	Water Content	3
5.5.4	Bulk Density	2
5.5.5	Particle Density	N/S
5.5.6	Particle Size Analysis	N/S
5.5.7	Consistency Limits	4
5.5.8	Density Index	N/S
5.5.9	Soil Dispersivity	N/S
5.5.10	Frost Susceptibility	N/S
5.6.2	Organic Content	4
5.6.3	Carbonate Content	3
5.6.4	Sulphate Content	3
5.6.5	pH	3
5.6.6	Chloride Content	3
5.7	Strength Index	1
5.8	Strength Tests	1
5.9	Compressibility Tests	1
5.10	Compaction Tests	N/S
5.11	Permeability	2

N/S – not stated. Presume a representative sample of appropriate size.

Samples recovered from trial pits or trenches meet the requirements of IS EN ISO 22475-1. It is highlighted that unforeseen circumstances such as variations in geological strata may lead to lower quality sample classes being obtained.

Groundwater

The depth of entry of any influx of groundwater is recorded during the course of boring operations. However, the normal rate of boring does not usually permit the recording of an equilibrium level for any one water strike. Where possible, drilling is suspended for a period of twenty minutes to monitor the subsequent rise in water level. Groundwater conditions observed in the borings or pits are those appertaining to the period of investigation. It should be noted however, that groundwater levels are

subject to diurnal, seasonal and climatic variations and can also be affected by drainage conditions, tidal variations etc.

Engineering Logging

Soil and rock identification has been based on the examination of the samples recovered and conforms with IS EN ISO 14688-1:2017 and IS EN ISO 14688-2:2017. Rock weathering classification conforms to IS EN ISO 14689-1:2017 along with discontinuities (bedding planes, joints, cleavages, faults etc) as classified in Section 6.4 of IS EN ISO 14689-1:2017 and Annex C of same. Rock mechanical indices (TCR, SCR, RQD) are defined in accordance with IS EN ISO 22475-1:2006.

Where peat has been encountered, samples have been logged in accordance with the Von Post Classification (ref. Von Post, L. 1992. Sveriges Gologiska Undersoknings torvinventering och nogra av dess hittils vunna resultat (SGU peat inventory and some preliminary results) Svenska Mosskulturforeningens Tidskrift, Jonkoping, Swedden, 36, 1-37 and Hobbs N. B. Mire morphology and the properties of some British and foreign peats. QJEG, Vol. 19, 1986.

Retention of Samples

After satisfactory completion of all the scheduled laboratory tests on any sample, the remaining material will be discarded. Unless a period of retention of samples is agreed, it is our normal practice to discard all soil samples one month after submission of our final report.

1. INTRODUCTION

IGSL Limited has undertaken a programme of geotechnical site investigation works for a new gas pipeline (GNI143 Ballykilleen Pipeline), hot tap and AGI required to connect the existing Bord na Mona (BnaM) power station in Ballykilleen, Edenderry, Co. Offaly, to the gas transmission network 23 kilometres north in the townland of Kilwarden, County Meath. The works were undertaken for Murphy International Limited on behalf of their client Gas Networks Ireland. This Phase 1 investigation focused on both the "Offtake" installation at Kilwarden and the AGI at Edenderry as well as a number of crossing points where the gas pipeline infrastructure encounters public roads, the M4 motorway, the Grand Canal and river courses, namely the Kilwarden River and the Yellow River.

Figure 1 – Site Location Plan (pipeline plotted)

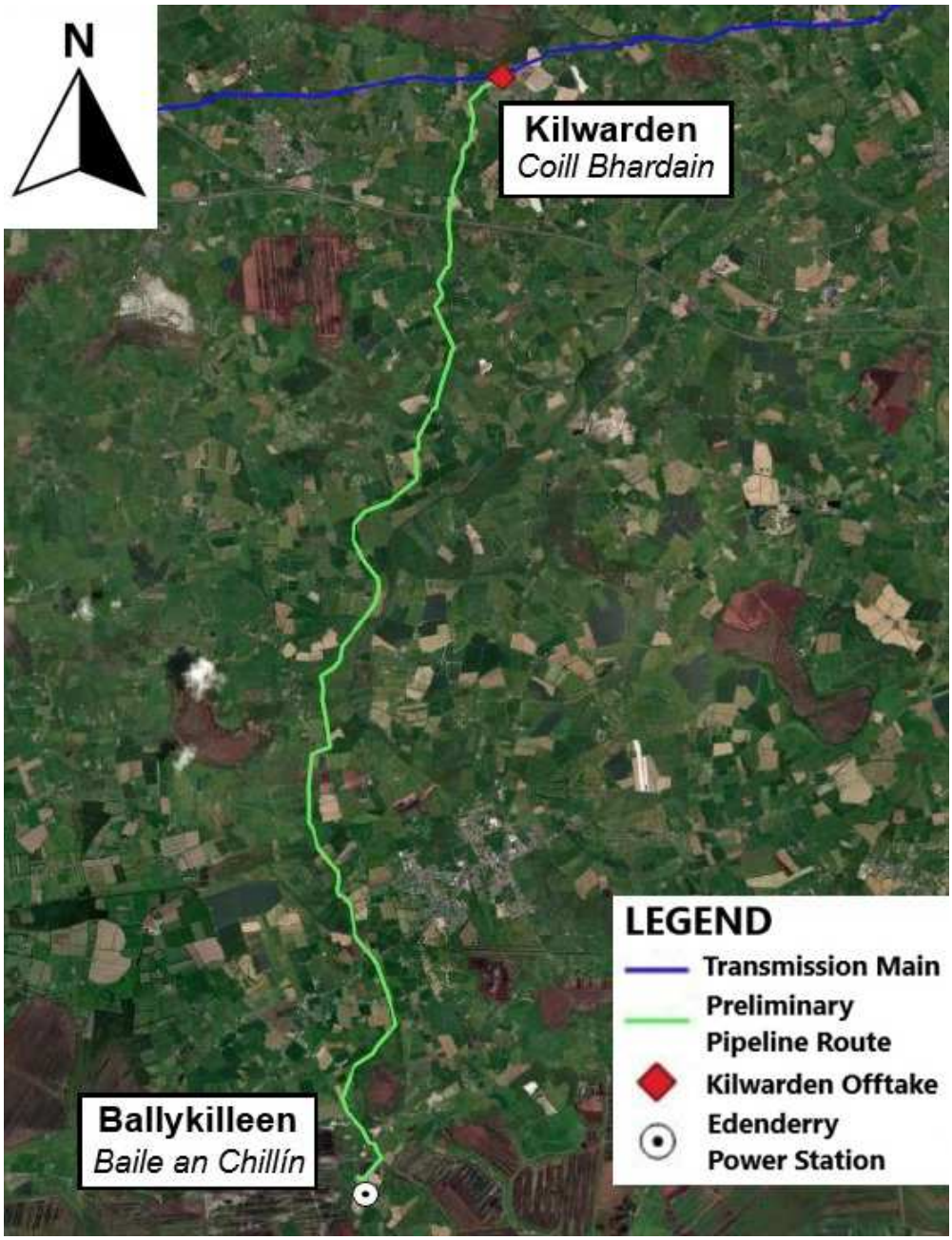


Fig 1 reproduced from Fingleton White 1718-CG-03001-R1 Phase 1 GI Scope of Works, Figure 1

The investigation comprised rotary drilling, cable percussion boring, trial pitting, plate bearing testing and soakaway tests to BRE365. The investigations were executed in accordance with BS 5930, Code of Practice for Site Investigations (BS 5930:2015 +A1:2020) and EN 1997-2 Eurocode 7 Part 2 Ground Investigation & Testing and supervised by an IGSL geotechnical engineer.

Geotechnical, chemical and environmental laboratory testing was scheduled on a range of soil and rock samples. The geotechnical soil testing included moisture contents, Atterberg Limits and particle size distribution [PSD] testing. Suites of both chemical testing and environmental testing were undertaken on soils. Where recovered, rock strength testing was completed on recovered cores. This comprised point load strength index testing [PLSI] testing and uniaxial compressive strength [UCS] testing. A number of Cerchar tests were performed on cores to determine the Cerchar Abrasivity Index (CAI).

This report presents an evaluation of the ground and groundwater conditions and an assessment of the key geotechnical issues pertaining to the complete route, from the Kilwarden Offtake in the north to the Ballykilleen AGI in the south, on the grounds of the existing Edenderry Power Station.

Four geotechnical reports have already been furnished to Murphy International / GNI relating to pre-designated high priority locations along the 23 kilometre pipeline route. These locations are referred to as “High Consequence Crossing” [HCC] points. The HCC reports are listed in Table 1 and are presented separately in Appendices 13 – 16.

Table 1 – High Consequence Crossing Points / Report Issue

High Consequence Crossing [HCC] Number	Location (RDX/RVX/RCX_)	Report Issue Date (Version _)	Featured in Appendix _
HCC1	**M4 Motorway** (RDX4)	12-08-25 (0)	Appendix 13
HCC2	**Yellow River** (RVX2)	19-09-25 (0)	Appendix 14
HCC3	**Kilwarden River** (RVX1)	29-09-25 (2)	Appendix 15
HCC4	**Grand Canal** (WCX1)	05-09-25 (0)	Appendix 16

Outside of the HCC locations, there existed a number of road (RDX) and river (RVX) crossing points in addition to the Kilwarden Offtake site and the Ballykilleen AGI site. The “Offtake” and AGI sites, in addition to boreholes and drillholes, saw the completion of trial pitting, plate bearing and soakaway testing. Table 2 lists all of the exploratory hole locations per road, river and canal crossing points in addition to the Kilwarden and Ballykilleen sites.

Table 2 – Investigation locations listed per site specific area (RDX, RVX, WCX, etc).
RC/ROH or CPBH in **bold & underlined** denotes data logger well location.

Location		Route Codes (where applicable)	Investigation Points				
			RC/ROH	CP BH	TP	SA	PBT
Road Crossing (RDX)	R161 Kilwarden	**RDX1**	-	05, **06**	-	-	-
	R148, Old Dublin Road, Ardnamullen	**RDX2**	-	13, 13A, **14**	-	-	-
	Unnamed Road, Ardnamullan	**RDX3**	-	(**14**) 15	-	-	-
	M4 Motorway, Ardnamullen	**RDX4 / HCC1**	16A, 17, 50, **18**, 19, 51A	16, 16A, 17, 50, 18, 19, 51, 51A	-	-	-
	R441, Mountwilson	**RDX12**	-	26, 27, **27A**	-	-	-
	R402, Rathmore / Drumcooly	**RDX14**	-	32, 32A, **32R**, 33	-	-	-
	R401, Ballykilleen / Shean	**RDX17**	-	56, 57, 34, **34R**, 35	-	-	-
	Unnamed bog road	**-**	-	58, 59	-	-	-
River Crossing (RVX)	Kilwarden River	**RVX1 / HCC3**	**07**, 08, 09, 46, 10, 11, 12, 48, 49	07, 08, 09, 46, 10, 11, 12, 48, 49, 49A	-	-	-
	Yellow River	**RVX2 / HCC2**	22, 23A, 53, 54, **24**, 25, 55	22, 23, 23A, 53, 54, 24, 25, 55	-	-	-
Canal (WCX)	Grand Canal	**WCX1 / HCC4**	28A, 29, **30A**, 31A	28, 28A, 29, 30, 30A, 31	-	-	-
	Kilwarden Offtake	**-**	**01**, **02**, 03, **04**	01, 02, 03, 04	1.1, 1.2	1.2	1.1, 1.2
	Kilwarden Approach	**-**	**40**, 41, 42, **43**, **44**, **45**	40, 42, 43, 44, 45	3.1, 3.2, 3.3, 3.4, 3.5	-	-
	Ballykilleen AGI	**-**	36, 37, 38, 39	36, 37, 38, 39	2.1, 2.2	2.2	2.1, 2.2

Key: RC/ROH = Rotary Core Drillhole / Rotary Open Hole; CP BH = Cable Percussion Borehole; TP = Trial Pit; SA = Soakaway Test; PBT = Plate Bearing Test.

2. FIELDWORKS

2.1 General

The geotechnical investigations along the route commenced in March 2025 at the Ballykilleen AGI site which was situated on the Edenderry Power campus, County Offaly. Works continued apace for the Spring and Summer of 2025 with the fieldworks reaching their conclusion by late September near Kilwarden, County Meath, at the northern extent of the project. The site works, including those intrusive locations featured in the separate HCC reports, comprised the following:

- Cable Percussion Boring (65 No.*)
- Rotary Drillholes (40 No.)
- Trial Pits (9 No.)
- Plate Bearing Testing (4 No.)
- Soakaway Testing (to BRE365) (2 No.)
- Groundwater Monitoring / Data Loggers (16 No.)
- Surveying of Exploratory Hole Locations

**Cable Percussion re-setups undertaken at locations BH13A, 16A, BH23A, 27A, 28A, 30A, 32A, 32R, 49A and BH51A following shallow refusals.*

2.2 Cable Percussion Boreholes

Cable percussion boring (200mm diameter) methods were deployed at sixty-five locations [BH_] using a Dando 2000 rig. Ten of these locations were re-setups whereby shallow obstructions were met in the original bore location. Where the re-setup locations were successful, they were used when following on with rotary drilling where applicable. Taking into account the re-setups, the boreholes extended to depths of between 1.0m and 15.50m, the deepest holes located to the very south of the site at the proposed Ballykilleen AGI (BH36 & BH38). At all locations, boring commenced through hand-dug service inspection pits. Disturbed bulk samples were recovered at 1m intervals or change of strata during boring and these are denoted 'B' on the engineering logs. Attempts were made at recovering undisturbed push-in samples, namely 'U100' samples. Where they were retrieved, the percentage recovery along with the blows per sample drive feature on the logs.

Standard Penetration Tests (SPT's) were performed in the boreholes and given the nature of the soils, a solid cone was used. It is noted that the SPT N-Values reported are the number of blows for 300mm increment penetration (e.g. BH19 at 3.0m where N=8). These exclude the seating blow values, which represent the initial 150mm depth of penetration. Where partial penetration was achieved during testing, the number of blows is shown for the actual penetration depth achieved (e.g. BH19 at 2.0m where N=50/150mm). In accordance with Eurocode 7, the SPT hammer has been calibrated. It is highlighted that the SPT N-Values reported on the engineering logs are uncorrected for energy ratio.

Descriptions of the soils encountered, in-situ tests undertaken and samples recovered are presented on the borehole records in Appendix 1. Details of groundwater strikes and hard strata boring (i.e. chiselling) are also presented on the aforementioned records.

2.3 Rotary Drillholes

Rotary drilling was carried out (holes denoted RC_) at forty holes throughout the project. Drilling works were completed using a Comacchio Geo-405, a Beretta T44 and a Casagrande C6. Symmetrex drilling was employed within the overlying superficial deposits with coring techniques used in the underlying bedrock if or when encountered. The drillholes were each taken to their required depths which often saw holes extended to approximately 20m bgl. In situ SPT testing was carried out in overburden soils, below the end depth of cable percussion bores, shy of eventual bedrock.

Where rockhead was met, the rotary drilling in bedrock produced 78mm diameter cores. Bedrock was generally described as fresh to slightly weathered, medium strong to strong, often massively bedded, pale grey, fine-grained, rarely slightly dolomitised LIMESTONE.

The cores were placed in 3m capacity timber boxes and logged by an IGSL engineering geologist. This included photography of the cores with a digital camera. Where rock core was recovered, a graphic fracture log is also presented alongside the mechanical indices. This illustrates the fracture state of the rock cores and allows easy identification of highly fractured / non-intact zones and discontinuity spacings. It should be noted that no correction for dip of the joints has been made and that the spacings shown are successive joint / core intersections within the core.

Groundwater monitoring standpipes were installed in many of the drillholes, with at least one well installation specified per road / river / canal crossing. Standpipes generally consisted of 50mm diameter HDPE pipework with proprietary 1mm slots and incorporate a pea gravel filter pack and cement / bentonite grout seal. 19mm diameter piezometers were placed in a small number of drillholes post-completion. Headwork covers were fixed in place with protective timber surrounds erected around many of the well heads.

The complete set of drillhole log records are presented in Appendix 2 and this includes engineering geological descriptions, details of the bedding / discontinuities and mechanical indices (TCR, SCR and RQD's) for each core run. Core photographs are also presented in the aforementioned Appendix 2 and these illustrate the structure and fracture state of the bedrock.

2.4 Trial Pits

Trial pitting was performed at nine locations across the site. Spatially, as can be viewed in Table 2, there are three distinct areas in which pitting was completed. The first was at the Kilwarden Offtake where pits TP1.1 and TP1.2 were constructed. The second was at Ballykilleen AGI where a further two pits (TP2.1 & TP2.2) were undertaken. A third set of pits were excavated on the approach to Kilwarden Offtake in fields to the west of the offtake site.

The trial pits were excavated, logged and sampled under the direction of an IGSL geotechnical engineer in accordance with BS 5930 (2015+A1:2020). Bulk samples (B) (typically 20 to 30kg) were taken as the pits progressed. In situ hand vane tests were conducted in pit sidewalls. The results are listed in the margin of the respective pit logs.

Bulk samples were placed in heavy-duty polyethylene bags. The trial pits were backfilled with the as-dug arisings and reinstated to the satisfaction of IGSL's site geotechnical engineer. The trial pit logs and photos are presented in Appendix 3 and include descriptions of the soils encountered, groundwater conditions and stability of the pit sidewalls.

2.5 Plate Bearing Tests

Four plate bearing tests were conducted at a consistent depth of 0.50m below ground level [bgl]. Plate testing was undertaken to evaluate the modulus of sub-grade reaction (Ks) and equivalent CBR value. A 450mm diameter plate was used for the tests with kentledge provided by a tracked excavator. Two load cycle tests, in accordance with BS 1377, were performed and the load / settlement plots, Ks and equivalent CBR values are presented in Appendix 4 of the report.

2.6 Soakaway Tests (to BRE 365)

Two number infiltration tests were performed to assess the suitability of the sub-soils for dispersion of storm water through a soakaway system. The infiltration tests, undertaken in the test pits (BRE_), were performed in accordance with BRE Digest 365 'Soakaway Design'. To obtain a measure of the infiltration rate of the sub-soils, water was poured into each test pit, with records taken of the fall in water level against time. Following the first soak cycle, the procedure was repeated to ensure saturation of the sub-soils. A total of three soak cycles were completed at each test location. The

infiltration rate is the volume of water dispersed per unit of exposed area per unit of time, and is generally expressed as metres / minute or metres / second. Designs are based on the slowest infiltration rate, which is generally calculated from the final soak cycle. The soakaway design logs are presented in Appendix 5.

2.7 Groundwater Monitoring / Data Loggers

Groundwater monitoring was undertaken following boring / drilling works. Groundwater levels were measured using an electric dipmeter with measurements taken from the wells installed in the holes on the project (Table 3). The levels recorded are shown in Appendix 6. Post-fieldworks, levels were also taken on the date of data logger download.

Sixteen data loggers were installed in designated wells across the project. One barologger was also positioned on site to record fluctuations in barometric pressure over the long term. A once per month visit over twelve months is required by IGSL to download the logger information. The downloaded logger information, once processed, is being issued to the client. Note that the downloaded raw data (in excel format) will not feature in these reports. Instead, separate graphs showing the fluctuation in water level are presented in Appendix 7.

Table 3 – Well installations noting standpipe (SP/Piezo) diameter and response zones.
** Denotes datalogger installed*

			Response Zone	
Location	**Installation Date**	**SP diameter**	**From (m)**	**To (m)**
BH06*	11/07/2025	50mm SP	1.0	7.60
BH14*	19/06/2025	50mm SP	1.0	8.0
BH27A*	01/05/2025	50mm SP	1.0	8.0
BH32R*	28/07/2025	50mm SP	1.0	7.5
BH34R*	24/07/2025	50mm SP	1.0	6.7
RC01*	18/08/2025	50mm SP	1.0	6.0
		19mm Piezo (Tip = 8.70-9.0)	8.0	20.0
RC02*	08/08/2025	50mm SP	1.0	18.0
RC03	12/08/2025	19mm Piezo (Tip = 11.70-12.0)	11.0	20.0
RC04*	15/08/2025	50mm SP	1.0	3.50
		19mm Piezo (Tip = 4.70-5.0)	4.50	7.0
RC07*	02/09/2025	50mm SP	1.50	20.0
RC18*	24/07/2025	50mm SP	1.0	15.0
RC24*	12/05/2025	50mm SP	2.0	20.0
RC30A*	22/08/2025	50mm SP	1.0	17.50
RC40*	20/08/2025	50mm SP	1.50	11.80
RC42	22/08/2025	50mm SP	1.0	12.70
RC43*	27/08/2025	50mm SP	1.0	14.10
RC44*	22/09/2025	50mm SP	1.0	16.20
RC45*	25/09/2025	50mm SP	1.5	9.0

2.8 Surveying of Exploratory Hole Locations

Following completion of the exploratory works, surveying was carried out using GPS techniques. Co-ordinates (x, y) were measured to Irish Transverse Mercator and ground levels (z) established to Malin Head. The co-ordinates and ground levels are shown on the exploratory hole logs with locations shown on the exploratory hole plan in Appendix 12.

3. LABORATORY TESTING

Geotechnical laboratory testing was performed at IGSL's INAB-accredited laboratory in accordance with the methods set out in BS1377; British Standard Methods of Test for Soils for Civil Engineering Purposes; British Standards Institute:1990. The laboratory applies best practice management systems as per International Standard IS EN ISO/IEC 17025. The geotechnical testing included moisture contents, Atterberg Limits and particle size distribution [PSD] testing. The results from geotechnical testing on selected cable percussion borehole and trial pit samples are presented in Appendix 8.

Chemical analysis incorporating BRE SD1 Suite D (Brownfield Site – Pyrite Present) were scheduled on recovered soils and undertaken by Chemtest Laboratories. The chemical results are presented in the report in Appendix 9. Soil samples were selected from borehole and trial pit excavations for specialist WAC assessment using the *Rilta* Suite of environmental testing. These results are also presented in the Chemtest reports in Appendix 9.

Geotechnical Rock strength testing on selected core specimens comprised Point Load Strength Index [PLSI], uniaxial compressive strength [UCS] testing and Slake Durability Testing. The tests were performed in accordance ISRM Suggested Methods for Rock Characterization, Testing and Monitoring and the results are presented in Appendix 10. A number of Cerchar tests were performed on cores to determine the Cerchar Abrasivity Index (CAI). These are also presented in Appendix 10.

Groundwater samples were retrieved at water well installations in October and November, 2025. Prior to sampling, installations were developed in accordance with ISO 14868 (2003) and then purged of three times well volume (in accordance with BS 6068). The water samples were sent for analysis as per the "IEI Suite F" test suite. The test results received to date are presented in Appendix 11.

4. DESK STUDY

4.1 Published Maps – Soil

The Quaternary Soils plot for the area (Figure 2 – retrieved from GSI website) reaffirms the findings of the investigation and highlights the widespread nature of clay-dominant till (TLs) derived largely from the ubiquitous Carboniferous Limestone. The linear accumulations of gravel (GLs) and alluvium (A) found meandering across the route, track the course of both the Yellow River and that of the Boyne River, which are themselves possibly long-established glacial outwash alignments.

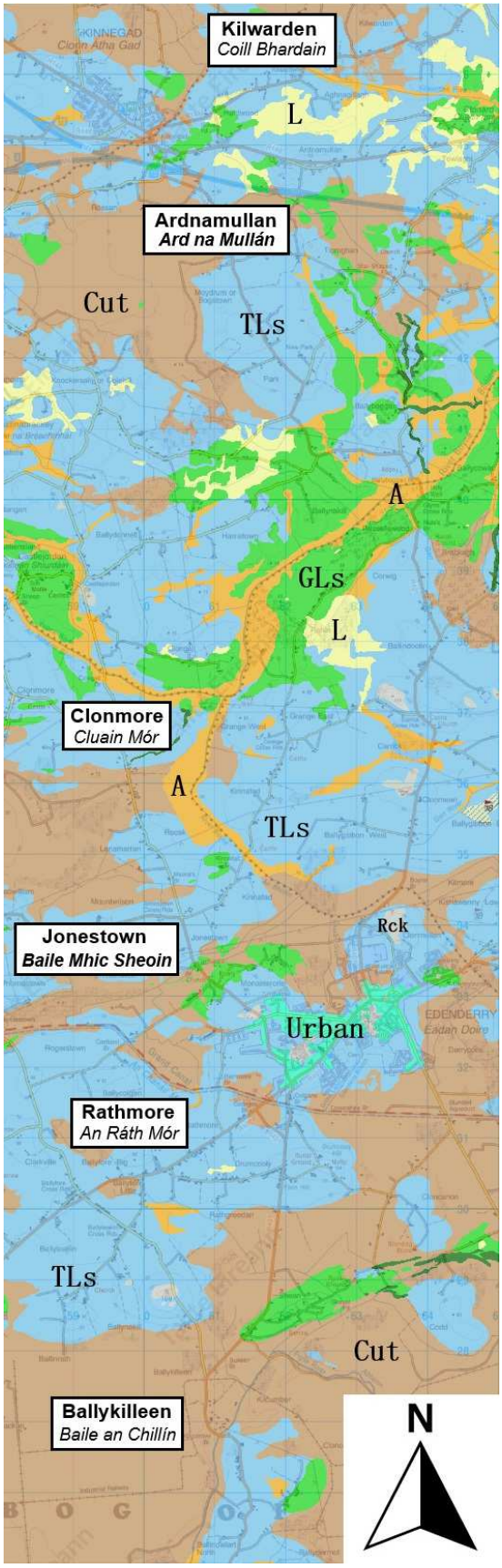


Figure 2 – Quaternary Soils Map for the pipeline route (retrieved from GSI website)

Key:

Urban	= Unclassified (Urban Cover)
Cut	= Cut over raised peat
A	= Alluvium
L	= Lacustrine
GLs	= Gravels derived from Limestones
TLs	= Till derived from limestones
Rck	= Bedrock outcrop or subcrop

4.2 Published Maps – Rock

Reference to the GSI map for the area (Figure 3, 1:100,000 Solid Geology series) shows that the site is underlain by chiefly Lower Carboniferous or Dinantian-aged bedrock. The rocks along the pipeline route are represented, for the most part, by the Edenderry Oolite Member of the Allenwood Formation, the Lucan Formation and the Waulsortian Limestones. These rock formations span a depositional history in the geological record of c. 20my from 360mya to 340mya [million years ago].

McConnell & Philcox (1994) describe the Edenderry Oolite Member (AWed) as a predominantly ooid mass with some exposures documented as displaying cross bedding typical of shallow water shelf depositional environment. Dolomitisation is noted as common in the oolitic limestone. Dolomitization is the process by which limestone comes into contact with magnesium-rich water, with the mineral dolomite, calcium and magnesium carbonate, $CaMg(CO3)_2$, replacing the calcite (calcium carbonate, CaCO3) in the rock, volume for volume. Dolomitization, whether complete or not, involves significant recrystallisation of the host rock. Dolomitised limestone and limestone are both prone to karstification.

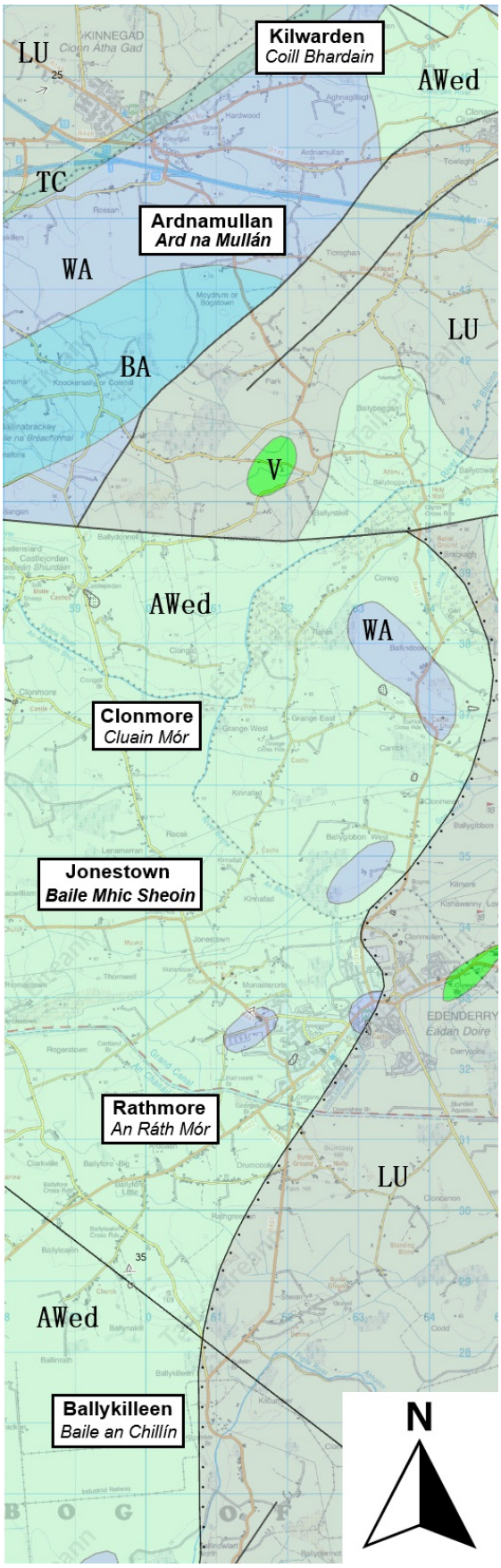
The Lucan Formation (LU) (Nolan 1986) forms the bulk of the basinal rocks throughout the geologically termed 'Dublin Basin', and is ategorizatio by graded, intraclastic skeletal packstone/grainstone interbedded with anoxic calcareous mudstone / black shale, laminated calcisiltite and argillaceous micrite (i.e. impure limestone with clay minerals). The Dublin (sedimentary) Basin extends spatially from the east coast of north County Dublin westwards to the River Shannon at Athlone (Somerville & Waters, 2011). It formed in the Lower Carboniferous during a gradual marine transgression from south to north. As a result, the depositional environment within the basin gradually progresses from terrestrial and shallow marine (Edenderry Oolite Member) to deep marine sedimentary facies (Lucan Formation). The basement found beneath the basin is likely to be comprised of Devonian terrestrial sandstone conglomerates (not mapped along route).

The Waulsortian Limestone (WA) largely consists of calcareous mudstones, wackestones and packstones many of them containing original cavities (including stromatactis) filled with internal sediments and fibrous and blocky sparry cements (Sevastopulo 1982). The very fine-grained carbonate lithology typical of the Waulsortian Limestones is also relatively pure and, in the right circumstances, amenable to dissolution and karst development. Blake *et al* (2015) suggest the Waulsortian limestone deposits within the Dublin Basin are massive and unbedded and are typically less prone to karstification. Waulsortian Limestone is also susceptible to Magnesium replacement and ategorization, which can further enhance permeability. McConnell & Philcox (1994) note the texture of the Waulsortian Limestone when dolomitized can make it almost indistinguishable from dolomitized Allenwood Formation limestones.

Figure 3 – Bedrock Geological Map for the pipeline route (retrieved from GSI website) (Adapted from Geraghty & McConnell, 1999)

Key:

AW = Allenwood Formation
AWed = Edenderry Oolite Member
LU = Lucan Formation
TC = Tober Colleen Formation
WA = Waulsortian Limestones
BA = Ballysteen Formation
V = Volcanics (in Carboniferous)



5. GROUND CONDITIONS & GROUNDWATER

5.1 Ground Profile – Superficial Deposits

The following is a summary of the ground conditions encountered across the site as identified by the exploratory locations. Each location is treated separately starting with the Kilwarden road crossing RDX1, ending with the Ballykilleen AGI area.

The HCC locations are not referred to in this summary report as they have been covered in the individual HCC reports already issued. Note that geological cross sections were drafted to illustrate the stratigraphic makeup at each of the HCC locations, HCC1 – HCC4 (See Appendices 13 – 16).

5.1.1 LOCATION: R161 Kilwarden (RDX1)
BH05, BH06

TOPSOIL

- Topsoil was found to be 0.20m thick in the boreholes.

Lacustrine / Alluvial (Possible Normally Consolidated) Soils

- Both boreholes encountered soft and soft to firm soils initially in the upper metre to 1.50m bgl. In the case of BH05, these soils are thought to continue to 3.0m depth (66.26m OD). This is based on a low SPT value at 1.0m (N=7). However, no SPT test drive was taken at 2.0m. Instead, a U100 sample was extracted at 2.0m. It took 3 blows to recover the 450mm long undisturbed sample. Although not a reliable or accepted indicator of soil strength, 3 blows would imply soft to firm soil.

- The published Quaternary soils map for the immediate area suggests soft soils running through the area (**Cut** = Cut over raised PEAT) (Figure 4). No peat was logged. It may be that the uppermost deposits are alluvial in origin.

- An SPT test at 2.0m in BH06, to the south of the R161, returned a N value of 19 which suggests stiff soil. In the absence of SPT data at 2.0m in BH05, further investigation, in the form of a number of dynamic probes, could be undertaken to better appreciate the strength or density of the surficial soils from 1.0m to 3.0m bgl.

Glacial TILL

- From ca. 3.0m, the soils appear to be more uniformly firm becoming stiff. The entry of over-consolidated glacial till is likely to be found between 3m and 4m depth described as a grey sandy gravelly SILT/CLAY. A further transition to very stiff grey CLAY is flagged in BH05 from 5.0m (64.26m OD). A similar trend of increasing SPT N-values is recorded in BH06.

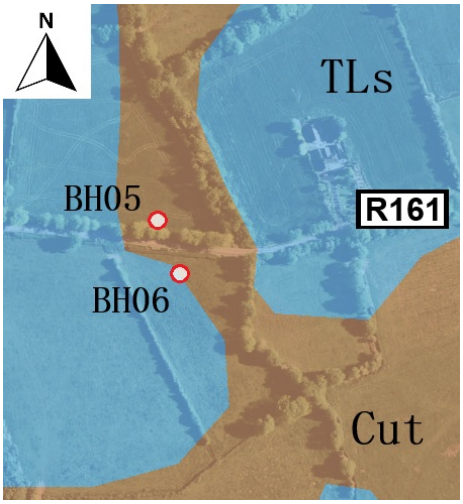


Figure 4 – Quaternary Soils Map for the boreholes either side of the R161 Regional Road. KEY: **Cut** = Cut over raised peat, **TLs** = Till derived from limestones

- Both boreholes encountered a water-bearing medium dense to very dense sandy coarse GRAVEL from 5.80m (63.46m OD & 63.20m OD). This was proven to be 1.20m thick in the case of BH06. The base of the gravel layer in BH05 was not proven as the borehole was ended in gravel at a depth of 7.10m (62.16m OD).

- A basal stiff grey CLAY was once again intercepted in BH06 from 7.0m to the borehole base at 7.90m (61.10m OD).

- A groundwater monitoring standpipe was installed in BH06. Measurements are being taken on an on-going basis using a data logger. Limited dip measurements from September to November 2025 show a rise from 1.39m bgl to 0.53m bgl over the course of three months.

5.1.2 LOCATION: R148, Old Dublin Road, Ardnamullen (RDX1)
BH13, BH13A & BH14

TOPSOIL

- Topsoil was found to range between 0.20m and 0.40m thick in the boreholes.

Variable-strength Glacial TILL

- Beneath the topsoil cover, a thin layer of soft and firm sandy SILT was encountered to 1.0m bgl.

- From 1.0m in both boreholes, the soils were described as brown sandy slightly gravelly SILT/CLAY with a low cobble content. The SPT plot for both boreholes is shown in Figure 5. When the two boreholes are compared, it can be seen that the N values are slightly higher for the soil column in BH13A in contrast to lower values obtained in BH14. The SPT values for the deposits in BH13A range from 8 to 38 whereas the values range from 8 to 15 for the tests from 1.0m to 5.0m in BH14. Overall, the soil column is regarded as firm in consistency, possibly firm to stiff in the case of BH13A.

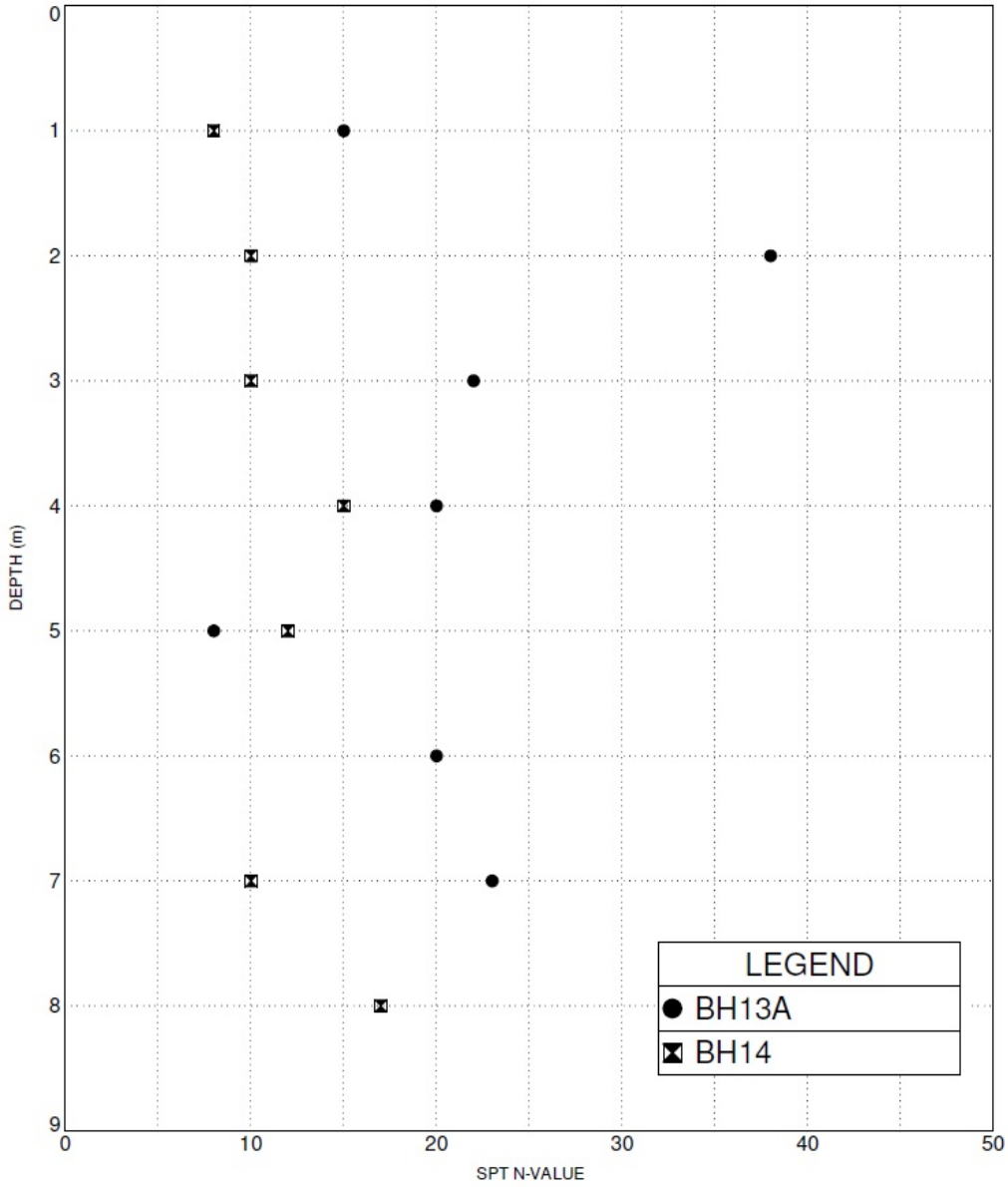
- Both boreholes were extended to 8.0m (required depth) without encountering bedrock. A boulder was pushed from 6.50m to 8.0m in BH13A which prevented soil being sampled and classified. A firm to stiff grey sandy gravelly SILT/CLAY was however logged from 5.30m to 8.0m in BH14.

- Water strikes in both holes were remarkable similar. In BH13A, a strike was measured at 6.0m (74.05m OD), rising to 5.70m. In BH14, the water was again struck at 6.0m (71.34m OD) and rose to 5.50m.

- Where SPT N-values recorded in boreholes are <10, it may be the case that disturbance caused by boring coupled with water ingress diminished the in situ strength of the upper silty soils which thereby delivered lower than expected or unrepresentative SPT results. The incidence of groundwater nearing 6.0m could have artificially softened the soils in that immediate area.

The standard penetration test [SPT] allows for an appraisal of the ground stiffness. An SPT data plot showing N-Vales against depth is shown in Figure 5. It highlights the initially soft and soft to firm nature of soils in test drives in shallow clay/silt overburden (1.0m). 'Low strength' deposits are those where N values of <10 blows are present.

Figure 5 – SPT Plot versus Depth for Cable Percussion Boreholes 13A & 14



5.1.3 LOCATION: Unnamed Road, Ardnamullan (RDX3)
BH14 & BH15

TOPSOIL

- Topsoil was found to range between 0.20m and 0.40m thick in the boreholes.

Variable-strength Glacial TILL

- Beneath the topsoil cover, as noted above for RDX2, a thin layer of soft sandy SILT was encountered to 1.0m bgl in BH14. In BH15, the SPT conducted at 2.0m depth was N=3. This suggests very soft or loose consistency soils. Once again, at 4.50m, an SPT value of 4 was registered. As a water strike was reported at 3.0m, it may be the case in BH15 that some soil softening has occurred promoted by the water strike. Given that there was a reasonably high SPT N value measured at 3.0m (N=21), and again from 5.0m to end depth (8.0m), the intervening low N values may be somewhat erroneous and may reflect soil softening due to water ingress or possibly due to loose sand lenses in BH15. Once again, to resolve this issue of inconsistent SPT results, dynamic probing may be useful to further assess the in situ strength parameters of the soil to both sides of the roadway.

- From ca. 5.0m depth bgl, a grey sandy gravelly CLAY is reported in both holes being logged as firm to stiff. Both boreholes were terminated at 8.0m (required depth) in this over-consolidated glacial till material.

- A rapid water strike was recorded in BH15 at 7.50m, rising to 3.50m. The depth of re-equilibrated water level appears to be around 3m (September to November 2025 dip readings in BH14).

5.1.4 LOCATION: R441, Mountwilson (RDX12)
BH26, BH27 & BH27A

TOPSOIL

- Topsoil was found to 300mm depth in the three boreholes.

Low Strength (weathered) Glacial TILL

- 'Low strength' deposits are those where N values of <10 blows are present. The soils in the uppermost metre in each of BH26, BH27 and BH27A saw SPT N values of 6 to 8 recorded in test drives at 1.0m. This soft uppermost layer was found to extend to between 1.40m to 1.70m bgl.

GLACIAL TILL

- From ca. 1.50m, consistently high SPT values were reported in each of the three boreholes (See Figure 7). The stiff and very stiff deposits were described as grey sandy gravelly CLAY.

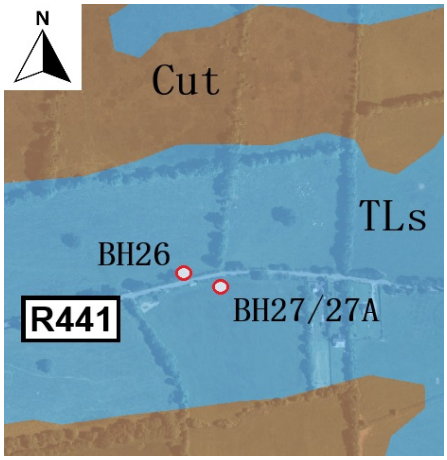
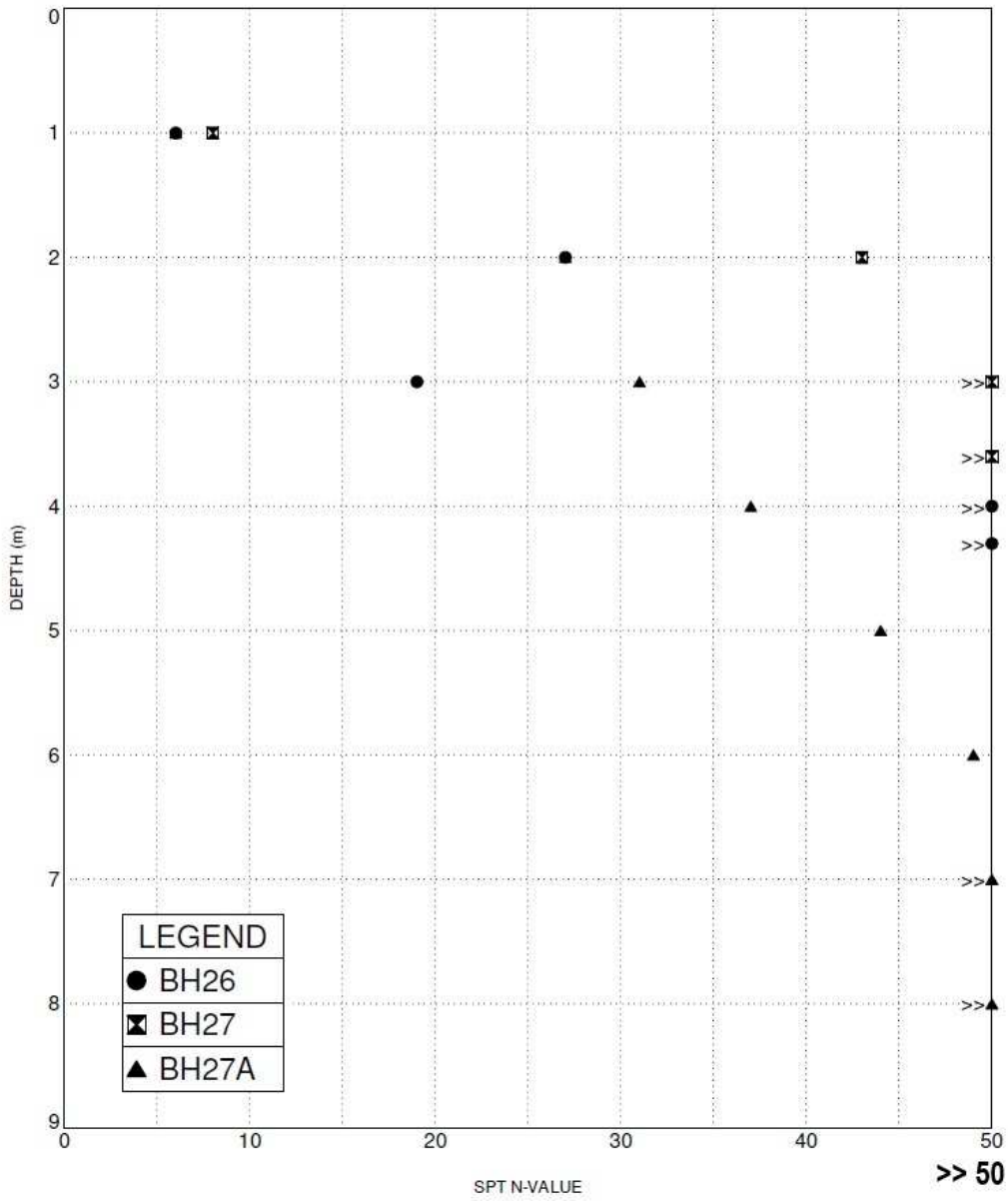


Figure 6 – Quaternary Soils Map for the boreholes either side of the R441 Regional Road.
KEY: Cut = Cut over raised peat, **TLs** = Till derived from limestones

- In both BH26 and BH27A, from 3.0m (70.35m OD) and 5.0m (68.20m OD), a grey silty very sandy GRAVEL with cobbles entered the stratigraphy. It appears both layers are water-bearing as water strikes were intercepted in both horizons.

Figure 7 – SPT Plot versus Depth for Cable Percussion Boreholes 26, 27 & 27A



5.1.5 LOCATION: R402, Rathmore / Drumcooly (RDX14)
BH32, BH32A, BH32R & BH33

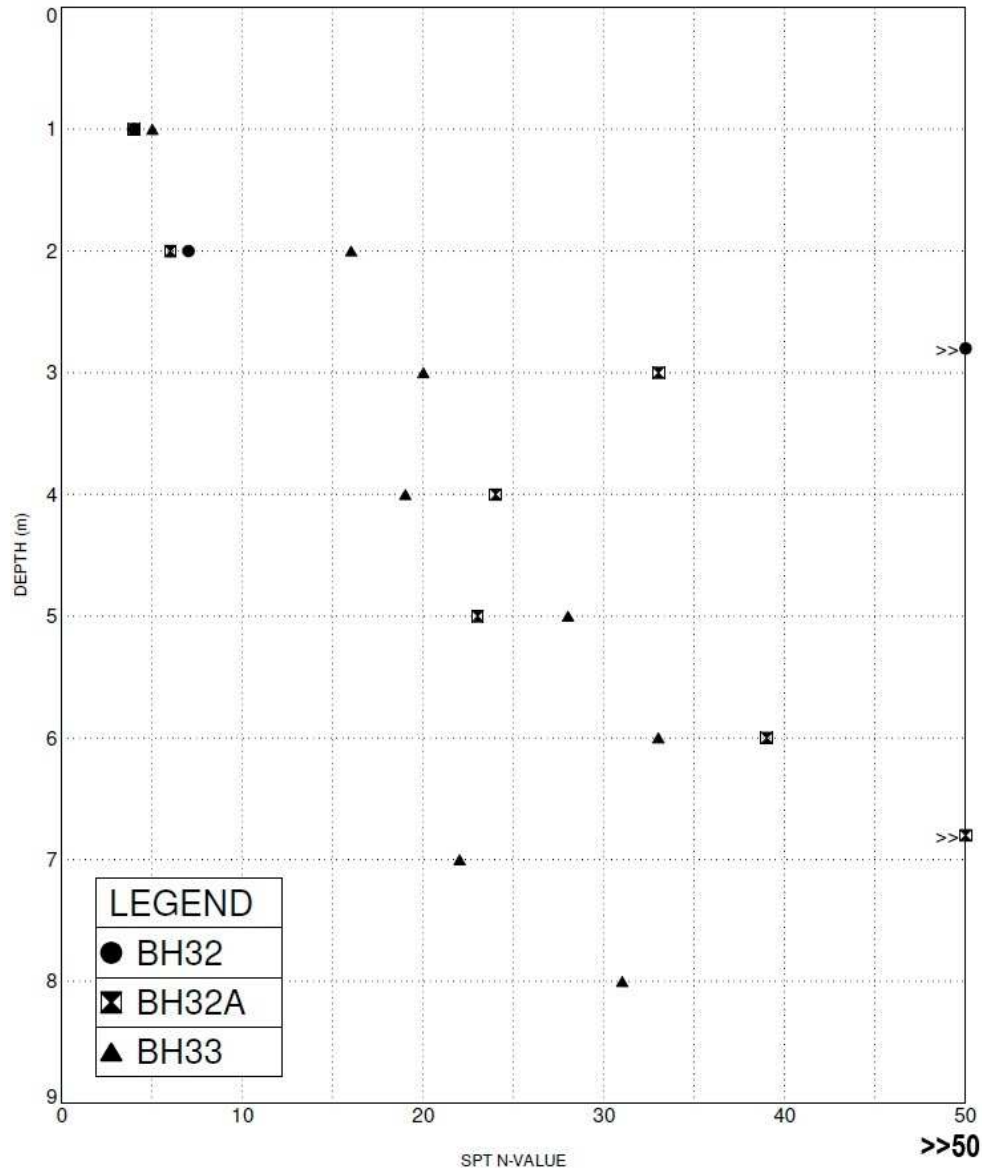
TOPSOIL

- Topsoil was found to range between 0.10m and 0.30m thick in the boreholes.

Variable-strength Glacial TILL

- North of the R402 road, the initial SPT test drives in each of BH32 and BH32A saw N values of between 4 and 7 (See Figure 8). This soft upper layer was found to extend to 2.50m bgl. This same layer appears to extend to 1.80m bgl south of the road in BH33.

Figure 8 – SPT Plot versus Depth for Cable Percussion Boreholes 32, 32A & 33



GLACIAL TILL

- From 2.50m in BH32/32A and from 1.80m in BH33, consistently high SPT values were reported in each of the three boreholes (See Figure 8). There appears to be a cobble / boulder bed at ca. 2.50m in BH32. The initial bore at BH32 ended in this layer at 2.80m bgl.

- The deposits from ca. 2.50m were described as stiff brown sandy gravelly CLAY with a high cobble content. From 4.0m in BH32A, a medium dense to dense grey brown clayey/silty slightly sandy cobbly GRAVEL was intercepted. The borehole was ended at 6.80m (74.06m OD) in this dense material.

- BH33, on the southern side of the R402, intercepted uniformly stiff CLAY and SILT/CLAY deposits from 1.80m to an end depth of 8.0m (required BH end depth).

- Water strikes were recorded in both BH32A (3.0m) and BH33 (6.50m). A water monitoring well was installed in BH32R. The recent dips show a re-equilibrated water level ranging from 2.50m (September) to 1.75m bgl (end October).

5.1.6 LOCATION: R401, Ballykilleen / Shean (RDX17)
BH56, BH57, BH34, BH34R & BH35

North of R401 Road
BH34, BH34R & BH56

PEAT / Soft Lacustrine SILT

- Northwest of the R401 saw the construction of boreholes BH34 (& BH34R) and BH56. Corroborating the Quaternary Soils map for the area, a mantle of very soft dark brown black PEAT was found/. It was proven to a depth of 1.50m.

- Underlying the PEAT, an equally soft grey sandy SILT was found. This was measured to be only 500mm thick in BH34 but extended to 3.80m depth below ground level in the nearby BH56.

Variable-strength Fluvioglacial outwash soil

- Beyond the base of very soft and soft soils entered clayey/silty SAND mixed with slightly sandy SILT/CLAY. These deeper buried soils in BH56 from 3.80m were loose to medium dense. BH56 ended at 8.0m (required depth).

- The base of BH34 differed in that a denser clayey/silty very sandy GRAVEL was intercepted from ca. 6.0m. BH34 (and BH34R) was ended in this very sandy GRAVEL at 8.0m (required depth).

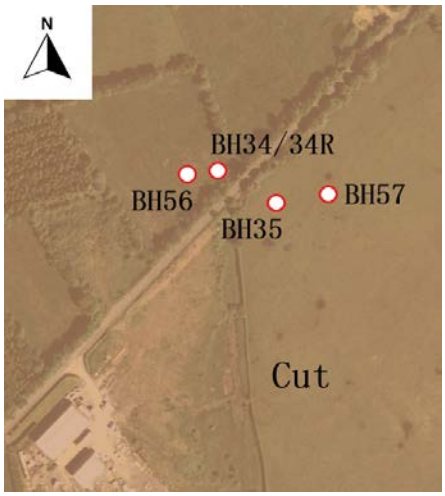
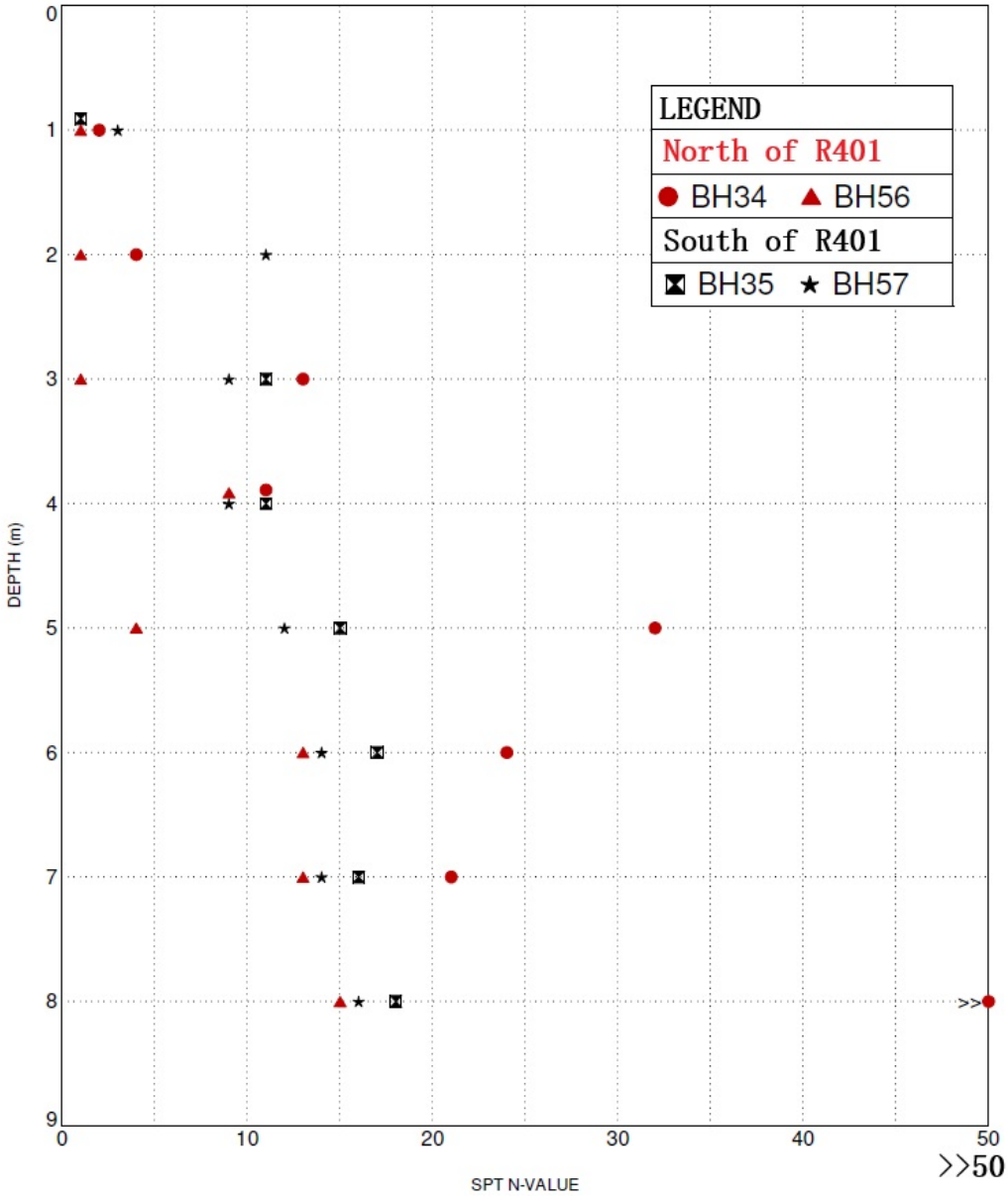


Figure 9 – Quaternary Soils Map for the boreholes either side of the R401 Regional Road. KEY: Cut = Cut over raised peat

- North of the R401 road, the initial SPT test drives in each of BH34 and BH56 saw low N values reported consistently to 2.0m (See Figure 10). The low values continued to 5m in BH56 where loose SAND were encountered. The blowcounts between the north and the south of the roadway are largely similar.

Figure 10 – SPT Plot versus Depth for Cable Percussion Boreholes at the R401 Road



South of R401 Road
BH35 & BH57

TOPSOIL

- Southeast of the R401, a very thin cover of Topsoil was found to 0.10m depth in both boreholes BH35 and BH57.

PEAT / Soft Lacustrine SILT

- At both locations, PEAT was proven to 1.50m and 1.0m depth. BH57 reported very soft grey sandy SILT to from 1.0m to 2.0m bgl (65.25m OD). In BH35, a soft to firm grey brown sandy CLAY was logged from 1.50m to 3.50m.

Variable-strength Fluvioglacial outwash soil

- Beyond the base of the low strength soils, in good agreement with the boreholes northwest of the roadway, were found loose and medium dense very silty SAND to sandy SILT/CLAY.

- Fine gravel was noted in the SAND from 4.50m to 8.0m in BH57. Both boreholes achieved the required end depth of 8.0m (8.50m in BH35).

- Water monitoring in BH34R has found levels ranging from 1.31m bgl (66.20m OD) in September 2025 to 1.13m bgl (66.38m OD) in late October 2025. A data logger was placed in BH34R in September.

5.1.7 LOCATION: Unnamed bog road, Shean / Ballykilleen
BH58 & BH59

TOPSOIL

- A cover of Topsoil was found to 0.10m depth in borehole BH58. This thickened to 0.40m in BH59.

PEAT / Soft Lacustrine SILT

- Very soft Peat was logged to 2.0m bgl in BH59. In contrast, only 300mm of PEAT was uncovered in BH58. In place of the PEAT, a very soft grey brown peaty SILT was logged from 0.40m to 2.0m in BH58.

- Underlying the thick cover of PEAT in BH59, an equally soft grey brown sandy gravelly SILT was found from 2.0m to 4.0m (63.15m OD).

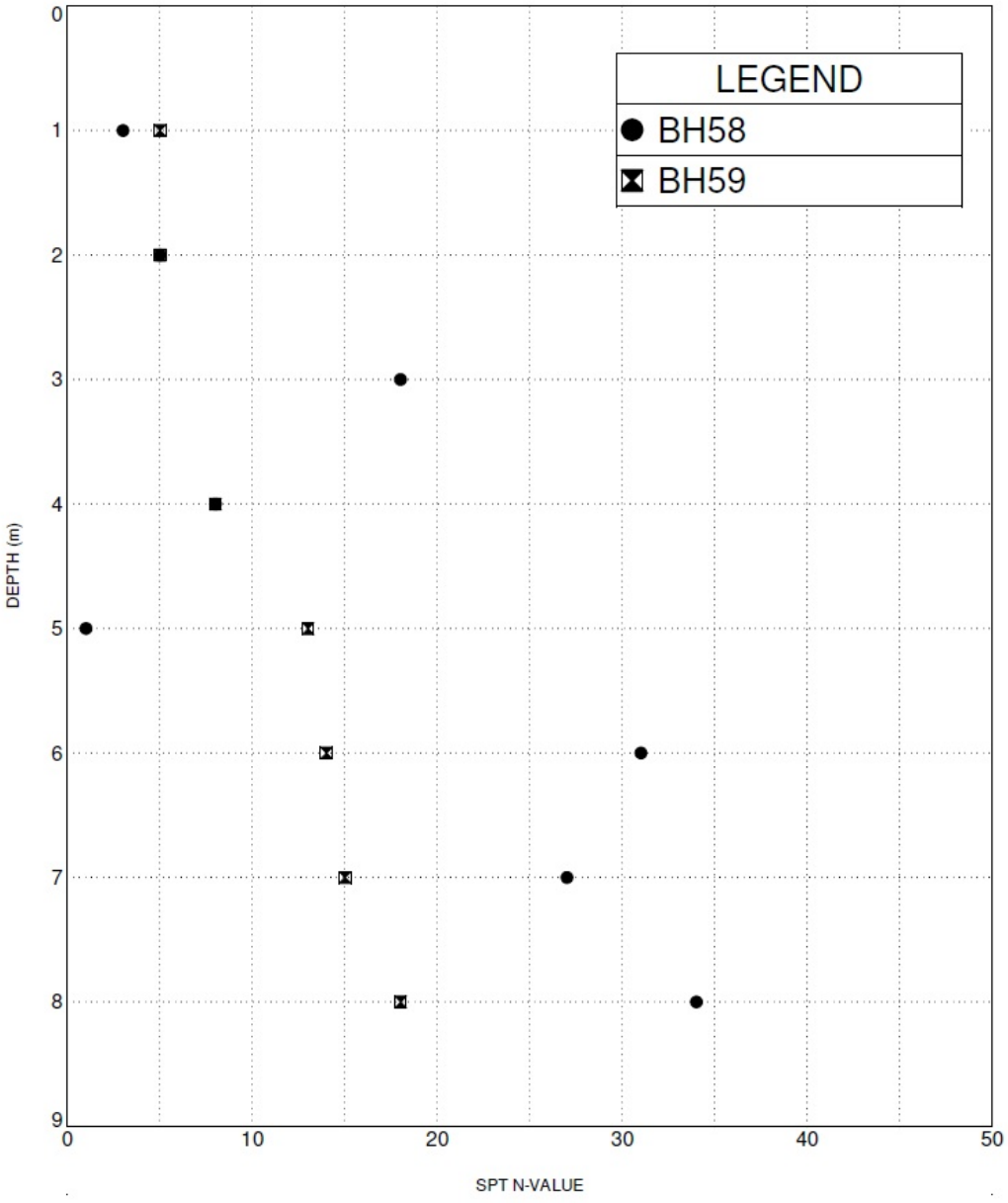
Variable-strength Fluvioglacial outwash soil

- As with other holes nearby at the R401, beneath the very soft and soft occasionally organic soils were found clayey/silty SAND and slightly sandy SILT/CLAY. These soils varied in strength, occasisonlly very soft / loose, albeit likely disturbed due to water ingress ahead of SPT testing.

GLACIAL TILL

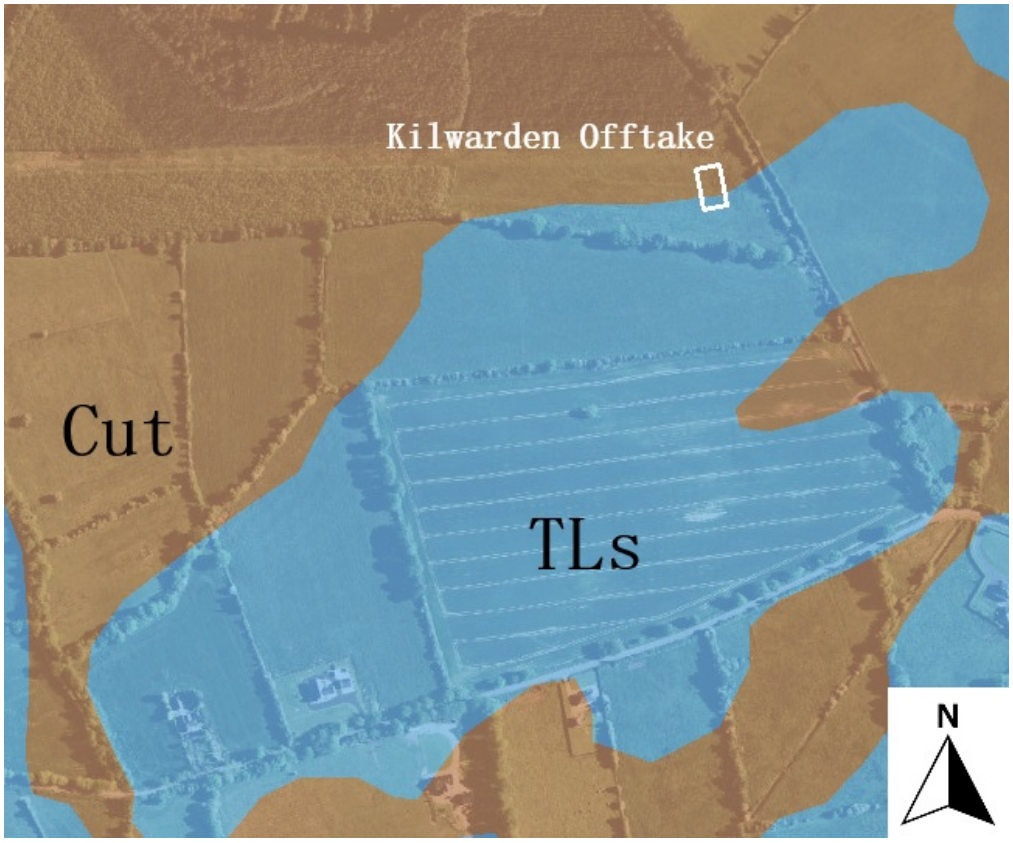
- Towards the base of BH58 saw the entry of a medium dense to dense grey brown slightly silty sandy GRAVEL from 5.80m (60.91m OD) to 8.0m (base of hole). This is illustrated clearly in the SPT plot (Figure 11) where a marked increase can be seen in the N values from 6.0m.

Figure 11 – SPT Plot versus Depth for Cable Percussion Boreholes 58 & 59



5.1.8 LOCATION: Kilwarden Offtake
BH/RC01, 02, 03 & 04. TP/PBT1.1, TP/PBT/SA1.2

Figure 12 – Quaternary Soils Map for the Kilwarden Offtake and approach.
KEY: Cut = Cut over raised peat, **TLs** = Till derived from limestones



TOPSOIL

- A peaty TOPSOIL to clayey PEAT was remarked in both trial pits at the site to a depth of 0.30m.

- Each of the four boreholes conducted at the site found a thin cover of TOPSOIL (100mm) underlain by a soft brown peaty SILT/CLAY to 0.20m or 0.30m bgl.

Glaciolacustrine / Fluvioglacial Deposits

- Belying what are typically low SPT N-values in the uppermost metre at the Kilwarden Offtake site, the two trial pits TP1.1 and TP1.2 saw hand shear vane strengths of 100kPa recorded widely in the uppermost "firm to stiff" light grey mottled yellow SILT (0.50m and 1.0m test depths). Rare organic remnants were also observed in this surficial material. Plate testing at 0.50m in both pits returned equivalent CBR load values of 2.30% and 0.90% improving to 2.40% and 6.20% for the reload cycle.

- The SPT N values from the boreholes can be viewed in Figure 14.

- Throughout the extent of both trial pits, the soils were logged as either firm to stiff and stiff, with very stiff used to describe the material from 1.0m to 3.0m in TP1.2 ("very stiff light grey sandy SILT with occasional organic remnant"). However, sidewall instability was a common trait with seepages and rapid water ingress (TP1.2 at 2.50m) identified during excavation (See Figure 13).

- Pits ended at 3.80m (65.95m OD) and 3.90m (65.59m OD).

Figure 13 – Trial Pit TP1.1 excavated to 3.80m. Poor sidewall stability was a common observation in both pits TP1.1 and TP1.2. Collapse was observed from 1.90m but sidewalls can be seen to spall from ground level.



- The four boreholes achieved end depths ranging 5.90m to 6.10m. In the case of both locations 01 and 02, bedrock was later proven by coring at 6.10m and 6.0m.

- SPT values increase consistently with depth as can be viewed in Figure 14. Borehole BH01 found firm to stiff and stiff grey from 2.20m to 4.80m, where a dense grey very sandy GRAVEL with cobbles and boulders was met to borehole end depth of 6.10m. A similar stratigraphy was viewed in each of BH02, BH03 and BH04.

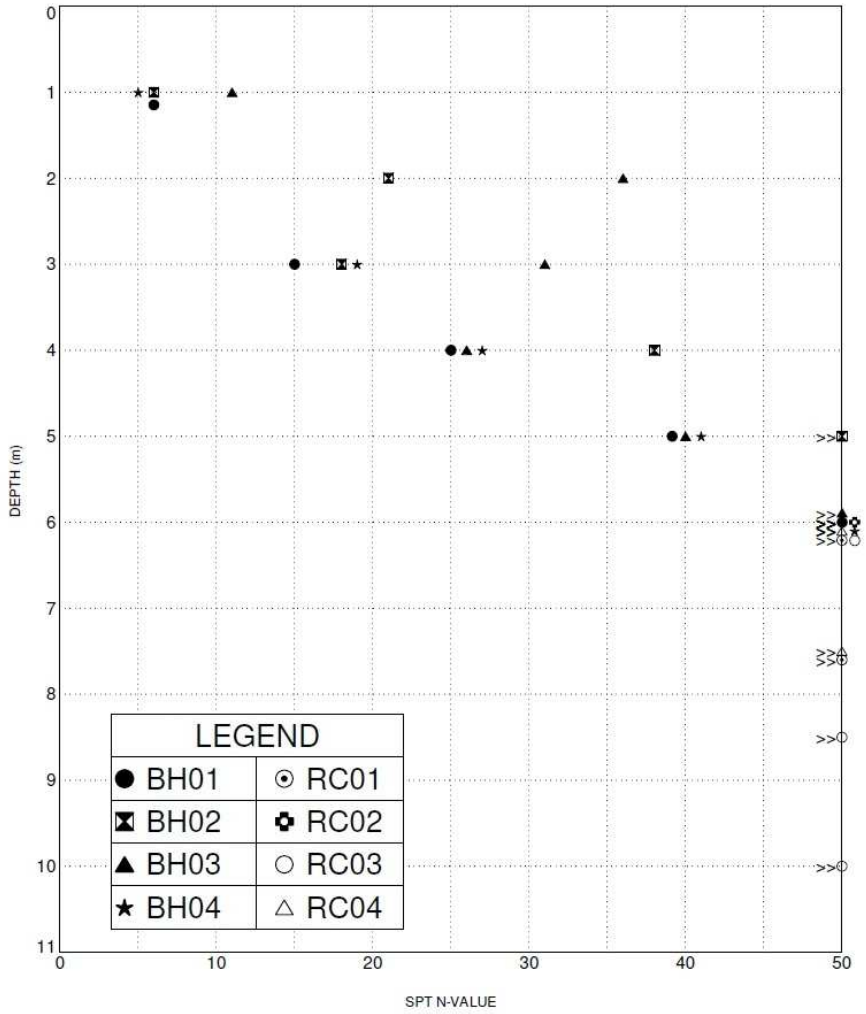
- Significant groundwater rises were noted following strikes across the four boreholes. Based on observations made during borehole construction, the buried and confined GRAVEL layer at depth is water bearing. Rapid rises of up to 4m in groundwater level were recorded in the boreholes.

- The soakaway test conducted in pit TP1.2 indicates the shallow CLAY/SILT is impermeable. A seepage was noted at 1.50m bgl. This may have contributed to the lack of infiltration over the course of the test.

- Data loggers were installed in RC01, RC02 and RC04. Water levels were dipped at or near ground level in each of the wells over the course of September to November 2025. It was noted during trial pit excavation that groundwater appeared to be rising from the ground in one area near the investigation locations. The potential for a spring(s) to be present in the area cannot be discounted.

- Beyond the cable percussion borehole end depths in each of BH03 and BH04, a "clayey GRAVEL" was logged in RC03 from 6.10-9.50m with a similar "grey sandy GRAVEL" in RC04 from 6.10-7.50m. Both RC03 and RC04 located bedrock at 9.50m and 7.50m respectively. SPT testing conducted in the rotary drillholes beyond the end depths of the cable percussion boreholes suggest the "GRAVEL" material is very dense. It may be the case that the "GRAVEL" was a highly to completely weathered limestone bedrock.

Figure 14 – SPT Plot versus Depth for Cable Percussion Boreholes and Rotary Drillholes at the Kilwarden Offtake.



5.1.9 LOCATION: Kilwarden Approach
RC41. BH/RC40, 42, 43, 44 & 45. TP3.1 – 3.5

The findings of the five trial pits, five boreholes and six cored drillholes are ategoriza below. The locations are aligned with the pipeline route for approximately 600m to the west of the Kilwarden Offtake. The Quaternary Soils map for the area is shown in Figure 11. Although no peats were found during the investigation of the immediate area, a mantle of fine grained SILT/CLAY soils appear to overlie deeper-seated, and higher strength, glacial till deposits.

TOPSOIL

- Topsoil was found to range between 0.10m and 0.30m thick in the trial pits.
- Each of the five boreholes registered a 0.20m thick topsoil.

Glaciolacustrine / Fluvioglacial Deposits

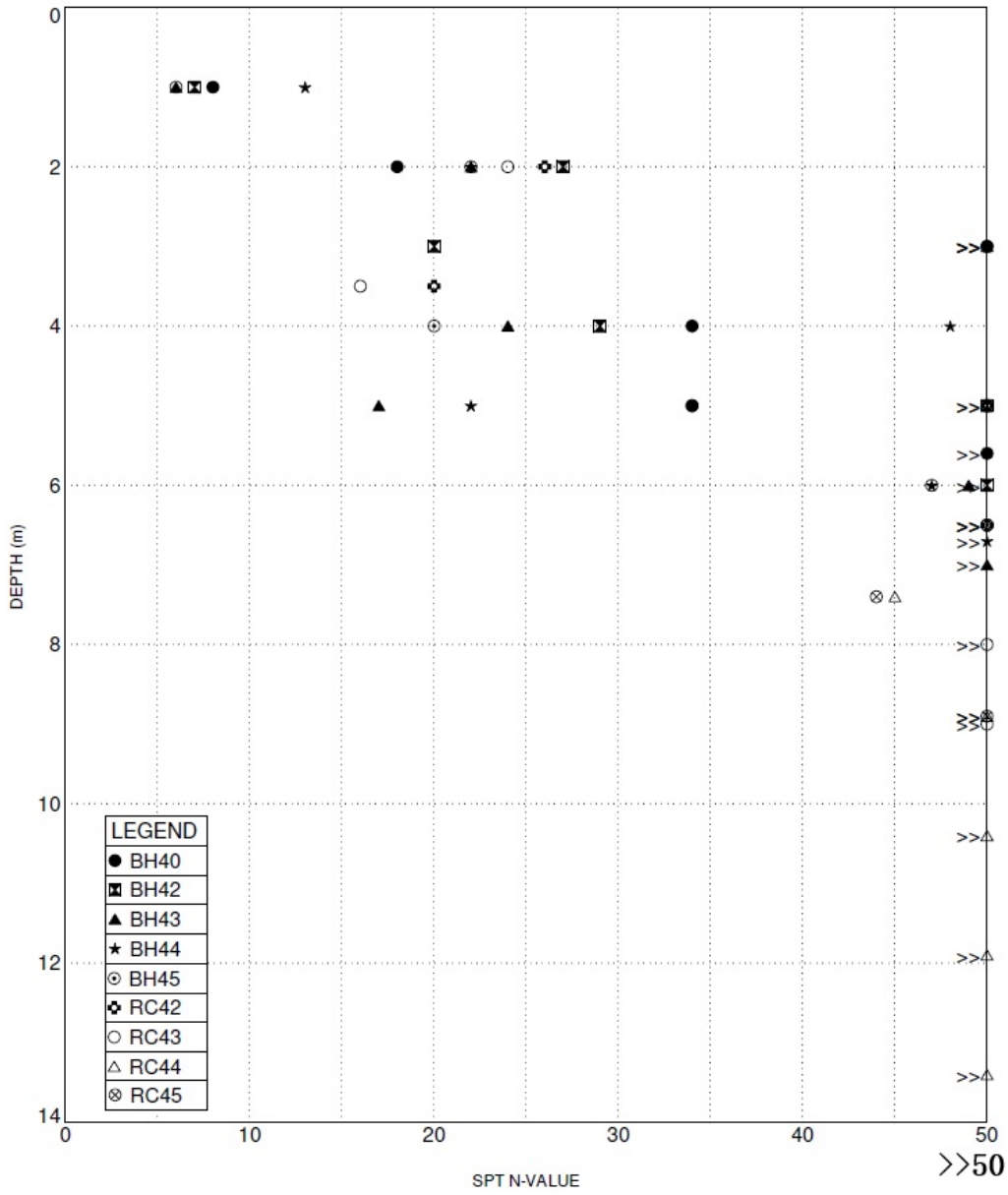
- The trial pits, for the most part, identified firm surficial soils, becoming stiff with depth. The soils were mainly colour-mottled (orange, grey and brown) and sandy gravelly SILT/CLAY in composition.
- Hand shear vanes were carried out in the uppermost soils in all five trial pits at 0.50m and 1.0m bgl. They derived in situ shear strengths typical of firm to stiff soils. The presence of gravel constituents may have led to a slight overestimation of the shear strength.
- SPT testing in boreholes suggests soft and soft to firm soils mainly in the uppermost 1.50m.
- There was a broad consistency in trial pit stratigraphic profiles whereby the soils from ca. 1.0m were generally firm and firm to stiff. Although stiff soils were logged to the pit bases (ranging 2.50m to 4.0m bgl), sidewall instability was a common occurrence. TP3.2 terminated due to continual sidewall collapse (See Figure 15).

Figure 15 – Trial Pit TP3.2 excavated to 2.50m. Poor sidewall stability was frequently observed in pits at Kilwarden. Collapse in TP3.2 was observed from ground level to the pit base.





Figure 16 – SPT Plot versus Depth for Cable Percussion Boreholes and Rotary Drillholes at the Kilwarden Offtake 'Approach'.



- Boreholes terminated at depths ranging 5.60m to 7.50m bgl. The overburden soils, mainly sandy gravelly SILT/CLAY soils were, as with the trial pits, found to increase in strength from firm to stiff / very stiff. There are instances in four of the five boreholes of very dense and dense sandy cobbly GRAVEL entering the sequence, culminating in borehole refusal. The GRAVEL layers were encountered from depths ranging 4.50m to 5.80m bgl. In the case of BH45, the gravel bed was found to be water-bearing with a groundwater strike at 4.80m rising to 3.10m bgl.

- In all cases, in order to intercept bedrock, the rotary drillholes RC40-RC45 extended to depths greater than the cable percussion end depth. The intervening soil cover ranged in

composition from medium dense SAND (RC40), to very stiff CLAY and silty sandy GRAVEL (RC44) and very stiff grey black sandy gravelly CLAY (RC45).

- Cored drillholes RC43 and RC44 were not carried out as "follow-on" drillholes at cable percussion borehole locations BH43 and BH44. Access to the original "set out" locations was not made available at the time of cable percussion boring (June/July 2025) whereas it was possible (due to crop harvesting) at the time of coring (September 2025) (Figure 17).

- Water strikes vary considerably when exploratory holes are compared. Dip measurements since well installation show an elevated groundwater table, rising from ca. 1.50m bgl in September 2025 to levels between 0.89m bgl and 0.34m bgl in November 2025. This reflects the seasonality in water level fluctuations at the site between the months of September to November 2025.

Figure 17 – Location of Cable Percussion Boreholes BH42 and BH43 compared to the location of Rotary Drillholes RC42 and RC43 at the Kilwarden Offtake 'Approach'.



5.1.10 LOCATION: Ballykilleen GNI
BH/RC36, 37, 38, 39. TP/PBT2.1, TP/PBT/SA2.2

Figure 18 – Quaternary Soils Map for the Ballykilleen AGI at Edenderry Power
KEY: Cut = Cut over raised peat



TOPSOIL / MADE GROUND

- Both pits encountered MADE GROUND initially. A very thin peaty TOPSOIL to clayey PEAT was found in both trial pits at the site to a depth of 50mm.

- The MADE GROUND comprised firm to stiff grey brown mottled yellow CLAY to 0.70m in TP2.1. In TP2.2, the infilled soils were soft grey sandy gravelly peaty CLAY and fimr grey silty cobbly CLAY. Rare cloth was observed in TP2.1.

- Although not identified on the logs as MADE GROUND, a mantle of what is referred to as “soft grey SILT” and “very soft brown sandy gravelly CLAY” was logged in the first metre of each borehole. It was found to overlie a very soft brown PEAT. For this reason, the SILT/CLAY is assumed to be MADE GROUND.

- There was possible disturbance in TP2.1 where peat pockets were found buried in a firm to stiff grey blue sandy SILT from 1.20m to 2.20m. These were limited to the pits northern wall.

PEAT / Soft Lacustrine SILT

- A layer of very soft dark brown PEAT was logged in many of the exploratory hole locations at the AGI site. Only pockets of PEAT were noted in TP2.1. Table 4 lists the depths at which PEAT was encountered and the thicknesses recorded.

Table 4 – Depth to PEAT and thicknesses found in intrusive locations on site at Ballykilleen AGI.

Exploratory Hole Location	PEAT from m / m OD	PEAT to m / m OD	Thickness m
TP2.1*	-	-	-
TP2.2	1.0 (66.85)	1.80 (66.05)	0.80
BH36	1.80 (66.26)	2.50 (65.56)	0.70
BH37	2.0 (66.01)	2.30 (65.71)	0.30
BH38	1.80 (66.68)	4.0 (64.48)	2.20
BH39	1.0 (66.78)	2.0 (65.78)	1.0

**only found as pockets in SILT from 1.20m to 2.20m*

- Hand shear vane tests at 0.75m bgl in trial pit TP2.1 suggests the shallow natural soil ranges between firm and stiff. The values (90, 95, 100Kpa) may be slightly elevated given the soil horizon was somewhat surcharged under a cover of MADE GROUND. Although there is an organic signature to the grey sandy SILT, the consistency in the soil is remarked as "firm to stiff" to the base of the pit (3.80m – See Figure 19).

- As is evidenced by the SPT plot in Figure 20, SPT N values to depths of 12 and 13m do not appear to improve, remaining <10 for the most part. This points to uniformly very soft / soft or loose soils, ie, low strength soils. There are clearly outliers in this sequence of low results (consecutive SPT N-values in BH37 of 25 and 19 measured in a gravelly SAND at 5.0 and 6.0m).

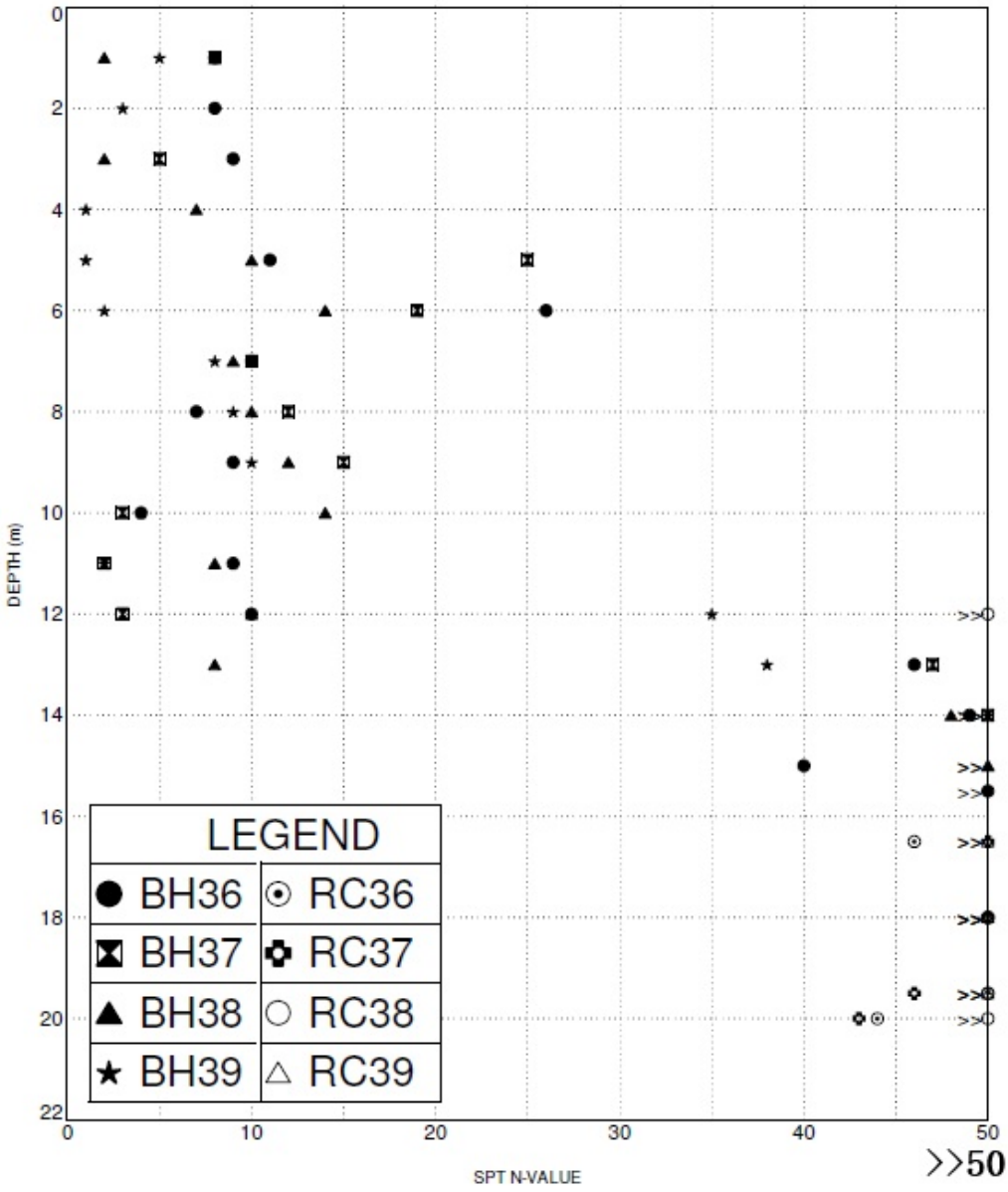


Figure 19 - Sidewall profile in pit TP2.1 (3.80m deep)

- Given the complex interaction between SILT / fine silty SAND and pore water fluctuations potentially induced by boring, fueled by often rapid groundwater strikes, the undertaking of CPT (Cone Penetration Testing) testing would

be strongly recommended to re-assess the in situ density / strength of the fine-grained soils to ca. 13-14m depth.

Figure 20 – SPT Plot versus Depth for Cable Percussion Boreholes and Rotary Drillholes at the Ballykilleen AGI.



GLACIAL TILL

- At depth in each of the four boreholes, below the thick grey silty SAND / sandy SILT beds, there exists a marked transition to a high strength glacial till. In BH36, this stratum was described as a dense slightly silty/clayey sandy GRAVEL. Cable percussion borehole BH36 achieved 3m penetration into the Gravel, 12.50m (55.56m OD) to borehole end depth at 15.50m bgl. Similarly, in BH38, a dense grey slightly clayey/silty sandy cobbly GRAVEL was encountered from 14.0m (54.48m OD).

- In BH37, the till was logged as a very stiff grey brown slightly sandy gravelly CLAY with cobbles and boulders. It was met at 12.70m (55.31m OD).

- Finally, in BH39, a dense gravelly SAND completed the cable percussion borehole from 12.0m (55.78m OD) to 14.0m (53.78m OD).

- Rotary open holing was conducted at each of the four BH locations. It served to complete each hole to a depth of 20m. By using Symmetrix open hole system, the drill rigs were able to push each drillhole into very stiff / very dense ground. As with the cable percussion boreholes, the use of SPT testing allowed strength descriptors to be apportioned.

- At location 36, openhole drilling extended the drillhole from 15.50m to 20m. Very dense sandy clayey GRAVEL and sandy GRAVEL were recorded by the driller to 20m. A similar sandy GRAVEL stratum was observed in BH37 from 14.60m. Very dense sandy clayey GRAVEL was logged in RC38 from 15.50m to 20m.

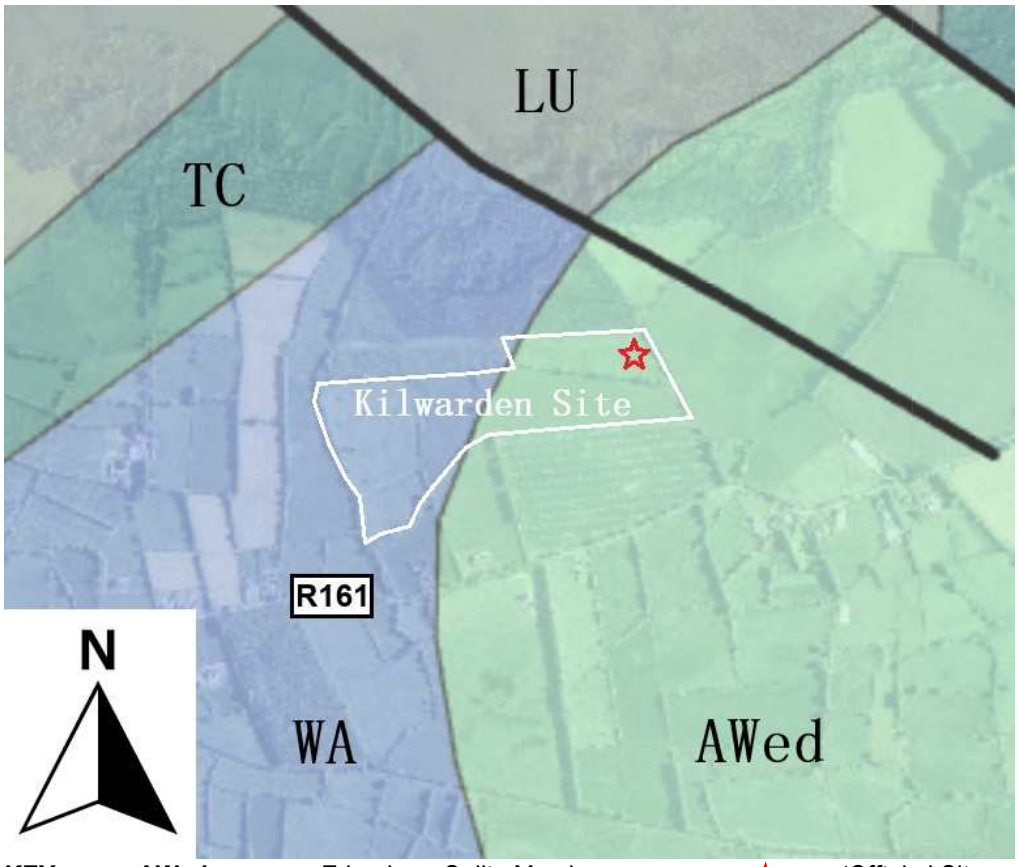
- At location 39, from 14.0m, open holing identified sandy clayey GRAVEL, sandy cobbly GRAVEL and clayey sandy GRAVEL to 20m. SPT records for the open hole drilling generally recorded values of N>>50 (See Figure 20)

- No installations were specified in the area of the Ballykilleen AGI. A range of deep-seated groundwater strikes was registered during boring from 4.50m to 9.0m bgl, with some of the water incursions noted as “rapid”. Only minor seepages were logged during open hole drilling. If long term monitoring is required, piezometer installation could be accomplished by the CPT rig during testing.

5.2 Bedrock – Kilwarden Offtake / Kilwarden Approach

As referenced earlier in Section 4, the GSI rock map for the area (Figure 21, 1:100,000 Solid Geology series) shows that Waulsortian Limestones along with the Edenderry Oolite member of the Allenwood Formation underlie the site. The Waulsortian Limestone is comprised of very fine-grained carbonate limestones more specifically pale grey biomicrite (a limestone consisting of skeletal debris and carbonate mud). The Edenderry Oolite member is described as a bio-oosparite.

Figure 21 – Bedrock Geological Map for the Kilwarden Site area (retrieved from GSI website) (Adapted from Geraghty & McConnell, 1999)



KEY:

AWed	=	Edenderry Oolite Member	★	= 'Offtake' Site
LU	=	Lucan Formation		
TC	=	Tober Colleen Formation		
WA	=	Waulsortian Limestones		

Rotary drilling was conducted at ten locations at Kilwarden – four at the 'Offtake' site and a further six along the route of the pipeline, over a 500m section west towards the R161. Such was the weathered and highly fractured state of the uppermost bedrock, drill casing was often pushed beyond rockhead into more competent stratum where core recovery was more favourable. In the case of RC02, at the Offtake site, pulverised drilling returns from 6.0m to 8.50m bgl were remarked as "Possible weathered Rock". Coring began at 8.50m in this case.

Deeper in RC02, from 15.70m to 19.80m, the drillhole was subject to open hole drilling once again. This is thought due to the rocks highly fractured nature. When coring was resumed at 19.80m, a stiff to very stiff light brown very sandy slightly gravelly CLAY was recovered to the hole end depth of 20.50m. This suggests zones of variable weathered bedrock in the sequence. There was evidence

of dolomitization noted during logging with localised orange brown discolouration on discontinuity surfaces, albeit non-penetrative.

Drilling successfully proved rock at each of the ten RC locations. At the Kilwarden Offtake site, the depths to rockhead ranged from 6m to 9.50m bgl with, as mentioned, the potential for higher rockhead to have been masked by closely spaced fracturing and/or high grade weathering. These depths corresponded to elevations of 63.76 OD and 60.45m OD. Figure 22 shows the core recovery in RC04 at the northern edge of the Offtake area.

From RC40 to RC45, the cores were generally similar in composition although the geological map suggests a change in lithology from the Allenwood Formation's Edenderry Oolite Member to that of the Waulsortian Limestone, both being calciferous limestone. Rock was found to deepen somewhat from east to west, ranging from 7.50m bgl (63.36m OD) (RC40) to 13.70m (57.70m OD) (RC44).

The recovered cores consist of predominantly fresh to slightly weathered, weak to strong, generally medium strong to strong, light to dark blue/black fine-grained massively bedded LIMESTONE. The bedrock is further classified as consisting of both calci-siltite layers and argillaceous / muddy limestone, being locally slightly dolomitised.

Discontinuity spacings in the rotary cores generally ranged from closely (60 to 200mm) to widely spaced (600 to 2000mm). The discontinuity surfaces were typically smooth and locally rough, planar to irregular. Apertures were tight to open, locally exhibiting clay smearing, iron oxide staining with some calcite veinfill. Dips were generally sub-horizontal, locally 30° and irregular. Subvertical fractures were also recored in logging.

The point load strength index (PLSI) test data produced $I_s(50)$ values for the Offtake site ranging from 0.37 to 5.22 MPa with a mean value of 3.10 MPa. Similarly, at the approach, the values ranged from 0.40 to 5.42 MPa with an average of 3.23 MPa. Overall, the PLSI strengths are suggestive of the presence of a strong rock mass.

Using a correlation factor (K) of 22 to assess compressive strength, this suggests a characteristic strength envelope in the order of 8.8 to 119 MPa and categorizes the bedrock as weak (5 to 25MPa) to very strong (100 to 250MPa), predominantly strong (See Figure 23).

The visual strength descriptors determined during engineering geological logging marry well with the overall plot scatter in Figure 23.

ISO 14689:2017 I rock strength parameters are drawn on Figure 23 to allow correlation between UCS and Point Load Strength tests. A correlation factor (K) of 22 was used to plot the ISO 14689:2017 I MPa strength divisions on the Point Load strength ($I_s(50)$) plot.

Uniaxial Compressive Strength [UCS] testing was undertaken on eight core samples selected from eight coreholes. Table 5 shows the results obtained. It can be seen from the rock description column that without exception the sample specimens were described as fine grained fresh limestone ranging in colour from dark grey to light bluish grey and light grey. UCS testing can produce slightly biased results given test specimens must be sufficiently long to test. Bieniawski & Bernede (1979) state that a height to diameter ratio of 2.5-3.0 is recommended for UCS test specimens. This would require samples measuring at least 220mm in length. Therefore, adequate test specimens of sufficient length are generally not obtainable in the weaker material where fracture spacing often inhibits sample selection. Where carried out, the testing reaffirms the weak to strong strength range for the limestone bedrock.

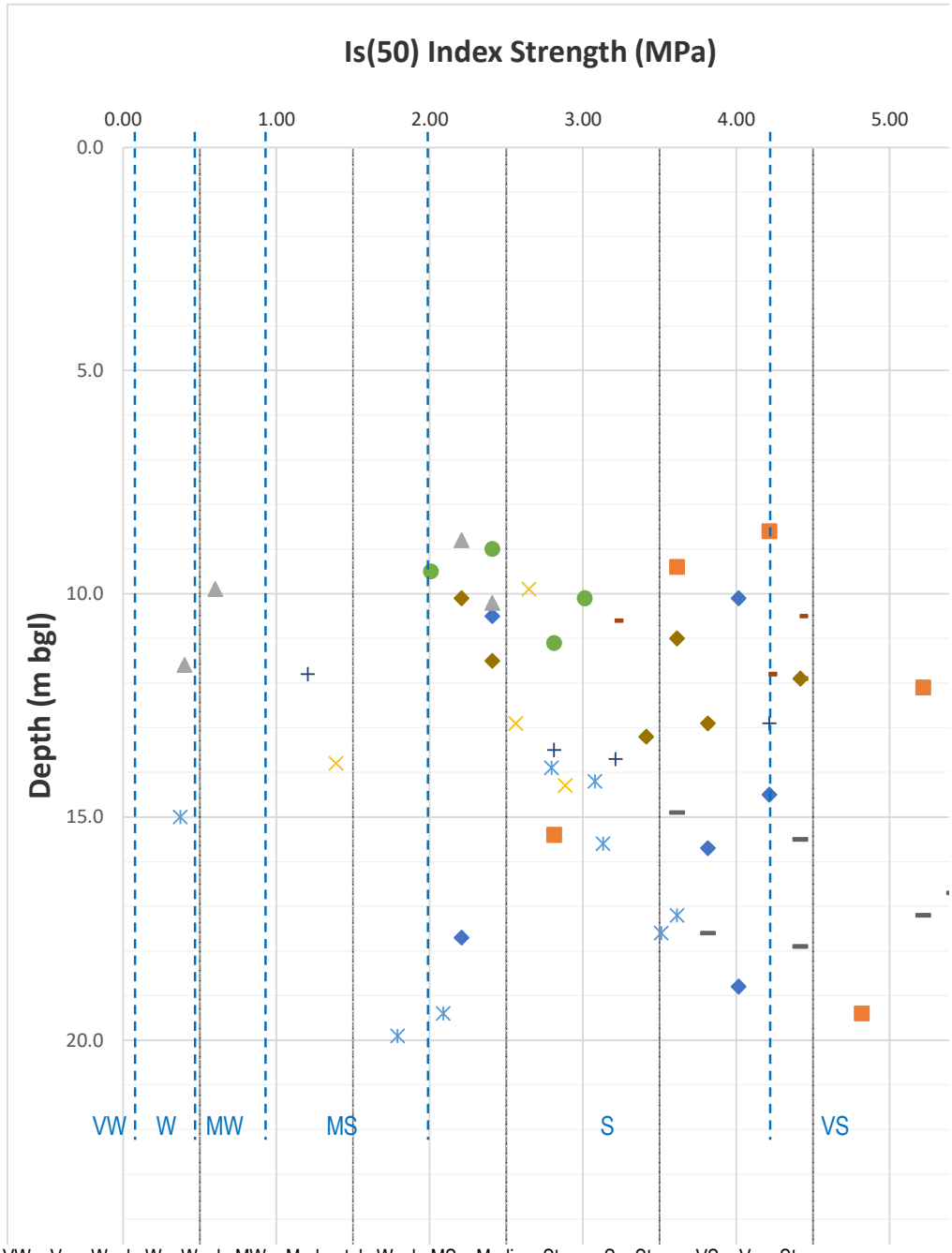
Table 5 – Uniaxial Compressive Strength [UCS] test results obtained from core samples

Exploratory Hole	Depth (m)	Level (m OD)	UCS (MPa)	Rock Strength (ISO 14689:2017 I)	Rock Description
RC01	14.50	55.05	74.31	Strong	Light bluish grey fine grained fresh Limestone
RC02	14.30	55.46	64.08	Strong	Light blueish grey fine grained fresh Limestone
RC03	16.80	53.15	21.97	Weak	Light blueish grey fine grained fresh Limestone
RC04	17.70	52.01	17.58	Weak	Light blueish grey fine grained fresh Limestone
RC40	9.40	61.46	77.01	Strong	Dark grey fine grained fresh Limestone
RC41	10.60	60.81	34.53	Medium Strong	Light grey fine grained fresh Limestone
RC44	17.30	54.10	23.44	Weak	Light blueish grey fine grained fresh Limestone
RC45	11.0	59.32	60.27	Strong	Dark grey fine grained fresh Limestone

Figure 22 – Bedrock cores in RC04 from 8.50m to 19.60m bgl



Figure 23– Is(50) strengths obtained from diametrial Point Load Strength Index testing



VW = Very Weak, W = Weak, MW = Moderately Weak, MS = Medium Strong, S = Strong, VS = Very Strong (ISO 14689:2017 I)

5.3 Groundwater

As outlined throughout Section 5.1, groundwater strikes in pits, boreholes and drillholes were largely restricted to depths beyond 2.0m bgl (See Table 6). However, trial pits did encounter seepages at shallower levels and pit sidewall stability was an issue in many of the trial pit excavations. At the time of excavation at the Kilwarden Offtake (March 2025), water was noted sitting on the ground and there may have been a groundwater springs emerging locally.

Sump pumping is likely to be required where shallow perched water entries are met. Elsewhere, where excavation in natural soils is required beyond 1.0 / 1.50m, based on re-equilibration data, this will likely necessitate dewatering. Many of the dip measurements (and therefore data logger records) show re-equilibration of groundwater up to 0.50m bgl and higher, most especially in the Kilwarden area. It may be the case that water will re-equilibrate to near surface level at the 'Offtake' most especially during the wetter months of Winter / Spring.

Table 6 – Water measurements in on-site exploratory holes (per RDX location)

Location		Route Codes (where applicable)	Loc ID	Water Strike Details				Data Logger Loc
				STRIKE	Rise To (20min)	Depth at End	Dip Range (Sept-Nov)	
Road Crossing (**RDX**)	R161 Kilwarden	**RDX1**	BH05 BH**06**	5.90 M 5.80 M	2.80 4.70	1.70 3.10	- 1.39-0.53	- BH06
	R148, Old Dublin Road, Ardnamullen	**RDX2**	BH13 BH13A **BH14**	- 6.0 S 6.0 S	- 5.70 5.50	- - -	- - 2.82-3.63	- - BH14
	Unnamed Road, Ardnamullan	**RDX3**	(BH**14**) BH15	6.0 S 3.0 S 7.5 R	5.50 2.50 3.50	- - -	2.82-3.63 - -	BH14 - -
	R441, Mountwilson	**RDX12**	BH26 BH27 **BH27A**	3.0 M 3.0 M 3.0 M 5.0 M	1.80 2.70 2.70 4.0	- - - -	- - 1.10-2.23	- - BH27A
	R402, Rathmore / Drumcooly	**RDX14**	BH32 BH32A BH**32R** BH33	- 3.0 M 3.0 M 4.0 R 6.50 M	- 1.50 2.0 1.50 6.0	- - - - -	- - 1.75-2.50 -	- - BH32R
	R401, Ballykilleen / Shean	**RDX17**	BH56 BH56 BH57 BH34 **BH34R** BH35	4.0 S 6.0 R 3.0 M 5.0 R 5.0 R 8.0 R	3.50 2.0 1.50 2.0 2.0 3.50	- - - - - -	- - - 1.13-1.31 -	- - - - BH34R -
	Unnamed bog road	-	BH58 BH59	5.0 M 6.0 S	3.0 5.0	- -	- -	- -

Table 6 (*Continued*)

Location		Route Codes (where applicable)	Loc ID	Water Strike Details				Data Logger Loc
				STRIKE	Rise To (20min)	Depth at End	Dip Range (Sept-Nov)	
	Kilwarden Offtake	-	BH01	5.0 R	1.50	1.20	-	
			RC01	-	-	1.66	0.10-0.72	RC01
			BH02	3.0 M	1.30	1.10	-	
			RC02	4.50	-	-	0.77-0.20	RC02
				7.0	-	0.80	-	
			BH03	3.50 M	2.0	1.10	-	
			RC03	6.0	-	1.12	0.60-1.25	
			BH04	4.90 R	1.70	1.30	-	
			RC04	5.0	-	2.16	0.73-0.14	RC04
			TP1.1	1.1 SE	-	-	-	
			TP1.2	1.5 SE	-	-	-	
			TP1.2	2.50 R	-	-	-	
	Kilwarden Approach	-	BH40	-	-	-	-	
			RC40	-	-	2.46	0.44-1.49	RC40
			RC41	2.50	-	-	-	
				6.0	-	1.46	-	
			BH42	-	-	2.70	-	
			RC42	5.0	-	6.26	0.63-1.50	
			BH43	-	-	3.40	-	
			RC43	3.0	-	-	0.52-1.08	RC43
				5.0	-	1.52	-	
			BH44	3.30 M	2.0	3.20	-	RC44
			RC44	14.7 S	-	2.80	0.43-0.63	
			BH45	4.80 M	3.10	2.80	-	
			RC45	-	-	5.0	0.33-0.34	RC45
			TP3.1	0.9 SE	-	-	-	-
			TP3.2	Dry	-	-	-	-
			TP3.3	0.7 SE	-	-	-	-
			TP3.4	Dry	-	-	-	-
			TP3.5	0.8 SE	-	-	-	-
	Ballykilleen AGI	-	BH36	9.0 R	6.0	6.0	-	-
			RC36	19.7SE	-	18.50	-	-
			BH37	4.50 S	4.0	-	-	-
				6.0 R	2.0	-	-	-
			RC37	15.8SE	-	14.70	-	-
			BH38	6.0 R	2.0	-	-	-
			RC38	2.60SE	-	-	-	-
				19.10SE	-	3.70	-	-
			BH39	7.0 R	3.0	-	-	-
			RC39	2.90 SE	-	-	-	-
				16.9SE	-	3.70	-	-
			TP2.1	1.35 SE				
			TP2.2	1.80 SE				

Se = Seepage
S = Slow
R = Rapid
M = Moderate

Should water be encountered during deeper digs / excavations it is likely that de-watering will be required through a combination of strategic sump pumping. The potential does exist for there to be seasonal changes in groundwater level. The works were carried out during Spring / Summer / early Autumn 2025. It may be the case that the various waterbodies at depth are subject to seasonal variations. Data logger information will continue to be downloaded over the next nine months to give one full year of data.

5.4 Slopes / Batters

In the absence of trench stabilisation methods, a maximum temporary slope angle of 1V to 1.5H (33º) is anticipated for batters constructed within the upper low to medium and medium strength fine grained soils. A slope angle of 1V to 2H (26°) should be appropriate for long term batters in the same soils. Further investigation (dynamic probing / trial pitting) on the pipeline corridor should pinpoint any soft zones / stability issues in near surface SILT/CLAY / silty SAND, ie., RDX1 Kilwarden.

Where deep excavation works are required in the superficial deposits, the use of trench box support is advised. In addition, the uppermost fine subsoils will be susceptible to softening and degradation and surface water or groundwater ingress can lead to a significant reduction in shear strength. Perched water or groundwater springs can exist locally and this should be considered in risk assessments for excavations.

Site operatives or personnel should not enter unsupported excavations and should be informed of potential risks. Where site operatives or engineering staff work in close proximity to temporary slopes or batters, these should be inspected and approved by a suitably experienced civil engineer, preferably with geotechnical experience. Where there is a risk of spalling of battered slopes, the use of a geogrid is recommended. The geogrid should be anchored at the top and bottom of the ridge face to contain particles such as gravel, cobbles and / or boulders that may become dislodged.

5.5 Buried Concrete

The chemical analysis tests show pH values generally between 8.0 and 8.5 with sulphate aqueous extract (SO_4) values mainly <10mg/l (See Table 7). This would categorise the upper natural soils as BRE Class DS-1. Table C1 ACEC for greenfield sites in BRE SD 1 (2005) could be used in the selection and design of concrete. With mobile groundwater conditions and given the pH values obtained, then ACEC class AC-1^{d} would be expected to be appropriate for buried concrete in natural soils.

There are exceptions to the rule. In BH15 (3.0m), a water soluble sulphate value of 670mg/kg was recorded with a pH of 7.4. This sulphate value would attract a BRE Class DS-2 (500-1500 mg/l) ategorization. An ACEC class AC-2 would be appropriate in this case at RDX3.

In line with I.S. EN 206-1:2013 concrete could be manufactured to Class XA1 where founded or positioned in the upper soils (Class XA1 being ≥ 2000 and ≤ 3000 SO_4^{2-} mg/kg). However, based on the chemical results, there does not appear to be any issue with “chemical attack”.

Table 7 – pH and WSS Results along 23km Pipeline Route

Location		Route Codes (where applicable)	Investigation Points	Chemtest Report	Values / Ranges	
					pH	WSS SO_4
Road Crossing (**RDX**)	R161 Kilwarden	**RDX1**	BH05 BH06	25-24474	- 8.4	- <10
	R148, Old Dublin Road, Ardnamullen	**RDX2**	BH13A BH14	25-25515 25-23231	8.6 8.4	<10 <10
	Unnamed Road, Ardnamullan	**RDX3**	BH14 BH15	25-23231 25-21003	8.4 7.4	<10 670
	R441, Mountwilson	**RDX12**	BH26	25-17444	8.6	<10
	R402, Rathmore / Drumcooly	**RDX14**	BH33	25-17444	8.7	<10
	R401, Ballykilleen / Shean	**RDX17**	BH35	25-16703	8.1	<10
	Unnamed bog road	-	BH58 BH59	25-16703	- 7.6	- 180
	Kilwarden Offtake	-	BH01, 02, 03, 04 TP1.1, 1.2	25-23231 25-16703	8.5-8.7 -	17-22 -
	Kilwarden Approach	-	BH40, 42, 43, 45 TP3.1, 3.2, 3.3, 3.4, 3.5	25-23231 25-16703	8.2-8.5 8.5-8.6	<10 <10
	Ballykilleen AGI	-	BH36, 37, 38, 39 TP2.1, TP2.2	25-16703 25-16703	8.0-8.3 8.0	26-81 19

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Appendix 1

Cable Percussion Borehole Logs

BH01 – BH59

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH01**
		SHEET	Sheet 1 of 1
CO-ORDINATES	663,472.19 E 746,785.34 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	69.55	**BOREHOLE DEPTH (m)**	6.10
		DATE COMMENCED	23/06/2025
		DATE COMPLETED	23/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	D.Tolster
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		69.45	0.10						
	Soft brown peaty CLAY		69.25	0.30						
	Soft grey sandy gravelly SILT				AA223601	B	0.50			
1					AA223602	B	1.00		N = 6 (0, 1, 1, 1, 2, 2)	
2			67.35	2.20	AA223603	U	2.00	40%rec 30 blows		
	Firm to stiff grey slightly sandy slightly gravelly CLAY with occasional cobbles & boulders				AA223604	B	2.50			
3					AA223605	B	3.00		N = 15 (1, 1, 1, 2, 4, 8)	
4					AA223606	B	4.00		N = 25 (2, 3, 5, 5, 7, 8)	
			64.75	4.80						
5	Dense grey clayey/silty very sandy GRAVEL with a medium cobble and low to medium boulder content				AA223607	B	5.00		N = 40 (6, 10, 10, 10, 10, 10)	
6			63.45	6.10	AA223608	B	6.00		N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 6.10 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
6	6.1	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
5.00	5.00	No	1.50	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
23-06-25	6.10	6.10	1.20	End of BH

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH02**
		SHEET	Sheet 1 of 1
CO-ORDINATES	663,439.34 E 746,777.94 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	69.76	**BOREHOLE DEPTH (m)**	5.90
		DATE COMMENCED	26/06/2025
		DATE COMPLETED	27/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	D.Tolster
		PROCESSED BY	T.G

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		69.66	0.10						
	Soft brown peaty CLAY		69.56	0.20						
	Soft brown mottled grey sandy SILT									
1			68.56	1.20	AA213944	B	1.00		N = 6 (0, 1, 1, 2, 1, 2)	
	Firm to stiff dark grey sandy gravelly SILT with ocassional cobbles and boulders									
2					AA213945	B	2.00		N = 21 (2, 3, 4, 6, 5, 6)	
			66.76	3.00						
3	Medium dense fine very sandy GRAVEL (possibly gravelly sand)				AA213946	B	3.00		N = 18 (2, 4, 4, 5, 5, 4)	
			65.76	4.00						
4	Very dense grey slightly clayey/silty sandy GRAVEL with a medium cobble content				AA213947	B	4.00		N = 38 (5, 8, 9, 10, 10, 9)	
5					AA213948	B	5.00		N = 44/225 mm (8, 12, 14, 15, 15)	
			63.86	5.90	AA213949	B	5.80			
6	Obstruction End of Borehole at 5.90 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
5.8	5.9	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.00	3.00	Yes	1.30	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
26-06-25	5.90	5.90	1.10	End of BH

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH03**
		SHEET	Sheet 1 of 1
CO-ORDINATES	663,433.04 E 746,794.15 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	69.95	**BOREHOLE DEPTH (m)**	6.10
		DATE COMMENCED	25/06/2025
		DATE COMPLETED	26/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	D.Tolster
		PROCESSED BY	T.G

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		69.85	0.10						
	Soft brown peaty SILT		69.65	0.30						
	Soft grey sandy SILT									
1			68.75	1.20	AA213937	B	1.00		N = 11 (0, 1, 1, 2, 4, 4)	
	Firm grey sandy gravelly SILT/CLAY with ocassional cobbles									
			68.05	1.90						
2	Very stiff dark grey sandy gravelly CLAY with a medium cobble and low boulder content				AA213938	B	2.00		N = 36 (6, 9, 9, 10, 9, 8)	
3					AA213939	B	3.00		N = 31 (5, 7, 7, 8, 7, 9)	
			66.35	3.60						
	Dense grey slightly clayey/silty sandy GRAVEL with a medium cobble content									
4					AA213940	B	4.00		N = 26 (5, 5, 6, 5, 6, 9)	
5					AA213941	B	5.00		N = 40 (5, 9, 9, 10, 9, 12)	
			64.45	5.50						
	Very stiff grey slightly sandy slightly gravelly SILT/CLAY with occasional cobbles (possibly clayey gravel)				AA213942	B	5.50			
6			63.85	6.10	AA213943	B	6.00		N = 50/150 mm (18, 21, 29)	
	Obstruction End of Borehole at 6.10 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.1	3.4	1	
5.7	6.1	2	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.50	3.50	Yes	2.00	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
26-06-25	5.80	5.80	1.10	End of BH

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH04**
		SHEET	Sheet 1 of 1
CO-ORDINATES	663,461.08 E 746,808.53 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	69.71	**BOREHOLE DEPTH (m)**	6.10
		DATE COMMENCED	24/06/2025
		DATE COMPLETED	24/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	D.Tolster
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		69.61	0.10						
	Soft brown peaty SILT		69.41	0.30						
1	Soft becoming soft to firm grey slightly gravelly sandy SILT				AA223609	B	1.00		N = 5 (0, 1, 1, 1, 1, 2)	
2					AA223610	U	2.00	70%rec 25 blows		
			67.31	2.40						
	Firm to stiff grey very sandy gravelly SILT/CLAY				AA223611	B	2.50			
3			66.61	3.10	AA223612	B	3.00		N = 19 (2, 4, 4, 4, 5, 6)	
	Medium dense clayey sandy GRAVEL with a medium cobble and low to medium boulder content									
4					AA223613	B	4.00		N = 27 (2, 7, 7, 7, 6, 7)	
			65.01	4.70						
	Dense grey slightly clayey/silty sandy GRAVEL with occasional cobbles & boulders									
5					AA223614	B	5.00		N = 41 (6, 9, 10, 10, 11, 10)	
			63.61	6.10						
6	Obstruction End of Borehole at 6.10 m				AA223615	B	6.00		N = 50/75 mm (25, 50)	
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
5.2	5.5	0.5	
6	6.1	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.90	4.90	No	1.70	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
24-06-25	6.10	6.10	1.30	End of BH

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH05**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,884.38 E 746,286.21 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	69.26	**BOREHOLE DEPTH (m)**	7.10
		DATE COMMENCED	08/07/2025
		DATE COMPLETED	09/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	D.Tolster
		PROCESSED BY	T.G

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		69.06	0.20						
	Soft brown/grey sandy silty gravelly CLAY with ocassional cobbles				AA223935	B	1.00-1.45		N = 7 (0, 1, 2, 2, 1, 2)	
1			67.46	1.80						
	Soft to firm light grey sandy silty CLAY				AA223936	U	2.00-2.45	100%rec 3 blows		
2					AA223937	B	2.50			
			66.26	3.00						
3	Stiff grey sandy silty gravelly CLAY with ocassional cobbles				AA223938	B	3.00-3.45		N = 13 (1, 2, 2, 3, 3, 5)	
					AA223939	B	4.00-4.45		N = 23 (3, 5, 5, 6, 5, 7)	
4			64.26	5.00						
5	Very stiff grey sandy gravelly CLAY with cobbles and boulders				AA223940	B	5.00-5.45		N = 35 (6, 8, 8, 9, 8, 10)	
			63.46	5.80						
6	Very dense grey fine sandy coarse GRAVEL				AA223941	B	6.00-6.45		N = 43 (6, 5, 9, 11, 11, 12)	
7			62.16	7.10	AA223942	B	7.00-7.10		N = 50/20 mm (25, 50)	
	Obstruction End of Borehole at 7.10 m									
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
7	7.1	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
5.90	5.90	Yes	2.80	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
09-07-25	7.10	7.10	1.70	End of BH

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH06**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,901.38 E 746,253.54 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	69.00	**BOREHOLE DEPTH (m)**	7.90
		DATE COMMENCED	10/07/2025
		DATE COMPLETED	11/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	T.G

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		68.80	0.20						
1	Soft brown/grey sandy SILT/CLAY with ocasional gravel		67.50	1.50	AA223943	B	1.00-1.45		N = 10 (0, 1, 1, 2, 2, 5)	
2	Firm and firm to stiff grey/brown sandy silty gravelly CLAY				AA223944	B	2.00-2.45		N = 19 (2, 3, 4, 4, 6, 5)	
3			65.80	3.20	AA223945	B	3.00-3.45		N = 10 (2, 1, 2, 2, 3, 3)	
4	Stiff to very stiff grey sandy gravelly CLAY with cobbles and boulders				AA223946	B	4.00-4.45		N = 24 (5, 5, 6, 5, 6, 7)	
5					AA223947	B	5.00-5.45		N = 45 (7, 7, 10, 15, 10, 10)	
6	Medium dense grey fine sandy angular to subrounded fine to coarse GRAVEL		63.20	5.80	AA223948	B	6.00-6.45		N = 26 (5, 6, 6, 7, 7, 6)	
7	Stiff grey sandy silty gravelly CLAY with cobbles and boulders		62.00	7.00	AA223949	B	7.00-7.45		N = 26 (1, 2, 3, 6, 8, 9)	
8	Obstruction End of Borehole at 7.90 m		61.10	7.90	AA223950	B	7.60-7.90		N = 50/150 mm (2, 13, 32, 18)	
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
5.2	5.5	0.5	
7.7	7.9	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
5.80	5.80	No	4.70	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
01-07-25	7.60	1.00	7.60	50mm SP

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
11-07-25	7.90	7.90	3.10	End of BH

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH07**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,902.19 E 745,937.07 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	67.85	**BOREHOLE DEPTH (m)**	8.10
		DATE COMMENCED	17/07/2025
		DATE COMPLETED	18/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	D.Tolster
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		67.55	0.30						
	Soft grey sandy slightly gravelly SILT/CLAY									
1			66.55	1.30	AA238659	B	1.00-1.45		N = 9 (1, 1, 2, 1, 2, 4)	
	Firm light grey mottled sandy gravelly SILT with occasional cobbles									
2					AA238660	B	2.00-2.45		N = 15 (1, 1, 2, 3, 5, 5)	
3			64.55	3.30	AA238661	B	3.00-3.45		N = 9 (1, 1, 1, 2, 2, 4)	
	Stiff grey slightly sandy slightly gravelly SILT with occasional cobbles & boulders									
4					AA238662	B	4.00-4.45		N = 16 (2, 3, 3, 2, 5, 6)	
5					AA238663	B	5.00-5.45		N = 21 (1, 1, 4, 4, 6, 7)	
6			61.45	6.40	AA238664	B	6.00-6.45		N = 22 (1, 1, 2, 2, 8, 10)	
	Very stiff grey/brown sandy gravelly CLAY with occasional cobbles & boulders									
7			60.65	7.20	AA238665	B	7.00-7.45		N = 41 (3, 7, 10, 11, 10, 10)	
	Dense grey silty fine sandy coarse GRAVEL									
8			59.75	8.10	AA238666	B	8.00-8.10		N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 8.10 m									
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
8	8.1	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
7.20	7.20	No	6.50	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
17-07-25	7.20	7.20	6.90	End of 1st day
18-07-25	8.10	8.10	2.00	End of BH

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH08**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,944.10 E 745,939.24 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	68.15	**BOREHOLE DEPTH (m)**	10.50
		DATE COMMENCED	11/07/2025
		DATE COMPLETED	14/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		68.05	0.10						
	Soft brown sandy SILT		67.65	0.50						
	Firm grey/brown sandy gravelly SILT				AA258617	B	0.50-1.00			
1					AA258618	B	1.00-1.50		N = 7 (1, 2, 2, 2, 1, 2)	
			66.15	2.00						
2	Firm grey sandy gravelly SILT				AA258619	B	2.00-2.50		N = 8 (1, 2, 3, 2, 1, 2)	
3					AA258620	B	3.00-3.50		N = 11 (3, 4, 2, 2, 3, 4)	
			64.75	3.40						
	Firm grey sandy gravelly CLAY with occasional cobbles									
4					AA258621	B	4.00-4.50		N = 21 (2, 3, 6, 8, 3, 4)	
			63.15	5.00						
5	Soft grey sandy gravelly CLAY				AA258622	B	5.00-5.50		N = 4 (1, 1, 1, 1, 1, 1)	
6					AA258623	B	6.00-6.50		N = 8 (1, 2, 1, 2, 3, 2)	
			61.15	7.00						
7	Stiff grey sandy gravelly SILT with cobbles & boulders				AA258624	B	7.00-7.50		N = 21 (2, 3, 3, 4, 6, 8)	
8					AA258625	B	8.00-8.50		N = 49 (10, 15, 10, 10, 12, 17)	
9					AA258626	B	9.00-9.50		N = 50/75 mm (25, 50)	

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
9	9.3	1	
10.2	10.5	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.70	4.70	No	3.00	20	Moderate
8.00	8.00	No	6.00	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH08**
		SHEET	Sheet 2 of 2
CO-ORDINATES	662,944.10 E 745,939.24 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	68.15	**BOREHOLE DEPTH (m)**	10.50
		DATE COMMENCED	11/07/2025
		DATE COMPLETED	14/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
10	Stiff grey sandy gravelly SILT with cobbles & boulders *(continued)*				AA258627	B	10.00-10.50		N = 50/150 mm (20, 5, 40, 10) N = 50/75 mm (25, 50)	
			57.65	10.50						
	Obstruction End of Borehole at 10.50 m									
11										
12										
13										
14										
15										
16										
17										
18										
19										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
9	9.3	1	
10.2	10.5	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH09**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,972.66 E 745,911.12 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	68.08	**BOREHOLE DEPTH (m)**	9.20
		DATE COMMENCED	14/07/2025
		DATE COMPLETED	15/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		67.88	0.20						
	Soft brown sandy CLAY		67.58	0.50						
	Firm grey/brown sandy gravelly SILT/CLAY				AA258627	B	0.50-1.00			
1					AA258628	B	1.00-1.50		N = 7 (1, 1, 2, 1, 2, 2)	
			66.08	2.00						
2	Soft grey sandy slightly gravelly CLAY					U	2.00-2.50	60%rec		
3					AA258629	B	3.00-3.50		N = 7 (1, 2, 1, 2, 2, 2)	
4						U	4.00-4.50	100%rec		
			63.08	5.00						
5	Soft grey sandy gravelly CLAY				AA258630	B	5.00-5.50		N = 5 (1, 0, 1, 1, 1, 2)	
6					AA258631	B	6.00-6.50		N = 6 (1, 2, 1, 1, 2, 2)	
7			60.98	7.10	AA258632	B	7.00-7.50		N = 12 (1, 2, 2, 3, 3, 4)	
	Stiff to very stiff grey sandy gravelly CLAY with cobbles & boulders									
8					AA258633	B	8.00-8.50		N = 50 (12, 12, 10, 15, 15, 10)	
9			58.88	9.20					N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 9.20 m								N = 50/75 mm (25, 50)	

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
7.6	7.9	1	
9	9.2	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.50	6.50	No	6.00	20	Slow
8.00	8.00	No	6.00	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH10**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,960.27 E 745,883.38 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	68.00	**BOREHOLE DEPTH (m)**	8.50
		DATE COMMENCED	18/07/2025
		DATE COMPLETED	19/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Sample Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		67.80	0.20						
	Firm brown sandy gravelly SILT/CLAY				AA254609	B	0.50			
1					AA254610	B	1.00		N = 12 (2, 2, 2, 3, 3, 4)	
			66.50	1.50						
	Soft grey sandy gravelly CLAY									
2					AA254611	B	2.00		N = 6 (1, 2, 1, 2, 1, 2)	
	Soft to firm grey SILT									
3			64.90	3.10	Fail	U	3.00			
	Firm grey gravelly SILT									
					AA254612	B	3.50		N = 18 (5, 6, 5, 6, 3, 4)	
			64.00	4.00						
4	Soft grey sandy gravelly CLAY with some cobbles				AA254613	B	4.00		N = 5 (1, 0, 1, 1, 1, 2)	
5					AA254614	B	5.00		N = 5 (1, 0, 1, 1, 2, 1)	
			62.20	5.80						
6	COBBLES with brown slightly clayey/silty slightly sandy Gravel				AA254615	B	6.00		N = 45 (6, 6, 8, 10, 15, 12)	
7					AA254616	B	7.00		N = 48 (4, 6, 8, 10, 17, 13)	
			60.50	7.50						
	Dense grey fine to coarse sandy GRAVEL with some cobbles									
8									N = 40 (10, 15, 10, 9, 10, 11)	
			59.50	8.50						
	Obstruction End of Borehole at 8.50 m								N = 50/75 mm (25, 50)	
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
6.2	6.5	1	
8.3	8.5	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.30	3.30	No	2.00	20	Moderate
6.00	6.00	No	4.50	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH11**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,927.00 E 745,873.78 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	67.78	**BOREHOLE DEPTH (m)**	8.00
		DATE COMMENCED	17/07/2025
		DATE COMPLETED	18/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		67.48	0.30						
	Soft grey/brown sandy slightly gravelly SILT/CLAY				AA254601	B	0.50-1.00			
1					AA254602	B	1.00-1.50		N = 6 (1, 0, 1, 1, 2, 2)	
			66.28	1.50						
	Firm grey sandy gravelly SILT with occasional cobbles									
2					AA254603	B	2.00-2.50		N = 10 (3, 4, 2, 4, 2, 2)	
3					AA254604	B	3.00-3.50		N = 18 (4, 3, 2, 6, 5, 5)	
			63.78	4.00						
4	Soft grey sandy gravelly CLAY				AA254605	B	4.00-4.50		N = 3 (1, 0, 1, 0, 1, 1)	
5					AA254606	B	5.00-5.50		N = 8 (1, 1, 1, 2, 3, 2)	
			62.08	5.70						
6	Very stiff grey sandy CLAY with cobbles & boulders				AA254607	B	6.00-6.50		N = 39 (7, 10, 10, 10, 9, 10)	
			61.28	6.50						
7	Dense grey slightly clayey/silty fine sandy coarse GRAVEL with cobbles				AA254608	B	7.00-7.50		N = 50/150 mm (20, 5, 40, 10)	
			59.78	8.00						
8	Obstruction End of Borehole at 8.00 m								N = 50/75 mm (25, 50)	
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
6.6	6.9	1	
7.7	8	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.50	3.50	No	3.00	20	Slow
6.50	6.50	No	3.00	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH12**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,894.94 E 745,902.21 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	68.21	**BOREHOLE DEPTH (m)**	9.00
		DATE COMMENCED	15/07/2025
		DATE COMPLETED	16/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		68.01	0.20						
	Stiff grey/brown sandy gravelly CLAY with occasional cobbles				AA258634	B	0.50-1.00			
1					AA258635	B	1.00-1.50		N = 21 (2, 3, 3, 6, 6, 6)	
2			65.91	2.30	AA258636	B	2.00-2.50		N = 19 (2, 3, 4, 4, 5, 6)	
	Firm grey sandy gravelly SILT/CLAY									
3			65.01	3.20	AA258637	B	3.00-3.50		N = 12 (3, 6, 4, 2, 2, 4)	
	Stiff to very stiff slightly sandy slightly gravelly CLAY with some cobbles									
4					AA258638	B	4.00-4.50		N = 22 (4, 3, 6, 5, 4, 7)	
5					AA258639	B	5.00-5.50		N = 27 (1, 2, 3, 2, 10, 12)	
6					AA258640	B	6.00-6.50		N = 48 (14, 11, 10, 10, 12, 16)	
7					AA258641	B	7.00-7.50		N = 35 (4, 6, 8, 9, 9, 9)	
8					AA258642	B	8.00-8.50		N = 49 (6, 8, 14, 14, 11, 10)	
			59.21	9.00						
9	Obstruction End of Borehole at 9.00 m								N = 50/75 mm (25, 50)	

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
6.1	6.5	1	
8.7	9	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
8.00	8.00	No	5.00	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH13**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,527.19 E 744,793.11 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	80.02	**BOREHOLE DEPTH (m)**	2.00
		DATE COMMENCED	22/07/2025
		DATE COMPLETED	22/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		79.82	0.20						
	Brown sandy SILT/CLAY with occasional gravel				AA249099	B	0.50			
			79.02	1.00						
1	Firm to stiff brown sandy silty gravelly CLAY with occasional cobbles				AA249100	B	1.00		N = 29 (2, 3, 6, 8, 7, 8)	
			78.02	2.00						
2	Obstruction End of Borehole at 2.00 m								N = 50/75 mm (25, 50)	
3										
4										
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
1.8	2	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Obstruction encountered . Moved rig to BH13A and attempted rebore .

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH13A**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,527.24 E 744,792.28 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	80.05	**BOREHOLE DEPTH (m)**	8.00
		DATE COMMENCED	22/07/2025
		DATE COMPLETED	23/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		79.85	0.20						
	Firm brown sandy SILT		79.05	1.00	AA234946	B	0.50			
1	Firm to stiff brown sandy gravelly CLAY with occasional cobbles				AA234947	B	1.00		N = 15 (1, 2, 2, 3, 5, 5)	
2					AA234948	B	2.00		N = 38 (6, 6, 10, 9, 10, 9)	
3					AA234949	B	3.00		N = 22 (6, 10, 8, 4, 5, 5)	
4					AA234950	B	4.00		N = 20 (4, 3, 4, 5, 5, 6)	
5					AA234951	B	5.00		N = 8 (4, 3, 3, 2, 1, 2)	
6					AA234952	B	6.00		N = 20 (5, 4, 5, 6, 5, 4)	
			73.55	6.50						
	No recovery - Possibly pushing BOULDER								N = 23 (3, 4, 5, 7, 7, 4)	
7										
			72.05	8.00						
8	End of Borehole at 8.00 m									
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
2.4	2.6	0.75	
5.5	5.7	0.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.00	6.00	No	5.70	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH14**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,590.90 E 744,768.67 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	77.34	**BOREHOLE DEPTH (m)**	8.00
		DATE COMMENCED	16/06/2025
		DATE COMPLETED	19/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		76.94	0.40						
	Soft brown sandy SILT/CLAY		76.34	1.00	AA225158	B	0.50			
1	Soft to firm and firm brown sandy slightly gravelly SILT/CLAY with rare cobbles				AA225159	B	1.00		N = 8 (1, 2, 2, 2, 2, 2)	
2					AA225160	B	2.00		N = 10 (10, 15, 4, 2, 2, 2)	
3					AA225161	B	3.00		N = 10 (1, 1, 3, 3, 2, 2)	
4					AA225162	B	4.00		N = 15 (5, 7, 5, 5, 3, 2)	
5			72.04	5.30	AA225163	B	5.00		N = 12 (1, 2, 2, 3, 3, 4)	
	Firm to stiff grey sandy silty gravelly CLAY with occasional cobbles									
6						U	6.00	90%rec		
7					AA225164	B	7.00		N = 10 (1, 2, 3, 2, 3, 2)	
			69.34	8.00						
8	Obstruction End of Borehole at 8.00 m								N = 17 (5, 4, 4, 5, 5, 3)	
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
2	2.2	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.00	6.00	No	5.50	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
19-06-25	8.00	1.00	8.00	50mm SP

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH15**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,568.92 E 744,723.13 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	75.20	**BOREHOLE DEPTH (m)**	8.00
		DATE COMMENCED	12/06/2025
		DATE COMPLETED	13/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		75.00	0.20						
	Soft grey/brown sandy SILT/CLAY with occasional gravel				AA22389	B	0.50			
1						U	1.00	85%rec		
2			73.00	2.20	AA22352	B	2.00		N = 3 (1, 1, 1, 1, 1, 0)	
	Stiff brown sandy gravelly CLAY									
3					AA22353	B	3.00		N = 21 (5, 8, 9, 8, 2, 2)	
			71.20	4.00						
4	Very soft grey/brown silty sandy CLAY				Failed	U	4.00			
					AA22354	B	4.50		N = 4 (1, 0, 1, 0, 1, 2)	
			70.20	5.00						
5	Firm to stiff grey sandy gravelly CLAY with occasional cobbles				AA22355	B	5.00		N = 13 (1, 2, 2, 3, 4, 4)	
6					AA22356	B	6.00		N = 24 (4, 5, 6, 6, 6, 6)	
7					AA22357	B	7.00		N = 27 (6, 6, 7, 7, 6, 7)	
			67.20	8.00						
8	Obstruction End of Borehole at 8.00 m								N = 50/150 mm (22, 3, 40, 10)	
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
7.7	8	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.00	3.00	No	2.50	20	Slow
7.50	7.50	No	3.50	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH16**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,475.07 E 744,340.60 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	73.76	**BOREHOLE DEPTH (m)**	1.00
		DATE COMMENCED	14/05/2025
		DATE COMPLETED	14/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		73.46	0.30						
	Soft brown sandy slightly gravelly SILT with occasional cobbles		72.76	1.00						
1	Obstruction End of Borehole at 1.00 m				AA221709	B	1.00		N = 50/75 mm (25, 50)	
2										
3										
4										
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
0.9	1	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Obstruction encountered at 1.0m. Moved to BH16A and attempted rebore.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH16A**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,476.50 E 744,338.87 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	73.73	**BOREHOLE DEPTH (m)**	6.50
		DATE COMMENCED	14/05/2025
		DATE COMPLETED	15/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		73.43	0.30						
	Soft brown sandy slightly gravelly SILT with occasional cobbles				AA212801	B	0.50			
1					AA212802	B	1.00		N = 6 (1, 0, 1, 1, 2, 2)	
2			71.53	2.20	AA212803	B	2.00		N = 5 (1, 0, 0, 1, 2, 2)	
	Stiff to very stiff grey slightly sandy gravelly CLAY with some cobbles									
3					AA212804	B	3.00		N = 23 (4, 4, 5, 5, 6, 7)	
4					AA212805	B	4.00		N = 25 (3, 4, 6, 8, 6, 5)	
5					AA212806	B	5.00		N = 50/75 mm (12, 15, 50)	
6					AA212807	B	6.00		N = 43 (6, 8, 15, 10, 8, 10)	
			67.23	6.50					N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 6.50 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
6.3	6.5	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH17**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,499.41 E 744,312.61 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	74.52	**BOREHOLE DEPTH (m)**	7.50
		DATE COMMENCED	15/05/2025
		DATE COMPLETED	20/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		74.32	0.20						
	Soft brown sandy gravelly SILT/CLAY with a low cobble content				AA212807	B	0.50			
1					AA212808	B	1.00		N = 6 (1, 0, 1, 2, 1, 2)	
2			72.12	2.40	AA212809	B	2.00		N = 7 (1, 2, 1, 2, 2, 2)	
	Stiff grey slightly sandy slightly gravelly CLAY with a low cobble content									
3					AA212810	B	3.00		N = 17 (2, 3, 4, 4, 4, 5)	
4					AA212811	B	4.00		N = 22 (4, 4, 5, 5, 5, 7)	
5			69.02	5.50	AA212812	B	5.00		N = 23 (2, 3, 4, 4, 6, 9)	
	Very stiff grey slightly sandy gravelly SILT with a high cobble content									
6					AA212813	B	6.00		N = 38 (6, 10, 7, 9, 10, 12)	
7					AA212814	B	7.00		N = 50/150 mm (6, 10, 20, 30)	
			67.02	7.50					N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 7.50 m									
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
5.7	6	1	
7.3	7.5	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.00	2.00	No	1.70	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH18**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,462.68 E 744,221.94 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	74.69	**BOREHOLE DEPTH (m)**	6.00
		DATE COMMENCED	21/05/2025
		DATE COMPLETED	21/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		74.39	0.30						
	Soft to firm brown sandy SILT/CLAY				AA212817	B	0.50			
1					AA212818	B	1.00		N = 11 (2, 2, 3, 2, 3, 3)	
			72.89	1.80						
	Firm brown sandy gravelly CLAY				AA212819	B	2.00		N = 13 (2, 3, 5, 3, 2, 3)	
3					AA212820	B	3.00		N = 12 (6, 4, 3, 3, 3, 3)	
			70.89	3.80						
4	Stiff to very stiff grey/brown slightly sandy gravelly SILT with cobbles				AA212821	B	4.00		N = 21 (17, 8, 4, 4, 6, 7)	
5					AA212822	B	5.00		N = 45 (6, 8, 9, 12, 12, 12)	
			68.69	6.00						
6	Obstruction End of Borehole at 6.00 m								N = 50/75 mm (25, 50)	
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4	4.2	1	
5.7	6	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.50	4.50	No	4.00	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH19**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,489.12 E 744,203.29 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	75.51	**BOREHOLE DEPTH (m)**	8.50
		DATE COMMENCED	22/05/2025
		DATE COMPLETED	26/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		75.11	0.40						
	Soft brown sandy SILT		74.51	1.00	AA212823	B	0.50			
1	Stiff grey/brown sandy gravelly CLAY with occasional cobbles				AA212824	B	1.00		N = 24 (3, 4, 6, 6, 6, 6)	
2			73.11	2.40	AA212825	B	2.00		N = 50/150 mm (16, 9, 40, 10)	
	Firm brown/grey to brown sandy gravelly SILT									
3					AA212826	B	3.00		N = 8 (1, 2, 2, 1, 2, 3)	
4					AA212827	B	4.00		N = 9 (2, 3, 2, 3, 2, 2)	
5					AA212828	B	5.00		N = 14 (3, 3, 2, 3, 3, 6)	
			69.51	6.00						
6	Stiff grey slightly gravelly slightly sandy CLAY with occasional cobbles				AA212829	B	6.00		N = 18 (3, 3, 4, 5, 4, 5)	
7					AA212830	B	7.00		N = 29 (3, 3, 4, 7, 8, 10)	
8			67.01	8.50					N = 50/75 mm (15, 10, 50)	
	Obstruction End of Borehole at 8.50 m								N = 50/75 mm (25, 50)	
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
2.1	2.4	1	
8.2	8.5	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.50	3.50	No	3.30	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH22**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,997.36 E 737,285.65 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	65.32	**BOREHOLE DEPTH (m)**	10.00
		DATE COMMENCED	29/05/2025
		DATE COMPLETED	03/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		65.02	0.30						
	Soft brown sandy peaty SILT		64.32	1.00	AA22514	B	0.50			
1	Medium dense grey slightly clayey very gravelly SAND. Gravel is fine.		63.32	2.00	AA22515	B	1.00		N = 15 (2, 3, 4, 4, 3, 4)	
2	Medium dense grey clayey very sandy GRAVEL with many cobbles				AA22536	B	2.00		N = 12 (2, 3, 3, 3, 3, 3)	
3					AA22537	B	3.00		N = 16 (6, 5, 5, 6, 2, 3)	
4					AA22538	B	4.00		N = 19 (2, 4, 6, 5, 4, 4)	
5			59.82	5.50	AA22539	B	5.00		N = 20 (2, 3, 3, 6, 5, 6)	
	Medium dense grey very silty SAND		58.82	6.50	AA22540	B	6.00		N = 13 (2, 2, 2, 3, 3, 5)	
7	Stiff brown slightly gravelly CLAY				AA22541	B	7.00		N = 24 (3, 4, 6, 7, 6, 5)	
8			56.62	8.70	AA22542	B	8.00		N = 24 (2, 3, 6, 6, 6, 6)	
9	Dense grey slightly clayey GRAVEL with some cobbles		55.32	10.00	AA22543	B	9.00		N = 37 (6, 10, 7, 8, 11, 11)	

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
8.8	9	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.80	3.80	No	3.00	20	Moderate
8.70	8.70	No	4.00	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH22**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,997.36 E 737,285.65 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	65.32	**BOREHOLE DEPTH (m)**	10.00
		DATE COMMENCED	29/05/2025
		DATE COMPLETED	03/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
		BORED BY	P.Allan
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
10	Obstruction End of Borehole at 10.00 m								N = 50/75 mm (25, 50)	
11										
12										
13										
14										
15										
16										
17										
18										
19										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
8.8	9	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH23**
		SHEET	Sheet 1 of 1
CO-ORDINATES	661,016.11 E 737,270.90 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	65.82	**BOREHOLE DEPTH (m)**	1.00
		DATE COMMENCED	04/06/2025
		DATE COMPLETED	04/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		65.32	0.50	AA22850	B	0.50			
	CONCRETE FILL (MADE GROUND)		64.82	1.00					N = 50/75 mm (25, 50)	
1	Obstruction End of Borehole at 1.00 m									
2										
3										
4										
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
0.9	1	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Obstruction encountered. Moved to BH23A and attempted rebore.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH23A**
		SHEET	Sheet 1 of 2
CO-ORDINATES	661,016.65 E 737,269.96 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	65.88	**BOREHOLE DEPTH (m)**	13.00
		DATE COMMENCED	04/06/2025
		DATE COMPLETED	05/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		65.38	0.50						
	Soft grey/brown sandy SILT/CLAY		64.88	1.00	AA22824	B	0.50			
1	Soft grey sandy gravelly SILT		63.88	2.00	AA22825	B	1.00		N = 4 (1, 1, 0, 1, 1, 2)	
2	Loose grey slightly silty SAND (Possibly very sandy Silt)				AA22826	B	2.00		N = 8 (1, 1, 2, 2, 2, 2)	
3			62.08	3.80	AA22827	B	3.00		N = 4 (1, 0, 1, 1, 0, 2)	
4	Firm grey sandy gravelly SILT				AA22828	B	4.00		N = 22 (2, 3, 6, 8, 4, 4)	
5			60.68	5.20	AA22829	B	5.00		N = 13 (3, 3, 4, 3, 3, 3)	
	Medium dense grey gravelly SAND		59.88	6.00						
6	Medium dense clayey very gravelly SAND. Gravel is fine.				AA22830	B	6.00		N = 24 (2, 3, 4, 6, 7, 7)	
7					AA22831	B	7.00		N = 23 (3, 4, 5, 6, 6, 6)	
			57.88	8.00						
8	Stiff brown slightly sandy slightly gravelly CLAY				AA22832	B	8.00		N = 23 (4, 5, 5, 5, 6, 7)	
9					AA22833	B	9.00		N = 19 (3, 4, 5, 4, 5, 5)	

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
11.8	12	1	
12.7	13	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.50	4.50	No	3.00	20	Moderate
8.00	8.00	No	5.00	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH23A**
		SHEET	Sheet 2 of 2
CO-ORDINATES	661,016.65 E 737,269.96 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	65.88	**BOREHOLE DEPTH (m)**	13.00
		DATE COMMENCED	04/06/2025
		DATE COMPLETED	05/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
10	Stiff brown slightly sandy slightly gravelly CLAY *(continued)*				AA22834	B	10.00		N = 17 (2, 2, 3, 4, 5, 5)	
11					AA22835	B	11.00		N = 20 (2, 3, 5, 6, 6, 3)	
			54.18	11.70						
12	Dense grey clayey sandy GRAVEL with many cobbles and rare boulders				AA22836	B	12.00		N = 52 (10, 10, 15, 14, 11, 12)	
			52.88	13.00						
13	Obstruction End of Borehole at 13.00 m								N = 50/150 mm (25, 40, 10)	
14										
15										
16										
17										
18										
19										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
11.8	12	1	
12.7	13	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
04-06-25	13.00	13.00	5.00	Start of 1st day
05-06-25	13.00	13.00	8.00	Start of 2nd day

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH24**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,957.67 E 737,231.14 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	66.15	**BOREHOLE DEPTH (m)**	12.00
		DATE COMMENCED	07/05/2025
		DATE COMPLETED	08/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
		BORED BY	P.Allan
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		65.95	0.20						
	Soft brown sandy SILT/CLAY		65.65	0.50						
	Firm grey sandy gravelly SILT				AA213975	B	0.50			
1					AA213976	B	1.00		N = 16 (6, 8, 4, 4, 4, 4)	
2			63.85	2.30	AA213977	B	2.00		N = 14 (4, 3, 4, 2, 4, 4)	
	Stiff brown sandy gravelly CLAY with cobbles		63.15	3.00						
3	Medium dense to dense brown slightly clayey/silty sandy GRAVEL with occasional cobbles				AA213978	B	3.00		N = 31 (3, 9, 9, 9, 6, 7)	
4					AA213979	B	4.00		N = 21 (10, 10, 8, 6, 4, 3)	
5					AA213980	B	5.00		N = 31 (8, 10, 20, 4, 4, 3)	
			60.15	6.00						
6	Stiff brown and grey slightly sandy slightly gravelly SILT/CLAY				AA213981	B	6.00		N = 22 (3, 4, 4, 4, 6, 8)	
7					AA213982	B	7.00		N = 26 (3, 4, 4, 6, 8, 8)	
8					AA213983	B	8.00		N = 26 (4, 4, 4, 6, 8, 8)	
9					AA213984	B	9.00		N = 29 (4, 4, 5, 8, 8, 8)	

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
5.1	5.3	1	
11.7	12	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.00	4.00	No	3.00	20	Moderate
4.50	4.50	No	1.00	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
07-05-25	5.00	5.00	1.00	End of 1st day
08-05-25	5.00	5.00	1.00	Start of 2nd day

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH24**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,957.67 E 737,231.14 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	66.15	**BOREHOLE DEPTH (m)**	12.00
		DATE COMMENCED	07/05/2025
		DATE COMPLETED	08/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
10	Stiff brown and grey slightly sandy slightly gravelly SILT/CLAY *(continued)*		55.35	10.80	AA213985	B	10.00		N = 25 (3, 3, 4, 6, 8, 7)	
11	Medium dense to dense grey sandy GRAVEL with occasional cobbles		54.15	12.00	AA213986	B	11.00		N = 27 (5, 6, 7, 8, 6, 6)	
12	End of Borehole at 12.00 m								N = 50/150 mm (17, 8, 40, 10)	
13										
14										
15										
16										
17										
18										
19										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
5.1	5.3	1	
11.7	12	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH25**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,988.17 E 737,220.98 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	66.04	**BOREHOLE DEPTH (m)**	11.50
		DATE COMMENCED	09/05/2025
		DATE COMPLETED	13/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		65.84	0.20						
	Soft brown sandy gravelly CLAY with occasional cobbles				AA222792	B	0.50			
1					AA222793	B	1.00		N = 10 (2, 2, 2, 2, 3, 3)	
			64.54	1.50						
	Firm to stiff slightly sandy slightly gravelly SILT/CLAY									
2					AA222794	B	2.00		N = 26 (2, 3, 4, 7, 8, 7)	
3					AA222795	B	3.00		N = 23 (1, 3, 4, 6, 6, 7)	
4					AA222796	B	4.00		N = 23 (3, 3, 4, 5, 7, 7)	
5					AA222797	B	5.00		N = 24 (4, 5, 6, 5, 6, 7)	
			60.04	6.00						
6	Grey slightly clayey/silty slightly gravelly SAND				AA222798	B	6.00		N = 23 (4, 5, 5, 5, 6, 7)	
7					AA222799	B	7.00		N = 19 (2, 3, 3, 4, 6, 6)	
			58.54	7.50						
	Firm grey slightly sandy slightly gravelly SILT									
8					AA222800	B	8.00		N = 11 (2, 2, 2, 3, 2, 4)	
9					AA222801	B	9.00		N = 6 (1, 2, 2, 1, 2, 1)	

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
10.7	11	1	
11.3	11.5	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.50	4.50	No	4.00	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
09-05-25	6.00	6.00	4.00	End of 1st day
12-05-25	6.00	6.00	3.00	Start of 2nd day

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH25**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,988.17 E 737,220.98 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	66.04	**BOREHOLE DEPTH (m)**	11.50
		DATE COMMENCED	09/05/2025
		DATE COMPLETED	13/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
10	Firm grey slightly sandy slightly gravelly SILT *(continued)*		55.54	10.50	AA222802	B	10.00		N = 13 (2, 2, 2, 3, 4, 4)	
11	Dense grey slightly clayey/silty slightly sandy GRAVEL with many cobbles & boulders		54.54	11.50	AA222803	B	11.00		N = 53 (6, 8, 10, 15, 15, 13)	
	Obstruction End of Borehole at 11.50 m								N = 50/75 mm (25, 50)	
12										
13										
14										
15										
16										
17										
18										
19										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
10.7	11	1	
11.3	11.5	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
10.50	10.50	No	3.00	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
13-05-25	11.50	Nil	dry	End of BH

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH26**
		SHEET	Sheet 1 of 1
CO-ORDINATES	659,940.63 E 734,155.28 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	73.35	**BOREHOLE DEPTH (m)**	4.30
		DATE COMMENCED	29/04/2025
		DATE COMPLETED	29/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		73.05	0.30						
1	Soft brown sandy SILT/CLAY with occasional fine gravel		71.65	1.70	AA245048	B	1.00		N = 6 (1, 0, 1, 1, 2, 2)	
2	Stiff brown gravelly SILT/CLAY with occasional cobbles		70.35	3.00	AA245049	B	2.00		N = 27 (4, 5, 6, 10, 6, 5)	
3	Medium dense to dense grey sandy GRAVEL with cobbles		69.05	4.30	AA245050	B	3.00		N = 19 (6, 6, 5, 3, 5, 6)	
4					AA245051	B	4.00		N = 50/150 mm (8, 5, 20, 30) N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 4.30 m									
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
2.9	3	0.5	
4.1	4.3	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.00	3.00		1.80	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH27**
		SHEET	Sheet 1 of 1
CO-ORDINATES	659,995.19 E 734,140.03 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	73.19	**BOREHOLE DEPTH (m)**	3.60
		DATE COMMENCED	30/04/2025
		DATE COMPLETED	30/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		72.89	0.30						
	Soft brown sandy SILT/CLAY with occasional fine gravel				AA213951	B	1.00		N = 8 (1, 2, 3, 1, 2, 2)	
1			71.69	1.50						
	Stiff brown sandy gravelly CLAY with cobbles				AA213952	B	2.00		N = 43 (8, 10, 8, 10, 10, 15)	
2										
					AA213953	B	3.00		N = 50/75 mm (25, 50)	
3			69.59	3.60					N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 3.60 m									
4										
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3	3.2	1	
3.5	3.6	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.00	3.00		2.70	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Obstruction encountered. Moved 3m to BH27A and attempted rebore .

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH27A**
		SHEET	Sheet 1 of 1
CO-ORDINATES	659,995.23 E 734,139.99 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	73.20	**BOREHOLE DEPTH (m)**	8.00
		DATE COMMENCED	30/04/2025
		DATE COMPLETED	01/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		72.90	0.30						
	Soft brown sandy SILT/CLAY									
1			71.80	1.40	AA213951	B	1.00		N = 6 (1, 0, 1, 1, 2, 2)	
	Stiff to very stiff grey gravelly CLAY with cobbles and occasional boulders									
2					AA213952	B	2.00		N = 27 (4, 5, 6, 10, 6, 5)	
3					AA213953 AA213954	B B	3.00 3.00		N = 31 (4, 5, 6, 11, 6, 8)	
4					AA213955	B	4.00		N = 37 (15, 10, 8, 10, 10, 9)	
5					AA213956	B	5.00		N = 44 (6, 8, 10, 12, 12, 10)	
6					AA213957	B	6.00		N = 49 (12, 12, 15, 11, 8, 15)	
7					AA213958	B	7.00		N = 56 (10, 15, 12, 15, 15, 14)	
			65.20	8.00						
8	Obstruction End of Borehole at 8.00 m								N = 50/150 mm (20, 50, 40, 10)	
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
5.6	5.9	1	
7.7	8	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.00	3.00		2.70	20	Moderate
5.00	5.00		4.00	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
01-05-25	8.00	1.00	8.00	50mm SP

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH28**
		SHEET	Sheet 1 of 1
CO-ORDINATES	660,822.46 E 731,757.88 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	77.04	**BOREHOLE DEPTH (m)**	3.50
		DATE COMMENCED	23/04/2025
		DATE COMPLETED	23/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		76.74	0.30						
	Soft brown sandy gravelly SILT				AA222764	B	0.50			
1									N = 6 (1, 2, 1, 1, 2, 2)	
					AA222765	B	1.50			
2			74.64	2.40					N = 7 (1, 2, 2, 2, 2, 1)	
	Stiff grey gravelly CLAY with boulders				AA222766	B	2.50			
3									N = 50/150 mm (10, 15, 20, 30)	
			73.54	3.50					N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 3.50 m									
4										
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.2	3.5	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.00	3.00	No	2.70	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Obstruction encountered. Moved 3m to BH28A and attempted rebore .

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH28A**
		SHEET	Sheet 1 of 1
CO-ORDINATES	660,822.56 E 731,757.61 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	77.40	**BOREHOLE DEPTH (m)**	9.50
		DATE COMMENCED	23/04/2025
		DATE COMPLETED	28/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
		BORED BY	P.Allan
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		77.10	0.30						
	Soft brown sandy gravelly SILT		75.10	2.30						
	Stiff grey gravelly CLAY		74.40	3.00						
3	Medium dense to dense brown silty sandy fine to coarse GRAVEL with cobbles				AA222767	B	3.00		N = 21 (6, 8, 5, 5, 5, 6)	
4					AA222768	B	4.00		N = 28 (4, 5, 6, 9, 7, 6)	
5					AA222769	B	5.00		N = 25 (4, 7, 5, 6, 7, 7)	
6					AA222770	B	6.00		N = 27 (4, 5, 7, 8, 6, 6)	
			70.40	7.00						
7	COBBLES with brown slightly clayey/silty slightly sandy Gravel				AA222771	B	7.00		N = 44 (16, 9, 10, 9, 15, 10)	
			69.40	8.00						
8	Dense brown slightly silty slightly sandy GRAVEL with many cobbles				AA222772	B	8.00		N = 32 (3, 4, 6, 9, 11, 6)	
9					AA222773	B	9.00		N = 36 (11, 14, 7, 9, 9, 11)	
			68.15	9.25						
	Very stiff brown sandy gravelly CLAY with cobbles		67.90	9.50					N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 9.50 m									

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.3	3.6	1	
7.2	7.4	0.5	
9.3	9.5	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.00	3.00	No	2.70	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH29**
		SHEET	Sheet 1 of 1
CO-ORDINATES	660,793.31 E 731,731.78 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	77.05	**BOREHOLE DEPTH (m)**	6.00
		DATE COMMENCED	28/04/2025
		DATE COMPLETED	28/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL/PEAT		76.55	0.50						
1	Firm grey/brown sandy SILT/CLAY				AA223246	B	1.00		N = 10 (1, 1, 2, 2, 2, 4)	
			75.05	2.00						
2	Stiff brown slightly sandy gravelly to very gravelly SILT/CLAY				AA223247	B	2.00		N = 29 (3, 6, 8, 7, 8, 6)	
3					AA223248	B	3.00		N = 24 (6, 12, 4, 8, 6, 6)	
			73.55	3.50						
4	Medium dense to dense grey clayey/silty very sandy GRAVEL with cobbles				AA223249	B	4.00		N = 27 (6, 8, 5, 6, 8, 8)	
5					AA223250	B	5.00		N = 33 (6, 8, 10, 8, 8, 7)	
			71.05	6.00						
6	Obstruction End of Borehole at 6.00 m				AA223251	B	6.00		N = 50/75 mm (25, 50)	
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
5.2	5.4	1	
5.6	6	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.50	3.50		0.80	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH30**
		SHEET	Sheet 1 of 1
CO-ORDINATES	660,823.77 E 731,665.35 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	78.62	**BOREHOLE DEPTH (m)**	4.50
		DATE COMMENCED	16/04/2025
		DATE COMPLETED	16/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		78.52	0.10						
	Firm brown sandy slightly gravelly SILT/CLAY				AA212791	B	0.50			
1					AA212792	B	1.00		N = 13 (2, 2, 2, 3, 4, 4)	
			77.02	1.60						
	Stiff to very stiff gravelly CLAY with some cobbles									
2					AA212793	B	2.00		N = 22 (2, 3, 4, 6, 6, 6)	
3					AA212794	B	3.00		N = 39 (6, 8, 9, 10, 10, 10)	
4									N = 50/75 mm (25, 50)	
			74.12	4.50					N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 4.50 m									
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4.2	4.5	2	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH30A**
		SHEET	Sheet 1 of 1
CO-ORDINATES	660,826.31 E 731,669.50 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	78.26	**BOREHOLE DEPTH (m)**	6.00
		DATE COMMENCED	16/04/2025
		DATE COMPLETED	17/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		78.16	0.10						
	Firm brown sandy slightly gravelly SILT/CLAY		76.66	1.60						
2	Stiff to very stiff brown very gravelly CLAY with cobbles								N = 25 (5, 6, 5, 5, 7, 8)	
4					AA212795	B	4.00		N = 30 (3, 4, 6, 8, 8, 8)	
			73.26	5.00						
5	Brown silty very sandy GRAVEL with some cobbles				AA212796	B	5.00		N = 50 (6, 8, 9, 12, 15, 14)	
			72.26	6.00						
6	Obstruction End of Borehole at 6.00 m								N = 50/75 mm (25, 50)	
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
2.5	2.8	1	
5.7	6	2	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
5.00	5.00	No	4.80	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH31**
		SHEET	Sheet 1 of 1
CO-ORDINATES	660,793.16 E 731,629.16 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	79.21	**BOREHOLE DEPTH (m)**	1.00
		DATE COMMENCED	17/04/2025
		DATE COMPLETED	17/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		79.01	0.20						
	Firm to stiff brown sandy gravelly SILT/CLAY with occasional cobbles				AA212797	B	0.50			
			78.21	1.00					N = 50/75 mm (25, 50)	
1	Obstruction End of Borehole at 1.00 m									
2										
3										
4										
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Moved 3m to BH31A and attempted rebore.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH31A**
		SHEET	Sheet 1 of 1
CO-ORDINATES	660,793.16 E 731,629.16 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	79.21	**BOREHOLE DEPTH (m)**	5.50
		DATE COMMENCED	17/04/2025
		DATE COMPLETED	18/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		79.01	0.20						
	Stiff to very stiff brown sandy gravelly CLAY with cobbles									
1									N = 50/225 mm (5, 6, 10, 30, 10)	
					AA212798	B	1.50			
2									N = 31 (3, 3, 4, 8, 8, 11)	
					AA212799	B	2.50			
3									N = 21 (3, 3, 4, 5, 5, 7)	
					AA212800	B	3.50			
4									N = 49 (15, 10, 16, 9, 11, 13)	
					AA212801	B	4.50			
5									N = 50/75 mm (22, 3, 50)	
			73.71	5.50					N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 5.50 m									
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
0.9	1	1	
1.3	1.5	1	
5.3	5.5	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH32**
		SHEET	Sheet 1 of 1
CO-ORDINATES	661,145.38 E 731,171.48 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	80.79	**BOREHOLE DEPTH (m)**	2.80
		DATE COMMENCED	14/04/2025
		DATE COMPLETED	14/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		80.69	0.10						
	Soft brown sandy SILT				AA212789	B	0.50			
1					AA212790	B	1.00		N = 4 (1, 0, 1, 1, 1, 1)	
2					AA212791	B	2.00		N = 7 (1, 0, 1, 2, 2, 2)	
			78.29	2.50						
	COBBLES & BOULDERS		77.99	2.80					N = 50/75 mm (25, 50)	
3	Obstruction End of Borehole at 2.80 m									
4										
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
2.5	2.8	2	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH32A**
		SHEET	Sheet 1 of 1
CO-ORDINATES	661,146.24 E 731,172.42 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	80.86	**BOREHOLE DEPTH (m)**	6.80
		DATE COMMENCED	14/04/2025
		DATE COMPLETED	15/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		80.76	0.10						
	Soft brown sandy SILT/CLAY								N = 4 (1, 0, 1, 1, 0, 2)	
1										
									N = 6 (1, 1, 2, 1, 2, 1)	
2			78.36	2.50						
	Very stiff brown sandy gravelly CLAY with some cobbles				AA212792	B	3.00		N = 33 (6, 16, 9, 9, 9, 6)	
3			76.86	4.00						
	Medium dense to dense grey/brown sandy silty GRAVEL with some cobbles				AA212793	B	4.00		N = 24 (3, 4, 5, 5, 5, 9)	
4										
					AA212794	B	5.00		N = 23 (3, 4, 5, 6, 6, 6)	
5										
					AA212795	B	6.00		N = 39 (6, 8, 9, 9, 10, 11)	
6			74.06	6.80						
	Obstruction End of Borehole at 6.80 m								N = 50/75 mm (25, 50)	
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
2.7	3	1	
6.5	6.8	2	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.00	3.00	No	1.50	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH32R**
		SHEET	Sheet 1 of 1
CO-ORDINATES	661,146.24 E 731,172.42 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	80.86	**BOREHOLE DEPTH (m)**	7.50
		DATE COMMENCED	25/07/2025
		DATE COMPLETED	28/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	D

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		80.76	0.10						
	Brown sandy SILT/CLAY									
2			78.36	2.50						
	Brown sandy SILT/CLAY with occasional fine gravel									
4			76.86	4.00						
	Brown very sandy GRAVEL with occasional cobbles (Possibly very gravelly Sand)									
7			73.36	7.50						
	Obstruction End of Borehole at 7.50 m									

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3	3.2	1	
7.2	7.5	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.00	3.00	No	2.00	20	Moderate
4.00	4.00	No	1.50	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
28-07-25	7.50	1.00	7.50	50mm SP

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Hole re-bored to install standpipe.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH33**
		SHEET	Sheet 1 of 1
CO-ORDINATES	661,183.48 E 731,162.44 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	80.68	**BOREHOLE DEPTH (m)**	8.00
		DATE COMMENCED	22/04/2025
		DATE COMPLETED	22/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		80.38	0.30						
	Soft grey/brown sandy SILT/CLAY with occasional fine gravel				AA222756	B	0.50		N = 5 (1, 0, 1, 1, 1, 2)	
1					AA222757	B	1.50			
	Stiff brown sandy gravelly CLAY with some cobbles		78.88	1.80					N = 16 (2, 3, 4, 4, 4, 4)	
2					AA222758	B	2.50			
3					AA222759	B	3.50		N = 20 (2, 2, 4, 6, 5, 5)	
	Stiff grey sandy gravelly CLAY with some cobbles		76.88	3.80						
4					AA222760	B	4.50		N = 19 (2, 3, 4, 6, 5, 4)	
5									N = 28 (4, 6, 10, 8, 6, 4)	
	Stiff to very stiff brown sandy gravelly CLAY with cobbles		75.28	5.40	AA222761	B	5.50			
6									N = 33 (4, 2, 6, 11, 6, 10)	
					AA222762	B	6.50			
7									N = 22 (4, 4, 5, 8, 4, 5)	
					AA222763	B	7.50			
8			72.68	8.00					N = 31 (4, 4, 6, 8, 7, 10)	
	Obstruction End of Borehole at 8.00 m									
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
5.7	5.9	1	
6.5	6.8	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.50	6.50	No	6.00	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH34**
		SHEET	Sheet 1 of 1
CO-ORDINATES	661,074.74 E 727,971.21 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	67.51	**BOREHOLE DEPTH (m)**	8.00
		DATE COMMENCED	04/04/2025
		DATE COMPLETED	08/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	Very soft dark brown/black PEAT				AA212758	B	0.50			
1					AA212759	B	1.00		N = 2 (1, 0, 0, 0, 1, 1)	
			66.01	1.50						
	Very soft grey SILT/CLAY		65.51	2.00						
2	Medium dense grey fine to medium silty SAND				AA212760	B	2.00		N = 4 (1, 0, 1, 0, 1, 2)	
3					AA212761	B	3.00		N = 13 (1, 2, 2, 3, 4, 4)	
4					AA212762	B	4.00		N = 11 (2, 2, 2, 3, 3, 3)	
			62.51	5.00						
5	Medium dense grey very sandy GRAVEL with occasional cobbles(Possibly pockets of very gravelly Sand)				AA212763	B	5.00		N = 32 (3, 8, 8, 9, 9, 6)	
6					AA212764	B	6.00		N = 24 (5, 6, 6, 6, 7, 5)	
7					AA212765	B	7.00		N = 21 (3, 4, 5, 5, 5, 6)	
			59.51	8.00						
8	End of Borehole at 8.00 m								N = 50/75 mm (25, 50)	
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
5.00	5.00	No	2.00	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Blow back noted in gravels.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH34R**
		SHEET	Sheet 1 of 1
CO-ORDINATES	661,074.74 E 727,971.21 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	67.51	**BOREHOLE DEPTH (m)**	6.70
		DATE COMMENCED	23/07/2025
		DATE COMPLETED	24/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	Dark brown PEAT		66.01	1.50						
	Grey sandy SILT/CLAY		65.51	2.00						
2	Grey silty SAND		62.51	5.00						
5	Grey very sandy GRAVEL with occasional cobbles (Possibly very gravelly Sand)		60.81	6.70						
7	Obstruction End of Borehole at 6.70 m									

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
6.4	6.7	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
5.00	5.00	No	2.00	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
24-07-25	6.70	1.00	6.70	50mm SP

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Hole re-bored to install standpipe.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH35**
		SHEET	Sheet 1 of 1
CO-ORDINATES	661,132.29 E 727,938.57 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	67.03	**BOREHOLE DEPTH (m)**	8.50
		DATE COMMENCED	09/04/2025
		DATE COMPLETED	10/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		66.93	0.10						
	Soft dark brown PEAT				AA212774	B	0.50			
1					AA212775	B	1.00		N = 1 (1, 0, 0, 0, 1, 0)	
			65.53	1.50						
	Soft to firm grey sandy SILT									
2						U	2.00	100%rec		
3					AA212776	B	3.00		N = 11 (1, 0, 2, 3, 3, 3)	
			63.53	3.50						
	Medium dense grey fine to medium silty SAND									
4					AA212777	B	4.00		N = 11 (2, 2, 2, 3, 3, 3)	
5					AA212778	B	5.00		N = 15 (3, 3, 3, 4, 4, 4)	
6					AA212779	B	6.00		N = 17 (3, 3, 4, 4, 4, 5)	
7					AA212780	B	7.00		N = 16 (2, 2, 3, 4, 5, 4)	
8									N = 18 (2, 4, 5, 4, 4, 5)	
			58.53	8.50						
	Obstruction End of Borehole at 8.50 m									
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
8.00	8.00	No	3.50	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH36**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,872.86 E 727,340.45 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	68.06	**BOREHOLE DEPTH (m)**	15.50
		DATE COMMENCED	26/03/2025
		DATE COMPLETED	27/03/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
		BORED BY	P.Allan
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	Dark brown PEAT		67.76	0.30						
	Soft grey SILT with occasional fine gravel				AA235035	B	0.50			
1					AA235036	B	1.00		N = 8 (1, 2, 2, 2, 2, 2)	
			66.26	1.80						
	Soft dark brown/black PEAT				AA235037	B	2.00		N = 8 (1, 1, 2, 2, 2, 2)	
2			65.56	2.50						
	Soft grey SILT									
3					AA235038	B	3.00		N = 9 (1, 2, 2, 2, 2, 3)	
4						U	4.00	90%rec		
5			62.96	5.10	AA235039	B	5.00		N = 11 (2, 2, 3, 3, 2, 3)	
	Loose to medium dense fine to coarse grey silty SAND									
6			62.06	6.00	AA235040	B	6.00		N = 26 (4, 5, 6, 7, 6, 7)	
	Medium dense grey very sandy GRAVEL		61.16	6.90						
7	Loose to medium dense fine to coarse grey silty SAND				AA235041	B	7.00		N = 10 (2, 2, 3, 2, 2, 3)	
8					AA235042	B	8.00		N = 7 (1, 2, 1, 2, 2, 2)	
9					AA235043	B	9.00		N = 9 (1, 2, 2, 2, 2, 3)	

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
14.6	14.8	1	
15.2	15.5	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
9.00	9.00	No	6.00	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
27-03-25	9.00	9.00	6.00	Start of 2nd day

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH36**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,872.86 E 727,340.45 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	68.06	**BOREHOLE DEPTH (m)**	15.50
		DATE COMMENCED	26/03/2025
		DATE COMPLETED	27/03/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
10	Loose to medium dense fine to coarse grey silty SAND *(continued)*				AA235044	B	10.00		N = 4 (1, 0, 1, 1, 0, 2)	
11					AA235045	B	11.00		N = 9 (2, 3, 2, 2, 3, 2)	
12					AA235046	B	12.00		N = 10 (3, 3, 2, 3, 2, 3)	
			55.56	12.50						
	Dense grey fine to coarse GRAVEL with cobbles									
13					AA235047	B	13.00		N = 46 (8, 9, 10, 12, 12, 12)	
14					AA235048	B	14.00		N = 49 (6, 8, 15, 15, 9, 10)	
15					AA235049	B	15.00		N = 40 (10, 15, 10, 8, 11, 11)	
			52.56	15.50					N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 15.50 m									
16										
17										
18										
19										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
14.6	14.8	1	
15.2	15.5	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH37**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,848.78 E 727,336.44 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	68.01	**BOREHOLE DEPTH (m)**	14.60
		DATE COMMENCED	28/03/2025
		DATE COMPLETED	29/03/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
		BORED BY	P.Allan
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		67.71	0.30						
	Soft grey SILT				AA245001	B	0.50			
1					AA245002	B	1.00		N = 8 (1, 2, 2, 2, 2, 2)	
			66.01	2.00						
2	Soft dark brown PEAT		65.71	2.30		U	2.00	70%rec		
	Soft grey sandy SILT									
3					AA245003	B	3.00		N = 5 (1, 0, 1, 1, 1, 2)	
4						U	4.00	100%rec		
			63.21	4.80						
5	Medium dense grey silty SAND with some gravel				AA245004	B	5.00		N = 25 (1, 4, 4, 6, 7, 8)	
6					AA245005	B	6.00		N = 19 (2, 3, 4, 5, 5, 5)	
			61.51	6.50						
	Lose to medium dense grey silty SAND									
7					AA245006	B	7.00		N = 10 (1, 1, 2, 2, 3, 3)	
8					AA245007	B	8.00		N = 12 (1, 2, 3, 3, 3, 3)	
9					AA245008	B	9.00		N = 15 (1, 4, 4, 4, 4, 3)	

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
12.8	13	1	
14.4	14.6	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.50	4.50	No	4.00	20	Slow
6.00	6.00	No	2.00	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH37**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,848.78 E 727,336.44 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	68.01	**BOREHOLE DEPTH (m)**	14.60
		DATE COMMENCED	28/03/2025
		DATE COMPLETED	29/03/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
10	Lose to medium dense grey silty SAND *(continued)*				AA245009	B	10.00		N = 3 (1, 0, 0, 1, 1, 1)	
			57.01	11.00						
11	Very soft grey SILT				AA245010	B	11.00		N = 2 (1, 0, 0, 1, 0, 1)	
12					AA245011	B	12.00		N = 3 (1, 2, 0, 0, 1, 2)	
			55.31	12.70						
13	Very stiff grey/brown gravelly CLAY with occasional cobbles & boulders				AA245012	B	13.00		N = 47 (6, 8, 8, 9, 15, 15)	
14					AA245013	B	14.00		N = 50/75 mm (25, 50)	
			53.41	14.60						
15	Obstruction End of Borehole at 14.60 m									
16										
17										
18										
19										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
12.8	13	1	
14.4	14.6	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH38**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,837.81 E 727,368.42 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	68.48	**BOREHOLE DEPTH (m)**	15.50
		DATE COMMENCED	31/03/2025
		DATE COMPLETED	01/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		68.18	0.30						
	Very soft brown sandy gravelly CLAY				AA245027	B	0.50			
1					AA245028	B	1.00		N = 2 (1, 0, 0, 1, 1, 0)	
			66.68	1.80						
	Very soft dark brown PEAT					U	2.00	90%rec		
2										
3					AA245029	B	3.00		N = 2 (1, 0, 0, 1, 0, 1)	
			64.48	4.00						
4	Loose to medium dense grey silty SAND				AA245030	B	4.00		N = 7 (1, 1, 2, 1, 2, 2)	
5					AA245031	B	5.00		N = 10 (1, 2, 2, 3, 2, 3)	
6					AA245032	B	6.00		N = 14 (2, 3, 3, 4, 4, 3)	
7					AA245033	B	7.00		N = 9 (1, 2, 2, 2, 2, 3)	
8					AA245034	B	8.00		N = 10 (1, 1, 2, 2, 3, 3)	
			59.48	9.00						
9	Firm grey SILT/CLAY				AA245035	B	9.00		N = 12 (1, 1, 2, 3, 3, 4)	

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
14.6	14.9	1	
15.2	15.5	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.00	6.00	No	2.00	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH38**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,837.81 E 727,368.42 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	68.48	**BOREHOLE DEPTH (m)**	15.50
		DATE COMMENCED	31/03/2025
		DATE COMPLETED	01/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
10	Firm grey SILT/CLAY *(continued)*				AA245036	B	10.00		N = 14 (2, 3, 3, 4, 4, 3)	
11					AA245037	B	11.00		N = 8 (2, 3, 3, 2, 2, 1)	
12					AA245038	B	12.00		N = 10 (2, 3, 3, 2, 2, 3)	
13					AA245039	B	13.00		N = 8 (1, 2, 2, 2, 2, 2)	
			54.48	14.00						
14	Dense grey fine to coarse sandy GRAVEL with some cobbles & occasional boulders				AA245040	B	14.00		N = 48 (6, 6, 8, 10, 15, 15)	
15					AA245041	B	15.00		N = 50/75 mm (20, 50)	
			52.98	15.50						
16	Obstruction End of Borehole at 15.50 m									
17										
18										
19										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
14.6	14.9	1	
15.2	15.5	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH39**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,879.03 E 727,367.70 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	67.78	**BOREHOLE DEPTH (m)**	14.00
		DATE COMMENCED	29/03/2025
		DATE COMPLETED	30/03/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	Dark brown/black PEAT		67.48	0.30						
	Very soft grey SILT		66.78	1.00	AA245014	B	0.50			
1	Very soft dark brown PEAT		65.78	2.00	AA245015	B	1.00		N = 5 (1, 0, 1, 1, 1, 2)	
2	Very soft grey sandy SILT				AA245016	B	2.00		N = 3 (1, 0, 1, 1, 0, 1)	
3					AA245017	U	3.00	100%rec		
4					AA245018	B	4.00		N = 1 (1, 0, 0, 0, 1, 0)	
5					AA245019	B	5.00		N = 1 (1, 0, 0, 0, 0, 1)	
6			61.28	6.50	AA245020	B	6.00		N = 2 (1, 0, 0, 1, 0, 1)	
	Loose grey silty SAND									
7					AA245021	B	7.00		N = 8 (1, 0, 1, 2, 2, 3)	
8					AA245022	B	8.00		N = 9 (1, 2, 2, 2, 2, 3)	
9					AA245023	B	9.00		N = 10 (1, 2, 2, 3, 2, 3)	

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
12.4	12.7	1	
13.8	14	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
7.00	7.00	No	3.00	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH39**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,879.03 E 727,367.70 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	67.78	**BOREHOLE DEPTH (m)**	14.00
		DATE COMMENCED	29/03/2025
		DATE COMPLETED	30/03/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
10			57.58	10.20	AA245024	B	10.00		N = 4 (1, 0, 0, 1, 1, 2)	
	Soft grey sandy SILT									
11					AA245025	B	11.00		N = 2 (1, 0, 0, 1, 0, 1)	
			55.78	12.00						
12	Dense grey fine to coarse GRAVEL with cobbles				AA245026	B	12.00		N = 35 (5, 4, 6, 8, 9, 12)	
13					AA245027	B	13.00		N = 38 (6, 9, 9, 10, 12, 7)	
			53.78	14.00						
14	Obstruction End of Borehole at 14.00 m								N = 50/75 mm (25, 50)	
15										
16										
17										
18										
19										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
12.4	12.7	1	
13.8	14	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH40**
		SHEET	Sheet 1 of 1
CO-ORDINATES	663,379.91 E 746,751.45 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	70.86	**BOREHOLE DEPTH (m)**	5.60
		DATE COMMENCED	27/06/2025
		DATE COMPLETED	30/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	D.Tolster
		PROCESSED BY	T.G

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		70.66	0.20						
	Soft grey sandy silty CLAY with ocassional gravel									
1			69.66	1.20	AA213901	B	1.00		N = 8 (0, 1, 1, 2, 2, 3)	
	Firm brown mottled grey sandy silty gravelly CLAY with ocassional gravel & cobbles									
2			68.46	2.40	AA213902	B	2.00		N = 18 (2, 2, 3, 5, 5, 5)	
	Very stiff grey sandy silty gravelly CLAY with ocassional cobbles and boulders									
3					AA213903	B	3.00		N = 50/150 mm (15, 10, 26, 24)	
4					AA213904	B	4.00		N = 34 (7, 7, 8, 9, 8, 9)	
5					AA213905	B	5.00		N = 34 (7, 7, 8, 9, 8, 9)	
			65.36	5.50						
	Dense fine to coarse sandy angular GRAVEL		65.26	5.60	AA213906	B	5.50		N = 50/75 mm (25, 50)	
6	Obstruction End of Borehole at 5.60 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.1	3.4	0.5	
5.5	5.6	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Blow back noted in gravels 4.0m - 2.80m

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH42**
		SHEET	Sheet 1 of 1
CO-ORDINATES	663,094.57 E 746,695.37 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	71.43	**BOREHOLE DEPTH (m)**	6.10
		DATE COMMENCED	01/07/2025
		DATE COMPLETED	02/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	D.Tolster
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		71.23	0.20						
	Soft brown sandy SILT/CLAY with occasional gravel				AA223914	B	0.80			
1					AA223915	B	1.00-1.45		N = 7 (0, 2, 2, 2, 1, 2)	
			69.63	1.80						
	Stiff grey/brown sandy gravelly SILT/CLAY with large cobbles & boulders				AA223916	B	2.00-2.45		N = 27 (5, 7, 7, 7, 6, 7)	
2			68.83	2.60						
	Stiff grey sandy gravelly CLAY with occasional cobbles & boulders				AA223917	B	3.00-3.45		N = 20 (2, 5, 5, 5, 4, 6)	
3										
					AA223918	B	4.00-4.45		N = 29 (5, 6, 6, 7, 8, 8)	
4			66.93	4.50						
	Very dense fine to coarse grey slightly silty sandy GRAVEL with occasional cobbles				AA223919	B	5.00-5.45		N = 50 (10, 12, 13, 14, 14, 9)	
5										
			65.33	6.10	AA223920	B	6.00-6.10		N = 50/75 mm (25, 50)	
6	Obstruction End of Borehole at 6.10 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
6	6.1	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
02-07-25	6.10	6.10	2.70	End of BH

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH43**
		SHEET	Sheet 1 of 1
CO-ORDINATES	663,094.22 E 746,637.54 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	71.29	**BOREHOLE DEPTH (m)**	7.50
		DATE COMMENCED	30/06/2025
		DATE COMPLETED	01/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	D.Tolster
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		71.09	0.20						
	Soft grey sandy gravelly SILT/CLAY with occasional cobbles				AA223907	B	1.00-1.45		N = 6 (0, 1, 1, 1, 2, 2)	
1			69.79	1.50						
	Stiff grey/brown sandy gravelly SILT/CLAY with occasional cobbles				AA223908	B	2.00-2.45		N = 22 (5, 6, 5, 6, 6, 5)	
2			68.79	2.50						
	Very stiff dark grey silty sandy gravelly CLAY with occasional cobbles				AA223909	B	3.00-3.20		N = 50/75 mm (25, 50)	
3			67.29	4.00						
	Medium dense to dense grey fine to coarse sandy GRAVEL				AA223910	B	4.00-4.45		N = 24 (2, 5, 5, 5, 6, 8)	
4			66.29	5.00						
	Firm brown gravelly SILT/CLAY				AA223911	B	5.00-5.45		N = 17 (2, 3, 3, 4, 5, 5)	
5			65.49	5.80						
	Very stiff grey sandy gravelly SILT/CLAY with occasional cobbles & boulders				AA223912	B	6.00-6.40		N = 49 (7, 9, 14, 14, 11, 10)	
6					AA223913	B	7.00-7.30		N = 51 (15, 10, 10, 17, 13, 11)	
7			63.79	7.50						
	Obstruction End of Borehole at 7.50 m									
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3	3.4	0.5	
7.2	7.5	2	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
01-07-25	7.30	7.30	3.40	End of BH

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH44**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,991.57 E 746,594.44 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	71.40	**BOREHOLE DEPTH (m)**	6.80
		DATE COMMENCED	07/07/2025
		DATE COMPLETED	07/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	D.Tolster
		PROCESSED BY	T.G

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		71.20	0.20						
	Soft grey mottled brown sandy SILT/CLAY with occasional gravel				AA223928	B	1.00-1.45		N = 13 (0, 1, 3, 4, 3, 3)	
1			69.90	1.50						
	Stiff grey/brown sandy silty gravelly CLAY with cobbles and boulders				AA223929	B	2.00-2.45		N = 22 (5, 5, 6, 5, 5, 6)	
2										
3			68.30	3.10	AA223930	B	3.00-3.45		N = 50/225 mm (15, 10, 16, 17, 17)	
	Very stiff grey very sandy gravelly CLAY with cobbles and boulders									
4			67.40	4.00	AA223931	B	4.00-4.45		N = 48 (7, 11, 12, 12, 12, 12)	
	Dense grey fine sandy coarse GRAVEL									
			66.60	4.80						
5	Stiff grey fine sandy SILT/CLAY with some gravel		66.20	5.20	AA223932	B	5.00-5.45		N = 22 (2, 5, 5, 5, 6, 6)	
	Dense grey fine to coarse sandy coarse GRAVEL with some cobbles									
6					AA223933	B	6.00-6.45		N = 47 (10, 15, 12, 12, 11, 12)	
			64.60	6.80	AA223934	B	6.70-6.80		(25, 50)	
7	Obstruction End of Borehole at 6.80 m									
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
6.7	6.8	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.30	3.30	Yes	2.00	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
07-07-25	6.80	6.80	3.20	End of BH

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH45**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,879.51 E 746,468.77 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	70.32	**BOREHOLE DEPTH (m)**	6.60
		DATE COMMENCED	03/07/2025
		DATE COMPLETED	03/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	D.Tolster
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		70.12	0.20						
	Soft grey/brown mottled sandy SILT/CLAY with occasional fine gravel				AA223921	B	1.00-1.45		N = 6 (0, 1, 1, 2, 1, 2)	
1			68.72	1.60						
	Stiff grey/brown mottled sandy gravelly SILT/CLAY with occasional large cobbles				AA223922	B	2.00-2.45		N = 22 (2, 6, 5, 5, 6, 6)	
2			68.02	2.30						
	Stiff grey sandy gravelly SILT/CLAY with occasional cobbles & boulders				AA223923	B	3.00-3.20		N = 50/75 mm (25, 50)	
3										
					AA223924	B	4.00-4.45		N = 20 (5, 5, 6, 5, 4, 5)	
4			65.52	4.80						
	Dense grey fine to coarse sandy GRAVEL with some cobbles				AA223925	B	5.00-5.45		N = 34 (5, 8, 8, 9, 8, 9)	
5										
					AA223926	B	6.00-6.45		N = 47 (6, 10, 11, 10, 14, 12)	
6			63.72	6.60	AA223927	B	6.50-6.60		N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 6.60 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.1	3.4	0.5	
6.5	6.6	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.80	4.80	No	3.10	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
03-07-25	6.60	6.60	2.80	End of BH

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH46**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,974.18 E 746,029.73 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	67.55	**BOREHOLE DEPTH (m)**	8.30
		DATE COMMENCED	15/07/2025
		DATE COMPLETED	16/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	D.Tolster
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		67.25	0.30						
	Soft light grey sandy SILT/CLAY		66.55	1.00						
1	Soft grey/brown mottled sandy slightly gravelly SILT/CLAY		66.05	1.50	AA238651	B	1.00-1.45		N = 8 (0, 1, 1, 2, 2, 3)	
	Firm light grey mottled sandy gravelly SILT with occasional cobbles & boulders		65.35	2.20	AA238652	B	2.00-2.45		N = 24 (2, 5, 5, 6, 7, 6)	
2	Medium dense grey fine sandy coarse GRAVEL		64.55	3.00						
	Firm grey sandy gravelly SILT		63.55	4.00	AA238653	B	3.00-3.45		N = 12 (1, 1, 2, 2, 3, 5)	
3	Firm brown slightly sandy gravelly SILT/CLAY with some cobbles		62.55	5.00	AA238654	B	4.00-4.45		N = 11 (1, 2, 2, 2, 2, 5)	
	Loose to medium dense grey slightly silty very sandy GRAVEL		60.75	6.80	AA238655	B	5.00-5.45		N = 10 (0, 2, 1, 2, 3, 4)	
4					AA238656	B	6.00-6.45		N = 13 (1, 1, 3, 3, 2, 5)	
	Very stiff grey slightly sandy slightly gravelly CLAY with occasional cobbles & boulders		59.25	8.30	AA238657	B	7.00-7.45		N = 44 (5, 8, 10, 11, 12, 11)	
5					AA238658	B	8.00-8.30		N = 50/150 mm (14, 11, 23, 27)	
	Obstruction End of Borehole at 8.30 m									
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
8.1	8.3	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
15-07-25	4.80	4.80	4.50	End of 1st day
16-07-25	8.30	8.30	1.30	End of BH

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH48**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,904.25 E 745,787.26 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	69.13	**BOREHOLE DEPTH (m)**	9.00
		DATE COMMENCED	19/07/2025
		DATE COMPLETED	20/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		68.83	0.30						
	Firm brown sandy gravelly SILT				AA254617	B	0.50			
1					AA254618	B	1.00		N = 11 (1, 2, 2, 2, 3, 4)	
			67.13	2.00						
2	Firm grey/brown sandy gravelly SILT/CLAY		66.63	2.50	AA254619	B	2.00		N = 19 (3, 3, 3, 5, 5, 6)	
	Firm grey slightly sandy slightly gravelly CLAY with occasional cobbles									
3					AA254620	B	3.00		N = 12 (2, 2, 3, 2, 3, 4)	
4					AA254621	B	4.00		N = 14 (2, 3, 3, 4, 3, 4)	
			64.13	5.00						
5	Firm grey sandy gravelly SILT with occasional cobbles				AA254622	B	5.00		N = 19 (3, 3, 5, 7, 3, 4)	
6			63.03	6.10	AA254623	B	6.00		N = 20 (7, 8, 6, 5, 5, 4)	
	Stiff to very stiff grey sandy gravelly CLAY with cobbles		62.13	7.00						
7	Dense grey slightly silty slightly sandy GRAVEL with many cobbles				AA254624	B	7.00		N = 26 (3, 4, 6, 6, 6, 8)	
			61.13	8.00						
8	Stiff to very stiff grey sandy gravelly CLAY with cobbles				AA254625	B	8.00		N = 51 (6, 8, 15, 10, 15, 11)	
			60.13	9.00						
9	End of Borehole at 9.00 m								N = 50/75 mm (25, 50)	

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
7.8	8	1	
8.8	9	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.50	6.50	No	3.50	20	Rapid
7.50	7.50	No	2.50	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH49**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,887.72 E 745,694.32 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	69.47	**BOREHOLE DEPTH (m)**	1.00
		DATE COMMENCED	20/07/2025
		DATE COMPLETED	20/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		69.27	0.20						
	Brown sandy gravelly SILT/CLAY with occasional cobbles				AA243626	B	0.50			
			68.47	1.00					N = 50/75 mm (25, 50)	
1	Obstruction End of Borehole at 1.00 m									
2										
3										
4										
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
0.9	1	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Obstruction encountered . Moved 3m to BH49A and attempted rebore.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH49A**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,887.42 E 745,694.00 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	69.50	**BOREHOLE DEPTH (m)**	8.30
		DATE COMMENCED	20/07/2025
		DATE COMPLETED	21/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		69.30	0.20						
	Brown sandy SILT/CLAY				AA243627	B	0.50			
			68.50	1.00						
1	Soft brown sandy gravelly SILT				AA243628	B	1.00		N = 7 (1, 1, 2, 2, 1, 2)	
2					AA243629	B	2.00		N = 6 (1, 0, 1, 1, 2, 2)	
3					AA243630	B	3.00		N = 9 (1, 2, 2, 3, 2, 2)	
			66.10	3.40						
	Stiff to very stiff grey slightly sandy gravelly CLAY with occasional cobbles									
4					AA243631	B	4.00		N = 40 (7, 9, 7, 10, 15, 8)	
5					AA243632	B	5.00		N = 20 (2, 3, 3, 6, 7, 4)	
6					AA243633	B	6.00		N = 29 (6, 7, 8, 8, 6, 7)	
			62.50	7.00						
7	Brown silty sandy GRAVEL with some cobbles				AA243634	B	7.00		N = 56 (6, 8, 15, 15, 12, 14)	
8					AA243635	B	8.00		N = 50/75 mm (5, 20, 50) N = 50/75 mm (25, 50)	
			61.20	8.30						
	Obstruction End of Borehole at 8.30 m									
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4.2	4.5	1	
8.1	8.3	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.50	6.50	No	3.50	20	Rapid
8.00	8.00	No	3.00	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Standing 2hrs on dumper to move rig .

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH50**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,483.88 E 744,417.75 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	72.68	**BOREHOLE DEPTH (m)**	5.80
		DATE COMMENCED	20/05/2025
		DATE COMPLETED	21/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	JL

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		72.38	0.30						
	Firm brown sandy CLAY		72.18	0.50						
	Firm becoming stiff grey sandy gravelly CLAY with cobbles				AA212812	B	0.50-1.00			
1					AA212813	B	1.00-1.50		N = 46 (4, 5, 6, 10, 15, 15)	
2					AA212814	B	2.00-2.50		N = 10 (2, 3, 2, 3, 3, 2)	
3					AA212815	B	3.00-3.50		N = 15 (2, 3, 3, 3, 4, 5)	
4					AA212816	B	4.00-4.50		N = 34 (5, 5, 6, 9, 8, 11)	
5					AA212817	B	5.00-5.50		N = 48 (5, 8, 9, 12, 12, 15)	
			66.88	5.80					N = 50/0 mm (25, 50)	
6	Obstruction End of Borehole at 5.80 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
1.3	1.6	0.75	
5.5	5.8	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.50	3.50	No	3.00	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH51**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,511.02 E 744,093.63 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	70.71	**BOREHOLE DEPTH (m)**	3.00
		DATE COMMENCED	27/05/2025
		DATE COMPLETED	27/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	Peaty TOPSOIL		70.21	0.50						
	Soft grey sandy SILT/CLAY				AA212847	B	0.50			
1			69.41	1.30	AA212848	B	1.00		N = 4 (1, 0, 0, 1, 2, 1)	
	Firm grey sandy gravelly SILT with some cobbles									
2					AA212849	B	2.00		N = 10 (1, 0, 1, 4, 3, 2)	
			68.01	2.70						
	COBBLES & BOULDERS		67.71	3.00						
3	Obstruction End of Borehole at 3.00 m								N = 50/75 mm (25, 50)	
4										
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3	3	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH51A**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,510.06 E 744,092.51 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	70.57	**BOREHOLE DEPTH (m)**	13.00
		DATE COMMENCED	27/05/2025
		DATE COMPLETED	28/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	Peaty TOPSOIL		70.07	0.50						
	Soft grey sandy SILT/CLAY				AA22801	B	0.50			
1			69.37	1.20	AA22802	B	1.00		N = 4 (1, 0, 2, 1, 0, 1)	
	Firm grey sandy gravelly SILT with some cobbles									
2					AA22803	B	2.00		N = 11 (1, 1, 4, 3, 2, 2)	
			67.57	3.00						
3	Stiff grey slightly sandy slightly gravelly CLAY with cobbles & occasional boulders				AA22804	B	3.00		N = 24 (4, 5, 6, 6, 6, 6)	
4					AA22805	B	4.00		N = 21 (3, 3, 6, 4, 5, 6)	
			65.57	5.00						
5	Stiff grey sandy gravelly SILT with cobbles and occasional boulders				AA22806	B	5.00		N = 22 (3, 5, 6, 4, 6, 6)	
6					AA22807	B	6.00		N = 18 (2, 3, 3, 4, 4, 7)	
7					AA22808	B	7.00		N = 50/75 mm (25, 50)	
			62.57	8.00						
8	Stiff brown slightly sandy slightly gravelly CLAY with many cobbles				AA22809	B	8.00		N = 27 (7, 5, 7, 7, 7, 6)	
9			61.27	9.30	AA22810	B	9.00		N = 21 (3, 4, 4, 5, 6, 6)	
	Medium dense to dense dark brown clayey/silty very sandy GRAVEL with occasional cobbles									

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
7	7.3	1	
12.6	13	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
7.50	7.50	No	7.00	20	Slow
10.00	10.00	No	2.00	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH51A**
		SHEET	Sheet 2 of 2
CO-ORDINATES	662,510.06 E 744,092.51 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	70.57	**BOREHOLE DEPTH (m)**	13.00
		DATE COMMENCED	27/05/2025
		DATE COMPLETED	28/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
10	Medium dense to dense dark brown clayey/silty very sandy GRAVEL with occasional cobbles *(continued)*				AA22811	B	10.00		N = 35 (5, 6, 8, 9, 9, 9)	
11					AA22812	B	11.00		N = 41 (11, 6, 8, 10, 12, 11)	
			58.57	12.00						
12	Dense dark brown slightly clayey/silty sandy GRAVEL				AA22813	B	12.00		N = 45 (6, 7, 10, 10, 11, 14)	
			57.57	13.00						
13	Obstruction End of Borehole at 13.00 m								N = 50/75 mm (25, 50)	
14										
15										
16										
17										
18										
19										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
7	7.3	1	
12.6	13	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH53**
		SHEET	Sheet 1 of 2
CO-ORDINATES	661,203.19 E 737,577.30 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	66.87	**BOREHOLE DEPTH (m)**	12.50
		DATE COMMENCED	10/06/2025
		DATE COMPLETED	11/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
		BORED BY	P.Allan
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		66.57	0.30						
	Firm grey/brown sandy gravelly SILT				AA213988	B	0.50			
1					AA213989	B	1.00		N = 11 (2, 2, 3, 2, 3, 3)	
			65.37	1.50						
	Soft grey very sandy slightly gravelly SILT/CLAY		64.87	2.00						
2	Loose grey very sandy GRAVEL (Possibly gravelly Sand)		64.37	2.50	AA213990	B	2.00		N = 6 (1, 1, 2, 1, 2, 1)	
	Soft grey sandy gravelly SILT									
3						U	3.00	80%rec		
			62.87	4.00						
4	Loose grey slightly clayey very gravelly SAND				AA213991	B	4.00		N = 7 (1, 1, 2, 3, 1, 1)	
5					Failed	U	5.00			
					AA213992	B	5.50		N = 8 (1, 1, 2, 2, 1, 3)	
6					AA213993	B	6.00		N = 9 (1, 2, 3, 2, 1, 3)	
			59.87	7.00						
7	Loose to medium dense grey slightly clayey/silty very sandy GRAVEL				AA213994	B	7.00		N = 13 (4, 3, 3, 3, 3, 4)	
8					AA213995	B	8.00		N = 8 (2, 2, 2, 2, 2, 2)	
9					AA213996	B	9.00		N = 9 (1, 2, 2, 3, 2, 2)	

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
11.8	12	1	
12.4	12.5	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
7.50	7.50	No	1.50	20	Moderate
10.00	10.00	No	6.00	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
10-06-25	7.50	7.50	1.50	End of 1st day
11-06-25	7.50	7.50	1.50	Start of 2nd Day

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Blow back noted in gravels 10.0-7.0m.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH53**
		SHEET	Sheet 2 of 2
CO-ORDINATES	661,203.19 E 737,577.30 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	66.87	**BOREHOLE DEPTH (m)**	12.50
		DATE COMMENCED	10/06/2025
		DATE COMPLETED	11/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
10	Loose to medium dense grey slightly clayey/silty very sandy GRAVEL *(continued)*				AA213997	B	10.00		N = 7 (1, 2, 1, 2, 2, 2)	
11					AA213998	B	11.00		N = 7 (2, 3, 3, 2, 1, 1)	
			55.37	11.50						
	Grey SILT (Possible Marl)		55.07	11.80	AA213999	B	11.50			
12	Dense brown clayey sandy GRAVEL with many cobbles and some pockets of stiff grey gravelly clay				AA214000	B	12.00		N = 50/150 mm (6, 10, 30, 20)	
			54.37	12.50						
	Obstruction End of Borehole at 12.50 m								N = 50/75 mm (25, 50)	
13										
14										
15										
16										
17										
18										
19										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
11.8	12	1	
12.4	12.5	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Blow back noted in gravels 10.0-7.0m.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH54**
		SHEET	Sheet 1 of 1
CO-ORDINATES	661,106.01 E 737,454.98 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	65.68	**BOREHOLE DEPTH (m)**	9.50
		DATE COMMENCED	06/06/2025
		DATE COMPLETED	09/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		65.38	0.30						
	Soft grey sandy gravelly SILT				AA22837	B	0.50			
1					AA22838	B	1.00		N = 10 (2, 3, 3, 3, 2, 2)	
2					AA22839	B	2.00		N = 9 (3, 3, 2, 3, 2, 2)	
			62.68	3.00						
3	Firm grey sandy SILT					U	3.00	80%rec		
					AA222841	B	3.50		N = 11 (1, 2, 2, 3, 3, 3)	
4					AA222842	B	4.00			
									N = 10 (1, 1, 2, 2, 3, 3)	
5						U	5.00	70%rec		
					AA22843	B	5.50		N = 11 (1, 2, 3, 3, 2, 3)	
6					AA22844	B	6.00			
									N = 12 (2, 1, 2, 2, 3, 5)	
7						U	7.00	60%rec		
			57.88	7.80						
8	Very stiff grey slightly sandy gravelly CLAY with occasional cobbles				AA22845	B	8.00		N = 35 (6, 8, 10, 7, 9, 9)	
9					AA22846	B	9.00		N = 50/75 mm (20, 50)	
			56.18	9.50						
	Obstruction End of Borehole at 9.50 m									

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
7.8	8	1	
9.3	9.5	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
9.50	9.50	No	3.00	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH55**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,896.88 E 737,102.23 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	69.20	**BOREHOLE DEPTH (m)**	14.00
		DATE COMMENCED	02/05/2025
		DATE COMPLETED	07/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
		BORED BY	P.Allan
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		69.00	0.20						
	Firm brown sandy gravelly SILT/CLAY				AA213961	B	0.50			
1					AA213962	B	1.00		N = 11 (2, 4, 4, 2, 2, 3)	
			67.40	1.80						
	Stiff grey sandy gravelly SILT with cobbles				AA213963	B	2.00		N = 30 (2, 6, 8, 5, 6, 11)	
2										
3					AA213964	B	3.00		N = 51 (6, 8, 10, 15, 16, 10)	
					AA213965	B	4.00		N = 19 (2, 3, 3, 4, 6, 6)	
4			64.80	4.40						
	Soft grey/grey brown sandy SILT/CLAY									
5					AA213966	B	5.00		N = 5 (2, 1, 1, 2, 1, 1)	
			63.20	6.00						
6	Soft grey sandy SILT (Marl)				AA213967	B	6.00		N = 4 (2, 1, 1, 1, 1, 1)	
7					AA213968	U	7.00			
			61.70	7.50						
	Firm grey slightly sandy SILT/CLAY				AA213969	B	7.50		N = 7 (1, 2, 1, 2, 2, 2)	
8					AA213970	B	8.00		N = 10 (1, 2, 2, 2, 3, 3)	
			60.20	9.00						
9	Medium dense grey silty slightly gravelly SAND to sandy slightly gravelly silt				AA213971	B	9.00		N = 11 (2, 3, 4, 2, 3, 2)	

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.3	3.5	1	
13.7	14	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
06-05-25	5.00	5.00	3.00	Start of 2nd day

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH55**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,896.88 E 737,102.23 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	69.20	**BOREHOLE DEPTH (m)**	14.00
		DATE COMMENCED	02/05/2025
		DATE COMPLETED	07/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
10	Medium dense grey silty slightly gravelly SAND to sandy slightly gravelly silt *(continued)*				AA213972	B	10.00		N = 27 (4, 4, 5, 6, 8, 8)	
11					AA213973	B	11.00		N = 16 (2, 3, 4, 4, 4, 4)	
12					AA213974	B	12.00		N = 23 (4, 3, 6, 5, 6, 6)	
			56.40	12.80						
13	Dense grey clayey/silty very sandy GRAVEL with some cobbles				AA213975	B	13.00		N = 41 (2, 3, 6, 10, 10, 15)	
			55.20	14.00						
14	Obstruction End of Borehole at 14.00 m								N = 50/75 mm (25, 50)	
15										
16										
17										
18										
19										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.3	3.5	1	
13.7	14	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH56**
		SHEET	Sheet 1 of 1
CO-ORDINATES	661,053.73 E 727,959.30 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	67.53	**BOREHOLE DEPTH (m)**	8.00
		DATE COMMENCED	03/04/2025
		DATE COMPLETED	04/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	Very soft dark brown/black PEAT				AA212751	B	0.50			
1					AA212752	B	1.00		N = 1 (1, 0, 0, 0, 1, 0)	
			66.03	1.50						
	Very soft grey sandy SILT									
2					AA212753	B	2.00		N = 1 (0, 0, 0, 0, 0, 1)	
3					AA212754	B	3.00		N = 1 (1, 0, 0, 0, 1, 0)	
			63.73	3.80						
	Loose grey very silty SAND									
4					AA212755	B	4.00		N = 9 (1, 2, 2, 3, 2, 2)	
5					AA212756	B	5.00		N = 4 (1, 0, 0, 1, 1, 2)	
			62.03	5.50						
	Medium dense grey fine to coarse silty SAND with occasional fine gravel									
6					AA212757	B	6.00		N = 13 (2, 2, 3, 3, 4, 3)	
7					AA212758	B	7.00		N = 13 (2, 5, 4, 2, 4, 3)	
			59.53	8.00						
8	End of Borehole at 8.00 m								N = 15 (4, 3, 3, 5, 4, 3)	
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.00	4.00	No	3.50	20	Slow
6.00	6.00	No	2.00	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH57**
		SHEET	Sheet 1 of 1
CO-ORDINATES	661,173.11 E 727,939.61 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	67.25	**BOREHOLE DEPTH (m)**	8.00
		DATE COMMENCED	11/04/2025
		DATE COMPLETED	12/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		67.15	0.10						
	Very soft dark brown PEAT		66.25	1.00	AA212781	B	0.50			
1	Very soft grey sandy SILT		65.25	2.00	AA212782	B	1.00		N = 3 (1, 0, 0, 1, 1, 1)	
2	Loose grey very silty SAND (Possibly very sandy Silt)				AA212783	B	2.00		N = 11 (3, 4, 3, 3, 2, 3)	
3					AA212784	B	3.00		N = 9 (5, 4, 3, 2, 2, 2)	
4			62.75	4.50	AA212785	B	4.00		N = 9 (5, 4, 3, 2, 2, 2)	
	Medium dense grey and grey/brown fine to medium silty SAND with occasional fine gravel									
5					AA212786	B	5.00		N = 12 (2, 3, 4, 4, 2, 2)	
6					AA212787	B	6.00		N = 14 (1, 2, 2, 4, 4, 4)	
7					AA212788	B	7.00		N = 14 (2, 2, 4, 4, 3, 3)	
			59.25	8.00						
8	End of Borehole at 8.00 m								N = 16 (4, 3, 3, 4, 4, 5)	
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.00	3.00	No	1.50	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH58**
		SHEET	Sheet 1 of 1
CO-ORDINATES	661,280.66 E 727,656.05 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	66.71	**BOREHOLE DEPTH (m)**	8.00
		DATE COMMENCED	08/04/2025
		DATE COMPLETED	09/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		66.61	0.10						
	Very soft dark brown PEAT		66.31	0.40						
	Very soft grey SILT/CLAY				AA212766	B	0.50			
1					AA212767	B	1.00		N = 3 (1, 0, 1, 1, 0, 1)	
			64.71	2.00						
2	Medium dense grey silty SAND				AA212768	B	2.00		N = 5 (1, 2, 1, 2, 1, 1)	
3					AA212769	B	3.00		N = 18 (2, 3, 4, 5, 5, 4)	
4					AA212770	B	4.00		N = 8 (1, 2, 2, 2, 2, 2)	
			61.71	5.00						
5	Very soft goft grey SILT				AA212771	B	5.00		N = 1 (1, 0, 0, 0, 1, 0)	
			60.91	5.80						
6	Stiff to very stiff grey sandy gravel with stiff CLAY				AA212772	B	6.00		N = 31 (6, 7, 7, 8, 8, 8)	
7					AA212773	B	7.00		N = 27 (3, 4, 5, 6, 8, 8)	
			58.71	8.00						
8	Obstruction End of Borehole at 8.00 m								N = 34 (5, 7, 7, 6, 10, 11)	
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
6.2	6.4	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
5.00	5.00	No	3.00	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH59**
		SHEET	Sheet 1 of 1
CO-ORDINATES	661,232.63 E 727,621.93 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	67.15	**BOREHOLE DEPTH (m)**	8.50
		DATE COMMENCED	02/04/2025
		DATE COMPLETED	02/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		66.75	0.40						
	Very soft dark brown PEAT				AA245041	B	0.50			
1					AA245042	B	1.00		N = 5 (1, 0, 1, 1, 1, 2)	
			65.15	2.00						
2	Soft grey sandy SILT				AA245043	B	2.00		N = 5 (1, 1, 1, 1, 2, 1)	
3						U	3.00	100%rec		
			63.15	4.00						
4	Medium dense grey silty SAND (occasionally becoming very sandy silt)				AA245044	B	4.00		N = 8 (1, 1, 2, 2, 2, 2)	
5					AA245045	B	5.00		N = 13 (1, 2, 3, 4, 4, 2)	
6					AA245046	B	6.00		N = 14 (1, 2, 3, 4, 3, 4)	
7					AA245047	B	7.00		N = 15 (2, 3, 3, 4, 4, 4)	
8									N = 18 (3, 3, 4, 4, 5, 5)	
			58.65	8.50						
	End of Borehole at 8.50 m									
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.00	6.00	No	5.00	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 23/12/25

Appendix 2

Rotary Drillhole Records & Photographs

RC01 -RC55

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC01**
		SHEET	Sheet 1 of 2
CO-ORDINATES	663,472.19 E 746,785.34 N		
GROUND LEVEL (mOD)	69.55	**DATE DRILLED**	15/08/2025
RIG TYPE	Casagrande C8		
FLUSH	Air/Mist		
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - LDG
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Description	Depth (m)	Elevation	SPT (N Value)
					SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.10	69.45	
					SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown peaty CLAY	0.30	69.25	
					SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey very sandy SILT/CLAY with occasional gravel	2.20	67.35	
		0	0	0	SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY with occasional cobbles & boulders	4.80	64.75	
					SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey fine to coarse sandy GRAVEL with occasional cobbles & boulders	6.10	63.45	
					SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible weathered ROCK	8.30	61.25	N = 51 (5, 7, 10, 9, 14, 18)
	8.30							
	8.60	100	30	0				N = 50/30 mm (12, 50)
		100	39	24				

REMARKS

Hole cased from 0.00-8.30m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
19-08-25	6.00	6.00	1.00	50mm SP
19-08-25	20.00	8.00	20.00	19mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC01**
		SHEET	Sheet 2 of 2
CO-ORDINATES	663,472.19 E 746,785.34 N	**RIG TYPE**	Casagrande C8
GROUND LEVEL (mOD)	69.55	**FLUSH**	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	15/08/2025
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Description
10	10.20				Weak to strong, light blue/grey fine-grained massively bedded LIMESTONE (slightly dolomitised with crystalline calcisiltite layers). Weathering: Orange brown non-penetrative discolouration common on discontinuity surfaces. Otherwise fresh to slightly weathered. Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally calcite veined (1-20mm thick), locally clay smeared, local clay layer (@19.58-19.74m),frequent incipient fractures. Dips are subhorizontal to locally 30° and irregular. *(continued)*
	11.00	100	56	28	
11	11.40	100	48	0	
12		100	27	16	
	12.80				
13		100	72	45	
14	14.30				
		100	82	68	
15	15.50				
16		100	69	33	
	16.90				
17		100	62	45	
18	18.10				
	18.70	100	30	0	
19		100	51	28	
	20.00				

Fracture Spacing Log (mm): 0 – 250 – 500

Non-intact Zone | Legend

Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20.00	49.55		

REMARKS

Hole cased from 0.00-8.30m

End of Borehole at 20.00 m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
15-08-25	20.00	8.30	1.66	End of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
19-08-25	6.00	6.00	1.00	50mm SP
19-08-25	20.00	8.00	20.00	19mm SP

IGSL RC FI 10M 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC02**
		SHEET	Sheet 1 of 3
CO-ORDINATES	663,439.34 E 746,777.94 N	**RIG TYPE**	Casagrande C8
GROUND LEVEL (mOD)	69.76	**FLUSH**	Air/Mist
		DATE DRILLED	06/08/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.10	69.66		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown peaty CLAY	0.20	69.56		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown mottled grey sandy SILT	1.20	68.56		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of dark grey sandy silty gravelly CLAY with occasional cobbles and boulders				
2												
3								SYMMETRIX DRILLING: No recovery, observed by driller as returns of fine very sandy GRAVEL (possibly gravelly sand)	3.00	66.76		
4		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey fine to coarse sandy slightly sandy GRAVEL with cobbles	4.00	65.76		
5												
6								SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible weathered ROCK	6.00	63.76		N = 50/230 mm (8, 10, 10, 20, 14, 6)
7												
8	8.50											
9		100	0	0				Strong, dark blue/grey GRAVEL with cobbles. Gravel is angular to subrounded fine to coarse of limestone. Cobbles are of limestone. Possible weathered rock	8.50	61.26		
	9.30	100	0	0								

REMARKS

Hole cased from 0.00-8.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.50 7.00	4.50 7.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
11-08-25	18.00	18.00	1.00	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC02**
		SHEET	Sheet 2 of 3
CO-ORDINATES	663,439.34 E 746,777.94 N		
GROUND LEVEL (mOD)	69.76	**RIG TYPE**	Casagrande C8
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	06/08/2025
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.40								10.40	59.36		
		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible weathered rock				
11	11.60								11.60	58.16		
		100	11	0				Medium strong to strong, light to dark blue/black fine-grained massively bedded LIMESTONE (predominantly calci-siltite layers with subordinate argillaceous layers, locally fossiliferous). Weathering: Local orange brown non-penetrative discolouration common on discontinuity surfaces. Otherwise fresh to slightly weathered Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally calcite veined (1-20mm thick), locally clay smeared, frequent incipient fractures. Dips are subhorizontal to locally 30° and irregular.				
12	12.60											
		100	46	31								
13	14.00											
		100	53	42								
14	14.90											
		100	26	22								
15	15.70								15.70	54.06		
		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of rock				
16												
17												
18												
19												
	19.80								19.80	49.96		

REMARKS

Hole cased from 0.00-8.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.50 7.00	4.50 7.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
06-08-25	10.40	8.50	0.95	End of Shift
07-08-25	14.90	8.50	2.16	End of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
11-08-25	18.00	18.00	1.00	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC02**
		SHEET	Sheet 3 of 3
CO-ORDINATES	663,439.34 E 746,777.94 N	**RIG TYPE**	Casagrande C8
GROUND LEVEL (mOD)	69.76	**FLUSH**	Air/Mist
		DATE DRILLED	06/08/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20	20.50	100	0	0				Stiff to very stiff light brown very sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of limestone. *(continued)*	20.50	49.26		
								End of Borehole at 20.50 m				
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.00-8.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.50 7.00	4.50 7.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
08-08-25	20.50	8.50	0.80	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
11-08-25	18.00	18.00	1.00	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC03**
		SHEET	Sheet 1 of 2
CO-ORDINATES	663,433.04 E 746,794.15 N		
GROUND LEVEL (mOD)	69.95	**RIG TYPE**	Casagrande C8
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	11/08/2025
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.10	69.85		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown peaty SILT	0.30	69.65		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy SILT	1.20	68.75		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT/CLAY with occasional cobbles	1.90	68.05		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of dark grey very sandy gravelly CLAY with occasional cobbles and boulders				
3									3.60	66.35		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey fine to coarse sandy GRAVEL with occasional cobbles				
4												
5									5.50	64.45		
		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey very gravelly CLAY with occasional cobbles (possibly clayey gravel)	6.10	63.85		
6								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy clayey GRAVEL				N = 50/35 mm (4, 26, 50)
									7.00	62.95		
7								SYMMETRIX DRILLING: No recovery, observed by driller as returns of clayey GRAVEL				
8												N = 50/30 mm (50, 50)
9									9.50	60.45		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK				

REMARKS

Hole cased from 0.00-11.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.00	6.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
11-08-25	12.00	11.00	20.00	19mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC03**
		SHEET	Sheet 2 of 2
CO-ORDINATES	663,433.04 E 746,794.15 N		
GROUND LEVEL (mOD)	69.95	**RIG TYPE**	Casagrande C8
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	11/08/2025
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10					SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK *(continued)*				N = 74/95 mm (6, 24, 24, 50)
11	11.50					11.50	58.45		
12		100	15	15	Weak to strong, light grey to grey brown fine-grained massively bedded LIMESTONE (slightly dolomitised with crystalline calcisiltite layers). Weathering: Orange brown non-penetrative discolouration common on discontinuity surfaces. Otherwise fresh to slightly weathered. Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, local calcite veined (1-15mm thick), frequent incipient fractures, slight iron oxide staining. Dips are subhroizontal to locally 30°, 45° and irregular.				
13	13.00	100	22	22					
14	14.10								
15		100	48	32					
16	15.70								
17		100	29	19					
18	17.20								
19		100	44	44					
	18.40								
		100	21	7					
	20.00				End of Borehole at 20.00 m	20.00	49.95		

Fracture Spacing Log (mm): 0 / 250 / 500

Non-intact Zone / Legend

REMARKS

Hole cased from 0.00-11.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.00	6.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
11-08-25	11.50	11.50	9.82	End of Shift
12-08-25	20.00	11.50	1.12	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
11-08-25	12.00	11.00	20.00	19mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC04**
		SHEET	Sheet 1 of 2
CO-ORDINATES	663,461.08 E 746,808.53 N		
GROUND LEVEL (mOD)	69.71	**DATE DRILLED**	12/08/2025
RIG TYPE	Casagrande C8		
FLUSH	Air/Mist		
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - LDG
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.10	69.61		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown peaty SILT	0.30	69.41		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy SILT				
2									2.40	67.31		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey very sandy SILT/CLAY with occasional gravel	3.10	66.61		
3								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY with occasional cobbles & boulders				
4		0	0	0					4.70	65.01		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey fine to coarse sandy GRAVEL with occasional cobbles & boulders				
5									6.10	63.61		
6								SYMMETRIX DRILLING: No recovery, observed by driller as returns of dark grey sandy GRAVEL				N = 50/40 mm (6, 18, 50)
7									7.50	62.21		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible weathered ROCK				N = 50/30 mm (50, 50)
8	8.50								8.50	61.21		
9		100	81	55								
	9.50											

REMARKS

Hole cased from 0.00-8.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
5.00	5.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
12-08-25	9.50	8.50	1.21	End of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
15-08-25	3.50	3.50	1.00	50mm SP
15-08-25	7.00	4.50	7.00	19mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC04**
		SHEET	Sheet 2 of 2
CO-ORDINATES	663,461.08 E 746,808.53 N		
GROUND LEVEL (mOD)	69.71	**DATE DRILLED**	12/08/2025
CLIENT	Murphy International Limited	**RIG TYPE**	Casagrande C8
ENGINEER	Fingleton White	**FLUSH**	Air/Mist
		INCLINATION (deg)	-90
		CORE DIAMETER (mm)	78
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.40	100	21	0	Weak to strong, light grey to grey brown fine-grained massively bedded LIMESTONE (slightly dolomitised with crystalline calcisiltite layers). Weathering: Orange brown non-penetrative discolouration common on discontinuity surfaces. Otherwise fresh to slightly weathered. Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally calcite veined (1-5mm thick), locally clay smeared, local gravel/clay layer (@19.47-19.60m) local clay layer, frequent incipient fractures. Dips are subhorizontal to locally 30° and irregular. *(continued)*				
		100	13	0					
11	11.10								
	11.40	100	20	0					
12		100	27	18					
	12.60								
13		100	2	0					
	13.40								
14		100	4	0					
	14.30								
15		100	61	34					
	15.70								
16		100	44	10					
	16.70								
17		100	14	0					
	17.40								
18		100	49	24					
	18.50								
19		100	37	15					
	19.60				End of Borehole at 19.60 m	19.60	50.11		

Fracture Spacing Log (mm): 0 – 250 – 500

Non-intact Zone

Legend

REMARKS

Hole cased from 0.00-8.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
5.00	5.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
13-08-25	14.30	8.50	2.16	End of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
15-08-25	3.50	3.50	1.00	50mm SP
15-08-25	7.00	4.50	7.00	19mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC07**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,902.19 E 745,937.07 N		
GROUND LEVEL (mOD)	67.85	**RIG TYPE**	Casagrande C8
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	29/08/2025
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	67.55		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy slightly gravelly SILT/CLAY	1.30	66.55		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of light grey mottled sandy gravelly SILT with occasional cobbles				
3									3.30	64.55		
4								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy slightly gravelly SILT with occasional cobbles & boulders				
5												
6									6.40	61.45		
7								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy gravelly CLAY with occasional cobbles & boulders	7.20	60.65		
8								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey silty fine sandy coarse GRAVEL	8.10	59.75		
9								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey clayey sandy GRAVEL with cobbles				

REMARKS

Hole cased from 0.00-11.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
9.00	9.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
02-09-25	20.00	1.50	20.00	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC07**
		SHEET	Sheet 2 of 2
CO-ORDINATES	662,902.19 E 745,937.07 N		
GROUND LEVEL (mOD)	67.85	**RIG TYPE**	Casagrande C8
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	29/08/2025
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey clayey sandy GRAVEL with cobbles *(continued)*	10.50	57.35		
11								SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	11.50	56.35		
	11.50							Strong to very strong, thickly to thinly bedded, dark grey/black, fine-grained, LIMESTONE (predominantly calci-siltite (sandy) limestone with subordinate argillaceous (muddy) limestone layers, locally fossiliferous), fresh to locally slightly weathered. Discontinuities are widely to closely spaced, smooth to very locally rough, fractures are planar to curviplanar. Apertures are tight to locally moderately open, locally clay smeared, locally calcite veined (1-15mm thick). Dips are subhorizontal to locally 30-40° and 70°.				
12		100	48	22								
13	13.20	100	78	40								
14	14.50	100	66	18								
15	15.90	100	95	76	649.999999999999							
16	17.00	100	54	34								
17	18.00	100	86	53								
18	19.20	100	91	91	800.000000000001							
19	20.00							End of Borehole at 20.00 m	20.00	47.85		
20												

REMARKS

Hole cased from 0.00-11.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
9.00	9.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
29-08-25	13.20	11.50	1.65	End of Shift
01-09-25	15.90	11.50	2.54	End of Shift
02-09-25	20.00	11.50	2.22	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
02-09-25	20.00	1.50	20.00	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC08**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,944.10 E 745,939.24 N		
GROUND LEVEL (mOD)	68.15	**DATE DRILLED**	30/07/2025
RIG TYPE	Casagrande C8		
FLUSH	Air/Mist		
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - LDG
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.10	68.05		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy SILT	0.50	67.65		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy gravelly SILT				
									2.00	66.15		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT				
3									3.40	64.75		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY with occasional cobbles				
4									5.00	63.15		
5								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY				
6									7.00	61.15		
7		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT with cobbles & boulders				
8												
9												

REMARKS

Hole cased from 0.00-15.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
11.00 12.50	11.00 12.50				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC08**
		SHEET	Sheet 2 of 2
CO-ORDINATES	662,944.10 E 745,939.24 N		
GROUND LEVEL (mOD)	68.15	**RIG TYPE**	Casagrande C8
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	30/07/2025
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10						10.50	57.65		N = 50/85 mm (16, 9, 30, 20)
11					SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy GRAVEL				
12					SYMMETRIX DRILLING: No recovery, observed by driller as returns of Possible ROCK	12.00	56.15		
13									
14									
15	15.00	100	22	12	Strong, thickly to thinly bedded, light blue/grey fine-grained massively bedded LIMESTONE (slightly dolomitised with crystalline calcisiltite layers). Weathering: Orange brown non-penetrative discolouration common on discontinuity surfaces. Otherwise fresh to slightly weathered. Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, local calcite veined (1-15mm thick), frequent incipient fractures, slight iron oxide staining. Dips are subhroizontal to locally 30°, 45° and irregular.	15.00	53.15		
16	16.20	100	54	50					
17	17.60	100	77	67					
18	18.80	100	13	8					
19									
	20.00				End of Borehole at 20.00 m	20.00	48.15		

Fracture Spacing Log (mm): 0 / 250 / 500

Non-intact Zone: 659.9999999999997

REMARKS

Hole cased from 0.00-15.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
11.00 12.50	11.00 12.50				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
30-07-25	12.00	12.00	8.34	End of Shift
31-07-25	16.20	15.00	2.87	End of Shift
01-08-25	16.20	15.00	2.13	Start of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC09**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,972.66 E 745,911.12 N	**RIG TYPE**	Casagrande C8
GROUND LEVEL (mOD)	68.08	**FLUSH**	Air/Mist
		DATE DRILLED	05/08/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	67.88		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy CLAY	0.50	67.58		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy gravelly SILT/CLAY	2.00	66.08		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy slightly gravelly CLAY	5.00	63.08		
3												
4												
5								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY	7.10	60.98		
6												
7		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY with cobbles & boulders				
8												
9								9.0m Blowing Sands	9.20	58.88		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of dark grey sandy GRAVEL				N = 50/285 mm (3, 6, 6, 10, 16, 18)

REMARKS

Hole cased from 0.00-14.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.00	6.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC09**
		SHEET	Sheet 2 of 2
CO-ORDINATES	662,972.66 E 745,911.12 N	**RIG TYPE**	Casagrande C8
GROUND LEVEL (mOD)	68.08	**FLUSH**	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	05/08/2025
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								SYMMETRIX DRILLING: No recovery, observed by driller as returns of dark grey sandy GRAVEL *(continued)*				
11												
12									12.00	56.08		N = 50/180 mm (3, 6, 9, 26, 15)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of Possible Rock				
13												
14	14.50								14.50	53.58		
15		100	15	8				Strong, thickly to thinly bedded, light to dark blue/grey fine-grained massively bedded LIMESTONE (slightly dolomitised with crystalline calcisiltite layers). Weathering: Orange brown non-penetrative discolouration common on discontinuity surfaces. Otherwise fresh to slightly weathered. Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, local calcite veined (1-15mm thick), frequent incipient fractures, slight iron oxide staining. Dips are subhroizontal to locally 30°, 45° and irregular.				
	15.80											
16		100	37	27								
17	17.40											
18		100	78	78								
	18.50											
19		100	64	52								
	20.00								20.00	48.08		

REMARKS

Hole cased from 0.00-14.50m

End of Borehole at 20.00 m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.00	6.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC10**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,960.27 E 745,883.38 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	68.00	**FLUSH**	Air/Mist
		DATE DRILLED	01/08/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	67.80		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly SILT/CLAY	1.50	66.50		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY	2.20	65.80		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey SILT	3.10	64.90		
3								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey gravelly SILT	4.00	64.00		
4								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY with some cobbles	5.80	62.20		
5		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of COBBLES with brown slightly clayey/silty slightly sandy Gravel	7.50	60.50		
6								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey fine to coarse sandy GRAVEL with some cobbles	8.00	60.00		
7								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy clayey GRAVEL with occasional boulders	8.90	59.10		
8								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy clayey GRAVEL	9.90	58.10		N = 50/120 mm (6, 12, 20, 30)
9												

REMARKS

Hole cased from 0.00-10.20m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
01-08-25	8.90	8.90	Dry	End of Shift

IGSL RC FI 10M 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC10**
		SHEET	Sheet 2 of 2
CO-ORDINATES	662,960.27 E 745,883.38 N		
GROUND LEVEL (mOD)	68.00	**DATE DRILLED**	01/08/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.20				SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK *(continued)*	10.20	57.80		
11	11.70	100	63	59	Moderately weak to strong, thickly to thinly bedded, light grey to grey brown fine-grained massively bedded LIMESTONE (slightly dolomitised with crystalline calcisiltite layers). Weathering: Orange brown non-penetrative discolouration common on discontinuity surfaces, local karst/solution weathering. Otherwise fresh to slightly weathered.				
12	12.60	100	94	94	Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally calcite veined (1-10mm thick), local calcite infill from weathering, locally clay smeared. Dips are subhorizontal to locally 30 and irregular.				
13	13.30	100	81	71					
14	14.90	100	89	89					
15	15.15	100	84	84					
16	16.40	100	97	80					
17	17.30	100	94	94					
18									
19						19.50	48.50		
					End of Borehole at 19.50 m				

Fracture Spacing Log (mm): 0, 250, 500

Non-intact Zone / Legend: 549.999999999997

REMARKS

Hole cased from 0.00-10.20m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
06-08-25	16.40	10.20	10.10	End of Shift
07-08-25	19.50	10.20	7.80	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC11**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,927.00 E 745,873.78 N		
GROUND LEVEL (mOD)	67.78	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	07/08/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	67.48		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy slightly gravelly SILT/CLAY	1.50	66.28		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT with occasional cobbles	4.00	63.78		
		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY	5.70	62.08		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy CLAY with cobbles & boulders	6.50	61.28		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly clayey/silty fine sandy coarse GRAVEL with cobbles	8.00	59.78		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	8.60	59.18		
	8.60											
		100	68	61								
	9.50											

REMARKS

Hole cased from 0.00-8.60m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
07-08-25	5.90	5.90	Dry	End of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT Gas to Bord na Mona, Edenderry, Phase 1 GI

DRILLHOLE NO RC11
SHEET Sheet 2 of 2

CO-ORDINATES 662,927.00 E, 745,873.78 N
GROUND LEVEL (mOD) 67.78

RIG TYPE Beretta T44
FLUSH Air/Mist
INCLINATION (deg) -90
CORE DIAMETER (mm) 78

DATE DRILLED 07/08/2025

CLIENT Murphy International Limited
ENGINEER Fingleton White

DRILLED BY IGSL - DH
LOGGED BY D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.40	100	61	53				Medium strong to strong, light to dark blue/black fine-grained massively bedded LIMESTONE (predominantly calci-siltite layers with subordinate argillaceous layers, locally fossiliferous). Weathering: Fresh to slightly weathered Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally calcite veined (1-10mm thick), locally clay smeared. Dips are subhorizontal to locally 30 and irregular. *(continued)*				
11	11.20	100	83	75								
	12.00	100	86	67								
12		100	76	64								
13	13.60											
14	14.40	100	52	52								
15		100	89	79								
16	16.20	100	76	69								
	17.00							End of Borehole at 17.00 m	17.00	50.78		
17												
18												
19												

REMARKS

Hole cased from 0.00-8.60m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
08-08-25	13.60	8.60	8.60	End of Shift
09-08-25	17.00	8.60	6.20	Water levels recorded 5min after end of drilling

IGSL RC FI 10M 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC12**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,894.94 E 745,902.21 N		
GROUND LEVEL (mOD)	68.21	**DATE DRILLED**	30/07/2025
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	68.01		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy CLAY	0.50	67.71		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy slightly gravelly SILT/CLAY	2.00	66.21		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey SILT/CLAY				
3												
4												
5		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly gravelly SILT/CLAY	5.00	63.21		
6												
7								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY with cobbles & boulders	7.10	61.11		
8												
9								SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible weathered ROCK	9.00	59.21		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	9.50	58.71		
	10.00								10.00	58.21		

REMARKS

Hole cased from 0.00-10.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC12**
		SHEET	Sheet 2 of 2
CO-ORDINATES	662,894.94 E 745,902.21 N		
GROUND LEVEL (mOD)	68.21	**DATE DRILLED**	30/07/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								Strong to very strong, thickly to thinly bedded, light to dark blue/black fine-grained massively bedded LIMESTONE (predominantly calci-siltite layers with subordinate argillaceous layers, locally fossiliferous). Weathering: Local orange brown non-penetrative discolouration common on discontinuity surfaces. Otherwise fresh to slightly weathered Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally calcite veined (1-20mm thick), locally clay smeared, frequent incipient fractures. Dips are subhorizontal to locally 30° and irregular.				
11	11.60	100	74	74								
12	12.40	100	87	95								
13	13.20	100	88	84		619.999999999999						
14	14.00	100	95	85		609.999999999999						
15	15.10	100	87	59					15.10	53.11		
16								End of Borehole at 15.10 m				
17												
18												
19												

REMARKS

Hole cased from 0.00-10.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
30-07-25	11.60	10.00	9.20	End of Shift
31-07-25	14.00	10.00	9.40	End of Shift
01-08-25	15.10	10.00	10.20	Water levels recorded 5min after end of drilling

IGSL RC FI 10M 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC16A**
		SHEET	Sheet 1 of 3
CO-ORDINATES	662,476.50 E 744,338.87 N		
GROUND LEVEL (mOD)	73.73	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	16/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	73.43		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy slightly gravelly SILT with occasional cobbles				
2									2.20	71.53		
3								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy gravelly CLAY with some cobbles				
4												
5												
6									6.50	67.23		
7		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of BOULDER	6.70	67.03		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly CLAY with a low to medium boulder content				N = 50/155 mm (8, 11, 16, 24, 10)
8												
9												N = 50/105 mm (19, 6, 27, 23)

REMARKS

Hole cased from 0.0-14.80m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC16A**
		SHEET	Sheet 2 of 3
CO-ORDINATES	662,476.50 E 744,338.87 N		
GROUND LEVEL (mOD)	73.73	**DATE DRILLED**	16/07/2025
CLIENT	Murphy International Limited	**RIG TYPE**	Beretta T44
ENGINEER	Fingleton White	**FLUSH**	Air/Mist
		INCLINATION (deg)	-90
		CORE DIAMETER (mm)	78
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10					SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly CLAY with a low to medium boulder content *(continued)*				N = 50/100 mm (12, 13, 28, 22)
11									
12						12.60	61.13		N = 50/110 mm (10, 15, 20, 30)
13					SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown silty sandy GRAVEL	13.10	60.63		
					SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown gravelly CLAY	13.90	59.83		N = 50/40 mm (7, 18, 50)
14					SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown clayey sandy GRAVEL	14.50	59.23		
	14.80				SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	14.80	58.93		
15		100	22	0	Moderately weak to strong, thickly to thinly bedded, light grey to grey brown fine-grained massively bedded LIMESTONE (slightly dolomitised with crystalline calcisiltite layers). Weathering: Orange brown non-penetrative discolouration common on discontinuity surfaces, local karst/solution weathering. Otherwise fresh to slightly weathered.				
	15.70								
16		100	52	28					
17	17.30				Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally calcite veined (1-10mm thick), locally clay smeared. Dips are subhorizontal to 30° & locally 75°.				
18		100	100	100					
	18.80								
19		100	99	99					

Fracture Spacing Log (mm): 0 / 250 / 500

Non-intact Zone

Legend

REMARKS

Hole cased from 0.0-14.80m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
17-07-25	13.10	13.10	2.80	Start of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC16A**
		SHEET	Sheet 3 of 3
CO-ORDINATES	662,476.50 E 744,338.87 N		
GROUND LEVEL (mOD)	73.73	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	16/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20	20.20							End of Borehole at 20.20 m	20.20	53.53		
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.0-14.80m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC17**
		SHEET	Sheet 1 of 3
CO-ORDINATES	662,499.41 E 744,312.61 N		
GROUND LEVEL (mOD)	74.52	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	18/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	74.32		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly SILT/CLAY with a low cobble content				
1												
2									2.40	72.12		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy slightly gravelly CLAY with a low cobble content				
3												
4												
5									5.50	69.02		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy gravelly SILT with a high cobble content				
6												
7									7.50	67.02		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy clayey GRAVEL				
8		0	0	0					8.30	66.22		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly CLAY				
9												N = 50/175 mm (4, 7, 14, 18, 18)

REMARKS

Hole cased from 0.0-16.10m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
13.70	13.70				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC17**
		SHEET	Sheet 2 of 3
CO-ORDINATES	662,499.41 E 744,312.61 N		
GROUND LEVEL (mOD)	74.52	**DATE DRILLED**	18/07/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	JL
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly CLAY *(continued)*				N = 50/105 mm (6, 10, 20, 30)
11												
12									12.40	62.12		N = 50/60 mm (14, 11, 50)
13								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown very silty/clayey sandy GRAVEL	13.70	60.82		N = 50/60 mm (16, 9, 50)
14								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown clayey sandy GRAVEL				
15									15.40	59.12		N = 50/95 mm (25, 35, 15)
16	16.10							SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	16.10	58.42		
17		100	94	90				Medium strong to strong light grey fine grained massively bedded slightly fossiliferous slightly dolomitised / crystalline calcisiltite LIMESTONE with medium to widely spaced (600-800mm spaced) thin calcite veins (~10mm thick). Weathering: 18.40m Rare thin brown clay smear on fracture surfaces (up to 5mm thick). 18.33m Rare pitted discontinuity surface. Otherwise fresh to slightly weathered.				
18	17.70	100	100	77				Discontinuities are very closely to medium spaced, predominantly closely to medium spaced, smooth; fractures are undulating to planar. Apertures are partly open to open, local calcite veinfill ~1mm to 10mm) occasionally resulting in 45-50° fractures. Dips are generally subhorizontal to 20°.				
19	19.30											

REMARKS

Hole cased from 0.0-16.10m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
13.70	13.70				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
18-07-25	16.10	16.10	14.90	End of Shift
21-07-25	17.70	16.10	7.60	End of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC17**
		SHEET	Sheet 3 of 3
CO-ORDINATES	662,499.41 E 744,312.61 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	74.52	**FLUSH**	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	18/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20	20.80	100	95	95				End of Borehole at 20.80 m	20.80	53.72		
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.0-16.10m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
13.70	13.70				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
22-07-25	20.80	16.10	7.40	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC18**
		SHEET	Sheet 1 of 3
CO-ORDINATES	662,462.68 E 744,221.94 N		
GROUND LEVEL (mOD)	74.69	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	23/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	74.39		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy SILT/CLAY	1.80	72.89		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly CLAY	3.80	70.89		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown slightly sandy gravelly SILT with cobbles	6.00	68.69		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly silty CLAY				N = 50/200 mm (8, 10, 17, 23, 10) N = 50/95 mm (12, 13, 33, 17)

REMARKS

Electric fencing required around rig / works area. Hole cased from 0.0-16.30m. Standpipe installed with fence surround.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
12.50	12.50	15.40			

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
24-07-25	15.00	1.00	15.00	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC18**
		SHEET	Sheet 2 of 3
CO-ORDINATES	662,462.68 E 744,221.94 N		
GROUND LEVEL (mOD)	74.69	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	23/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy clayey GRAVEL to gravelly CLAY	10.10	64.59		N = 50/45 mm (25, 50)
11												
12									12.50	62.19		N = 50/125 mm (14, 11, 21, 29)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown clayey sandy GRAVEL				
13												
14												N = 50/100 mm (20, 5, 28, 22)
15									15.40	59.29		N = 50/55 mm (25, 50)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly CLAY	16.00	58.69		
16								SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	16.30	58.39		
		100	49	31				Medium strong to strong thickly to thinly bedded, light grey to grey brown fine grained massively bedded LIMESTONE.(slightly dolomitised with crystalline calcisiltite layers). Weathering: Orange brown non-penetrative discolouration common on discontinuity surfaces. Otherwise fresh to slightly weathered.				
17	17.10											
18		100	100	100				Discontinuities are closely to medium spaced, smooth; fractures are planar to irregular. Apertures are tight to partly open. Local calcite veinfill (19.80m) resulting in rare 45-50° fractures. Dips generally subhorizontal to 10°.				
	18.65											
19		100	65	61								

REMARKS

Electric fencing required around rig / works area. Hole cased from 0.0-16.30m. Standpipe installed with fence surround.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
12.50	12.50	15.40			

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
23-07-25	16.30	16.30	Dry	End of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
24-07-25	15.00	1.00	15.00	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC18**
		SHEET	Sheet 3 of 3
CO-ORDINATES	662,462.68 E 744,221.94 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	74.69	**FLUSH**	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	23/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20	20.25							End of Borehole at 20.25 m	20.25	54.44		
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Electric fencing required around rig / works area. Hole cased from 0.0-16.30m. Standpipe installed with fence surround.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
12.50	12.50	15.40			

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
24-07-25	20.25	16.30	7.00	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
24-07-25	15.00	1.00	15.00	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC19**
		SHEET	Sheet 1 of 3
CO-ORDINATES	662,489.12 E 744,203.29 N		
GROUND LEVEL (mOD)	75.51	**DATE DRILLED**	28/07/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	JL
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.40	75.11		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy SILT	1.00	74.51		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy gravelly CLAY with occasional cobbles				
2									2.40	73.11		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown/grey to brown sandy gravelly SILT				
3												
4												
5												
									6.00	69.51		
6								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly gravelly slightly sandy CLAY with occasional cobbles				
7												
8									8.50	67.01		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly silty CLAY				
9												N = 50/255 mm (6, 9, 10, 11, 16, 13)

REMARKS

Hole cased from 0.0-20.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
17.40	17.40				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC19**
		SHEET	Sheet 2 of 3
CO-ORDINATES	662,489.12 E 744,203.29 N		
GROUND LEVEL (mOD)	75.51	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	28/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly silty CLAY *(continued)*				N = 50/220 mm (8, 14, 14, 16, 20)
11												
12												N = 50/155 mm (7, 15, 20, 25, 5)
13												
14												N = 50/100 mm (10, 15, 30, 20)
15												
16												N = 50/95 mm (25, 29, 21)
17									17.40	58.11		N = 50/60 mm (25, 50)
18								SYMMETRIX DRILLING: No recovery, observed by driller as returns of sandy clayey GRAVEL				N = 50/80 mm (25, 42, 8)
19												N = 50/65 mm (25, 50)

REMARKS

Hole cased from 0.0-20.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
17.40	17.40				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
28-07-25	12.00	12.00	Dry	Start of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC19**
		SHEET	Sheet 3 of 3
CO-ORDINATES	662,489.12 E 744,203.29 N		
GROUND LEVEL (mOD)	75.51	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	28/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20	20.50							SYMMETRIX DRILLING: No recovery, observed by driller as returns of sandy clayey GRAVEL *(continued)*	20.50	55.01		N = 50/50 mm (25, 50)
								End of Borehole at 20.50 m				
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.0-20.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
17.40	17.40				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
29-07-25	20.50	20.50	9.40	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC22**
		SHEET	Sheet 1 of 3
CO-ORDINATES	660,986.83 E 737,290.15 N		
GROUND LEVEL (mOD)	65.24	**DATE DRILLED**	05/09/2025
RIG TYPE	Beretta T44		
FLUSH	Air Hammer		
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	JL
INCLINATION (deg)	-90		
CORE DIAMETER (mm)			

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	64.94		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy peaty SILT	1.00	64.24		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly clayey very gravelly SAND. Gravel is fine.	2.00	63.24		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey clayey very sandy GRAVEL with many cobbles	5.50	59.74		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey very silty SAND	6.50	58.74		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown slightly gravelly CLAY	8.70	56.54		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly clayey GRAVEL with some cobbles	10.00	55.24		

REMARKS

Hole cased from 0.0-20.0m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
10.30 11.60	10.30 11.60	11.00			

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC22**
		SHEET	Sheet 2 of 3
CO-ORDINATES	660,986.83 E 737,290.15 N		
GROUND LEVEL (mOD)	65.24	**RIG TYPE**	Beretta T44
		FLUSH	Air Hammer
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	
		DATE DRILLED	05/09/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								SYMMETRIX DRILLING: No recovery, observed by driller as returns of BOULDER	10.30	54.94		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy GRAVEL	11.00	54.24		N = 50/215 mm (8, 14, 16, 17, 17)
11								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly silty CLAY	11.60	53.64		
12								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown slightly silty sandy GRAVEL				N = 50/105 mm (12, 13, 24, 26)
13												N = 50/95 mm (10, 15, 30, 20)
14									14.90	50.34		
15								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown gravelly CLAY				N = 50/45 mm (25, 50)
16												
17												N = 50/35 mm (25, 50)
18									18.00	47.24		N = 50/30 mm (25, 50)
19								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy GRAVEL				
									20.00	45.24		N = 50/30 mm (25, 50)

REMARKS

Hole cased from 0.0-20.0m

End of Borehole at 20.00 m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
10.30 11.60	10.30 11.60	11.00			

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
05-09-25	14.90	14.90	7.80	End of Shift
09-09-25	20.00	20.00	8.10	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT Gas to Bord na Mona, Edenderry, Phase 1 GI

DRILLHOLE NO RC22
SHEET Sheet 3 of 3

CO-ORDINATES 660,986.83 E
737,290.15 N
GROUND LEVEL (mOD) 65.24

RIG TYPE Beretta T44
FLUSH Air Hammer
INCLINATION (deg) -90
CORE DIAMETER (mm)

DATE DRILLED 05/09/2025

CLIENT Murphy International Limited
ENGINEER Fingleton White

DRILLED BY IGSL - DH
LOGGED BY JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20												N = 50/35 mm (25, 50)
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.0-20.0m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
10.30 11.60	10.30 11.60	11.00			

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

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GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC23A**
		SHEET	Sheet 1 of 3
CO-ORDINATES	661,016.65 E 737,269.96 N		
GROUND LEVEL (mOD)	65.88	**RIG TYPE**	Beretta T44
		FLUSH	Air Hammer
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	
		DATE DRILLED	03/09/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.50	65.38		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy SILT/CLAY	1.00	64.88		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT	2.00	63.88		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly silty SAND (Possibly very sandy Silt)	3.80	62.08		
3												
4								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT	5.20	60.68		
5								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey gravelly SAND	6.00	59.88		
6								SYMMETRIX DRILLING: No recovery, observed by driller as returns of clayey very gravelly SAND. Gravel is fine.	8.00	57.88		
7												
8								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown slightly sandy slightly gravelly CLAY				
9												

REMARKS

Hole cased from 0.0-20.0m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
18.50	18.50				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC23A**
		SHEET	Sheet 2 of 3
CO-ORDINATES	661,016.65 E 737,269.96 N		
GROUND LEVEL (mOD)	65.88	**RIG TYPE**	Beretta T44
		FLUSH	Air Hammer
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	
		DATE DRILLED	03/09/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown slightly sandy slightly gravelly CLAY *(continued)*	11.70	54.18		
11								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey clayey sandy GRAVEL with many cobbles and rare boulders	13.00	52.88		
12								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey and dark brown sandy gravelly silty CLAY	16.50	49.38		N = 50 (14, 16, 11, 12, 13, 14)
13								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown gravelly sandy silty CLAY	18.50	47.38		N = 50/180 mm (10, 18, 17, 20, 13)
14								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy GRAVEL	20.00	45.88		N = 50/80 mm (17, 19, 40, 10)
15												
16												
17												N = 50/40 mm (25, 50)
18												
19												

REMARKS

Hole cased from 0.0-20.0m

End of Borehole at 20.00 m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
18.50	18.50				

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
03-09-25	17.90	17.90	Dry	End of Shift
04-09-25	20.00	20.00	18.20	Water levels recorded 5min after end of drilling

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC23A**
		SHEET	Sheet 3 of 3
CO-ORDINATES	661,016.65 E 737,269.96 N		
GROUND LEVEL (mOD)	65.88	**RIG TYPE**	Beretta T44
		FLUSH	Air Hammer
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	
		DATE DRILLED	03/09/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20												N = 50/25 mm (25, 50)
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.0-20.0m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
18.50	18.50				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC24**
		SHEET	Sheet 1 of 3
CO-ORDINATES	660,957.67 E 737,231.14 N	**RIG TYPE**	GEO-405
GROUND LEVEL (mOD)	66.15	**FLUSH**	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	12/05/2025
		DRILLED BY	IGSL - AK
		LOGGED BY	D. O'Shea

Description	Depth (m)	Elevation
SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	65.95
SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy SILT/CLAY	0.50	65.65
SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT	2.30	63.85
SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly CLAY with cobbles	3.00	63.15
SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown slightly clayey/silty sandy GRAVEL with occasional cobbles	6.00	60.15
SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown and grey slightly sandy slightly gravelly SILT/CLAY		

REMARKS

Hole cased from 0.00-20.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.20 18.70	4.20 18.70				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
12-05-25	20.00	2.00	20.00	50mm SP

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GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC24**
		SHEET	Sheet 2 of 3
CO-ORDINATES	660,957.67 E 737,231.14 N		
GROUND LEVEL (mOD)	66.15	**RIG TYPE**	GEO-405
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	12/05/2025
		DRILLED BY	IGSL - AK
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown and grey slightly sandy slightly gravelly SILT/CLAY *(continued)*	10.80	55.35		
11								SYMMETRIX DRILLING: No recovery, observed by driller as returns of sandy GRAVEL with occasional cobbles	12.00	54.15		
12								SYMMETRIX DRILLING: No recovery, observed by driller as returns of sandy gravelly CLAY	13.00	53.15		
13								SYMMETRIX DRILLING: No recovery, observed by driller as returns of clayey sandy GRAVEL				N = 32 (3, 7, 5, 7, 9, 11)
14												
15												N = 54 (12, 17, 14, 19, 12, 9)
16												
17												N = 77 (6, 21, 18, 17, 19, 23)
18												
19												N = 81 (11, 17, 21, 19, 22, 19)
	20.00								20.00	46.15		

REMARKS

Hole cased from 0.00-20.00m

End of Borehole at 20.00 m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.20 18.70	4.20 18.70				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
12-05-25	20.00	20.00	3.30	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
12-05-25	20.00	2.00	20.00	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC24**
		SHEET	Sheet 3 of 3
CO-ORDINATES	660,957.67 E 737,231.14 N		
GROUND LEVEL (mOD)	66.15	**DATE DRILLED**	12/05/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - AK
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	GEO-405		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20												N = 76 (11, 24, 18, 22, 17, 19)
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.00-20.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.20 18.70	4.20 18.70				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
12-05-25	20.00	2.00	20.00	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC25**
		SHEET	Sheet 1 of 3
CO-ORDINATES	660,988.17 E 737,220.98 N		
GROUND LEVEL (mOD)	66.04	**DATE DRILLED**	13/05/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - AK
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	GEO-405		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	65.84		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly CLAY with occasional cobbles	1.50	64.54		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of slightly sandy slightly gravelly SILT/CLAY				
3												
4												
5												
6								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly clayey/silty slightly gravelly SAND	6.00	60.04		
7									7.50	58.54		
8								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy slightly gravelly SILT				
9												

REMARKS

Hole cased from 0.00-20.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.70 11.20	2.70 11.20				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC25**
		SHEET	Sheet 2 of 3
CO-ORDINATES	660,988.17 E 737,220.98 N		
GROUND LEVEL (mOD)	66.04	**RIG TYPE**	GEO-405
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	13/05/2025
		DRILLED BY	IGSL - AK
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy slightly gravelly SILT *(continued)*	10.50	55.54		
11								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly clayey/silty slightly sandy GRAVEL with many cobbles & boulders	11.50	54.54		
12								SYMMETRIX DRILLING: No recovery, observed by driller as returns of clayey sandy GRAVEL				N = 48 (9, 7, 11, 14, 12, 11)
13												N = 87 (11, 19, 21, 24, 22, 20)
14												
15												N = 65 (7, 11, 15, 14, 16, 20)
16												
17												N = 58 (5, 7, 12, 15, 14, 17)
18												N = 62 (8, 11, 14, 17, 15, 16)
19												
	20.00								20.00	46.04		N = 69 (9, 14, 17, 15, 18, 19)

REMARKS

Hole cased from 0.00-20.00m

End of Borehole at 20.00 m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.70 11.20	2.70 11.20				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
13-05-25	20.00	20.00	2.50	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC25**
		SHEET	Sheet 3 of 3
CO-ORDINATES	660,988.17 E 737,220.98 N	**RIG TYPE**	GEO-405
GROUND LEVEL (mOD)	66.04	**FLUSH**	Air/Mist
		DATE DRILLED	13/05/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL - AK
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20												N = 59 (17, 15, 12, 14, 16, 17)
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.00-20.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.70 11.20	2.70 11.20				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

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GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC28A**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,822.56 E 731,757.61 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	77.40	**FLUSH**	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	26/08/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	77.10		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly SILT				
2									2.30	75.10		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey gravelly CLAY	3.00	74.40		
3								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown silty sandy fine to coarse GRAVEL with cobbles				
6		0	0	0					7.00	70.40		
7								SYMMETRIX DRILLING: No recovery, observed by driller as returns of COBBLES with brown slightly clayey/silty slightly sandy Gravel	8.00	69.40		
8								SYMMETRIX DRILLING: No recovery, observed by driller as returns of slightly silty slightly sandy GRAVEL with many cobbles	9.25	68.15		
9								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly CLAY with cobbles	9.50	67.90		

REMARKS

Hole cased from 0.00-11.80m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
9.80	9.80				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC28A**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,822.56 E 731,757.61 N		
GROUND LEVEL (mOD)	77.40	**DATE DRILLED**	26/08/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy gravelly CLAY *(continued)*	10.80	66.60		N = 50/100 mm (8, 14, 27, 23)
11								SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	11.80	65.60		
12	11.80	100	57	57		520		Strong, thickly to thinly bedded, light blue/grey fine-grained massively bedded LIMESTONE (slightly dolomitised with crystalline calcisiltite layers). Weathering: Orange brown non-penetrative discolouration common on discontinuity surfaces. Otherwise fresh to slightly weathered. Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, locally calcite veined (1-10mm thick), local clay/gravel infill (@13.02-13.14m & 13.37-13.40m), frequent incipient fractures, occasional iron oxide staining. Dips are subhoriztonal to locally 30° and irregular.				
13	12.50	100	79	75								
14	14.00	100	71	67								
15	15.20	100	95	93		630.0000000000001						
16	16.30	100	98	98								
17	16.80	100	86	74		680						
18	18.40	100	94	94		670.0000000000002						
19	20.00								20.00	57.40		

REMARKS

Hole cased from 0.00-11.80m

End of Borehole at 20.00 m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
9.80	9.80				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
26-08-25	12.50	11.80	5.40	End of Shift
27-08-25	20.00	11.80	2.20	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC29**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,793.31 E 731,731.78 N		
GROUND LEVEL (mOD)	77.05	**DATE DRILLED**	29/08/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - LDG
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL/PEAT	0.50	76.55		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy SILT/CLAY	2.00	75.05		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown slightly sandy gravelly to very gravelly SILT/CLAY	3.50	73.55		
3		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey clayey/silty very sandy GRAVEL with cobbles	6.00	71.05		
4								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/black gravelly CLAY	6.40	70.65		
5								SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	7.20	69.85		
6												
7	7.20											
8		100	54	50				Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, locally calcite veined (1-5mm thick), local clay lenses, frequent incipient fractures, local iron oxide staining. Dips are subhoriztonal to locally 45° and irregular.				
9	8.80	100	93	93				Strong, thickly to thinly bedded dark blue/grey fine-grained massively bedded LIMESTONE (slightly dolomitised with crystalline calcisiltite layers). Weathering: Orange brown non-penetrative discolouration common on discontinuity surfaces. Otherwise fresh to slightly weathered.				
	10.00											

REMARKS

Hole cased from 0.00-7.20m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.60 15.10	6.60 7.20				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
29-08-25	7.20	7.20	2.60	End of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT Gas to Bord na Mona, Edenderry, Phase 1 GI

DRILLHOLE NO RC29
SHEET Sheet 2 of 2

CO-ORDINATES 660,793.31 E, 731,731.78 N
GROUND LEVEL (mOD) 77.05
CLIENT Murphy International Limited
ENGINEER Fingleton White

RIG TYPE Beretta T44
FLUSH Air/Mist
INCLINATION (deg) -90
CORE DIAMETER (mm) 78

DATE DRILLED 29/08/2025
DRILLED BY IGSL - LDG
LOGGED BY D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.40	100	87	87				Strong, thickly to thinly bedded dark blue/grey fine-grained massively bedded LIMESTONE (slightly dolomitised with crystalline calcisiltite layers). Weathering: Orange brown non-penetrative discolouration common on discontinuity surfaces. Otherwise fresh to slightly weathered. *(continued)*				
11	12.00	38	92	88		680.000000000001 750						
12	12.10	100	80	0								
13	13.60	100	30	29				Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, locally calcite veined (1-15mm thick), frequent incipient fractures, local iron oxide staining. Dips are subhoriztonal to locally 30° and irregular.				
14	14.40	100	67	62								
15	15.10	100	97	97		699.999999999999						
16	16.50	100	71	57								
17	16.70	100	90	90		600.000000000001						
18	18.30	100	97	92		930			18.30	58.75		
19								End of Borehole at 18.30 m				

REMARKS

Hole cased from 0.00-7.20m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.60 15.10	6.60 7.20				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
01-09-25	18.30	7.20	1.40	End of Shift

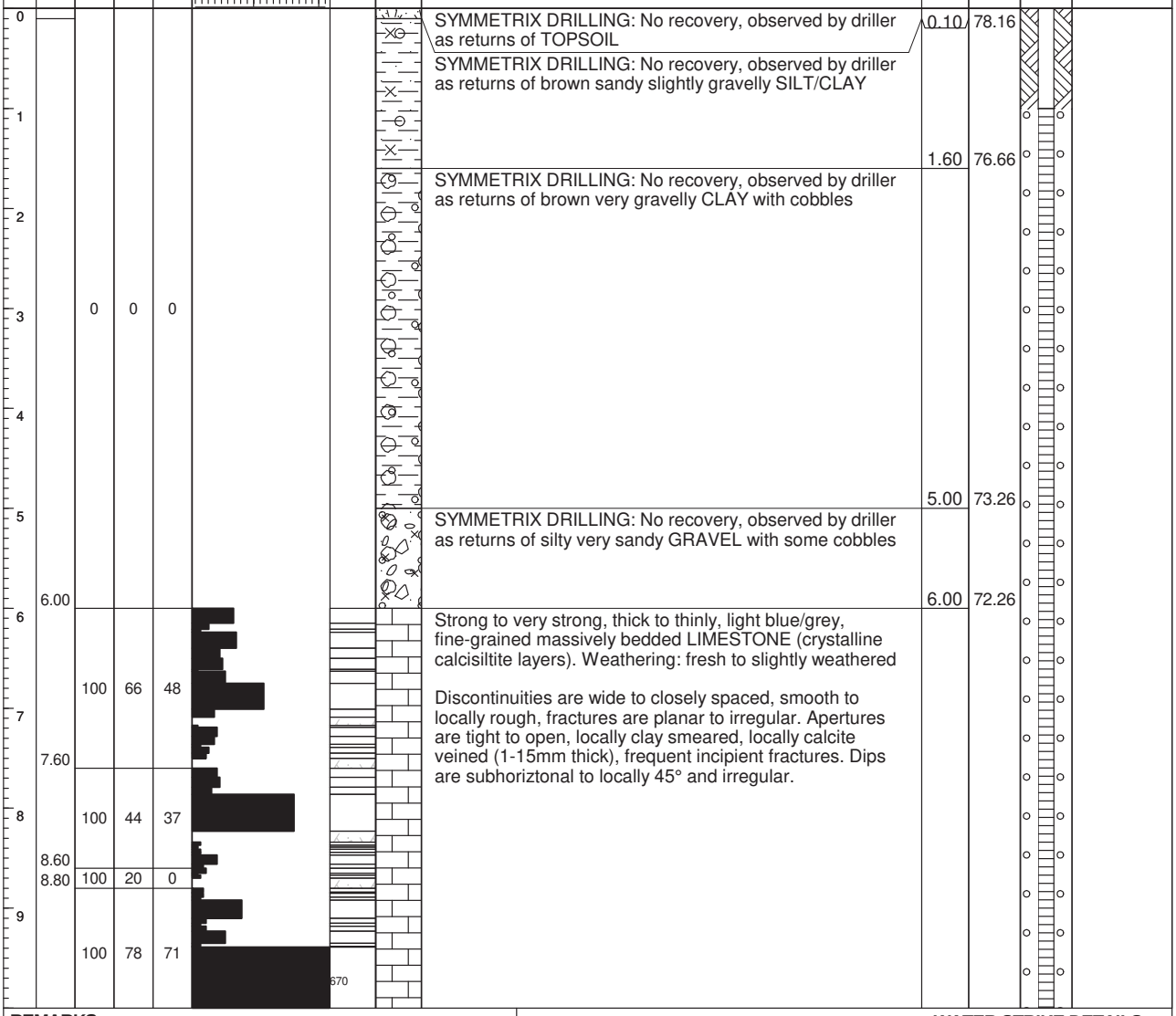
INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC30A**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,826.31 E 731,669.50 N		
GROUND LEVEL (mOD)	78.26	**DATE DRILLED**	20/08/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		



REMARKS

Hole cased from 0.00-6.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
22-08-25	17.50	1.00	17.50	50mm SP

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
21-08-25	8.80	6.00	7.40	End of Shift

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC30A**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,826.31 E 731,669.50 N		
GROUND LEVEL (mOD)	78.26	**DATE DRILLED**	20/08/2025
CLIENT	Murphy International Limited	**RIG TYPE**	Beretta T44
ENGINEER	Fingleton White	**FLUSH**	Air/Mist
		INCLINATION (deg)	-90
		CORE DIAMETER (mm)	78
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.10							Strong to very strong, thick to thinly, light blue/grey, fine-grained massively bedded LIMESTONE (crystalline calcisiltite layers). Weathering: fresh to slightly weathered				
		100	97	97								
	10.80							Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, locally calcite veined (1-15mm thick), frequent incipient fractures. Dips are subhoriztonal to locally 45° and irregular. *(continued)*				
11		100	69	60								
	11.70											
12		100	72	54								
13	13.30											
14		100	74	49		699.999999999999						
	14.90											
15		100	94	94		850						
16	16.50											
17		100	93	93		570						
	17.50								17.50	60.76		
18								End of Borehole at 17.50 m				
19												

REMARKS

Hole cased from 0.00-6.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
22-08-25	17.50	1.00	17.50	50mm SP

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
22-08-25	17.50	6.00	5.50	Water levels recorded 5min after end of drilling

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC31A**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,793.16 E 731,629.16 N		
GROUND LEVEL (mOD)	79.21	**DATE DRILLED**	19/08/2025
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	79.01		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly CLAY with cobbles				
1												
2												
3		0	0	0								
4												
5									5.50	73.71		
	5.90							SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	5.90	73.31		
6		100	80	75	560			Strong to very strong, thick to thinly, light blue/grey, fine-grained massively bedded LIMESTONE (crystalline calcisiltite layers). Weathering: fresh to slightly weathered				
	7.00							Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, locally calcite veined (1-15mm thick), frequent incipient fractures. Dips are subhoriztonal to locally 45° and irregular.				
7		100	39	34								
	7.90											
8		100	14	78								
	8.70											
	8.90	100	0	0								
9		100	80	73								

REMARKS

Hole cased from 0.00-5.90m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
19-08-25	7.90	5.90	6.80	End of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

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GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC31A**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,793.16 E 731,629.16 N		
GROUND LEVEL (mOD)	79.21	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	19/08/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.40					580		Strong to very strong, thick to thinly, light blue/grey, fine-grained massively bedded LIMESTONE (crystalline calcisiltite layers). Weathering: fresh to slightly weathered Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, locally calcite veined (1-15mm thick), frequent incipient fractures. Dips are subhoriztonal to locally 45° and irregular. *(continued)*				
11	11.50	100	11	84								
	11.80	100	67	40								
12		100	71	58		569.9999999999999						
13	13.40											
		100	60	56								
14	14.30	100	93	87								
	15.00											
15		100	91	87		510.0000000000002						
16	16.60											
17		100	91	91		670.0000000000002						
18	18.20								18.20	61.01		
								End of Borehole at 18.20 m				
19												

REMARKS

Hole cased from 0.00-5.90m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
20-08-25	18.20	5.90	8.30	Water levels recorded 5min after end of drilling

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC36**
		SHEET	Sheet 1 of 3
CO-ORDINATES	660,872.86 E 727,340.45 N	**RIG TYPE**	GEO-405
GROUND LEVEL (mOD)	68.06	**FLUSH**	Air/Mist
		DATE DRILLED	29/04/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL - AK
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of dark brown PEAT	0.30	67.76		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey SILT with occasional fine gravel	1.80	66.26		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of dark brown/black PEAT	2.50	65.56		
3								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey SILT	5.10	62.96		
4												
5								SYMMETRIX DRILLING: No recovery, observed by driller as returns of fine to coarse grey silty SAND	6.00	62.06		
6								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey very sandy GRAVEL	6.90	61.16		
7								SYMMETRIX DRILLING: No recovery, observed by driller as returns of fine to coarse grey silty SAND				
8												
9												

REMARKS

Hole cased from 0.00-20.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
19.70	19.70				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC36**
		SHEET	Sheet 2 of 3
CO-ORDINATES	660,872.86 E 727,340.45 N		
GROUND LEVEL (mOD)	68.06	**RIG TYPE**	GEO-405
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	29/04/2025
		DRILLED BY	IGSL - AK
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of fine to coarse grey silty SAND *(continued)*				
11												
12									12.50	55.56		
13								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey fine to coarse GRAVEL with cobbles				
14												
15									15.50	52.56		
16								SYMMETRIX DRILLING: No recovery, observed by driller as returns of clayey sandy GRAVEL	16.50	51.56		
17								SYMMETRIX DRILLING: No recovery, observed by driller as returns of sandy GRAVEL				N = 46 (5, 7, 9, 11, 12, 14)
18									18.00	50.06		
19								SYMMETRIX DRILLING: No recovery, observed by driller as returns of sandy clayey GRAVEL				N = 52 (4, 5, 9, 11, 15, 17)
	20.00								20.00	48.06		N = 60 (5, 8, 10, 14, 17, 19)

REMARKS

Hole cased from 0.00-20.00m

End of Borehole at 20.00 m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
19.70	19.70				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
29-04-25	20.00	20.00	18.50	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC36**
		SHEET	Sheet 3 of 3
CO-ORDINATES	660,872.86 E 727,340.45 N	**RIG TYPE**	GEO-405
GROUND LEVEL (mOD)	68.06	**FLUSH**	Air/Mist
		DATE DRILLED	29/04/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL - AK
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20												N = 44 (6, 8, 10, 11, 11, 12)
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.00-20.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
19.70	19.70				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC37**
		SHEET	Sheet 1 of 3
CO-ORDINATES	660,848.78 E 727,336.44 N	**RIG TYPE**	GEO-405
GROUND LEVEL (mOD)	68.01	**FLUSH**	Air/Mist
		DATE DRILLED	30/04/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL - AK
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	67.71		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey SILT	2.00	66.01		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of dark brown PEAT	2.30	65.71		
3								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy SILT	4.80	63.21		
4												
5								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey silty SAND with some gravel	6.50	61.51		
6												
7								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey silty SAND				
8												
9												

REMARKS

Hole cased from 0.00-20.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
15.80	15.80				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT Gas to Bord na Mona, Edenderry, Phase 1 GI

DRILLHOLE NO RC37
SHEET Sheet 2 of 3

CO-ORDINATES 660,848.78 E, 727,336.44 N
GROUND LEVEL (mOD) 68.01
RIG TYPE GEO-405
FLUSH Air/Mist
INCLINATION (deg) -90
CORE DIAMETER (mm) 78
DATE DRILLED 30/04/2025

CLIENT Murphy International Limited
ENGINEER Fingleton White
DRILLED BY IGSL - AK
LOGGED BY D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey silty SAND *(continued)*	11.00	57.01		
11								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey SILT	12.70	55.31		
12												
13								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown gravelly CLAY with occasional cobbles & boulders	15.50	52.51		
14												
15												
16								SYMMETRIX DRILLING: No recovery, observed by driller as returns of sandy GRAVEL				N = 62 (6, 9, 14, 17, 15, 16)
17												
18												N = 58 (4, 7, 11, 14, 16, 17)
19												
	20.00								20.00	48.01		N = 46 (5, 8, 9, 11, 14, 12)

REMARKS
Hole cased from 0.00-20.00m

End of Borehole at 20.00 m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
15.80	15.80				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
30-04-25	20.00	20.00	14.70	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC37**
		SHEET	Sheet 3 of 3
CO-ORDINATES	660,848.78 E 727,336.44 N	**RIG TYPE**	GEO-405
GROUND LEVEL (mOD)	68.01	**FLUSH**	Air/Mist
		DATE DRILLED	30/04/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL - AK
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20												N = 43 (7, 6, 8, 10, 11, 14)
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.00-20.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
15.80	15.80				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC38**
		SHEET	Sheet 1 of 3
CO-ORDINATES	660,837.81 E 727,368.42 N	**RIG TYPE**	GEO-405
GROUND LEVEL (mOD)	68.48	**FLUSH**	Air/Mist
		DATE DRILLED	06/05/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL - AK
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	68.18		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly CLAY	1.80	66.68		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of dark brown PEAT	4.00	64.48		
3												
4								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey silty SAND	9.00	59.48		
5												
6												
7												
8												
9								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey SILT/CLAY				

REMARKS

Hole cased from 0.00-20.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.60 19.10	2.60 19.10				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

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GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC38**
		SHEET	Sheet 2 of 3
CO-ORDINATES	660,837.81 E 727,368.42 N		
GROUND LEVEL (mOD)	68.48	**DATE DRILLED**	06/05/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - AK
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	GEO-405		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey SILT/CLAY *(continued)*				
11												
12												N = 77/225 mm (12, 21, 27, 24, 26)
13												
14									14.00	54.48		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey fine to coarse sandy GRAVEL with some cobbles & occasional boulders				
15									15.50	52.98		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of sandy clayey GRAVEL				
16												
17												
18												N = 92 (16, 12, 19, 23, 21, 29)
19												
	20.00								20.00	48.48		N = 75 (10, 17, 15, 20, 19, 21)

REMARKS

Hole cased from 0.00-20.00m

End of Borehole at 20.00 m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.60 19.10	2.60 19.10				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
06-05-25	20.00	20.00	3.70	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC38**
		SHEET	Sheet 3 of 3
CO-ORDINATES	660,837.81 E 727,368.42 N	**RIG TYPE**	GEO-405
GROUND LEVEL (mOD)	68.48	**FLUSH**	Air/Mist
		DATE DRILLED	06/05/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL - AK
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20												N = 69 (18, 29, 17, 12, 21, 19)
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.00-20.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.60 19.10	2.60 19.10				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC39**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,879.03 E 727,367.70 N		
GROUND LEVEL (mOD)	67.78	**DATE DRILLED**	01/05/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - AK
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	GEO-405		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of dark brown/black PEAT	0.30	67.48		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey SILT	1.00	66.78		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of dark brown PEAT	2.00	65.78		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy SILT				
3												
4												
5												
6									6.50	61.28		
7								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey silty SAND				
8												
9												

REMARKS

Hole cased from 0.00-20.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.90 16.90	2.90 16.90				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

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GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC39**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,879.03 E 727,367.70 N		
GROUND LEVEL (mOD)	67.78	**RIG TYPE**	GEO-405
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	01/05/2025
		DRILLED BY	IGSL - AK
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10		0	0	0					10.20	57.58		
11								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy SILT	12.00	55.78		
12								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey fine to coarse GRAVEL with cobbles	14.00	53.78		
13												
14								SYMMETRIX DRILLING: No recovery, observed by driller as returns of sandy clayey GRAVEL	16.50	51.28		N = 79/145 mm (32, 27, 29, 25, 25)
15												
16								SYMMETRIX DRILLING: No recovery, observed by driller as returns of sandy cobbly GRAVEL	18.00	49.78		N = 25/30 mm (25, 25)
17												
18								SYMMETRIX DRILLING: No recovery, observed by driller as returns of clayey sandy GRAVEL	20.00	47.78		N = 74 (7, 21, 18, 19, 17, 20)
19	20.00											N = 73 (9, 23, 15, 17, 21, 20)

REMARKS

Hole cased from 0.00-20.00m

End of Borehole at 20.00 m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.90 16.90	2.90 16.90				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
01-05-25	20.00	20.00	3.70	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC40**
		SHEET	Sheet 1 of 2
CO-ORDINATES	663,379.91 E 746,751.45 N		
GROUND LEVEL (mOD)	70.86	**DATE DRILLED**	19/08/2025
RIG TYPE	Casagrande C8		
FLUSH	Air/Mist		
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - LDG
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	70.66		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy silty CLAY with occasional gravel				
1									1.20	69.66		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown mottled grey sandy silty gravelly CLAY with occasional gravel & cobbles				
2									2.40	68.46		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy silty gravelly CLAY with occasional cobbles and boulders				
3												
4		0	0	0								
5									5.50	65.36		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of fine to coarse sandy angular GRAVEL	5.60	65.26		
6								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey silty gravelly SAND				N = 13 (2, 2, 1, 2, 9, 1)
7									7.50	63.36		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK				N = 70/105 mm (6, 14, 20, 50)
8	8.40								8.40	62.46		
9		100	54	31								
	10.00											

REMARKS

Hole cased from 0.00-8.40m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
19-08-25	7.50	7.50	2.20	Start of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
20-08-25	11.80	11.80	1.50	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC40**
		SHEET	Sheet 2 of 2
CO-ORDINATES	663,379.91 E 746,751.45 N	**RIG TYPE**	Casagrande C8
GROUND LEVEL (mOD)	70.86	**FLUSH**	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	19/08/2025
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.80	100	16	16				Moderately weak to strong, thickly to thinly bedded dark blue/grey fine-grained massively bedded LIMESTONE (crystalline calcisiltite layers with argillaceous layers). Weathering: fresh to slightly weathered. Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, locally calcite veined (1-10mm thick), slight iron oxide staining. Dips are subhoriztonal to 30° and irregular. *(continued)*				
11	11.80	100	21	0				End of Borehole at 11.80 m	11.80	59.06		
12												
13												
14												
15												
16												
17												
18												
19												

REMARKS

Hole cased from 0.00-8.40m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
20-08-25	11.80	7.50	2.46	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
20-08-25	11.80	11.80	1.50	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC41**
		SHEET	Sheet 1 of 2
CO-ORDINATES	663,220.39 E 746,699.23 N		
GROUND LEVEL (mOD)	71.41	**DATE DRILLED**	21/08/2025
RIG TYPE	Casagrande C8		
FLUSH	Air/Mist		
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - LDG
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy CLAY				
1												
2									2.50	68.91		N = 26 (2, 6, 8, 7, 5, 6)
3								SYMMETRIX DRILLING: No recovery, observed by driller as returns of dark brown sandy gravelly CLAY				
4		0	0	0								N = 24 (1, 2, 6, 5, 5, 8)
5									5.00	66.41		
6								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy GRAVEL				N = 20 (3, 3, 3, 4, 4, 9)
7									7.50	63.91		N = 50/20 mm (11, 14, 50)
8	8.50							SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	8.50	62.91		
9		100	64	59								
	10.00											

REMARKS

Hole cased from 0.00-8.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.50 6.00	2.50 6.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC41**
		SHEET	Sheet 2 of 2
CO-ORDINATES	663,220.39 E 746,699.23 N	**RIG TYPE**	Casagrande C8
GROUND LEVEL (mOD)	71.41	**FLUSH**	Air/Mist
		DATE DRILLED	21/08/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								Medium strong, thick to thinly, light blue/grey, fine-grained massively bedded LIMESTONE (crystalline calcisiltite layers). Weathering: fresh to slightly weathered Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, locally calcite veined (1-5mm thick). Dips are subhoriztonal to 30° and irregular. *(continued)*				
11	11.60	100	61	59				End of Borehole at 11.60 m	11.60	59.81		
12												
13												
14												
15												
16												
17												
18												
19												

REMARKS

Hole cased from 0.00-8.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.50 6.00	2.50 6.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
21-08-25	11.60	8.50	1.20	Start of Shift
22-08-25	11.60	8.50	1.46	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC42**
		SHEET	Sheet 1 of 2
CO-ORDINATES	663,124.43 E 746,734.60 N		
GROUND LEVEL (mOD)	71.53	**RIG TYPE**	Casagrande C8
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	22/08/2025
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly CLAY				
1												
2									2.50	69.03		N = 26 (7, 6, 6, 6, 6, 8)
3								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown gravelly clayey SAND				N = 20 (2, 2, 4, 5, 5, 6)
4												
5		0	0	0					5.00	66.53		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy GRAVEL				N = 95/255 mm (4, 13, 16, 14, 15, 50)
6									6.00	65.53		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey clayey gravelly SAND				N = 71/95 mm (10, 15, 21, 50)
7									7.50	64.03		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy GRAVEL				
8												
9									9.20	62.33		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK				

REMARKS

Hole cased from 0.00-7.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
5.00	5.00				

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
26-08-25	12.70	12.70	1.00	50mm SP

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
22-08-25	7.50	7.50	6.26	Water levels recorded 5min after end of drilling

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC42**
		SHEET	Sheet 2 of 2
CO-ORDINATES	663,124.43 E 746,734.60 N		
GROUND LEVEL (mOD)	71.53	**RIG TYPE**	Casagrande C8
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	22/08/2025
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Description	Depth (m)	Elevation	SPT (N Value)
10	10.20					10.20	61.33	
	10.70	100	38	38	Dark blue/grey clayey GRAVEL with cobbles. Gravel is angular to subangular, fine to coarse of limestone. Cobbles of limestone Possible Rock	10.70	60.83	
11	11.70	0	0	0	SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	11.70	59.83	
12	12.10	100	65	65	Moderatley weak to medium strong, medium to thinly bedded dark blue/grey fine-grained massively bedded LIMESTONE (argillaceous layers with crystalline calcisiltite layers). Weathering: fresh to slightly weathered.			
	12.70	100	0	0	Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, locally calcite veined (1-5mm thick), slight iron oxide staining. Dips are subhoriztonal to 30° and irregular.	12.70	58.83	
13					End of Borehole at 7.50 m			
14								
15								
16								
17								
18								
19								

Fracture Spacing Log (mm): 0, 250, 500

REMARKS

Hole cased from 0.00-7.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
5.00	5.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
26-08-25	12.70	12.70	1.00	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC43**
		SHEET	Sheet 1 of 2
CO-ORDINATES	663,120.69 E 746,627.22 N	**RIG TYPE**	Casagrande C8
GROUND LEVEL (mOD)	71.45	**FLUSH**	Air/Mist
		DATE DRILLED	27/08/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy CLAY				
1												
2									2.50	68.95		N = 24 (3, 5, 6, 10, 5, 3)
3								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY				N = 16 (2, 1, 1, 3, 4, 8)
4												
5								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy clayey GRAVEL	5.00	66.45		N = 50/230 mm (2, 8, 16, 12, 16, 6)
6		0	0	0								
7								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown gravelly clayey SAND with cobbles	7.00	64.45		N = 50/155 mm (10, 14, 22, 26, 2)
8									8.50	62.95		N = 50/160 mm (12, 12, 20, 26, 4)
9								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy GRAVEL with cobbles				N = 50/152 mm (11, 13, 22, 27, 1)

REMARKS

Hole cased from 0.00-11.70m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.00 5.00	3.00 5.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
27-08-25	14.10	1.00	14.10	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC43**
		SHEET	Sheet 2 of 2
CO-ORDINATES	663,120.69 E 746,627.22 N	**RIG TYPE**	Casagrande C8
GROUND LEVEL (mOD)	71.45	**FLUSH**	Air/Mist
		DATE DRILLED	27/08/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy GRAVEL with cobbles *(continued)*				
									11.00	60.45		
11								SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK				
	11.70								11.70	59.75		
12	12.20	100	26	26				Moderately weak to strong, medium to thinly, dark blue/grey, fine-grained massively bedded LIMESTONE (crystalline calcisiltite layers with argillaceous layers). Weathering: fresh to slightly weathered				
	12.90	100	21	0				Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, locally calcite veined (1-5mm thick), slight iron oxide staining. Dips are subhoriztonal, subvertical to locally 30° and irregular.				
13		100	58	46								
	14.10								14.10	57.35		
14								End of Borehole at 14.10 m				
15												
16												
17												
18												
19												

REMARKS

Hole cased from 0.00-11.70m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.00 5.00	3.00 5.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
27-08-25	14.40	11.70	1.52	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
27-08-25	14.10	1.00	14.10	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC44**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,991.57 E 746,594.44 N		
GROUND LEVEL (mOD)	71.40	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	18/09/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Description	Depth (m)	Elevation	SPT (N Value)
SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	71.20	
SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey mottled brown sandy SILT/CLAY with occasional gravel	1.50	69.90	
SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy silty gravelly CLAY with cobbles and boulders	3.10	68.30	
SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey very sandy gravelly CLAY with cobbles and boulders	4.00	67.40	
SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey fine sandy coarse GRAVEL	4.80	66.60	
SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey fine sandy SILT/CLAY with some gravel	5.20	66.20	
SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey fine to coarse sandy coarse GRAVEL with some cobbles	6.80	64.60	
SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy gravelly CLAY	9.60	61.80	N = 45 (4, 8, 9, 11, 12, 13)
SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey silty sandy GRAVEL			N = 50/200 mm (6, 10, 16, 18, 16)

REMARKS

Hole cased from 0.00-14.70m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
14.70	14.70	N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
22-09-25	16.20	1.00	18.20	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC44**
		SHEET	Sheet 2 of 2
CO-ORDINATES	662,991.57 E 746,594.44 N		
GROUND LEVEL (mOD)	71.40	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	18/09/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey silty sandy GRAVEL *(continued)*				N = 50/165 mm (5, 11, 17, 23, 10)
11									11.50	59.90		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown silty sandy GRAVEL				N = 50/185 mm (7, 10, 13, 15, 22)
12												
13									13.70	57.70		N = 50/15 mm (50, 50)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK				
14	14.70								14.70	56.70		
15		100	58	13				Strong, medium to thinly bedded, bluish grey, fine-grained, LIMESTONE (calci-siltite (sandy) limestone, localised chert layers, locally slightly dolomitised), fresh to locally slightly weathered. Hole collapsed back from 18.20m to 16.20m - Installation at 16.20m				
	15.60											
16		100	38	0				Discontinuities are medium to closely spaced, smooth to rough, fractures are planar to curviplanar. Apertures are tight to locally moderately open, locally clay smeared, locally calcite/dolomite veined (1-10mm thick), locally iron-oxide stained. Dips are subhorizontal, 60° & subvertical.				
	16.60											
17		100	70	44								
18	18.20								18.20	53.20		
								End of Borehole at 18.20 m				
19												

REMARKS

Hole cased from 0.00-14.70m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
14.70	14.70	N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
19-09-25	14.70	14.70	14.30	End of Shift
22-09-25	18.20	14.70	2.80	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
22-09-25	16.20	1.00	18.20	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC45**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,879.51 E 746,468.77 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	70.32	**FLUSH**	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	
		DATE DRILLED	24/09/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	70.12		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown mottled sandy SILT/CLAY with occasional fine gravel	1.60	68.72		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown mottled sandy gravelly SILT/CLAY with occasional large cobbles	2.30	68.02		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT/CLAY with occasional cobbles & boulders	4.80	65.52		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey fine to coarse sandy GRAVEL with some cobbles	6.60	63.72		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy gravelly CLAY	7.90	62.42		N = 44 (4, 5, 7, 11, 12, 14)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/black sandy gravelly CLAY	9.60	60.72		N = 50/110 mm (8, 15, 22, 28)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK				

REMARKS

Hole cased from 0.00-10.10m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
25-09-25	9.00	1.50	9.00	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC45**
		SHEET	Sheet 2 of 2
CO-ORDINATES	662,879.51 E 746,468.77 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	70.32	**FLUSH**	Air/Mist
		DATE DRILLED	24/09/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								Medium strong to strong, medium to thinly bedded, light to dark blue/black, fine-grained, LIMESTONE (predominantly calci-siltite layers with subordinate argillaceous layers, locally fossiliferous), fresh to locally slightly weathered Discontinuities are medium to closely spaced, smooth to rough, fractures are planar. Apertures are tight to locally moderately open, locally clay smeared, locally calcite veined (1-40mm thick), locally iron-oxide stained. Dips are 30-40° & 60°.	10.10	60.22		
11												
12												
13									13.30	57.02		
								End of Borehole at 13.30 m				
14												
15												
16												
17												
18												
19												

REMARKS

Hole cased from 0.00-10.10m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
24-09-25	11.70	10.10	10.50	End of Shift
25-09-25	13.30	10.10	5.00	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
25-09-25	9.00	1.50	9.00	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC46**
		SHEET	Sheet 1 of 3
CO-ORDINATES	662,974.18 E 746,029.73 N		
GROUND LEVEL (mOD)	67.55	**RIG TYPE**	Casagrande C8
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	02/09/2025
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	67.25		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of light grey sandy SILT/CLAY	1.00	66.55		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown mottled sandy slightly gravelly SILT/CLAY	1.50	66.05		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of light grey mottled sandy gravelly SILT with occasional cobbles & boulders	2.20	65.35		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey fine sandy coarse GRAVEL	3.00	64.55		
3								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT	4.00	63.55		
4								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown slightly sandy gravelly SILT/CLAY with some cobbles	5.00	62.55		
5								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly silty very sandy GRAVEL	6.80	60.75		
6								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy slightly gravelly CLAY with occasional cobbles & boulders 7.0m Blowing Sands	8.30	59.25		
7								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY with cobbles 9.20m Blowing Sands				N = 50/250 mm (10, 10, 10, 16, 18, 6)
8												
9												

REMARKS

Hole cased from 0.00-11.50m. Coring difficult due to CLAY bands from 16.70m. Down-the-hole hammer used from 17.50-18.50m to clear hole. Loss of flush reported 18.50-20.60m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
10.00	10.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC46**
		SHEET	Sheet 2 of 3
CO-ORDINATES	662,974.18 E 746,029.73 N	**RIG TYPE**	Casagrande C8
GROUND LEVEL (mOD)	67.55	**FLUSH**	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	02/09/2025
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10					SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY with cobbles *(continued)*	10.50	57.05		
					SYMMETRIX DRILLING: No recovery, observed by driller as returns of Possible ROCK				
11	11.50					11.50	56.05		
		86	30	16	Strong (where competent), medium to thinly bedded (to locally structureless), bluish grey, fine-grained, LIMESTONE (calci-siltite (sandy) limestone, localised chert layers), slightly to locally moderately weathered (to a clayey gravel at 14.49-14.56m) From 16.70m Driller notes Rock with clay bands. 17.50-18.50m - DTH Hammer (fragmented rock) Discontinuities are medium to closely spaced, smooth to rough, fractures are planar to irregular. Apertures are tight to open, commonly clay smeared, locally calcite veined (1-5mm thick), commonly iron-oxide stained. Dips are subhorizontal, subvertical & irregular.				
12	12.20								
		100	62	23					
	12.80								
13		100	32	0					
	13.30								
		100	55	25					
14	14.60								
	14.90	100	0	0					
		83	28	0					
15	15.50								
	15.70	100	45	0					
		100	16	0					
16	16.70								
	17.00	100	13	0					
		100	0	0					
17	17.50								
		0	0	0					
18	18.50								
		24	6	0					
19									

REMARKS

Hole cased from 0.00-11.50m. Coring difficult due to CLAY bands from 16.70m. Down-the-hole hammer used from 17.50-18.50m to clear hole. Loss of flush reported 18.50-20.60m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
10.00	10.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
03-09-25	14.80	11.50	2.23	End of Shift
04-09-25	17.50	11.50	2.20	End of Shift
05-09-25	17.50	11.50	1.19	Start of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC46**
		SHEET	Sheet 3 of 3
CO-ORDINATES	662,974.18 E 746,029.73 N	**RIG TYPE**	Casagrande C8
GROUND LEVEL (mOD)	67.55	**FLUSH**	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	02/09/2025
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20	20.60							End of Borehole at 20.60 m	20.60	46.95		
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.00-11.50m. Coring difficult due to CLAY bands from 16.70m. Down-the-hole hammer used from 17.50-18.50m to clear hole. Loss of flush reported 18.50-20.60m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
10.00	10.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC48**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,904.25 E 745,787.26 N		
GROUND LEVEL (mOD)	69.13	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	09/08/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	68.83		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly SILT	2.00	67.13		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy gravelly SILT/CLAY	2.50	66.63		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy slightly gravelly CLAY with occasional cobbles	5.00	64.13		
5		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT with occasional cobbles	6.10	63.03		
6								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY with cobbles	7.00	62.13		
7								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly silty slightly sandy GRAVEL with many cobbles	8.00	61.13		
8								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY with cobbles	9.00	60.13		
9								SYMMETRIX DRILLING: No recovery, observed by driller as returns of black gravelly CLAY	9.40	59.73		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of Possible ROCK				

REMARKS

Hole cased from 0.00-10.10m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
9.00	9.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
09-08-25	4.50	4.50	Dry	End of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC48**
		SHEET	Sheet 2 of 2
CO-ORDINATES	662,904.25 E 745,787.26 N		
GROUND LEVEL (mOD)	69.13	**DATE DRILLED**	09/08/2025
CLIENT	Murphy International Limited	**RIG TYPE**	Beretta T44
ENGINEER	Fingleton White	**FLUSH**	Air/Mist
		INCLINATION (deg)	-90
		CORE DIAMETER (mm)	78
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.10								10.10	59.03		
		100	75	67				Medium strong to strong, thickly to thinly bedded, light to dark blue/black fine-grained massively bedded LIMESTONE (predominantly calci-siltite layers with subordinate argillaceous layers, locally fossiliferous). Weathering: Fresh to slightly weathered Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, locally calcite veined (1-15mm thick), local incipient fractures. Dips are subhoriztonal to 30° and irregular.				
11	11.70											
		100	50	35								
12	12.70											
		100	82	82								
13	13.30											
		100	62	56								
14	14.90											
		100	61	57								
15	16.40											
		100	70	51								
16	17.40								17.40	51.73		
								End of Borehole at 17.40 m				
17												
18												
19												

REMARKS

Hole cased from 0.00-10.10m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
9.00	9.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
11-08-25	13.30	10.10	10.80	End of Shift
12-08-25	17.40	10.10	3.80	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC49A**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,887.42 E 745,694.00 N		
GROUND LEVEL (mOD)	69.50	**DATE DRILLED**	13/08/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	69.30		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy SILT/CLAY	1.00	68.50		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly SILT				
2												
3									3.40	66.10		
4								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy gravelly CLAY with occasional cobbles				
		0	0	0								
5												
6												
7									7.00	62.50		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of Brown silty sandy GRAVEL with some cobbles				
8									8.30	61.20		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy gravelly CLAY	8.80	60.70		
9	9.20							SYMMETRIX DRILLING: No recovery, observed by driller as returns of Possible ROCK	9.20	60.30		N = 50/20 mm (5, 50)
		100	51	27								

REMARKS

Hole cased from 0.00-9.20m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
8.30	8.30				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC49A**
		SHEET	Sheet 2 of 2
CO-ORDINATES	662,887.42 E 745,694.00 N		
GROUND LEVEL (mOD)	69.50	**DATE DRILLED**	13/08/2025
CLIENT	Murphy International Limited	**RIG TYPE**	Beretta T44
ENGINEER	Fingleton White	**FLUSH**	Air/Mist
		INCLINATION (deg)	-90
		CORE DIAMETER (mm)	78
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.10								
		100	81	59	Moderately weak to strong, light to dark blue/black fine-grained massively bedded LIMESTONE (predominantly calci-siltite layers with subordinate argillaceous layers, locally fossiliferous). Weathering: Fresh to slightly weathered Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally calcite veined (1-20mm thick), locally clay smeared, frequent incipient fractures. Dips are subhorizontal to locally 30° and irregular. *(continued)*				
11	11.60								
		100	98	98					
12	12.90								
		100	82	65					
13	14.20								
	14.50	100	97	83					
14	15.00	100	76	74					
		100	77	73					
15	16.50								
16		100	81	77					
17	17.20				End of Borehole at 17.20 m	17.20	52.30		
18									
19									

Fracture Spacing Log (mm): 0 – 250 – 500

REMARKS

Hole cased from 0.00-9.20m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
8.30	8.30				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
13-08-25	11.60	9.20	9.00	End of Shift
14-08-25	17.20	9.20	7.20	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC50**
		SHEET	Sheet 1 of 3
CO-ORDINATES	662,483.88 E 744,417.75 N		
GROUND LEVEL (mOD)	72.68	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	04/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	72.38		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy CLAY	0.50	72.18		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY with cobbles				
2												
3												
4												
5									5.80	66.88		
6								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown gravelly sandy CLAY with a low to medium boulder content				N = 29 (2, 3, 5, 8, 8, 8)
7		0	0	0								N = 54 (4, 7, 10, 11, 16, 17)
8												
9												N = 50/185 mm (7, 12, 15, 21, 14)

REMARKS

Hole cased from 0.0-14.80m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
12.10	12.10				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC50**
		SHEET	Sheet 2 of 3
CO-ORDINATES	662,483.88 E 744,417.75 N		
GROUND LEVEL (mOD)	72.68	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	04/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
									10.40	62.28		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown gravelly sandy CLAY				N = 50/80 mm (14, 11, 35, 15)
									12.10	60.58		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy clayey GRAVEL				N = 50/50 mm (10, 15, 50)
									13.80	58.88		N = 50/15 mm (16, 9, 50)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK				
	14.80								14.80	57.88		
		100	97	97				Medium strong to strong thickly to thinly bedded to massively bedded pale grey slightly dolomitised / crystalline calcisiltite LIMESTONE. Weathering: Fresh to slightly weathered Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally calcite veined (1-10mm thick), locally clay smeared. Dips are subhorizontal to locally 30 and irregular.				
	16.40											
		100	100	95		599.9999999999998						
	17.45											
		100	84	73								
	18.00											
						800.0000000000001						
		100	81	77								
	19.60					599.9999999999999						

REMARKS

Hole cased from 0.0-14.80m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
12.10	12.10				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC50**
		SHEET	Sheet 3 of 3
CO-ORDINATES	662,483.88 E 744,417.75 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	72.68	**FLUSH**	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	04/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20	20.70	100	100	100				End of Borehole at 20.70 m	20.70	51.98		
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.0-14.80m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
12.10	12.10				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
05-07-25	20.70	14.80	4.80	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC51A**
		SHEET	Sheet 1 of 3
CO-ORDINATES	662,510.06 E 744,092.51 N		
GROUND LEVEL (mOD)	70.57	**DATE DRILLED**	25/07/2025
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	JL
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of Peaty TOPSOIL	0.50	70.07		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy SILT/CLAY	1.20	69.37		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT with some cobbles	3.00	67.57		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy slightly gravelly CLAY with cobbles & occasional boulders	5.00	65.57		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT with cobbles and occasional boulders	8.00	62.57		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown slightly sandy slightly gravelly CLAY with many cobbles	9.30	61.27		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of dark brown clayey/silty very sandy GRAVEL with occasional cobbles				

REMARKS

Electric fencing required around rig / works area. Hole cased from 0.0-20.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC51A**
		SHEET	Sheet 2 of 3
CO-ORDINATES	662,510.06 E 744,092.51 N		
GROUND LEVEL (mOD)	70.57	**DATE DRILLED**	25/07/2025
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	JL
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of dark brown clayey/silty very sandy GRAVEL with occasional cobbles *(continued)*				
11												
12									12.00	58.57		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of dark brown slightly clayey/silty sandy GRAVEL				
13									13.00	57.57		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly CLAY with a low to medium boulder content	13.60	56.97		N = 50/95 mm (7, 12, 32, 18)
14								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy clayey GRAVEL				
									14.90	55.67		
15								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy silty/clayey GRAVEL				N = 50/85 mm (25, 30, 20)
16												N = 50/95 mm (25, 27, 23)
									16.80	53.77		
17								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey black gravelly CLAY				
18												N = 50/40 mm (25, 50)
19												N = 50/45 mm (25, 50)

REMARKS

Electric fencing required around rig / works area. Hole cased from 0.0-20.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
25-07-25	13.60	13.60	Dry	End of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC51A**
		SHEET	Sheet 3 of 3
CO-ORDINATES	662,510.06 E 744,092.51 N		
GROUND LEVEL (mOD)	70.57	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	25/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20	20.50							SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey black gravelly CLAY *(continued)*	20.50	50.07		N = 50/30 mm (25, 50)
								End of Borehole at 20.50 m				
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Electric fencing required around rig / works area. Hole cased from 0.0-20.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
26-07-25	20.50	20.50	Dry	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC53**
		SHEET	Sheet 1 of 3
CO-ORDINATES	661,193.57 E 737,534.88 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	66.79	**FLUSH**	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	16/09/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.40	66.39		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy gravelly CLAY	1.00	65.79		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown silty SAND				N = 16 (2, 2, 3, 4, 4, 5)
2									2.20	64.59		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy SILT				N = 7 (1, 0, 1, 1, 2, 3)
3												
4												N = 6 (0, 0, 1, 2, 1, 2)
5												
6												N = 13 (1, 3, 3, 4, 3, 3)
7												
8												N = 14 (1, 1, 2, 3, 5, 4)
									8.40	58.39		
9								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown silty gravelly SAND				N = 59 (3, 7, 10, 16, 16, 17)
									9.60	57.19		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy GRAVEL				

REMARKS

Hole cased from 0.00-13.30m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
8.40	8.40	N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC53**
		SHEET	Sheet 2 of 3
CO-ORDINATES	661,193.57 E 737,534.88 N		
GROUND LEVEL (mOD)	66.79	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	16/09/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10					SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy GRAVEL *(continued)*				N = 50/105 mm (9, 11, 23, 27)
11									
12									N = 10/5 mm (40, 10)
						12.70	54.09		
13	13.30				SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	13.30	53.49		
	14.00	100	50	14	Strong to very strong, thickly to thinly bedded, grey, fine-grained, LIMESTONE (calci-siltite (sandy) limestone, locally fossiliferous), fresh to locally slightly weathered. Discontinuities are widely to closely spaced, smooth to very locally rough, fractures are planar to curviplanar. Apertures are tight to locally moderately open, locally clay smeared, locally calcite veined (1-8mm thick). Dips are subhorizontal, 30-40° and 70°.				
14		100	93	68					
15	15.50								
16		100	84	76					
17	17.10								
18		100	98	95					
19	18.65								
		100	70	39					

Fracture Spacing Log (mm): 0, 250, 500 — Non-intact Zone — Legend

REMARKS

Hole cased from 0.00-13.30m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
8.40	8.40	N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
16-09-25	13.30	13.30	3.80	End of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC53**
		SHEET	Sheet 3 of 3
CO-ORDINATES	661,193.57 E 737,534.88 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	66.79	**FLUSH**	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	16/09/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20	20.25							End of Borehole at 20.25 m	20.25	46.54		
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.00-13.30m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
8.40	8.40	N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC54**
		SHEET	Sheet 1 of 3
CO-ORDINATES	661,106.01 E 737,454.98 N		
GROUND LEVEL (mOD)	65.68	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	09/09/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	65.38		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT				
2												
3									3.00	62.68		
4								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy SILT				
5												
6												
7									7.80	57.88		
8								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy gravelly CLAY with occasional cobbles				
9												

REMARKS

Hole cased from 0.00-16.20m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
15.80	15.80	N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC54**
		SHEET	Sheet 2 of 3
CO-ORDINATES	661,106.01 E 737,454.98 N		
GROUND LEVEL (mOD)	65.68	**DATE DRILLED**	09/09/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy gravelly CLAY with occasional cobbles *(continued)*				N = 50/195 mm (6, 8, 12, 17, 21)
11												
12												N = 50/95 mm (11, 16, 32, 18)
13												
14												N = 22/20 mm (28, 22)
15								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy GRAVEL	15.00	50.68		N = 50/65 mm (50, 50)
									15.80	49.88		
16	16.20							SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	16.20	49.48		
17		100	58	40				Strong to very strong, thickly to thinly bedded, dark grey/black, fine-grained, LIMESTONE (predominantly calci-siltite (sandy) limestone with subordinate argillaceous (muddy) limestone layer (at 18.90-19.20m), locally fossiliferous), fresh to locally slightly weathered.				
	17.50							Discontinuities are widely to closely spaced, smooth to very locally rough, fractures are planar to curviplanar. Apertures are tight to locally moderately open, locally clay smeared, locally calcite veined (1-8mm thick). Dips are subhorizontal to locally 30-40° and 70°.				
18		100	86	82								
	19.00											
19		100	100	87								

REMARKS

Hole cased from 0.00-16.20m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
15.80	15.80	N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC54**
		SHEET	Sheet 3 of 3
CO-ORDINATES	661,106.01 E 737,454.98 N		
GROUND LEVEL (mOD)	65.68	**DATE DRILLED**	09/09/2025
CLIENT	Murphy International Limited	**RIG TYPE**	Beretta T44
ENGINEER	Fingleton White	**FLUSH**	Air/Mist
		INCLINATION (deg)	-90
		CORE DIAMETER (mm)	78
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20	20.40							End of Borehole at 20.40 m	20.40	45.28		
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.00-16.20m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
15.80	15.80	N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
15-09-25	20.40	16.20	3.00	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC55**
		SHEET	Sheet 1 of 3
CO-ORDINATES	660,896.88 E 737,102.23 N		
GROUND LEVEL (mOD)	69.20	**DATE DRILLED**	08/05/2025
CLIENT	Murphy International Limited	**RIG TYPE**	GEO-405
ENGINEER	Fingleton White	**FLUSH**	Air/Mist
		INCLINATION (deg)	-90
		CORE DIAMETER (mm)	78
		DRILLED BY	IGSL - AK
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	69.00		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly SILT/CLAY	1.80	67.40		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT with cobbles	4.40	64.80		
3												
4												
5								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/grey brown sandy SILT/CLAY	6.00	63.20		
6								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy SILT (Marl)	7.50	61.70		
7												
8								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy SILT/CLAY	9.00	60.20		
9								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey silty slightly gravelly SAND to sandy slightly gravelly silt				

REMARKS

Hole cased from 0.00-20.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.40	6.40				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC55**
		SHEET	Sheet 2 of 3
CO-ORDINATES	660,896.88 E 737,102.23 N		
GROUND LEVEL (mOD)	69.20	**RIG TYPE**	GEO-405
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	08/05/2025
		DRILLED BY	IGSL - AK
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey silty slightly gravelly SAND to sandy slightly gravelly silt *(continued)*				
11												
12									12.80	56.40		
13								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey clayey/silty very sandy GRAVEL with some cobbles	14.00	55.20		
14								SYMMETRIX DRILLING: No recovery, observed by driller as returns of sandy cobbly GRAVEL				
15												N = 58 (21, 17, 1, 20, 18, 19)
16												N = 91 (7, 18, 19, 21, 24, 27)
17												
18									18.00	51.20		
19								SYMMETRIX DRILLING: No recovery, observed by driller as returns of clayey cobbly GRAVEL				N = 25/10 mm (25, 25)
	20.00								20.00	49.20		N = 82 (12, 19, 17, 23, 20, 22)

REMARKS

Hole cased from 0.00-20.00m

End of Borehole at 20.00 m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.40	6.40				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
08-05-25	20.00	20.00	5.10	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 23/12/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT Gas to Bord na Mona, Edenderry, Phase 1 GI

DRILLHOLE NO RC55
SHEET Sheet 3 of 3

CO-ORDINATES 660,896.88 E
737,102.23 N
GROUND LEVEL (mOD) 69.20

RIG TYPE GEO-405
FLUSH Air/Mist
INCLINATION (deg) -90
CORE DIAMETER (mm) 78

DATE DRILLED 08/05/2025

CLIENT Murphy International Limited
ENGINEER Fingleton White

DRILLED BY IGSL - AK
LOGGED BY D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20												N = 84 (8, 12, 15, 23, 27, 19)
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.00-20.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.40	6.40				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

RC01 - Box 1 of 5 – 8.30-10.20m



RC01 – Box 2 of 5 – 10.20-12.80m



RC01 – Box 3 of 5 – 12.80-15.50m



RC01 – Box 4 of 5 – 15.50-18.10m



RC01 – Box 5 of 5 – 18.10-20.00m



RC02 Box 1 of 4 8.50-10.40m



RC02 Box 2 of 4 10.40-14.00m



RC02 Box 3 of 4 14.00-15.70m



RC02 Box 4 of 4 15.70-20.50m



RC03 Box 1 of 4 11.50-14.10m



RC03 Box 2 of 4 14.10-15.70m



RC03 Box 3 of 4 15.70-18.40m



RC03 Box 4 of 4 18.40-20.00m



RC04 – Box 1 of 6 – 8.50-11.10m



RC04 – Box 2 of 6 – 11.10-12.60m



RC04 – Box 3 of 6 – 12.60-14.30m



RC04 – Box 4 of 6 – 14.30-16.70m



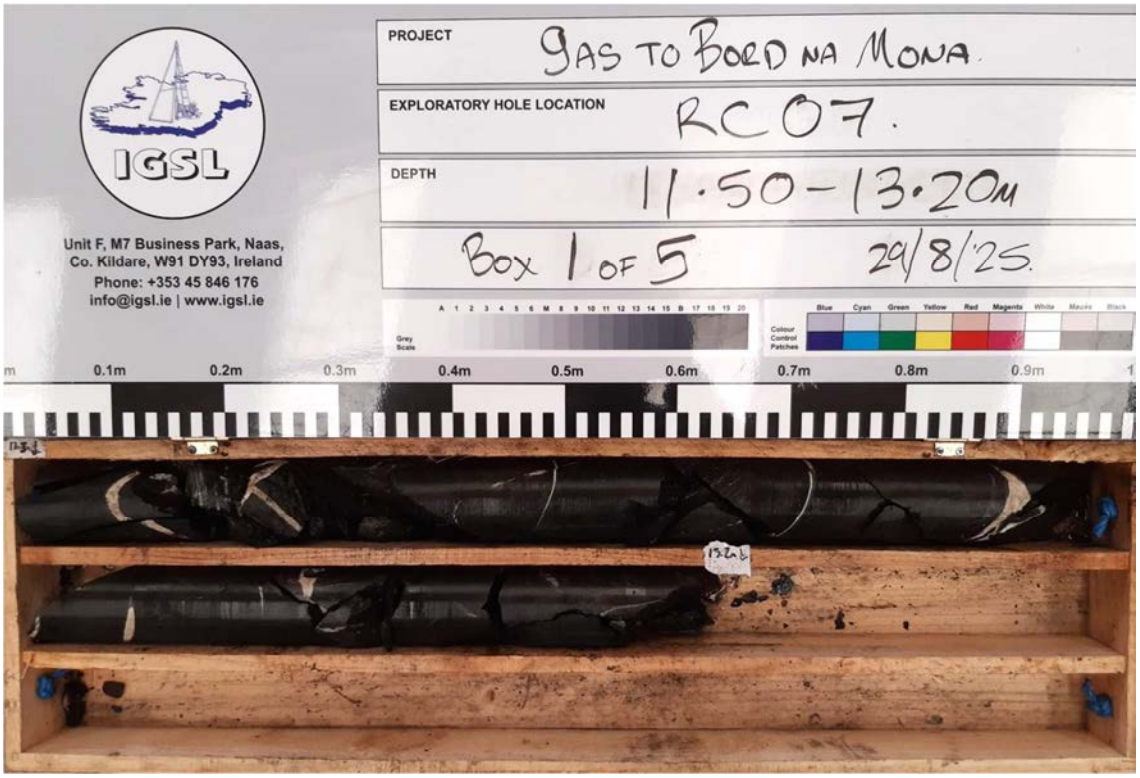
RC04 – Box 5 of 6 – 16.70-19.20m



RC04 – Box 6 of 6 – 19.20-19.60m



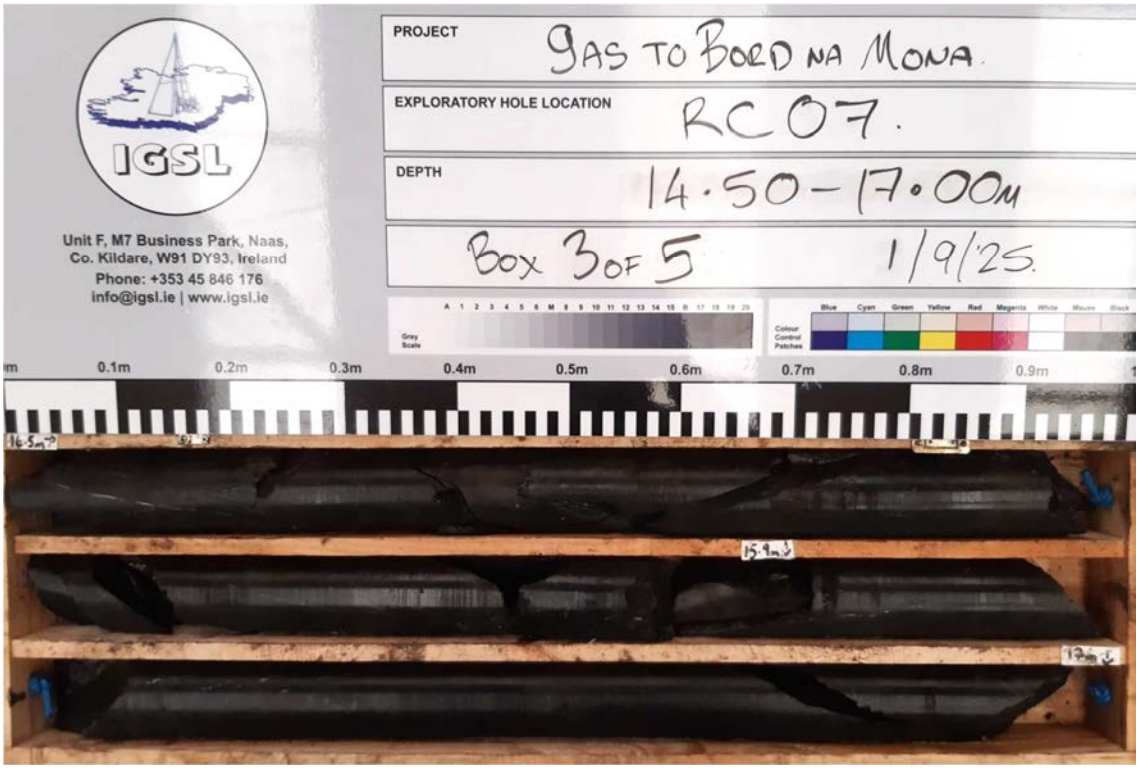
RC07 - Box 1 of 5 – 11.50-13.20m



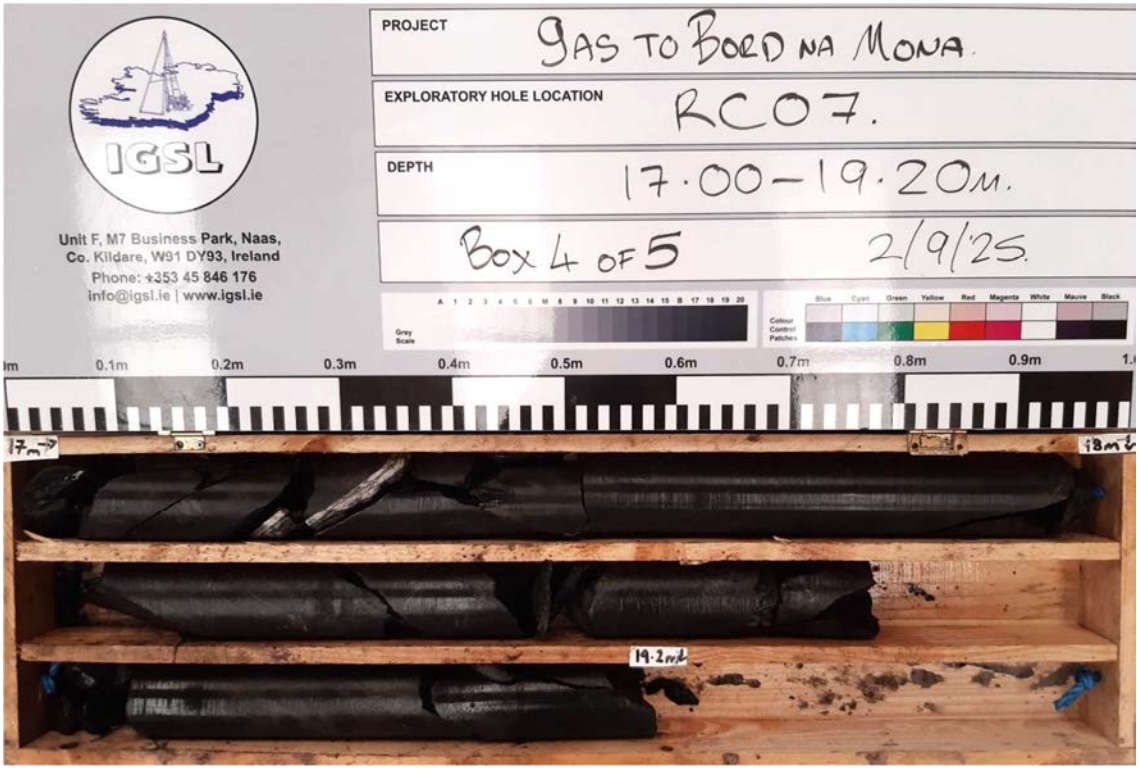
RC07 - Box 2 of 5 – 13.20-14.50m



RC07 - Box 3 of 5 – 14.50-17.00m



RC07 - Box 4 of 5 – 17.00-19.20m



RC07 - Box 5 of 5 – 17.00-19.20m



RC08 Box 1 of 2 15.00-17.60m



RC08 Box 2 of 2 17.60-20.00m



RC09 Box 1 of 2 14.50-17.40m



RC09 Box 2 of 2 17.40-20.00m



RC10 Box 1 of 4 10.20-12.60m



RC10 Box 2 of 4 12.60-15.15m



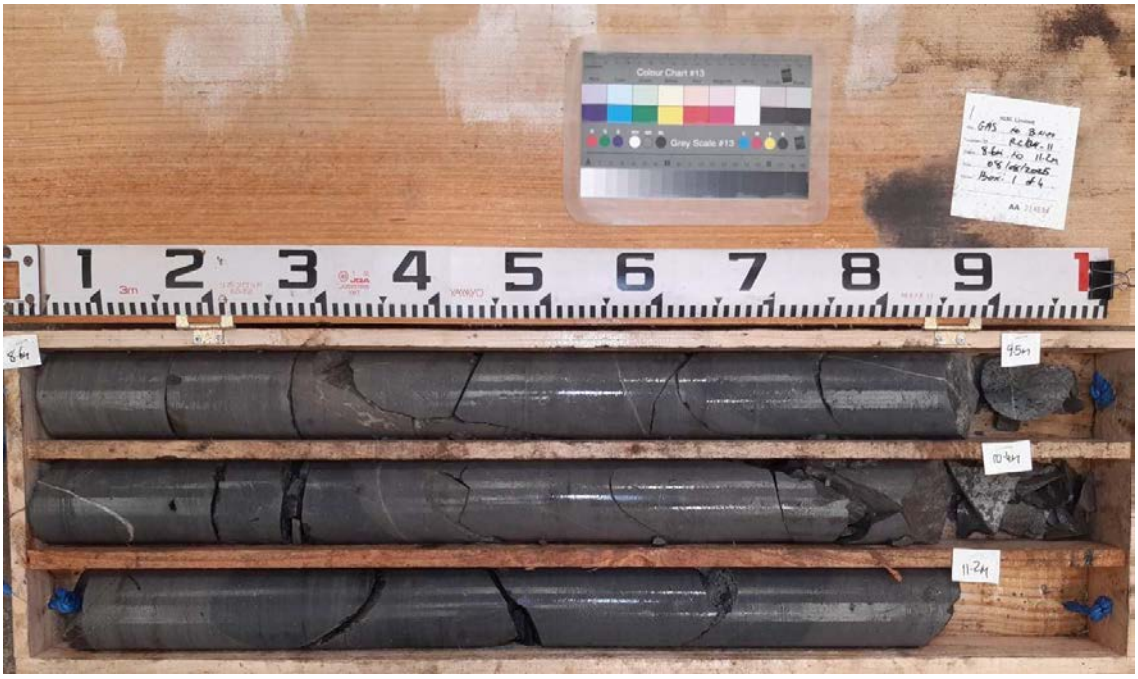
RC10 Box 3 of 4 15.15-17.30m



RC10 Box 4 of 4 17.30-19.50m



RC11 Box 1 of 4 8.60-11.20m



RC11 Box 2 of 4 11.20-13.60m



RC11 Box 3 of 4 13.60-16.20m



RC11 Box 4 of 4 16.20-17.00m



RC12 Box 1 of 2 10.00-12.40m



RC12 Box 2 of 2 12.40-15.10m



RC16A – Box 1 of 3 - 14.80-17.30m



RC16A – Box 2 of 3 – 17.30-19.40m



RC16A - Box 3 of 3 – 19.40-20.20m



RC17 – Box 1 of 2 - 16.10-18.70m



RC17 – Box 2 of 2 – 18.70-20.80m



RC18 – Box 1 of 2 - 16.30-18.95m



RC18 – Box 2 of 2 – 18.95-20.25m



RC28A – Box 1 of 4 – 11.80-14.00m



RC28A – Box 2 of 4 – 14.00-16.30m



RC28A – Box 3 of 4 – 16.30-18.40m



RC28A – Box 4 of 4 – 18.40-20.00m



RC29 – Box 1 of 5 – 7.20-10.00m



RC29 – Box 2 of 5 – 10.00-12.10m



RC29 – Box 3 of 5 – 12.10-14.40m



RC29 – Box 4 of 5 – 14.40-16.50m



RC29 – Box 5 of 5 – 16.50-18.30m



RC30A – Box 1 of 5 – 6.00-8.60m



RC30A – Box 2 of 5 – 8.60-10.80m



RC30A – Box 3 of 5 – 10.80-13.30m



RC30A – Box 4 of 5 – 13.30-14.90m



RC30A – Box 5 of 5 – 14.90-17.50m



RC31A – Box 1 of 5 – 5.90-8.70m



RC31A – Box 2 of 5 – 8.70-11.50m



RC31A - Box 3 of 5 – 11.50-14.30m



RC31A – Box 4 of 5 – 14.30-16.60m



RC31A – Box 5 of 5 – 16.60-18.20m



RC40 – Box 1 of 2 – 8.40-10.80m



RC40 – Box 2 of 2 – 10.80-11.80m



RC41 – Box 1 of 2 – 8.50-10.00m



RC41 – Box 2 of 2 – 10.00-11.60m



RC42 – Box 1 of 1 – 10.20-12.70m



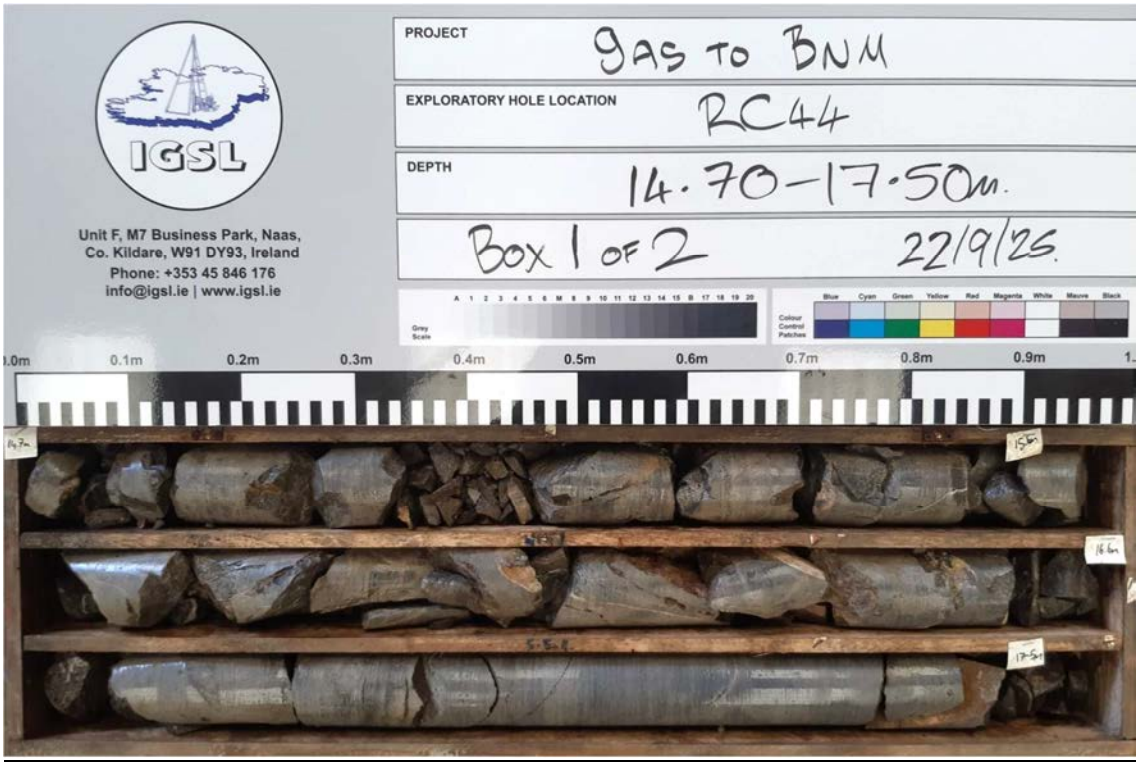
RC43 – Box 1 of 2 – 11.70-12.90m



RC43 – Box 2 of 2 – 12.90-14.10m



RC44 – Box 1 of 2 – 14.70-17.50m



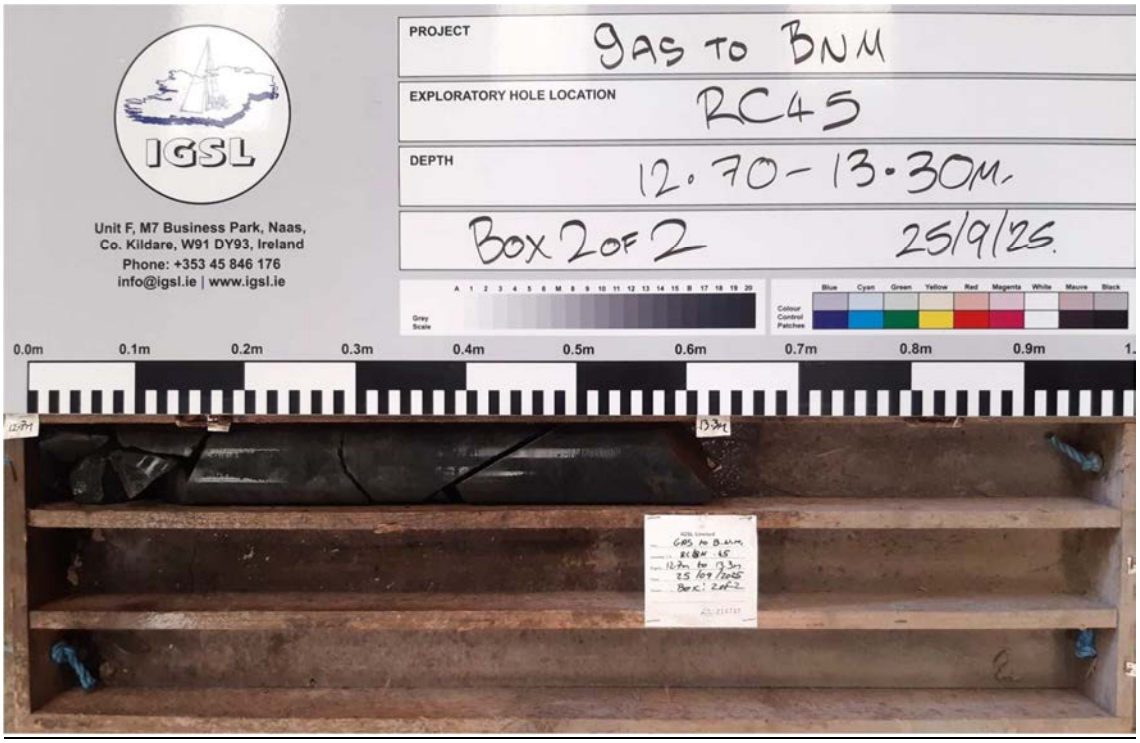
RC44 – Box 2 of 2 – 17.50-18.20m



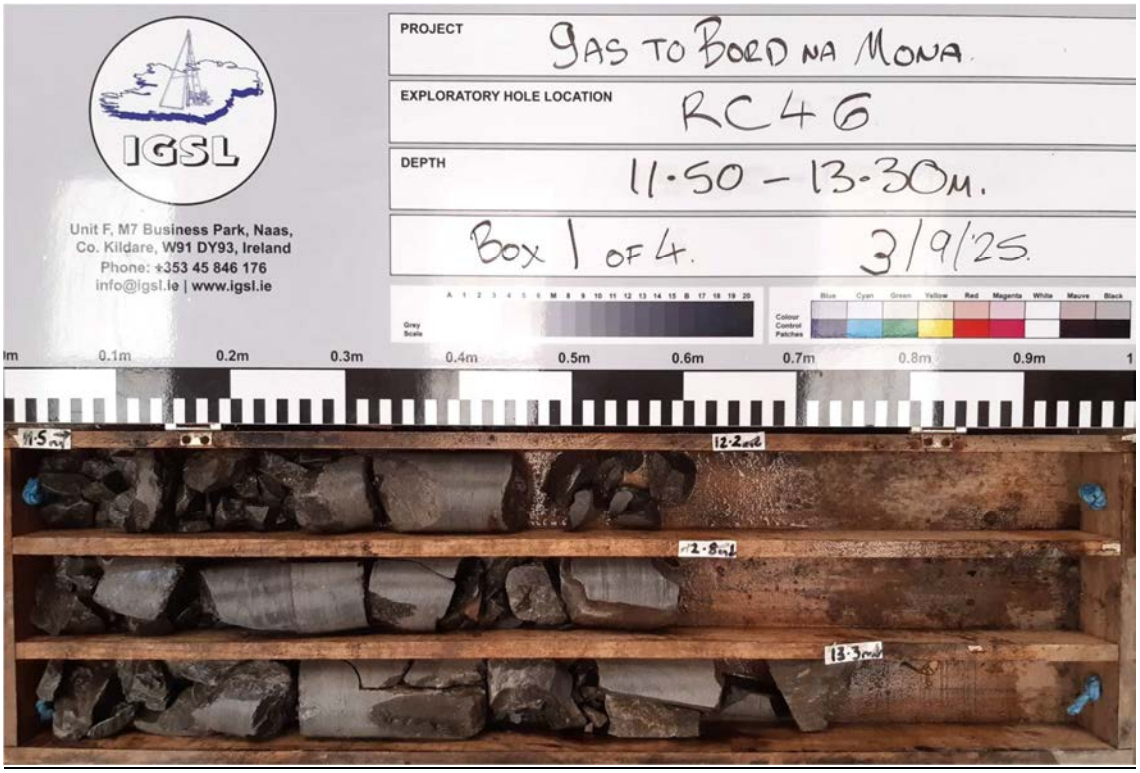
RC45 – Box 1 of 2 – 10.10-12.70m



RC45 – Box 2 of 2 – 12.70-13.30m



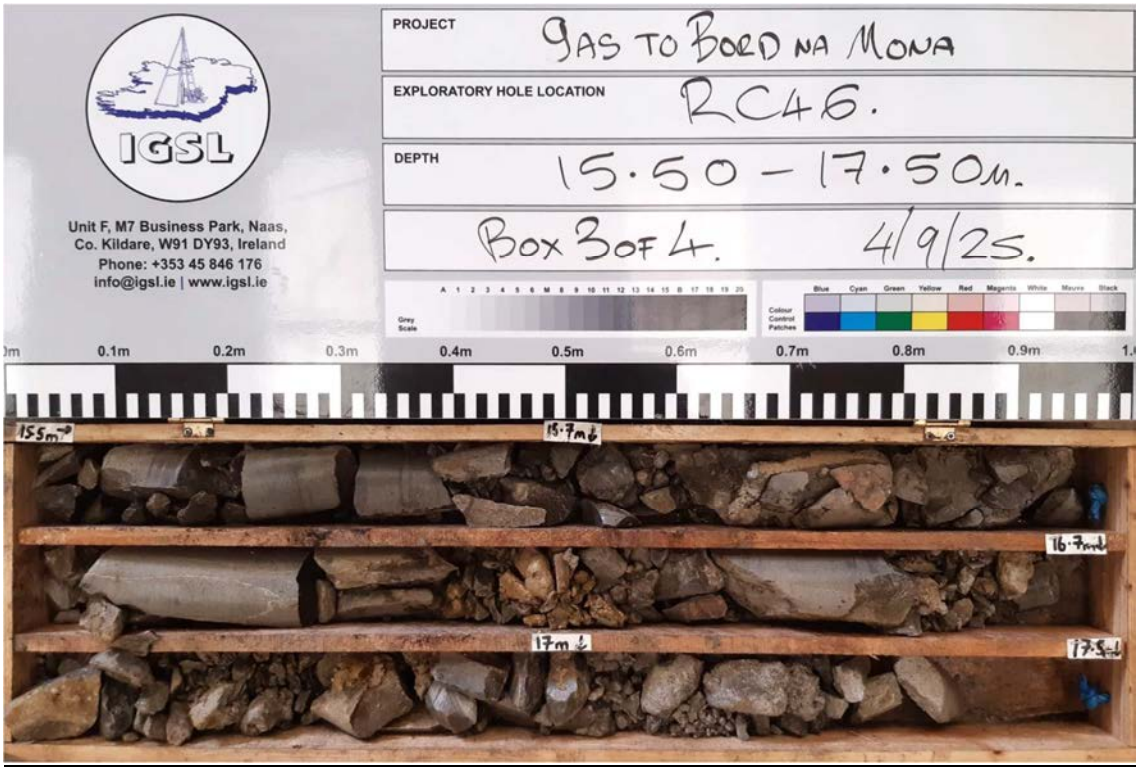
RC46 – Box 1 of 4 – 11.50-13.30m



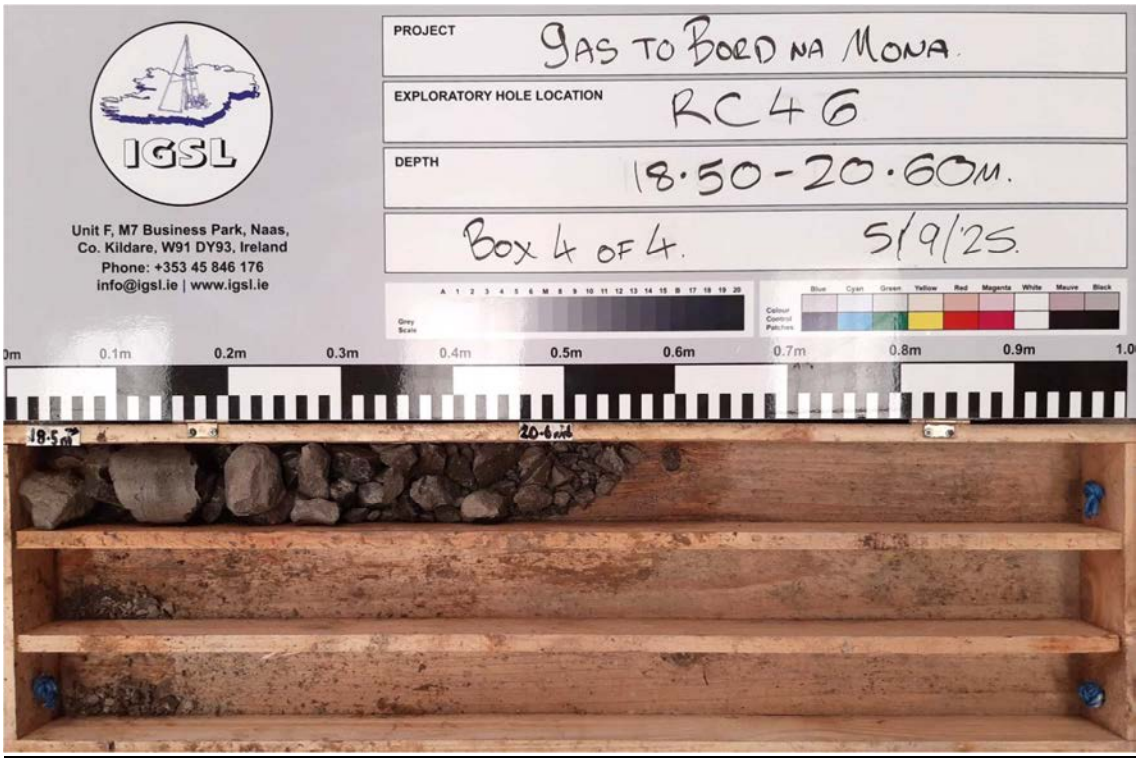
RC46 – Box 2 of 4 – 13.30-15.50m



RC46 – Box 3 of 4 – 15.50-17.50m



RC46 – Box 4 of 4 – 18.50-20.60m



RC48 – Box 1 of 3 – 10.10-12.70m



RC48 – Box 2 of 3 – 12.70-14.90m



RC48 – Box 3 of 3 – 14.90-17.60m



RC49A - Box 1 of 4 – 9.20-11.60m



RC49A – Box 2 of 4 – 11.60-14.20m



RC49A – Box 3 of 4 – 14.20-16.50m



RC49A – Box 4 of 4 – 16.50-17.20m



RC50 – Box 1 of 3 – 14.80-17.45m



RC50 – Box 2 of 3 – 17.45-19.60m



RC50 – Box 3 of 3 – 19.60-20.70m



RC53 – Box 1 of 3 – 13.30-15.90m



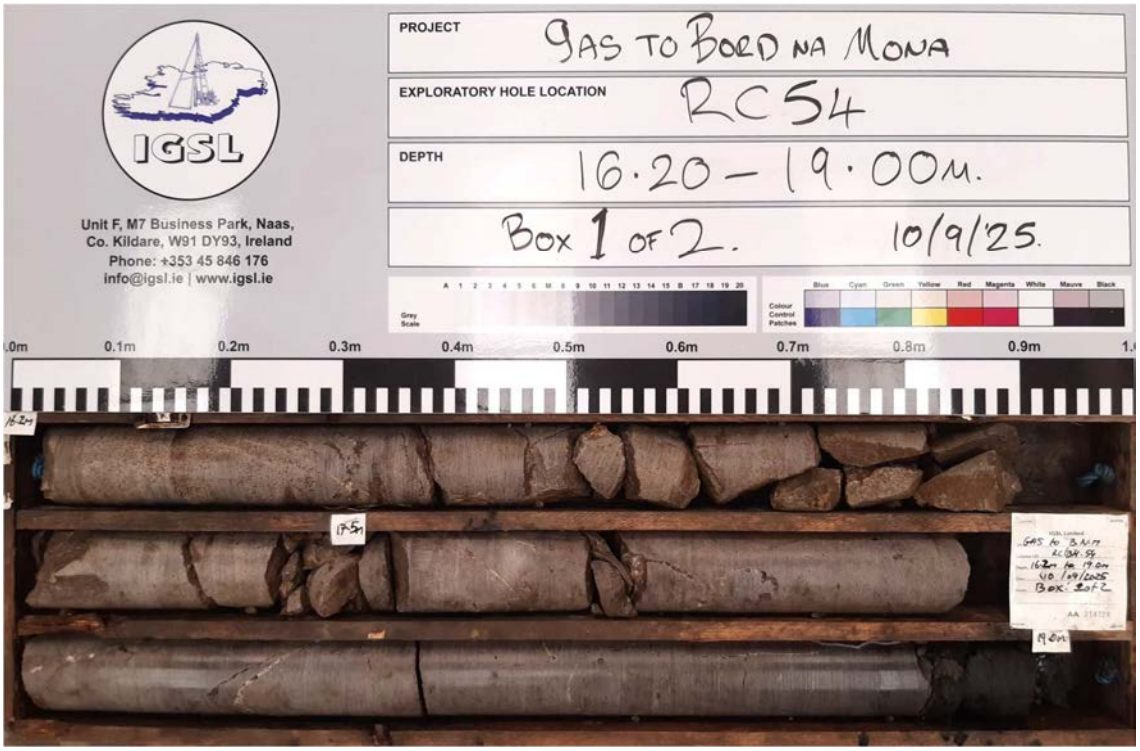
RC53 – Box 2 of 3 – 15.90-18.35m



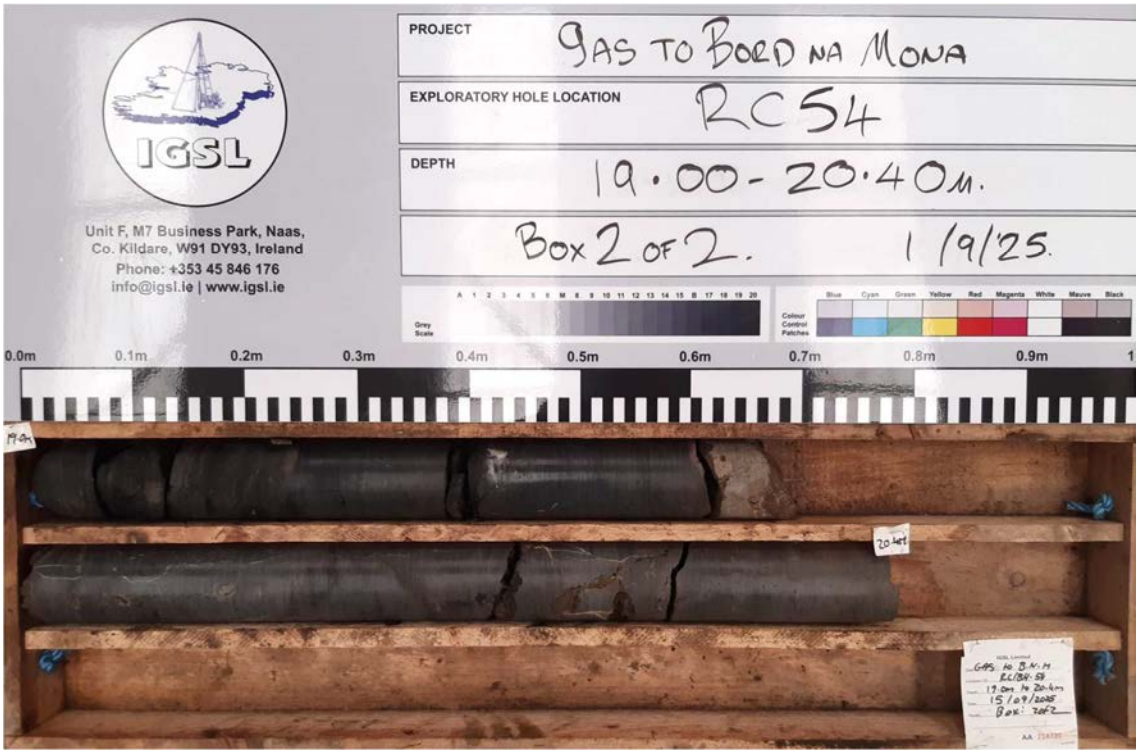
RC53 – Box 3 of 3 – 18.35-20.25m



RC54 – Box 1 of 2 – 16.20-19.00m



RC54 – Box 2 of 2 – 19.00-20.40m



Appendix 3

Trial Pit Logs & Photographs

TRIAL PIT RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona Edenderry	**TRIAL PIT NO.**	**TP1.1**
		SHEET	Sheet 1 of 1
LOGGED BY	T.Gallagher	**CO-ORDINATES**	663,449.75 E 746,800.58 N
		DATE STARTED	10/03/2025
		DATE COMPLETED	10/03/2025
CLIENT	Murphy International	**GROUND LEVEL (m)**	69.75
ENGINEER	Fingleton White	**EXCAVATION METHOD**	Komatsu PC138us

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 Peaty TOPSOIL									
		0.30	69.45						
Firm grey slightly gravelly sandy silty CLAY with occasional rootlets. Sand is fine to coarse. Gravel is subangular to subrounded		0.60	69.15		AA245857	B	0.50-0.60	84 90 116	
Firm grey slightly gravelly sandy silty CLAY with a low cobble content and occasional rootlets. Sand is fine to coarse. Gravel and cobbles are subangular to subrounded				1 (Seepage)				>120	
1.0									
Firm to stiff grey slightly sandy slighty organic SILT. Sand is fine to coarse		1.30	68.45		AA245858	B	1.30-1.40		
Rare boulder (up to 300mm)									
2.0 Stiff grey sandy gravelly CLAY with a medium cobble content. Sand is fine to coarse. Gravel and cobbles are subangular to subrounded		2.00	67.75		AA245859	B	2.20-2.30		
3.0									
Stiff grey slightly sandy gravelly CLAY with a medium cobble content and occasional silt pockets. Sand is fine to coarse. Gravels and cobbles are subangular to subrounded		3.20	66.55		AA245860	B	3.20-3.30		
End of Trial Pit at 3.80m		3.80	65.95						
4.0									

Groundwater Conditions
Multiple seepages at 1.10m bgl

Stability
Poor with sidewall collapse from ground level to 1.90m bgl

General Remarks
Plate bearing test PBT1.1 undertaken at 0.50m bgl. Pit ended at 3.80m due to multiple sidewall collapse

TRIAL PIT RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona Edenderry	**TRIAL PIT NO.**	**TP1.2**
		SHEET	Sheet 1 of 1
LOGGED BY	T.Gallagher	**CO-ORDINATES**	663,453.37 E 746,784.47 N
		DATE STARTED	10/03/2025
		DATE COMPLETED	10/03/2025
CLIENT	Murphy International	**GROUND LEVEL (m)**	69.49
ENGINEER	Fingleton White	**EXCAVATION METHOD**	Komatsu PC138us

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 Soft dark brown amorphous clayey PEAT									
		0.30	69.19						
Firm to stiff light grey mottled yellow clayey SILT with rare organic remnants					AA245861	B	0.50-0.60	76 90 68	
		1.00	68.49						
1.0 Very stiff light grey sandy SILT with occasional organic remnants.				1 (Seepage)	AA245862	B	1.00-1.10	118 102 112	
2.0					AA245863	B	2.00-2.10		
				2 (Rapid)					
3.0 Stiff grey slightly sandy gravelly CLAY with a medium cobble content and low boulder content. Sand is fine to coarse. Gravel is subangular to subrounded. Cobbles and boulders (up to 300mm) are subrounded		3.00	66.49		AA245864	B	3.00-3.10		
		3.40	66.09						
Stiff grey sandy gravelly CLAY with a medium cobble content and a medium boulder content. Sand is fine to coarse. Gravel is subangular to subrounded. Cobbles and boulders (up to 250mm) are subrounded									
		3.90	65.59						
End of Trial Pit at 3.90m									
4.0									

Groundwater Conditions
Seepage at 1.50m bgl. Rapid flow at 2.50m bgl

Stability
Poor from ground level to 3m bgl

General Remarks
Plate bearing test PBT1.2 undertaken at 0.50m bgl. Soakaway test SA1.2 carried out in pit. Pit ended at 3.90m due to multiple sidewall collapse.

TRIAL PIT RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona Edenderry	**TRIAL PIT NO.**	**TP2.1**
		SHEET	Sheet 1 of 1
LOGGED BY	T.Gallagher	**CO-ORDINATES**	660,848.81 E 727,349.53 N
		DATE STARTED	04/03/2025
		DATE COMPLETED	04/03/2025
CLIENT	Murphy International	**GROUND LEVEL (m)**	68.11
ENGINEER	Fingleton White	**EXCAVATION METHOD**	Komatsu PC138us

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
MADE GROUND comprising soft dark brown amorphous PEAT with occasional rootlets		0.05	68.06		AA235888	B	0.15-0.25		
MADE GROUND comprising firm to stiff grey brown mottled yellow brown slightly sandy slightly gravelly organic CLAY with a low cobble content and occasional rootlets and rare cloth. Sand is fine to coarse. Gravels are subangular to subrounded		0.70	67.41					70 110	
Firm to stiff greyish blue slightly sandy SILT with a low cobble content. Sand is fine to a medium. Cobbles are subrounded.					AA235889	B	0.75-0.85	115 100	
1.20-2.20m Rare pocket of Peat in northern pit wall				1 (Seepage)				90 95	
					AA235890	B	2.00-2.10		
Firm to stiff light grey sandy SILT with rare decaying organic remnants, rootlets and rare shell fragments		2.30	65.81						
					AA235891	B	2.90-3.00		
					AA235885	B	3.20-3.20		
End of Trial Pit at 3.80m		3.80	64.31						

Groundwater Conditions
Seepage at 1.35m bgl, possibly associated with pocket of peat in sidewall

Stability
Slightly unstable from ground level to 1.90m bgl

General Remarks
Plate bearing test PBT2.1 undertaken at 0.50m bgl. Sidewalls showing cracking / incipient failure with sidewall failure at 0.50m bgl and 1.40m bgl at end of dig.

TRIAL PIT RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona Edenderry	**TRIAL PIT NO.**	**TP2.2**
		SHEET	Sheet 1 of 1
LOGGED BY	T.Gallagher	**CO-ORDINATES**	660,872.18 E 727,351.02 N
		DATE STARTED	04/03/2025
		DATE COMPLETED	04/03/2025
CLIENT	Murphy International	**GROUND LEVEL (m)**	67.85
ENGINEER	Fingleton White	**EXCAVATION METHOD**	Komatsu PC138us

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 Peaty TOPSOIL (MADE GROUND)		0.05	67.80						
MADE GROUND comprising soft grey slightly sandy slightly gravelly peaty CLAY with a low cobble content and low boulder content. Sand is fine to coarse. Gravel is subangular to subrounded, fine to a medium. Cobbles and boulders (up to 450mm) are subrounded.		0.20	67.65		AA235886	B	0.20-0.30	84	
MADE GROUND comprising firm grey slightly sandy slightly gravelly silty CLAY with a low cobble content and low boulder content. Sand is fine to coarse. Gravel is subangular to subrounded, fine to a medium. Cobbles and boulders (up to 400mm) are subrounded								64 80 96 100	
1.0 Soft dark brown amorphous PEAT with occasional rootlets		1.00	66.85		AA235887	B	1.00-1.10	92	
Firm to stiff bluish grey sandy SILT with occasional shell fragments. Sand is fine to a medium		1.80	66.05	(Seepage)					
2.0					AA235893	B	2.00-2.10		
Firm to stiff bluish grey very sandy clayey SILT with occasional shell fragments. Sand is fine to a medium		2.40	65.45						
3.0 (Medium dense) Bluish grey silty SAND to sandy SILT/CLAY. Sand is fine to a medium		3.00	64.85						
					AA235894	B	3.50-3.60		
End of Trial Pit at 3.80m		3.80	64.05						
4.0									

Groundwater Conditions
Soakaway test SA2.2 carried out in pit. Seepage at 1.80m bgl

Stability
Good

General Remarks
Plate bearing test PBT2.2 undertaken at 0.50m bgl. Pit ended at 3.80m

TRIAL PIT RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona Edenderry	**TRIAL PIT NO.**	**TP3.1**
		SHEET	Sheet 1 of 1
LOGGED BY	T.Gallagher	**CO-ORDINATES**	663,374.45 E 746,773.62 N
		DATE STARTED	07/03/2025
		DATE COMPLETED	07/03/2025
CLIENT	Murphy International	**GROUND LEVEL (m)**	70.99
ENGINEER	Fingleton White	**EXCAVATION METHOD**	Komatsu PC138us

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL Large boulder (up to 500mm)		0.30	70.69						
Firm orange mottled greyish brown sandy gravelly silty CLAY with a low cobble content and low boulder content. Sand is fine to coarse. Gravel is subangular to subrounded. Cobbles and boulders (up to 250mm) are subrounded to rounded		0.70	70.29		AA245851	B	0.50-0.60	68 84 68	
1.0 Stiff orange mottled greyish brown sandy gravelly silty CLAY with a medium cobble content and low boulder content. Sand is fine to coarse. Gravel is subangular to subrounded. Cobbles and boulders (up to 250mm) are subrounded to rounded		1.00	69.99	1 (Seepage)	AA245852	B	1.00-1.10	82 98 88	
Stiff orange mottled greyish brown very sandy gravelly silty CLAY with a high cobble content and low boulder content. Sand is fine to coarse. Gravel is subangular to subrounded. Cobbles and boulders (up to 320mm) are subrounded to rounded		2.00	68.99						
2.0 Stiff grey sandy gravelly SILT with a low cobble content and medium boulder content. Sand is fine to coarse. Gravel is subangular to subrounded. Cobbles and boulders (up to 300mm) are subrounded to rounded		2.20	68.79		AA245853	B	2.00-2.10		
Stiff grey very sandy very gravelly clayey SILT with a low cobble content and medium boulder content. Sand is fine to coarse. Gravel is subangular to subrounded. Cobbles and boulders (up to 300mm) are subrounded to rounded									
3.0 Stiff dark grey very gravelly sandy silty CLAY with a high cobble content and medium boulder content. Sand is fine to coarse. Gravel is subangular to subrounded. Cobbles and boulders (up to 300mm) are subrounded to rounded		3.20	67.79		AA245856	B	3.50-3.60		
End of Trial Pit at 3.80m		3.90	67.09						
4.0									

Groundwater Conditions
Seepage at 0.90m bgl

Stability
Slightly unstable from ground level to 1m bgl

General Remarks
Pit ended at 3.80m due to multiple sidewall collapse

TRIAL PIT RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona Edenderry	**TRIAL PIT NO.**	**TP3.2**
		SHEET	Sheet 1 of 1
LOGGED BY	T.Gallagher	**CO-ORDINATES**	663,260.03 E 746,712.28 N
		DATE STARTED	06/03/2025
		DATE COMPLETED	06/03/2025
CLIENT	Murphy International	**GROUND LEVEL (m)**	71.31
ENGINEER	Fingleton White	**EXCAVATION METHOD**	Komatsu PC138us

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL		0.20	71.11						
Firm to stiff orange greyish brown sandy gravelly CLAY with a medium cobble content and low boulder content. Sand is fine to coarse. Gravel is angular to subrounded. Cobbles and boulders (up to 250mm) are subrounded to rounded					AA235895	B	0.50-0.60	118 106	
1.0 Firm to stiff brownish grey slightly sandy slightly gravelly CLAY with a high cobble content and medium boulder content. Sand is fine to coarse. Gravel is angular to subrounded. Cobbles and boulders (up to 250mm) are subrounded		1.00	70.31		AA235896	B	1.00-1.10	58 84 48	
2.0 Firm brownish grey slightly sandy slightly gravelly CLAY with a high cobble content and medium boulder content. Sand is fine to coarse. Gravel is angular to subrounded. Cobbles and boulders (up to 300mm) are subrounded		2.00	69.31		AA235897	B	2.00-2.10		
End of Trial Pit at 2.50m		2.50	68.81						
3.0									
4.0									

Groundwater Conditions
Dry

Stability
Very poor - multiple wall collapse from ground level to 2.50m bgl. Pit ended due to multiple sidewall failure.

General Remarks
Pit ended at 2.50m due to multiple sidewall collapse

TRIAL PIT RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona Edenderry	**TRIAL PIT NO.**	**TP3.3**
		SHEET	Sheet 1 of 1
LOGGED BY	T.Gallagher	**CO-ORDINATES**	663,168.05 E 746,659.88 N
		DATE STARTED	06/03/2025
		DATE COMPLETED	06/03/2025
CLIENT	Murphy International	**GROUND LEVEL (m)**	71.17
ENGINEER	Fingleton White	**EXCAVATION METHOD**	Komatsu PC138us

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL		0.20	70.97						
Firm sandy gravelly CLAY with a medium cobble content and low boulder content. Sand is fine to coarse. Gravel is angular to subrounded. Cobbles and boulders (up to 250mm) are rounded to subrounded				1 (Seepage)	AA235898	B	0.50-0.60	76 82 68	
1.0					AA235899	B	1.00-1.10	94 86 72	
Firm to stiff very sandy gravelly CLAY with a high cobble content and medium boulder content. Sand is fine to coarse. Gravel is angular to subrounded. Cobbles and boulders (up to 300mm) are subrounded		1.20	69.97						
2.0					AA235900	B	2.00-2.10		
Firm grey sandy gravelly SILT with a high cobble content and high boulder content. Sand is fine to coarse. Gravel is angular to subrounded. Cobbles and boulders (up to 350mm) are subrounded		2.60	68.57		AA245854	B	2.60-2.70		
3.0					AA245855	B	3.60-3.70		
End of Trial Pit at 3.60m		3.80	67.37						
4.0									

Groundwater Conditions
Seepage at 0.70m bgl

Stability
Poor - multiple sidewall collapse from ground level to 3m bgl at end of dig

General Remarks
Pit ended at 3.60m due to multiple sidewall collapse

TRIAL PIT RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona Edenderry	**TRIAL PIT NO.**	**TP3.4**
		SHEET	Sheet 1 of 1
LOGGED BY	T.Gallagher	**CO-ORDINATES**	663,056.05 E 746,562.20 N
		DATE STARTED	11/03/2025
		DATE COMPLETED	11/03/2025
CLIENT	Murphy International	**GROUND LEVEL (m)**	71.52
ENGINEER	Fingleton White	**EXCAVATION METHOD**	Komatsu PC138us

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL									
		0.30	71.22						
Firm greyish brown slightly gravelly slightly silty sandy CLAY with a low cobble content. Sand is fine to coarse. Gravels and cobbles are angular to subrounded.					AA245865	B	0.50-0.60	112 114 84	
1.0								118 120	
		1.20	70.32						
Firm brownish grey gravelly slightly silty sandy CLAY with a medium cobble content and low boulder content. Sand is fine to coarse. Gravel is angular to subrounded. Cobbles and boulders (up to 300mm) are subrounded					AA245866	B	1.20-1.30	68	
		1.90	69.62						
2.0 Firm to stiff brownish grey gravelly slightly silty sandy CLAY with a high cobble content and a medium boulder content. Sand is fine to coarse. Gravels and cobbles are subangular to subrounded. Boulders are subrounded		2.20	69.32		AA245867	B	2.20-2.30		
Firm to stiff light brown slightly sandy gravelly CLAY with a high cobble content and low boulder content. Sand is fine to coarse. Gravel is subangular to subrounded. Cobbles and boulders (up to 300mm) are subrounded to rounded									
3.0									
		3.50	68.02						
Firm grey sandy gravelly silty CLAY with a high cobble content and medium boulder content. Sand is fine to coarse. Gravels and cobbles are subangular to subrounded. Boulders are subrounded to rounded					AA245868	B	3.50-3.60		
		4.00	67.52						
4.0 End of Trial Pit at 4.00m									

Groundwater Conditions
Dry

Stability
Poor from ground level to 3m bgl

General Remarks
Multiple sidewall failures throughout excavation. Pit ended at required depth

TRIAL PIT RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona Edenderry	**TRIAL PIT NO.**	**TP3.5**
		SHEET	Sheet 1 of 1
LOGGED BY	T.Gallagher	**CO-ORDINATES**	662,940.00 E 746,459.59 N
		DATE STARTED	12/03/2025
		DATE COMPLETED	12/03/2025
CLIENT	Murphy International	**GROUND LEVEL (m)**	70.53
ENGINEER	Fingleton White	**EXCAVATION METHOD**	Komatsu PC138us

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL		0.10	70.43						
Firm orange mottled greyish brown slightly sandy gravelly CLAY with frequent rootlets. Sand is fine to a medium		0.40	70.13						
Firm orange mottled greyish brown sandy gravelly CLAY. Sand is fine to coarse					AA245869	B	0.50-0.60	98 64 88	
Firm to stiff greyish brown sandy gravelly CLAY with a medium cobble content and medium boulder content. Sand is fine to coarse. Gravel is subangular to subrounded. Cobbles and boulders (up to 250mm) are subrounded		0.80	69.73	1 (Seepage)					
1.0		1.20	69.33		AA245870	B	1.20-1.30	102 >120	
Stiff greyish brown sandy gravelly SILT with a high cobble content and medium boulder content. Sand is fine to coarse. Gravels and cobbles are subangular to subrounded. Boulders are subrounded									
2.0 Firm light grey sandy gravelly silty CLAY with a low cobble content. Sand is fine to coarse. Gravels and cobbles are subangular to subrounded.		2.00	68.53		AA245871	B	2.00-2.10		
3.0									
Very stiff greyish brown very gravelly sandy CLAY with a high cobble content and high boulder content. Sand is fine to coarse. Gravels and cobbles are subangular to subrounded. Boulders (up to 300mm) are subrounded		3.20	67.33						
End of Trial Pit at 3.50m		3.50	67.03						
4.0									

Groundwater Conditions
Seepage at 0.80m bgl

Stability
Unstable

General Remarks
Pit ended at 3.50m due to sidewall collapse

TP1.1

Photo 1/8



Photo 2/8



TP1.1

Photo 3/8



Photo 4/8



TP1.1

Photo 5/8



Photo 6/8



TP1.1

Photo 7/8



Photo 8/8



TP1.2

Photo 1/3



Photo 2/3



TP1.2

Photo 3/3



TP2.1

Photo 1/10



Photo 2/10



TP2.1

Photo 3/10



Photo 4/10



TP2.1

Photo 5/10

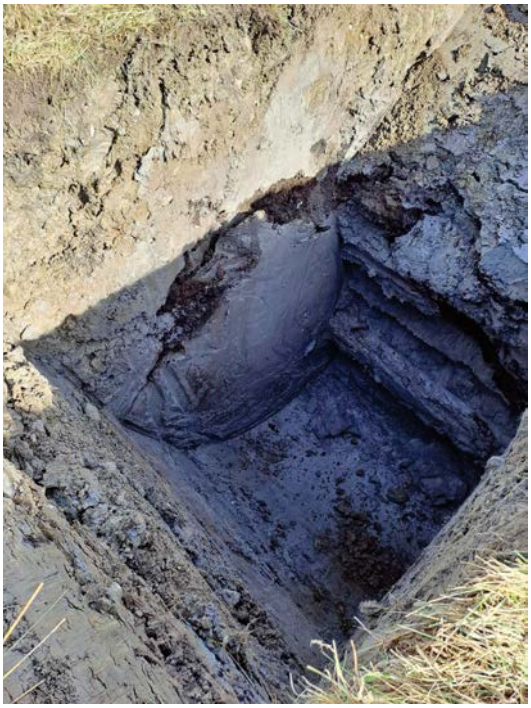


Photo 6/10



TP2.1

Photo 7/10



Photo 8/10



TP2.1

Photo 9/10



Photo 10/10



TP2.2

Photo 1/3



Photo 2/3



TP2.2

Photo 3/3



TP3.1

Photo 1/3



Photo 2/3



TP3.1

Photo 3/3



TP3.2

Photo 1/3



Photo 2/3



TP3.2

Photo 3/3



TP3.3

Photo 1/3



Photo 2/3



TP3.3

Photo 3/3



TP3.4

Photo 1/3



Photo 2/3



TP3.4

Photo 3/3



TP3.5

Photo 1/3



Photo 2/3



TP3.5

Photo 3/3



Appendix 4

Plate Bearing Test Records

PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

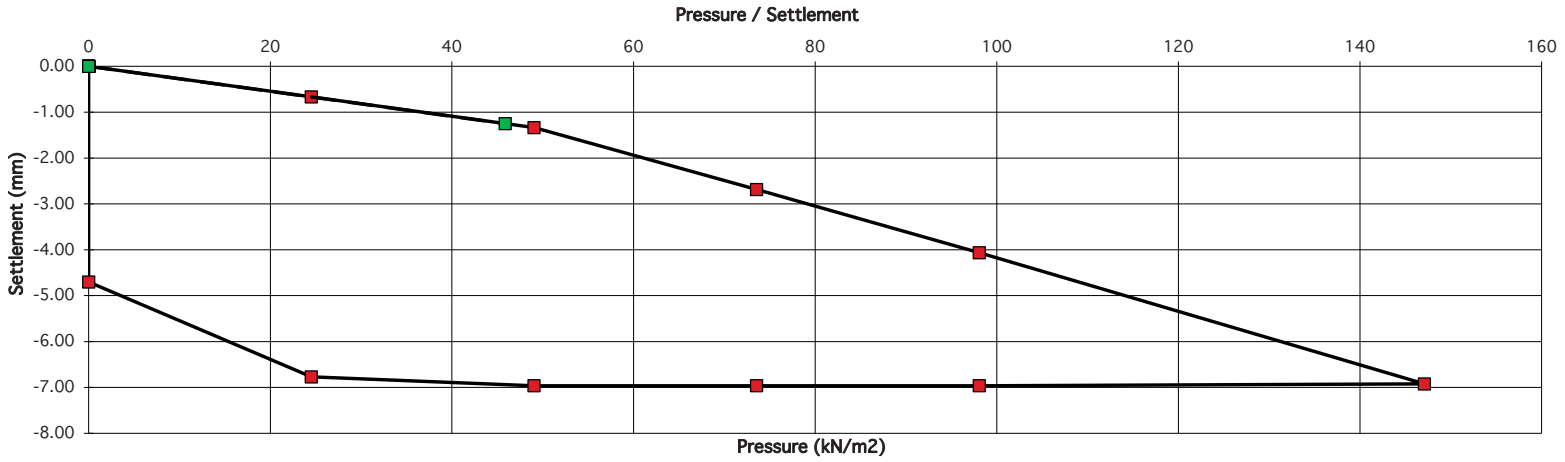
Reference No.	R165918
Contract	Gas to Bord na Mona Edenderry
Test No.	PBT - 1.1 Load
Location	TP1.1
Depth	0.5m
Client	Murphy International
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	T.Gallagher
Authorised by	
Date	13/03/2025

Description of soil under test
(natural soil, placed fill, sub-base)

Grey slightly gravelly sandy silty CLAY with ocassional rootlets.

Sample Ref No.

Depth m bgl



Gradient at 1.25 mm settlement intersection = 37
Modulus of subgrade reaction = 24 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 2.3 %

PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

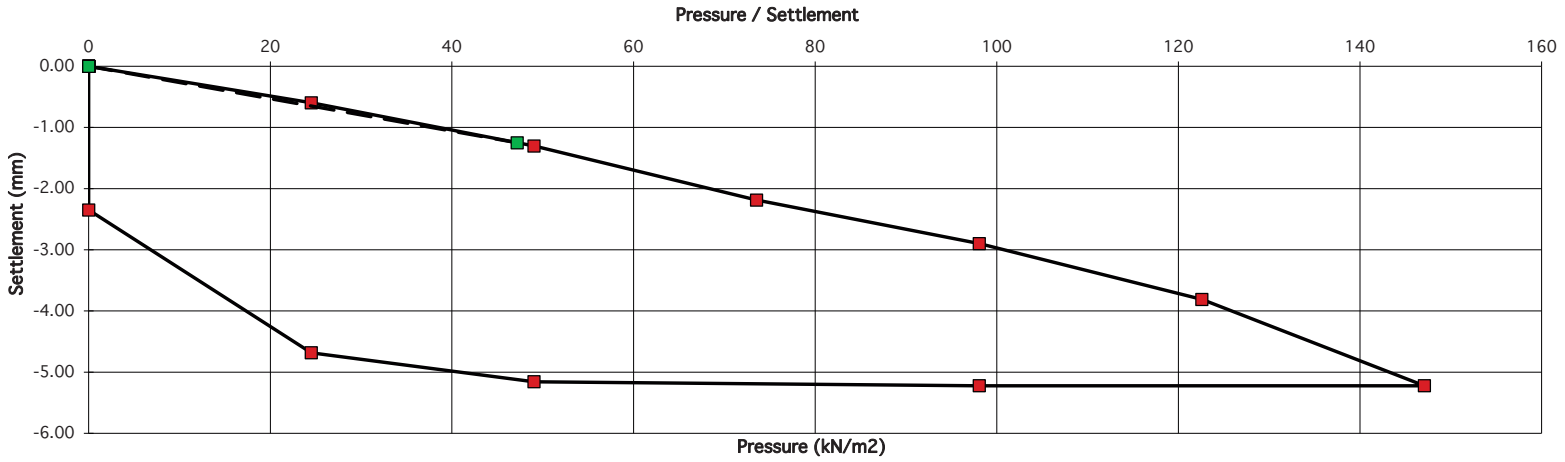
Reference No.	R165918
Contract	Gas to Bord na Mona Edenderry
Test No.	PBT - 1.1 Reload
Location	TP1.1
Depth	0.5m
Client	Murphy International
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	T.Gallagher
Authorised by	
Date	13/03/2025

Description of soil under test
(natural soil, placed fill, sub-base)

Grey slightly gravelly sandy silty CLAY with ocassional rootlets.

Sample Ref No.

Depth m bgl



Gradient at 1.25 mm settlement intersection = 38
Modulus of subgrade reaction = 24 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 2.4 %

PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

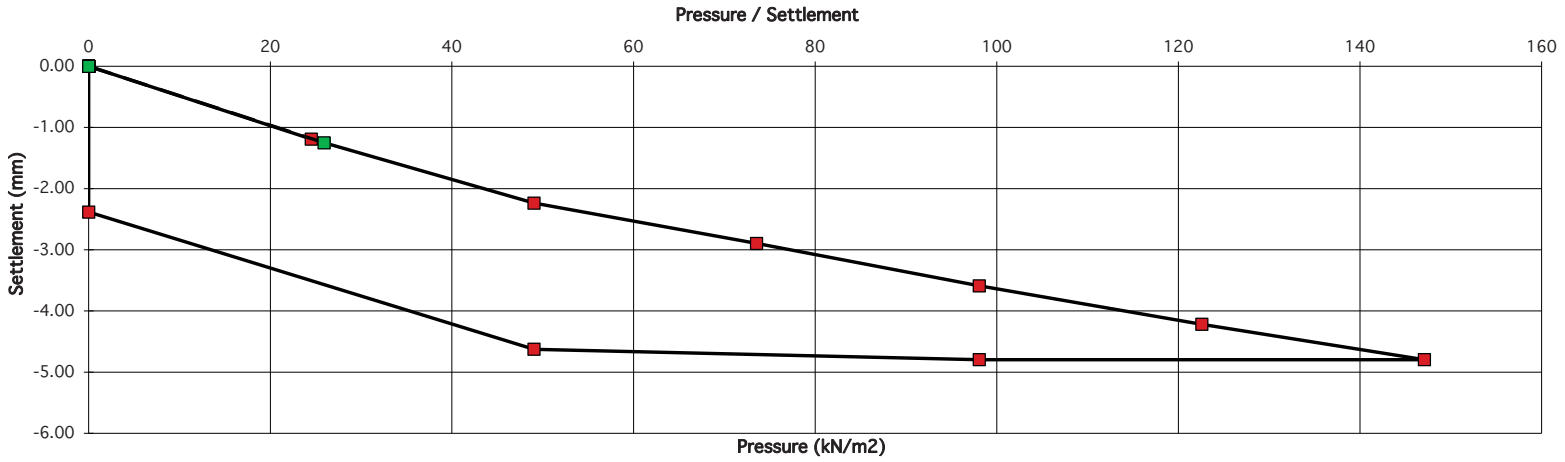
Reference No.	R165919
Contract	Gas to Bord na Mona Edenderry
Test No.	PBT - 1.2 Load
Location	TP1.2
Depth	0.5m
Client	Murphy International
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	T.Gallagher
Authorised by	
Date	13/03/2025

Description of soil under test
(natural soil, placed fill, sub-base)

Light grey mottled yellow clayey SILT with rare organic remnants

Sample Ref No.

Depth m bgl



Gradient at 1.25 mm settlement intersection = 21
Modulus of subgrade reaction = 13 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 0.9 %

PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

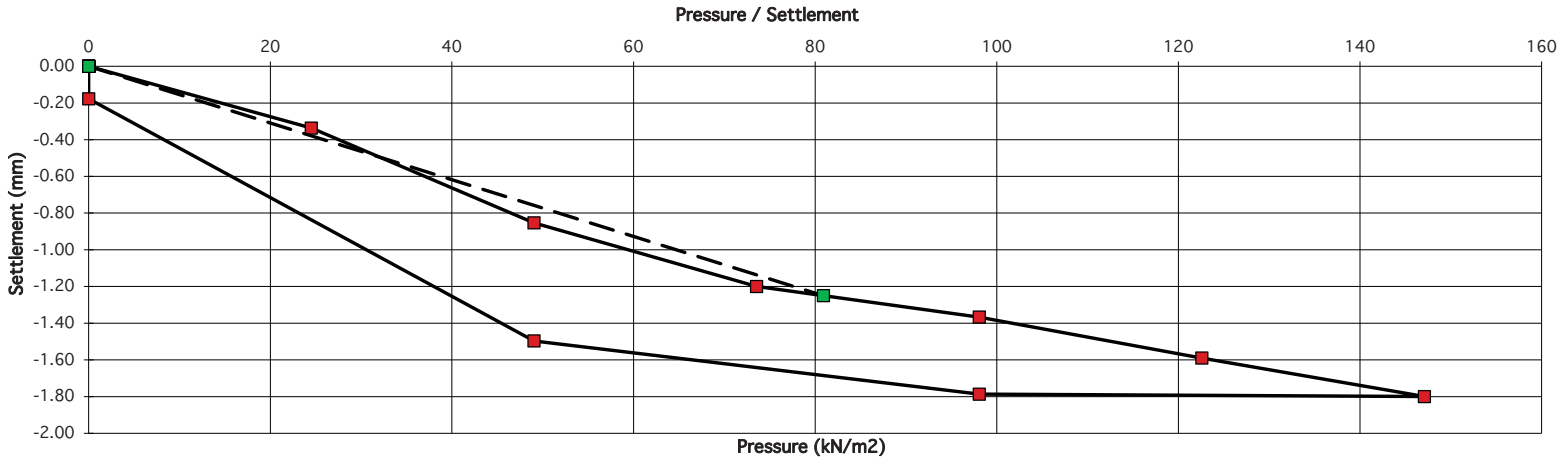
Reference No.	R165919
Contract	Gas to Bord na Mona Edenderry
Test No.	PBT - 1.2 Reload
Location	TP1.2
Depth	0.5m
Client	Murphy International
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	T.Gallagher
Authorised by	
Date	13/03/2025

Description of soil under test
(natural soil, placed fill, sub-base)

Light grey mottled yellow clayey SILT with rare organic remnants

Sample Ref No.

Depth m bgl



Gradient at 1.25 mm settlement intersection = 65
Modulus of subgrade reaction = 42 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 6.2 %

PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

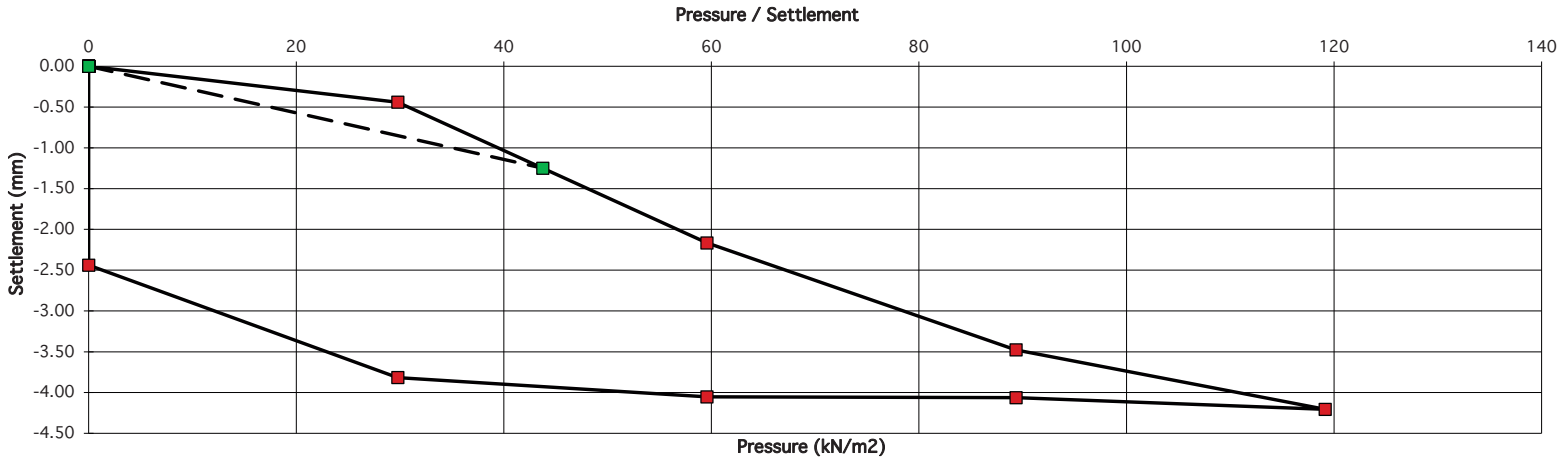
Reference No.	R165916
Contract	Gas to Bord na Mona Edenderry
Test No.	PBT - 2.1 Load
Location	TP2.1
Depth	0.5m
Client	Murphy International
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	T.Gallagher
Authorised by	
Date	13/03/2025

Description of soil under test
(natural soil, placed fill, sub-base)

Firm to stiff grey mottled yellow brown slightly sandy slightly gravelly CLAY with low cobble content

Sample Ref No.

Depth m bgl



Gradient at 1.25 mm settlement intersection = 35
Modulus of subgrade reaction = 23 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 2.1 %

PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

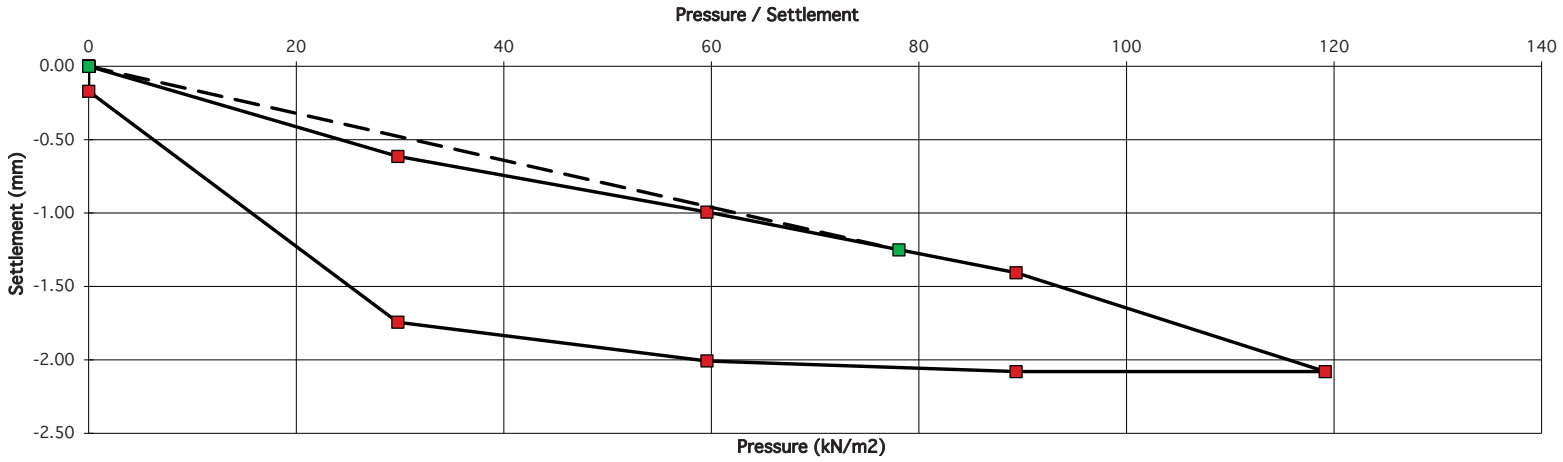
Reference No.	R165916
Contract	Gas to Bord na Mona Edenderry
Test No.	PBT - 2.1 Reload
Location	TP2.1
Depth	0.5m
Client	Murphy International
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	T.Gallagher
Authorised by	
Date	13/03/2025

Description of soil under test
(natural soil, placed fill, sub-base)

Firm to stiff grey mottled yellow brown slightly sandy slightly gravelly CLAY with low cobble content

Sample Ref No.

Depth m bgl



Gradient at 1.25 mm settlement intersection = 62
Modulus of subgrade reaction = 40 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 5.8 %

PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

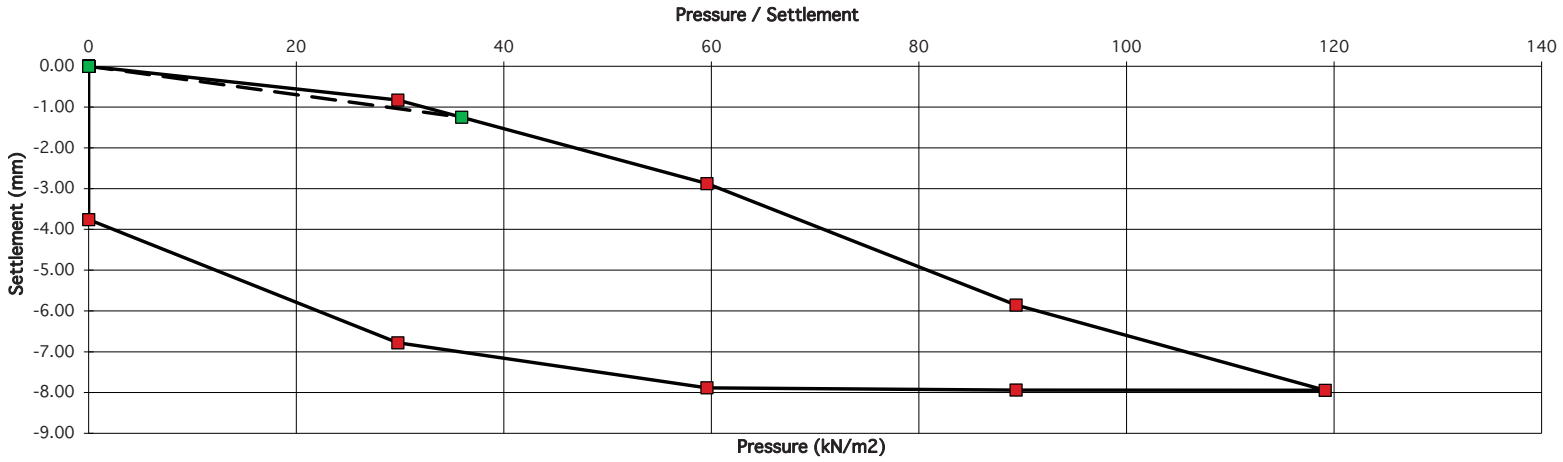
Reference No.	R165917
Contract	Gas to Bord na Mona Edenderry
Test No.	PBT - 2.2 Load
Location	TP2.2
Depth	0.5m
Client	Murphy International
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	T.Gallagher
Authorised by	
Date	13/03/2025

Description of soil under test
(natural soil, placed fill, sub-base)

Grey slightly sandy peaty silty CLAY with low cobble and low boulder content

Sample Ref No.

Depth m bgl



Gradient at 1.25 mm settlement intersection = 29
Modulus of subgrade reaction = 18 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 1.5 %

PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

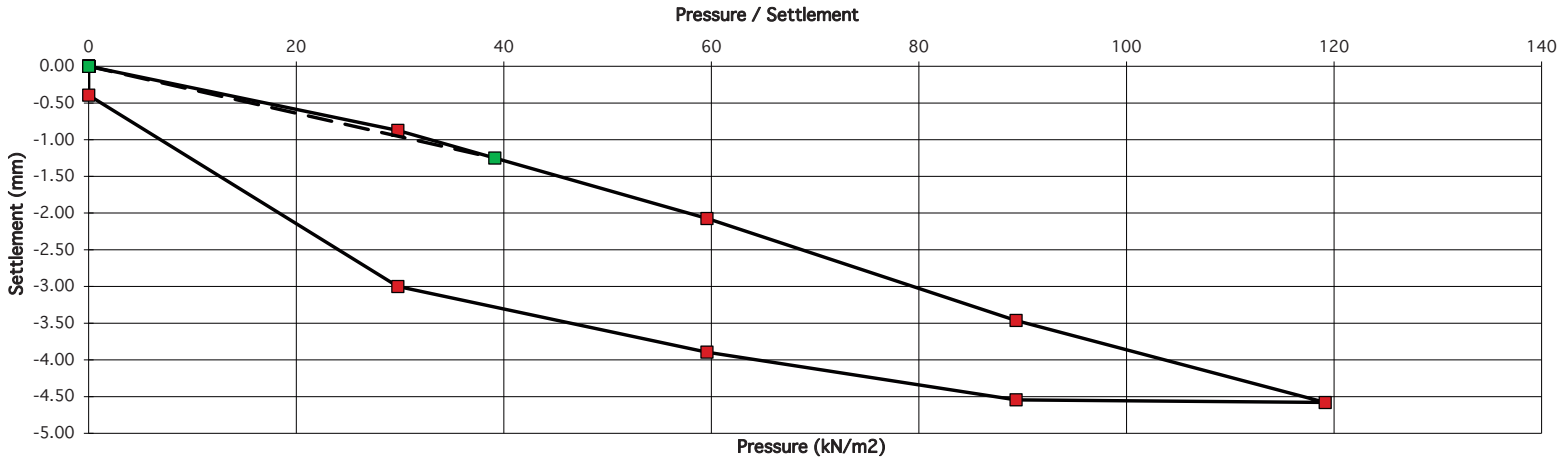
Reference No.	R165917
Contract	Gas to Bord na Mona Edenderry
Test No.	PBT - 2.2 Reload
Location	TP2.2
Depth	0.5m
Client	Murphy International
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	T.Gallagher
Authorised by	
Date	13/03/2025

Description of soil under test
(natural soil, placed fill, sub-base)

Grey slightly sandy peaty silty CLAY with low cobble and low boulder content

Sample Ref No.

Depth m bgl



Gradient at 1.25 mm settlement intersection = 31
Modulus of subgrade reaction = 20 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 1.8 %

Appendix 5

Soakaway Test Logs (to BRE365)

Soakaway Design f -value from field tests

(F2C) IGSL

Contract:	Gas to Bord na Mona Edenderry	Contract No.	25882
Test No.	SA1.2	Easting	663453.371
Client	Murphy International	Northing	746784.467
Date:	10/03/25	Elevation	69.494

Summary of ground conditions

from	to	Description	Ground water
0.00	0.30	Soft dark brown amorphous clayey PEAT	Seepage at 1.5m
0.30	1.00	Firm to stiff light grey mottled yellow clayey SILT with rare organic remnants	
1.00	1.50	Very stiff light grey clayey SILT with occasional organic remnants.	

Notes:

Field Data

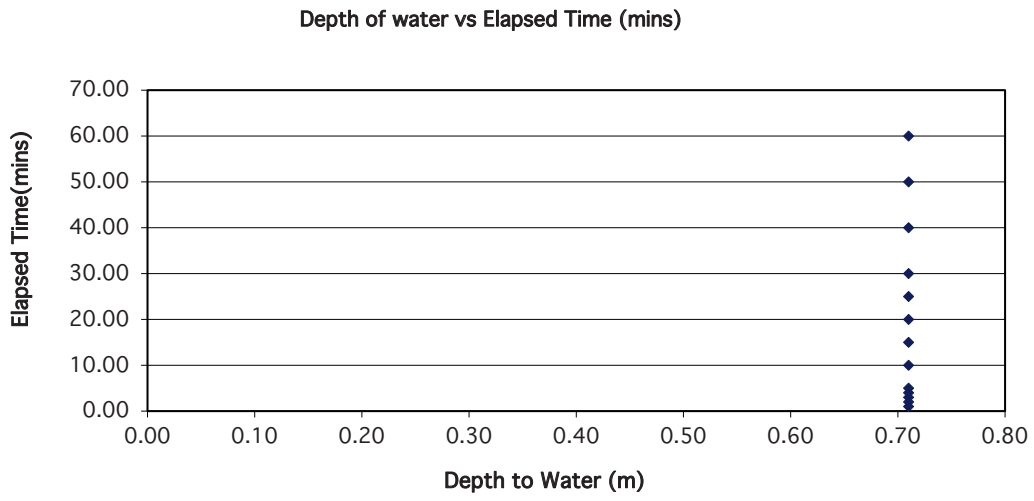
Depth to Water (m)	Elapsed Time (min)
0.71	1.00
0.71	2.00
0.71	3.00
0.71	4.00
0.71	5.00
0.71	10.00
0.71	15.00
0.71	20.00
0.71	25.00
0.71	30.00
0.71	40.00
0.71	50.00
0.71	60.00

Field Test

Depth of Pit (D)	1.50	m
Width of Pit (B)	0.60	m
Length of Pit (L)	2.70	m
Initial depth to Water =	0.71	m
Final depth to water =	0.71	m
Elapsed time (mins)=	60.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	1.62	m2
*Av. side area of permeable stratum over test period=	5.214	m2
Total Exposed area =	6.834	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 0 m/min or 0 m/sec



Soakaway Design f -value from field tests (F2C) IGSL

Contract:	Gas to Bord na Mona Edenderry	Contract No.	25882
Test No.	SA2.2	Easting	660872.177
Client	Murphy International	Northing	727351.018
Date:	05/03/25	Elevation	67.851

Summary of ground conditions

from	to	Description	Ground water
0.00	0.05	Peaty TOPSOIL (MADE GROUND)	Seepage at 1.80m bgl
0.05	0.20	MADE GROUND comprising soft grey slightly sandy slightly gravelly peaty CLAY with a low cobble content and low boulder content.	
0.20	1.00	MADE GROUND comprising firm grey slightly sandy slightly gravelly silty CLAY with a low cobble content and low boulder content.	
1.00	1.80	Soft dark brown amorphous PEAT with occasional rootlets	

Notes:

Field Data

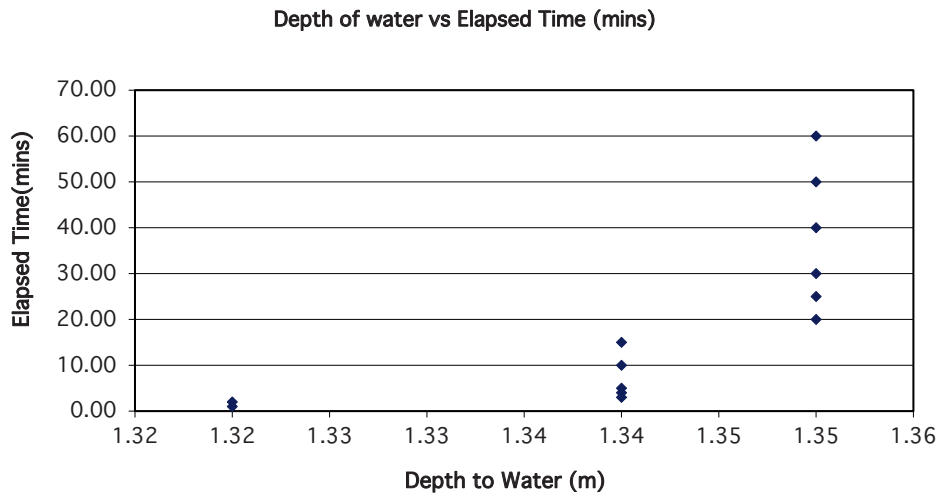
Depth to Water (m)	Elapsed Time (min)
1.32	1.00
1.32	2.00
1.34	3.00
1.34	4.00
1.34	5.00
1.34	10.00
1.34	15.00
1.35	20.00
1.35	25.00
1.35	30.00
1.35	40.00
1.35	50.00
1.35	60.00

Field Test

Depth of Pit (D)	1.80	m
Width of Pit (B)	0.57	m
Length of Pit (L)	3.20	m
Initial depth to Water =	1.32	m
Final depth to water =	1.35	m
Elapsed time (mins)=	60.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	1.824	m2
*Av. side area of permeable stratum over test perio	3.5061	m2
Total Exposed area =	5.3301	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 0.00017 m/min or 2.85173E-06 m/sec



Appendix 6

Groundwater Monitoring Records (Dip Measurements)

GROUNDWATER MONITORING DATA SHEET

Project: Gas to Bord na Mona, Edenderry
Project No. 25882
Engineer: Fingleton White

Exploratory Hole		Ground Elevation m OD	10/09/2025		11/09/2025		30/10/2025		31/10/2025		06/11/2025		17/11/2025	
Name	Ø [mm]		m bgl	m OD	m bgl	m OD	m bgl	m OD	m bgl	m OD	m bgl	m OD	m bgl	m OD
RC 01	50	69.55	0.72	68.83	-	-	0.13	69.42	-	-	0.10	69.45	-	-
RC 02	50	69.76	0.77	68.99	-	-	0.22	69.54	-	-	0.20	69.56	-	-
RC 03	19	69.95	1.25	68.70	-	-	0.79	69.16	-	-	0.60	69.35	-	-
RC 04	50	69.71	0.73	68.98	-	-	0.38	69.33	-	-	0.40	69.31	0.14	69.57
	19	69.71	0.85	68.86	-	-	0.38	69.33	-	-	0.40	69.31	0.14	69.57
BH 06	50	69.00	1.39	67.61	-	-	-	-	0.53	67.08	0.56	68.44	0.57	68.43
RC 07	50	67.85	1.98	65.87	-	-	-	-	1.10	66.75	0.82	67.03	-	-
BH 14	50	77.34	3.63	73.71	-	-	-	-	3.20	73.94	-	-	2.82	74.52
RC 18	50	74.69	2.79	71.90	-	-	-	-	2.50	71.99	-	-	2.20	72.49
RC 24	50	66.15	3.23	62.92	-	-	-	-	2.77	63.38	-	-	-	-
BH 27A	50	73.20	-	-	2.23	70.97	-	-	1.10	72.10	-	-	-	-
RC 30A	50	78.26	3.00	75.26	-	-	-	-	2.28	75.98	-	-	-	-
BH 32R	50	80.79	-	-	2.50	78.29	-	-	1.75	79.09	-	-	-	-
BH 34R	50	67.51	-	-	1.31	66.20	-	-	1.13	66.38	-	-	-	-
BH 40	50	70.86	1.49	69.37	-	-	0.95	69.91	-	-	0.44	70.42	0.89	69.97
BH 42	50	71.53	*Damaged*	-	-	-	-	-	-	-	-	-	-	-
	19	71.53	1.50	70.03	-	-	0.65	70.88	-	-	0.63	70.90	-	-
BH 43	50	71.45	1.08	70.37	-	-	0.56	70.89	-	-	-	-	0.52	70.93
BH 44	50	71.40	*Not drilled*		*Not drilled*		0.63	70.77	-	-	-	-	0.43	70.97
BH 45	50	70.32	*Not drilled*		*Not drilled*		0.33	69.99	-	-	-	-	0.34	69.98

Remarks: DATA LOGGER DIPS - Water levels measured using electric dipmeter

Appendix 7

Data Logger Graphs

Download 1

12-Aug-25 to 10-Sept-25

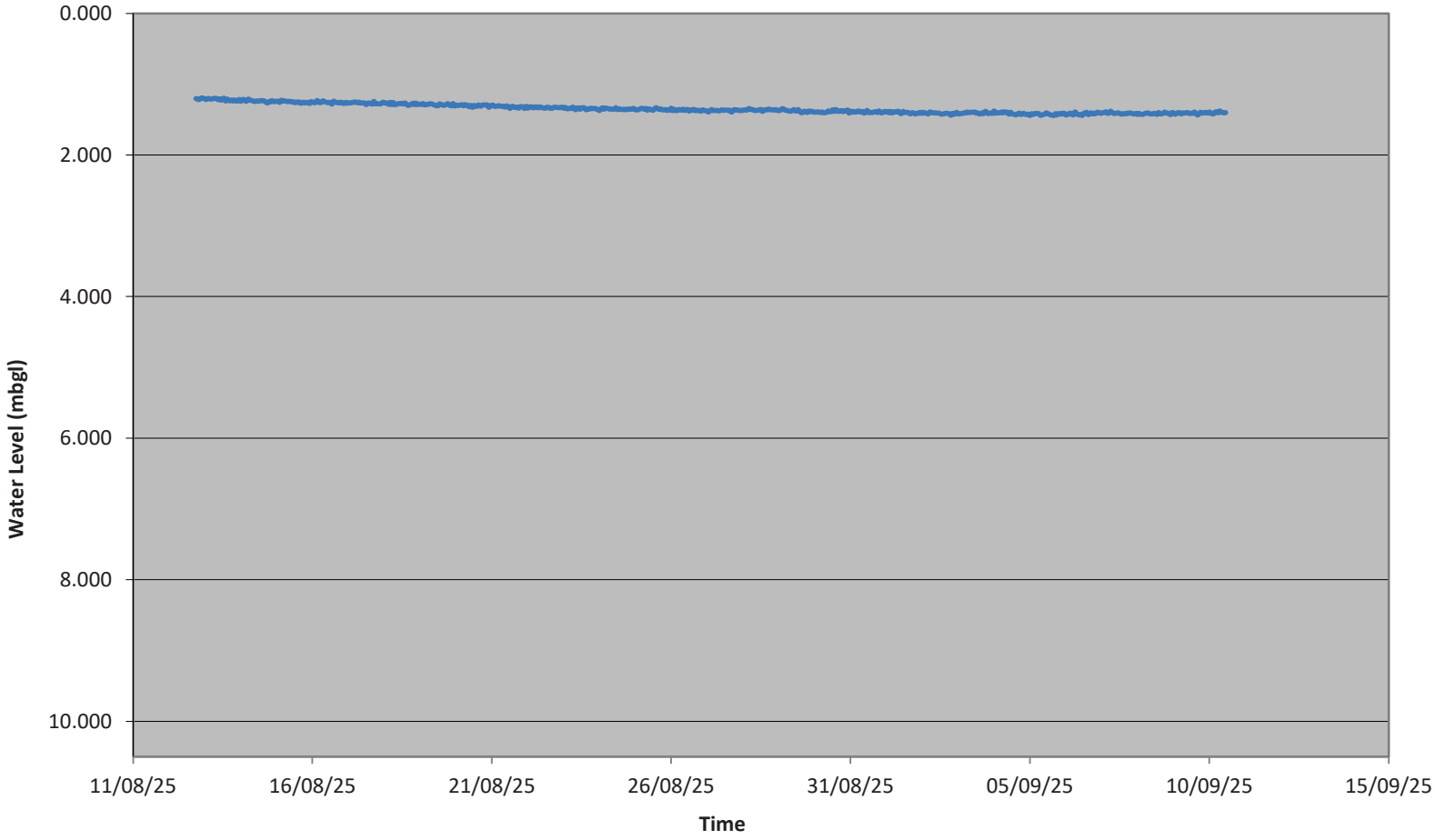
Download 2

11-Sept-25 to 31-Oct-25

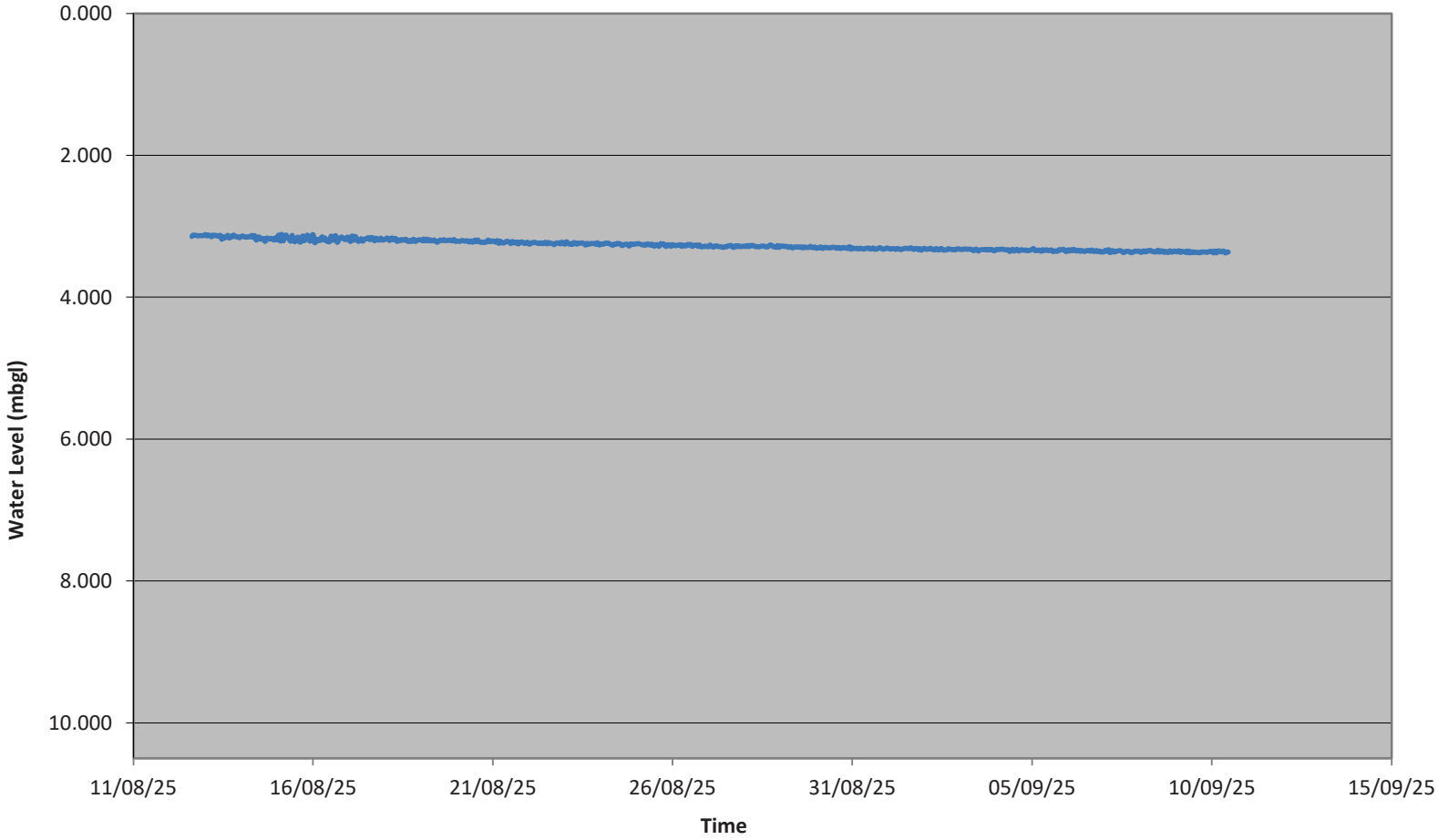
Download 3

31-Oct-25 to 02-Dec-25

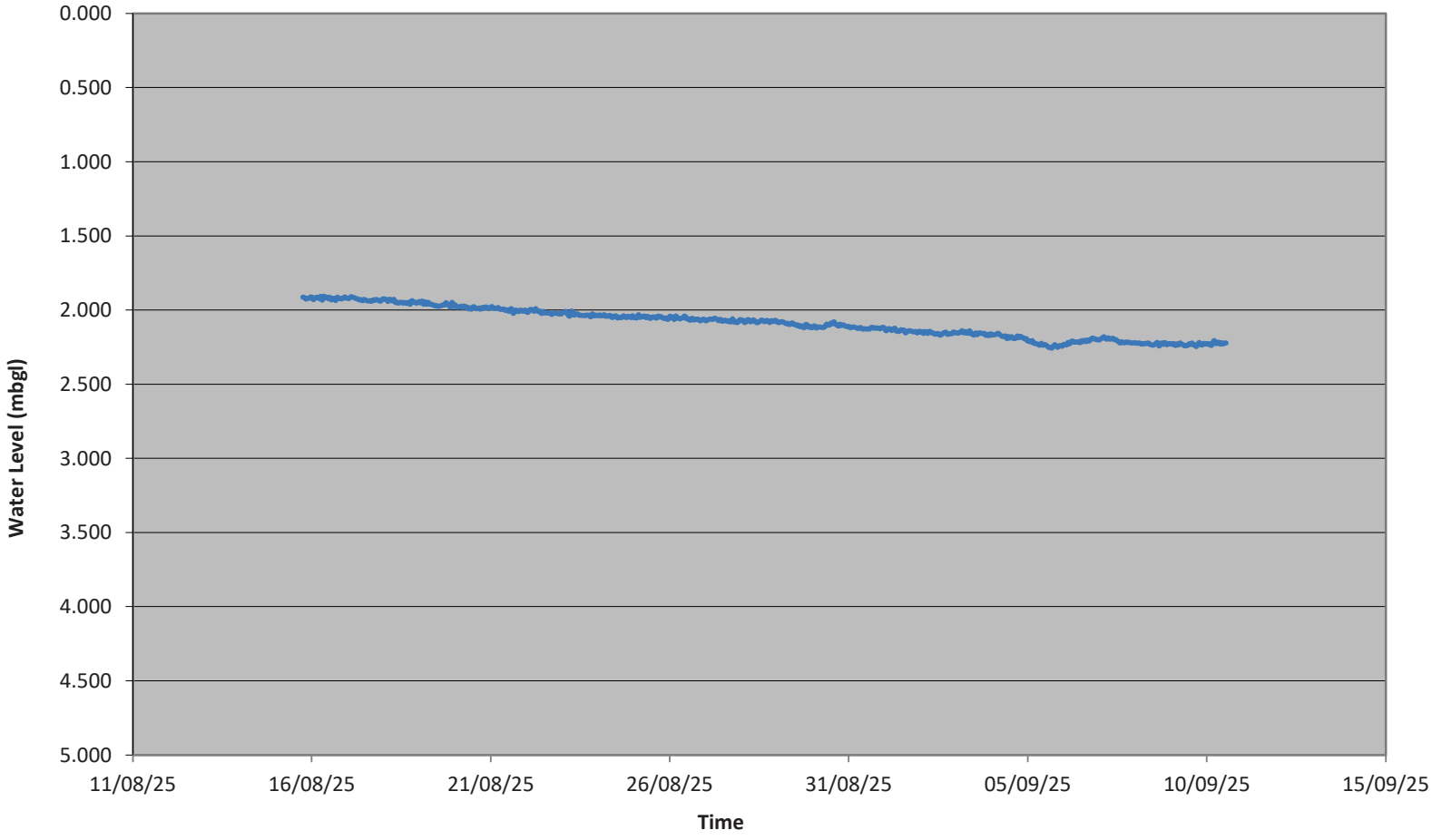
25882 - RC 06 Gas to Bord na Mona Edenderry



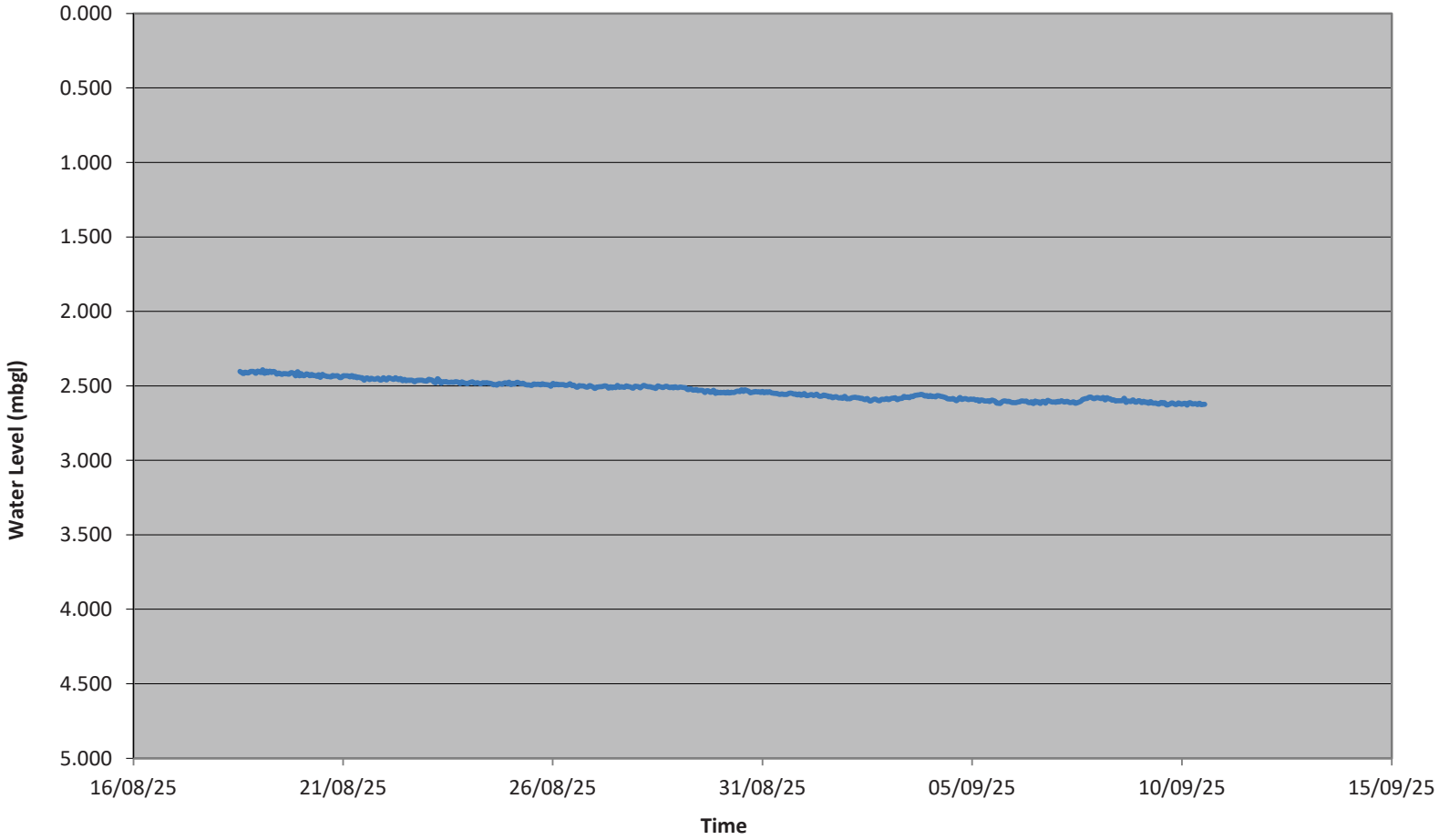
25882 - RC 14 Gas to Bord na Mona Edenderry



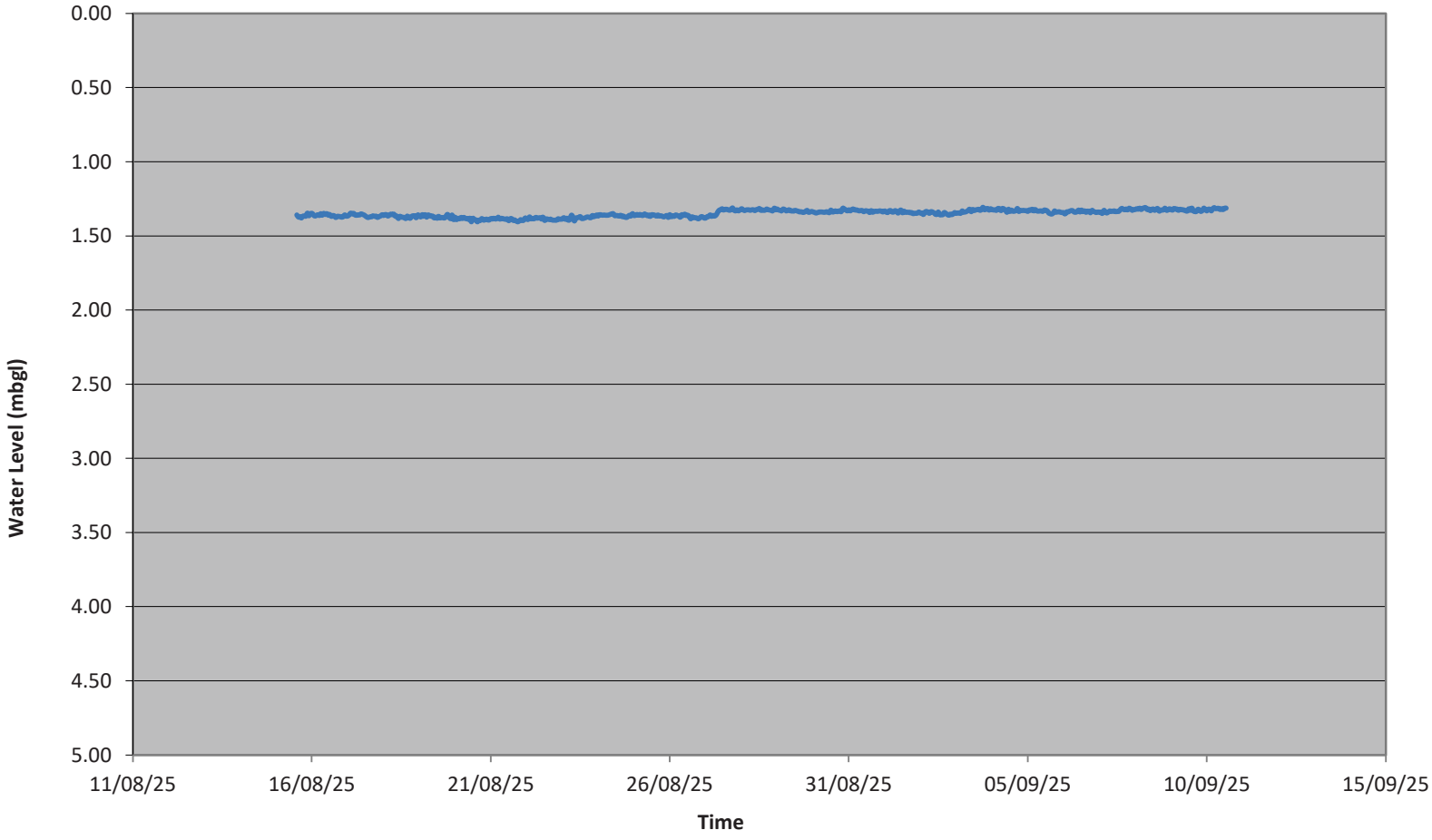
25882 - RC 27A Gas to Bord na Mona Edenderry



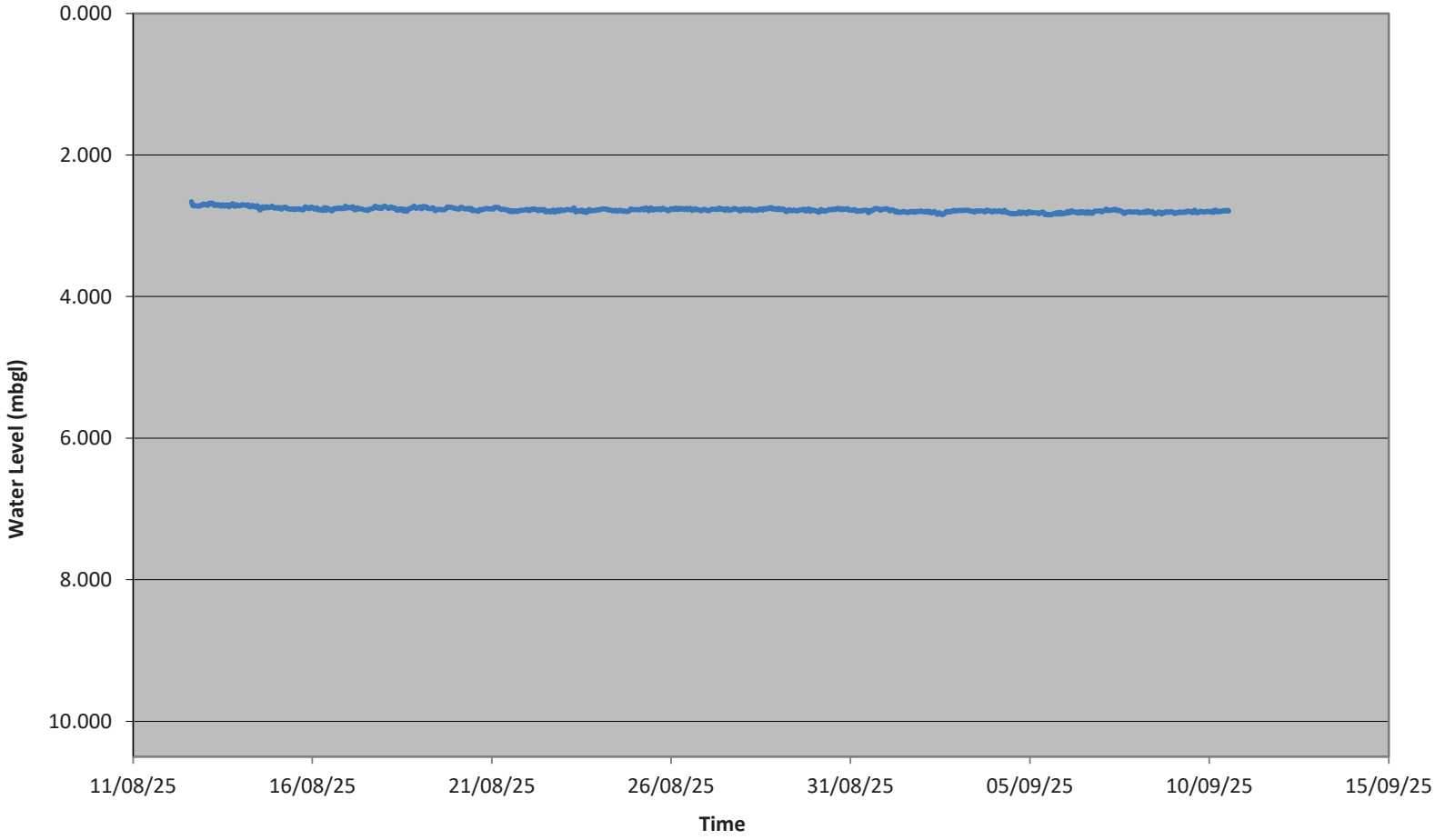
25882 - RC 32 Gas to Bord na Mona Edenderry



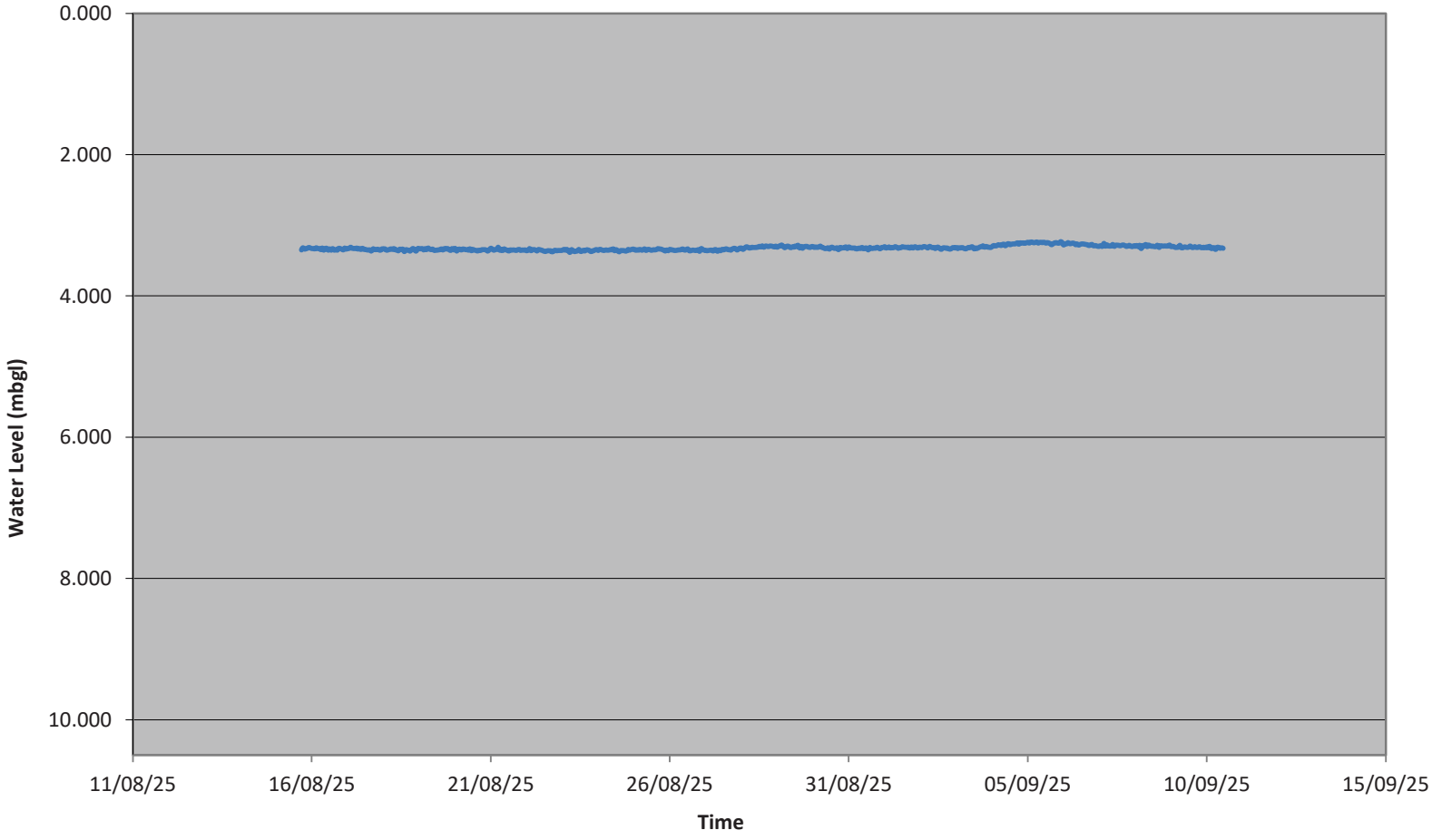
25882 - RC 34 Gas to Bord na Mona Edenderry



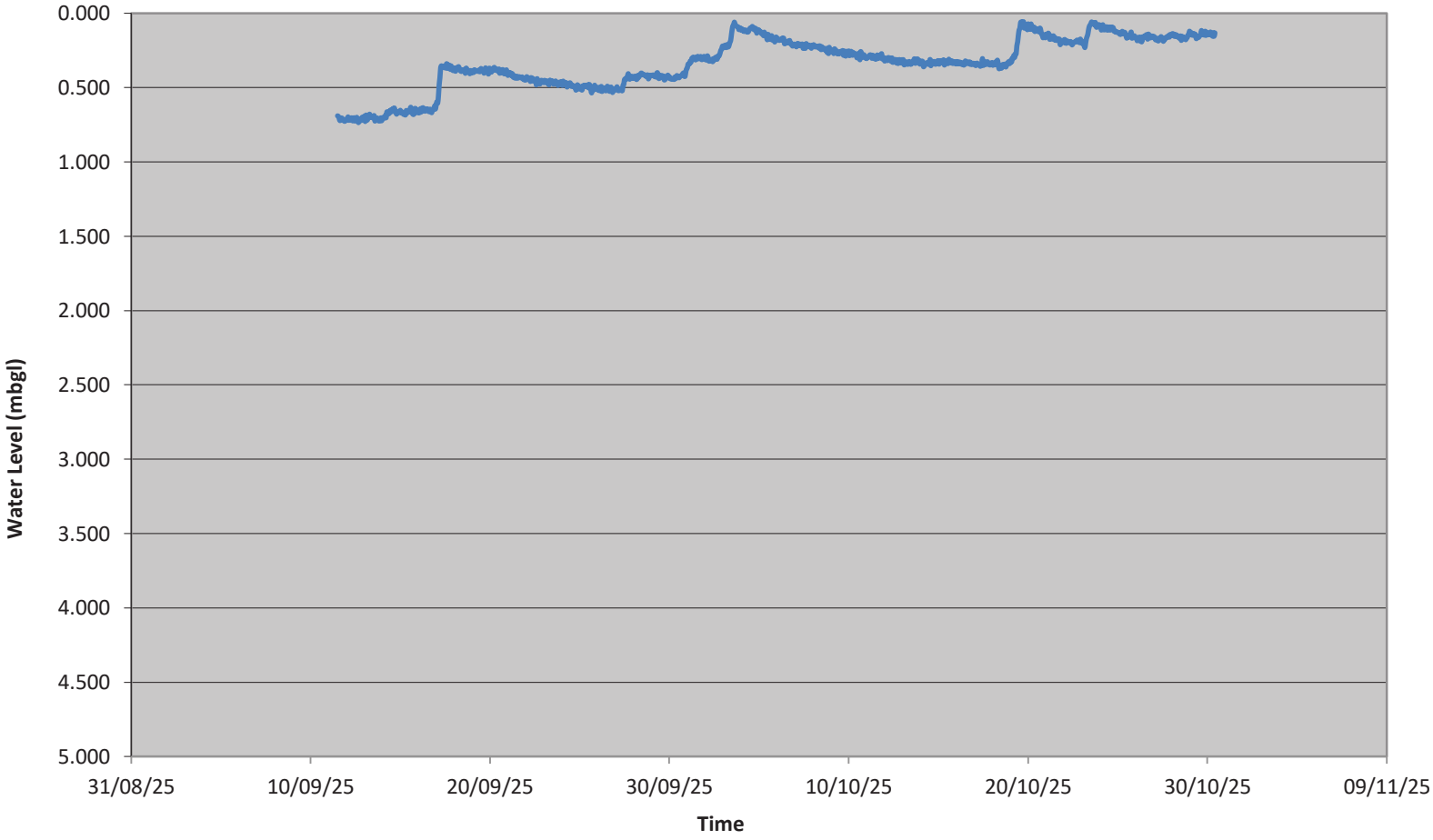
25882 - RC 18 Gas to Bord na Mona Edenderry



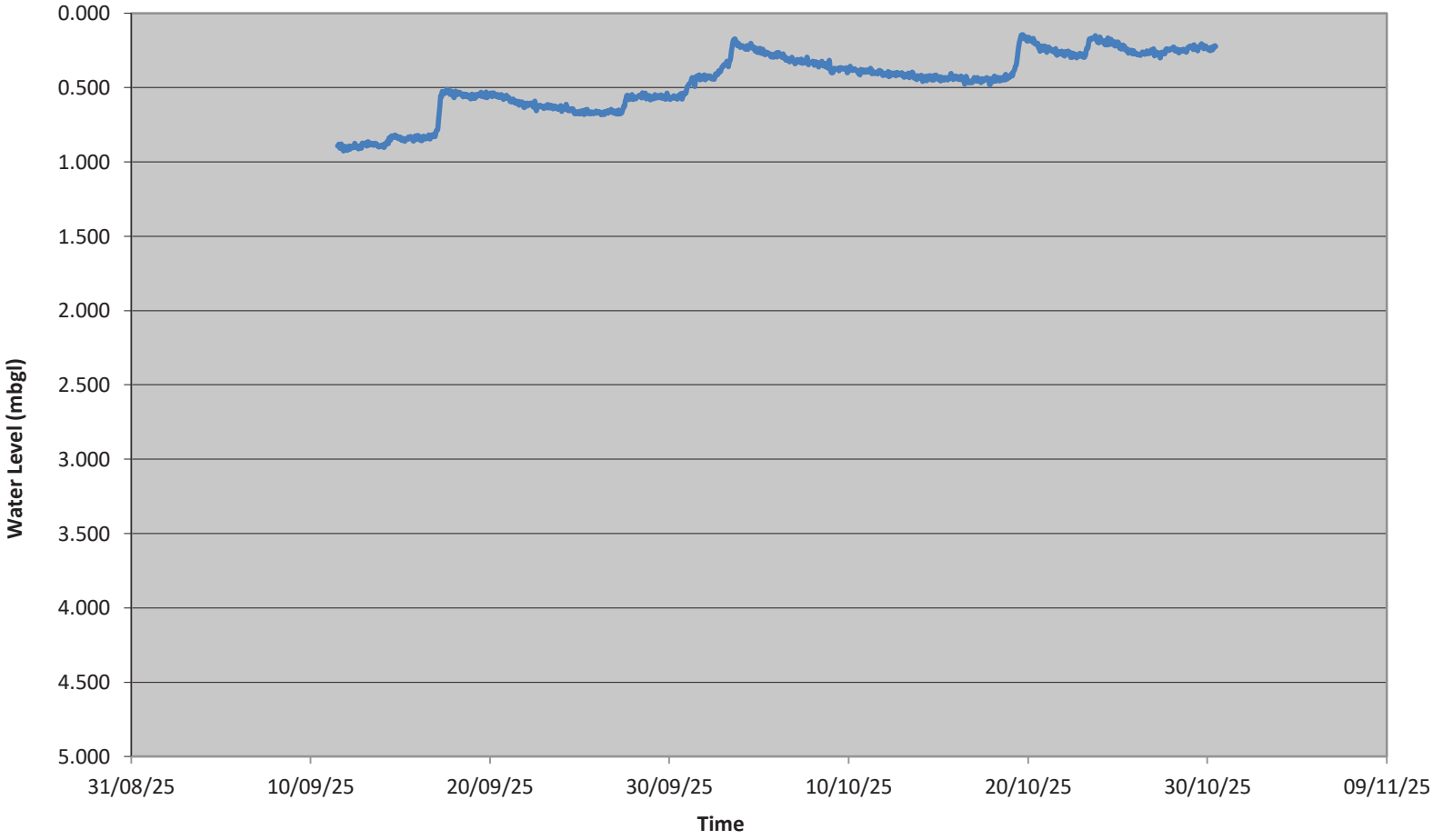
25882 - RC 24 Gas to Bord na Mona Edenderry



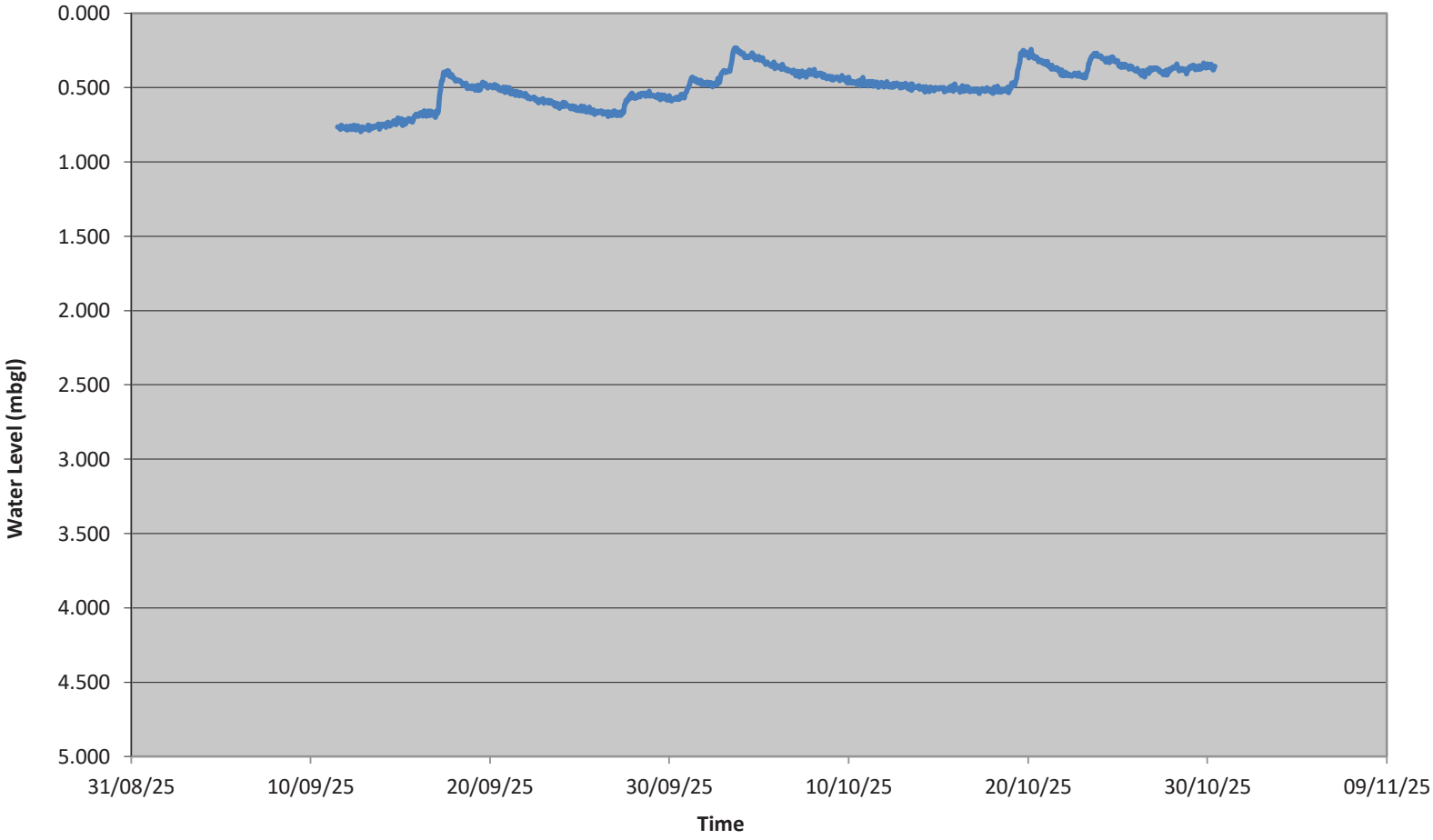
25882 - RC 01 Gas to Bord na Mona Edenderry



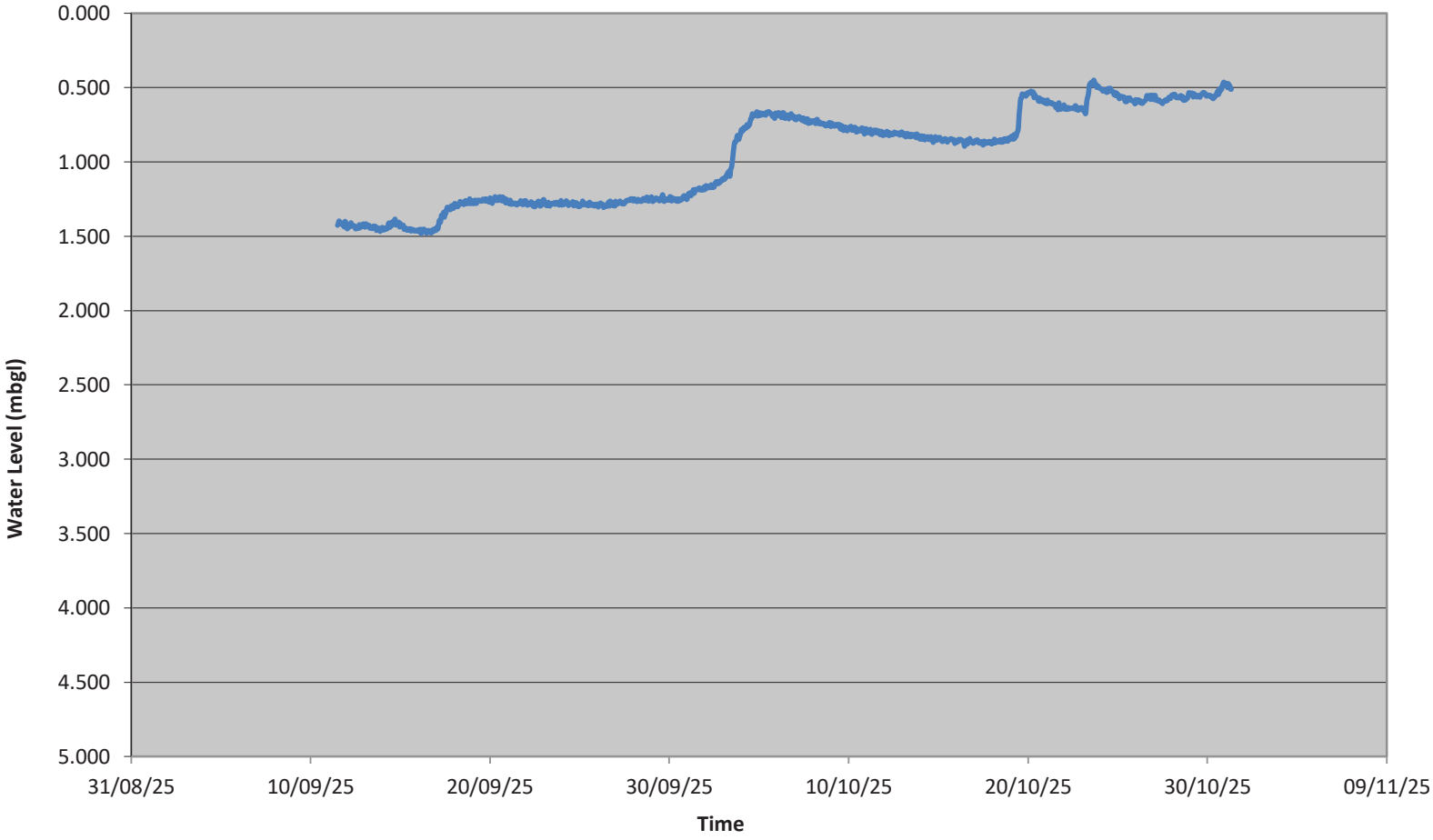
25882 - RC 02 Gas to Bord na Mona Edenderry



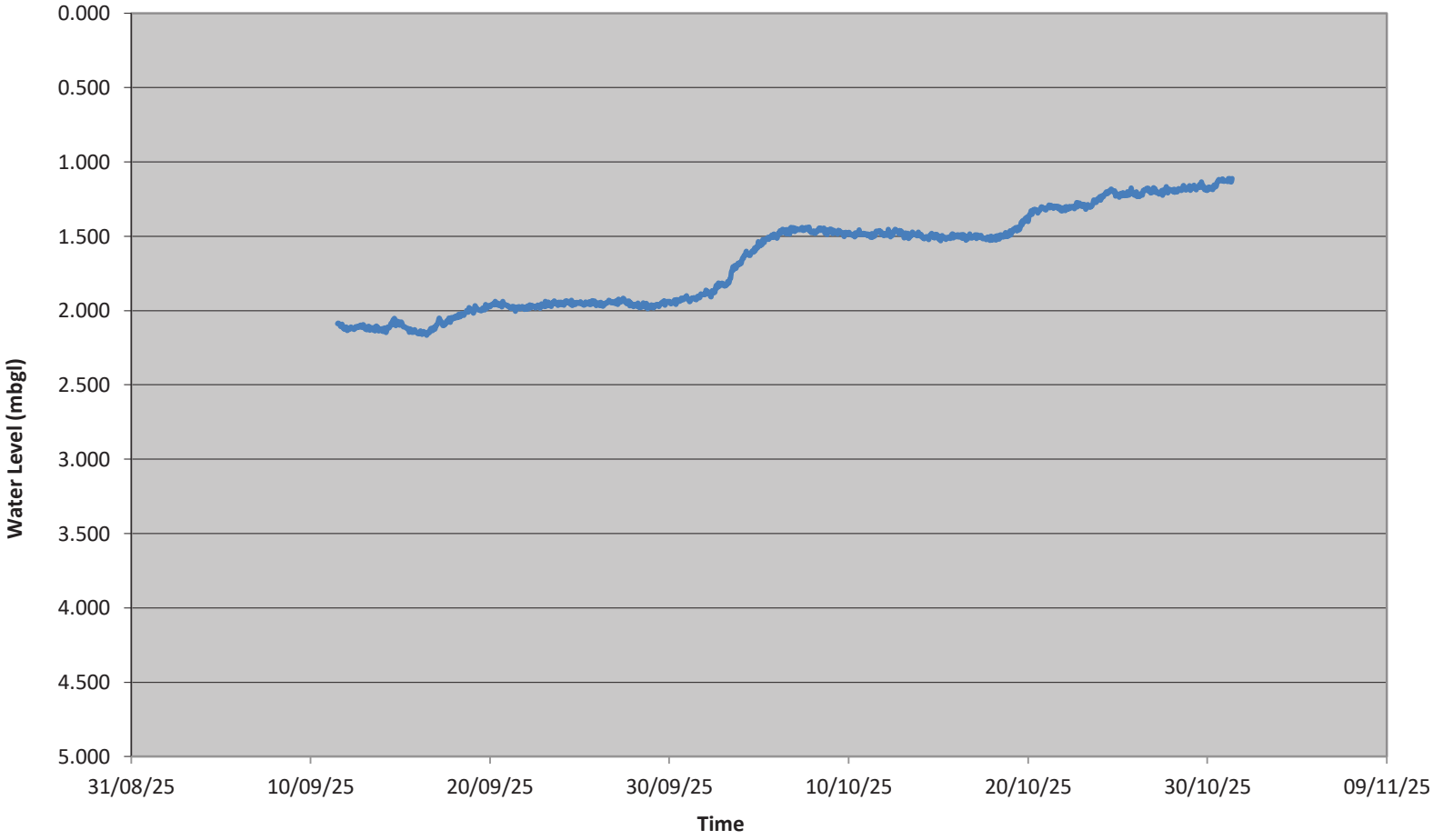
25882 - RC 04 Gas to Bord na Mona Edenderry



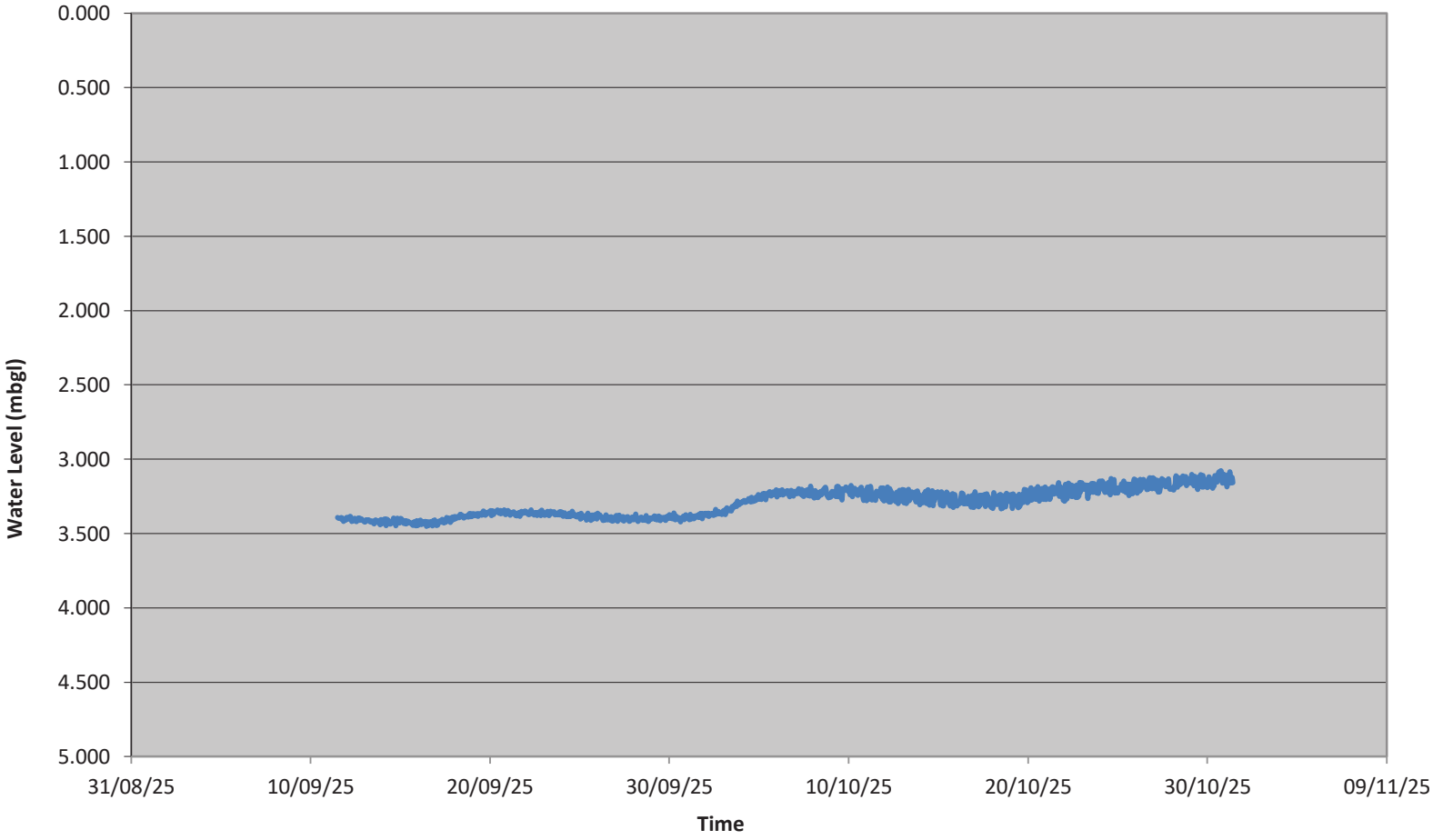
25882 - BH 06 Gas to Bord na Mona Edenderry



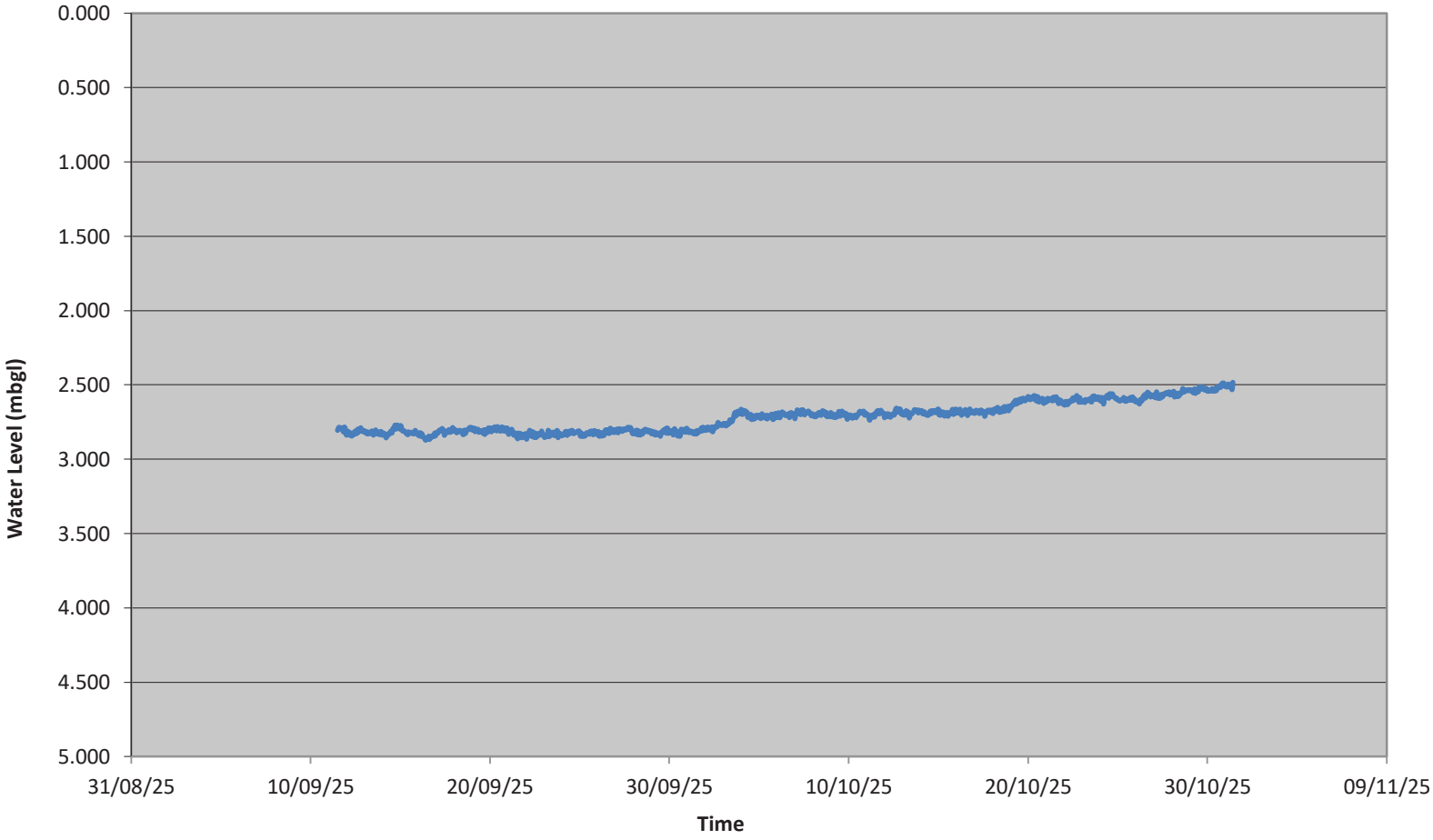
25882 - RC 07 Gas to Bord na Mona Edenderry



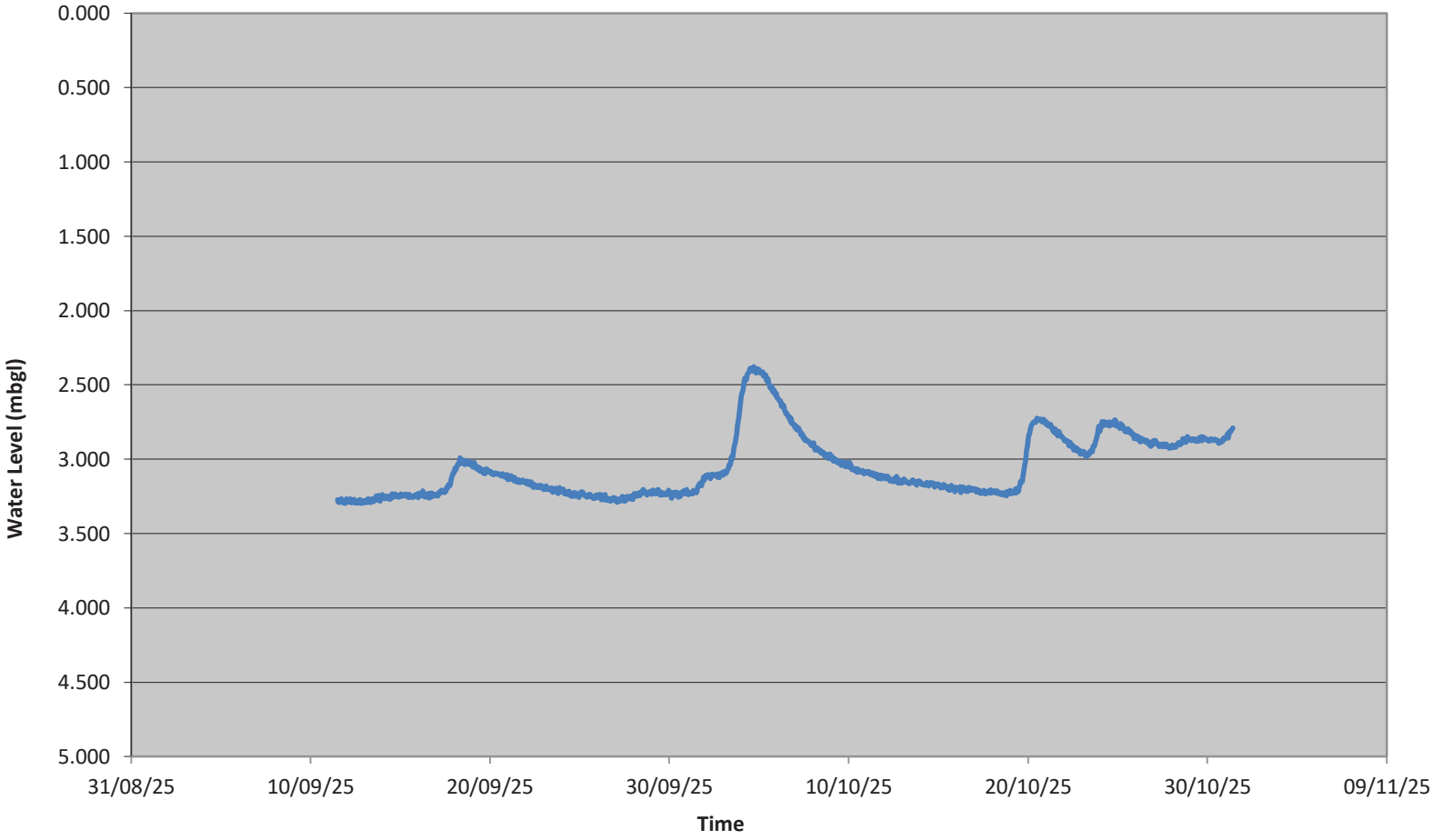
25882 - BH 14 Gas to Bord na Mona Edenderry



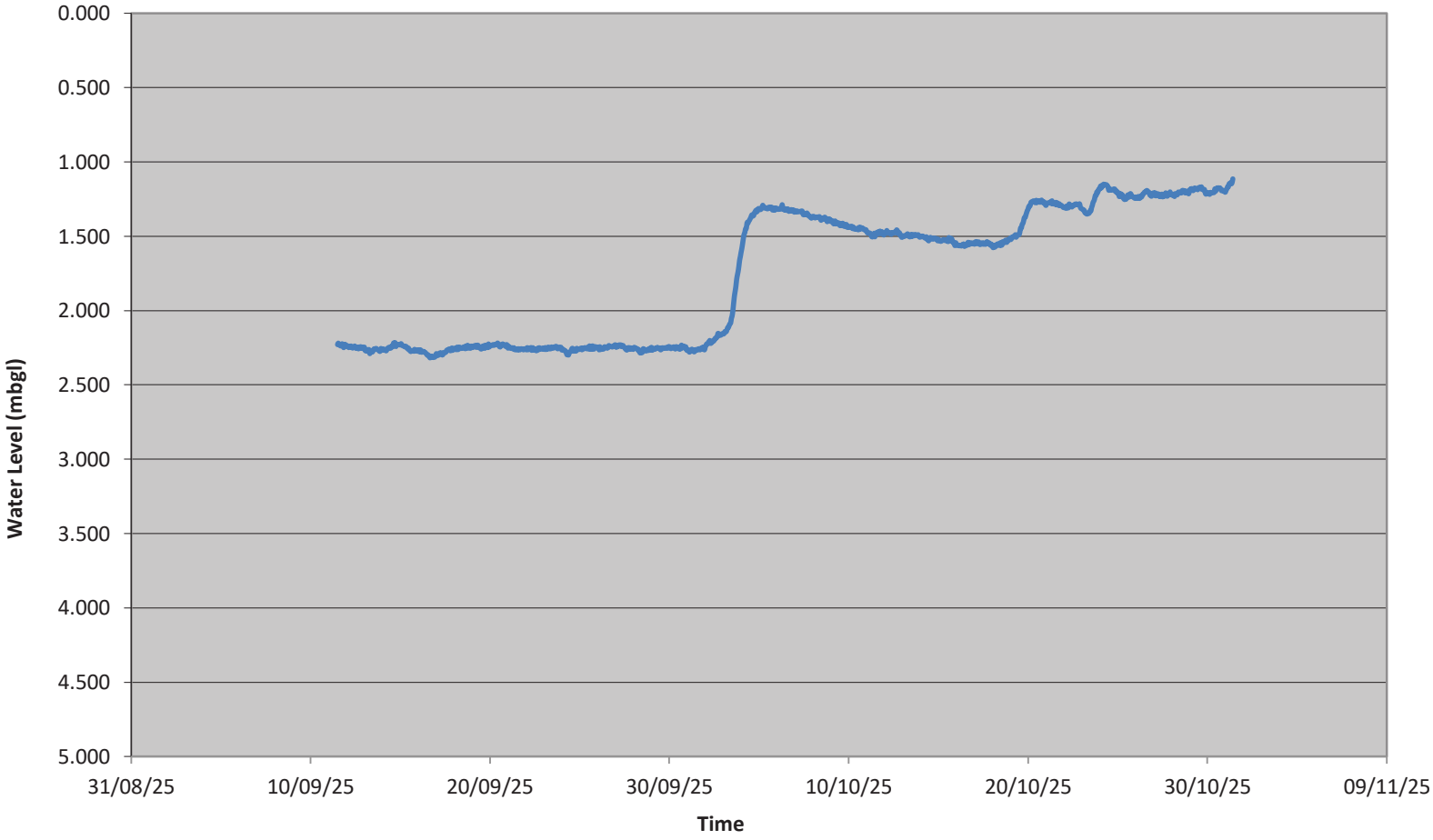
25882 - RC 18 Gas to Bord na Mona Edenderry



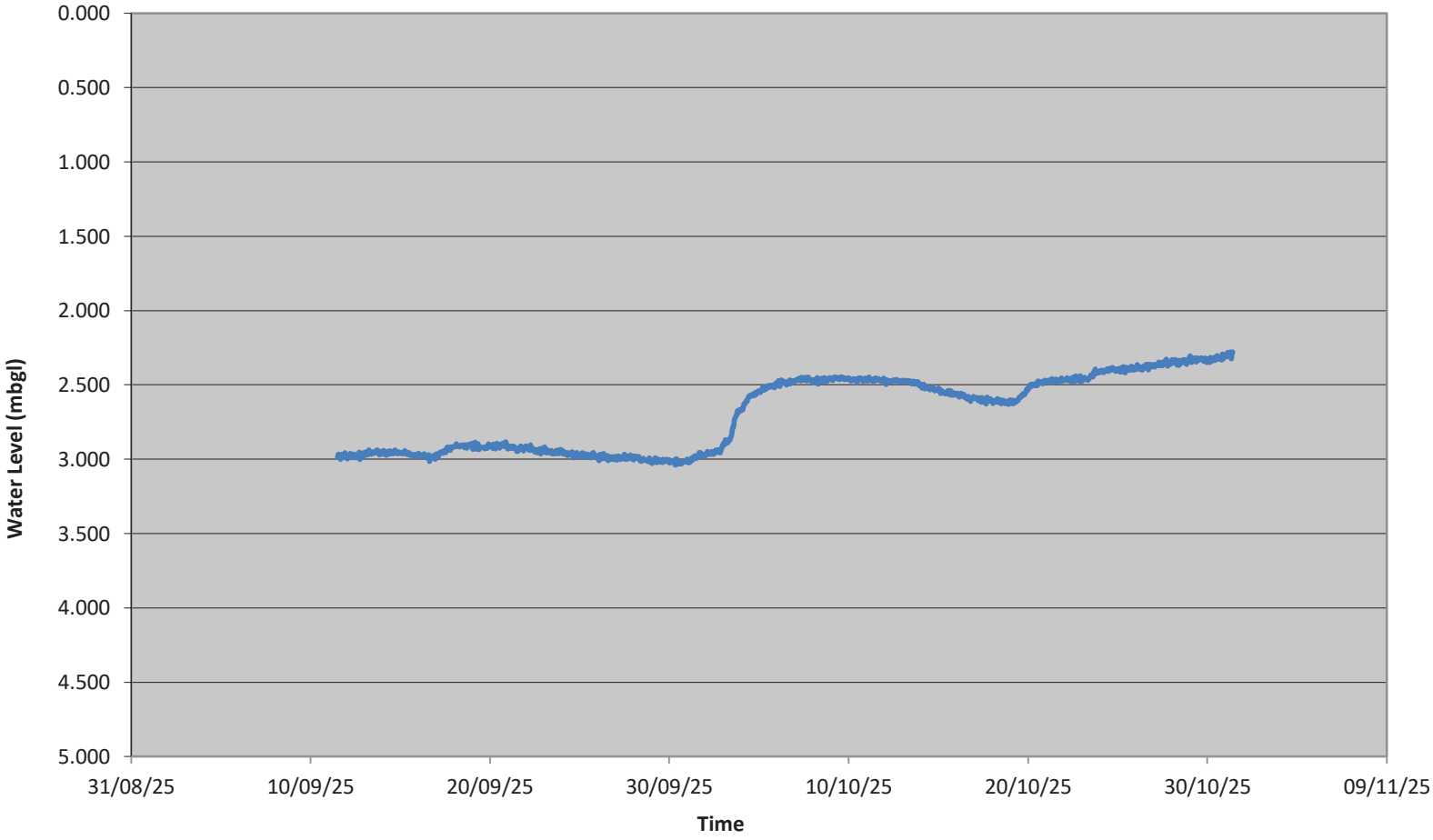
25882 - RC 24 Gas to Bord na Mona Edenderry



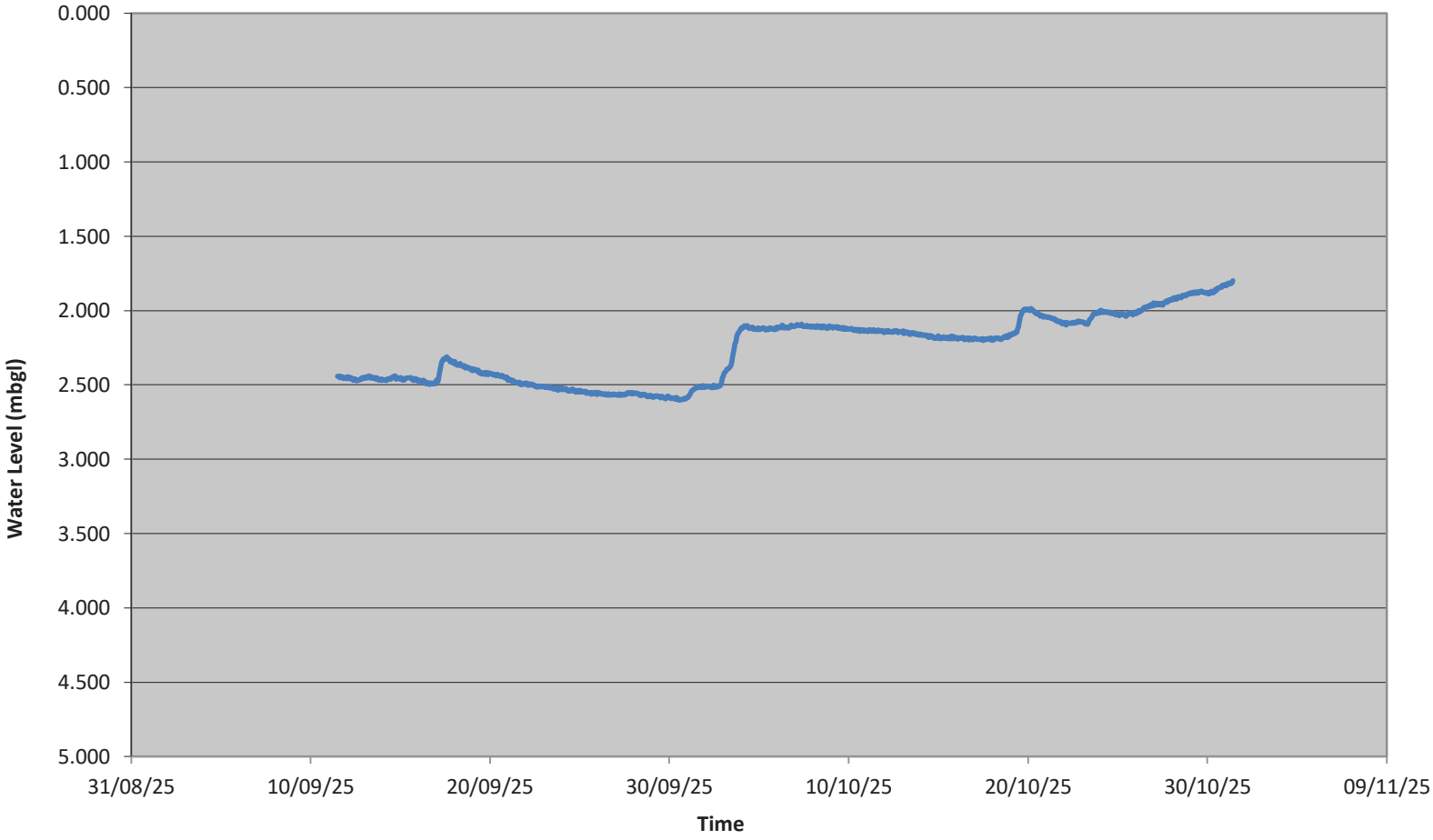
25882 - BH 27A Gas to Bord na Mona Edenderry



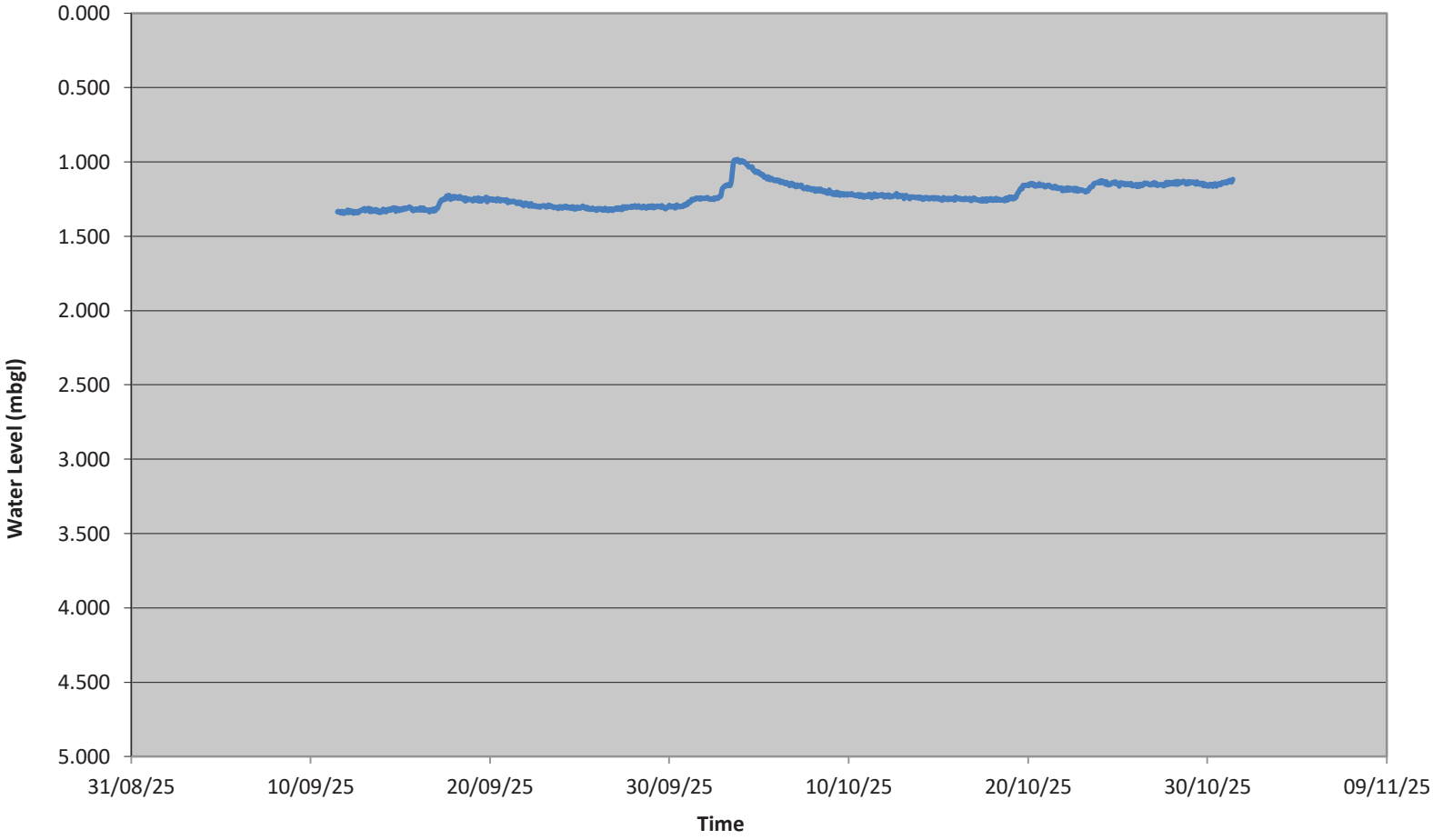
25882 - RC 30A Gas to Bord na Mona Edenderry



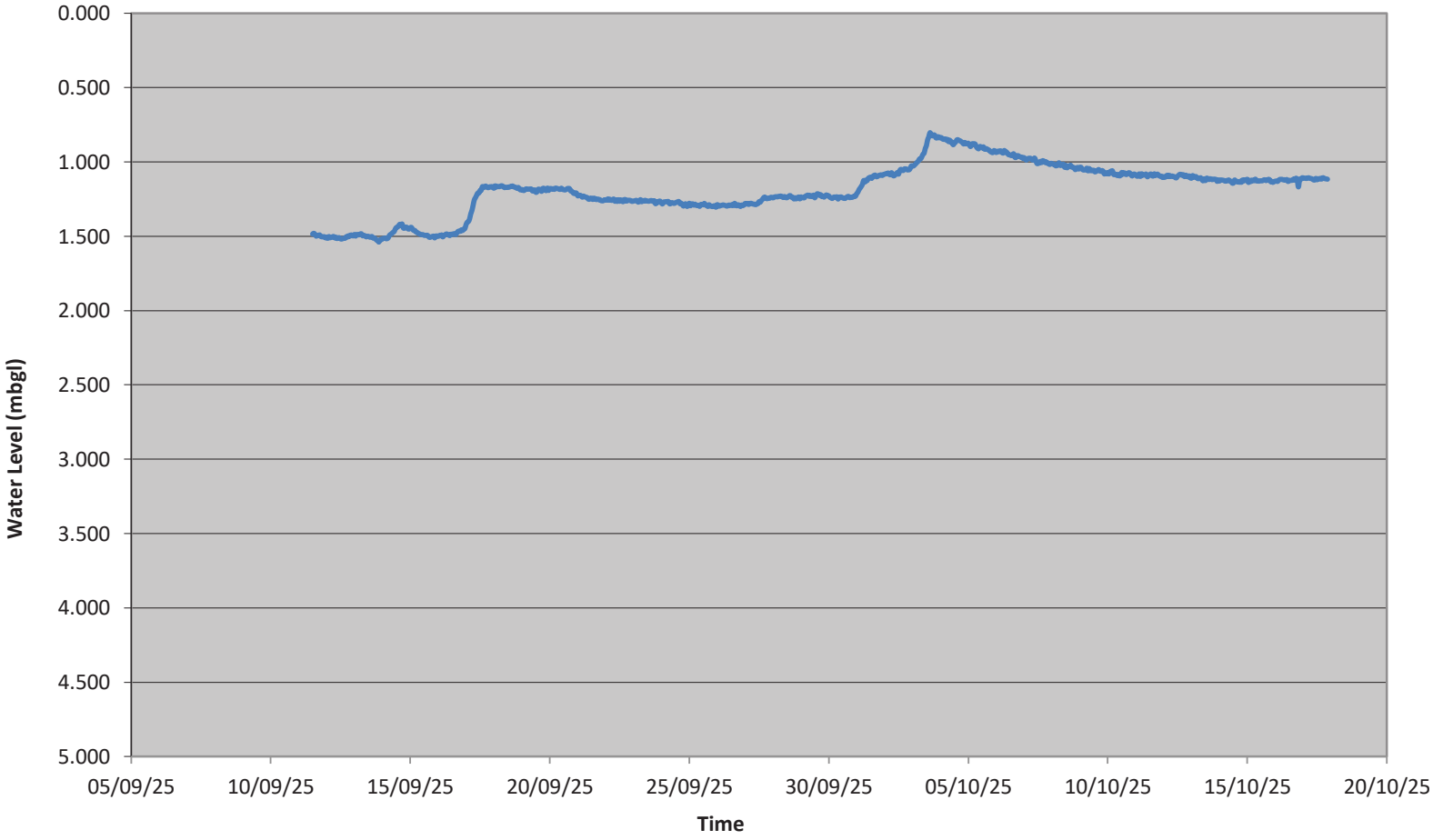
25882 - RC 32R Gas to Bord na Mona Edenderry



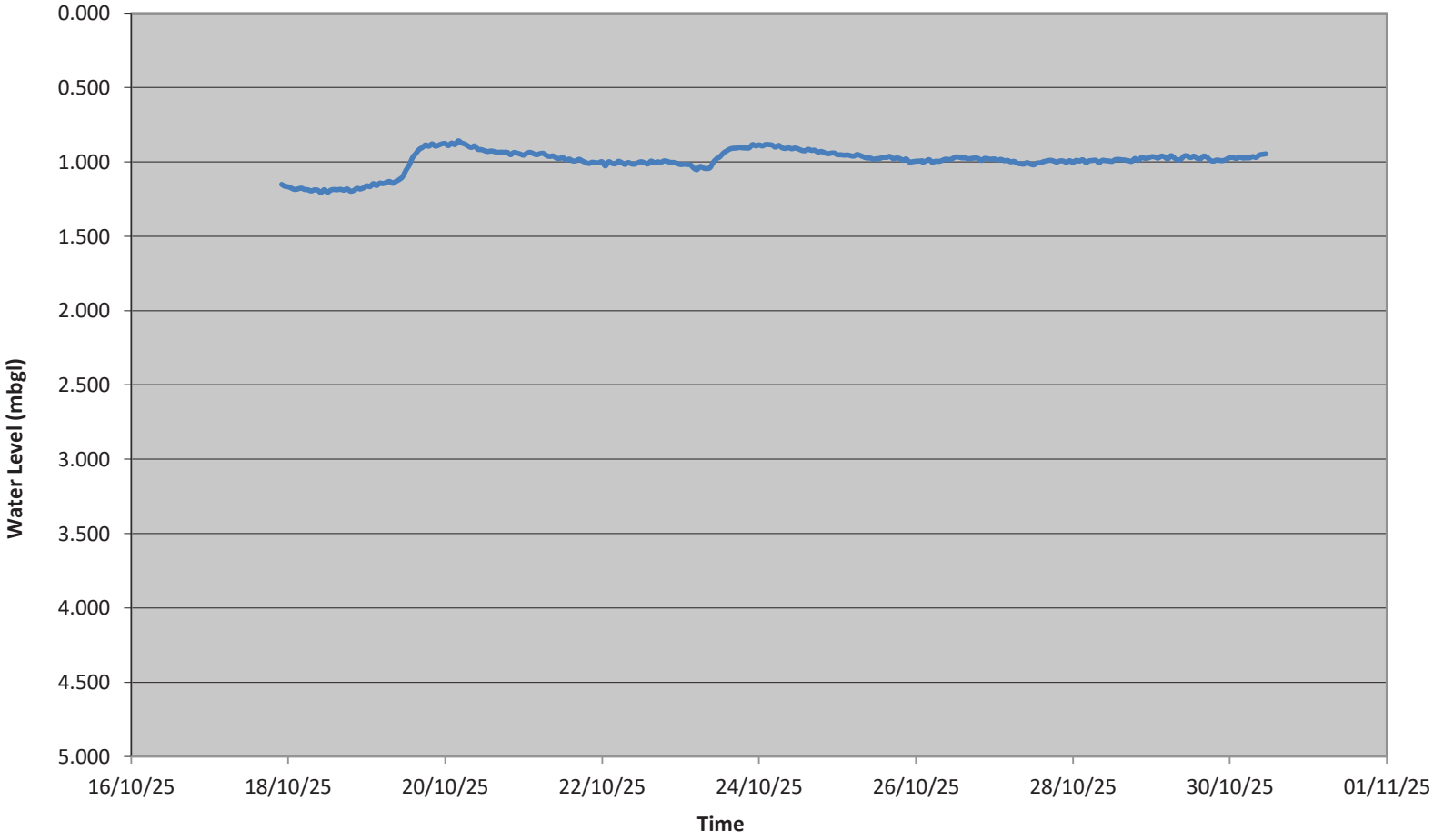
25882 - BH 34R Gas to Bord na Mona Edenderry



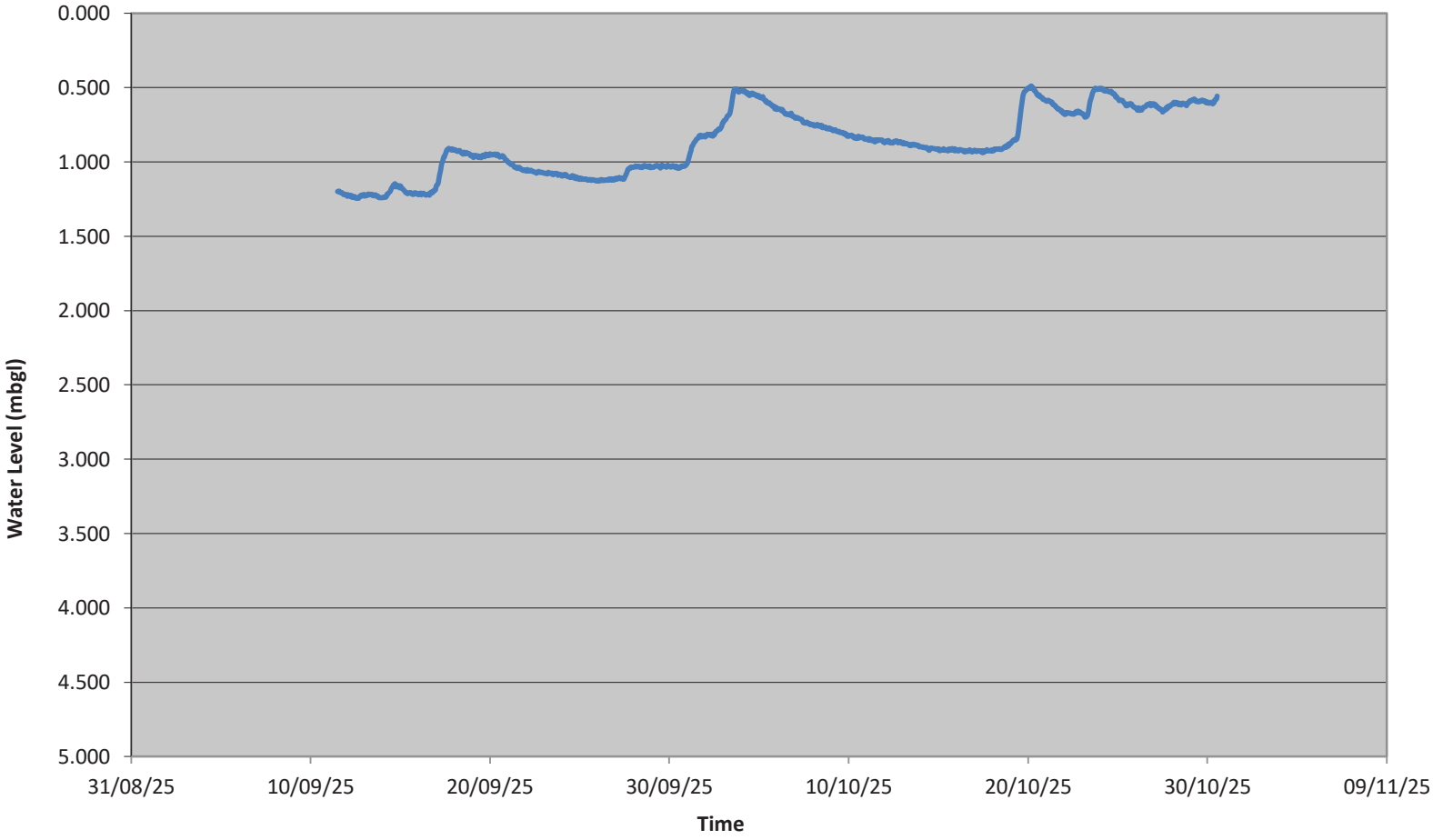
25882 - BH 40 Gas to Bord na Mona Edenderry



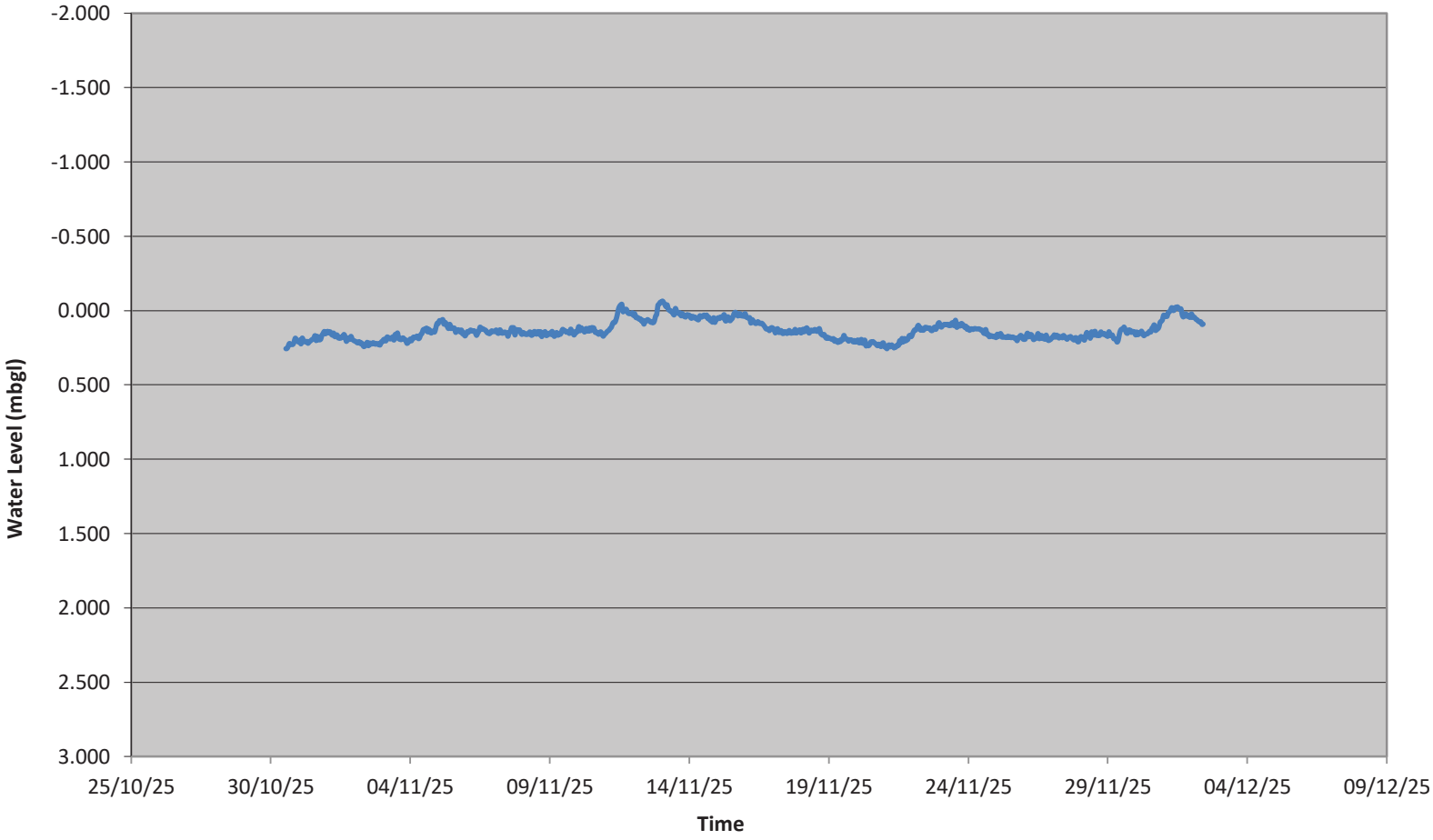
25882 - BH 40 Gas to Bord na Mona Edenderry



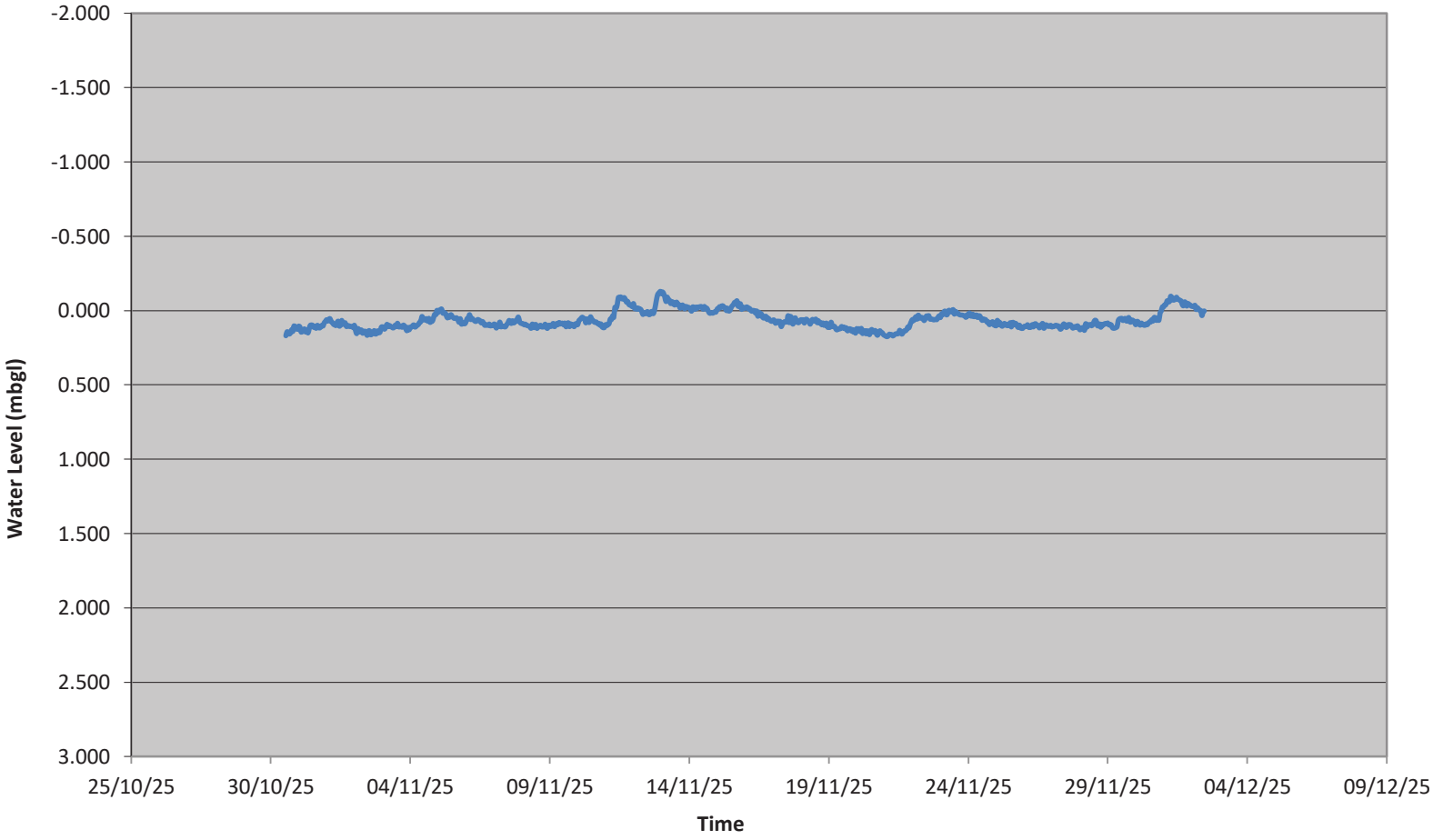
25882 - BH 43 Gas to Bord na Mona Edenderry



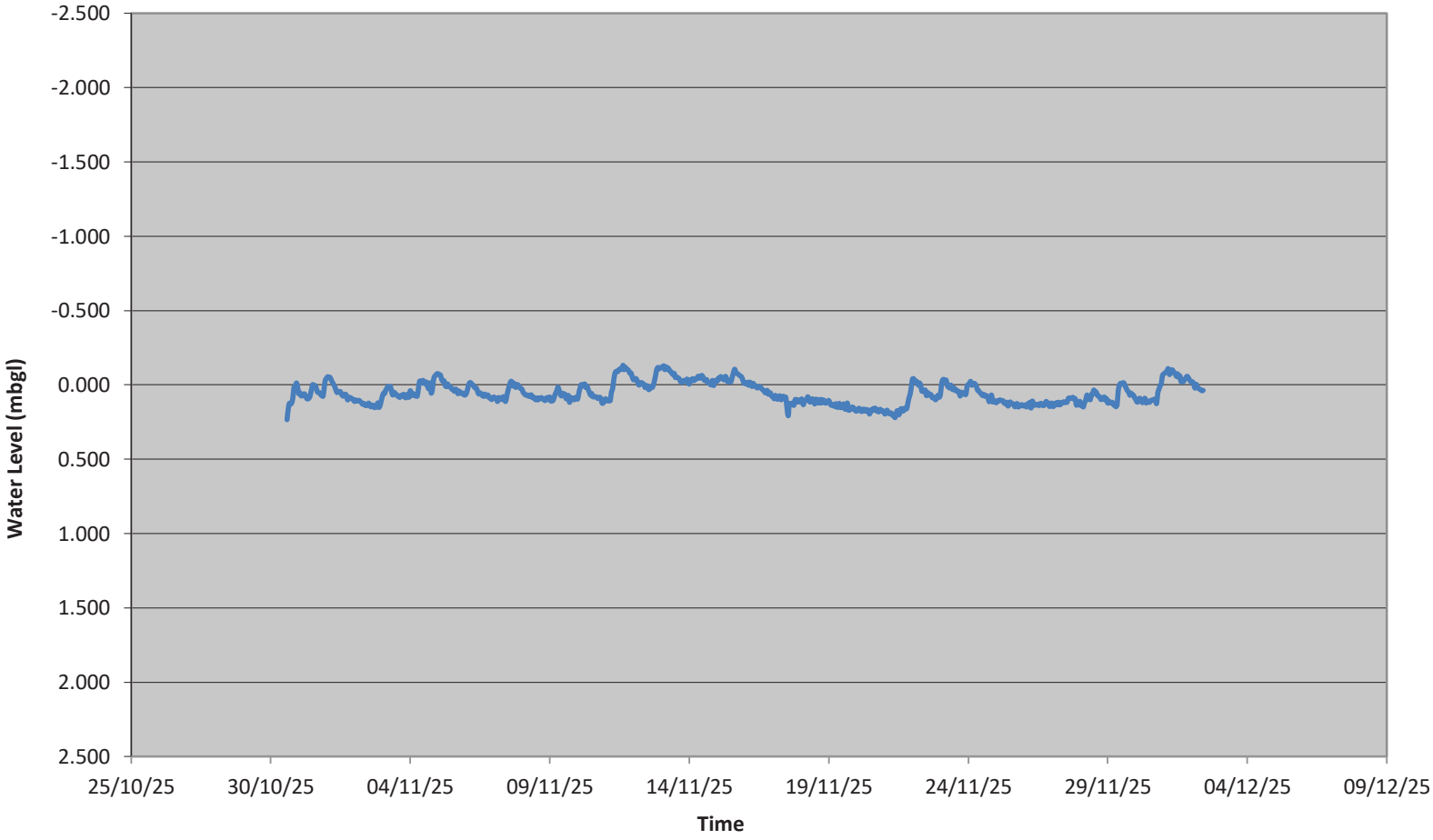
25882 - RC 01 Gas to Bord na Mona Edenderry



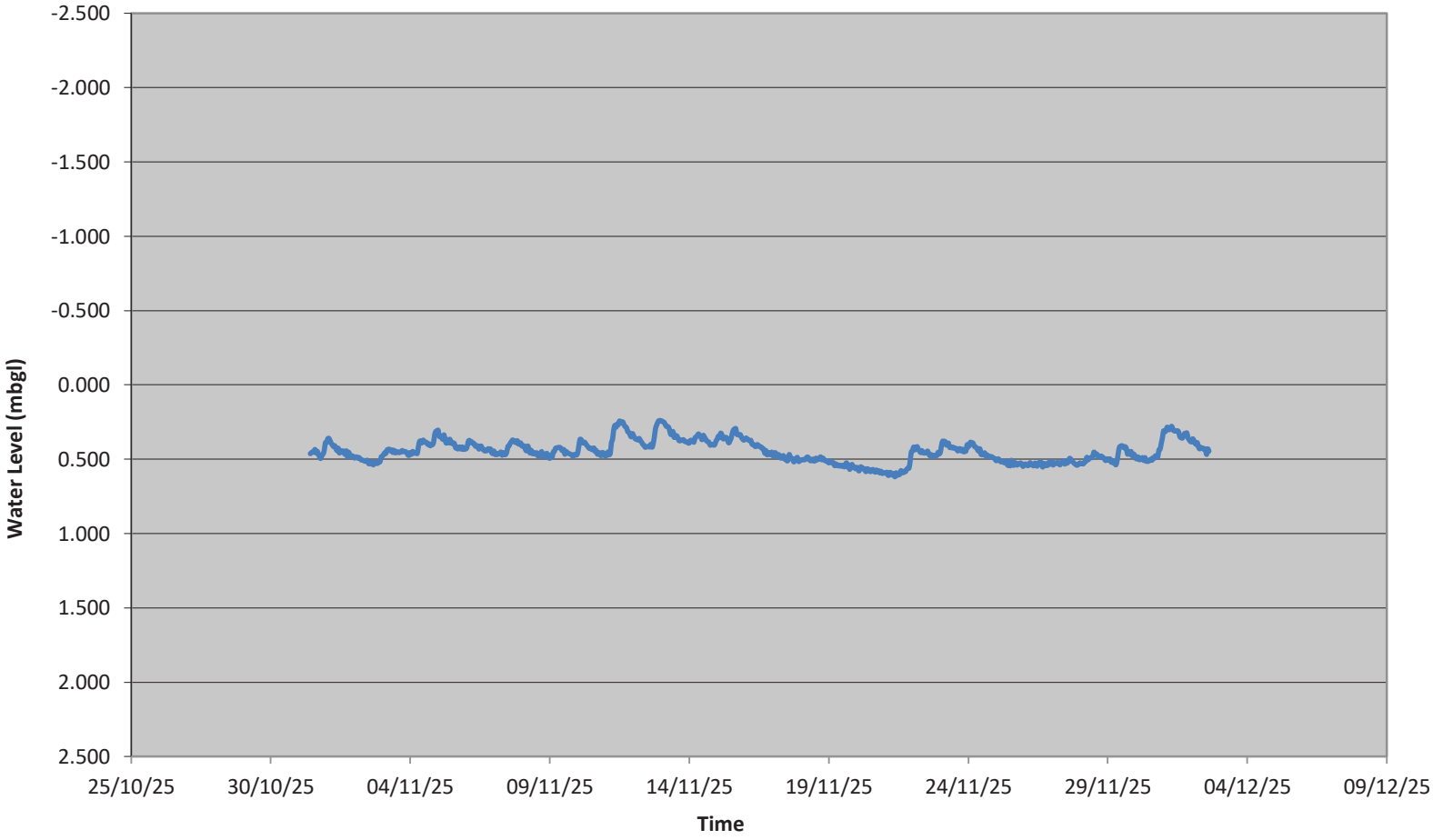
25882 - RC 02 Gas to Bord na Mona Edenderry



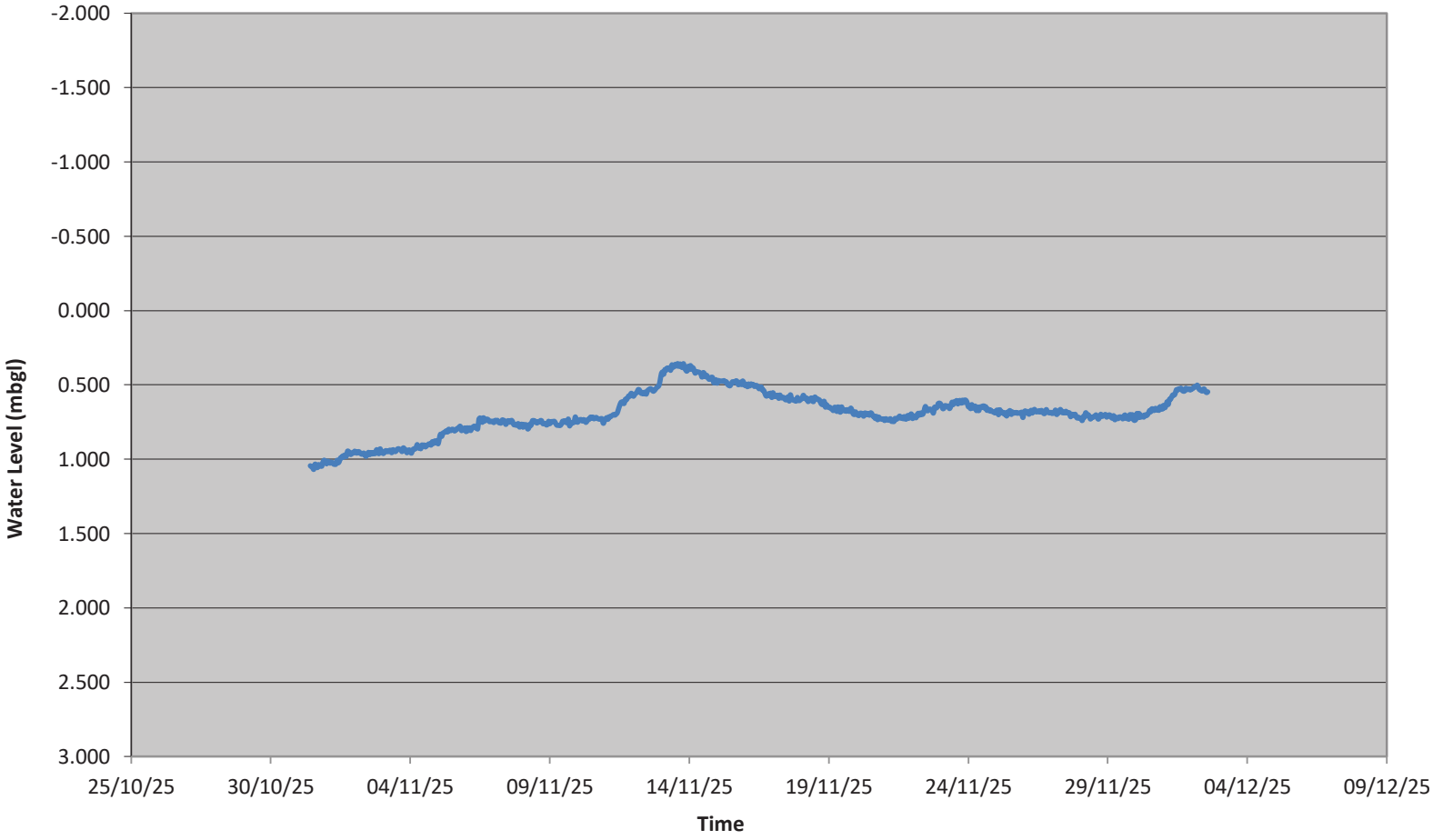
25882 - RC 04 Gas to Bord na Mona Edenderry



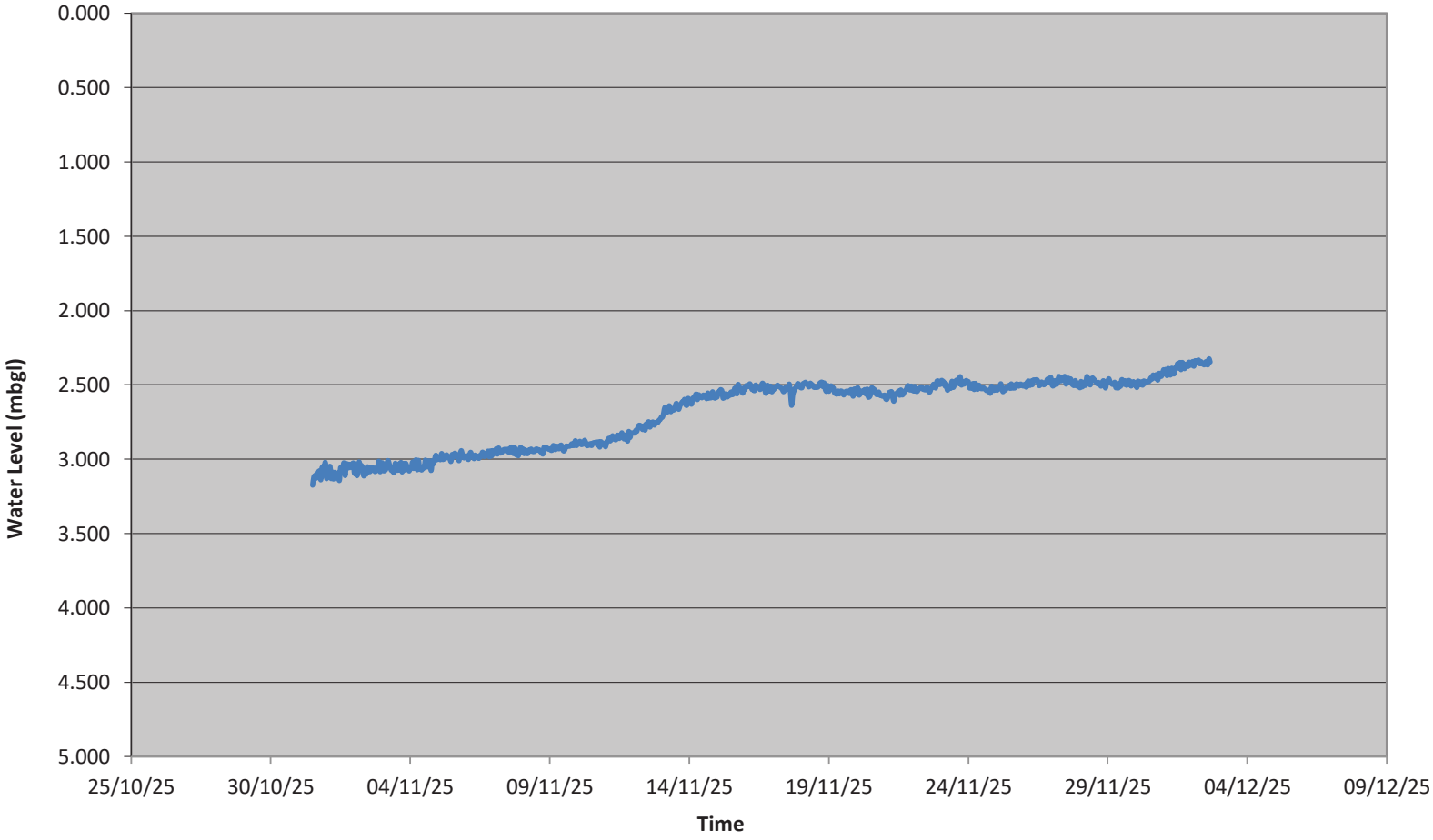
25882 - BH 06 Gas to Bord na Mona Edenderry



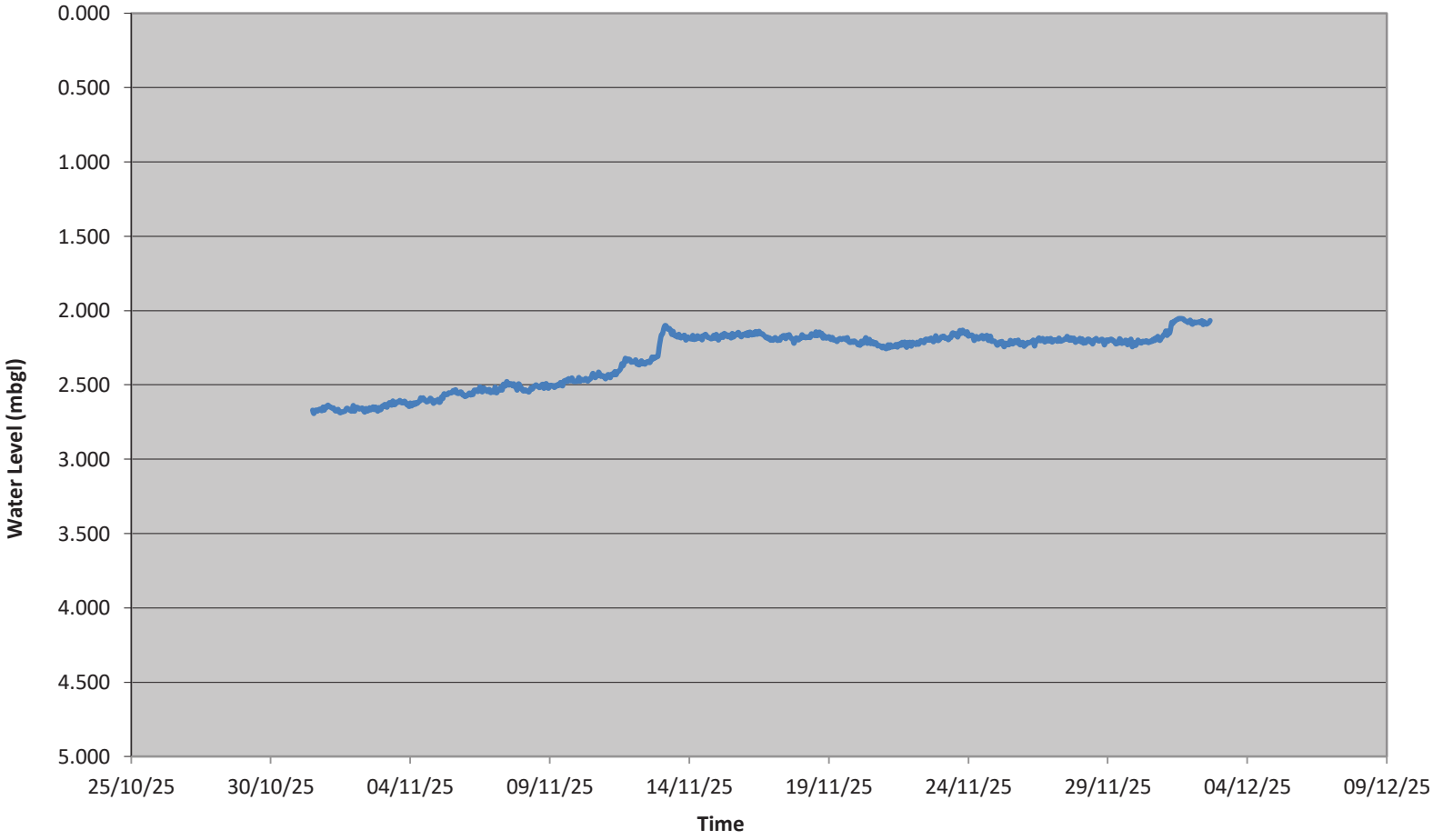
25882 - RC 07 Gas to Bord na Mona Edenderry



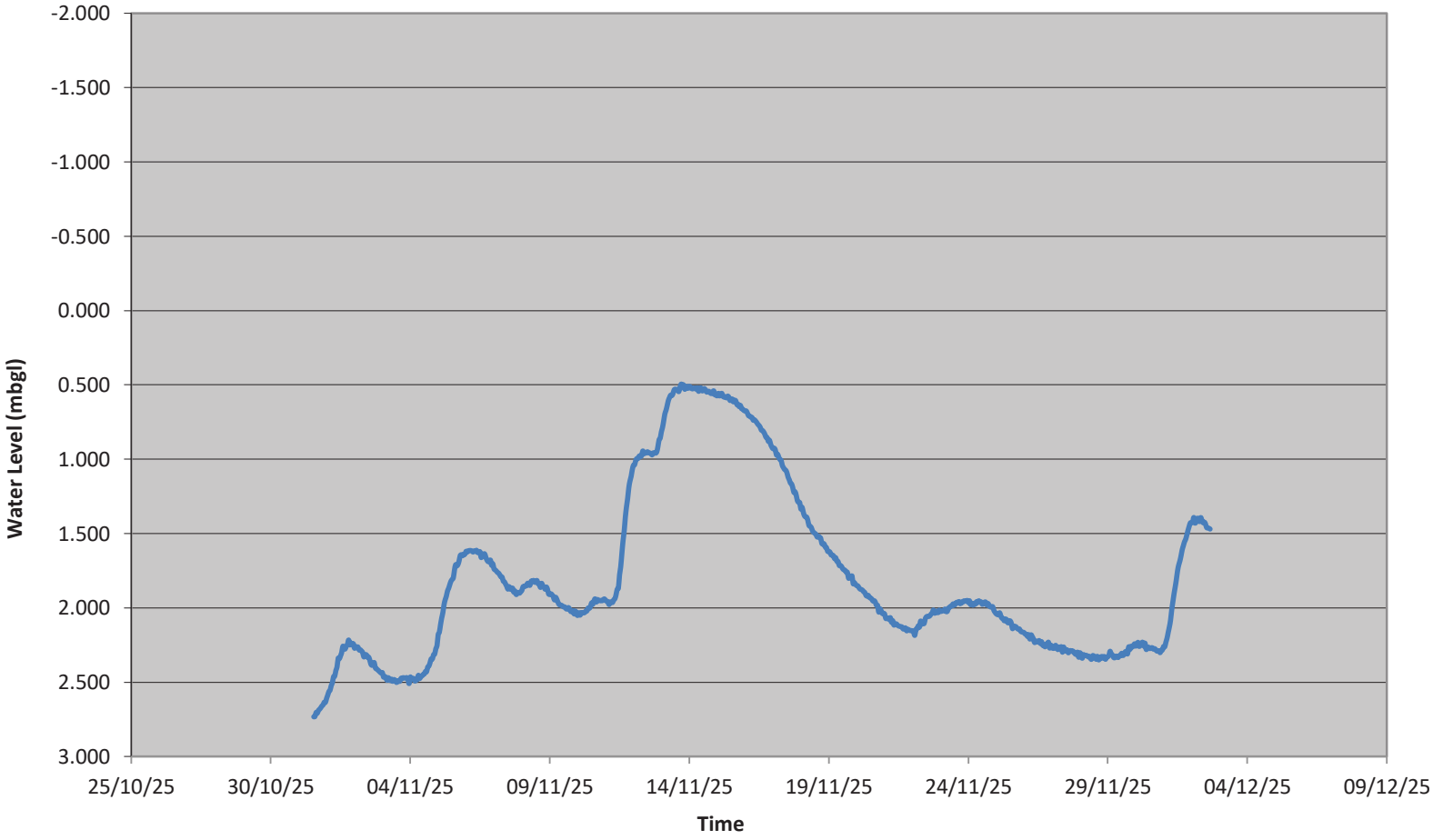
25882 - BH 14 Gas to Bord na Mona Edenderry



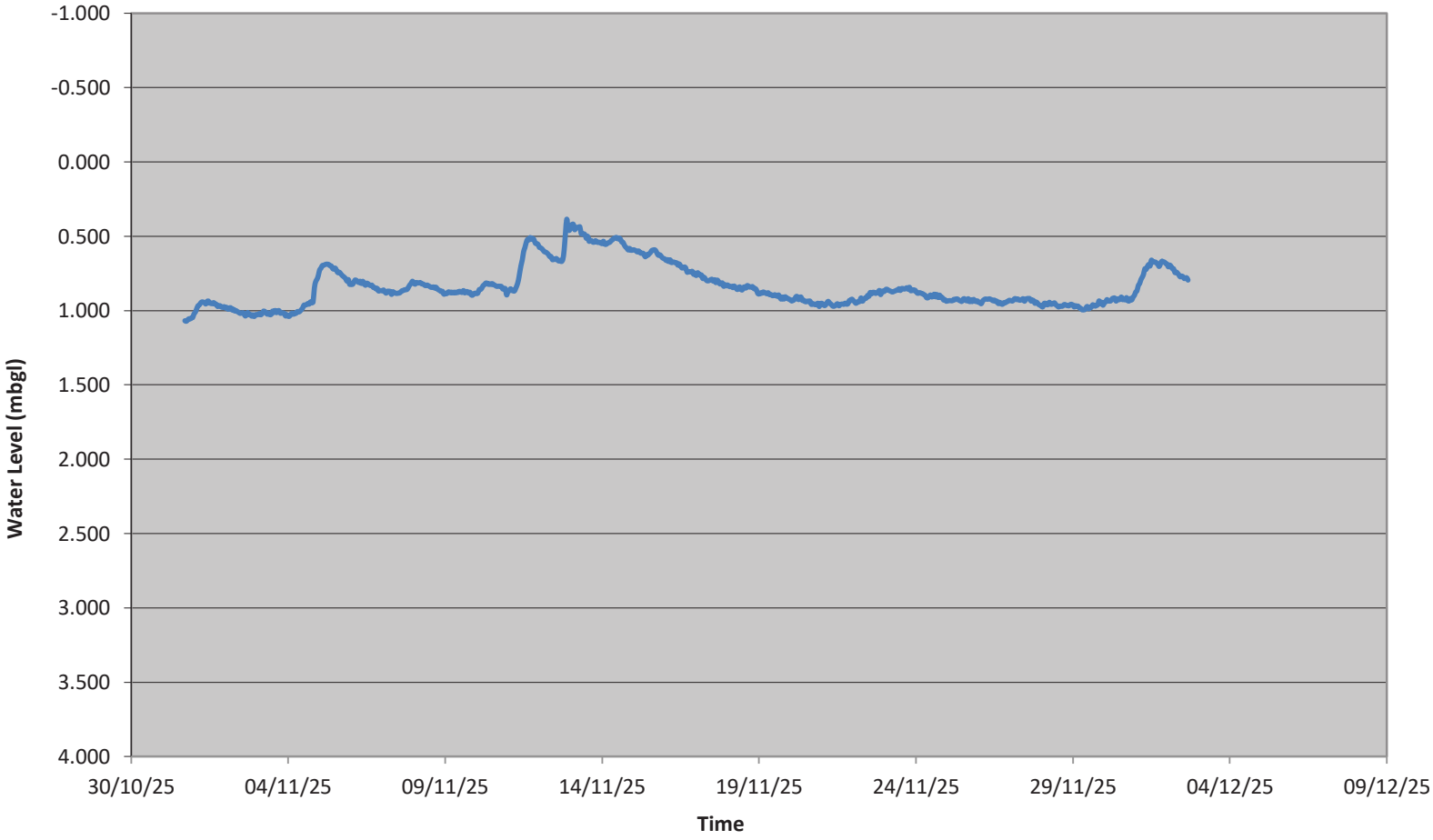
25882 - RC 18 Gas to Bord na Mona Edenderry



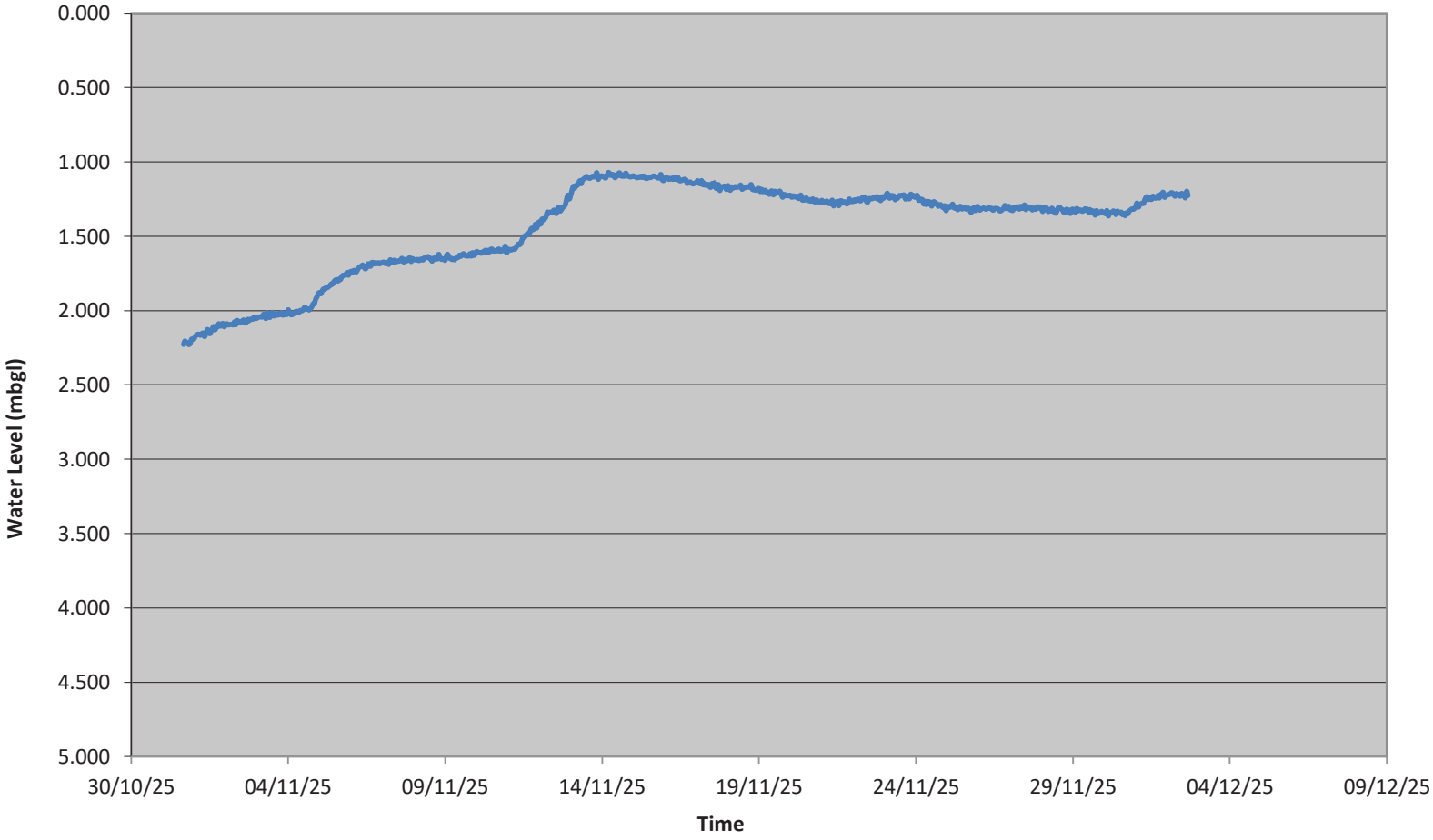
25882 - RC 24 Gas to Bord na Mona Edenderry



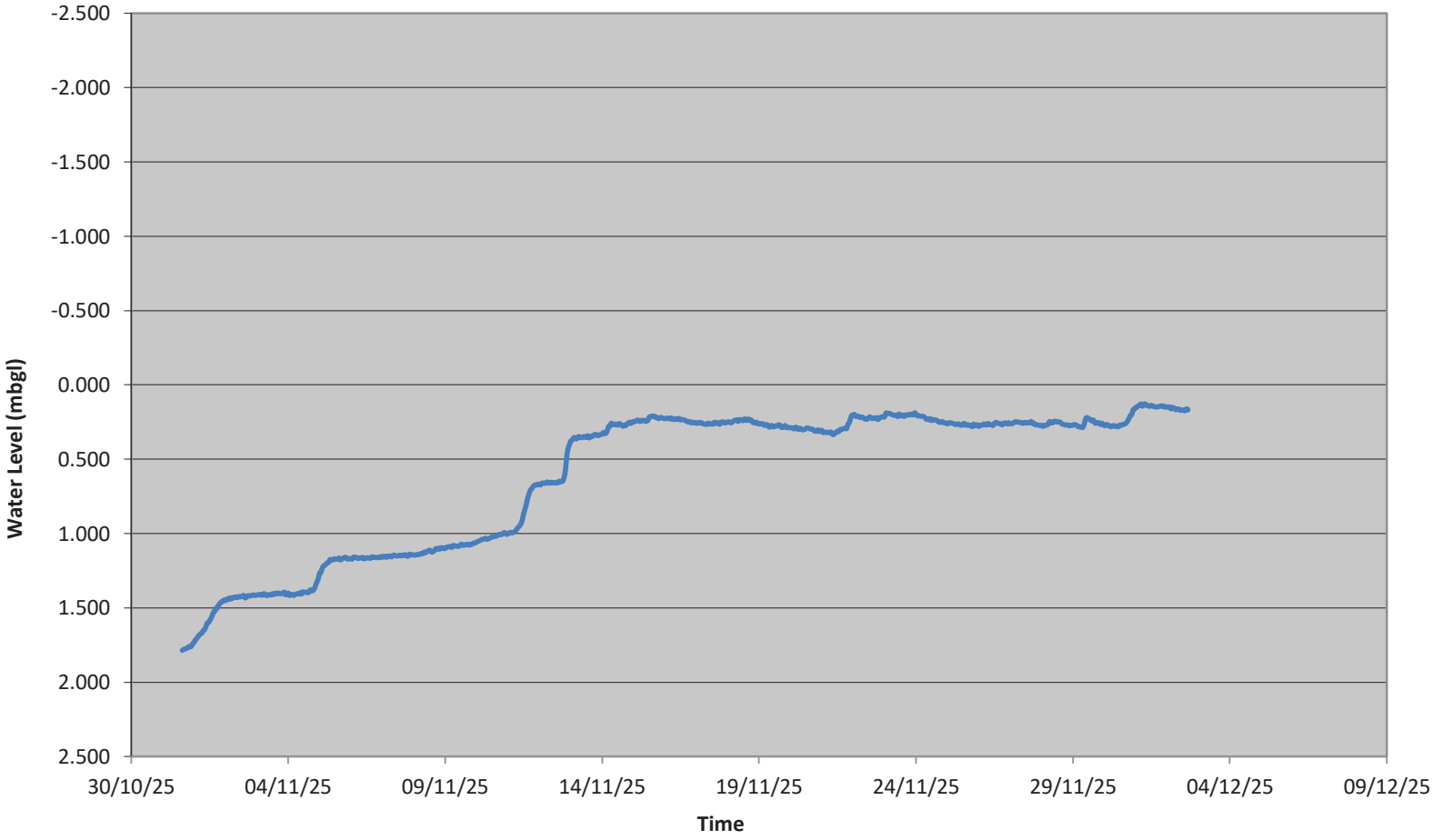
25882 - BH 27A Gas to Bord na Mona Edenderry



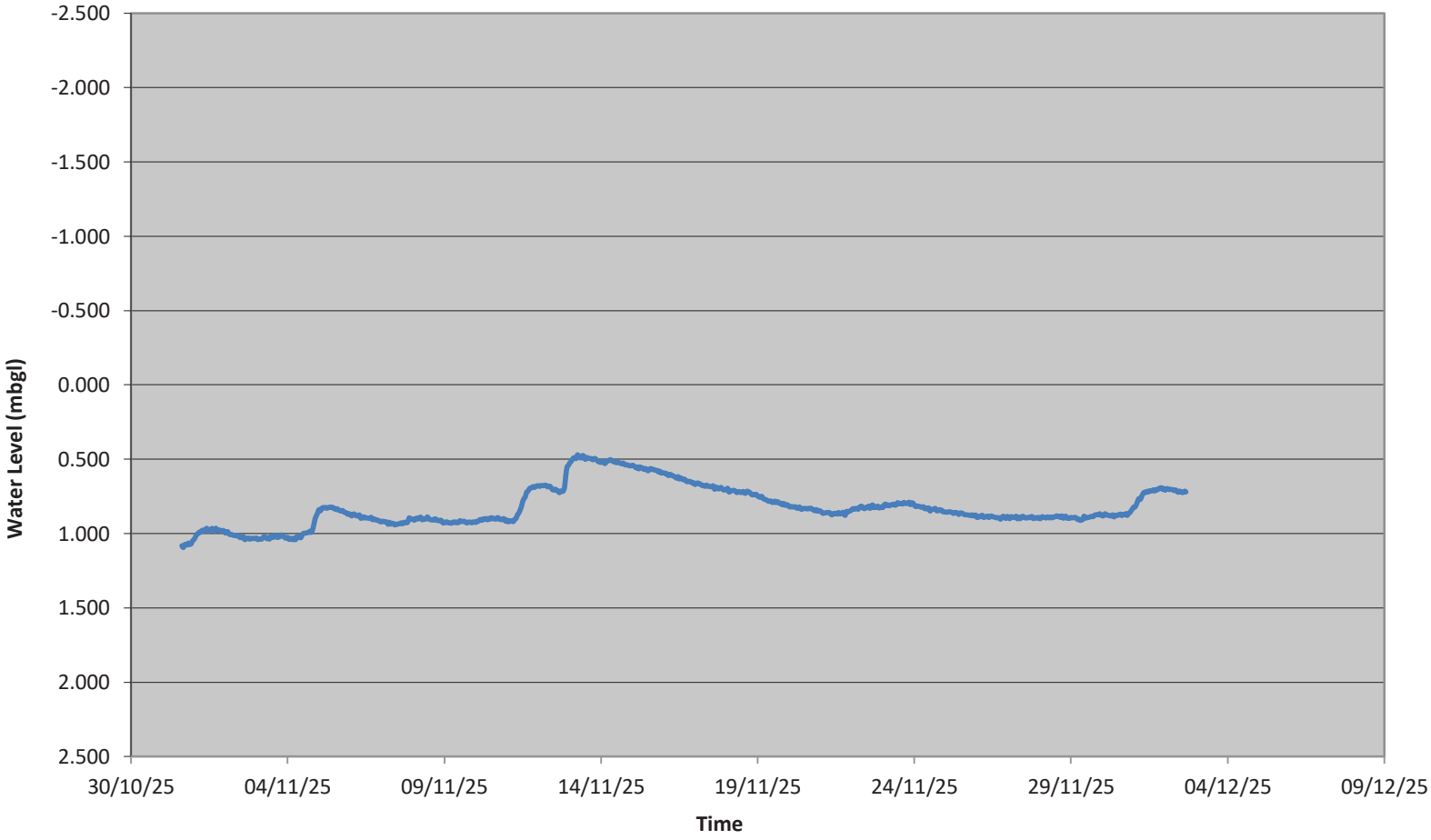
25882 - RC 30A Gas to Bord na Mona Edenderry



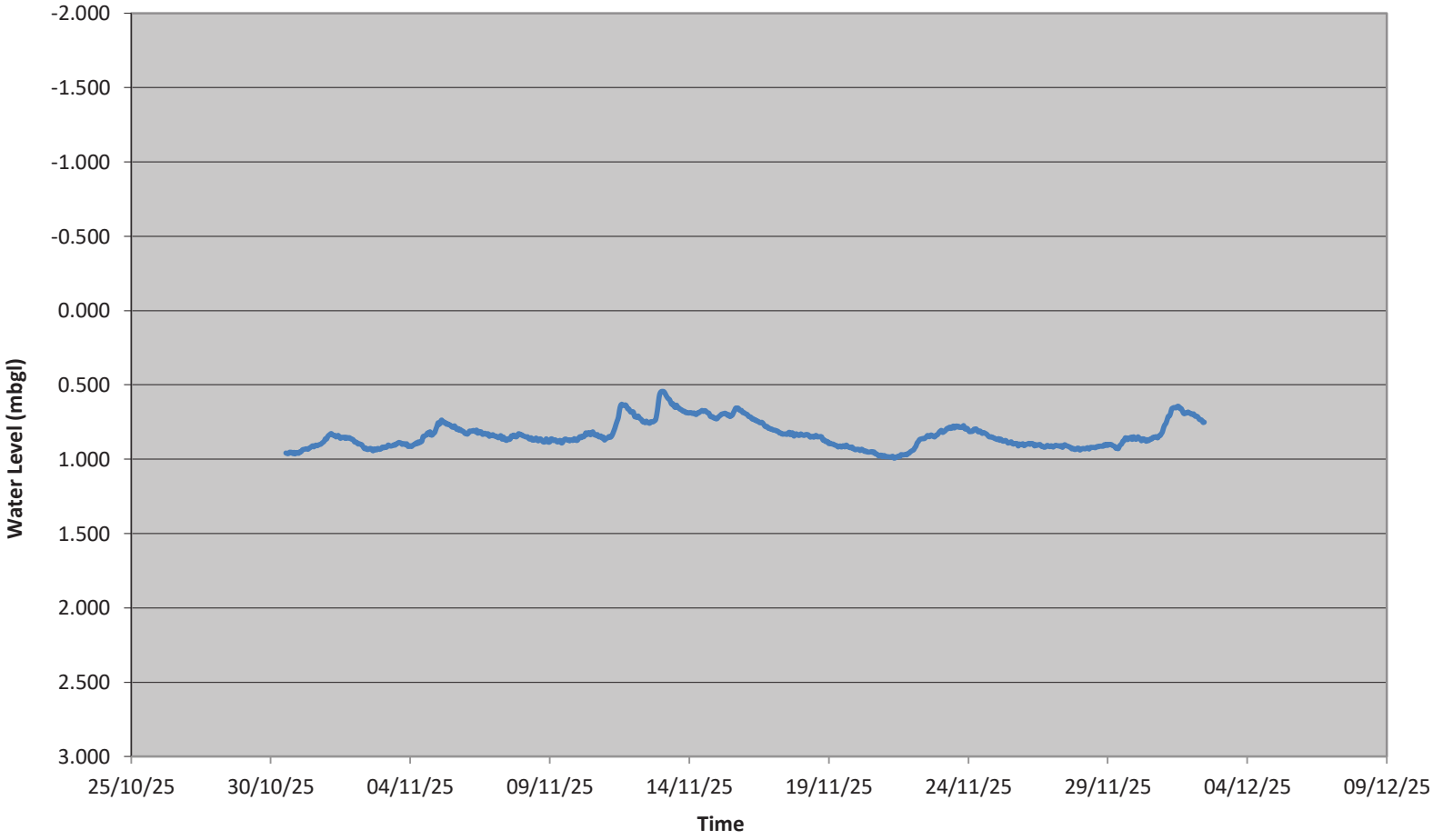
25882 - RC 32R Gas to Bord na Mona Edenderry



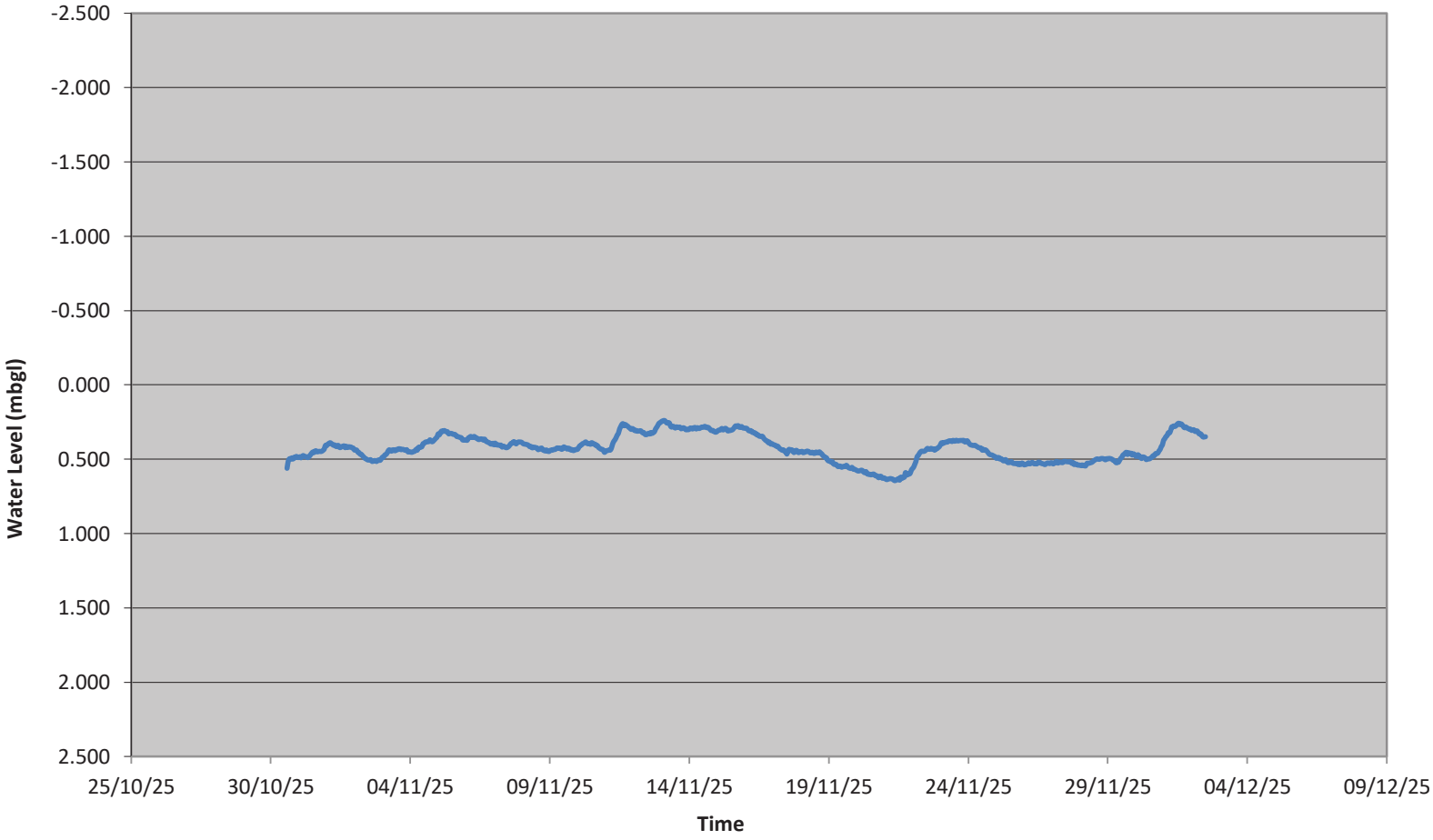
25882 - BH 34R Gas to Bord na Mona Edenderry



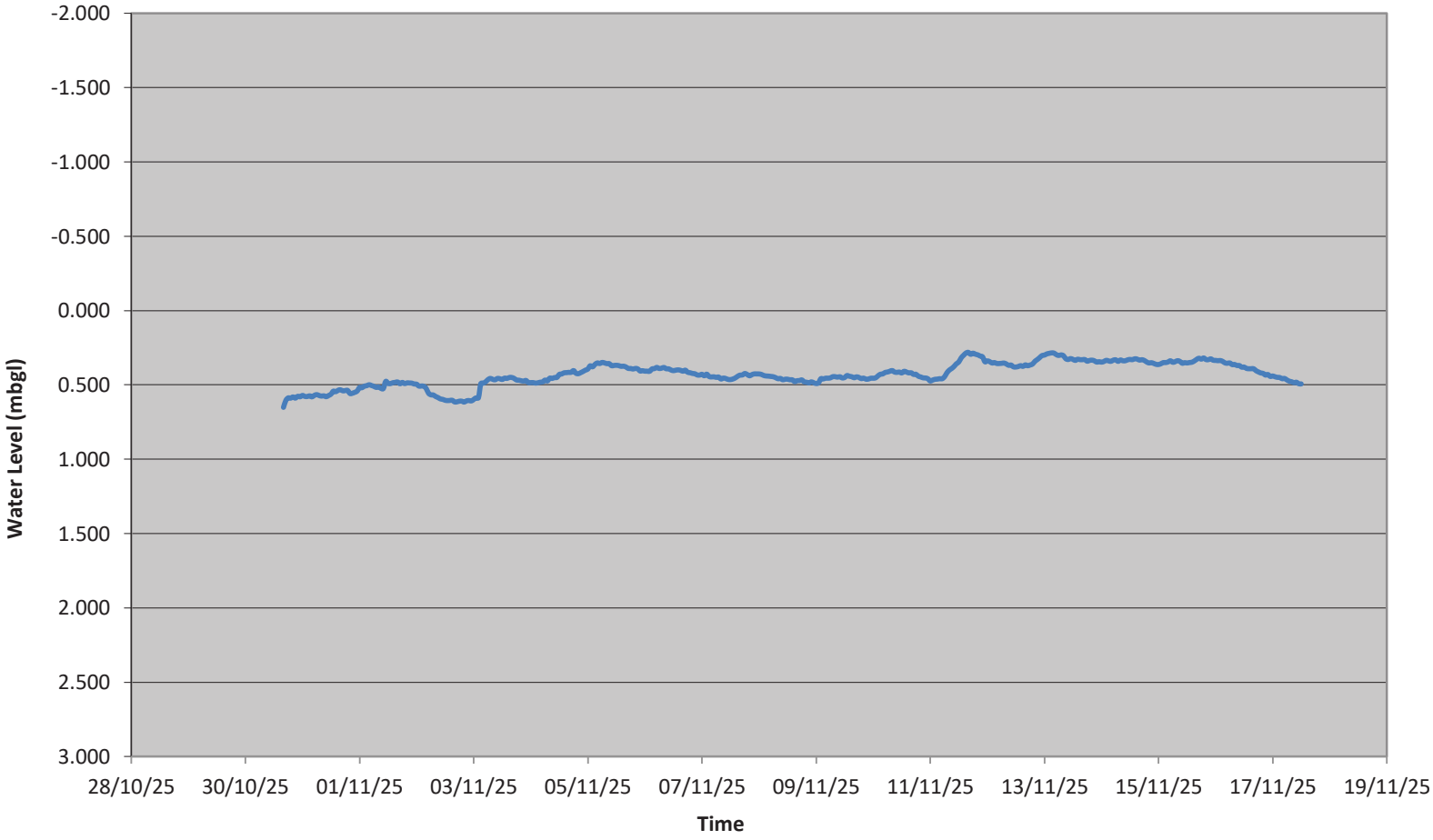
25882 - BH 40 Gas to Bord na Mona Edenderry



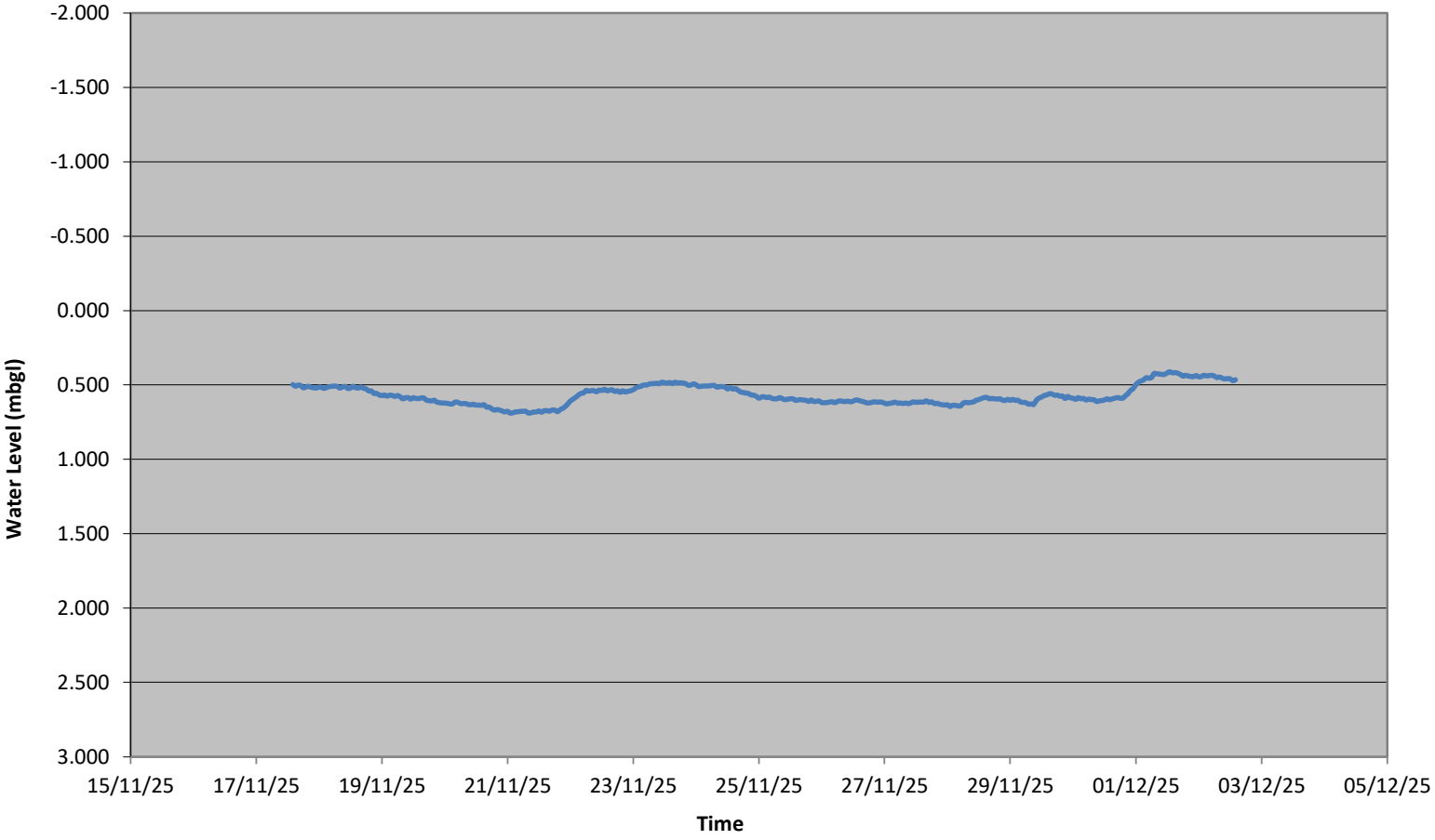
25882 - BH 43 Gas to Bord na Mona Edenderry



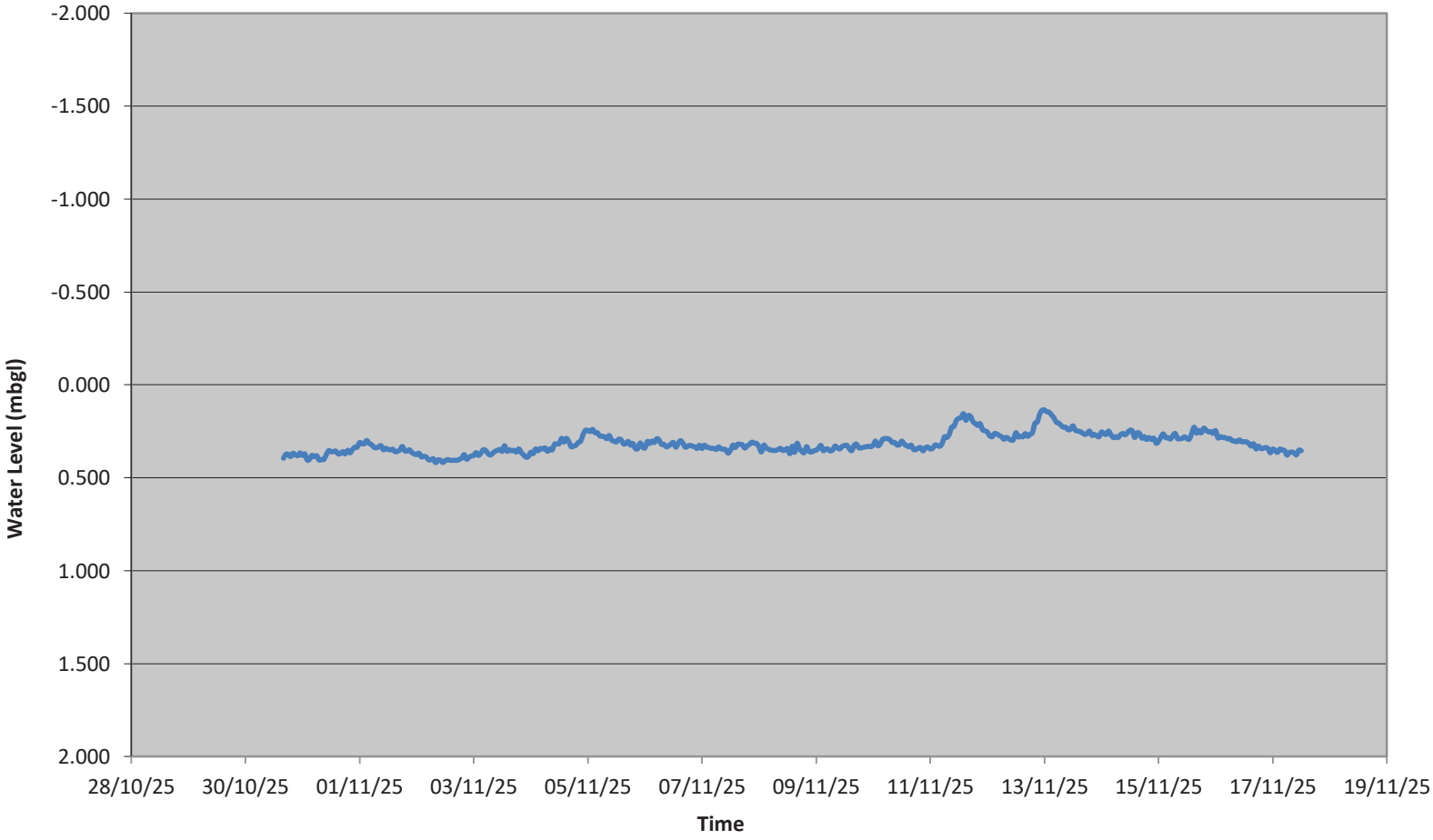
25882 - BH 44 Gas to Bord na Mona Edenderry



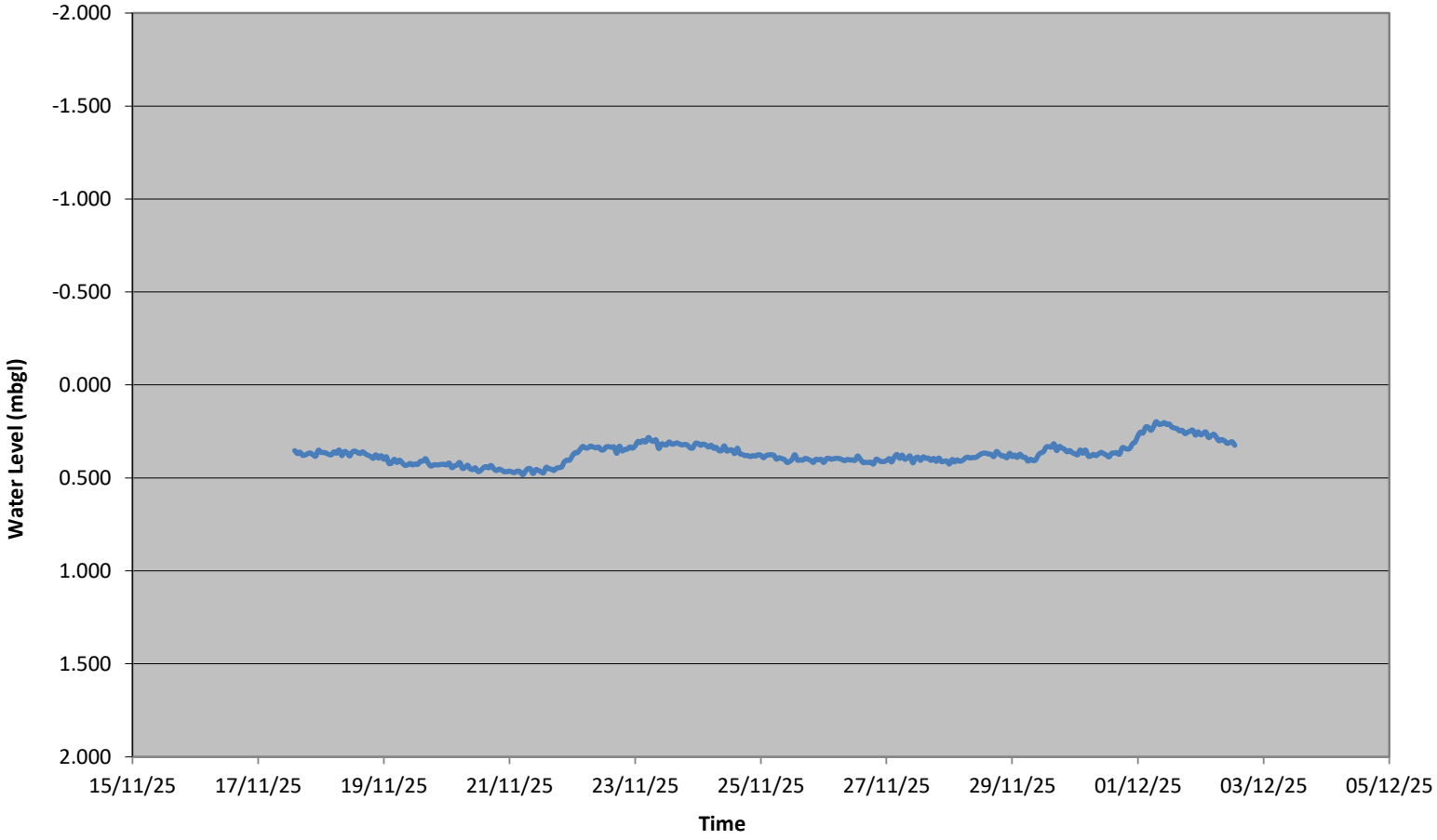
25882 - BH 44 Gas to Bord na Mona Edenderry



25882 - BH 45 Gas to Bord na Mona Edenderry



25882 - BH 45 Gas to Bord na Mona Edenderry



Appendix 8

Geotechnical Laboratory Results (Soil)

Schedules 1 - 7

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**

Report No. **R169109** Contract No. 25882 Contract Name: Gas to Edenderry GNI

Customer MIL

Samples Received: 01/05/25 Date Tested: 02/05/25

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH30A	AA212796	5.0	A25/1619	B	7.7	19	NP	NP	50	WS	4.4		Brown silty, very sandy, GRAVEL with some cobbles
BH32	AA212791	2.0	A25/1620	B	25	27	NP	NP	99	WS	4.4		Brown sandy gravelly SILT
BH35	0	2.0	A25/1623	U	24	32	17	15	100	WS	4.4	C L	Grey/brown sandy CLAY
BH36	0	4.0	A25/1626	U	21	31	15	16	99	WS	4.4	C L	Grey/brown sandy CLAY
BH37	AA245002	1.0	A25/1630	B	20	27	NP	NP	82	WS	4.4		Grey sandy gravelly SILT
BH37	0	4.0	A25/1631	U	22	26	NP	NP	99	WS	4.4		Grey/brown sandy SILT
BH37	AA345011	12.0	A25/1634	B	20	21	NP	NP	99	WS	4.4		Grey sandy SILT
BH37	AA345013	14.0	A25/1635	B	14	28	15	13	60	WS	4.4	C L	Grey slightly sandy, gravelly, CLAY
BH38	0	2.0	A25/1636	U	398	277	NP	NP	N/A	WS	4.4		Black/brown fibrous PEAT
BH38	AA245036	10.0	A25/1639	B	20	25	NP	NP	100	WS	4.4		Grey sandy SILT
BH38	AA245039	13.0	A25/1640	B	22	24	NP	NP	100	WS	4.4		Grey sandy SILT
BH39	AA245017	3.0	A25/1642	U	24	24	NP	NP	97	WS	4.4		Grey sandy SILT
BH39	AA245025	11.0	A25/1644	B	7.1	22	NP	NP	58	WS	4.4		Grey sandy gravelly SILT
BH58	AA212767	1.0	A25/1648	B	33	36	NP	NP	99	WS	4.4		Brown peaty SILT
BH58	AA212771	5.0	A25/1650	B	21	23	NP	NP	100	WS	4.4		Brown sandy SILT

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method
4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.
NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12.
Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.
This report shall not be reproduced except in fullwithout written approval from the Laboratory.

IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by: H Byrne

Date: 05/06/25

Page: 1 of 1

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**

Report No. **R169110** Contract No. 25882 Contract Name: Gas to Edenderry GNI

Customer MIL

Samples Received: 01/05/25 Date Tested: 02/05/25

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH58	AA212773	7.0	A25/1651	B	4.4	19	NP	NP	6	WS	4.4		Brown slightly silty, sandy, GRAVEL
BH59	0	3.0	A25/1652	U	21	30	NP	NP	99	WS	4.4		Grey/brown sandy gravelly SILT
TP1.1	AA245858	1.3	A25/1655	B	19	31	NP	NP	100	WS	4.4		Grey sandy SILT
TP1.1	AA245860	3.2	A25/1656	B	11	24	13	11	64	WS	4.4	C L	Grey slightly sandy, gravelly, CLAY
TP1.2	AA245862	1.0	A25/1657	B	23	27	NP	NP	99	WS	4.4		Brown sandy SILT
TP1.2	AA245864	3.0	A25/1658	B	10	26	14	12	63	WS	4.4	C L	Grey slightly sandy, gravelly, CLAY
TP2.1	AA235890	2.0	A25/1659	B	20	30	NP	NP	99	WS	4.4		Grey sandy SILT
TP2.1	AA235885	3.2	A25/1660	B	22	28	NP	NP	99	WS	4.4		Grey sandy SILT
TP2.2	AA235893	2.0	A25/1661	B	32	30	NP	NP	98	WS	4.4		Grey sandy SILT
TP3.1	AA245853	2.0	A25/1663	B	11	21	NP	NP	59	WS	4.4		Grey sandy gravelly SILT
TP3.2	AA235897	2.0	A25/1664	B	11	23	13	10	70	WS	4.4	C L	Brown slightly sandy, slightly gravelly, CLAY
TP3.3	AA235899	1.0	A25/1665	B	10	24	12	12	67	WS	4.4	C L	Brown sandy gravelly CLAY
TP3.3	AA245855	3.6	A25/1666	B	12	22	NP	NP	55	WS	4.4		Brown sandy gravelly SILT
TP3.4	AA245867	2.2	A25/1667	B	10	25	12	13	63	WS	4.4	C L	Brown slightly sandy, gravelly, CLAY
TP3.5	AA245870	1.2	A25/1668	B	12	25	NP	NP	67	WS	4.4		Grey/brown sandy gravelly SILT

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method
4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.
NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12.
Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.
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IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by | Date: 05/06/25 | Page: 1 of 1

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

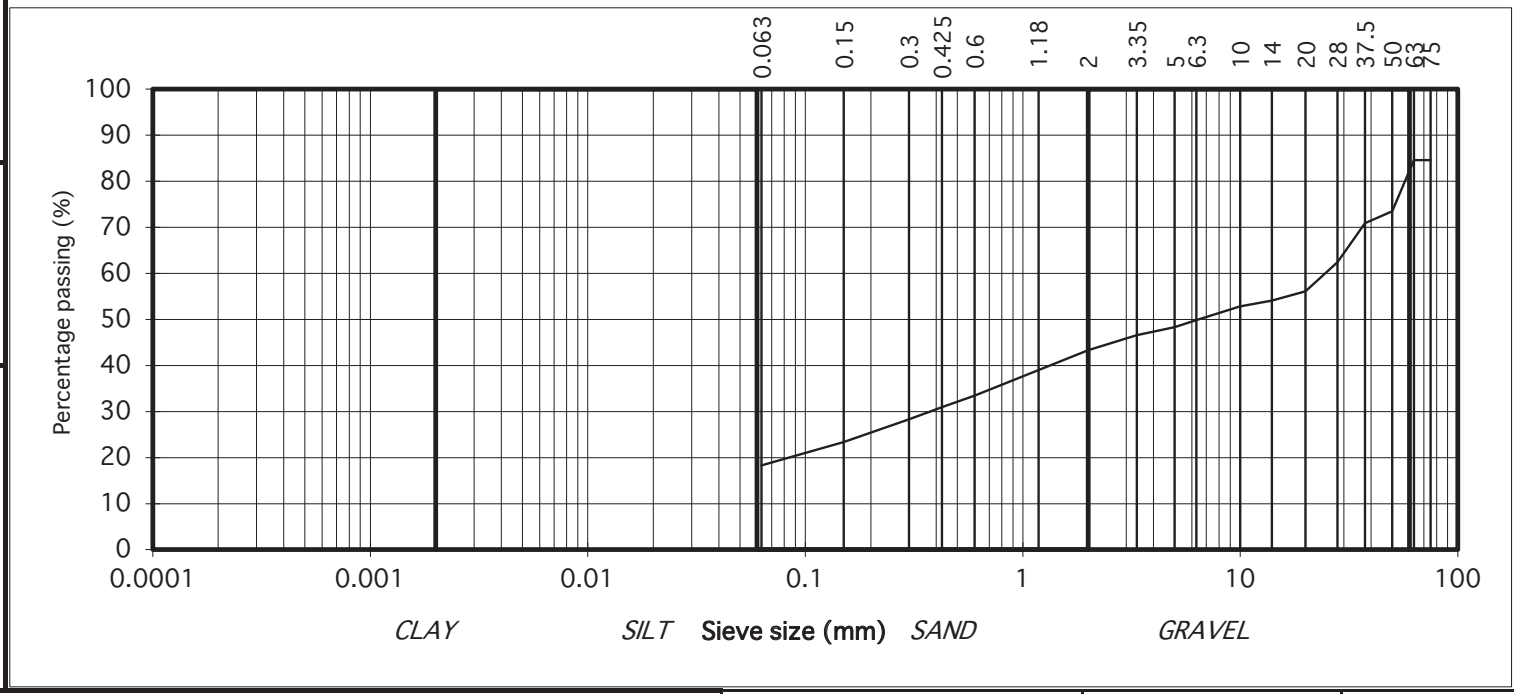
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	85	COBBLES
63	85	
50	74	GRAVEL
37.5	71	
28	62	
20	56	
14	54	
10	53	
6.3	50	
5	48	
3.35	47	
2	43	
1.18	39	SAND
0.6	33	
0.425	31	
0.3	28	
0.15	23	
0.063	18	SILT/CLAY

Contract No. 25882 Report No. R169081
Contract Name : Gas to Edenderry
BH/TP No. BH30A
Sample No.* AA212796 Lab. Sample No. A25/1619
Sample Type: B
Depth* (m) 5.00 Customer: MIL
Date Received 01/05/2025 Date Testing started 10/05/2025
Description: Brown silty, very sandy, GRAVEL with some cobbles

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requiremenst of BS1377

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

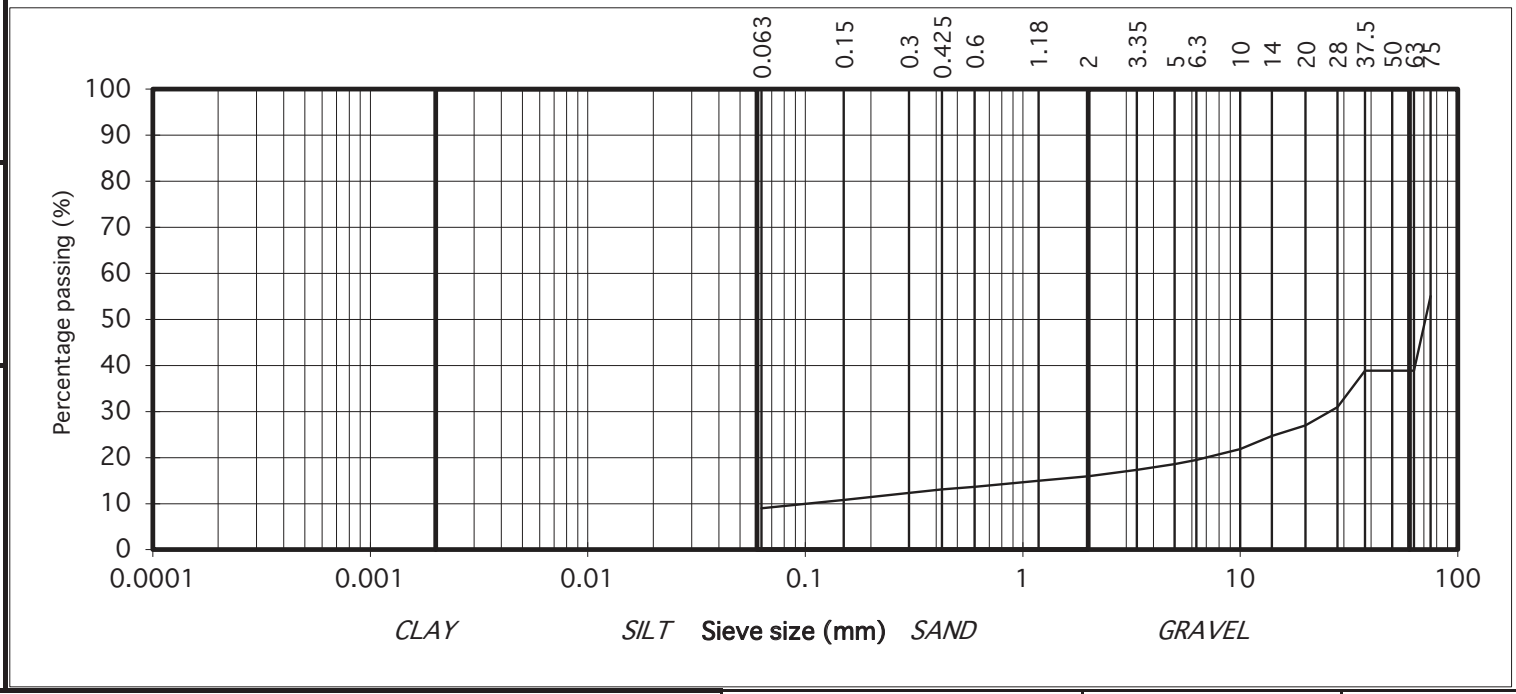
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	55	COBBLES
63	39	
50	39	GRAVEL
37.5	39	
28	31	
20	27	
14	25	
10	22	
6.3	20	
5	19	
3.35	17	
2	16	
1.18	15	SAND
0.6	14	
0.425	13	
0.3	12	
0.15	11	
0.063	9	SILT/CLAY

Contract No.	25882	Report No.	R169082	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH32A			
Sample No.*	AA212792	Lab. Sample No.		A25/1621
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		10/05/2025
Description:	COBBLES with brown clayey/silty, sandy, gravel			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requiremenst of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

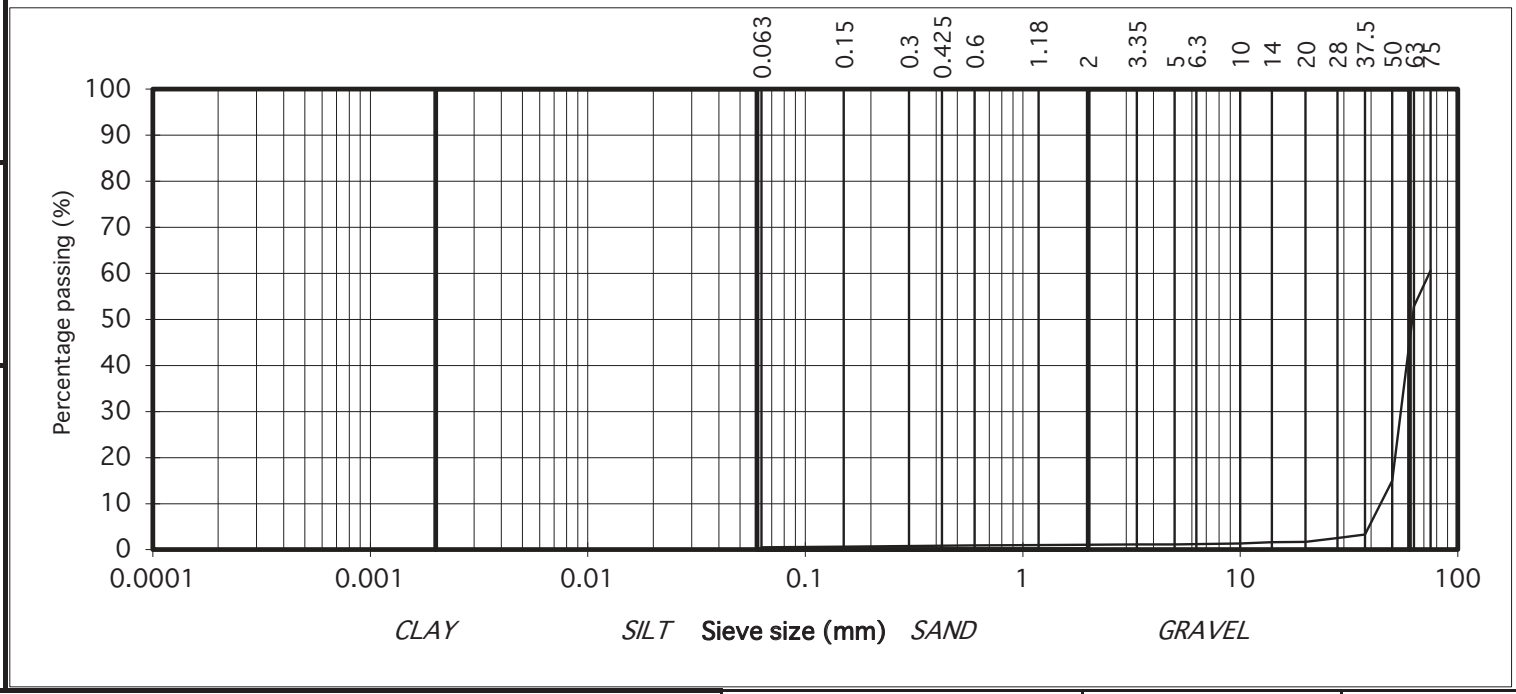
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	61	COBBLES
63	53	
50	15	GRAVEL
37.5	3	
28	3	
20	2	
14	2	
10	1	
6.3	1	
5	1	
3.35	1	
2	1	
1.18	1	SAND
0.6	1	
0.425	1	
0.3	1	
0.15	1	
0.063	1	SILT/CLAY

Contract No.	25882	Report No.	R169083	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH32A			
Sample No.*	AA212794	Lab. Sample No.		A25/1622
Sample Type:	B			
Depth* (m)	5.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		10/05/2025
Description:	Brown slightly clayey/silty, slightly sandy, GRAVEL with many cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requiremenst of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

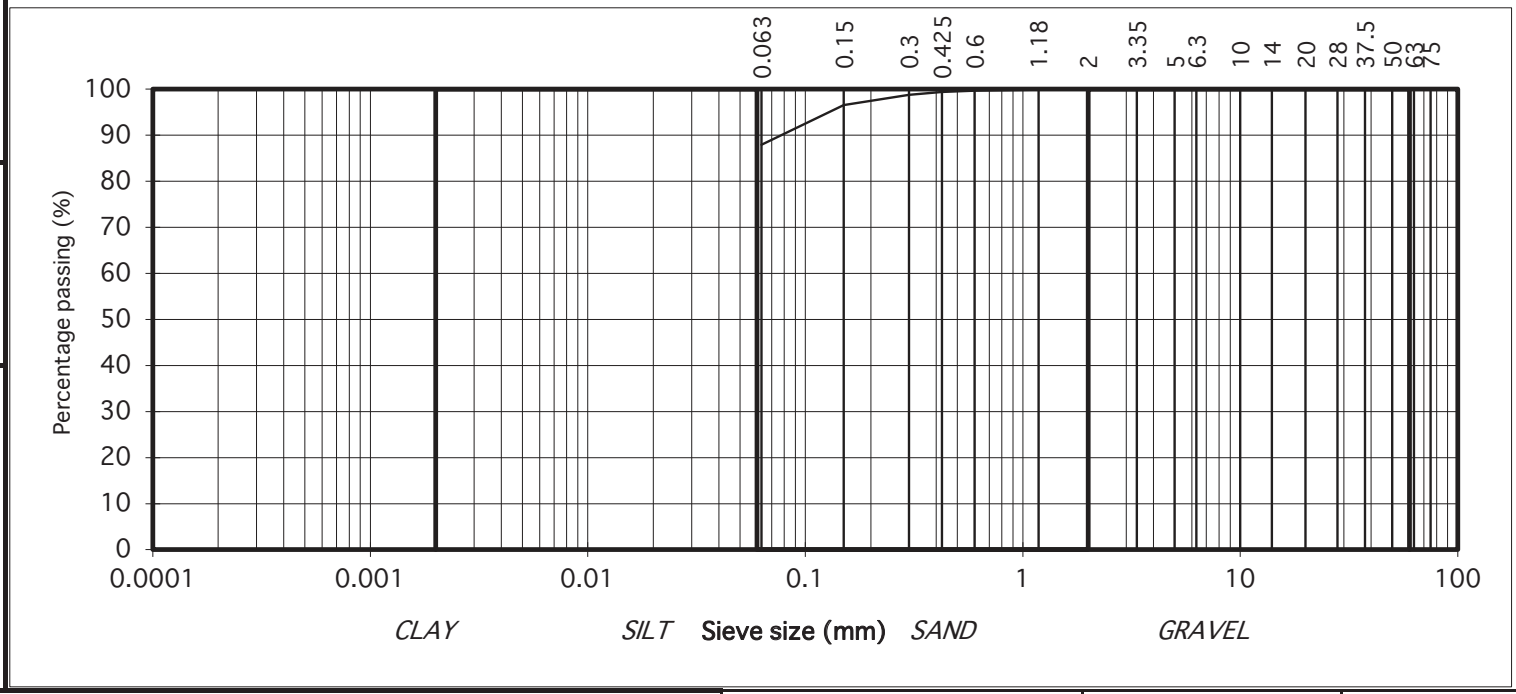
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	100	
0.425	99	
0.3	99	
0.15	97	
0.063	88	SILT/CLAY

Contract No.	25882	Report No.	R169084	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH35			
Sample No.*	AA212777	Lab. Sample No.		A25/1624
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		10/05/2025
Description:	Brown slightly sandy, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

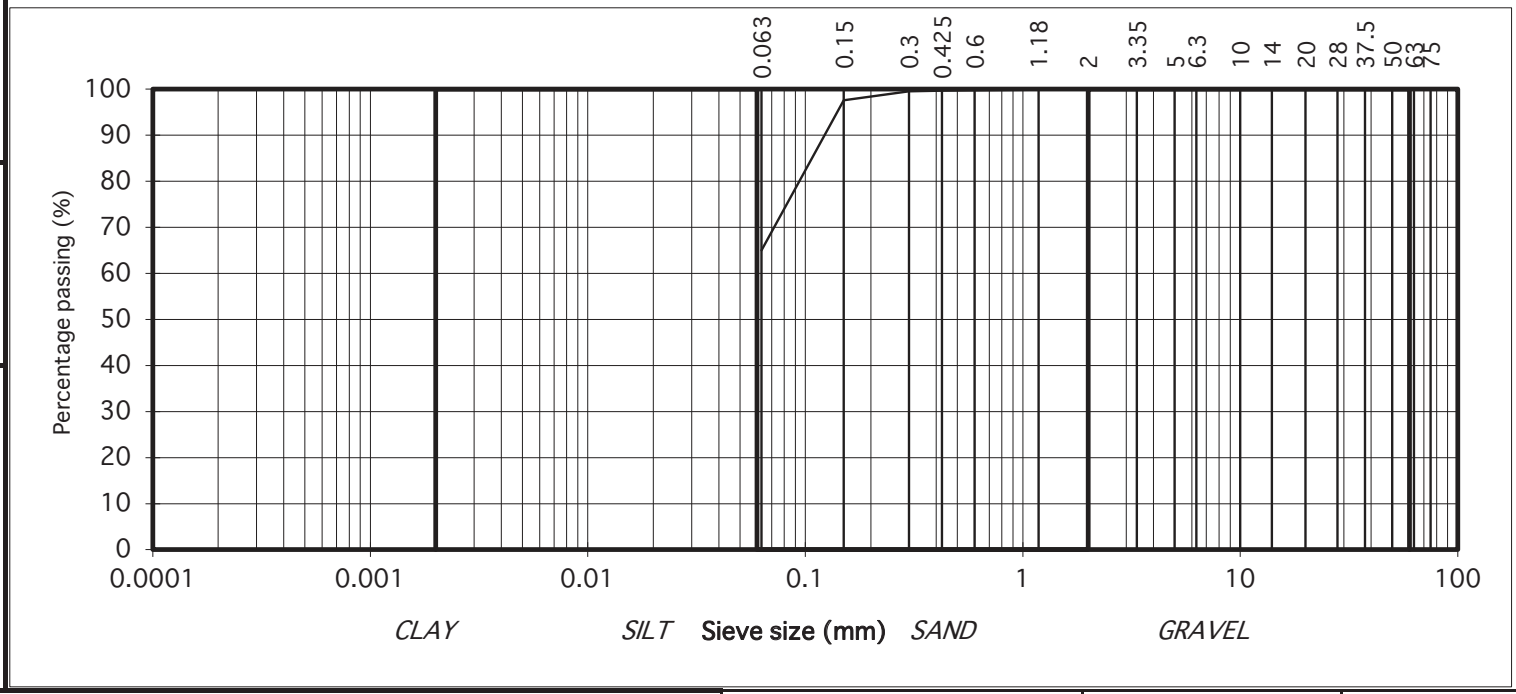
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	100	
0.425	100	
0.3	100	
0.15	98	
0.063	65	SILT/CLAY

Contract No.	25882	Report No.	R169085	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH35			
Sample No.*	AA212780	Lab. Sample No.		A25/1625
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		10/05/2025
Description:	Brown sandy, SILT/CLAY			

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

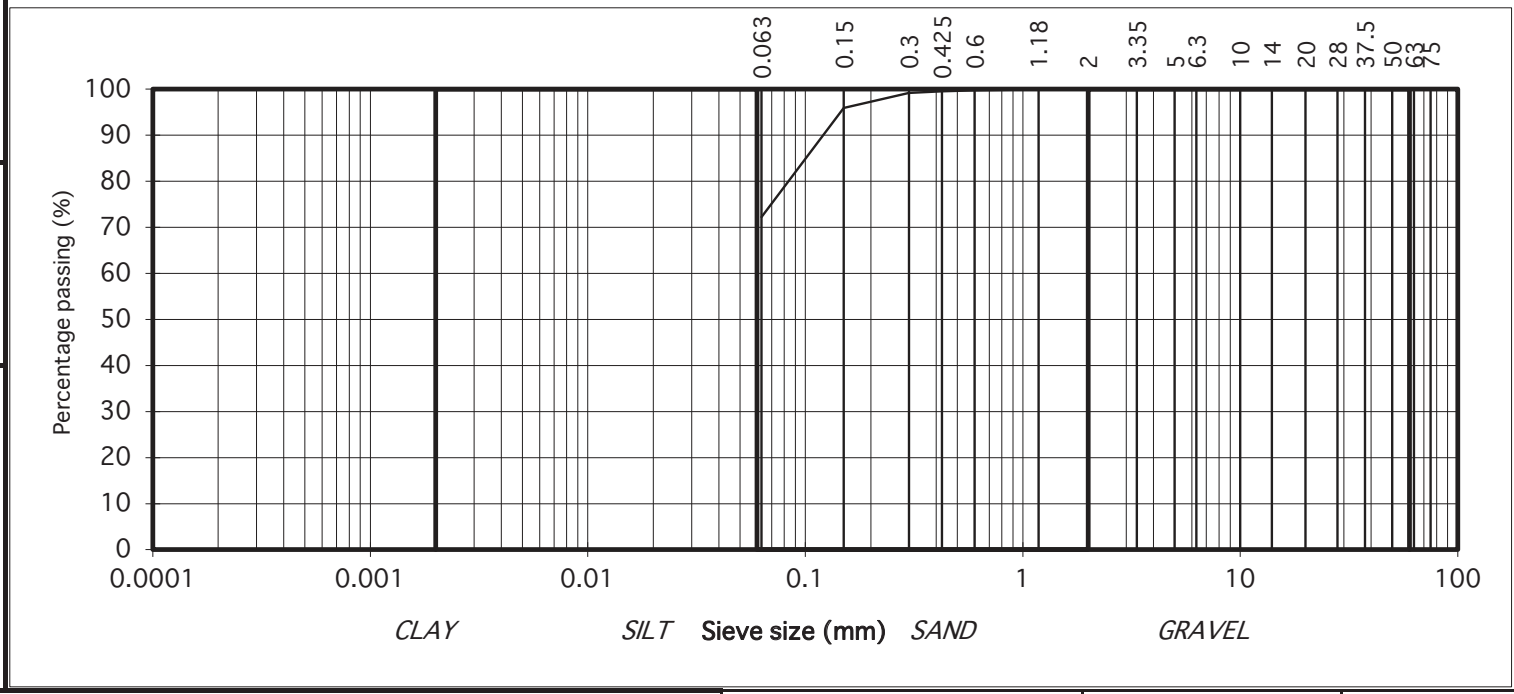
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	100	
0.425	100	
0.3	99	
0.15	96	
0.063	72	SILT/CLAY

Contract No.	25882	Report No.	R169086	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH36			
Sample No.*	AA235040	Lab. Sample No.		A25/1627
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		01/05/2025
Description:	Grey slightly sandy, SILT/CLAY			

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

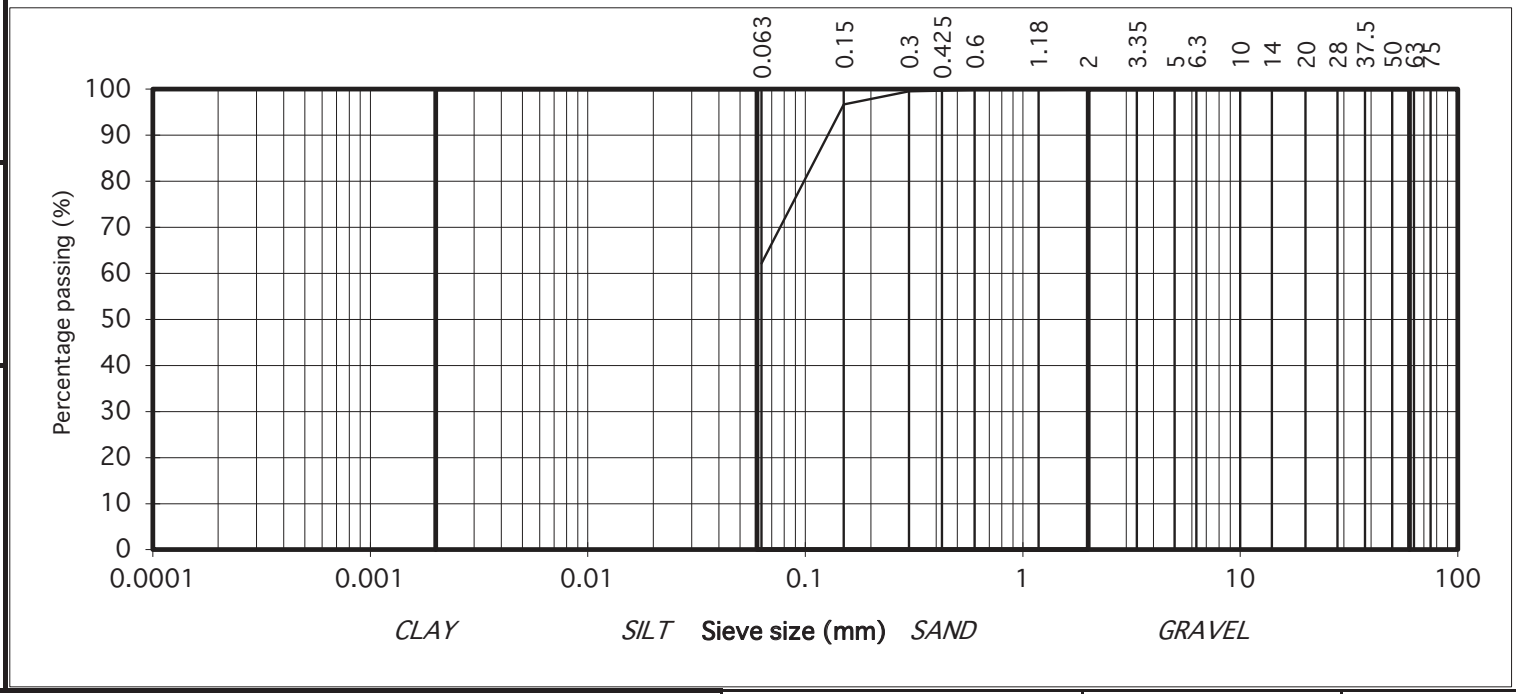
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	100	
0.425	100	
0.3	100	
0.15	97	
0.063	62	SILT/CLAY

Contract No.	25882	Report No.	R169087	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH36			
Sample No.*	AA235043	Lab. Sample No.		A25/1628
Sample Type:	B			
Depth* (m)	9.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		02/05/2025
Description:	Grey sandy, SILT/CLAY			

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

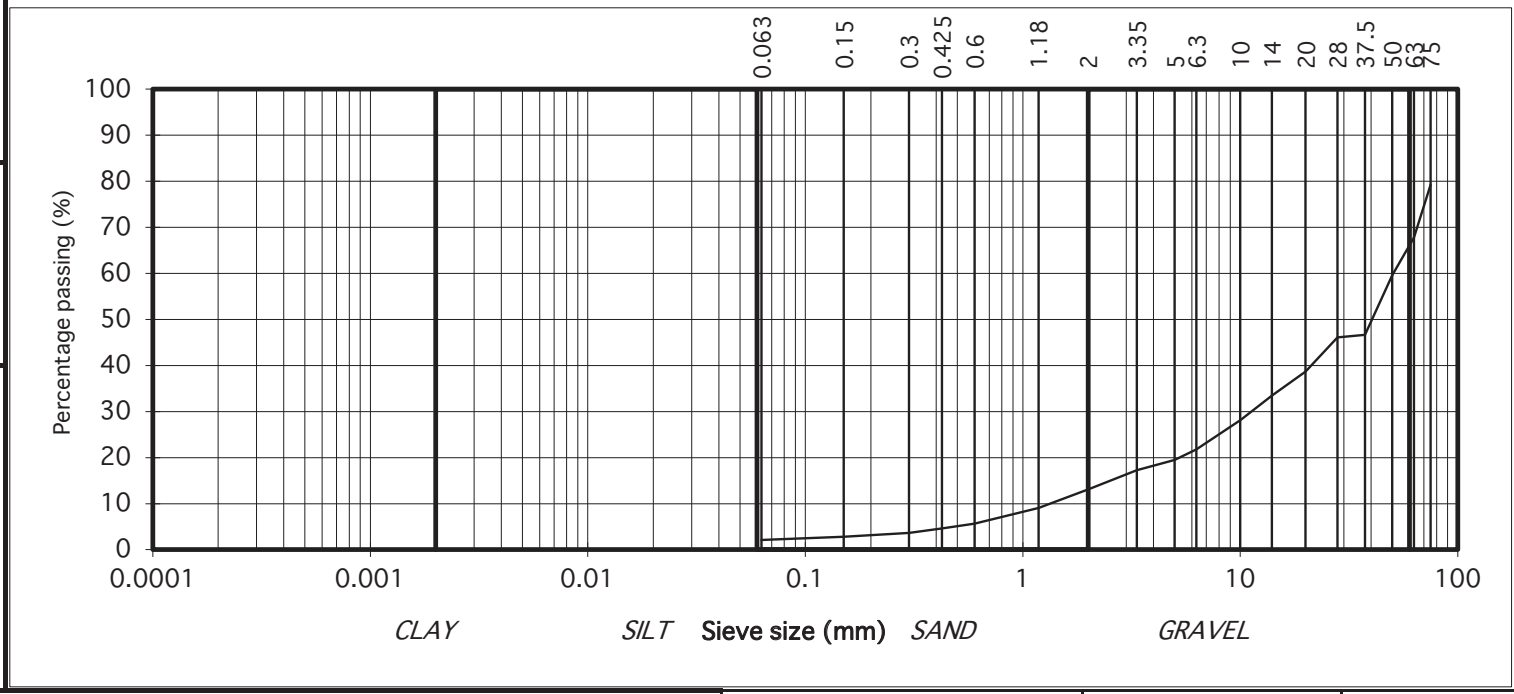
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	79	COBBLES
63	68	
50	60	GRAVEL
37.5	47	
28	46	
20	39	
14	33	
10	28	
6.3	22	
5	19	
3.35	17	
2	13	
1.18	9	SAND
0.6	6	
0.425	5	
0.3	4	
0.15	3	
0.063	2	SILT/CLAY

Contract No.	25882	Report No.	R169088
Contract Name :	Gas to Edenderry		
BH/TP No.	BH36		
Sample No.*	AA235048	Lab. Sample No.	A25/1629
Sample Type:	B		
Depth* (m)	14.00	Customer:	MIL
Date Received	01/05/2025	Date Testing started	01/05/2025
Description:	Grey slightly silty, sandy, GRAVEL with many cobbles		

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requiremenst of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

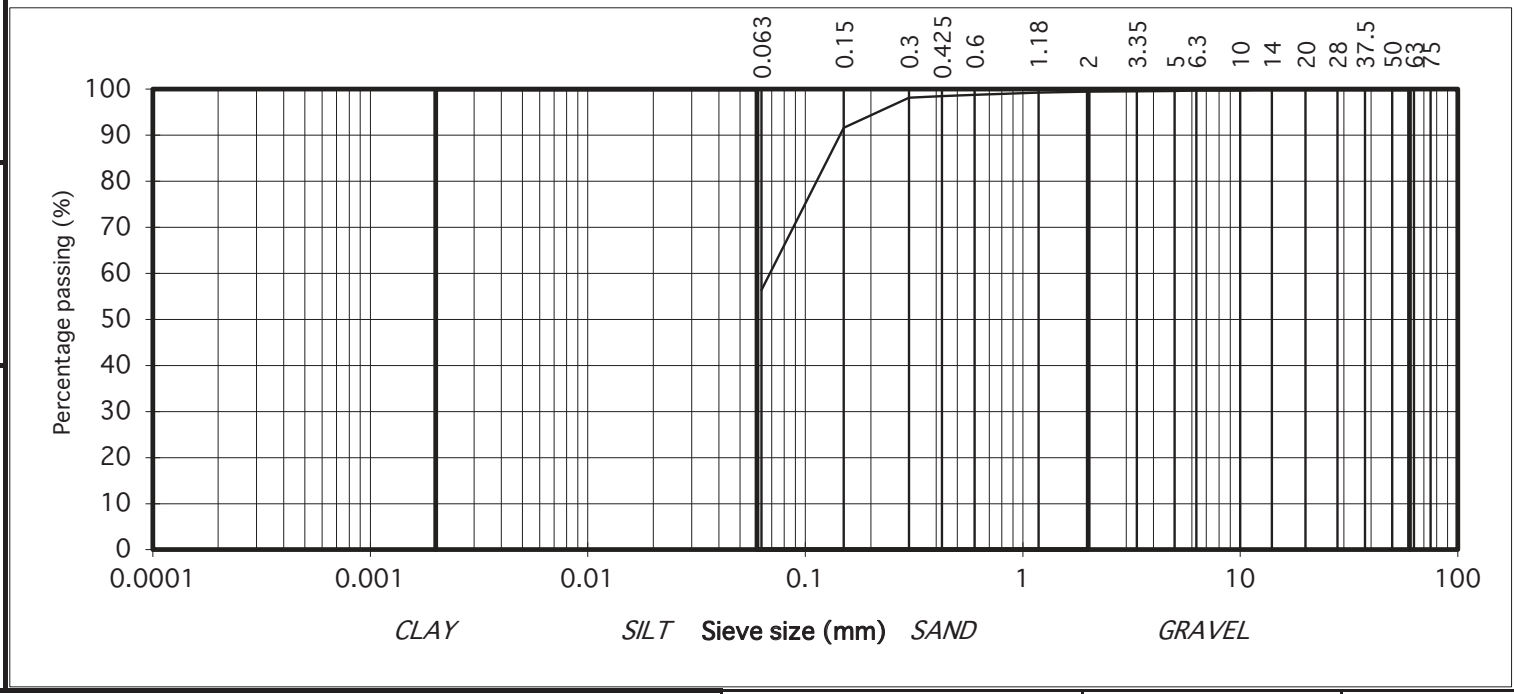
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	99	
1.18	99	SAND
0.6	99	
0.425	99	
0.3	98	
0.15	92	
0.063	56	SILT/CLAY

Contract No.	25882	Report No.	R169089	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH37			
Sample No.*	AA245005	Lab. Sample No.		A25/1632
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		02/05/2025
Description:	Grey sandy, slightly gravelly, SILT/CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

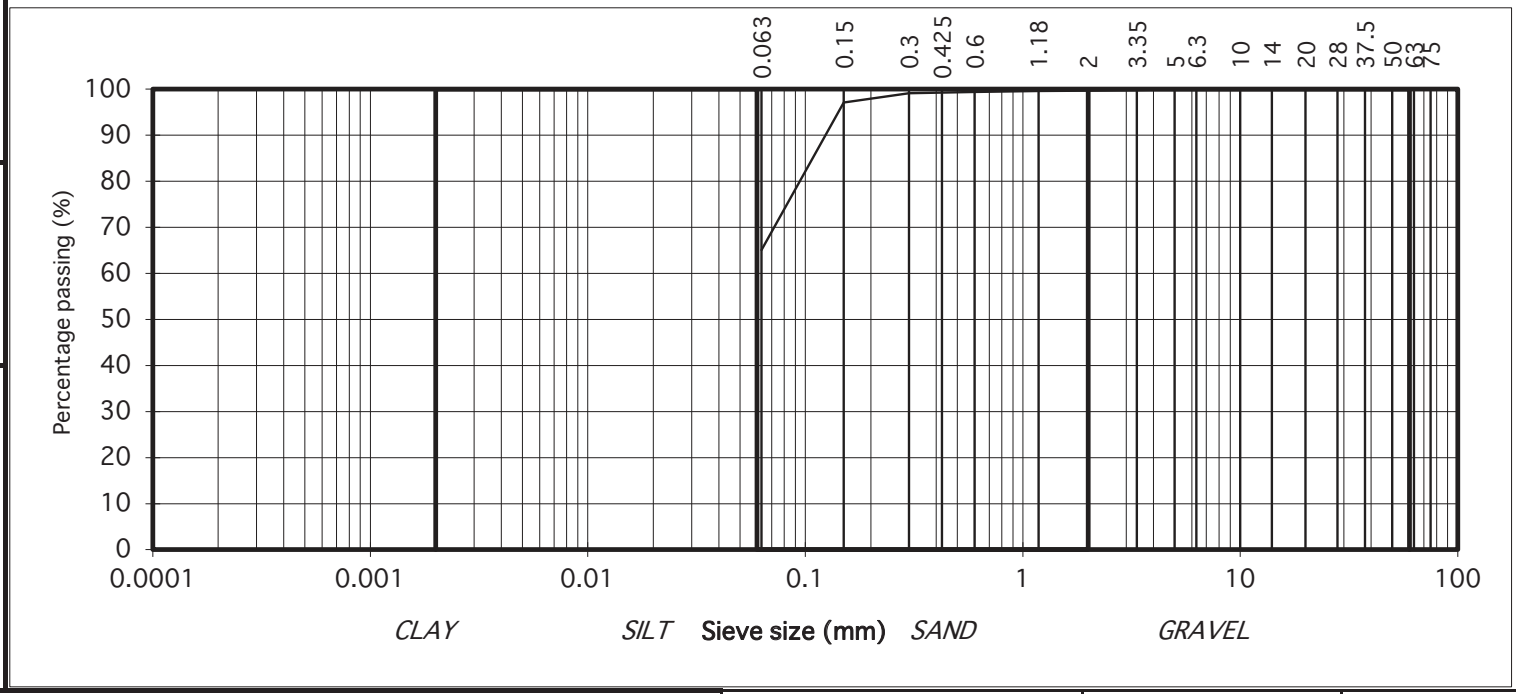
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	99	
0.425	99	
0.3	99	
0.15	97	
0.063	65	SILT/CLAY

Contract No.	25882	Report No.	R169090	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH37			
Sample No.*	AA245008	Lab. Sample No.		A25/1633
Sample Type:	B			
Depth* (m)	9.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		01/05/2025
Description:	Grey slightly sandy, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

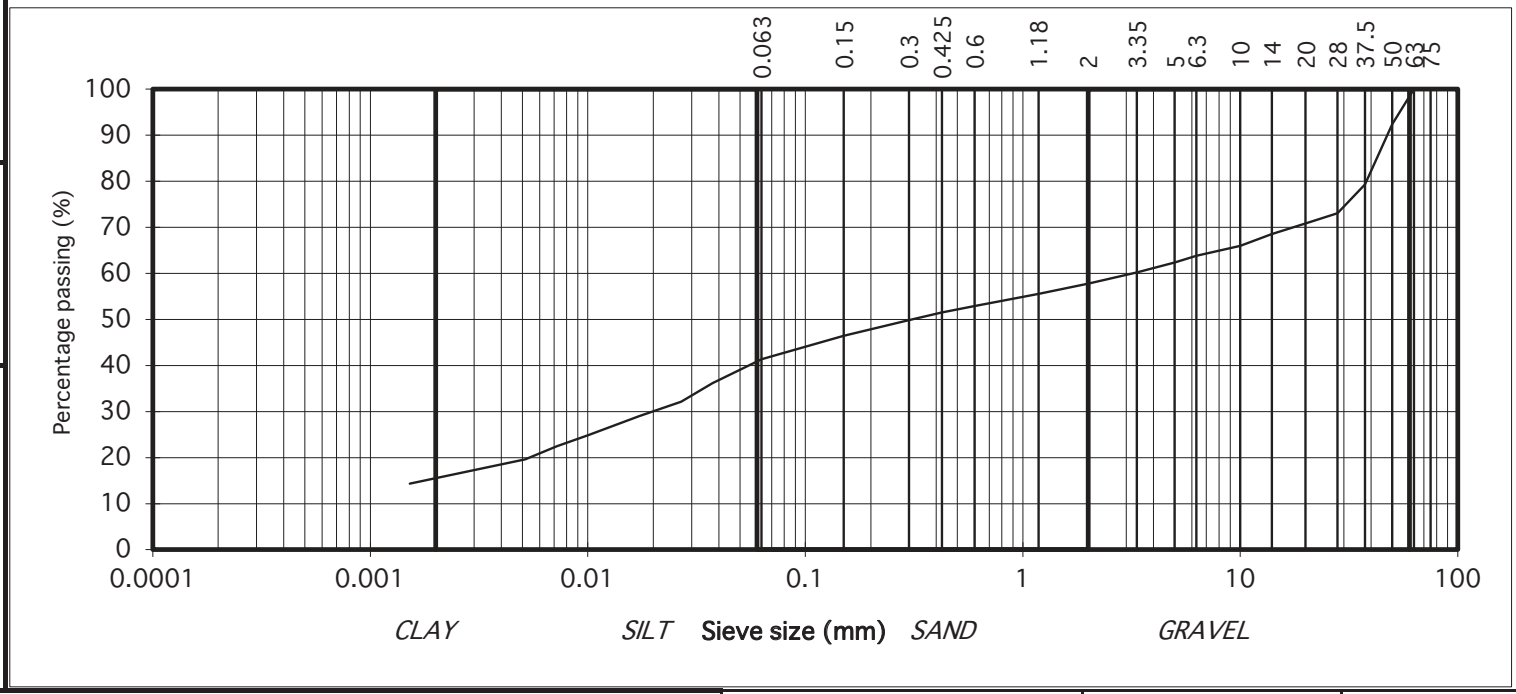
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	92	GRAVEL
37.5	79	
28	73	
20	71	
14	69	
10	66	
6.3	64	
5	62	
3.35	60	
2	58	
1.18	56	SAND
0.6	53	
0.425	51	
0.3	50	
0.15	46	
0.063	41	SILT/CLAY
0.037	36	
0.027	32	
0.017	29	
0.010	25	
0.007	22	
0.005	20	
0.002	14	

Contract No.	25882	Report No.	R169091	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH37			
Sample No.*	AA245013	Lab. Sample No.		A25/1635
Sample Type:	B			
Depth* (m)	14.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		01/05/2025
Description:	Grey slightly sandy, gravelly, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

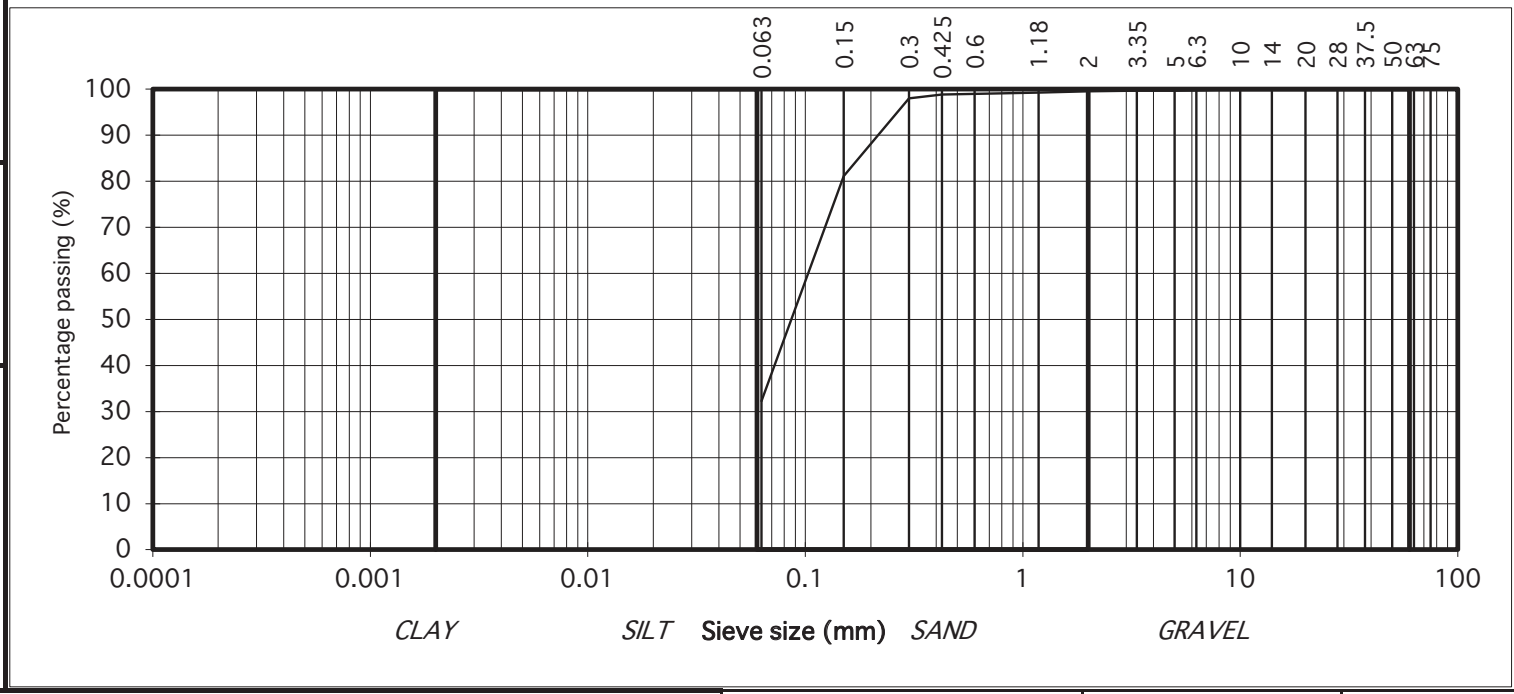
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	99	SAND
0.6	99	
0.425	99	
0.3	98	
0.15	81	
0.063	32	SILT/CLAY

Contract No.	25882	Report No.	R169092	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH38			
Sample No.*	AA245031	Lab. Sample No.		A25/1637
Sample Type:	B			
Depth* (m)	5.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		01/05/2025
Description:	Grey very sandy, SILT/CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

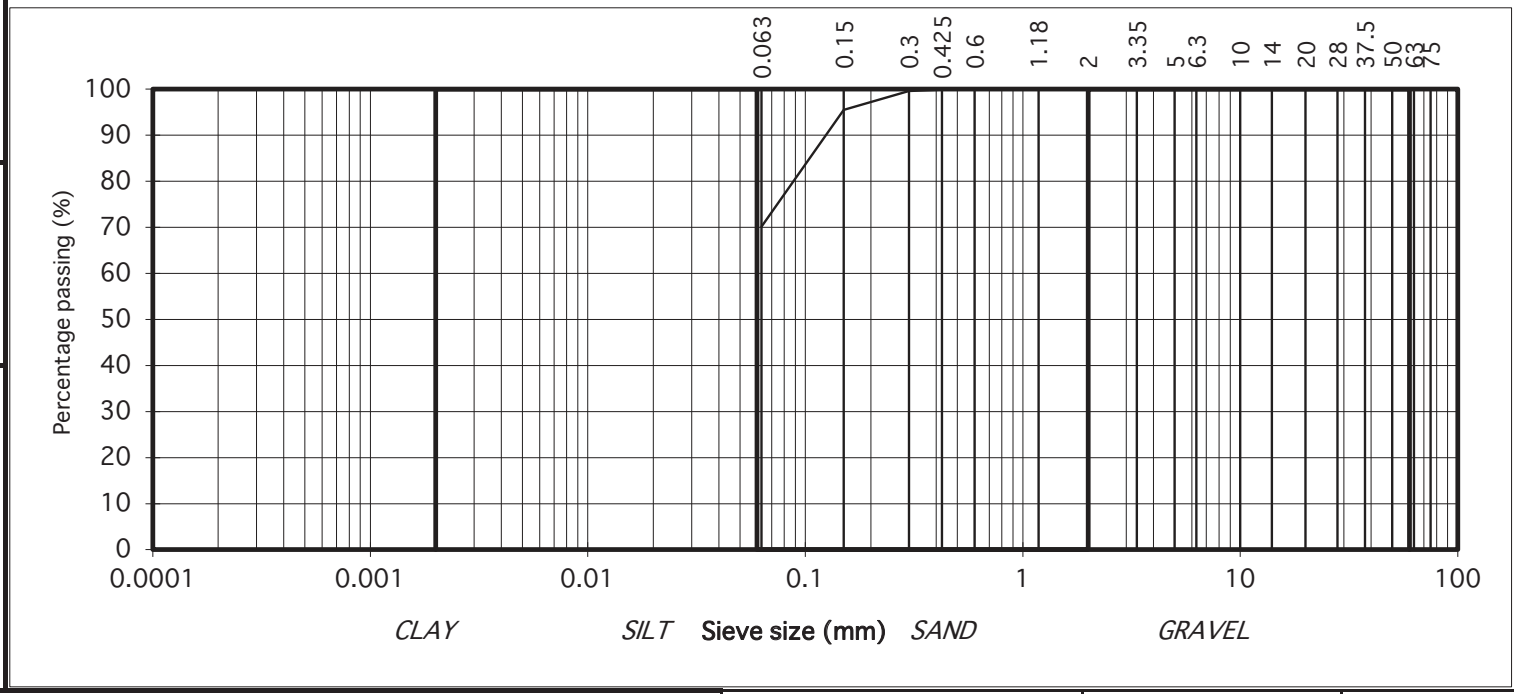
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	100	
0.425	100	
0.3	100	
0.15	96	
0.063	70	SILT/CLAY

Contract No.	25882	Report No.	R169093	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH38			
Sample No.*	AA245034	Lab. Sample No.		A25/1638
Sample Type:	B			
Depth* (m)	8.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		01/05/2025
Description:	Grey slightly sandy, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

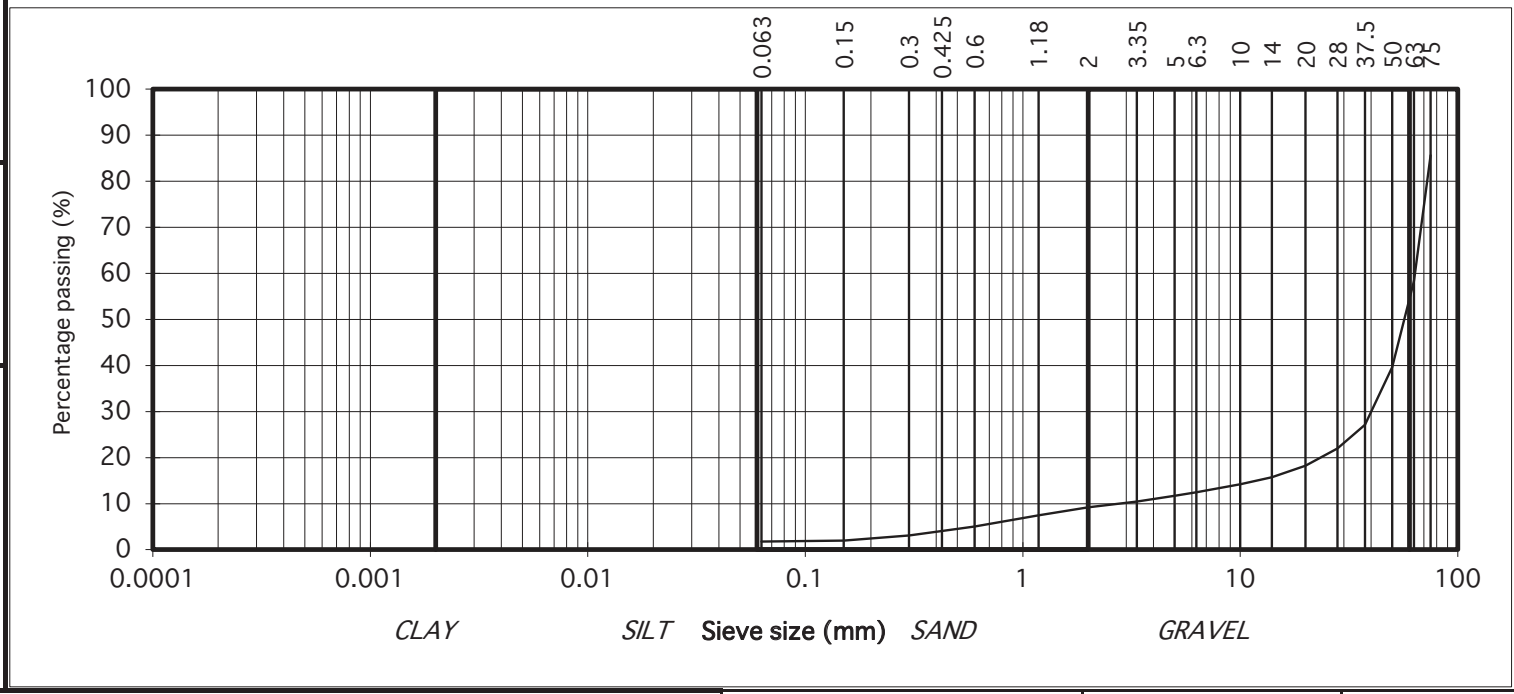
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	86	COBBLES
63	58	
50	40	GRAVEL
37.5	27	
28	22	
20	18	
14	16	
10	14	
6.3	12	
5	12	
3.35	10	
2	9	
1.18	7	SAND
0.6	5	
0.425	4	
0.3	3	
0.15	2	
0.063	2	SILT/CLAY

Contract No. 25882 Report No. R171143
Contract Name : Gas to Edenderry
BH/TP No. BH38
Sample No.* AA245041 Lab. Sample No. A25/1641
Sample Type: B
Depth* (m) 15.00 Customer: MIL
Date Received 25/06/2025 Date Testing started 25/06/2025
Description: Grey slightly clayey/silty, sandy, GRAVEL with many cobbles

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

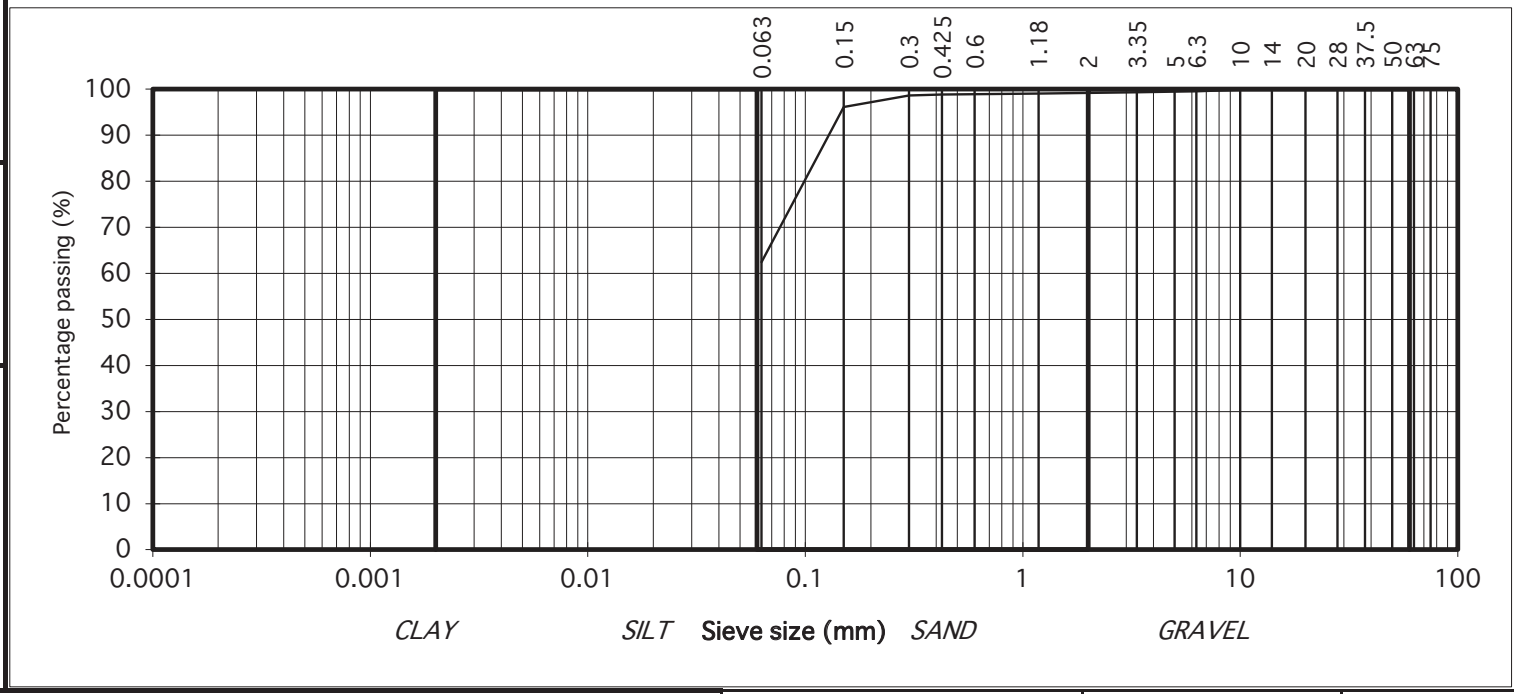
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	99	
3.35	99	
2	99	
1.18	99	SAND
0.6	99	
0.425	99	
0.3	99	
0.15	96	
0.063	62	SILT/CLAY

Contract No.	25882	Report No.	R169096	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH39			
Sample No.*	AA245021	Lab. Sample No.		A25/1643
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		01/05/2025
Description:	Grey sandy, slightly gravelly, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

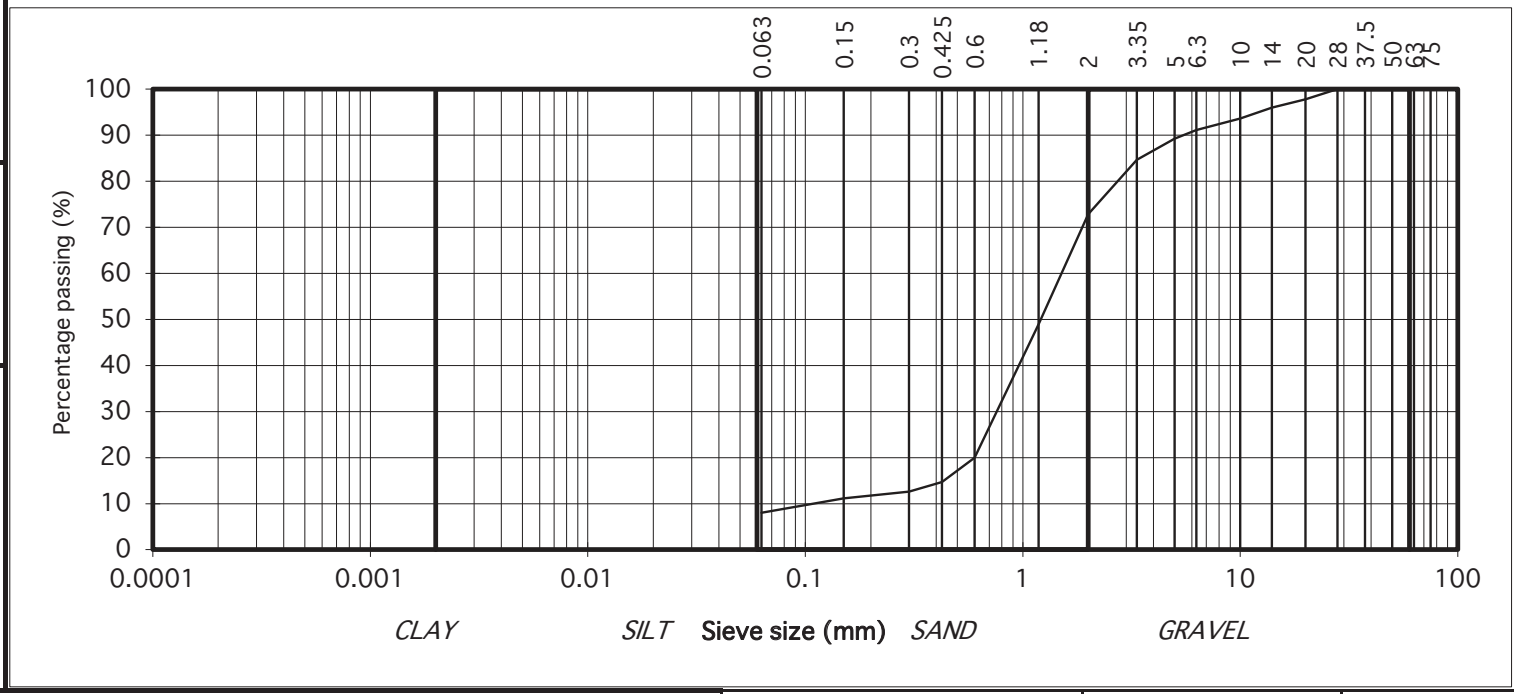
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	98	
14	96	
10	94	
6.3	91	
5	89	
3.35	85	
2	73	
1.18	49	SAND
0.6	20	
0.425	15	
0.3	13	
0.15	11	
0.063	8	SILT/CLAY

Contract No.	25882	Report No.	R169094	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH39			
Sample No.*	AA245027	Lab. Sample No.		A25/1645
Sample Type:	B			
Depth* (m)	13.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		10/05/2025
Description:	Brown clayey/silty, very gravelly, SAND			

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

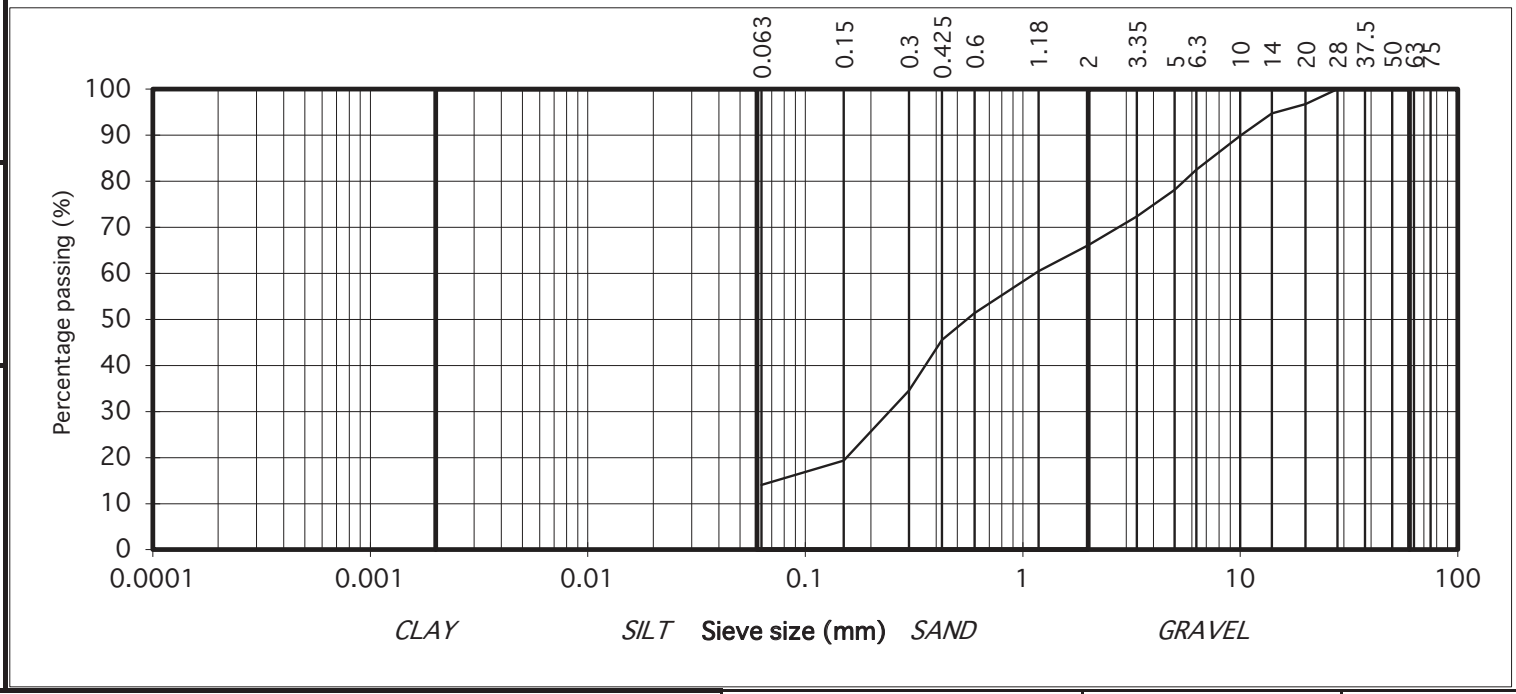
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	97	
14	95	
10	90	
6.3	82	
5	78	
3.35	72	
2	66	
1.18	60	SAND
0.6	51	
0.425	46	
0.3	35	
0.15	19	
0.063	14	SILT/CLAY

Contract No.	25882	Report No.	R171144	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH52			
Sample No.*	AA212783	Lab. Sample No.		A25/1646
Sample Type:	B			
Depth* (m)	2.00	Customer:	MIL	
Date Received	25/06/2025	Date Testing started		25/06/2025
Description:	Grey clayey/silty, very gravelly, SAND			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Approved by:	Date:	Page no:
H Byrne	29/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

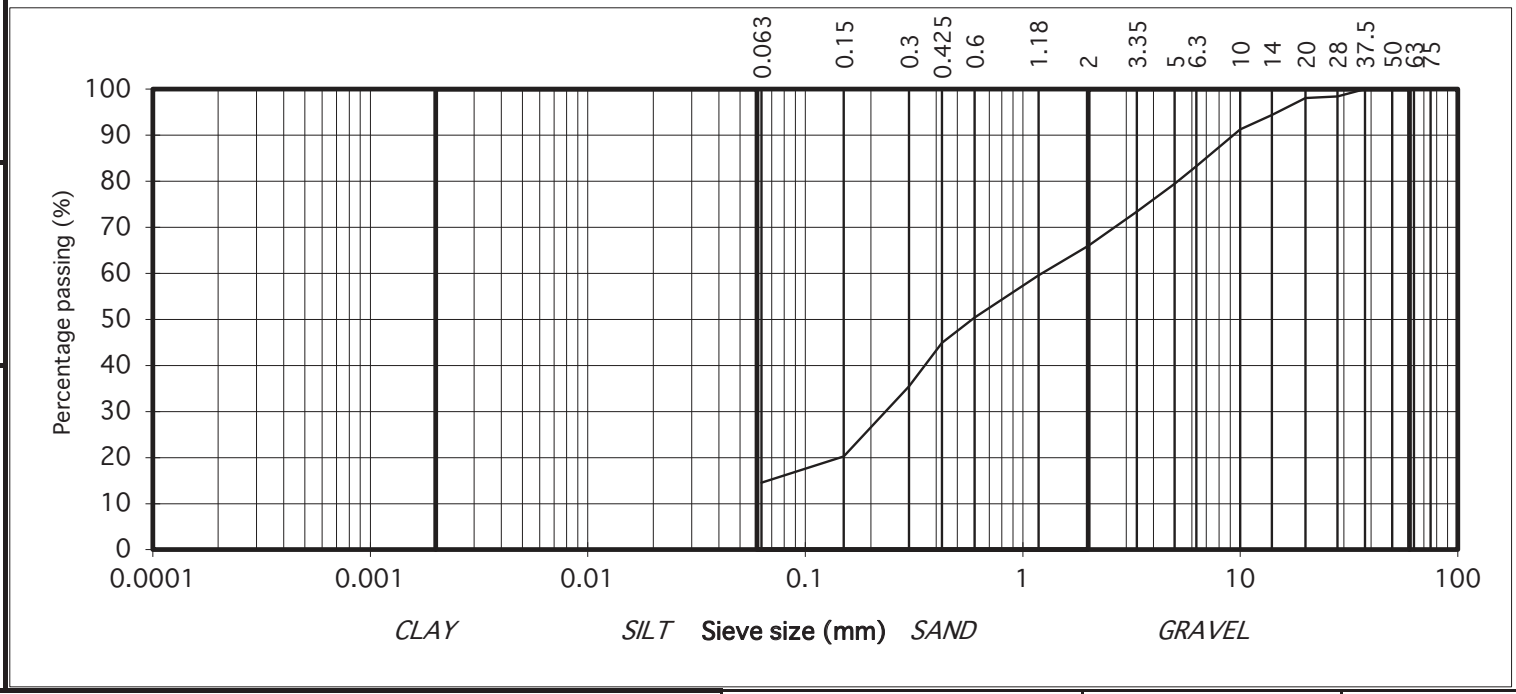
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	98	
20	98	
14	94	
10	91	
6.3	83	
5	79	
3.35	73	
2	66	
1.18	60	SAND
0.6	50	
0.425	45	
0.3	36	
0.15	20	
0.063	15	SILT/CLAY

Contract No. 25882 Report No. R171145
Contract Name : Gas to Edenderry
BH/TP No. BH52
Sample No.* AA212786 Lab. Sample No. A25/1647
Sample Type: B
Depth* (m) 5.00 Customer: MIL
Date Received 25/06/2025 Date Testing started 25/06/2025
Description: Grey clayey/silty, very gravelly, SAND

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Approved by:	Date:	Page no:
H Byrne	29/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

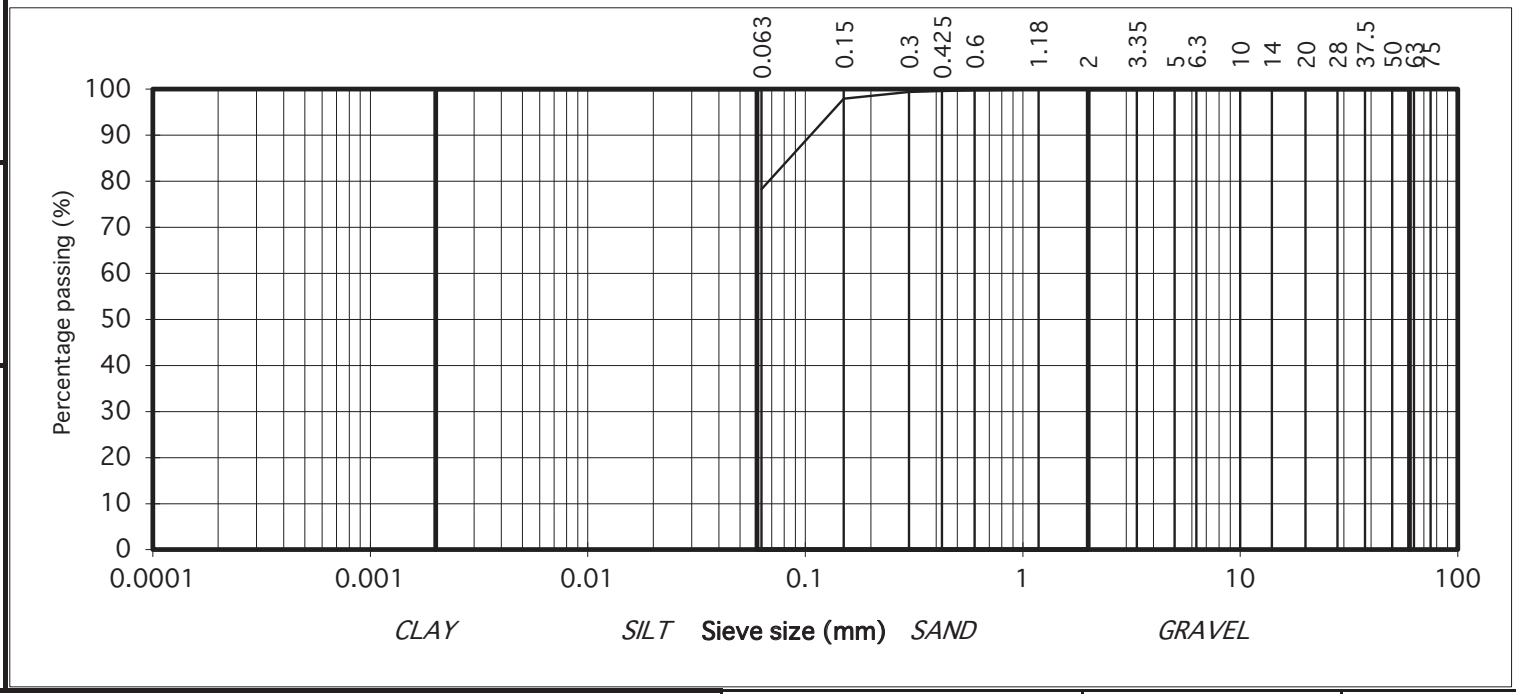
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	100	
0.425	100	
0.3	99	
0.15	98	
0.063	78	SILT/CLAY

Contract No.	25882	Report No.	R169099	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH58			
Sample No.*	AA212769	Lab. Sample No.		A25/1649
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		10/05/2025
Description:	Brown slightly sandy, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

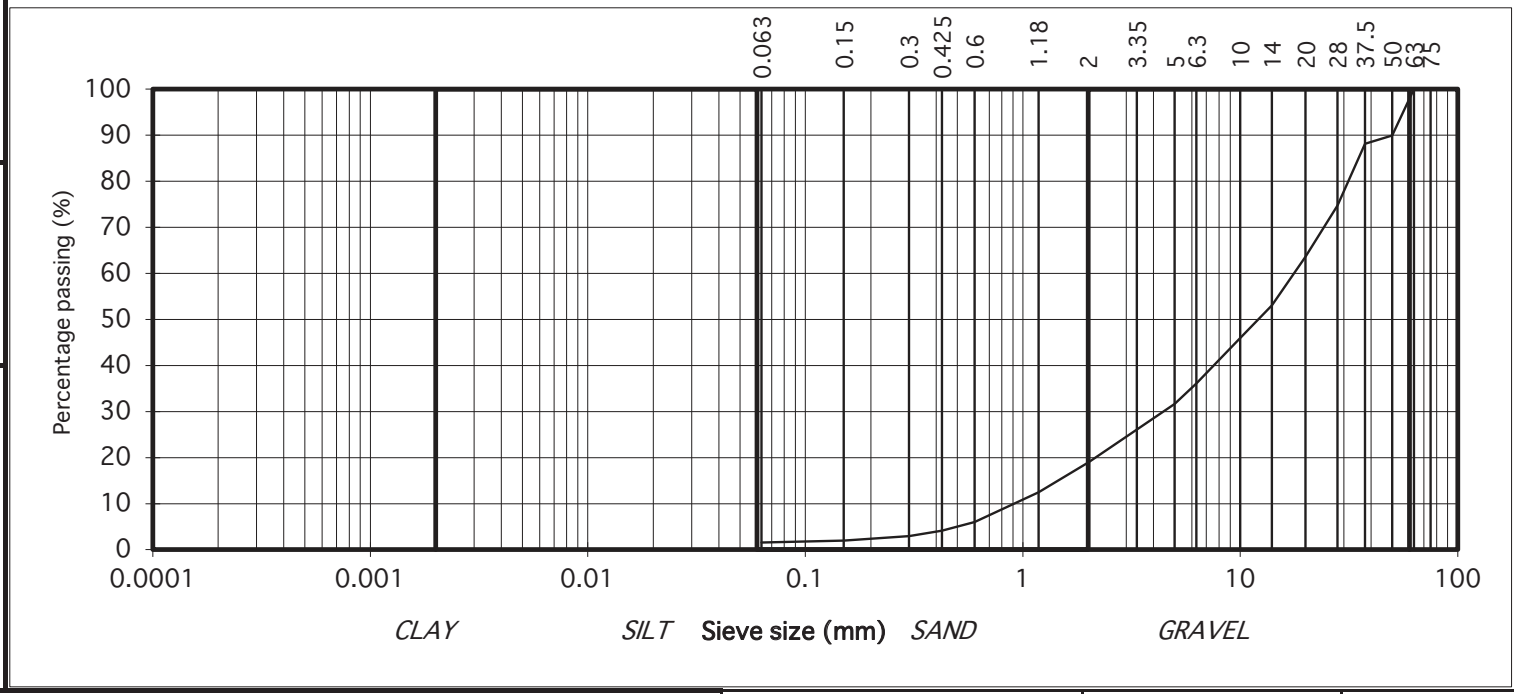
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	90	GRAVEL
37.5	88	
28	75	
20	64	
14	53	
10	46	
6.3	36	
5	32	
3.35	26	
2	19	
1.18	12	SAND
0.6	6	
0.425	4	
0.3	3	
0.15	2	
0.063	2	SILT/CLAY

Contract No.	25882	Report No.	R169100	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH58			
Sample No.*	AA212773	Lab. Sample No.		A25/1651
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		10/05/2025
Description:	Brown slightly silty, sandy, GRAVEL			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

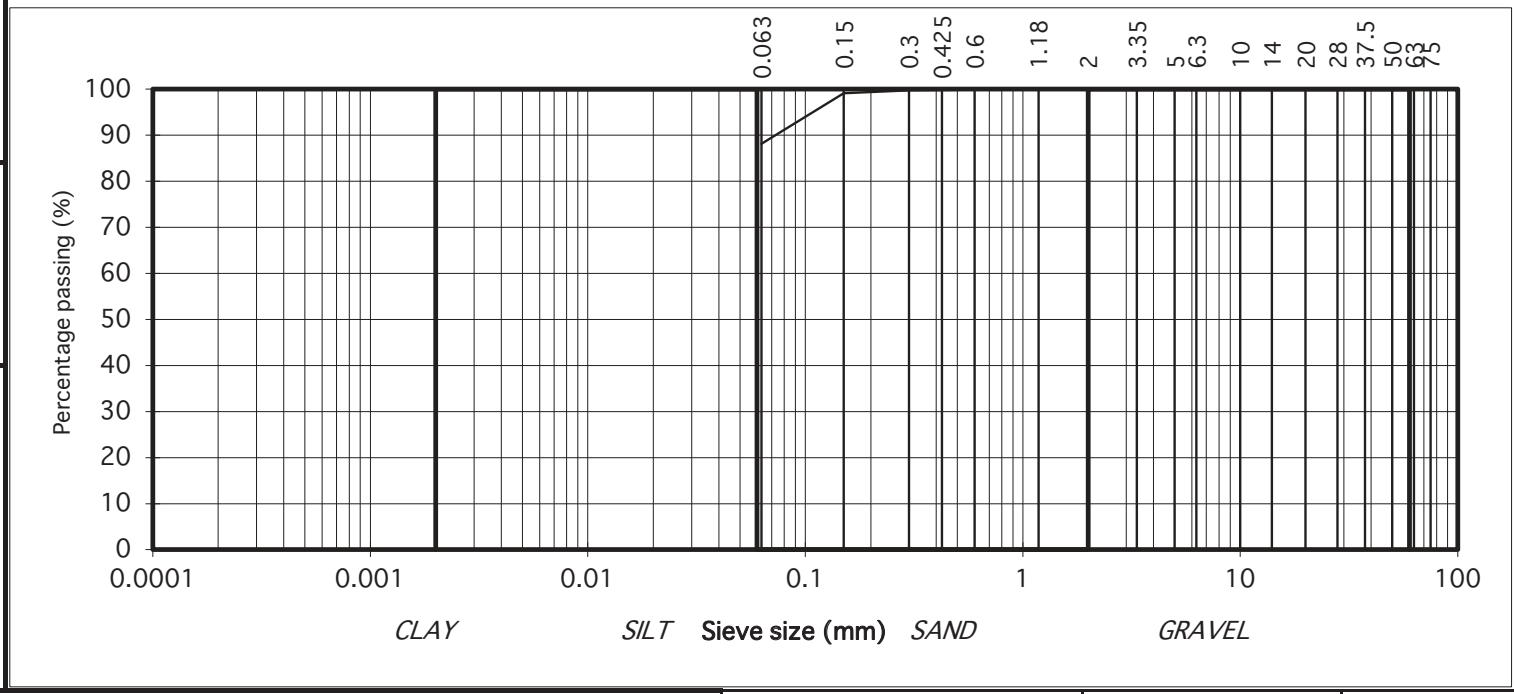
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	100	
0.425	100	
0.3	100	
0.15	99	
0.063	88	SILT/CLAY

Contract No.	25882	Report No.	R169101	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH59			
Sample No.*	AA245045	Lab. Sample No.		A25/1653
Sample Type:	B			
Depth* (m)	5.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		10/05/2025
Description:	Brown slightly sandy, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

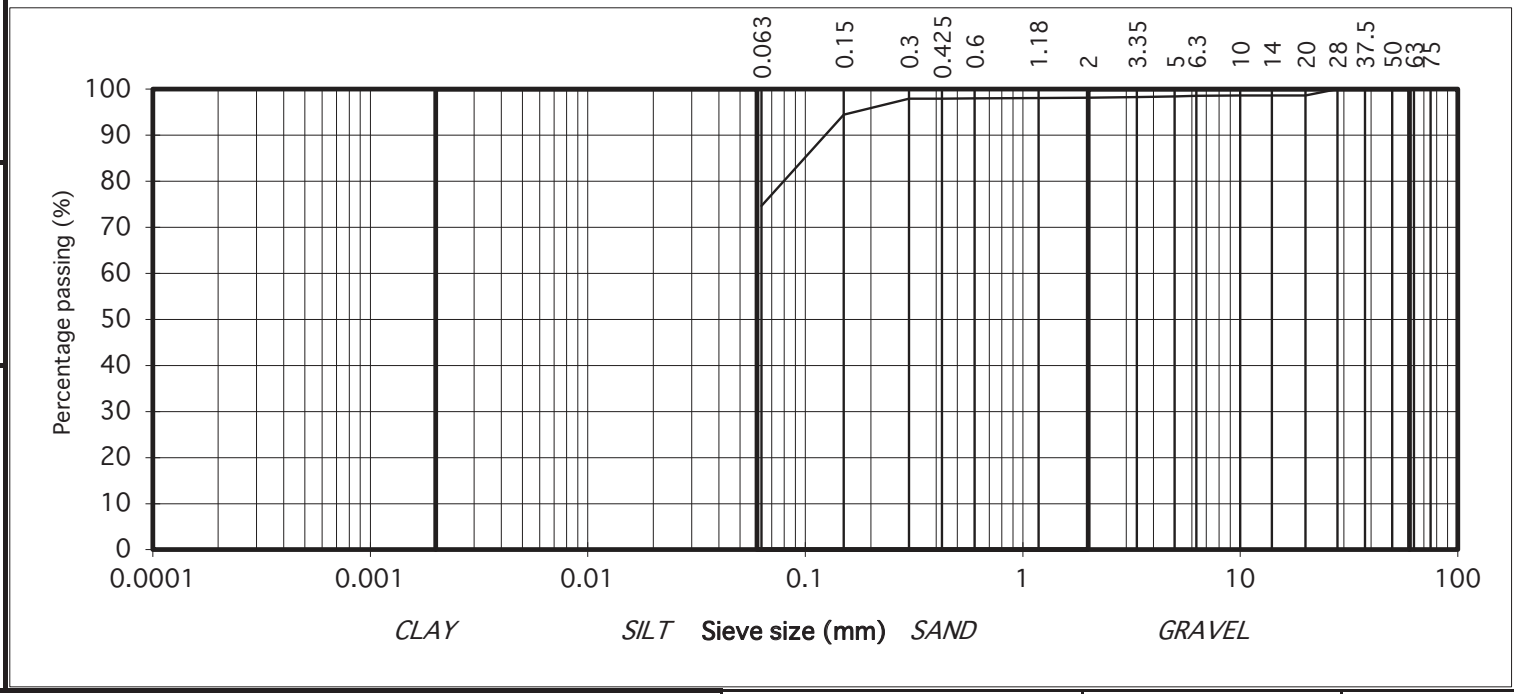
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	99	
14	99	
10	99	
6.3	99	
5	98	
3.35	98	
2	98	
1.18	98	SAND
0.6	98	
0.425	98	
0.3	98	
0.15	94	
0.063	75	SILT/CLAY

Contract No.	25882	Report No.	R169102	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH59			
Sample No.*	AA245047	Lab. Sample No.		A25/1654
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		01/05/2025
Description:	Grey slightly sandy, slightly gravelly, SILT/CLAY			

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

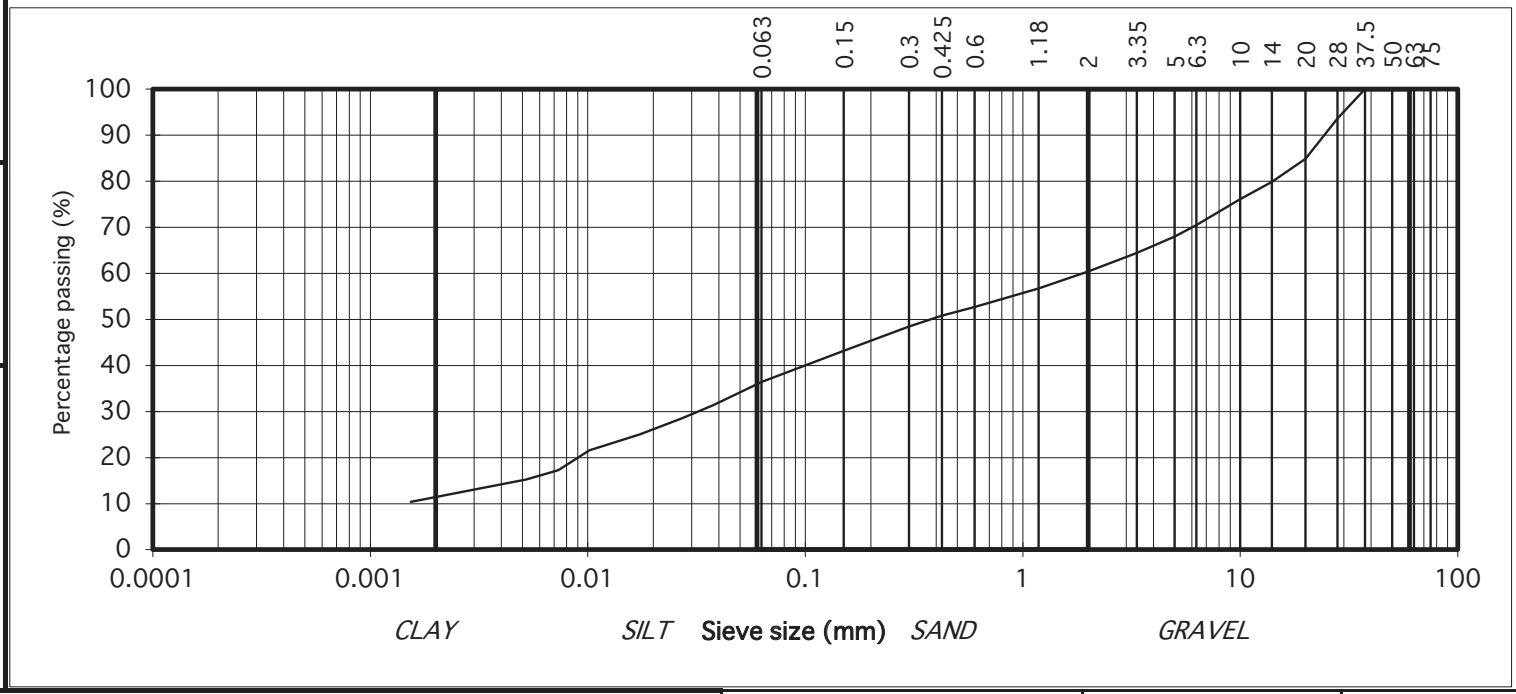
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	94	
20	85	
14	80	
10	76	
6.3	71	
5	68	
3.35	64	
2	60	
1.18	57	SAND
0.6	53	
0.425	51	
0.3	48	
0.15	43	
0.063	36	SILT/CLAY
0.038	31	
0.027	29	
0.017	25	
0.010	22	
0.007	17	
0.005	15	
0.002	10	

Contract No.	25882	Report No.	R169103	
Contract Name :	Gas to Edenderry			
BH/TP No.	TP1.1			
Sample No.*	AA245864	Lab. Sample No.		A25/1656
Sample Type:	B			
Depth* (m)	3.20	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		21/05/2025
Description:	Grey slightly sandy, gravelly, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

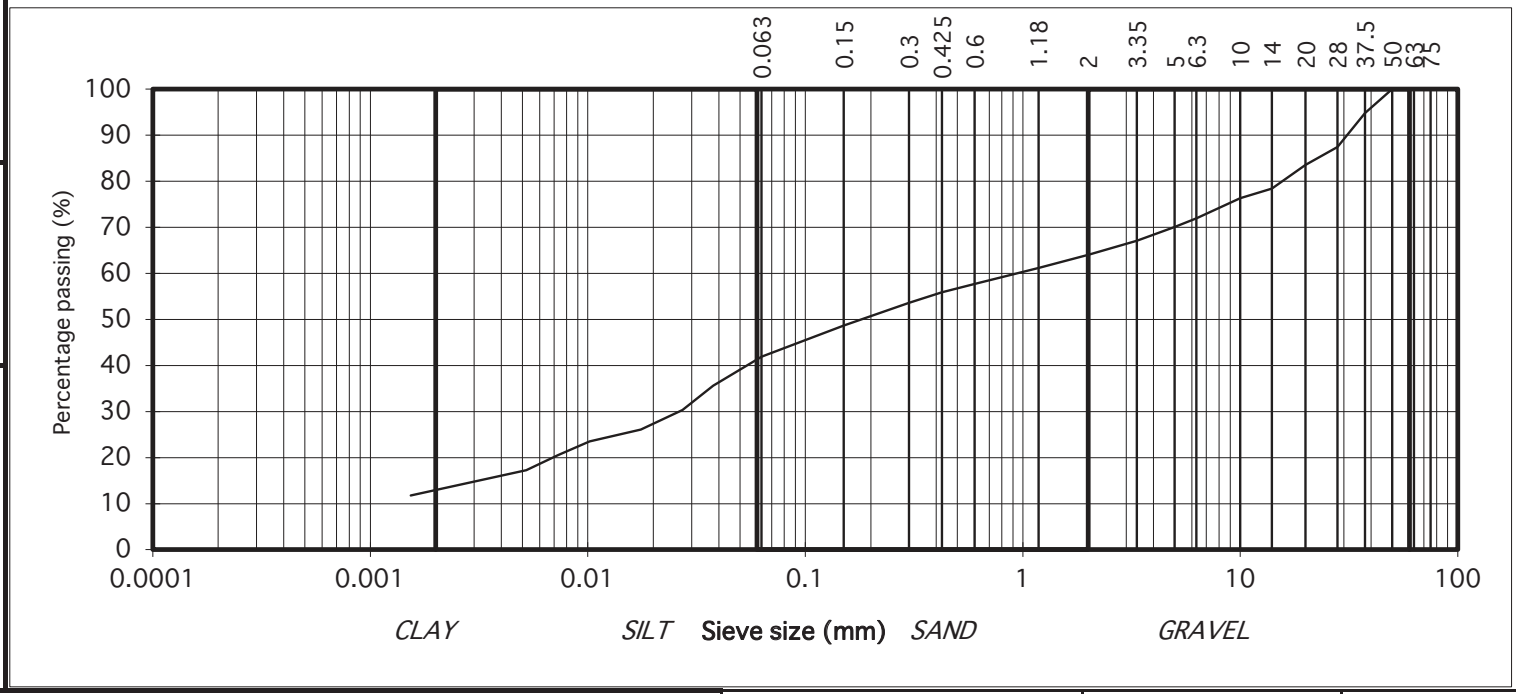
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	95	
28	87	
20	84	
14	78	
10	76	
6.3	72	
5	70	
3.35	67	
2	64	
1.18	61	SAND
0.6	58	
0.425	56	
0.3	54	
0.15	49	
0.063	42	SILT/CLAY
0.038	36	
0.027	30	
0.018	26	
0.010	24	
0.007	21	
0.005	17	
0.002	12	

Contract No.	25882	Report No.	R169104	
Contract Name :	Gas to Edenderry			
BH/TP No.	TP1.2			
Sample No.*	AA245864	Lab. Sample No.		A25/1658
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		21/05/2025
Description:	Grey slightly sandy, gravelly, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

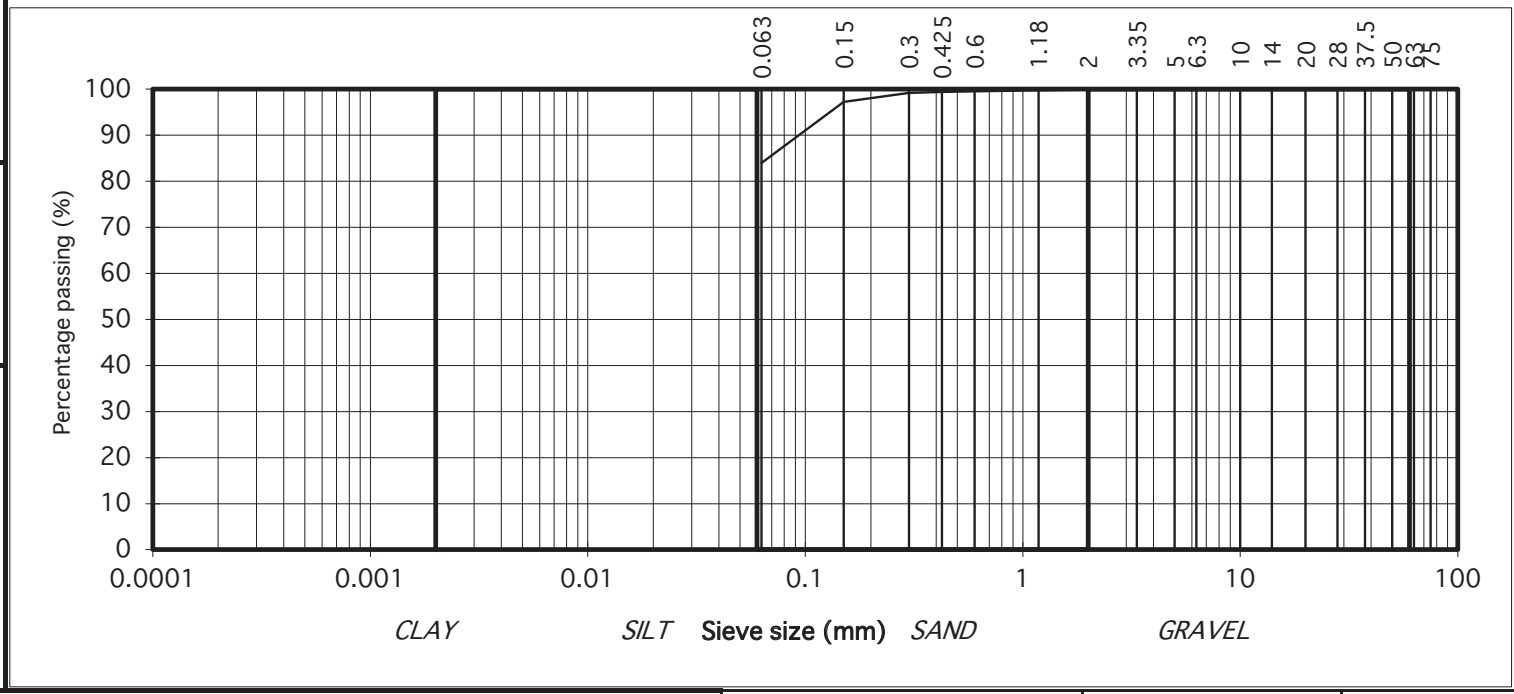
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	100	
0.425	99	
0.3	99	
0.15	97	
0.063	84	SILT/CLAY

Contract No.	25882	Report No.	R169105	
Contract Name :	Gas to Edenderry			
BH/TP No.	TP2.2			
Sample No.*	AA235894	Lab. Sample No.		A25/1662
Sample Type:	B			
Depth* (m)	3.50	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		21/05/2025
Description:	Grey slightly sandy, SILT/CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

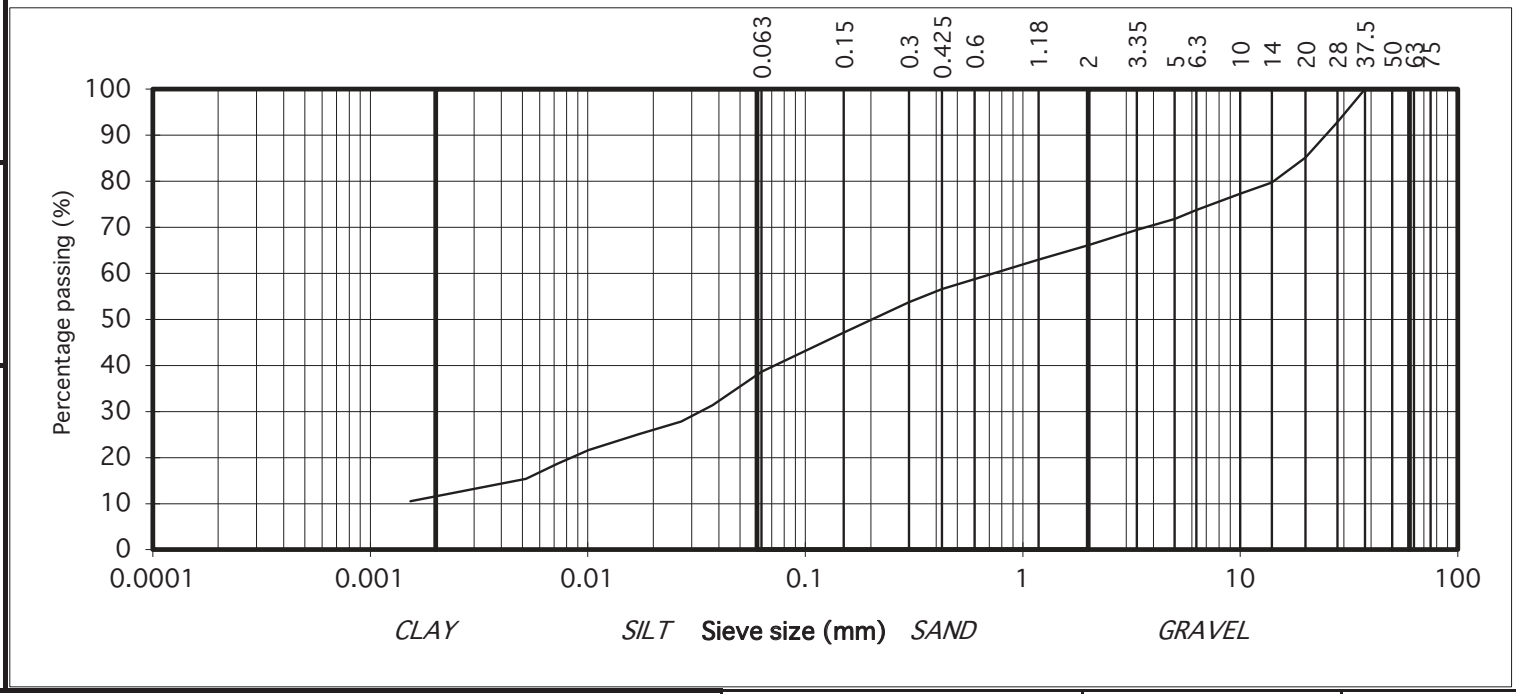
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	93	
20	85	
14	80	
10	77	
6.3	74	
5	72	
3.35	69	
2	66	
1.18	63	SAND
0.6	59	
0.425	57	
0.3	54	
0.15	47	
0.063	39	SILT/CLAY
0.037	31	
0.027	28	
0.017	25	
0.010	22	
0.007	19	
0.005	15	
0.002	11	

Contract No.	25882	Report No.	R169106	
Contract Name :	Gas to Edenderry			
BH/TP No.	TP3.2			
Sample No.*	AA235897	Lab. Sample No.		A25/1664
Sample Type:	B			
Depth* (m)	2.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		21/05/2025
Description:	Brown slightly sandy, slightly gravelly, CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

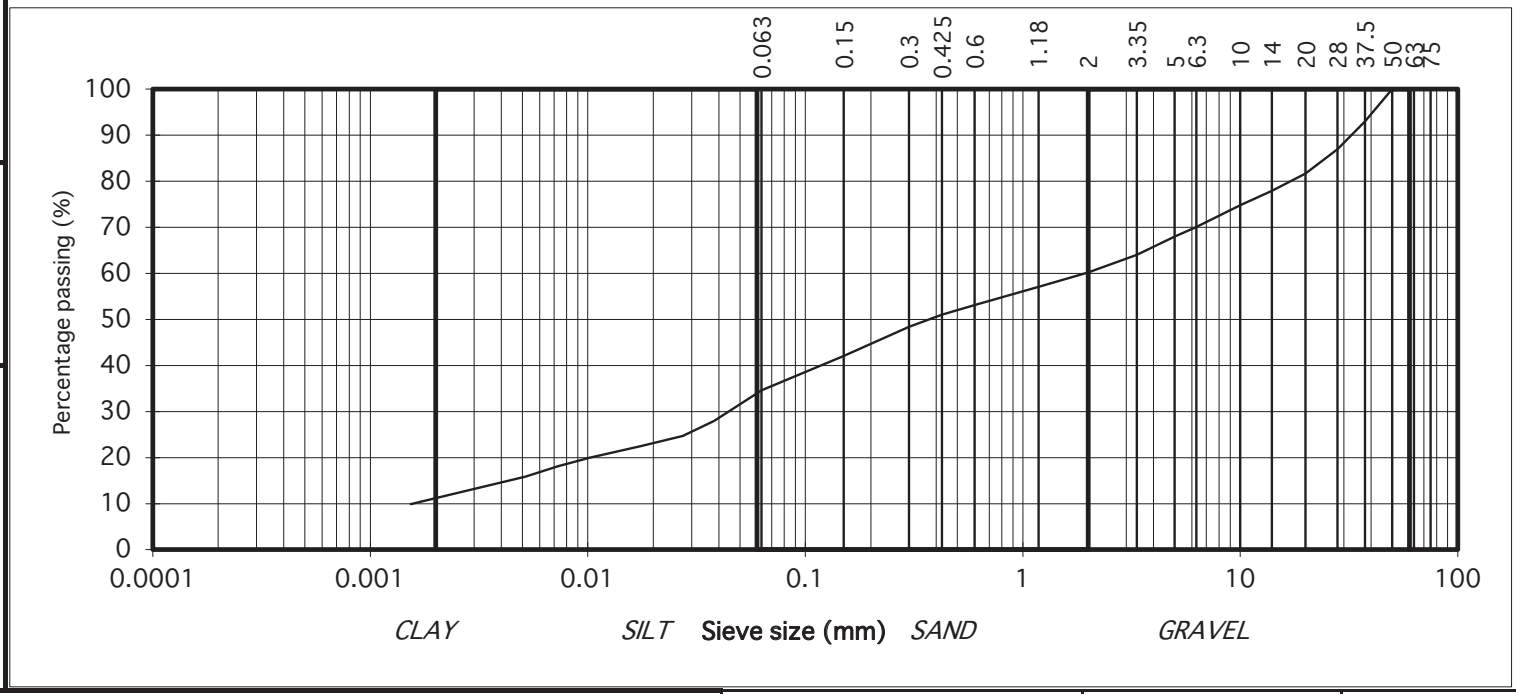
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	93	
28	87	
20	82	
14	78	
10	75	
6.3	70	
5	68	
3.35	64	
2	60	
1.18	57	SAND
0.6	53	
0.425	51	
0.3	48	
0.15	42	
0.063	35	SILT/CLAY
0.038	28	
0.027	25	
0.017	22	
0.010	20	
0.007	18	
0.005	16	
0.002	10	

Contract No.	25882	Report No.	R169107	
Contract Name :	Gas to Edenderry			
BH/TP No.	TP3.4			
Sample No.*	AA245867	Lab. Sample No.		A25/1667
Sample Type:	B			
Depth* (m)	2.20	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		22/05/2025
Description:	Brown slightly sandy, gravelly, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.1331

Report No. **R169108** Contract No. 25882 Contract Name: Gas to Edenderry GNI

Customer MIL

Samples Received: 22/05/25 Date Tested: Various

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH26	AA245049	2.0	A25/1896	B	11.2	26	14	12	59	WS	4.4	C L	Brown sandy gravelly CLAY
BH27	AA213951	1.0	A25/1898	B	8.9	24	13	11	64	WS	4.4	C L	Brown sandy gravelly CLAY
BH27A	AA213956	5.0	A25/1900	B	6.6	20	NP	NP	50	WS	4.4		Grey silty, very sandy, GRAVEL with occasional cobbles
BH28	AA222765	1.5	A25/1901	B	10.6	22	NP	NP	66	WS	4.4		Brown sandy gravelly SILT
BH28A	AA222767	3.0	A25/1902	B	5.5	20	NP	NP	51	WS	4.4		Brown silty, sandy, GRAVEL with some cobbles
BH28A	AA222773	9.0	A25/1905	B	3.7	24	NP	NP	9	WS	4.4		Brown slightly silty, slightly sandy, GRAVEL with many cobbles
BH29	AA223246	1.0	A25/1906	B	15.3	24	NP	NP	55	WS	4.4		Brown sandy gravelly SILT
BH33	AA222758	2.5	A25/1909	B	12.3	26	14	12	61	WS	4.4	C L	Brown sandy, slightly gravelly, CLAY
BH33	AA222761	5.5	A25/1910	B	10.6	23	NP	NP	54	WS	4.4		Brown sandy gravelly SILT
BH33	AA222763	7.5	A25/1911	B	12.7	24	13	11	61	WS	4.4	C L	Brown slightly sandy, slightly gravelly, CLAY
BH55	AA213963	2.0	A25/1912	B	16.6	25	NP	NP	81	WS	4.4		Brown sandy gravelly SILT
BH55	AA213968	7.0	A25/1913	B	21.3	25	NP	NP	99	WS	4.4		Grey sandy SILT

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method
4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.
NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12.
Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.
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IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by: H Byrne

Date: 29/07/25

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

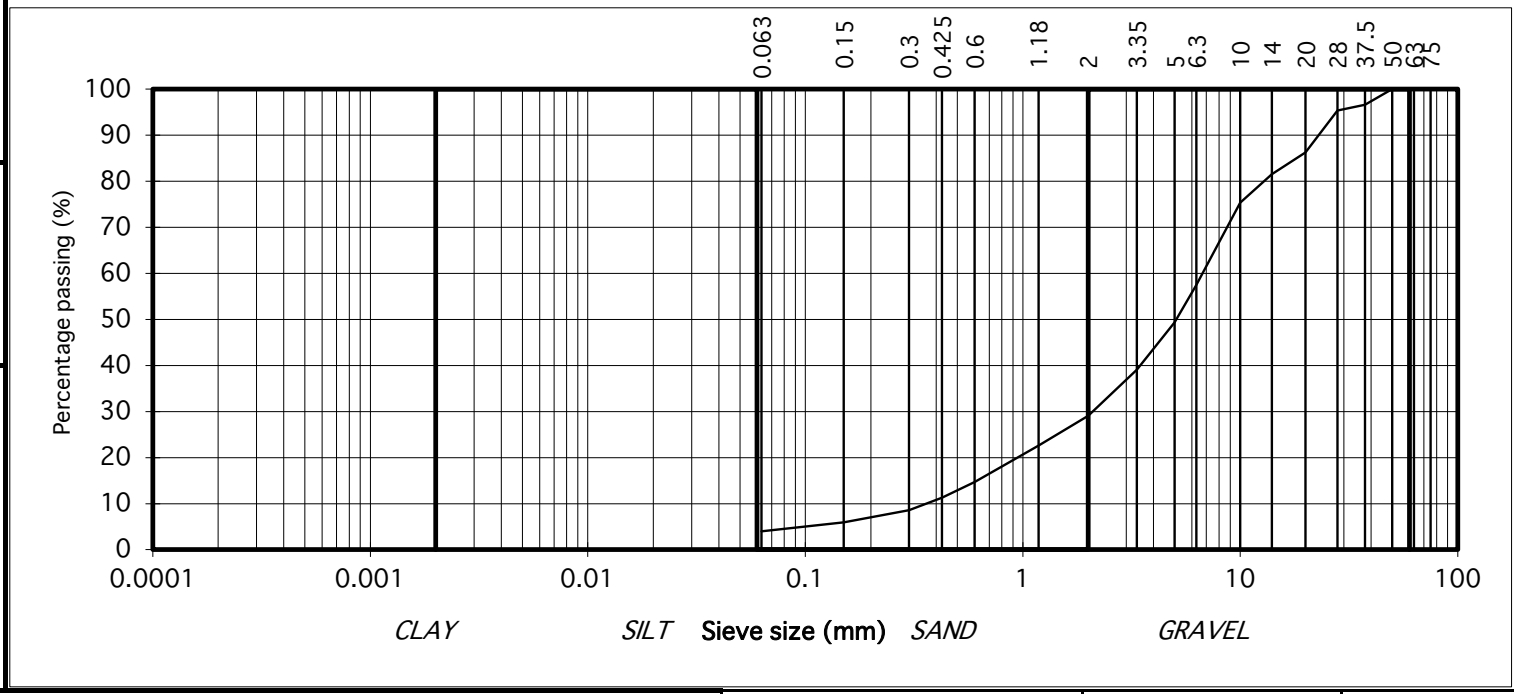
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	97	
28	95	
20	86	
14	82	
10	75	
6.3	57	
5	49	
3.35	39	
2	29	
1.18	23	SAND
0.6	15	
0.425	11	
0.3	9	
0.15	6	
0.063	4	SILT/CLAY

Contract No.	25882	Report No.	R171139	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH26			
Sample No.*	AA245051	Lab. Sample No.		A25/1897
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	08/05/2025	Date Testing started		25/06/2025
Description:	Grey slightly clayey/silty, very sandy, GRAVEL			

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
H Byrne	29/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

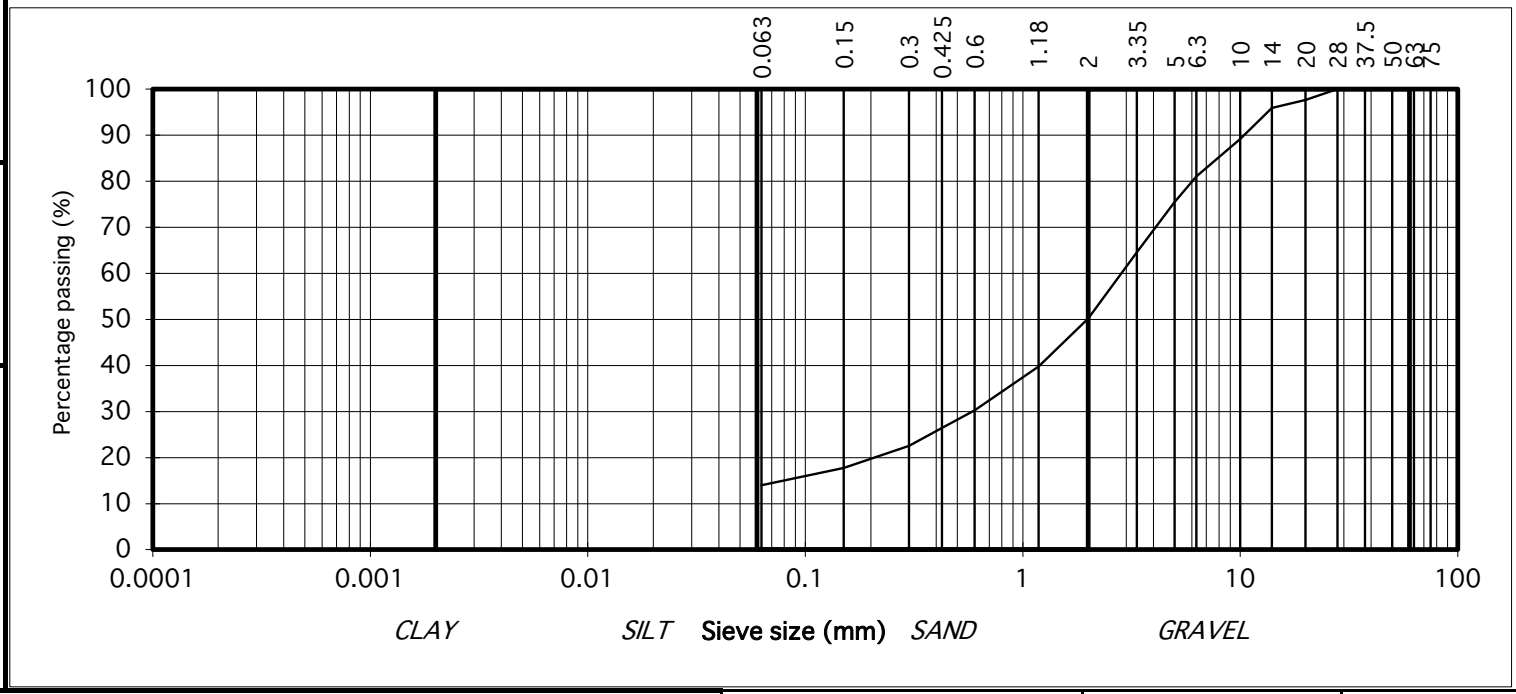
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	98	
14	96	
10	89	
6.3	81	
5	75	
3.35	65	
2	50	
1.18	40	SAND
0.6	30	
0.425	26	
0.3	23	
0.15	18	
0.063	14	SILT/CLAY

Contract No.	25882	Report No.	R171140	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH27			
Sample No.*	AA213953	Lab. Sample No.		A25/1899
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	08/05/2025	Date Testing started		25/06/2025
Description:	Brown clayey/silty, very sandy, GRAVEL			

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

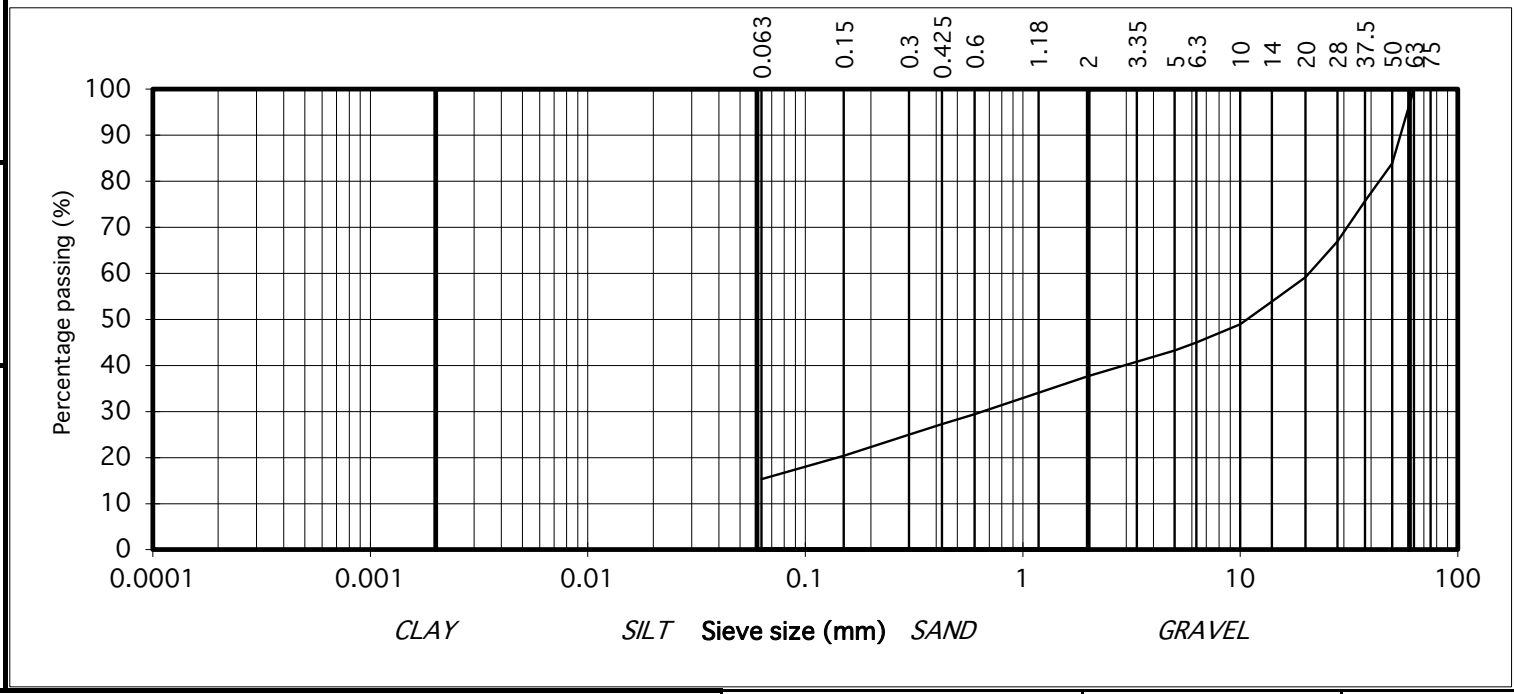
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	84	GRAVEL
37.5	76	
28	67	
20	59	
14	54	
10	49	
6.3	45	
5	43	
3.35	41	
2	38	
1.18	34	SAND
0.6	29	
0.425	27	
0.3	25	
0.15	20	
0.063	15	SILT/CLAY

Contract No.	25882	Report No.	R169076	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH27A			
Sample No.*	AA213956	Lab. Sample No.		A25/1900
Sample Type:	B			
Depth* (m)	5.00	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		22/05/2025
Description:	Grey silty, very sandy, GRAVEL with occasional cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

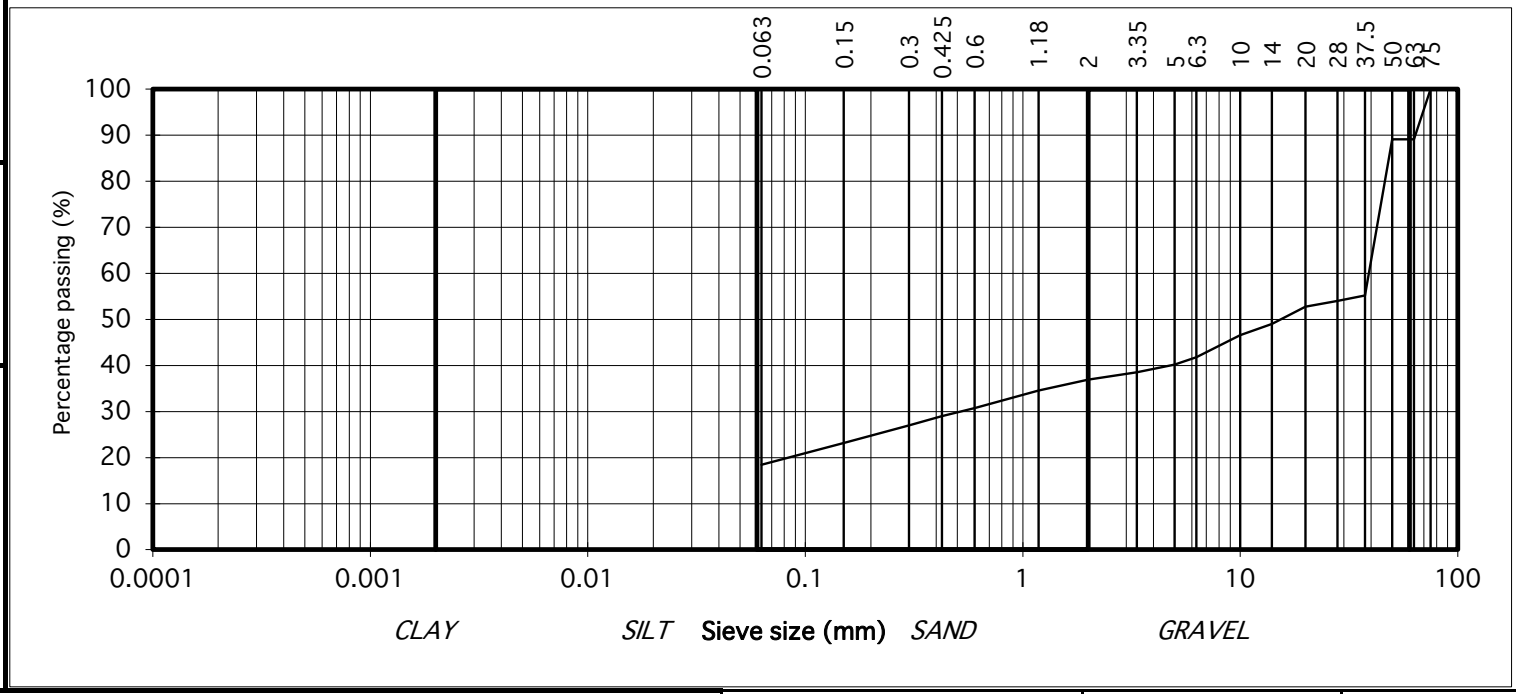
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	89	
50	89	GRAVEL
37.5	55	
28	54	
20	53	
14	49	
10	47	
6.3	42	
5	40	
3.35	39	
2	37	
1.18	35	SAND
0.6	31	
0.425	29	
0.3	27	
0.15	23	
0.063	18	SILT/CLAY

Contract No.	25882	Report No.	R169077	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH28A			
Sample No.*	AA222767	Lab. Sample No.		A25/1902
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		22/05/2025
Description:	Brown silty, sandy, GRAVEL with some cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

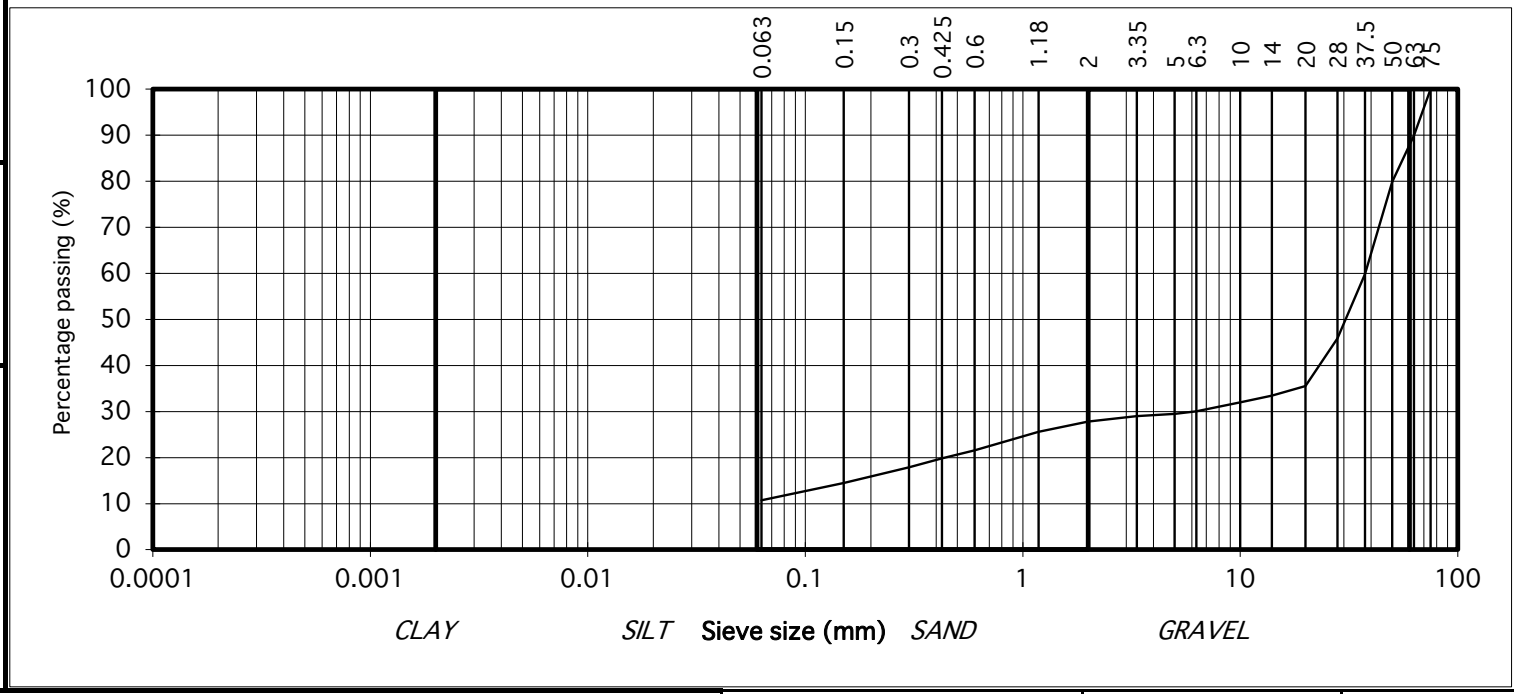
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	90	
50	80	GRAVEL
37.5	60	
28	46	
20	36	
14	33	
10	32	
6.3	30	
5	30	
3.35	29	
2	28	
1.18	26	SAND
0.6	22	
0.425	20	
0.3	18	
0.15	14	
0.063	11	SILT/CLAY

Contract No.	25882	Report No.	R169078	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH28A			
Sample No.*	AA222769	Lab. Sample No.		A25/1903
Sample Type:	B			
Depth* (m)	5.00	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		22/05/2025
Description:	Brown clayey/silty, sandy, GRAVEL with some cobbles			
Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

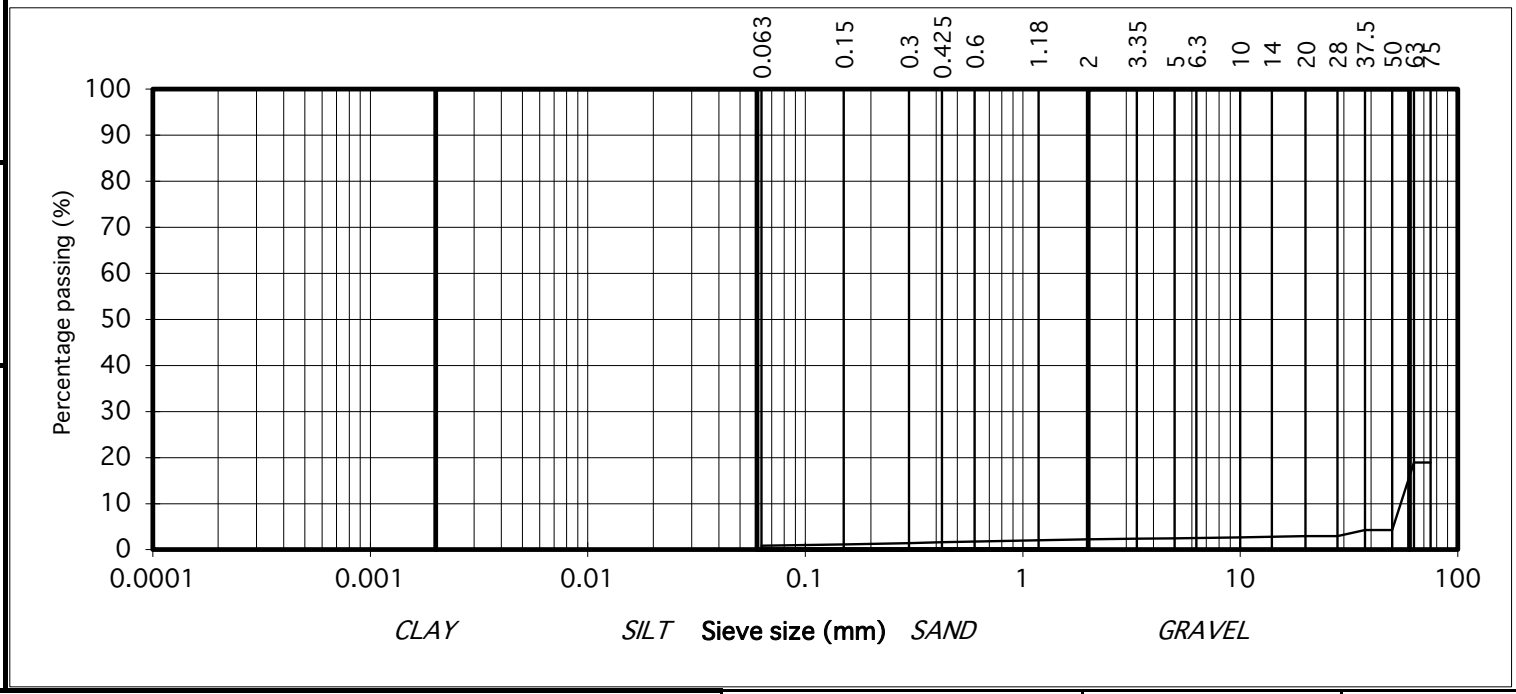
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	19	COBBLES
63	19	
50	4	GRAVEL
37.5	4	
28	3	
20	3	
14	3	
10	3	
6.3	3	
5	2	
3.35	2	
2	2	
1.18	2	SAND
0.6	2	
0.425	2	
0.3	1	
0.15	1	
0.063	1	SILT/CLAY

Contract No.	25882	Report No.	R169161	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH28A			
Sample No.*	AA222771	Lab. Sample No.		A25/1904
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		22/05/2025
Description:	COBBLES with brown slightly clayey/silty, slightly sandy, gravel			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	06/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

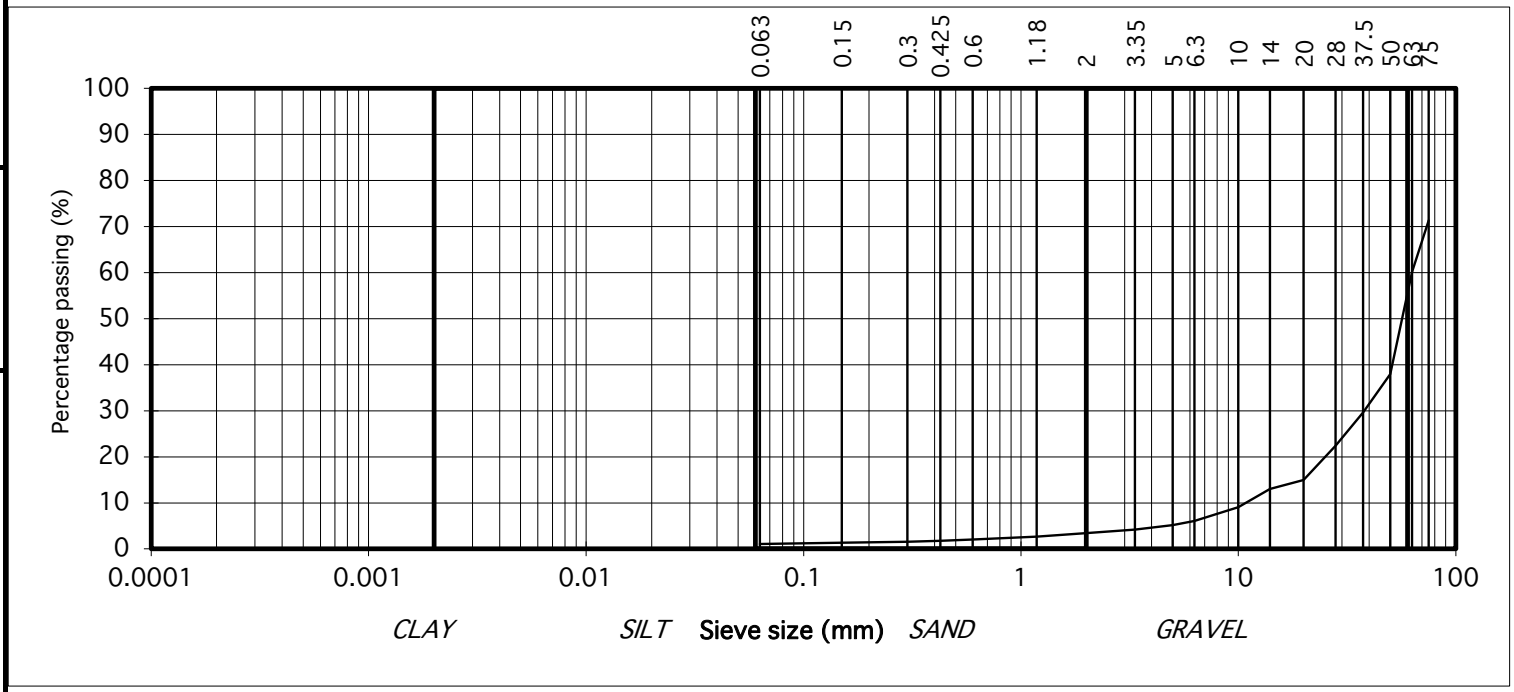
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	71	COBBLES
63	60	
50	38	GRAVEL
37.5	30	
28	22	
20	15	
14	13	
10	9	
6.3	6	
5	5	
3.35	4	
2	3	
1.18	3	SAND
0.6	2	
0.425	2	
0.3	2	
0.15	1	
0.063	1	SILT/CLAY

Contract No. 25882 Report No. R169079
Contract Name : Gas to Edenderry GNI
BH/TP No. BH28A
Sample No.* AA222773 Lab. Sample No. A25/1905
Sample Type: B
Depth* (m) 9.00 Customer: MIL
Date Received 22/05/2025 Date Testing started 22/05/2025
Description: Brown slightly silty, slightly sandy, GRAVEL with many cobbles

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

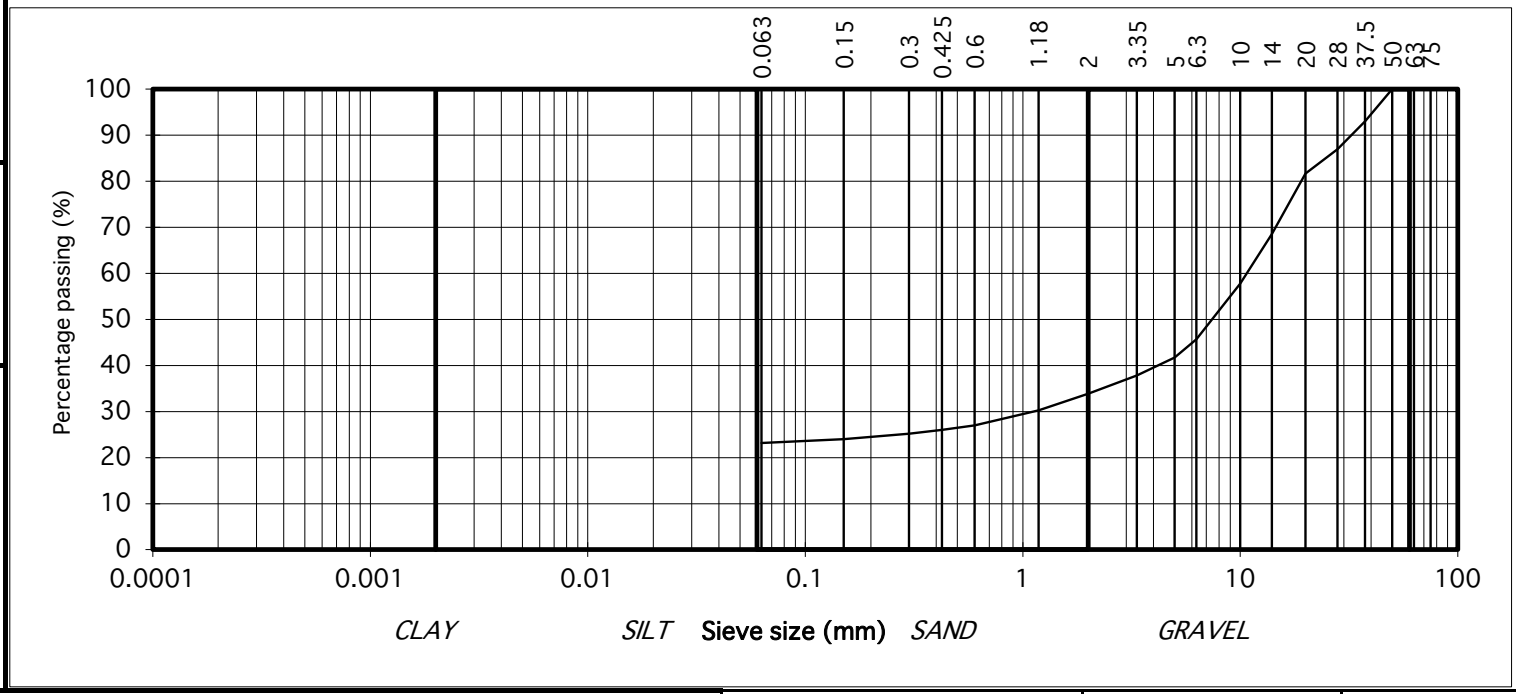
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	93	
28	87	
20	82	
14	69	
10	58	
6.3	46	
5	42	
3.35	38	
2	34	
1.18	30	SAND
0.6	27	
0.425	26	
0.3	25	
0.15	24	
0.063	23	SILT/CLAY

Contract No. 25882 Report No. R169080
Contract Name : Gas to Edenderry GNI
BH/TP No. BH29
Sample No.* AA223249 Lab. Sample No. A25/1907
Sample Type: B
Depth* (m) 4.00 Customer: MIL
Date Received 22/05/2025 Date Testing started 22/05/2025
Description: Brown slightly sandy, very gravelly, SILT/CLAY

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

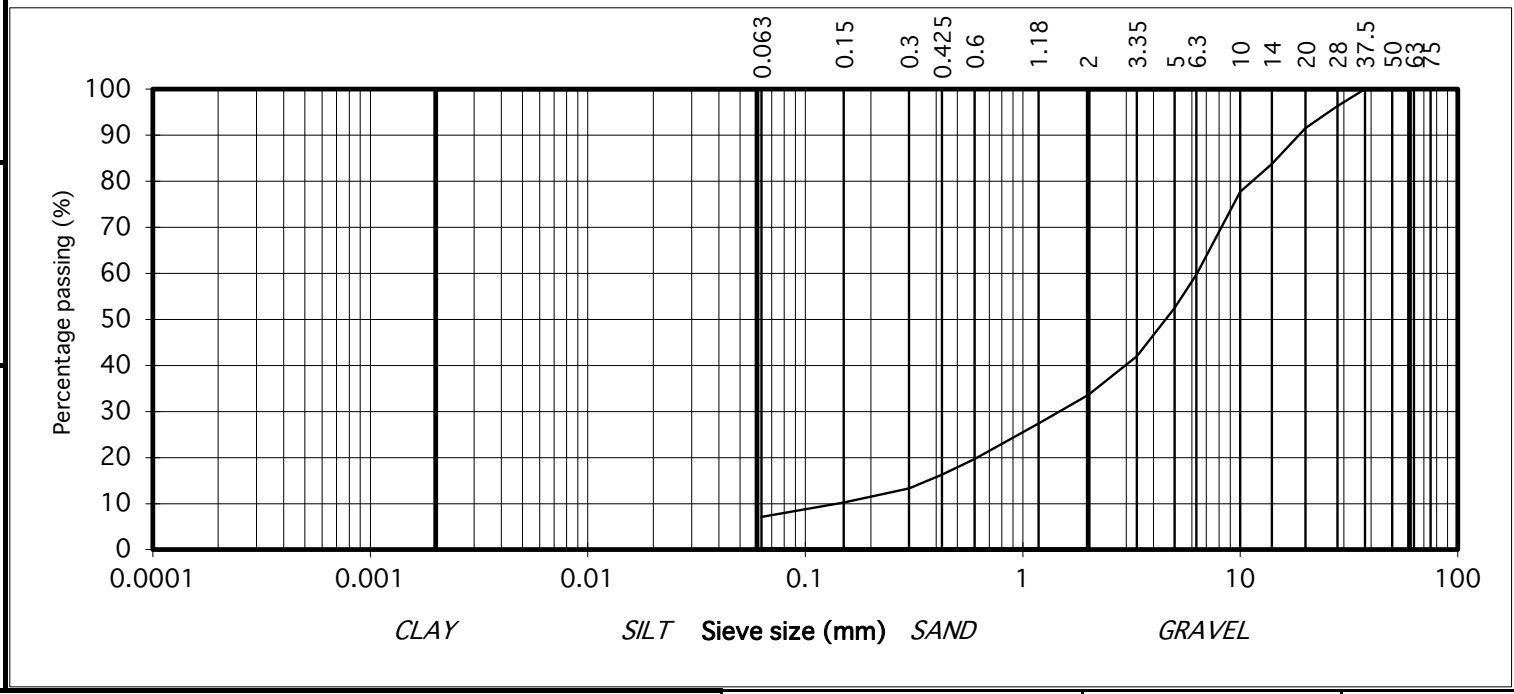
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	96	
20	92	
14	84	
10	78	
6.3	60	
5	52	
3.35	42	
2	34	
1.18	27	SAND
0.6	20	
0.425	16	
0.3	13	
0.15	10	
0.063	7	SILT/CLAY

Contract No. 25882 Report No. R171141
Contract Name : Gas to Edenderry
BH/TP No. BH29
Sample No.* AA223251 Lab. Sample No. A25/1908
Sample Type: B
Depth* (m) 6.00 Customer: MIL
Date Received 08/05/2025 Date Testing started 25/06/2025
Description: Grey clayey/silty, very sandy, GRAVEL

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
H Byrne	29/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

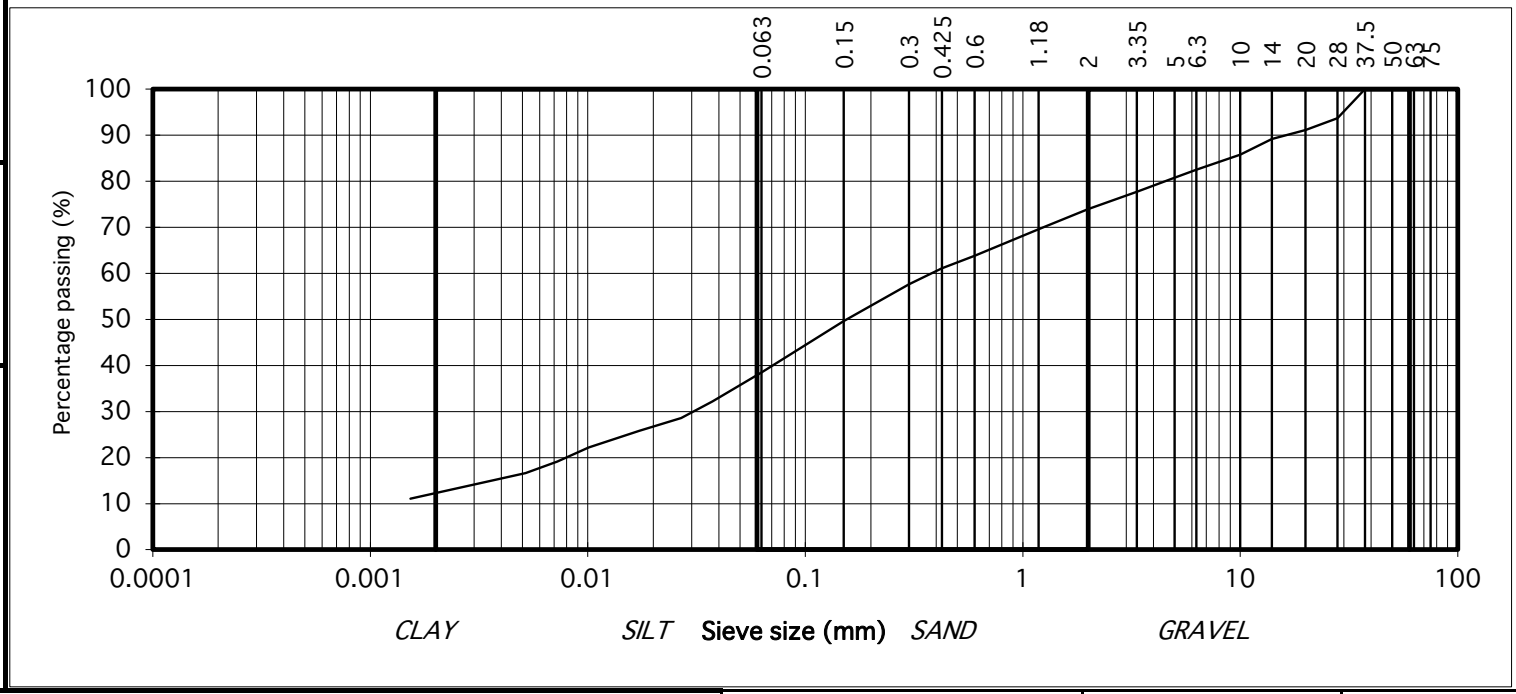
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	94	
20	91	
14	89	
10	86	
6.3	83	
5	81	
3.35	78	
2	74	
1.18	70	SAND
0.6	64	
0.425	61	
0.3	58	
0.15	50	
0.063	39	SILT/CLAY
0.037	32	
0.027	29	
0.017	26	
0.010	22	
0.007	19	
0.005	17	
0.002	11	

Contract No.	25882	Report No.	R169711	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH33			
Sample No.*	AA222758	Lab. Sample No.		A25/1909
Sample Type:	B			
Depth* (m)	2.50	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		31/05/2025
Description:	Brown sandy, slightly gravelly, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

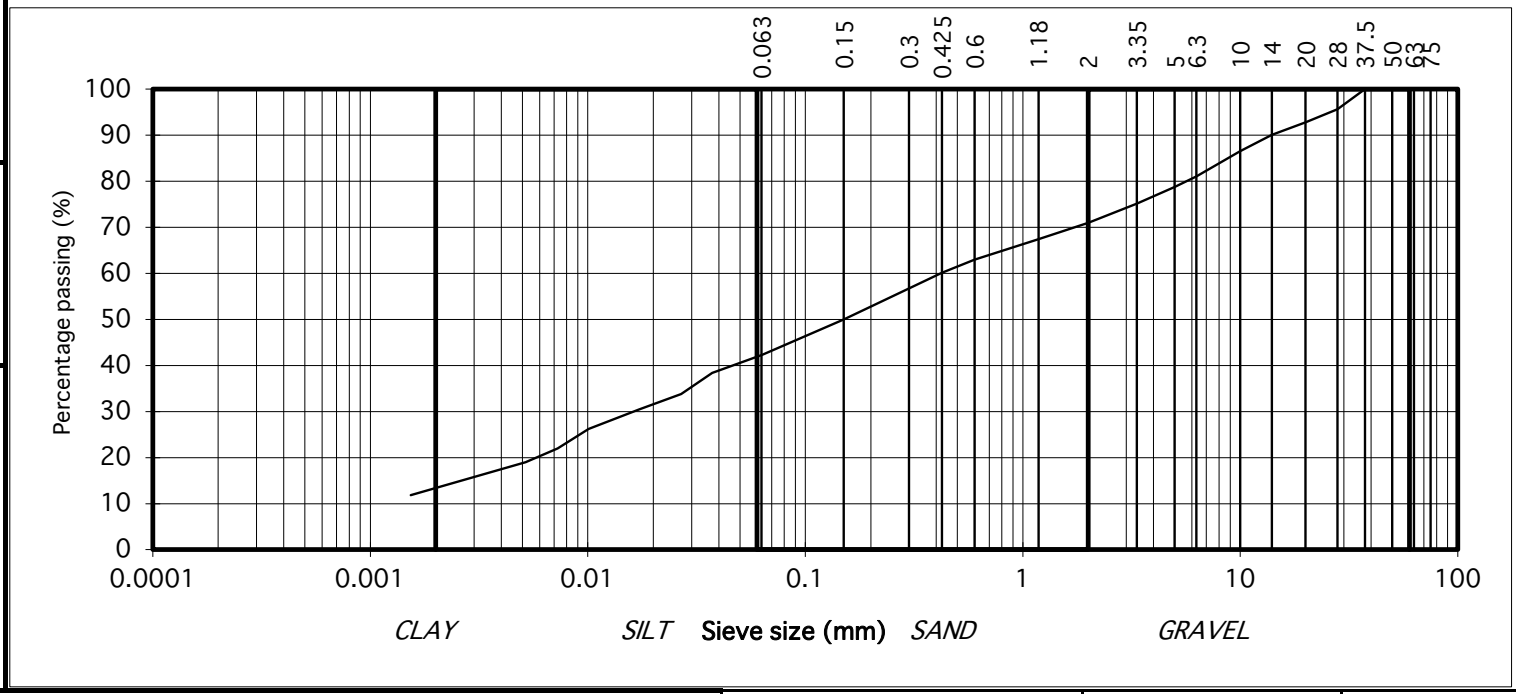
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	96	
20	93	
14	90	
10	87	
6.3	81	
5	79	
3.35	75	
2	71	
1.18	67	SAND
0.6	63	
0.425	60	
0.3	57	
0.15	50	
0.063	42	SILT/CLAY
0.037	38	
0.027	34	
0.017	31	
0.010	26	
0.007	22	
0.005	19	
0.002	12	

Contract No.	25882	Report No.	R171142	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH33			
Sample No.*	AA222763	Lab. Sample No.		A25/1911
Sample Type:	B			
Depth* (m)	7.50	Customer:	MIL	
Date Received	08/05/2025	Date Testing started		25/06/2025
Description:	Brown slightly sandy, slightly gravelly, CLAY			

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

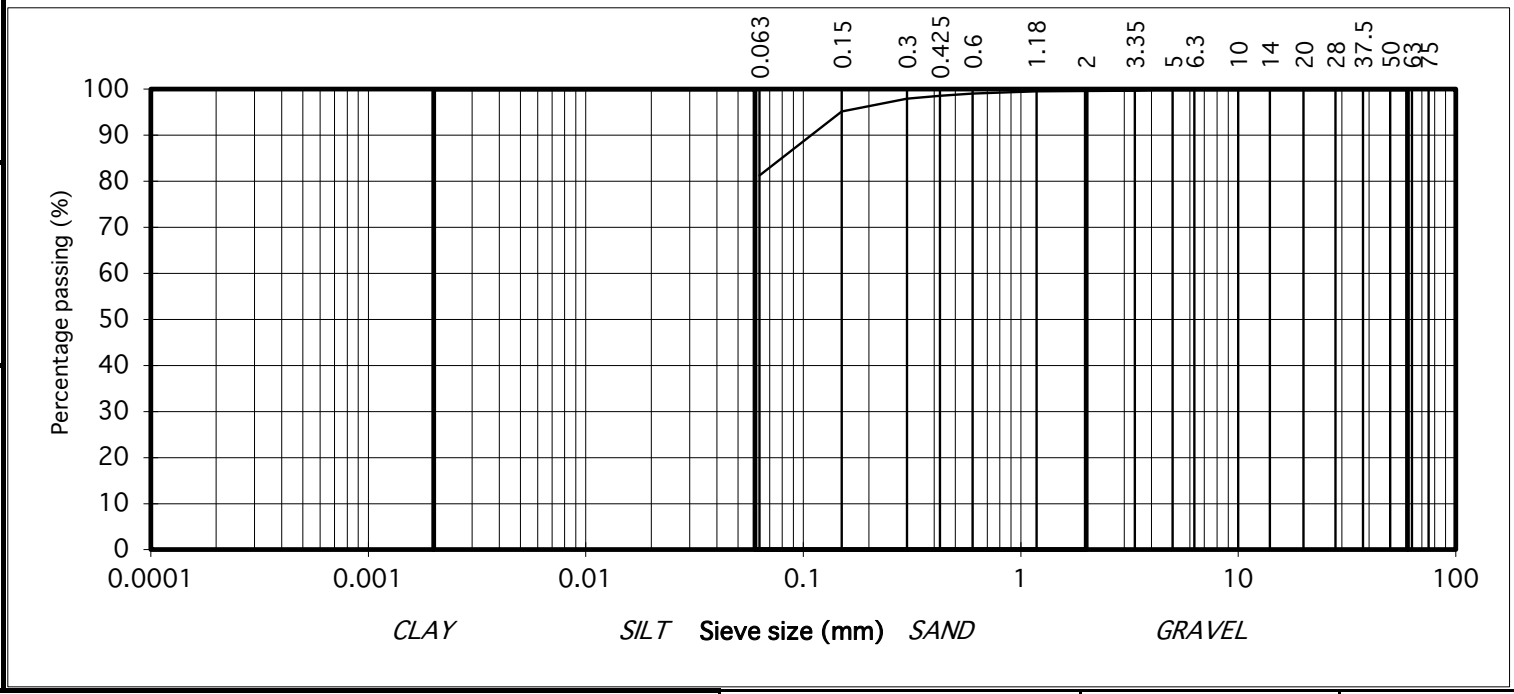
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	99	
0.425	99	
0.3	98	
0.15	95	
0.063	81	SILT/CLAY

Contract No.	25882	Report No.	R169095	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH55			
Sample No.*	AA213971	Lab. Sample No.		A25/1914
Sample Type:	B			
Depth* (m)	9.00	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		22/05/2025
Description:	Grey slightly sandy, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

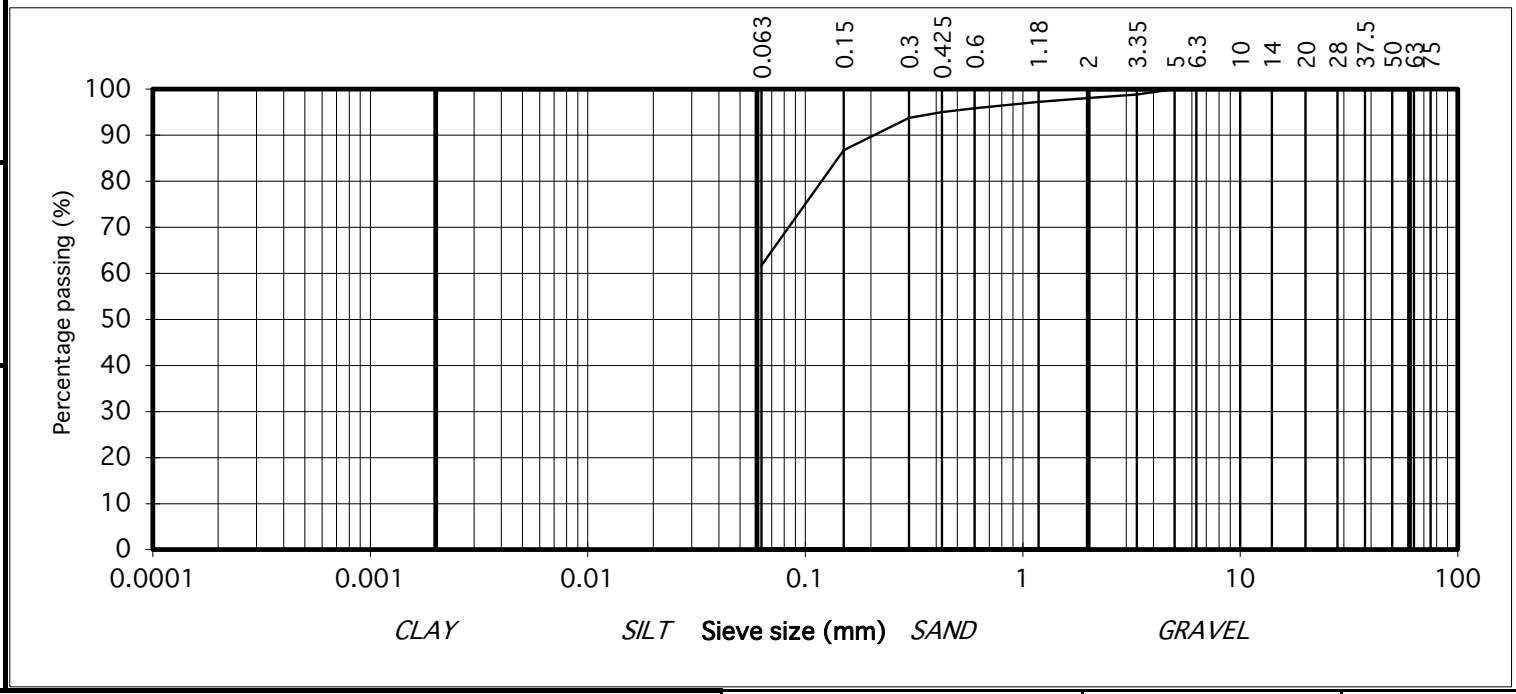
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	99	
2	98	
1.18	97	SAND
0.6	96	
0.425	95	
0.3	94	
0.15	87	
0.063	62	SILT/CLAY

Contract No.	25882	Report No.	R169097	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH55			
Sample No.*	AA213973	Lab. Sample No.		A25/1915
Sample Type:	B			
Depth* (m)	11.00	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		22/05/2025
Description:	Grey sandy, slightly gravelly, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

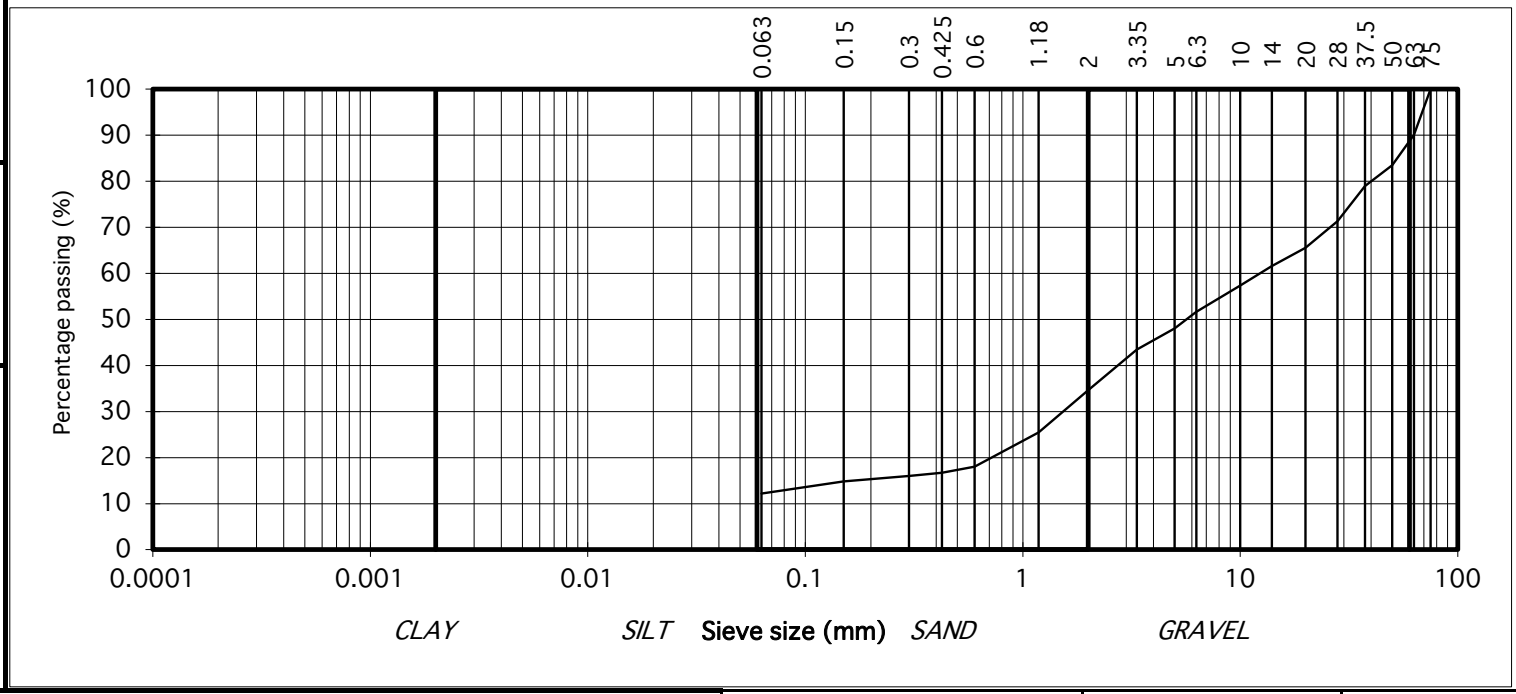
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	90	
50	84	GRAVEL
37.5	79	
28	71	
20	66	
14	62	
10	57	
6.3	52	
5	48	
3.35	43	
2	35	
1.18	25	SAND
0.6	18	
0.425	17	
0.3	16	
0.15	15	
0.063	12	SILT/CLAY

Contract No. 25882 Report No. R169098
Contract Name : Gas to Edenderry GNI
BH/TP No. BH55
Sample No.* AA213975 Lab. Sample No. A25/1916
Sample Type: B
Depth* (m) 13.00 Customer: MIL
Date Received 22/05/2025 Date Testing started 22/05/2025
Description: Grey clayey/silty, very sandy, GRAVEL with some cobbles

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**

Report No. **R171146** Contract No. 25882 Contract Name: Gas to Edenderry

Customer MIL

Samples Received: 07/07/25 Date Tested: 07/07/25

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH16A	AA212803	2.0	A25/2519	B	9.5	22	NP	NP	46	WS	4.4		Brown sandy gravelly SILT
BH16A	AA212805	4.0	A25/2520	B	13	23	13	10	61	WS	4.4	C L	Grey slightly sandy, gravelly, CLAY
BH16A	AA212807	6.0	A25/2521	B	10	25	13	12	65	WS	4.4	C L	Grey slightly sandy, gravelly, CLAY with some cobbles
BH17	AA212808	1.0	A25/2522	B	25	30	NP	NP	79	WS	4.4		Brown sandy gravelly SILT
BH17	AA212810	3.0	A25/2523	B	13	22	11	11	55	WS	4.4	C L	Grey slightly sandy, slightly gravelly, CLAY
BH17	AA212812	5.0	A25/2524	B	11	24	13	11	55	WS	4.4	C L	Grey sandy gravelly CLAY
BH17	AA212814	7.0	A25/2525	B	8.8	22	NP	NP	57	WS	4.4		Grey slightly sandy, gravelly, SILT with some cobbles
BH18	AA212819	2.0	A25/2526	B	12	25	13	12	66	WS	4.4	C L	Brown sandy gravelly CLAY
BH18	AA212821	4.0	A25/2527	B	6.4	20	NP	NP	75	WS	4.4		Brown slightly sandy, gravelly, SILT with many cobbles
BH19	AA212826	3.0	A25/2528	B	12	23	NP	NP	45	WS	4.4		Brown sandy gravelly SILT
BH19	AA212828	5.0	A25/2529	B	9.9	21	NP	NP	57	WS	4.4		Grey sandy gravelly SILT
BH19	AA212830	7.0	A25/2530	B	13	25	13	12	58	WS	4.4	C L	Grey slightly sandy, slightly gravelly, CLAY
BH24	AA213977	2.0	A25/2531	B	6.0	23	NP	NP	28	WS	4.4		Brown sandy gravelly SILT
BH25	AA222793	1.0	A25/2536	B	21	32	18	14	82	WS	4.4	C L	Grey/brown sandy gravelly CLAY
BH25	AA222801	9.0	A25/2540	B	22	25	NP	NP	99	WS	4.4		Grey slightly sandy, slightly gravelly, SILT

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method
4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.
NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12.
Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.
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IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by | Date: 05/08/25 | Page: 1 of 1

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.1331

Report No. **R171147** Contract No. 25882 Contract Name: Gas to Edenderry

Customer MIL

Samples Received: 07/07/25 Date Tested: 07/07/25

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH51A	AA22803	2.0	A25/2542	B	7.4	20	NP	NP	52	WS	4.4		Brown sandy gravelly SILT
BH51A	AA22805	4.0	A25/2543	B	13	27	14	13	59	WS	4.4	C L	Brown slightly sandy, slightly gravelly, CLAY
BH51A	AA22807	6.0	A25/2544	B	15	23	NP	NP	66	WS	4.4		Brown sandy gravelly SILT
BH51A	AA22809	8.0	A25/2545	B	10	26	14	12	57	WS	4.4	C L	Brown slightly sandy, slightly gravelly, CLAY with many cobbles

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method
4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.
NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12.
Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.
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IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by: H Byrne

Date: 05/08/25

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TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

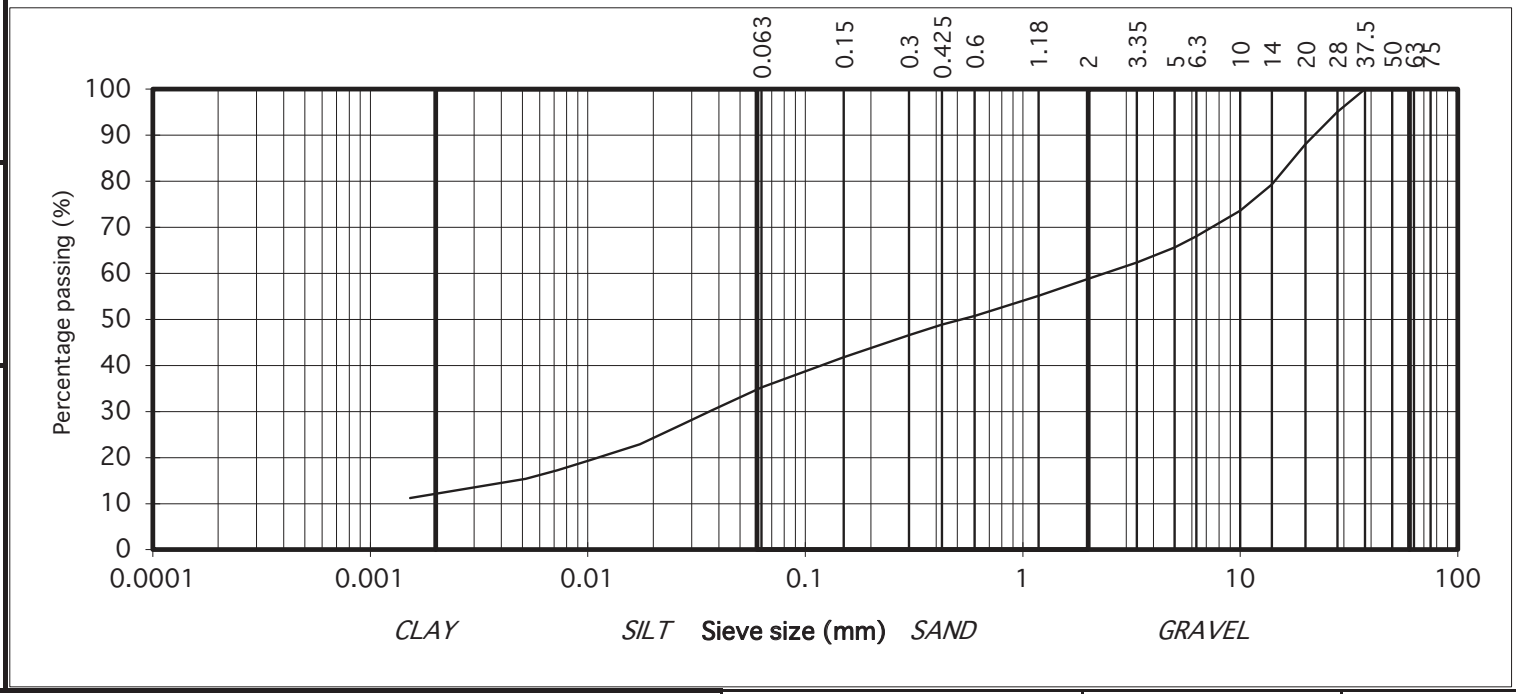
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	95	
20	88	
14	79	
10	74	
6.3	68	
5	66	
3.35	62	
2	59	
1.18	55	SAND
0.6	51	
0.425	49	
0.3	47	
0.15	42	
0.063	35	SILT/CLAY
0.037	30	
0.027	27	
0.017	23	
0.010	19	
0.007	17	
0.005	15	
0.002	11	

Contract No.	25882	Report No.	R171127	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH16A			
Sample No.*	AA212805	Lab. Sample No.		A25/2520
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		08/07/2025
Description:	Grey slightly sandy, gravelly, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

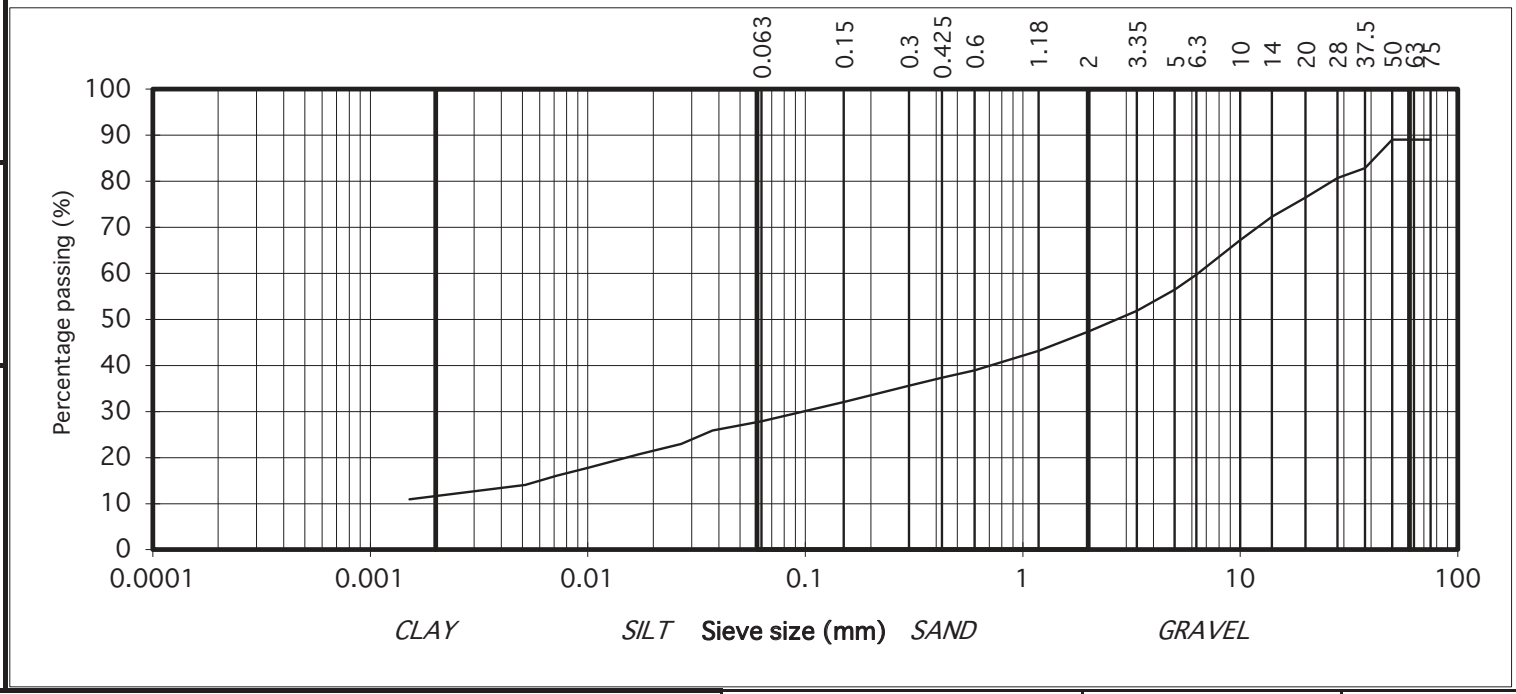
particle size	% passing	
75	89	COBBLES
63	89	
50	89	GRAVEL
37.5	83	
28	81	
20	76	
14	72	
10	67	
6.3	60	
5	56	
3.35	52	
2	47	
1.18	43	SAND
0.6	39	
0.425	37	
0.3	36	
0.15	32	
0.063	28	SILT/CLAY
0.037	26	
0.027	23	
0.017	21	
0.010	18	
0.007	16	
0.005	14	
0.002	11	

Contract No.	25882	Report No.	R171613	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH16A			
Sample No.*	AA212807	Lab. Sample No.		A25/2521
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		08/07/2025
Description:	Grey slightly sandy, gravelly, CLAY with some cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks

Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Smple size ddi not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	05/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

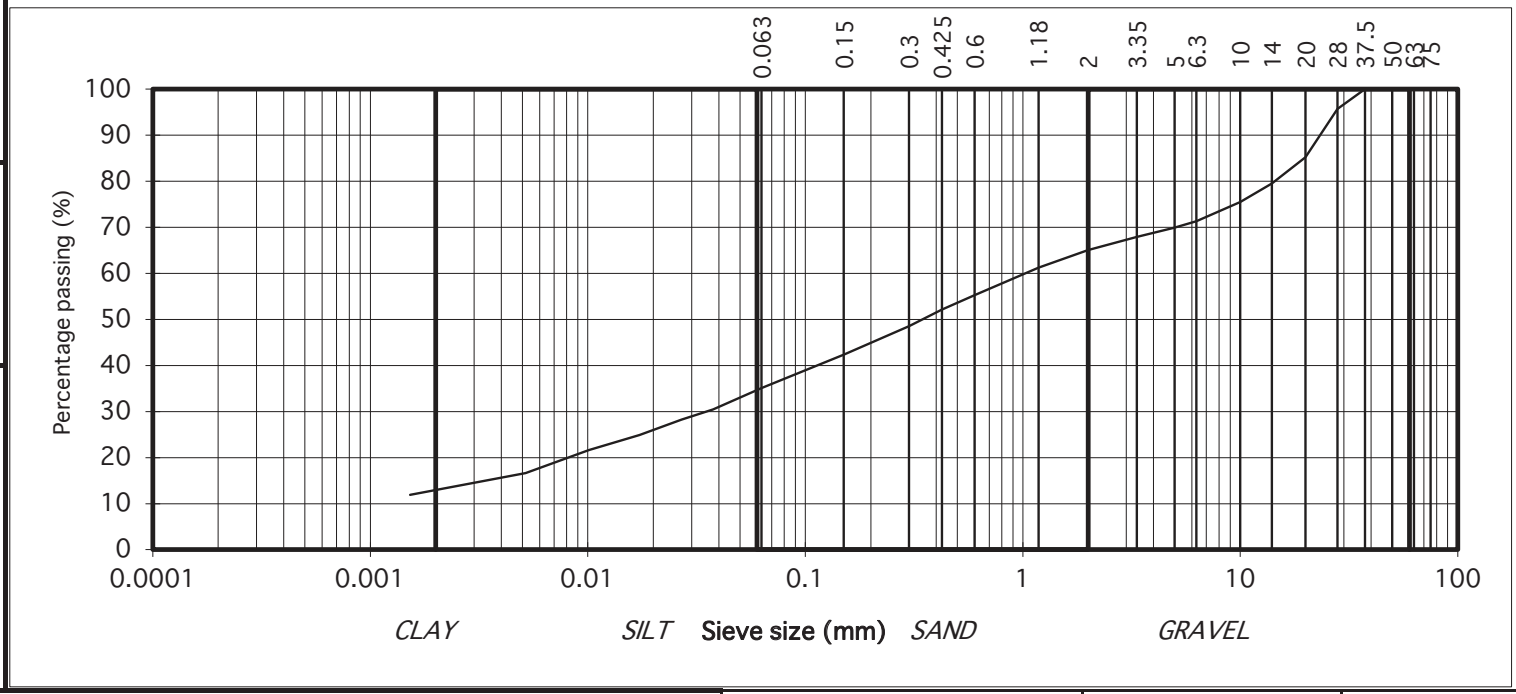
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	96	
20	85	
14	80	
10	76	
6.3	71	
5	70	
3.35	68	
2	65	
1.18	61	SAND
0.6	55	
0.425	52	
0.3	49	
0.15	42	
0.063	35	SILT/CLAY
0.038	30	
0.027	28	
0.017	25	
0.010	22	
0.007	19	
0.005	17	
0.002	12	

Contract No.	25882	Report No.	R171125	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH17			
Sample No.*	AA212810	Lab. Sample No.		A25/2523
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		08/07/2025
Description:	Grey slightly sandy, slightly gravelly, CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

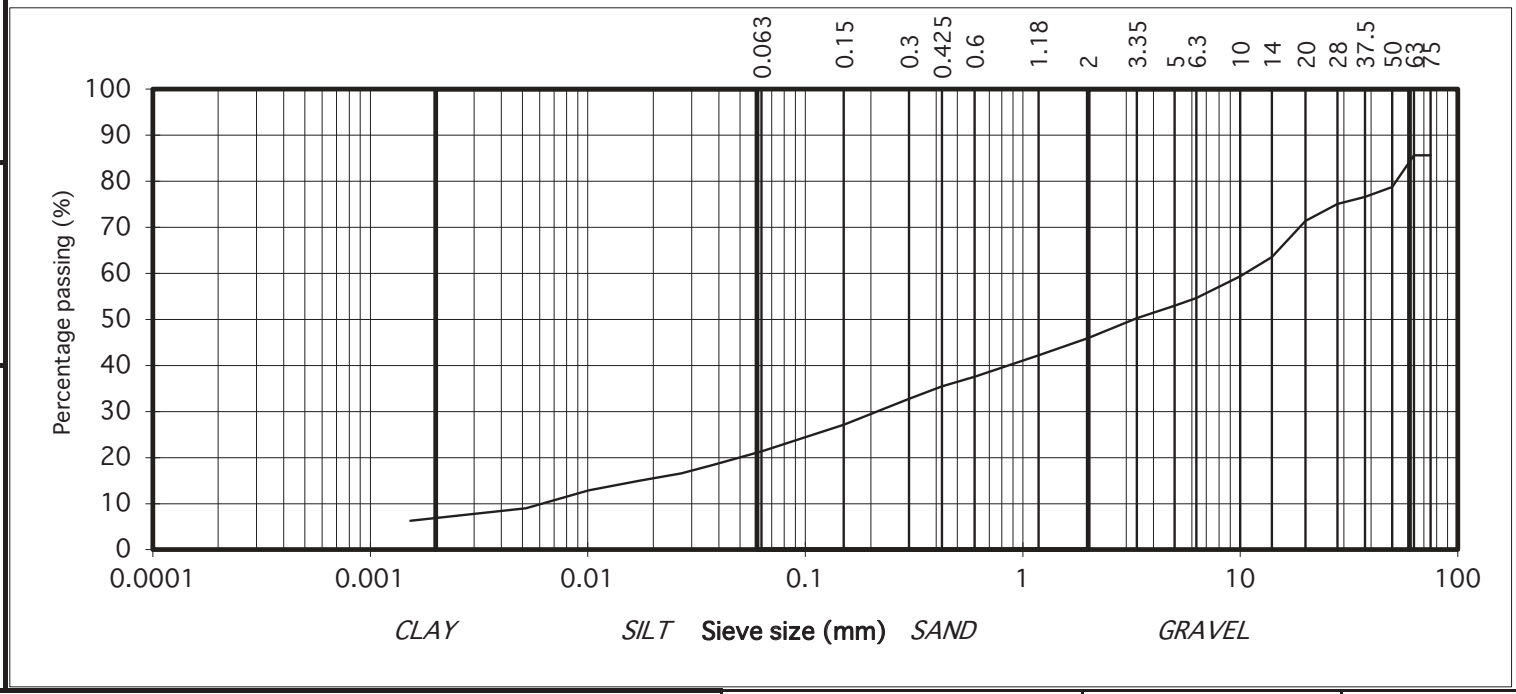
particle size	% passing	
75	86	COBBLES
63	86	
50	79	GRAVEL
37.5	77	
28	75	
20	71	
14	64	
10	59	
6.3	55	
5	53	
3.35	50	
2	46	
1.18	42	SAND
0.6	38	
0.425	35	
0.3	33	
0.15	27	
0.063	21	SILT/CLAY
0.037	18	
0.027	17	
0.017	15	
0.010	13	
0.007	11	
0.005	9	
0.002	6	

Contract No.	25882	Report No.	
Contract Name :	Gas to Edenderry		
BH/TP No.	BH17		
Sample No.*	AA212814	Lab. Sample No.	A25/2925
Sample Type:	B		
Depth* (m)	7.00	Customer: MIL	
Date Received	07/07/2025	Date Testing started	07/07/2025
Description:	Grey slightly sandy, gravelly, SILT with some cobbles		

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	05/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

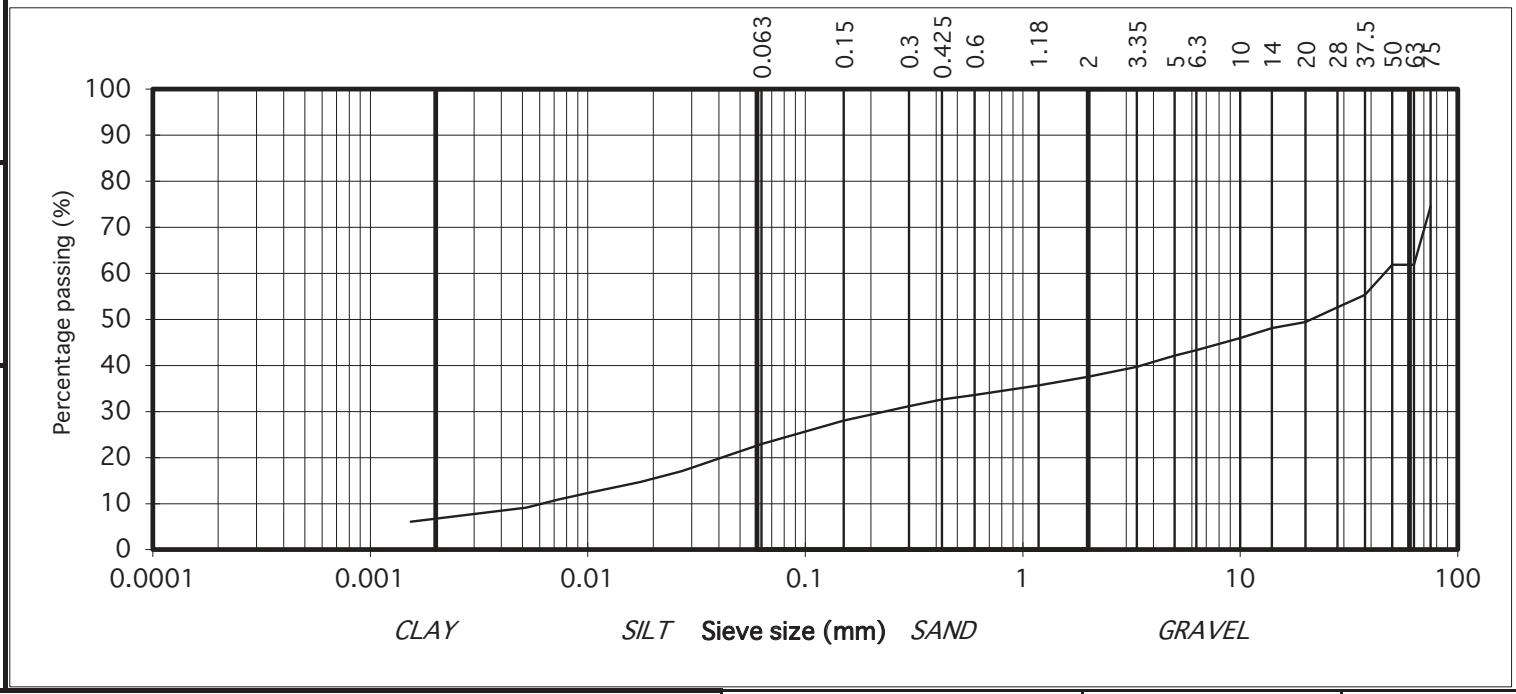
particle size	% passing	
75	75	COBBLES
63	62	
50	62	GRAVEL
37.5	55	
28	53	
20	49	
14	48	
10	46	
6.3	43	
5	42	
3.35	40	
2	38	
1.18	36	SAND
0.6	34	
0.425	33	
0.3	31	
0.15	28	
0.063	23	SILT/CLAY
0.038	19	
0.027	17	
0.017	15	
0.010	12	
0.007	11	
0.005	9	
0.002	6	

Contract No.	25882	Report No.	R171126	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH18			
Sample No.*	AA212821	Lab. Sample No.		A25/2527
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		07/07/2025
Description:	Brown slightly sandy, gravelly, SILT with many cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

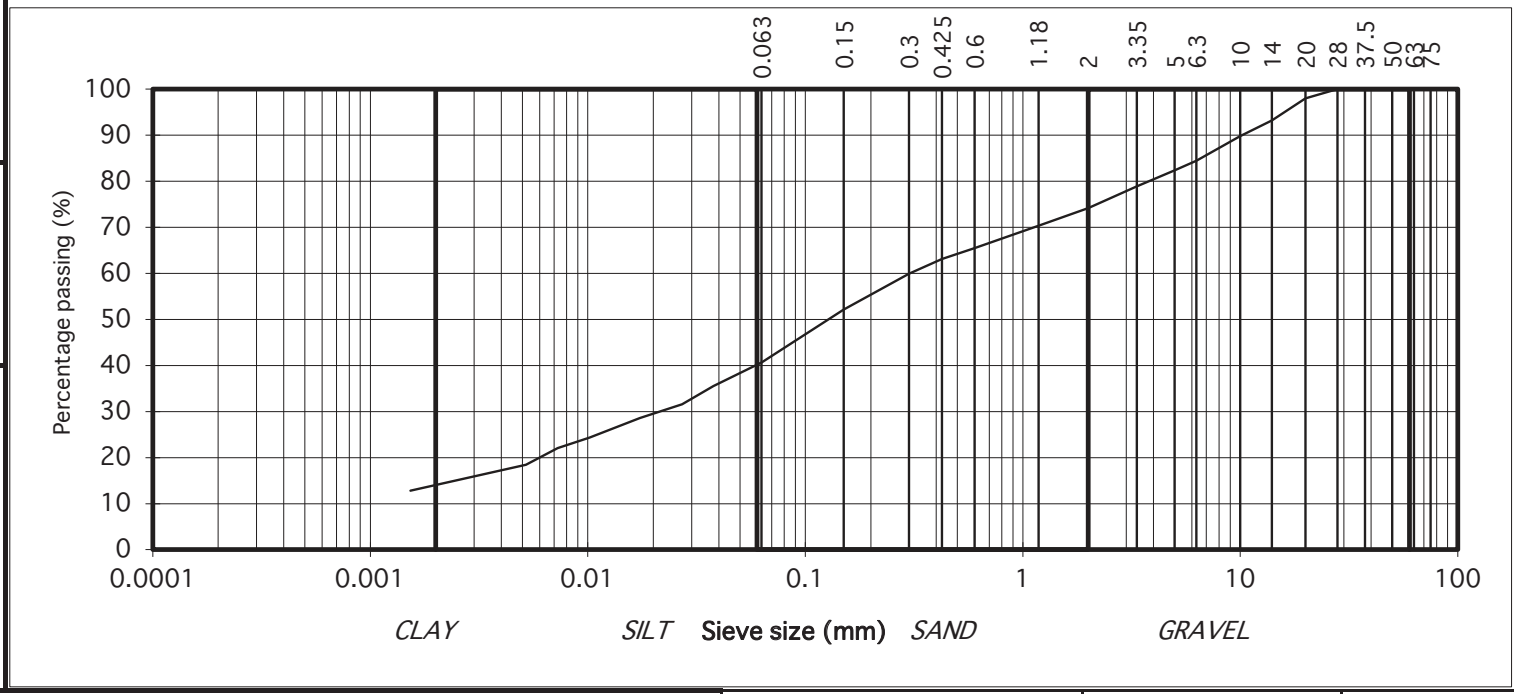
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	98	
14	93	
10	90	
6.3	84	
5	82	
3.35	79	
2	74	
1.18	70	SAND
0.6	65	
0.425	63	
0.3	60	
0.15	52	
0.063	41	SILT/CLAY
0.038	36	
0.027	32	
0.017	29	
0.010	24	
0.007	22	
0.005	18	
0.002	13	

Contract No.	25882	Report No.	R171128	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH19			
Sample No.*	AA212830	Lab. Sample No.		A25/2530
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		08/07/2025
Description:	Grey slightly sandy, slightly gravelly, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

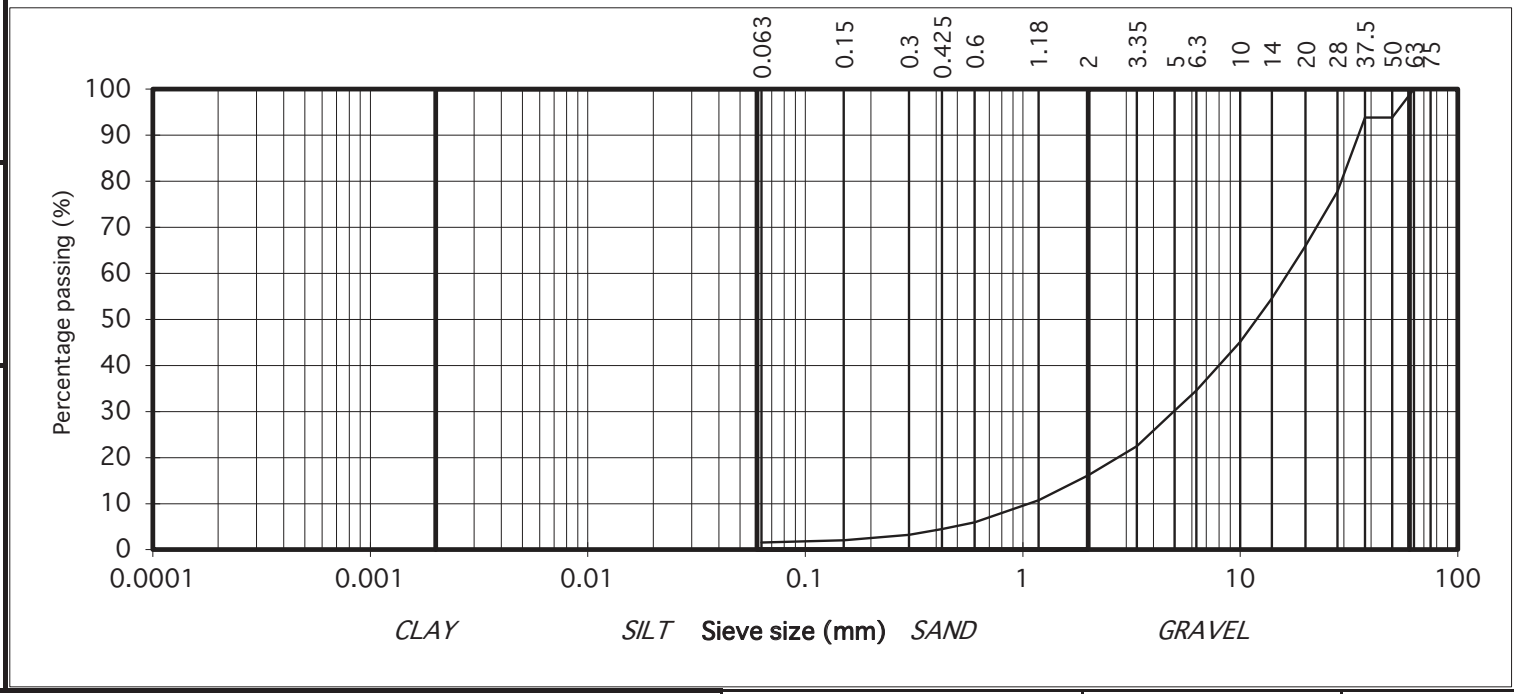
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	94	GRAVEL
37.5	94	
28	78	
20	66	
14	55	
10	45	
6.3	35	
5	30	
3.35	22	
2	16	
1.18	11	SAND
0.6	6	
0.425	4	
0.3	3	
0.15	2	
0.063	2	SILT/CLAY

Contract No.	25882	Report No.	R171117	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH24			
Sample No.*	AA213979	Lab. Sample No.		A25/2532
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		08/07/2025
Description:	Brown slightly clayey/silty, sandy, GRAVEL			
Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

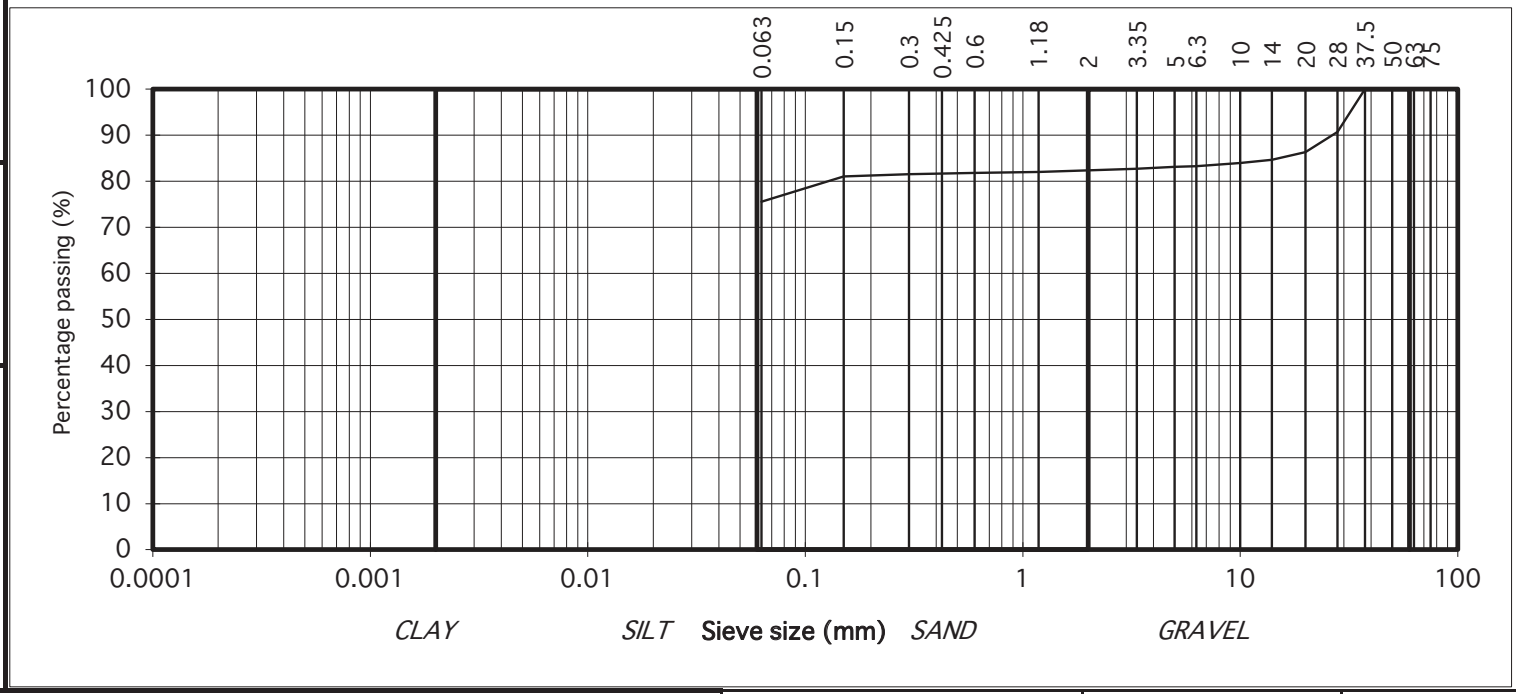
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	91	
20	86	
14	85	
10	84	
6.3	83	
5	83	
3.35	83	
2	82	
1.18	82	SAND
0.6	82	
0.425	82	
0.3	82	
0.15	81	
0.063	76	SILT/CLAY

Contract No. 25882 Report No. R171115
Contract Name : Gas to Edenderry
BH/TP No. BH24
Sample No.* AA213981 Lab. Sample No. A25/2533
Sample Type: B
Depth* (m) 6.00 Customer: MIL
Date Received 07/07/2025 Date Testing started 08/07/2025
Description: Brown slightly sandy, slightly gravelly, SILT/CLAY

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

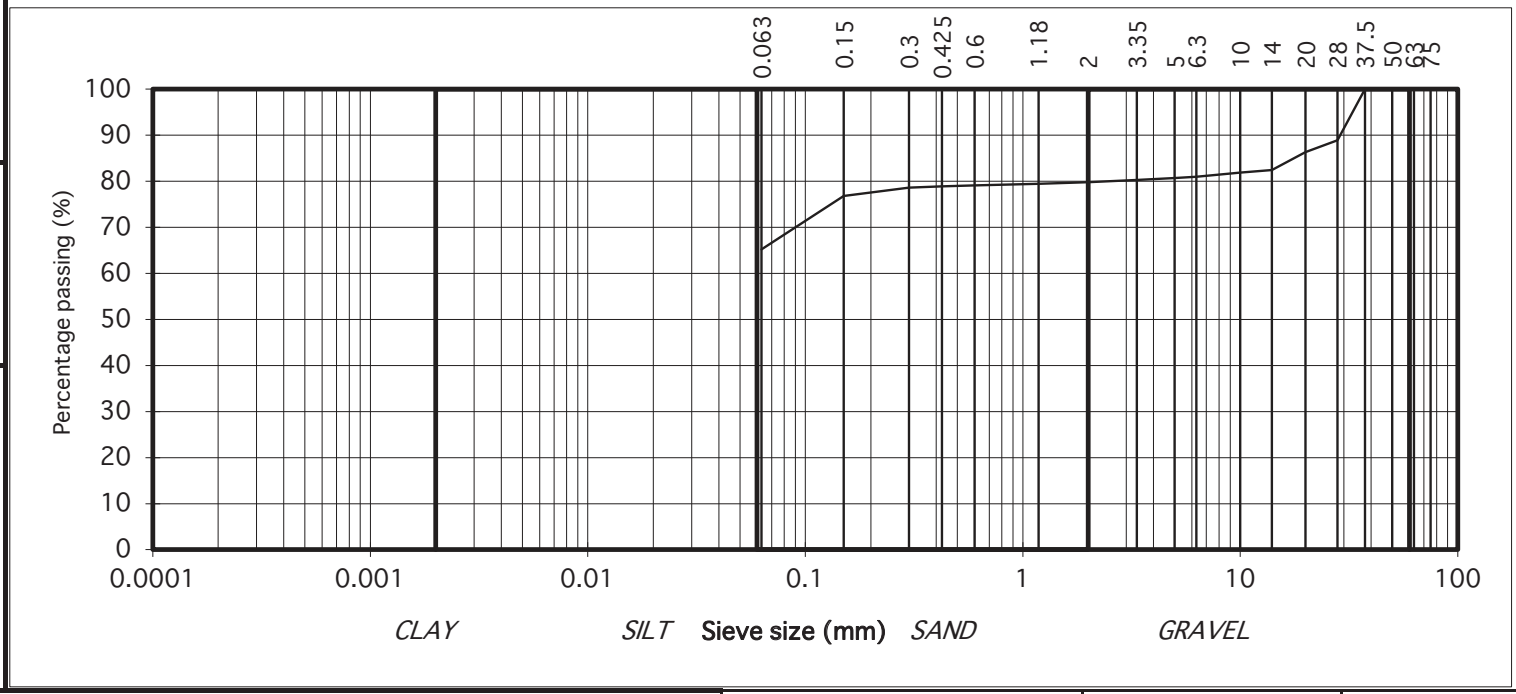
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	89	
20	86	
14	82	
10	82	
6.3	81	
5	81	
3.35	80	
2	80	
1.18	79	SAND
0.6	79	
0.425	79	
0.3	79	
0.15	77	
0.063	65	SILT/CLAY

Contract No. 25882 Report No. R171116
Contract Name : Gas to Edenderry
BH/TP No. BH24
Sample No.* AA213983 Lab. Sample No. A25/2534
Sample Type: B
Depth* (m) 8.00 Customer: MIL
Date Received 07/07/2025 Date Testing started 08/07/2025
Description: Grey slightly sandy, slightly gravelly, SILT/CLAY

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

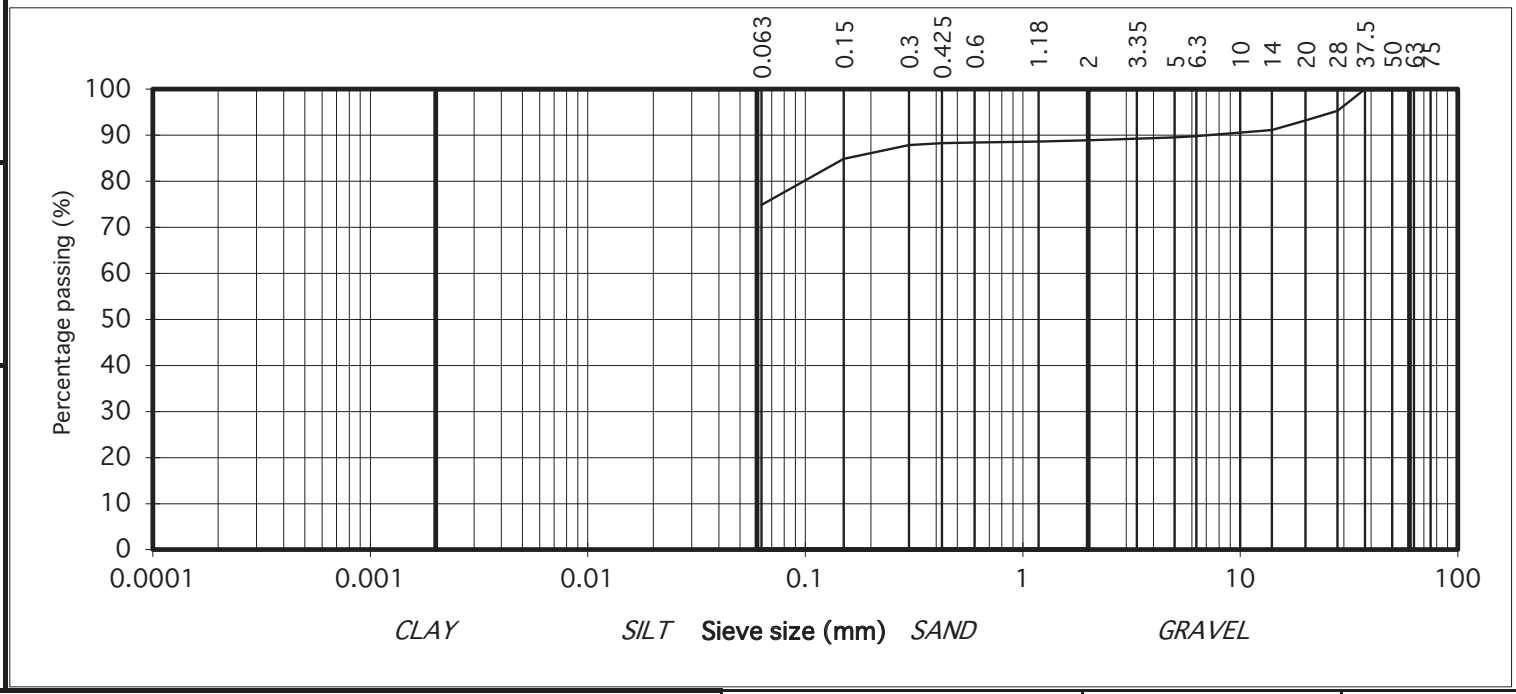
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	95	
20	93	
14	91	
10	91	
6.3	90	
5	90	
3.35	89	
2	89	
1.18	89	SAND
0.6	88	
0.425	88	
0.3	88	
0.15	85	
0.063	75	SILT/CLAY

Contract No.	25882	Report No.	R171114	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH24			
Sample No.*	AA213985	Lab. Sample No.		A25/2535
Sample Type:	B			
Depth* (m)	10.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		07/07/2025
Description:	Brown slightly sandy, slightly gravelly, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

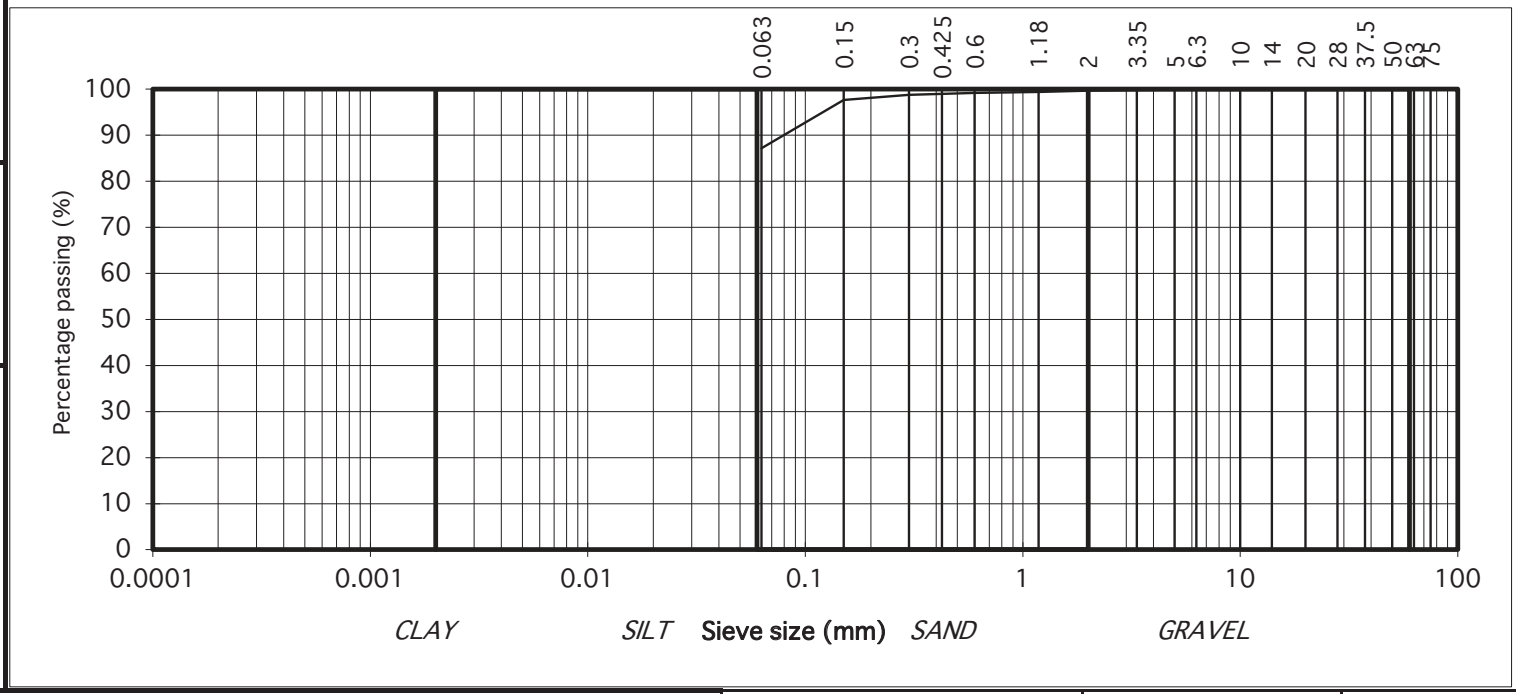
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	99	SAND
0.6	99	
0.425	99	
0.3	99	
0.15	98	
0.063	87	SILT/CLAY

Contract No.	25882	Report No.	R171119	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH25			
Sample No.*	AA222794	Lab. Sample No.		A25/2537
Sample Type:	B			
Depth* (m)	2.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		07/07/2025
Description:	Brown slightly sandy, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

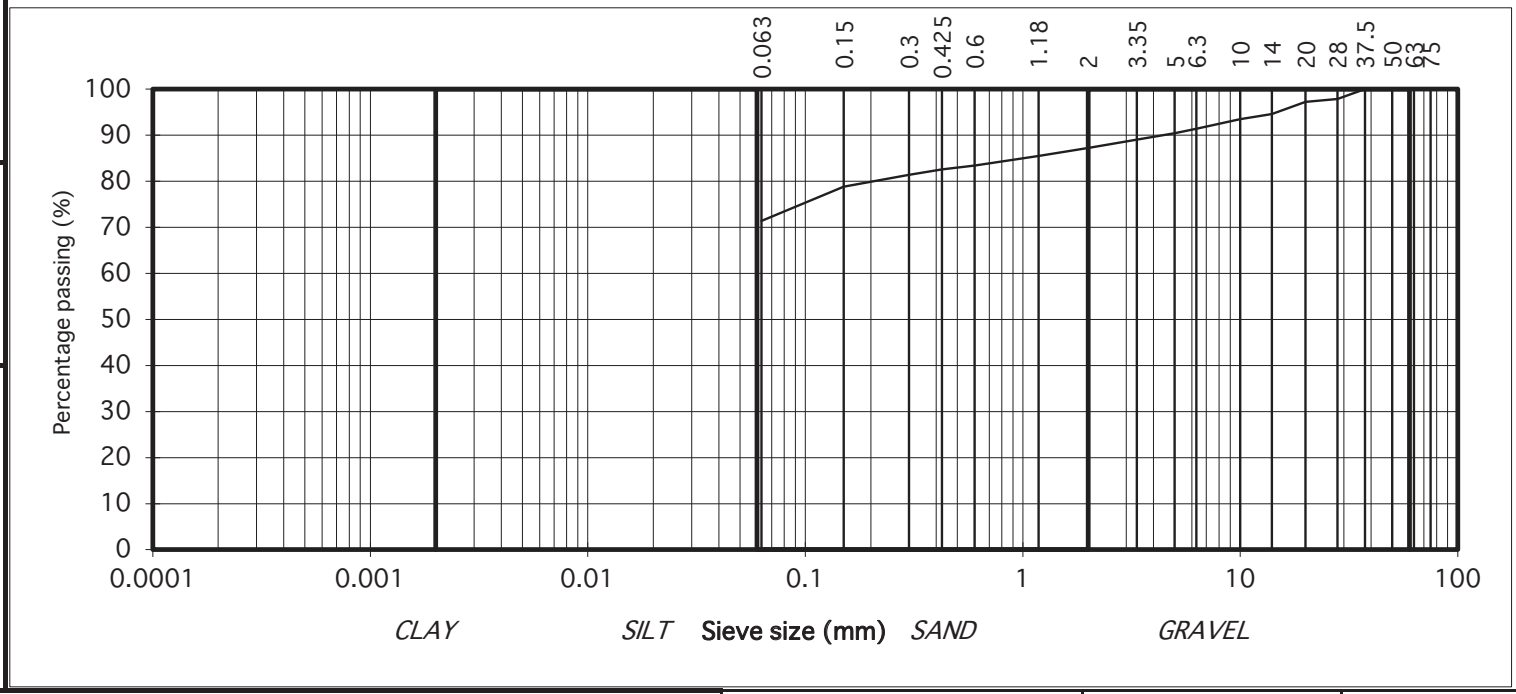
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	98	
20	97	
14	95	
10	94	
6.3	91	
5	90	
3.35	89	
2	87	
1.18	86	SAND
0.6	83	
0.425	83	
0.3	81	
0.15	79	
0.063	71	SILT/CLAY

Contract No.	25882	Report No.	R171120	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH25			
Sample No.*	AA222796	Lab. Sample No.		A25/2538
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		07/07/2025
Description:	Brown slightly sandy, slightly gravelly, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

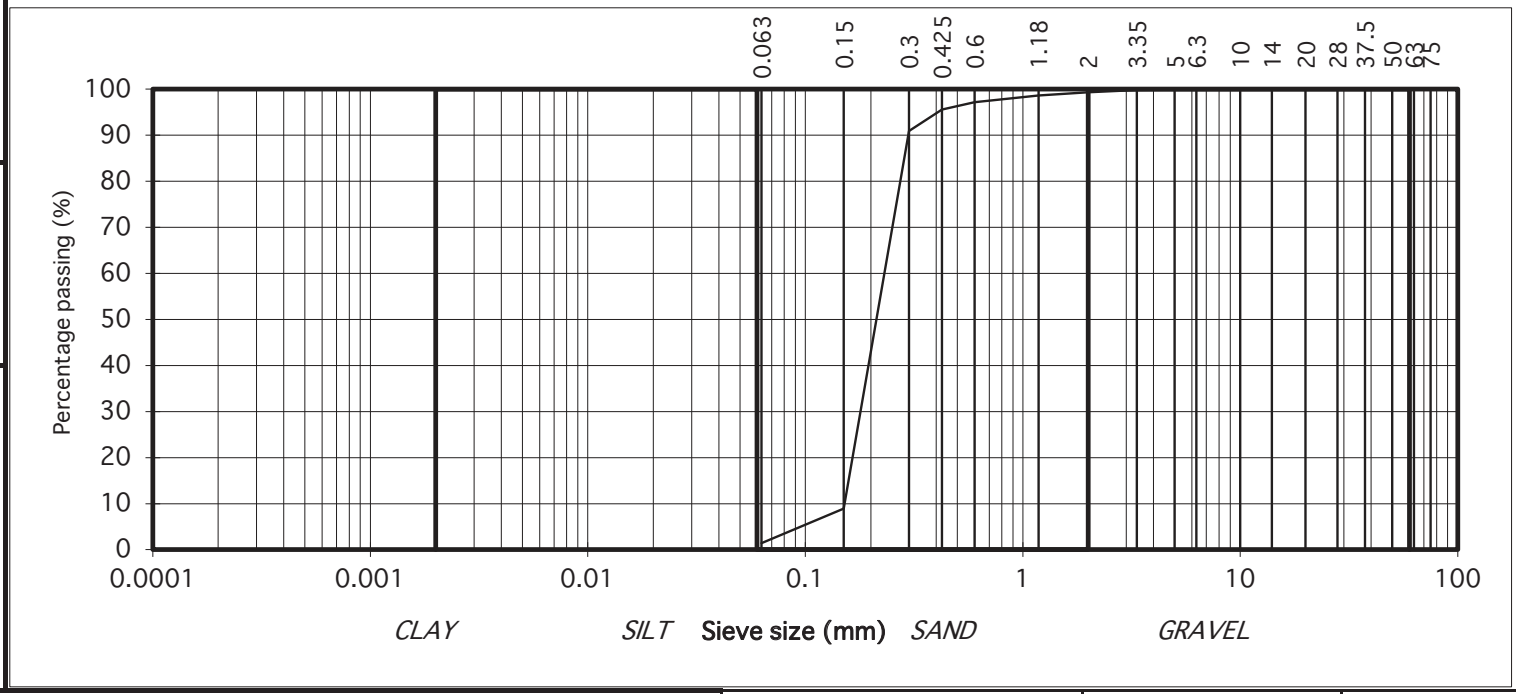
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	99	
1.18	99	SAND
0.6	97	
0.425	96	
0.3	91	
0.15	9	
0.063	1	SILT/CLAY

Contract No.	25882	Report No.	R171614	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH25			
Sample No.*	AA222798	Lab. Sample No.		A25/2539
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		07/07/2025
Description:	Grey slightly clayey/silty, slightly gravelly, SAND			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Approved by:	Date:	Page no:
H Byrne	05/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

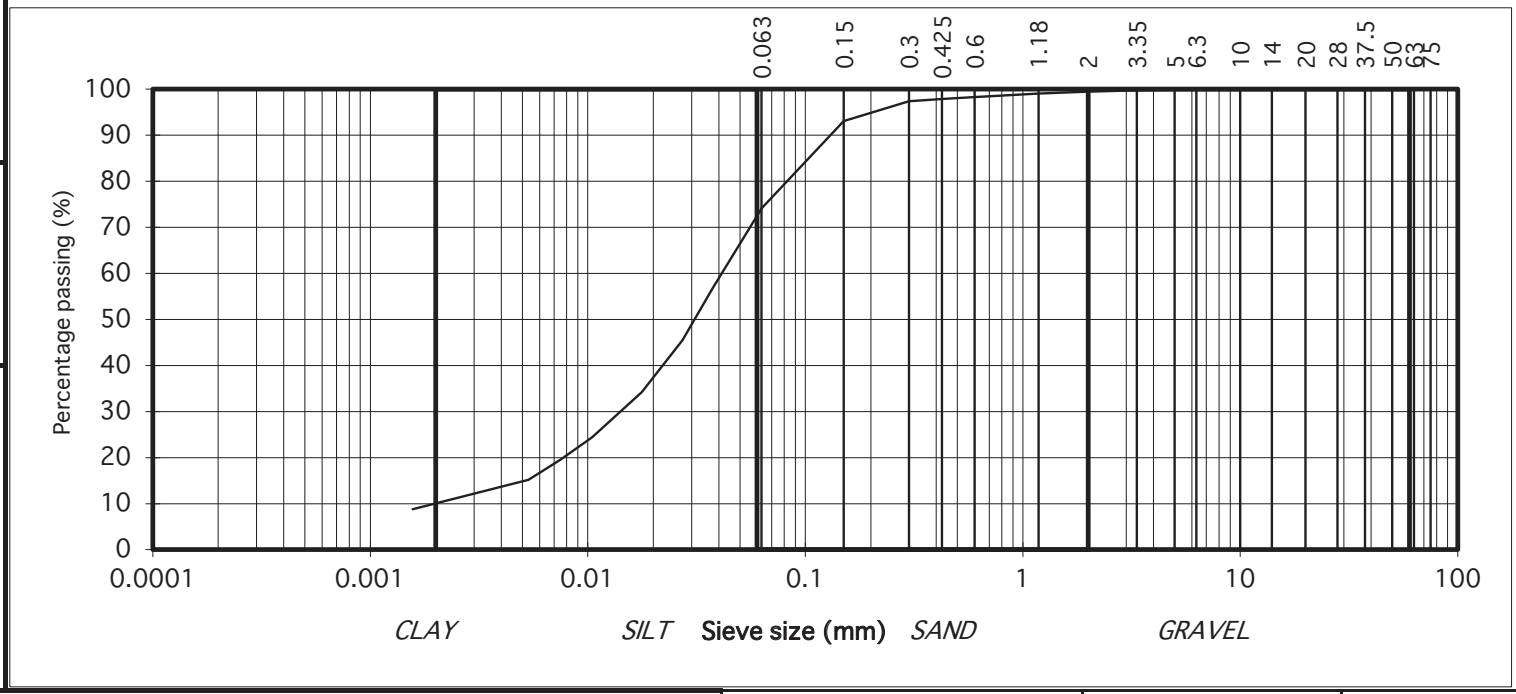
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	99	
1.18	99	SAND
0.6	98	
0.425	98	
0.3	97	
0.15	93	
0.063	74	SILT/CLAY
0.037	57	
0.027	45	
0.018	34	
0.010	24	
0.007	20	
0.005	15	
0.002	9	

Contract No.	25882	Report No.	R171118	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH25			
Sample No.*	AA222801	Lab. Sample No.		A25/2540
Sample Type:	B			
Depth* (m)	9.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		08/07/2025
Description:	Grey slightly sandy, slightly gravelly, SILT			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

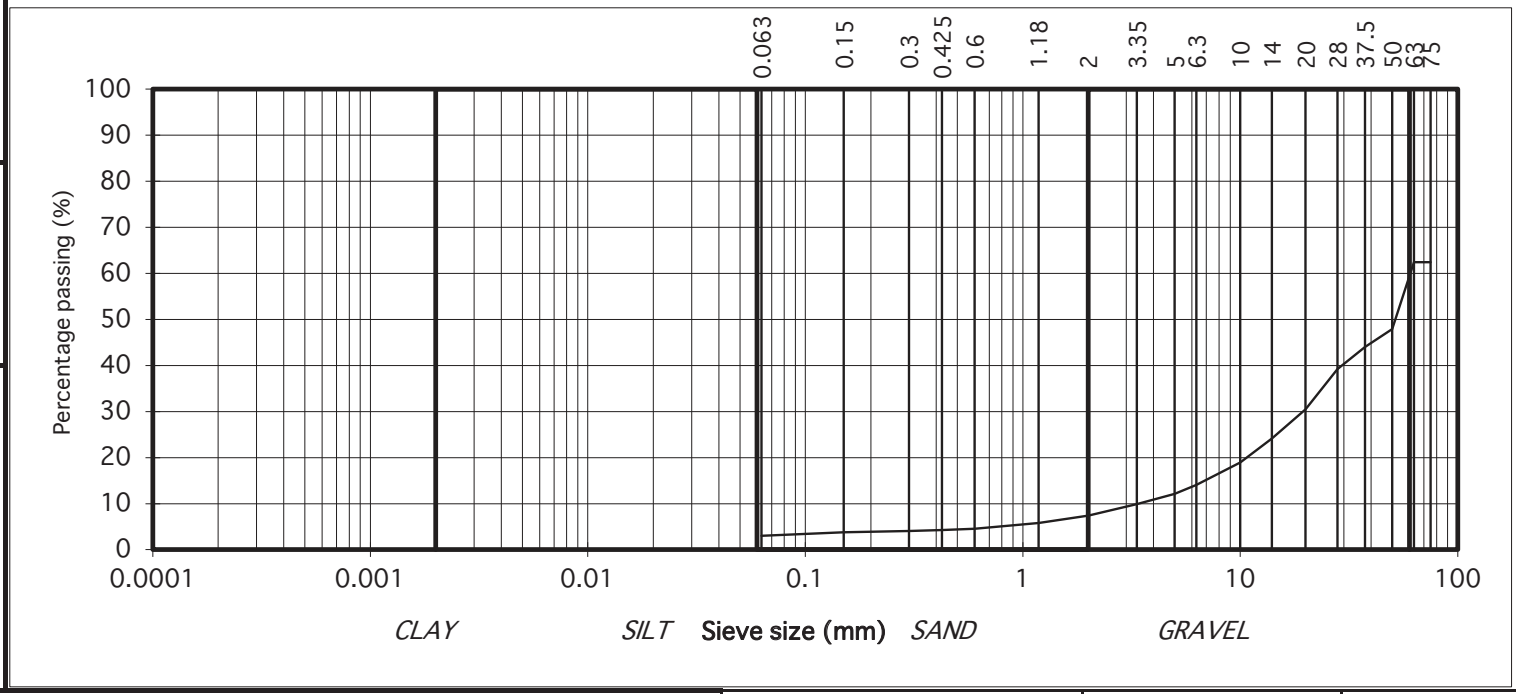
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	62	COBBLES
63	62	
50	48	GRAVEL
37.5	44	
28	39	
20	30	
14	24	
10	19	
6.3	14	
5	12	
3.35	10	
2	7	
1.18	6	SAND
0.6	5	
0.425	4	
0.3	4	
0.15	4	
0.063	3	SILT/CLAY

Contract No.	25882	Report No.	R171113	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH25			
Sample No.*	AA222803	Lab. Sample No.		A25/2541
Sample Type:	B			
Depth* (m)	11.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		07/07/2025
Description:	Brown slightly clayey/silty, slightly sandy, GRAVEL with many cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

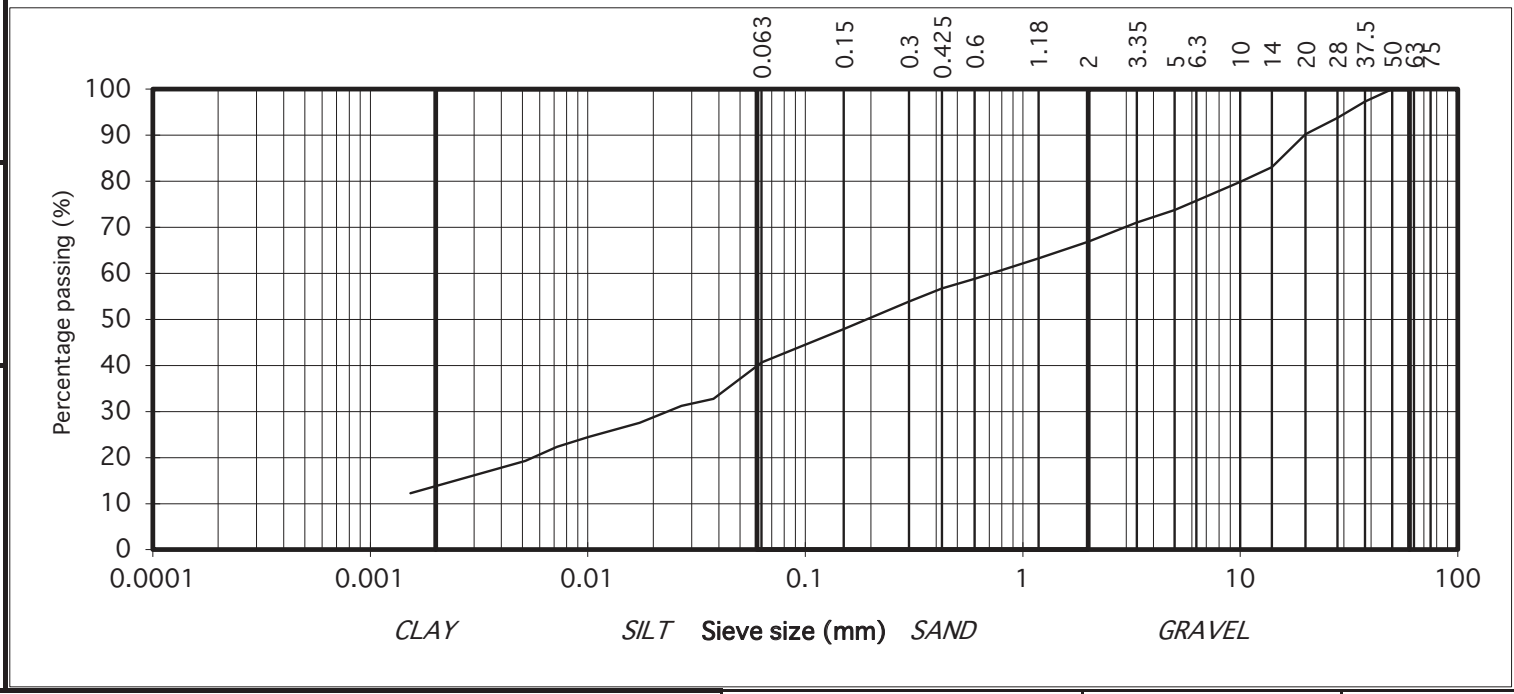
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	97	
28	94	
20	90	
14	83	
10	80	
6.3	76	
5	74	
3.35	71	
2	67	
1.18	63	SAND
0.6	59	
0.425	57	
0.3	54	
0.15	48	
0.063	41	SILT/CLAY
0.038	33	
0.027	31	
0.017	28	
0.010	24	
0.007	22	
0.005	19	
0.002	12	

Contract No.	25882	Report No.	R171124	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH51A			
Sample No.*	AA22805	Lab. Sample No.		A25/2543
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		07/07/2025
Description:	Brown slightly sandy, slightly gravelly, CLAY			

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

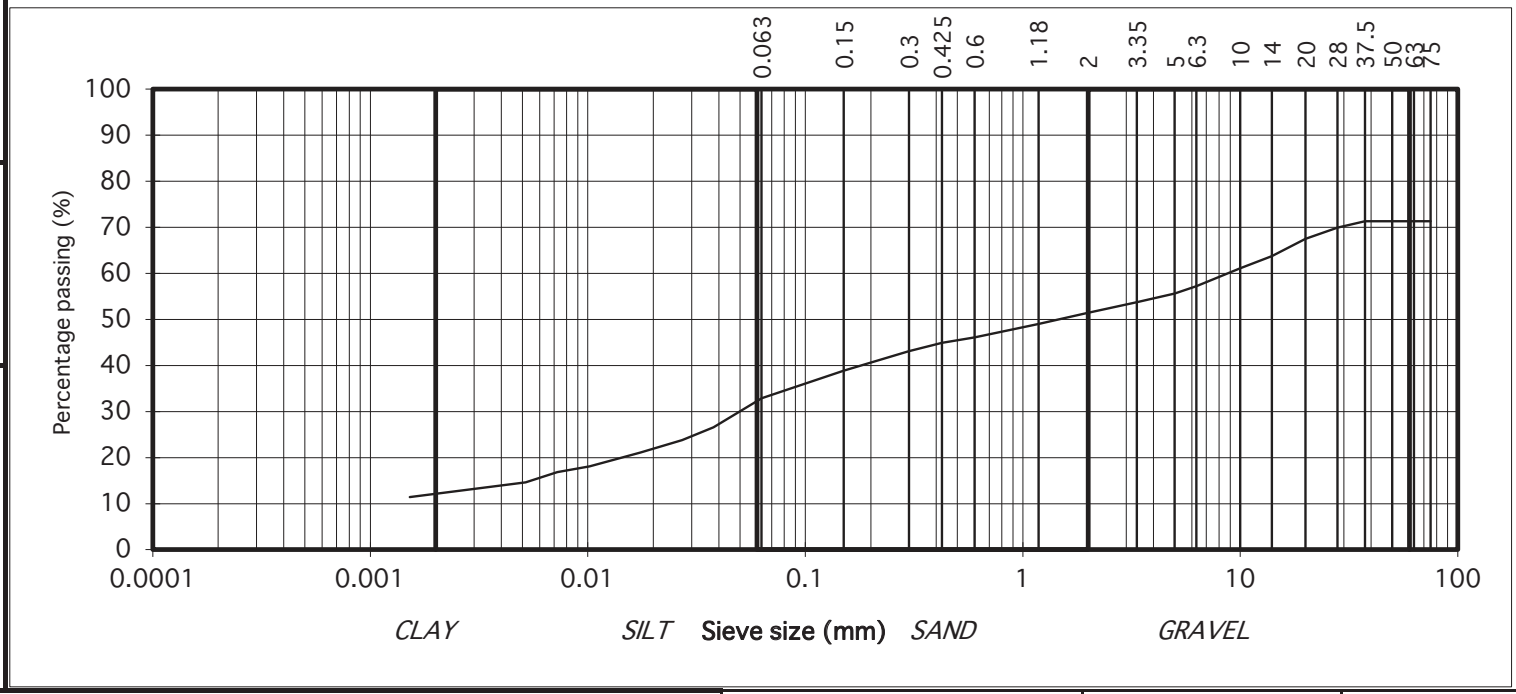
particle size	% passing	
75	71	COBBLES
63	71	
50	71	GRAVEL
37.5	71	
28	70	
20	67	
14	64	
10	61	
6.3	57	
5	56	
3.35	54	
2	51	
1.18	49	SAND
0.6	46	
0.425	45	
0.3	43	
0.15	39	
0.063	33	SILT/CLAY
0.038	27	
0.027	24	
0.017	21	
0.010	18	
0.007	17	
0.005	15	
0.002	11	

Contract No.	25882	Report No.	R171123	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH51A			
Sample No.*	AA22809	Lab. Sample No.		A25/2545
Sample Type:	B			
Depth* (m)	8.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		07/07/2025
Description:	Brown slightly sandy, slightly gravelly, CLAY with many cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

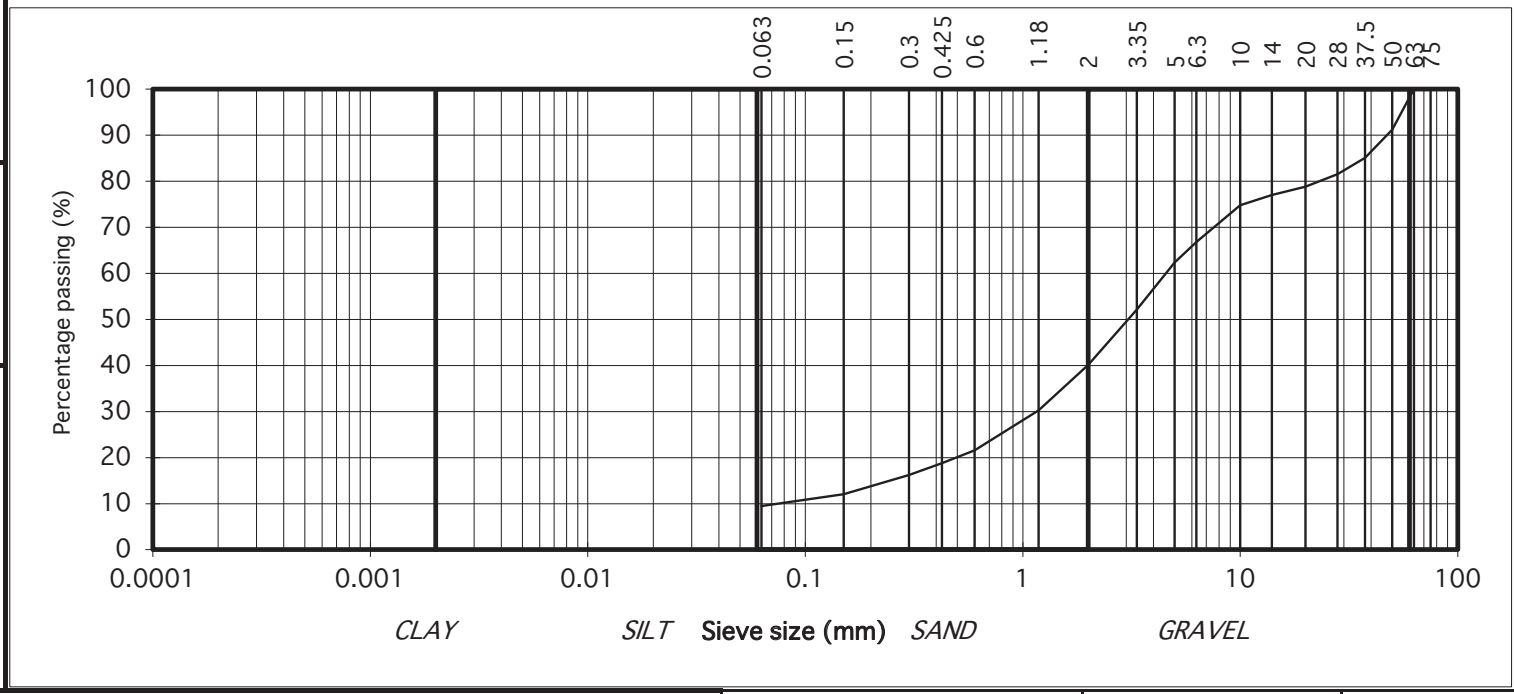
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	91	GRAVEL
37.5	85	
28	82	
20	79	
14	77	
10	75	
6.3	67	
5	62	
3.35	52	
2	40	
1.18	30	SAND
0.6	22	
0.425	19	
0.3	16	
0.15	12	
0.063	9	SILT/CLAY

Contract No.	25882	Report No.	R171122	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH51A			
Sample No.*	AA22811	Lab. Sample No.		A25/2546
Sample Type:	B			
Depth* (m)	10.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		07/07/2025
Description:	Brown clayey/silty, very sandy, GRAVEL			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

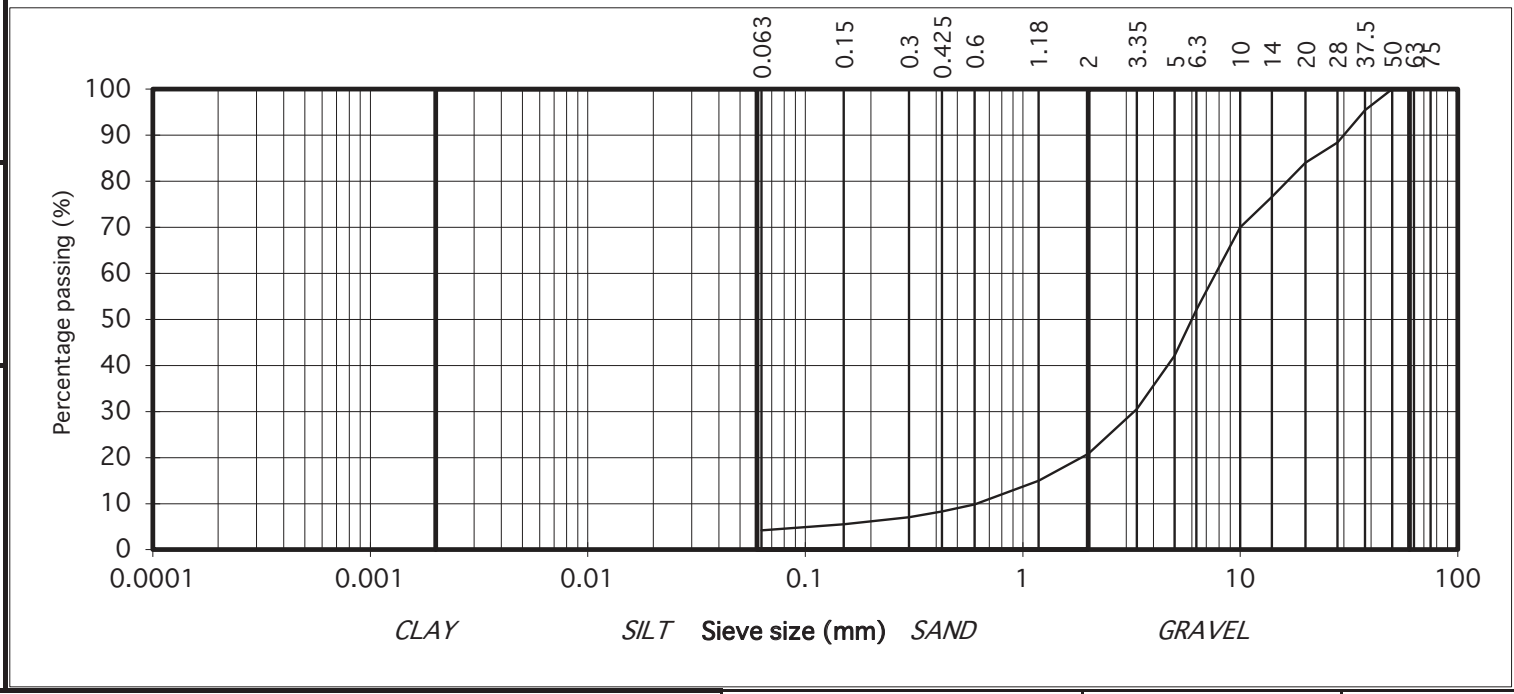
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	95	
28	88	
20	84	
14	77	
10	70	
6.3	52	
5	42	
3.35	31	
2	21	
1.18	15	SAND
0.6	10	
0.425	8	
0.3	7	
0.15	6	
0.063	4	SILT/CLAY

Contract No.	25882	Report No.	R171121
Contract Name :	Gas to Edenderry		
BH/TP No.	BH51A		
Sample No.*	AA22813	Lab. Sample No.	A25/2547
Sample Type:	B		
Depth* (m)	12.00	Customer:	MIL
Date Received	07/07/2025	Date Testing started	08/07/2025
Description:	Brown slightly clayey/silty, sandy, GRAVEL		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**

Report No. **R172042** Contract No. 25882 Contract Name: Gas to Edenderry

Customer MIL

Samples Received: 17/06/25 Date Tested: 07/07/25

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH15	0	1.0	A25/2703	U	12	24	NP	NP	58	WS	4.4		Brown sandy gravelly SILT
BH15	AA22353	3.0	A25/2704	B	9.5	25	12	13	50	WS	4.4	C L	Brown slightly sandy, gravelly, CLAY with some cobbles
BH15	AA22354	4.5	A25/2705	B	11	26	14	12	60	WS	4.4	C L	Brown sandy gravelly CLAY
BH15	AA22356	6.0	A25/2706	B	9.9	24	13	11	55	WS	4.4	C L	Brown slightly sandy, slightly gravelly, CLAY
BH23A	AA22825	1.0	A25/2712	B	29	54	NP	NP	82	WS	4.4		Brown sandy gravelly SILT
BH23A	AA22828	4.0	A25/2713	B	26	79	NP	NP	78	WS	4.4		Brown sandy gravelly SILT
BH53	AA213989	1.0	A25/2718	B	23	32	NP	NP	72	WS	4.4		Grey brown sandy gravelly SILT
BH53	0	3.0	A25/2719	U	15	20	NP	NP	81	WS	4.4		Brown sandy gravelly SILT
BH53	AA214000	12.0	A25/2724	B	4.7	26	13	13	37	WS	4.4	C L	Brown clayey, sandy, GRAVEL with many cobbles
BH54	AA22838	1.0	A25/2725	B	20	23	NP	NP	87	WS	4.4		Grey sandy gravelly SILT
BH54	0	3.0	A25/2726	U	20	26	NP	NP	100	WS	4.4		Brown sandy SILT
BH54	0	5.0	A25/2727	U	19	27	NP	NP	99	WS	4.4		Brown sandy SILT
BH54	0	7.0	A25/2728	U	24	29	NP	NP	100	WS	4.4		Brown sandy SILT
BH54	AA22846	9.0	A25/2729	B	8.5	26	14	12	50	WS	4.4	C L	Grey slightly sandy, gravelly, CLAY

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method
4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.
NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12.
Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.
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IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by | Date: 07/08/25 | Page: 1 of 1

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

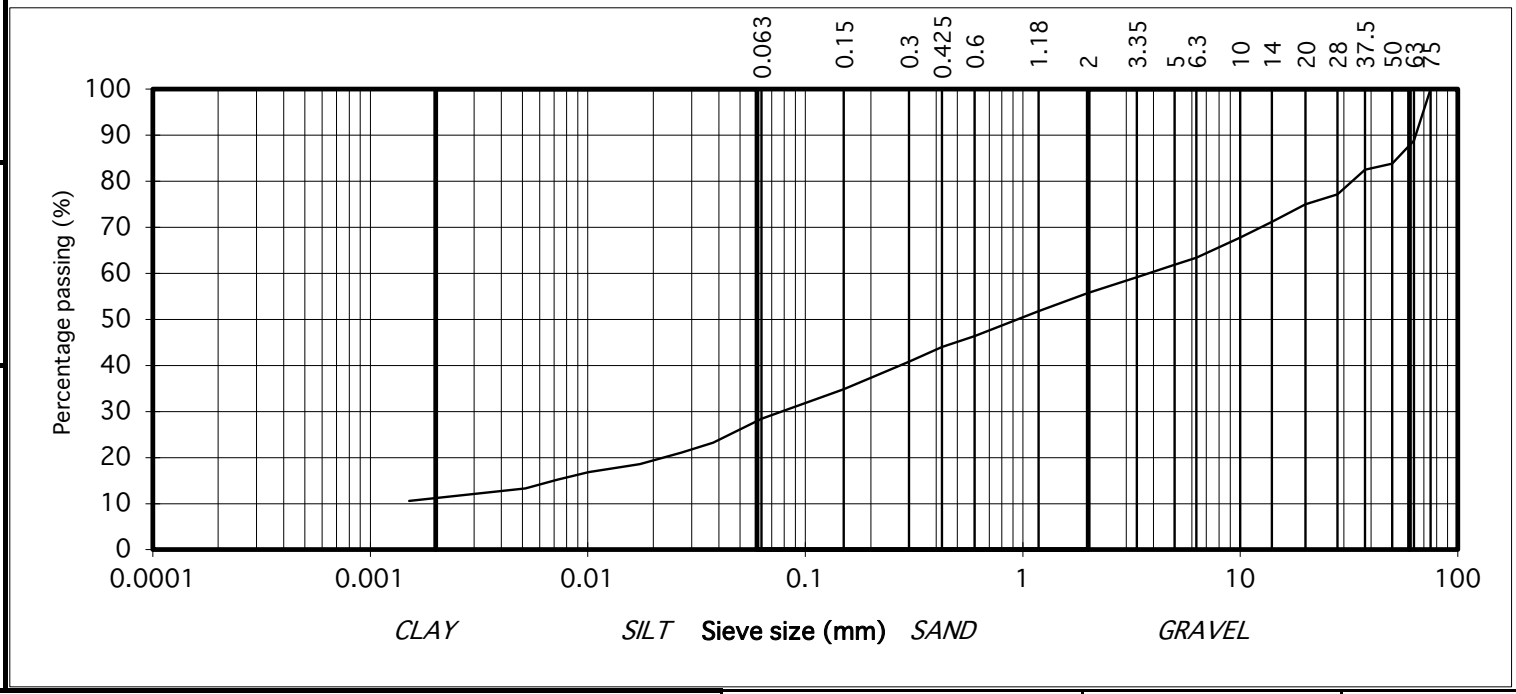
particle size	% passing	
75	100	COBBLES
63	89	
50	84	GRAVEL
37.5	82	
28	77	
20	75	
14	71	
10	68	
6.3	63	
5	62	
3.35	59	
2	56	
1.18	52	SAND
0.6	46	
0.425	44	
0.3	41	
0.15	35	
0.063	28	SILT/CLAY
0.038	23	
0.027	21	
0.017	19	
0.010	17	
0.007	15	
0.005	13	
0.002	11	

Contract No.	25882	Report No.	R172271	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH15			
Sample No.*	AA22353	Lab. Sample No.		A25/2704
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	17/06/2025	Date Testing started		16/08/2025
Description:	Brown slightly sandy, gravelly, CLAY with some cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

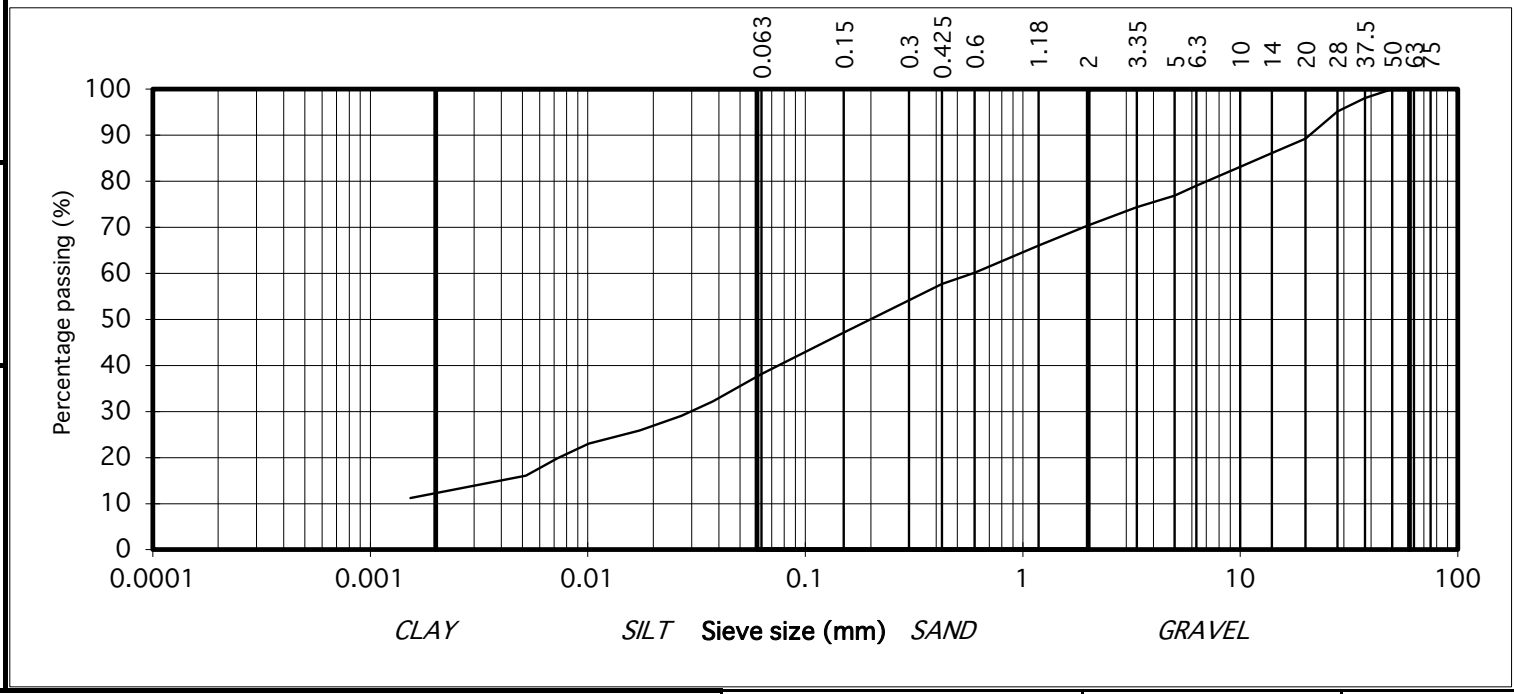
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	98	
28	95	
20	89	
14	86	
10	83	
6.3	79	
5	77	
3.35	74	
2	70	
1.18	66	SAND
0.6	60	
0.425	58	
0.3	54	
0.15	47	
0.063	38	SILT/CLAY
0.038	32	
0.027	29	
0.017	26	
0.010	23	
0.007	20	
0.005	16	
0.002	11	

Contract No.	25882	Report No.	R172221	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH15			
Sample No.*	AA22356	Lab. Sample No.		A25/2706
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	17/06/2025	Date Testing started		01/08/2025
Description:	Brown slightly sandy, slightly gravelly, CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing
75	100
63	100
50	100
37.5	94
28	89
20	82
14	77
10	73
6.3	69
5	68
3.35	64
2	56
1.18	43
0.6	25
0.425	17
0.3	12
0.15	6
0.063	1

COBBLES

GRAVEL

SAND

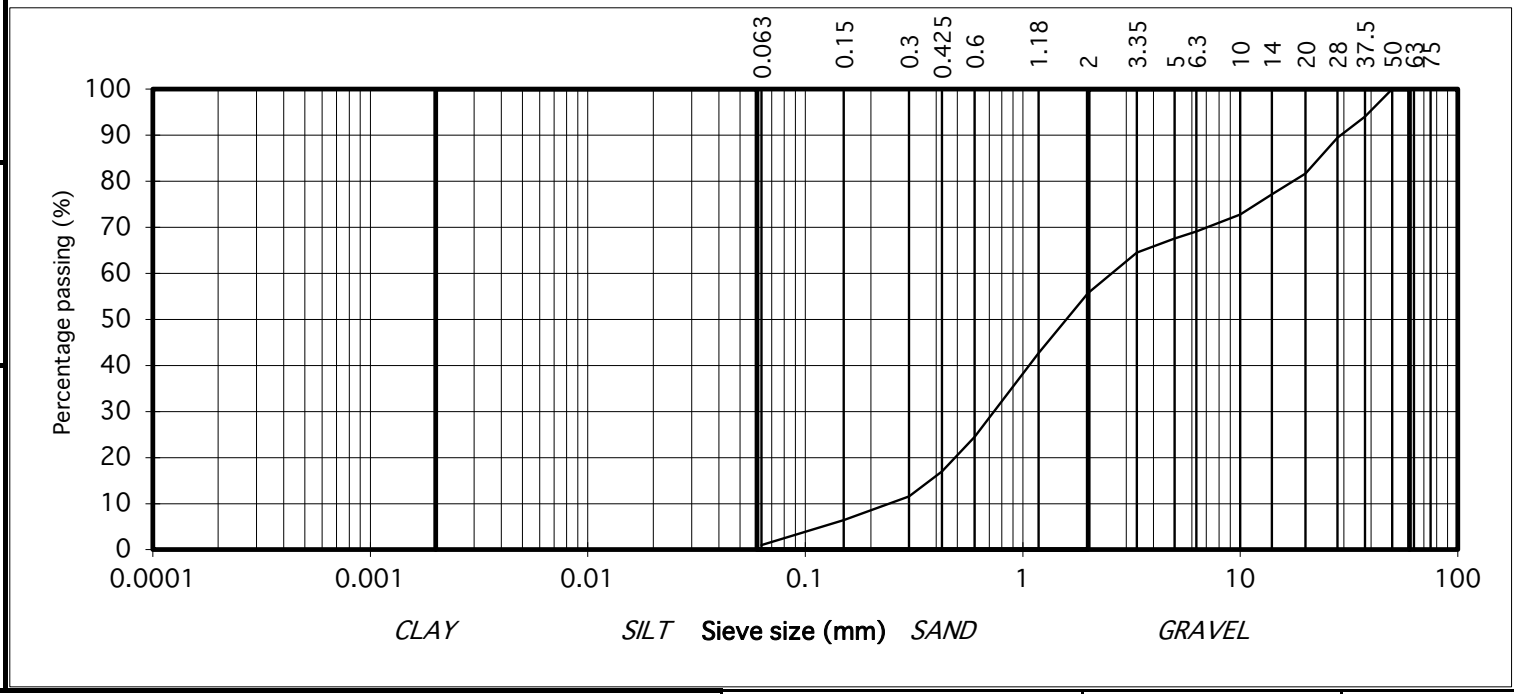
SILT/CLAY

Contract No.	25882	Report No.	R172258	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH22			
Sample No.*	AA22515	Lab. Sample No.		A25/2707
Sample Type:	B			
Depth* (m)	1.00	Customer:	MIL	
Date Received	17/06/2025	Date Testing started		16/08/2025
Description:	Grey slightly clayey, very gravelly, SAND			

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

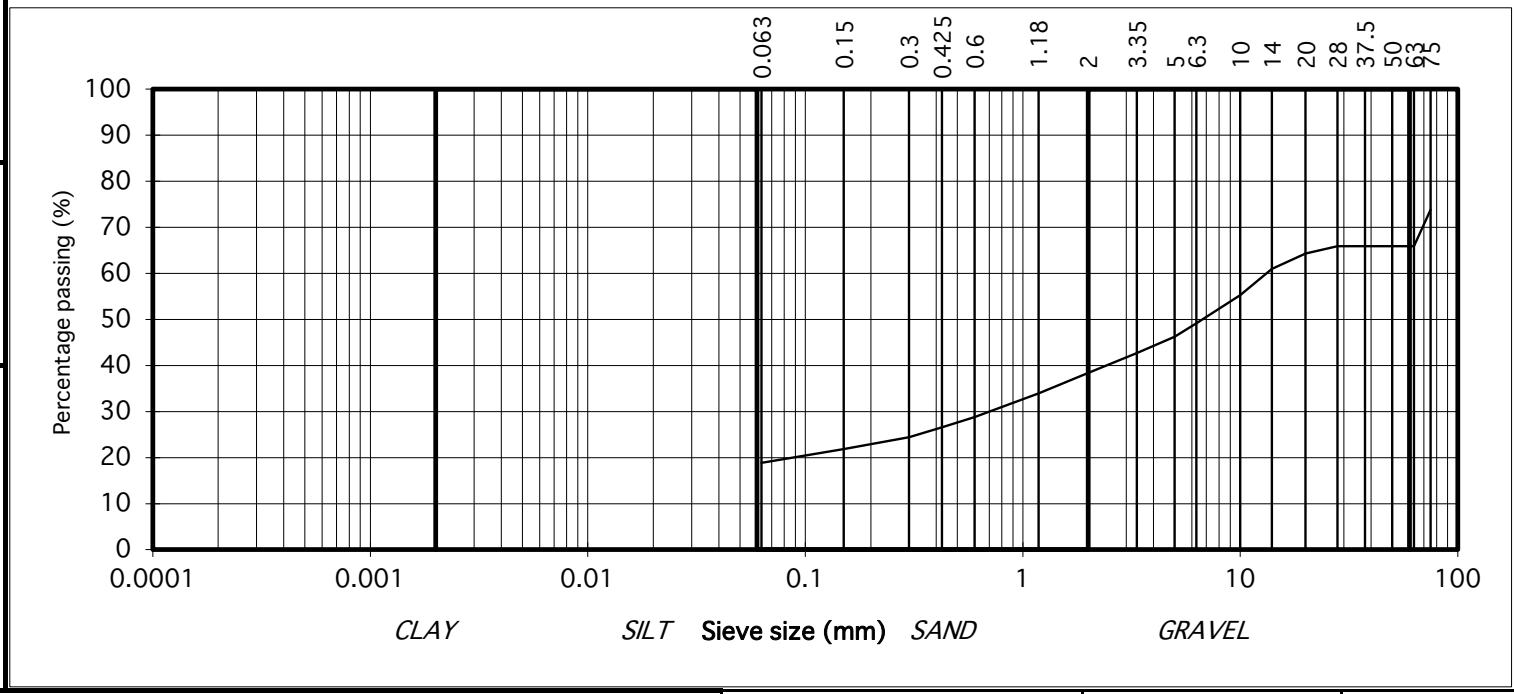
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	74	COBBLES
63	66	
50	66	GRAVEL
37.5	66	
28	66	
20	64	
14	61	
10	55	
6.3	49	
5	46	
3.35	43	
2	38	
1.18	34	SAND
0.6	29	
0.425	27	
0.3	24	
0.15	22	
0.063	19	SILT/CLAY

Contract No.	25882	Report No.	R1712045	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH22			
Sample No.*	AA22537	Lab. Sample No.		A25/2708
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	17/06/2025	Date Testing started		02/08/2025
Description:	Brown clayey, sandy, GRAVEL with many cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

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H Byrne	19/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

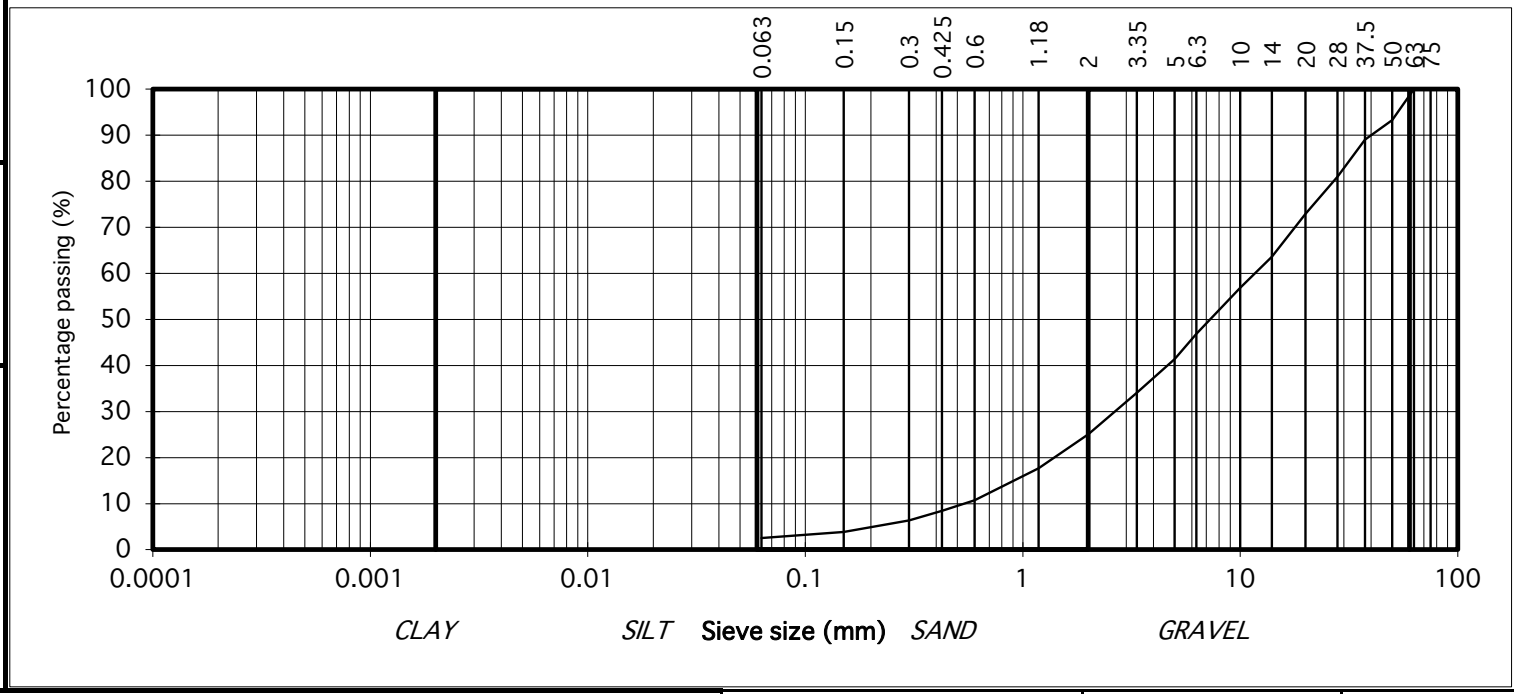
particle size	% passing	
75	100	COBBLES
63	100	
50	93	GRAVEL
37.5	89	
28	81	
20	73	
14	64	
10	57	
6.3	47	
5	41	
3.35	34	
2	25	
1.18	18	SAND
0.6	11	
0.425	8	
0.3	6	
0.15	4	
0.063	2	SILT/CLAY

Contract No.	25882	Report No.	R172272	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH22			
Sample No.*	AA22539	Lab. Sample No.		A25/2709
Sample Type:	B			
Depth* (m)	5.00	Customer:	MIL	
Date Received	17/06/2025	Date Testing started		16/08/2025
Description:	Grey slightly clayey/silty, very sandy, GRAVEL			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

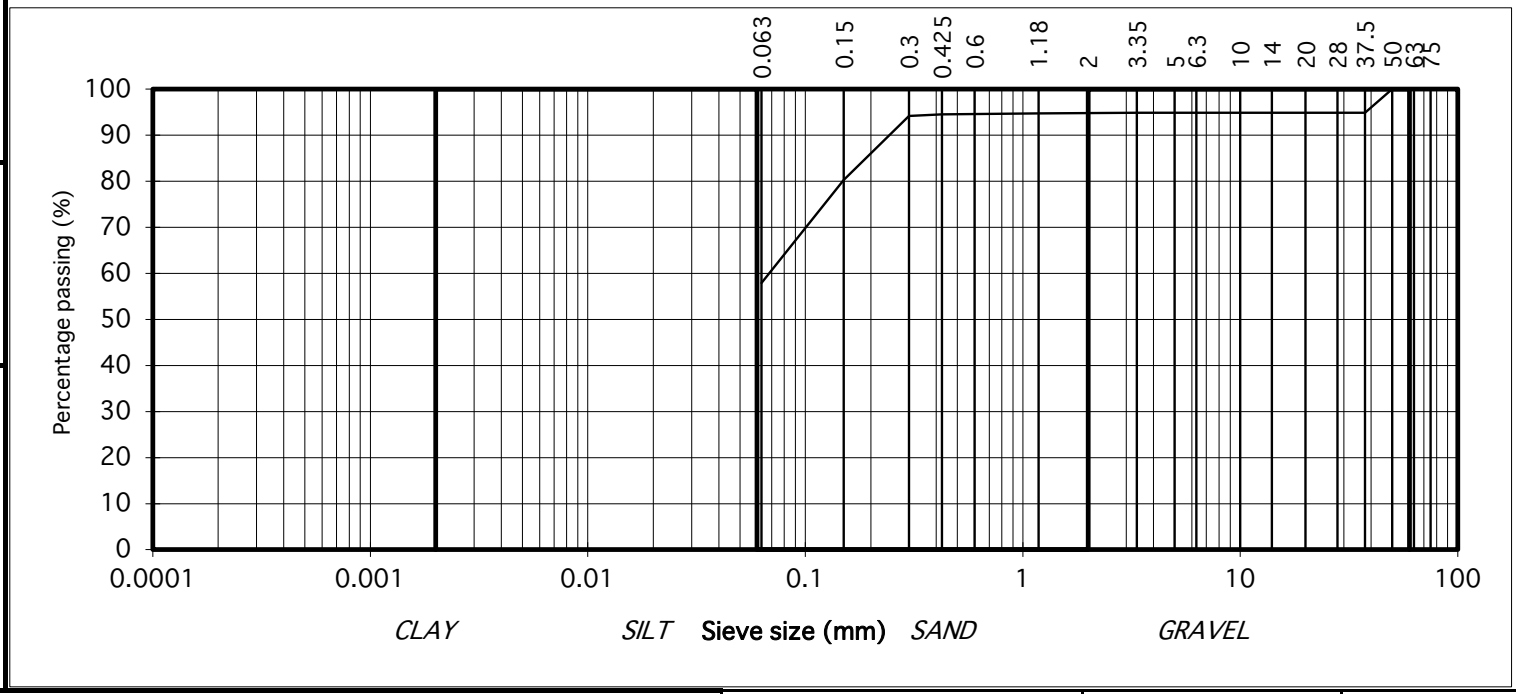
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	95	
28	95	
20	95	
14	95	
10	95	
6.3	95	
5	95	
3.35	95	
2	95	
1.18	95	SAND
0.6	95	
0.425	95	
0.3	94	
0.15	80	
0.063	58	SILT/CLAY

Contract No.	25882	Report No.	R172222	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH22			
Sample No.*	AA22541	Lab. Sample No.		A25/2710
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	17/06/2025	Date Testing started		02/08/2025
Description:	Brown sandy, slightly gravelly, CLAY			

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

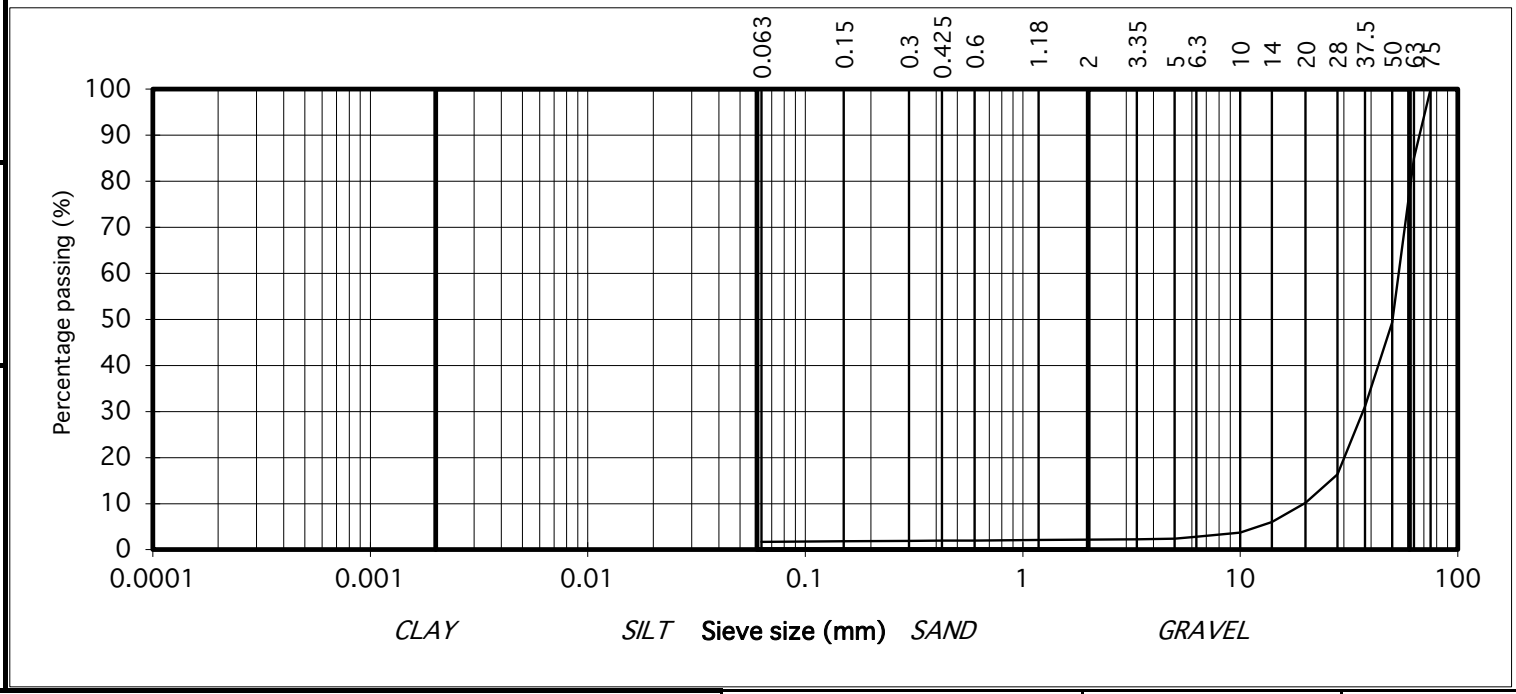
particle size	% passing	
75	100	COBBLES
63	85	
50	49	GRAVEL
37.5	31	
28	16	
20	10	
14	6	
10	4	
6.3	3	
5	2	
3.35	2	
2	2	
1.18	2	SAND
0.6	2	
0.425	2	
0.3	2	
0.15	2	
0.063	2	SILT/CLAY

Contract No.	25882	Report No.	R1712047	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH22			
Sample No.*	AA22543	Lab. Sample No.		A25/2711
Sample Type:	B			
Depth* (m)	9.00	Customer:	MIL	
Date Received	17/06/2025	Date Testing started		02/08/2025
Description:	Brown slightly clayey, GRAVEL with some cobbles			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

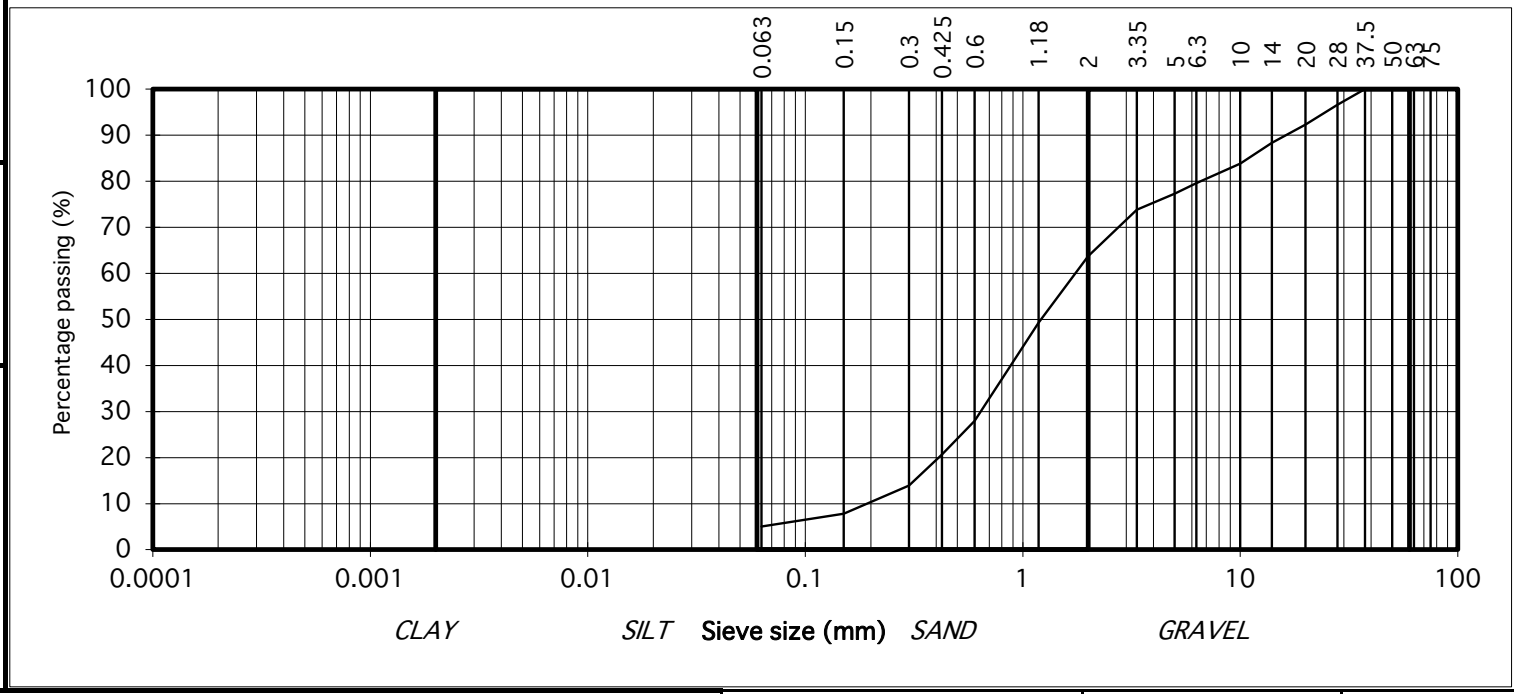
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	97	
20	92	
14	88	
10	84	
6.3	80	
5	77	
3.35	74	
2	64	
1.18	49	SAND
0.6	28	
0.425	21	
0.3	14	
0.15	8	
0.063	5	SILT/CLAY

Contract No.	25882	Report No.	R172259
Contract Name :	Gas to Edenderry		
BH/TP No.	BH23A		
Sample No.*	AA22830	Lab. Sample No.	A25/2714
Sample Type:	B		
Depth* (m)	6.00	Customer:	MIL
Date Received	17/06/2025	Date Testing started	16/08/2025
Description:	Grey clayey, very gravelly, SAND		

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing
75	100
63	100
50	100
37.5	100
28	100
20	100
14	100
10	99
6.3	99
5	99
3.35	98
2	98
1.18	97
0.6	97
0.425	97
0.3	96
0.15	96
0.063	93

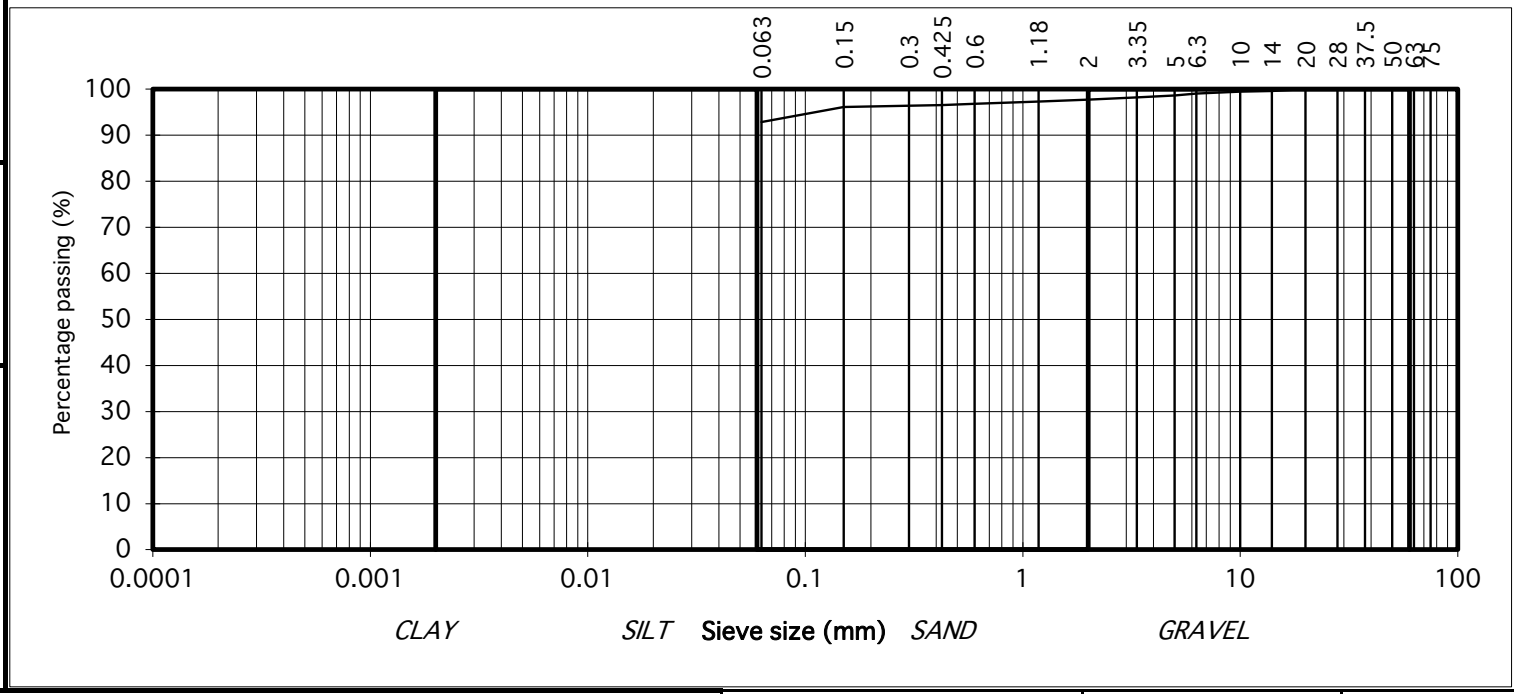
COBBLES | GRAVEL | SAND | SILT/CLAY

Contract No.	25882	Report No.	R1712048	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH23A			
Sample No.*	AA22832	Lab. Sample No.		A25/2715
Sample Type:	B			
Depth* (m)	8.00	Customer:	MIL	
Date Received	17/06/2025	Date Testing started		02/08/2025
Description:	Brown slightly sandy, slightly gravelly, CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Approved by:	Date:	Page no:
H Byrne	19/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

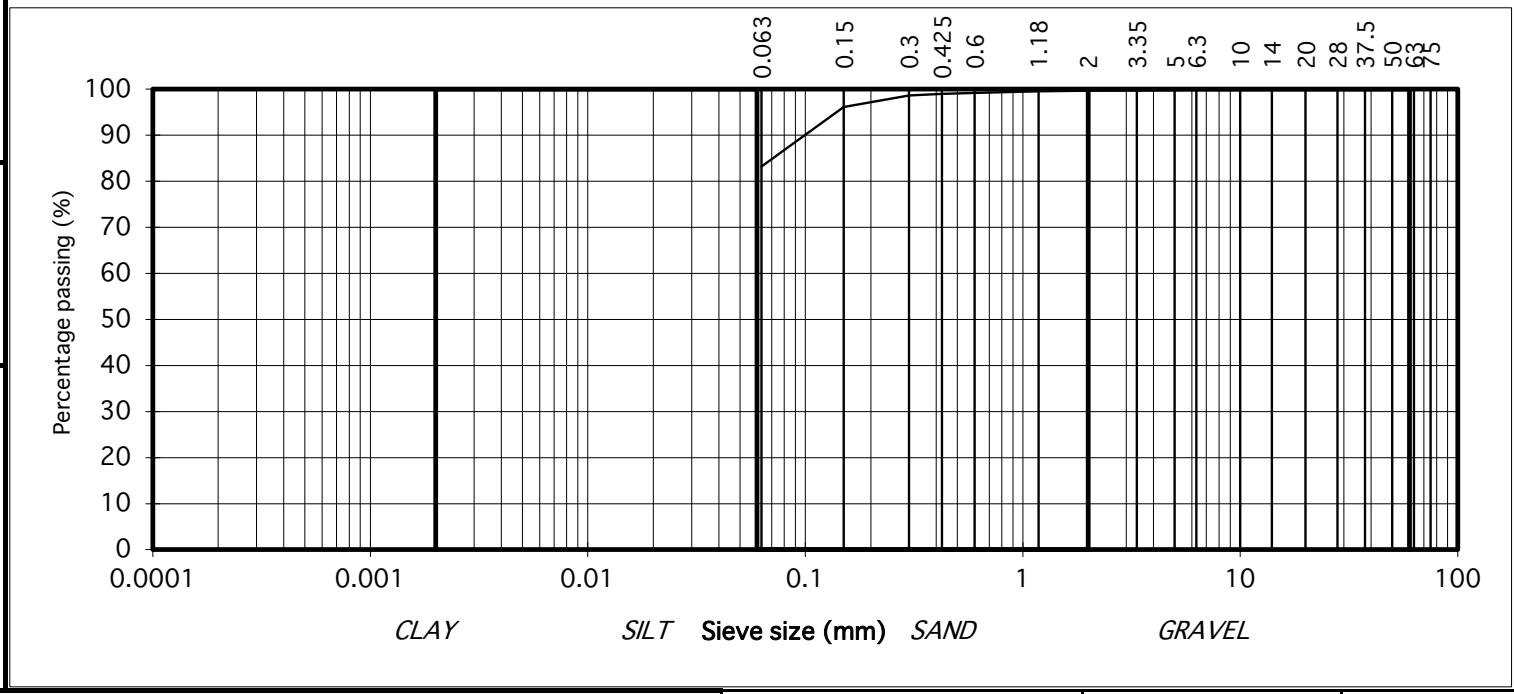
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	
0.6	99	SAND
0.425	99	
0.3	99	
0.15	96	
0.063	83	SILT/CLAY

Contract No.	25882	Report No.	R1712049	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH23A			
Sample No.*	AA22834	Lab. Sample No.		A25/2716
Sample Type:	B			
Depth* (m)	10.00	Customer:	MIL	
Date Received	17/06/2025	Date Testing started		02/08/2025
Description:	Grey/brown slightly sandy, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

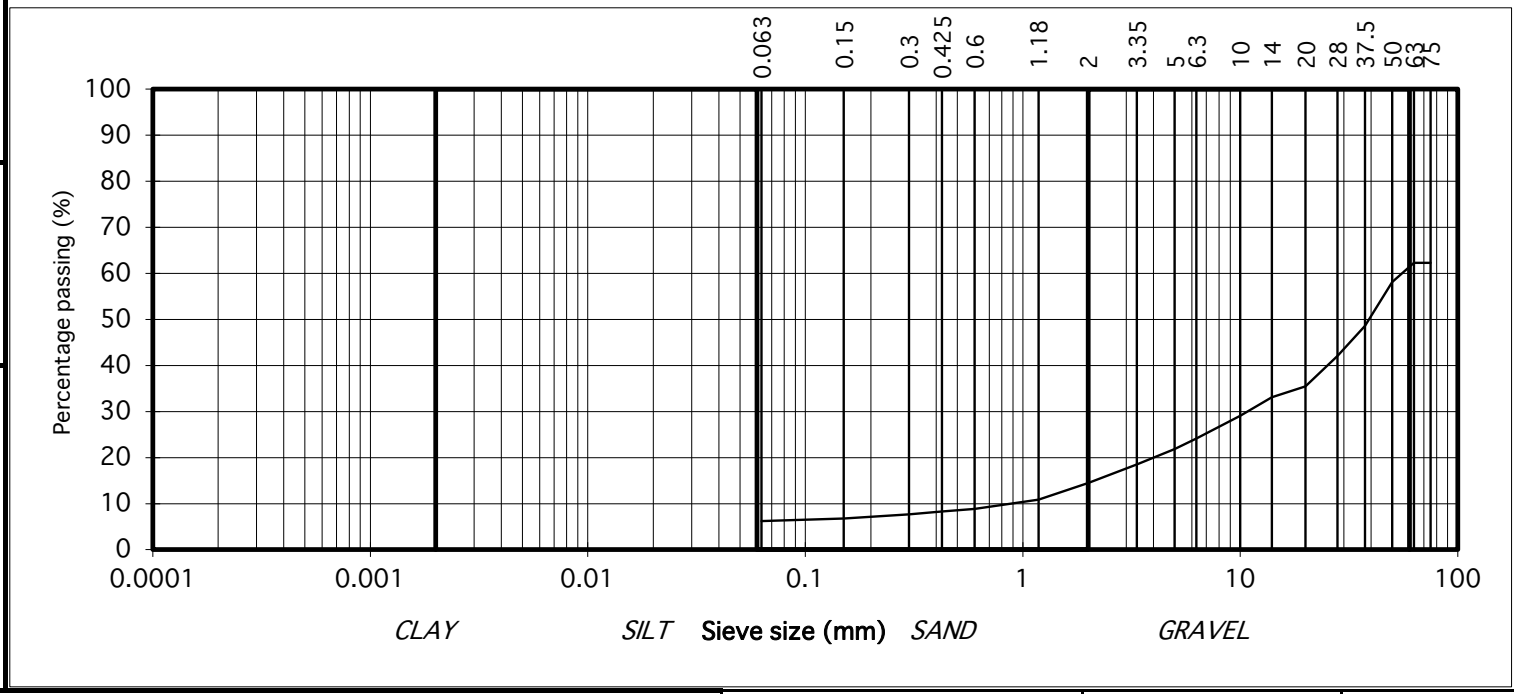
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	62	COBBLES
63	62	
50	58	GRAVEL
37.5	49	
28	42	
20	35	
14	33	
10	29	
6.3	24	
5	22	
3.35	19	
2	15	
1.18	11	SAND
0.6	9	
0.425	8	
0.3	8	
0.15	7	
0.063	6	SILT/CLAY

Contract No.	25882	Report No.	R172260
Contract Name :	Gas to Edenderry		
BH/TP No.	BH23A		
Sample No.*	AA22836	Lab. Sample No.	A25/2717
Sample Type:	B		
Depth* (m)	12.00	Customer:	MIL
Date Received	17/06/2025	Date Testing started	01/08/2025
Description:	Brown clayey, sandy, GRAVEL with many cobbles		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

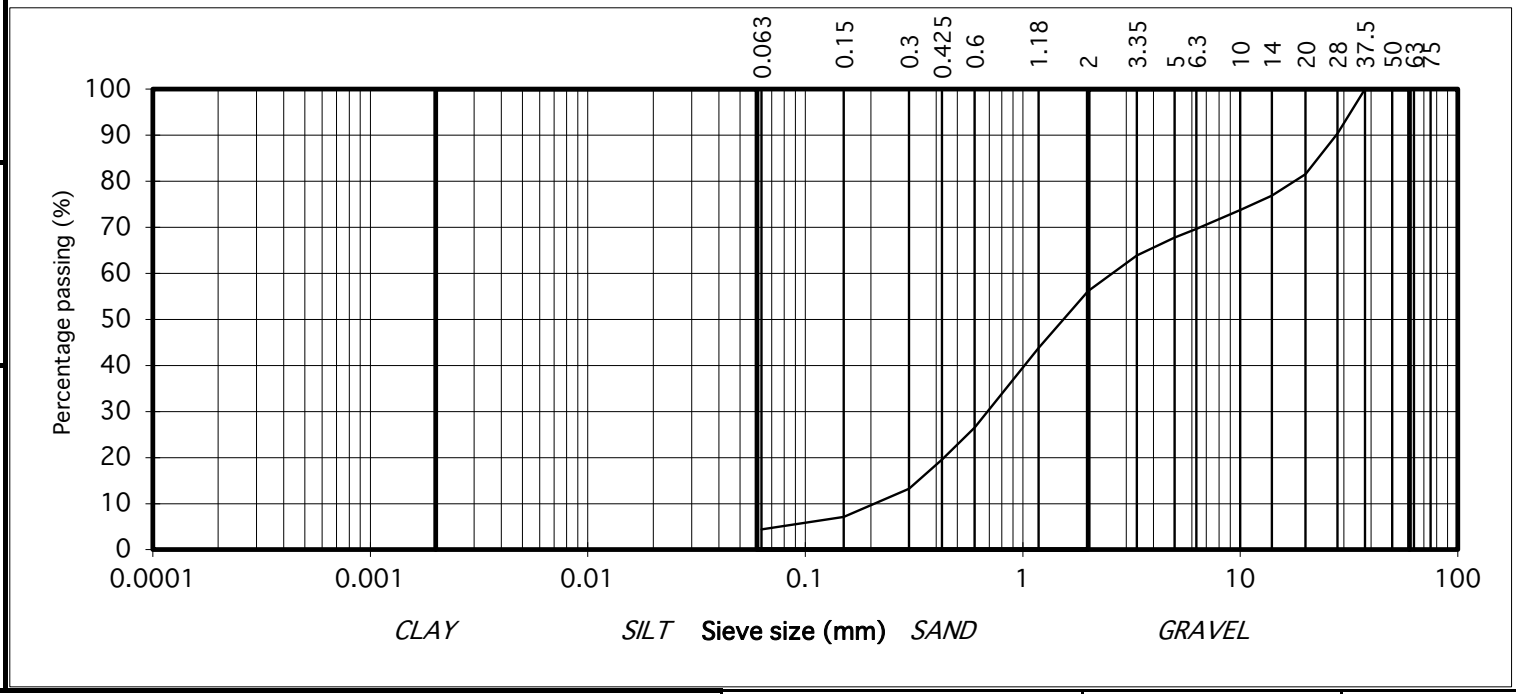
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	90	
20	82	
14	77	
10	74	
6.3	70	
5	68	
3.35	64	
2	56	
1.18	44	SAND
0.6	26	
0.425	20	
0.3	13	
0.15	7	
0.063	4	SILT/CLAY

Contract No.	25882	Report No.	R172261
Contract Name :	Gas to Edenderry		
BH/TP No.	BH53		
Sample No.*	AA213992	Lab. Sample No.	A25/2720
Sample Type:	B		
Depth* (m)	5.50	Customer:	MIL
Date Received	17/06/2025	Date Testing started	16/08/2025
Description:	Grey slightly clayey, very gravelly, SAND		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
H Byrne	25/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

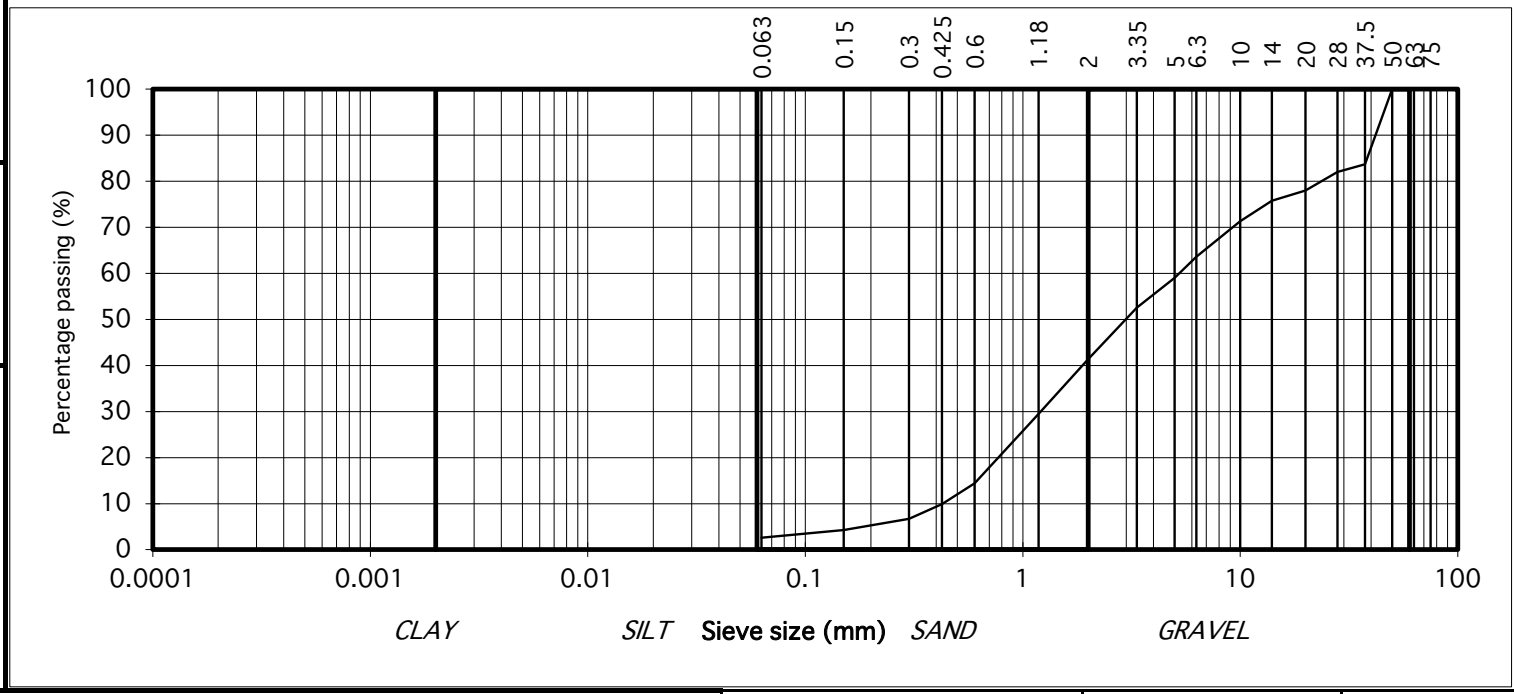
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	84	
28	82	
20	78	
14	76	
10	71	
6.3	64	
5	59	
3.35	53	
2	41	
1.18	30	SAND
0.6	14	
0.425	10	
0.3	7	
0.15	4	
0.063	3	SILT/CLAY

Contract No.	25882	Report No.	R172262
Contract Name :	Gas to Edenderry		
BH/TP No.	BH53		
Sample No.*	AA213994	Lab. Sample No.	A25/2721
Sample Type:	B		
Depth* (m)	7.00	Customer:	MIL
Date Received	17/06/2025	Date Testing started	16/08/2025
Description:	Grey slightly clayey, very sandy, GRAVEL		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
H Byrne	25/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

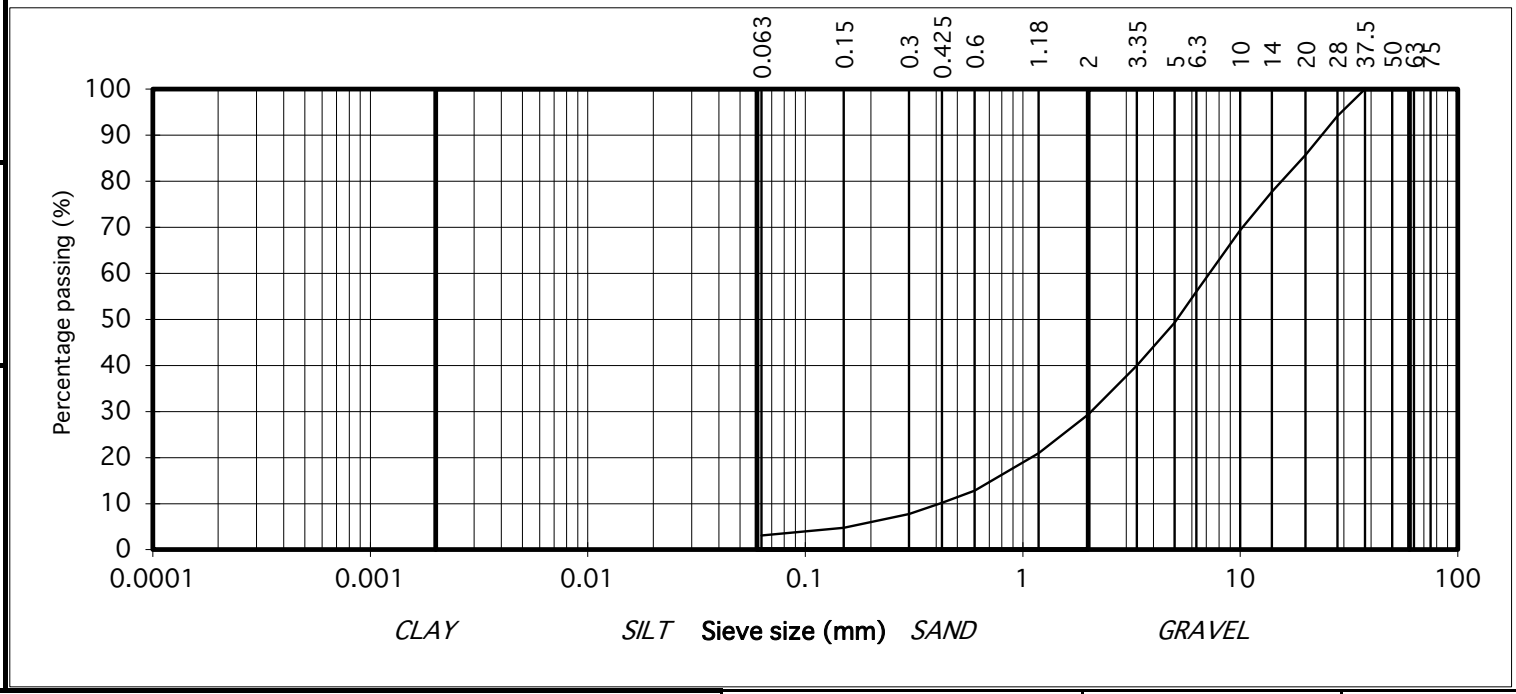
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	94	
20	86	
14	78	
10	69	
6.3	56	
5	49	
3.35	40	
2	29	
1.18	21	SAND
0.6	13	
0.425	10	
0.3	8	
0.15	5	
0.063	3	SILT/CLAY

Contract No. 25882 Report No. R172268
Contract Name : Gas to Edenderry
BH/TP No. BH53
Sample No.* AA213996 Lab. Sample No. A25/2722
Sample Type: B
Depth* (m) 9.00 Customer: MIL
Date Received 17/06/2025 Date Testing started 16/08/2025
Description: Grey slightly clayey/silty, very sandy, GRAVEL

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

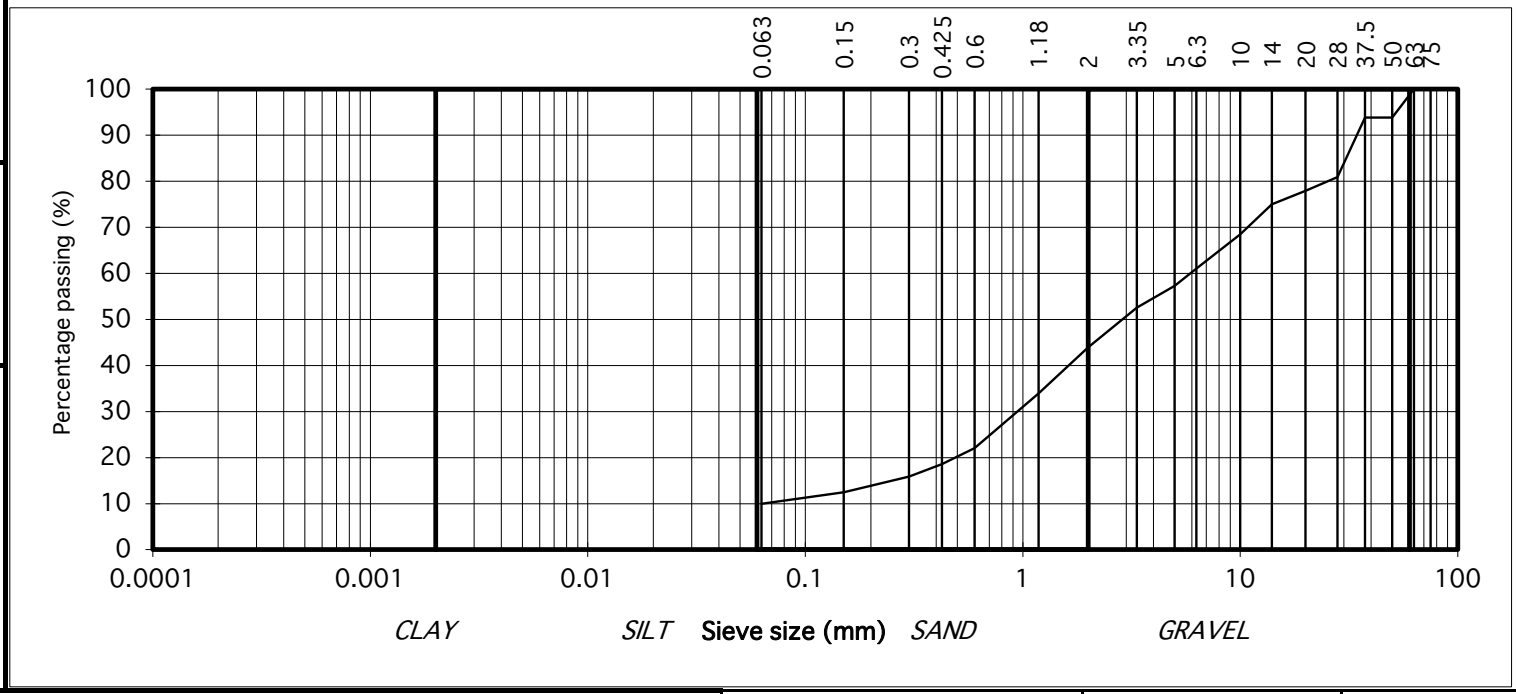
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	94	GRAVEL
37.5	94	
28	81	
20	78	
14	75	
10	68	
6.3	61	
5	57	
3.35	53	
2	44	
1.18	34	SAND
0.6	22	
0.425	19	
0.3	16	
0.15	12	
0.063	10	SILT/CLAY

Contract No.	25882	Report No.	R172269
Contract Name :	Gas to Edenderry		
BH/TP No.	BH53		
Sample No.*	AA213998	Lab. Sample No.	A25/2723
Sample Type:	B		
Depth* (m)	11.00	Customer:	MIL
Date Received	17/06/2025	Date Testing started	16/08/2025
Description:	Grey clayey/silty, very sandy, GRAVEL		

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

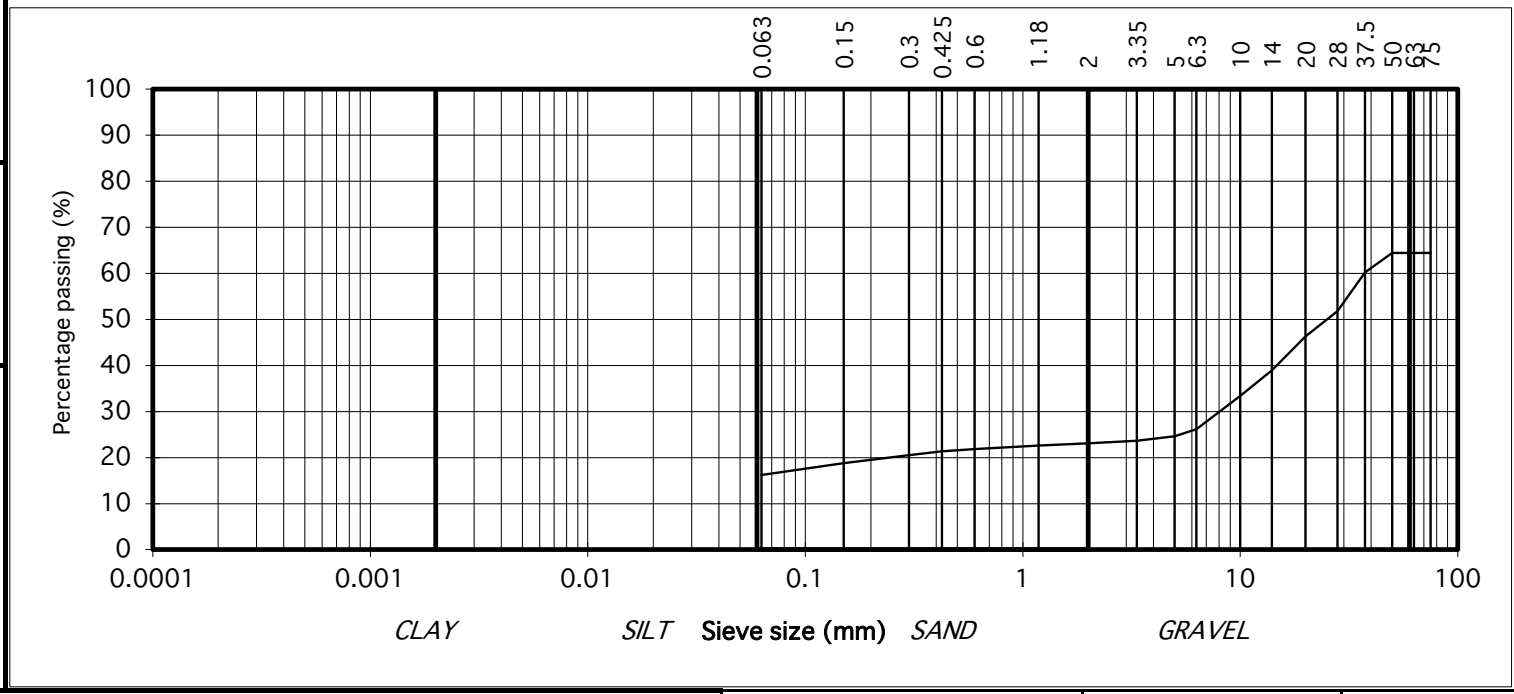
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	64	COBBLES
63	64	
50	64	GRAVEL
37.5	60	
28	52	
20	46	
14	39	
10	33	
6.3	26	
5	25	
3.35	24	
2	23	
1.18	23	SAND
0.6	22	
0.425	21	
0.3	21	
0.15	19	
0.063	16	SILT/CLAY

Contract No.	25882	Report No.	R1712050
Contract Name :	Gas to Edenderry		
BH/TP No.	BH53		
Sample No.*	AA214000	Lab. Sample No.	A25/2727
Sample Type:	B		
Depth* (m)	12.00	Customer:	MIL
Date Received	17/06/2025	Date Testing started	02/08/2025
Description:	Brown clayey, sandy, GRAVEL with many cobbles		

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

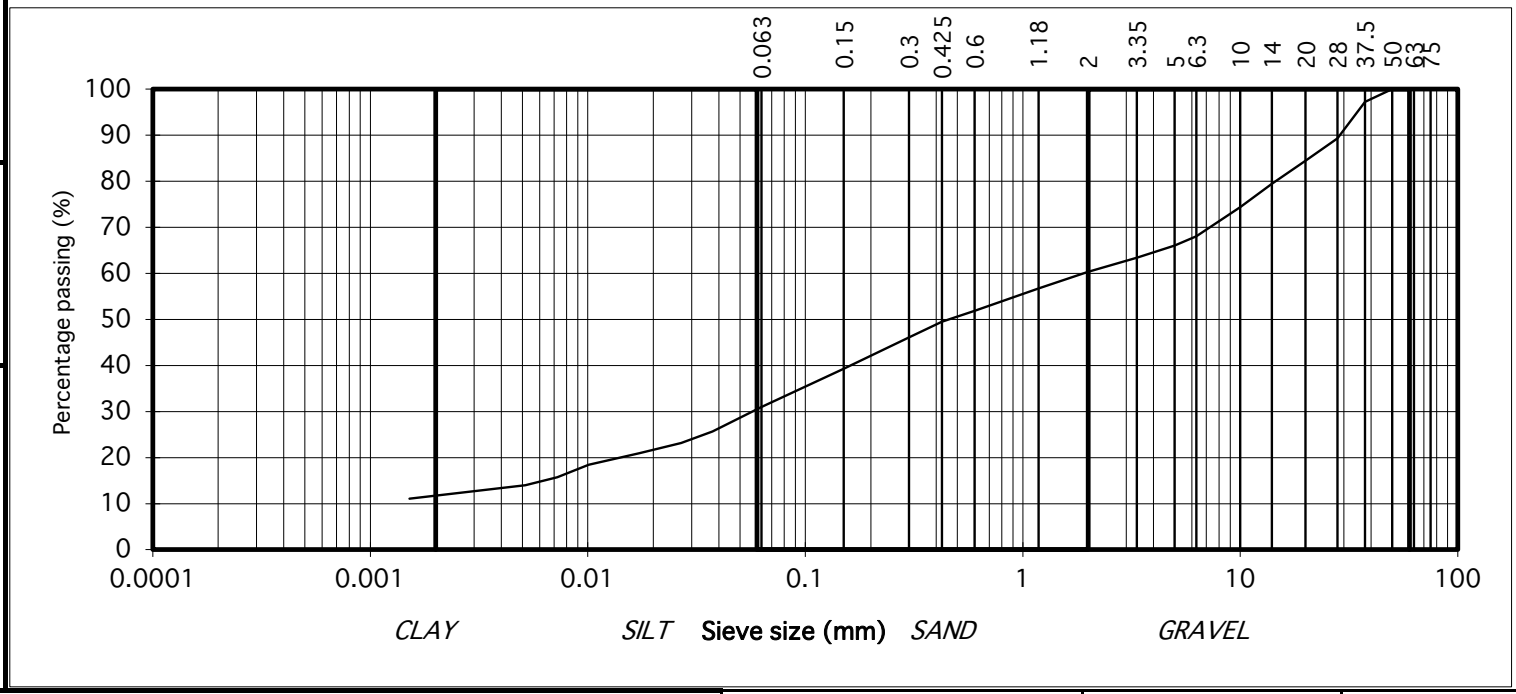
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	97	
28	89	
20	84	
14	79	
10	74	
6.3	68	
5	66	
3.35	63	
2	60	
1.18	57	SAND
0.6	52	
0.425	49	
0.3	46	
0.15	39	
0.063	31	SILT/CLAY
0.037	26	
0.027	23	
0.017	21	
0.010	18	
0.007	16	
0.005	14	
0.002	11	

Contract No.	25882	Report No.	R172270	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH54			
Sample No.*	AA22846	Lab. Sample No.		A25/2729
Sample Type:	B			
Depth* (m)	9.00	Customer:	MIL	
Date Received	17/06/2025	Date Testing started		16/08/2025
Description:	Grey slightly sandy, gravelly, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.1331

Report No. **R172041** Contract No. 25882 Contract Name: Gas to Edenderry

Customer MIL

Samples Received: 07/07/25 Date Tested: Various

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH01	AA223602	1.0	A25/2805	B	19	25	NP	NP	95	WS	4.4		Grey sandy gravelly SILT
BH01	AA223605	3.0	A25/2806	B	11	24	12	12	62	WS	4.4	C L	Brown slightly sandy, slightly gravelly, CLAY
BH02	AA213945	2.0	A25/2809	B	10	22	NP	NP	51	WS	4.4		Grey sandy gravelly SILT
BH03	AA213938	2.0	A25/2812	B	12	28	15	13	67	WS	4.4	C L	Grey sandy gravelly CLAY
BH03	AA213939	3.0	A25/2813	B	9.5	30	15	15	54	WS	4.4	C L	Grey slightly sandy, gravelly, CLAY with some cobbles
BH03	AA213943	6.0	A25/2816	B	6.0	56	NP	NP	8.8	WS	4.4		Grey silty sandy GRAVEL
BH04	AA223610	2.0	A25/2817	B	10	23	NP	NP	79	WS	4.4		Brown sandy gravelly SILT
BH04	AA223613	4.0	A25/2818	B	7.4	28	15	13	29	WS	4.4	C L	Brown clayey, sandy, GRAVEL with some cobbles
BH14	AA225159	1.0	A25/2820	B	16	21	NP	NP	71	WS	4.4		Brown sandy gravelly SILT
BH14	AA225161	3.0	A25/2821	B	14	23	NP	NP	71	WS	4.4		Brown sandy gravelly SILT
BH14	0	6.0	A25/2822	B	14	19	NP	NP	78	WS	4.4		Brown sandy slightly gravelly SILT
BH40	AA213902	2.0	A25/2824	B	10	26	14	12	53	WS	4.4	C L	Grey sandy gravelly CLAY
BH40	AA213904	4.0	A25/2825	B	8.4	23	11	12	51	WS	4.4	C L	Grey slightly sandy, gravelly, CLAY
BH42	AA223915	1.0	A25/2827	B	14	21	NP	NP	78	WS	4.4		Brown sandy gravelly SILT
BH42	AA223917	3.0	A25/2828	B	10	29	15	14	53	WS	4.4	C L	Brown slightly sandy, gravelly, CLAY

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method
4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.
NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12.
Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.
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IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by: H Byrne

Date: 07/08/25

Page: 1 of 1

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.1331

Report No. **R172043** Contract No. 25882 Contract Name: Gas to Edenderry

Customer MIL

Samples Received: 07/07/25 Date Tested: Various

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH43	AA223908	2.0	A25/2830	B	13	21	NP	NP	66	WS	4.4		Grey sandy gravelly SILT
BH43	AA223909	3.0	A25/2831	B	12	25	11	14	61	WS	4.4	C L	Brown sandy gravelly CLAY
BH43	AA223911	5.0	A25/2833	B	11	34	17	17	57	WS	4.4	C L	Brown sandy gravelly CLAY
BH43	AA223913	7.0	A25/2834	B	16	26	13	13	63	WS	4.4	C L	Brown slightly sandy, slightly gravelly, CLAY
BH45	AA223921	1.0	A25/2835	B	16	27	NP	NP	47	WS	4.4		Grey/brown sandy gravelly SILT
BH45	AA223923	3.0	A25/2836	B	8.0	22	NP	NP	69	WS	4.4		Grey/brown slightly sandy, slightly gravelly, SILT with many cobbles

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method
4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.
NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12.
Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.
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IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by: H Byrne

Date: 07/08/25

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TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

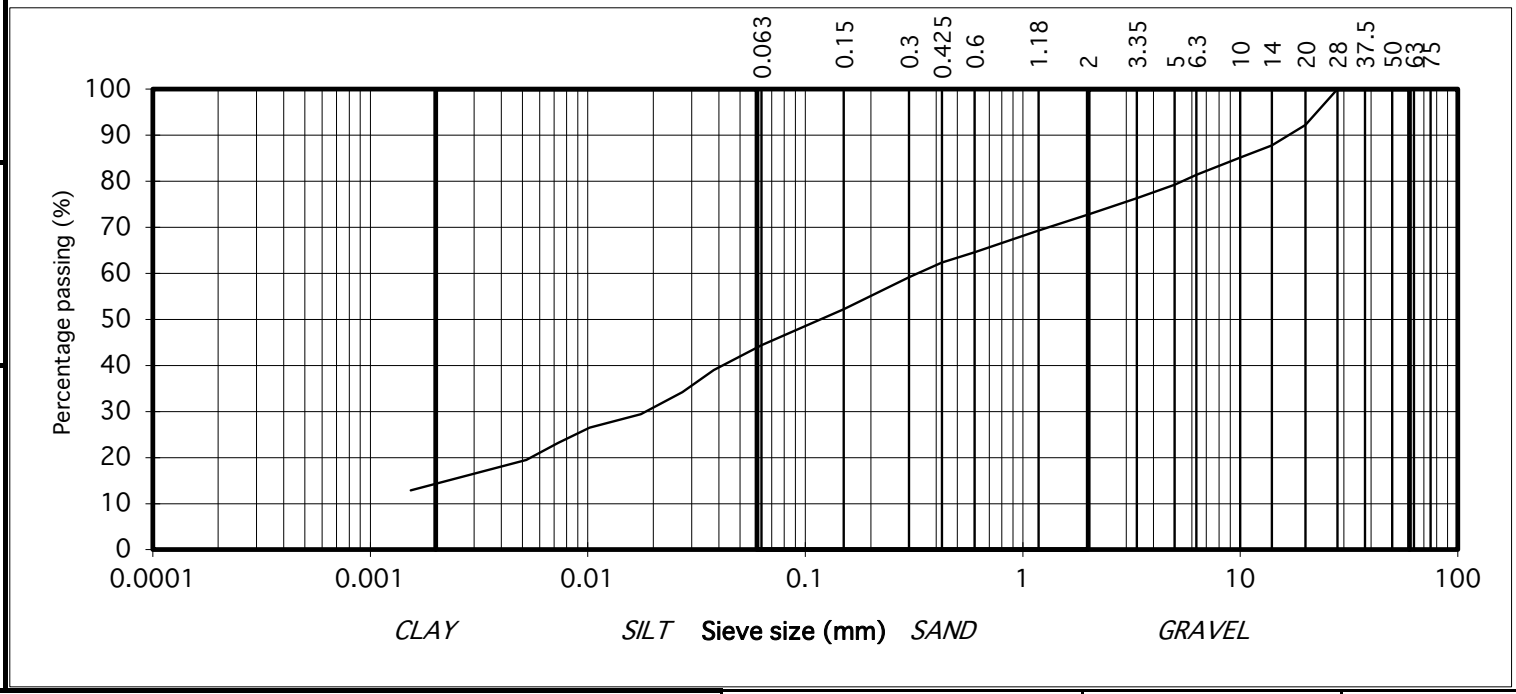
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	92	
14	88	
10	85	
6.3	81	
5	79	
3.35	76	
2	73	
1.18	69	SAND
0.6	65	
0.425	62	
0.3	59	
0.15	52	
0.063	44	SILT/CLAY
0.038	39	
0.027	34	
0.018	29	
0.010	26	
0.007	23	
0.005	19	
0.002	13	

Contract No.	25882	Report No.	R1712051	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH01			
Sample No.*	AA223605	Lab. Sample No.		A25/2806
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		26/07/2025
Description:	Brown slightly sandy, slightly gravelly, CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

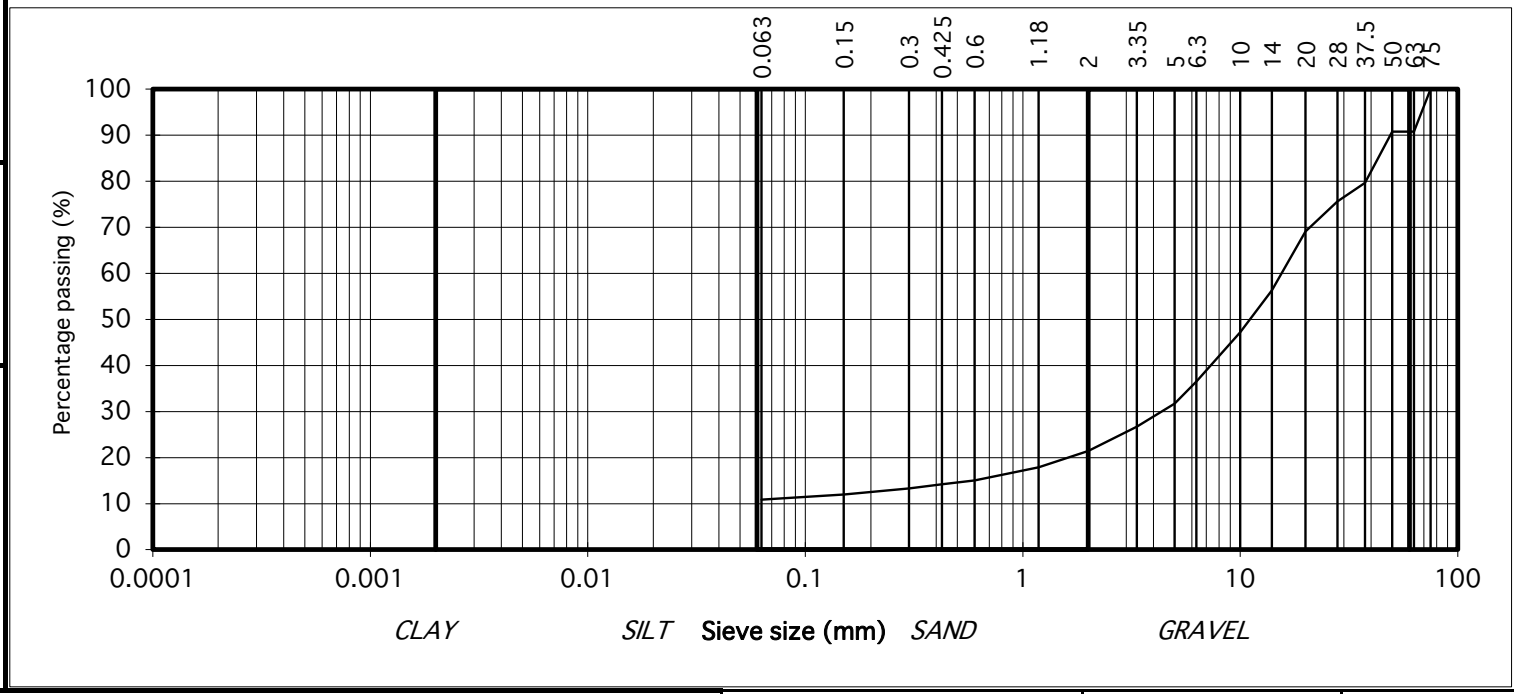
particle size	% passing	
75	100	COBBLES
63	91	
50	91	GRAVEL
37.5	80	
28	76	
20	69	
14	56	
10	47	
6.3	37	
5	32	
3.35	27	
2	21	
1.18	18	SAND
0.6	15	
0.425	14	
0.3	13	
0.15	12	
0.063	11	SILT/CLAY

Contract No.	25882	Report No.	R172132
Contract Name :	Gas to Edenderry		
BH/TP No.	BH01		
Sample No.*	AA223607	Lab. Sample No.	A25/2807
Sample Type:	B		
Depth* (m)	5.00	Customer:	MIL
Date Received	07/07/2025	Date Testing started	29/07/2025
Description:	Brown clayey/silty, sandy, GRAVEL with some cobbles		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

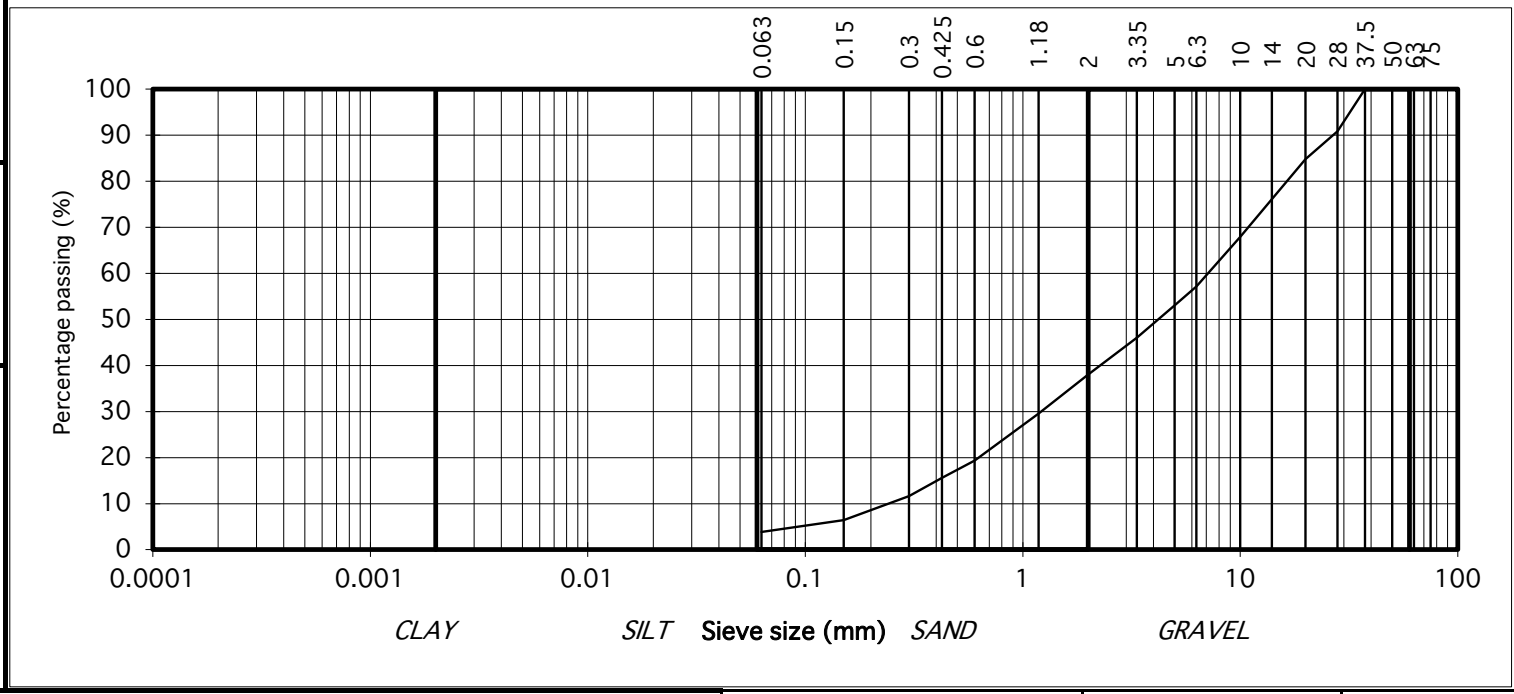
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	91	
20	85	
14	76	
10	68	
6.3	57	
5	53	
3.35	46	
2	38	
1.18	30	SAND
0.6	19	
0.425	16	
0.3	12	
0.15	6	
0.063	4	SILT/CLAY

Contract No.	25882	Report No.	R171422	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH01			
Sample No.*	AA223608	Lab. Sample No.		A25/2808
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		29/07/2025
Description:	Brown slightly clayey/silty, very sandy, GRAVEL			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

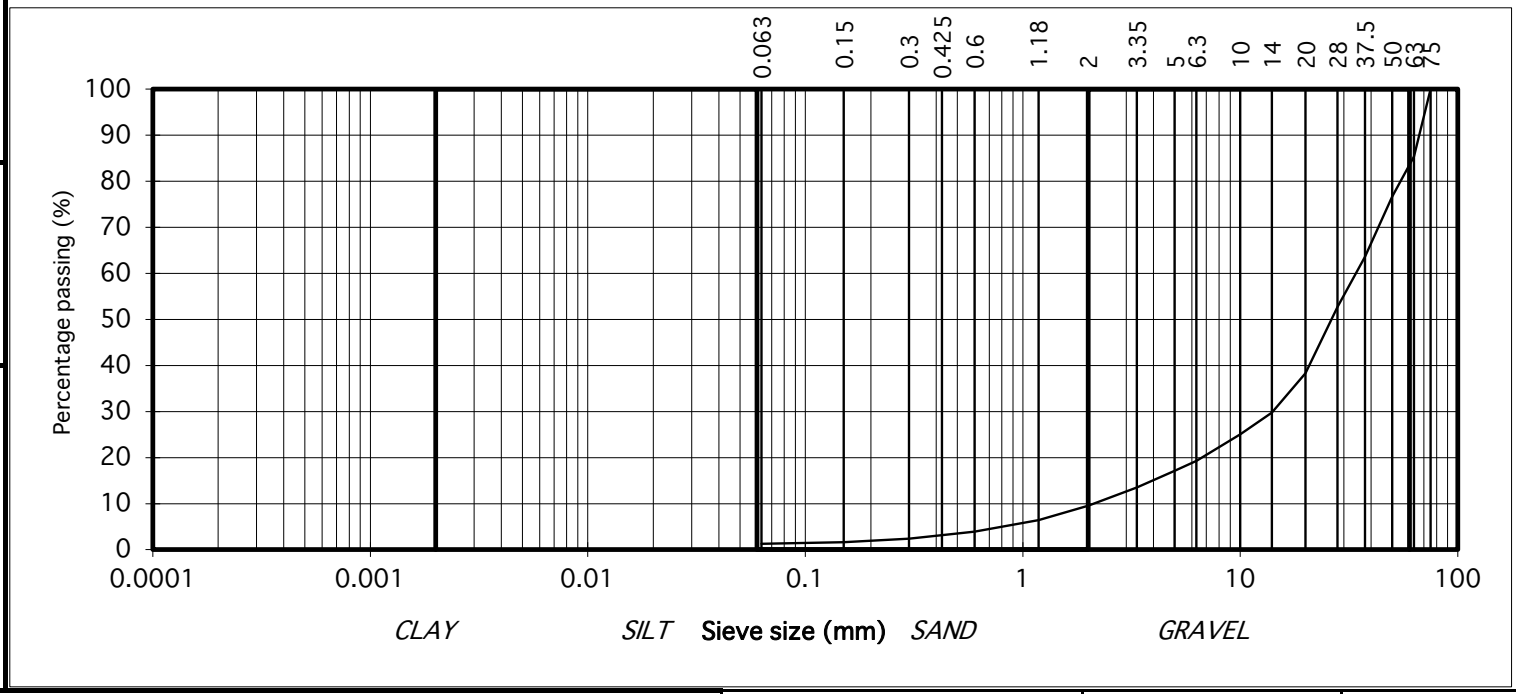
TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	85	
50	77	GRAVEL
37.5	64	
28	53	
20	38	
14	30	
10	25	
6.3	19	
5	17	
3.35	14	
2	10	
1.18	6	SAND
0.6	4	
0.425	3	
0.3	2	
0.15	2	
0.063	1	SILT/CLAY

Contract No.	25882	Report No.	R171423	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH02			
Sample No.*	AA213947	Lab. Sample No.		A25/2810
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		29/07/2025
Description:	Grey slightly clayey/silty, sandy, GRAVEL with some cobbles			
Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size ddi not meet the requirements of BS1377			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

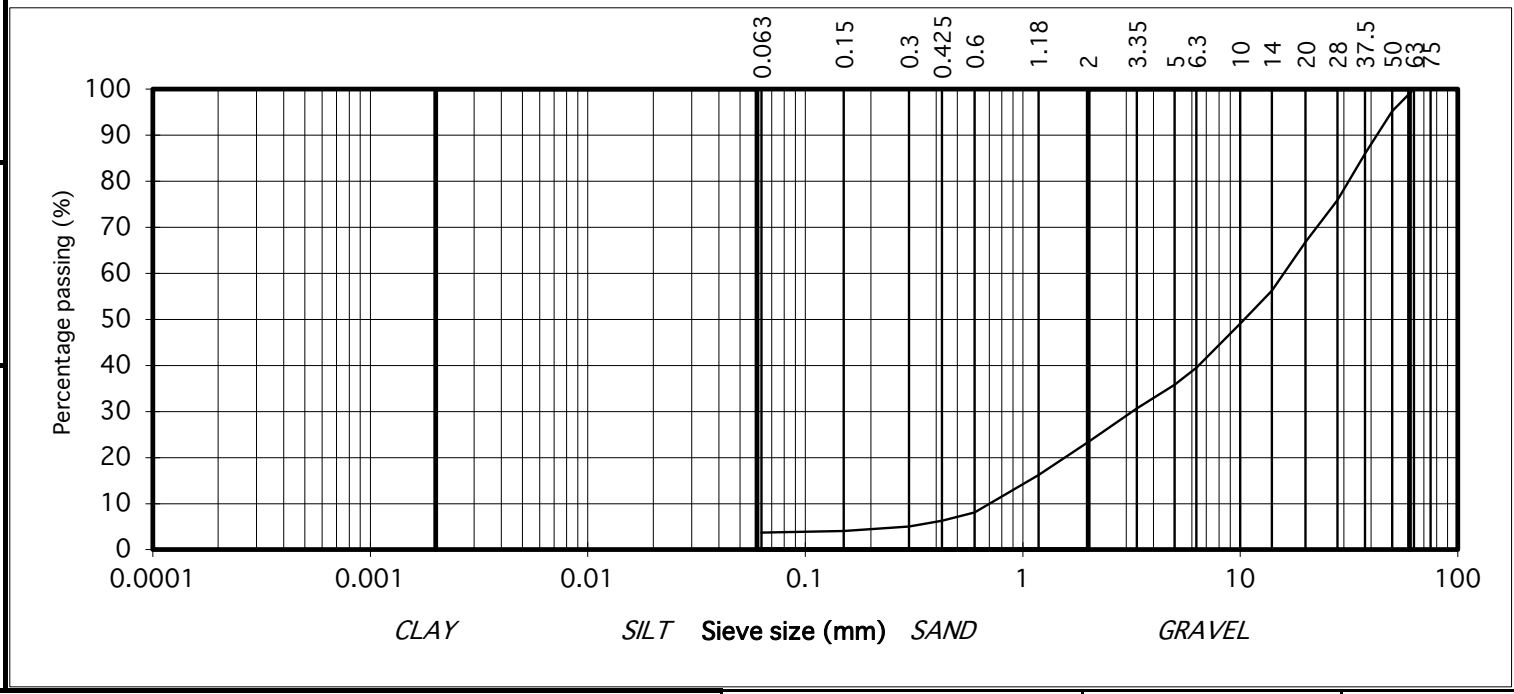
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	95	GRAVEL
37.5	86	
28	76	
20	67	
14	56	
10	49	
6.3	40	
5	36	
3.35	31	
2	23	
1.18	16	SAND
0.6	8	
0.425	6	
0.3	5	
0.15	4	
0.063	4	SILT/CLAY

Contract No.	25882	Report No.	R172133	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH02			
Sample No.*	AA213949	Lab. Sample No.		A25/2810
Sample Type:	B			
Depth* (m)	5.80	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		29/07/2025
Description:	Grey slightly clayey/silty, sandy, GRAVEL			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

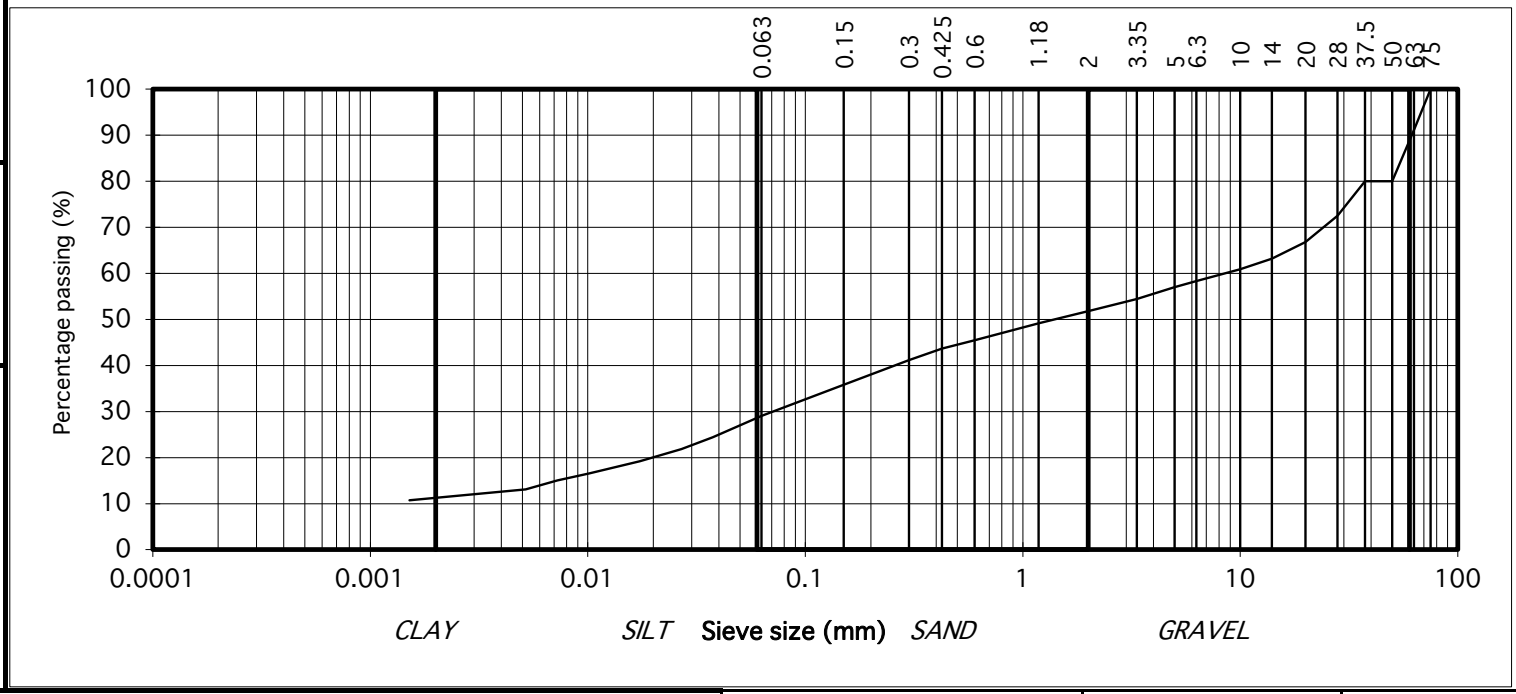
particle size	% passing	
75	100	COBBLES
63	91	
50	80	GRAVEL
37.5	80	
28	73	
20	67	
14	63	
10	61	
6.3	58	
5	57	
3.35	54	
2	52	
1.18	49	SAND
0.6	45	
0.425	44	
0.3	41	
0.15	36	
0.063	29	SILT/CLAY
0.038	24	
0.027	22	
0.017	19	
0.010	17	
0.007	15	
0.005	13	
0.002	11	

Contract No.	25882	Report No.	R1712052	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH03			
Sample No.*	AA213939	Lab. Sample No.		A25/2813
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		29/07/2025
Description:	Grey slightly sandy, gravelly, CLAY with some cobbles			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

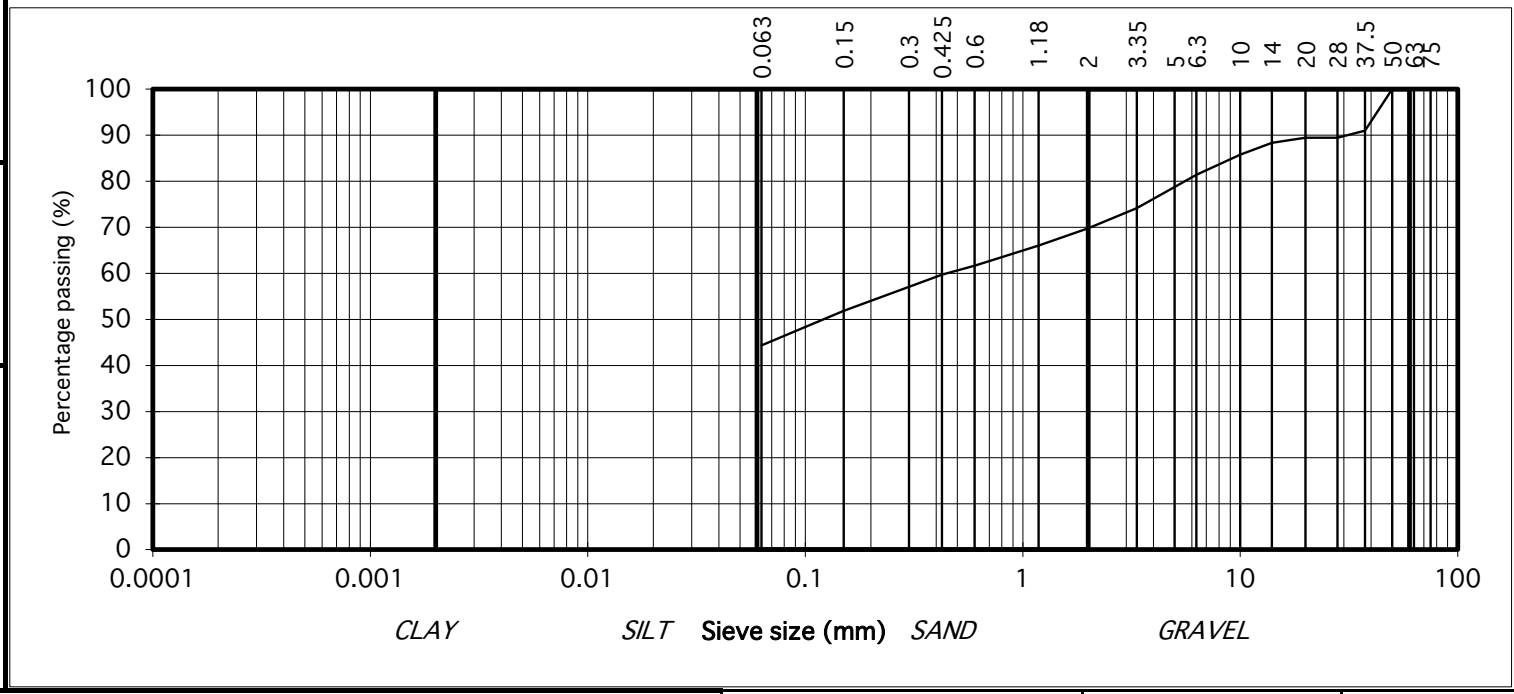
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	91	
28	89	
20	89	
14	88	
10	86	
6.3	81	
5	79	
3.35	74	
2	70	
1.18	66	SAND
0.6	62	
0.425	60	
0.3	57	
0.15	52	
0.063	44	SILT/CLAY

Contract No.	25882	Report No.	R1712053
Contract Name :	Gas to Edenderry		
BH/TP No.	BH03		
Sample No.*	AA213942	Lab. Sample No.	A25/2815
Sample Type:	B		
Depth* (m)	5.50	Customer:	MIL
Date Received	07/07/2025	Date Testing started	26/07/2025
Description:	Brown slightly sandy, slightly gravelly, SILT/CLAY		

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

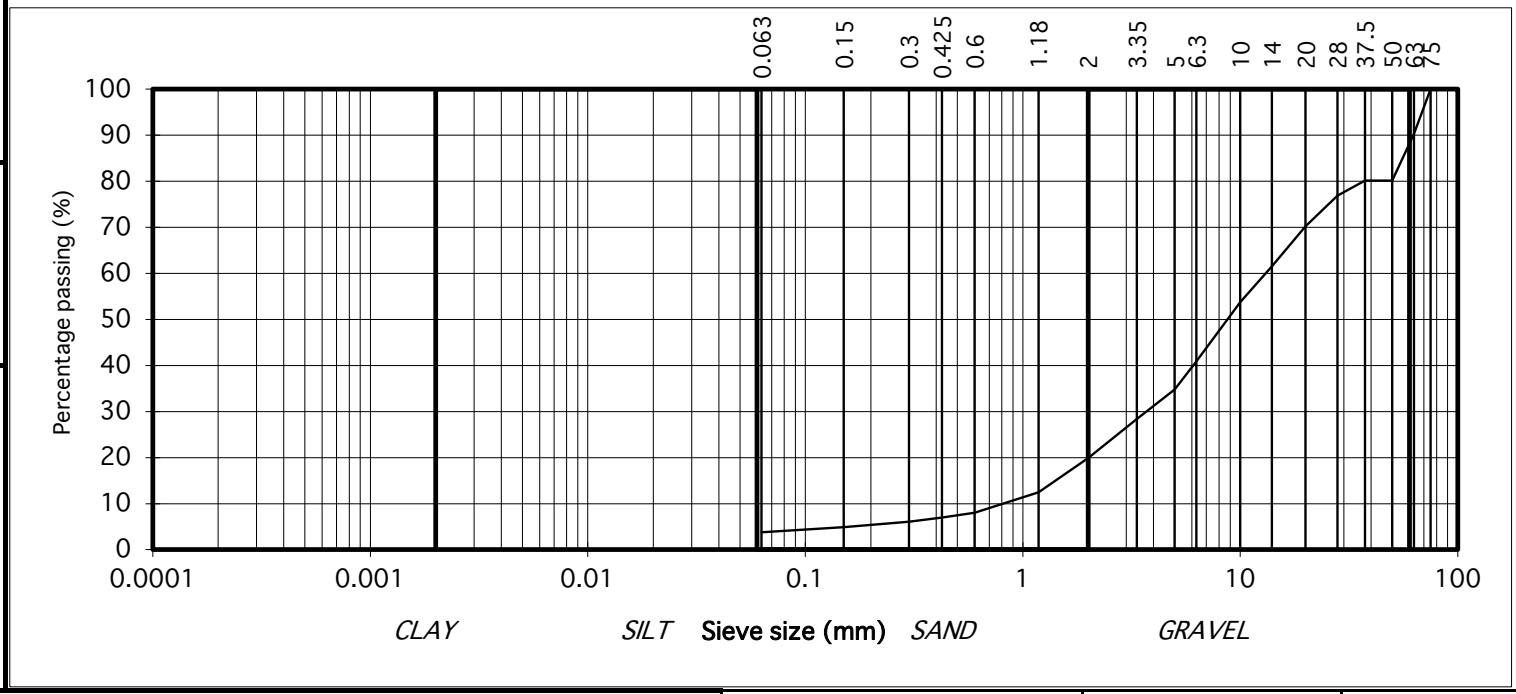
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	90	
50	80	GRAVEL
37.5	80	
28	77	
20	70	
14	62	
10	54	
6.3	41	
5	35	
3.35	28	
2	20	
1.18	12	SAND
0.6	8	
0.425	7	
0.3	6	
0.15	5	
0.063	4	SILT/CLAY

Contract No. 25882 Report No. R171424
Contract Name : Gas to Edenderry
BH/TP No. BH03
Sample No.* AA213940 Lab. Sample No. A25/2814
Sample Type: B
Depth* (m) 4.00 Customer: MIL
Date Received 07/07/2025 Date Testing started 29/07/2025
Description: Brown slightly clayey/silty, sandy, GRAVEL with some cobbles

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

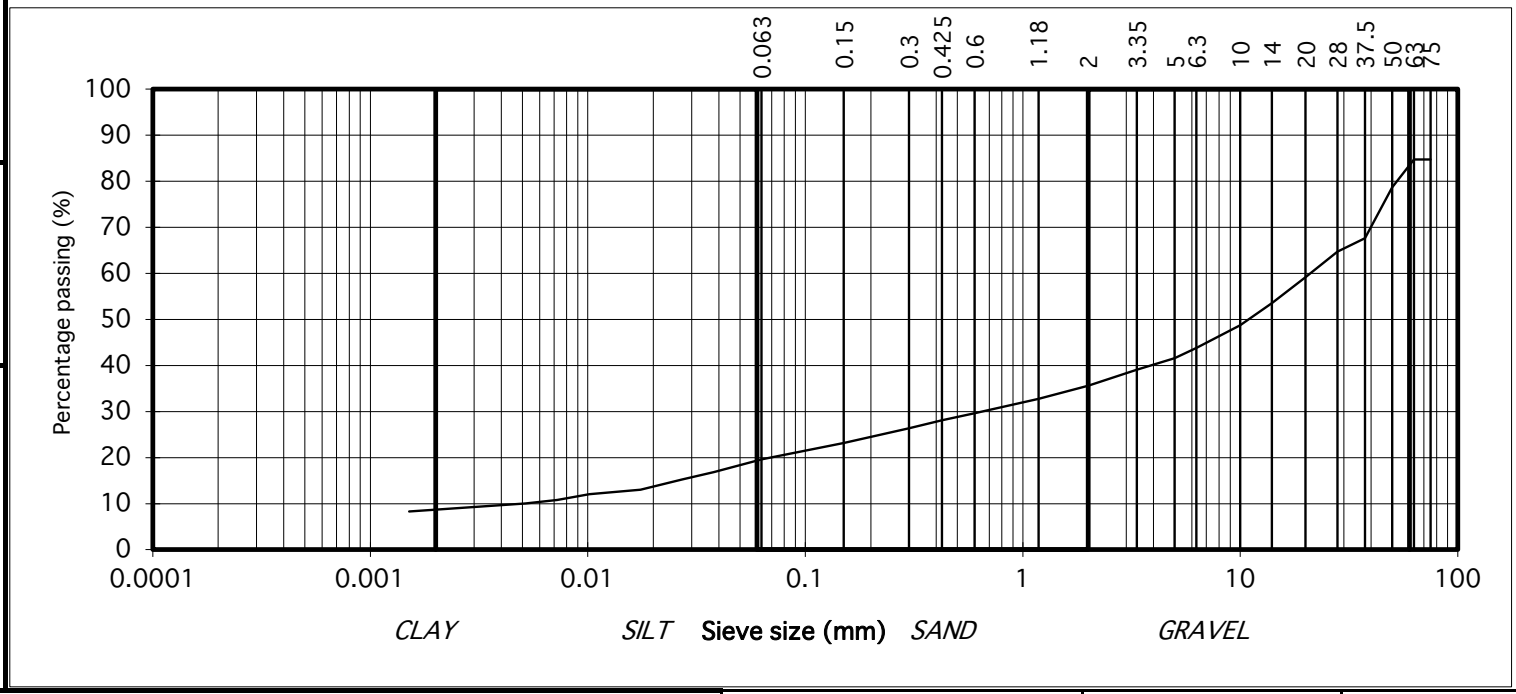
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	85	COBBLES
63	85	
50	79	GRAVEL
37.5	68	
28	65	
20	59	
14	54	
10	49	
6.3	44	
5	42	
3.35	39	
2	36	
1.18	33	SAND
0.6	30	
0.425	28	
0.3	26	
0.15	23	
0.063	20	SILT/CLAY
0.038	17	
0.027	15	
0.017	13	
0.010	12	
0.007	11	
0.005	10	
0.002	8	

Contract No.	25882	Report No.	R172134	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH04			
Sample No.*	AA223612	Lab. Sample No.		A25/2818
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		29/07/2025
Description:	Brown clayey, sandy, GRAVEL with some cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

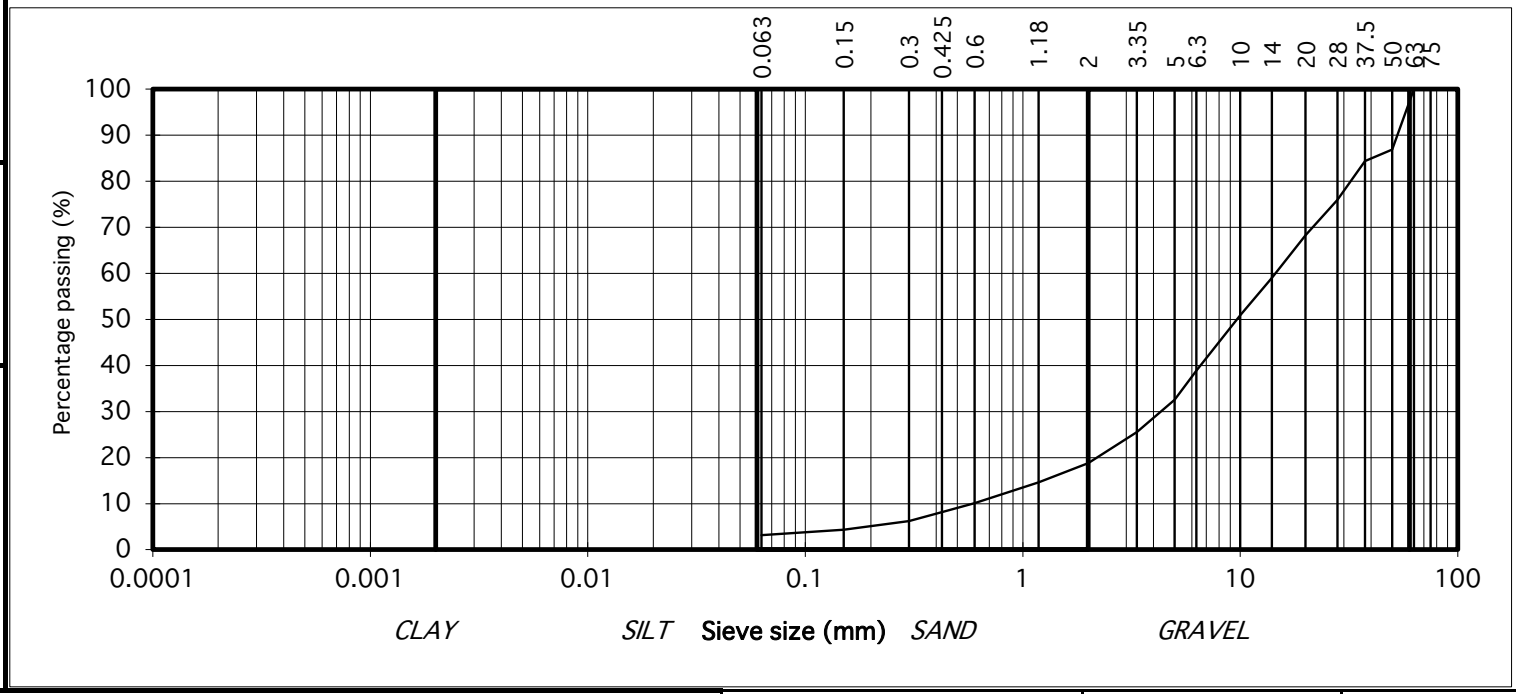
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	87	GRAVEL
37.5	84	
28	76	
20	68	
14	59	
10	51	
6.3	39	
5	33	
3.35	26	
2	19	
1.18	15	SAND
0.6	10	
0.425	8	
0.3	6	
0.15	4	
0.063	3	SILT/CLAY

Contract No.	25882	Report No.	R172135	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH04			
Sample No.*	AA223615	Lab. Sample No.		A25/2819
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		29/07/2025
Description:	Brown slightly clayey/silty, sandy, GRAVEL			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

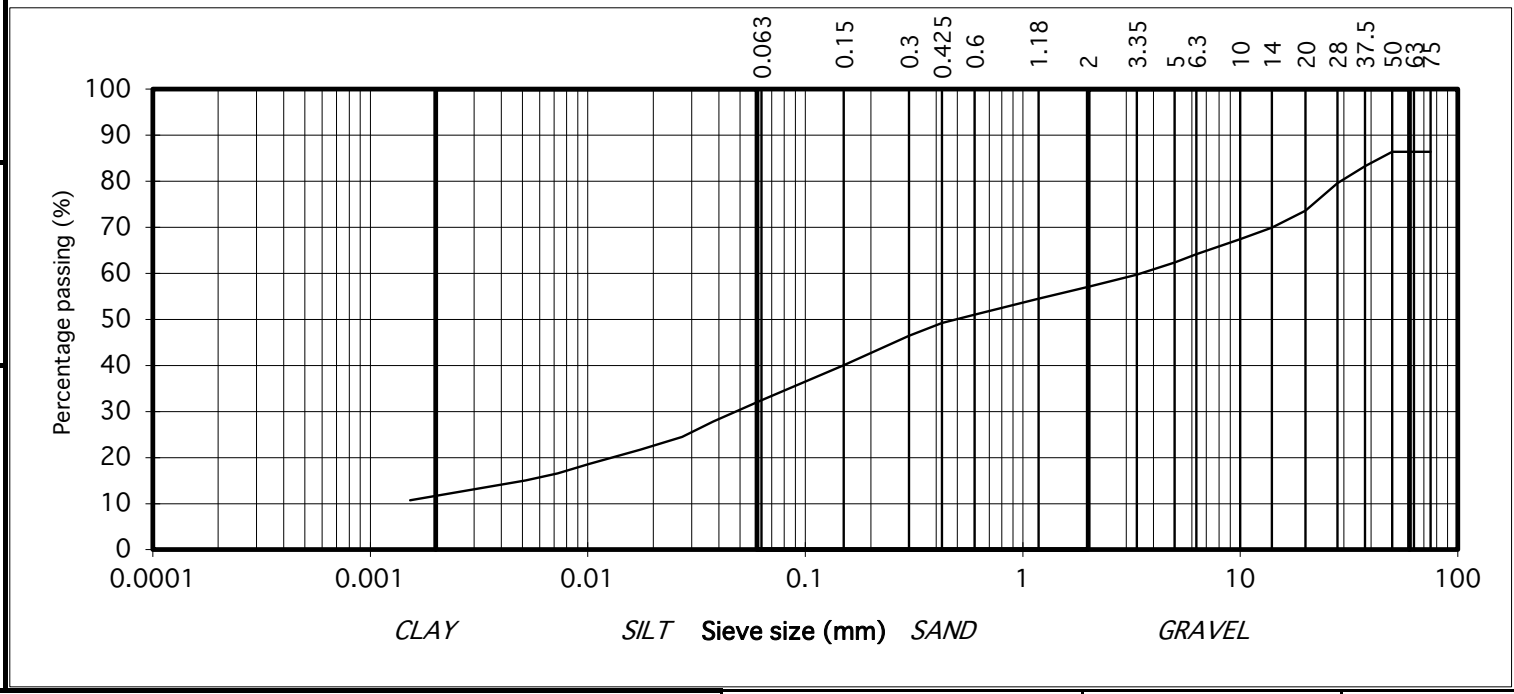
particle size	% passing	
75	86	COBBLES
63	86	
50	86	GRAVEL
37.5	83	
28	80	
20	74	
14	70	
10	67	
6.3	64	
5	62	
3.35	60	
2	57	
1.18	55	SAND
0.6	51	
0.425	49	
0.3	46	
0.15	40	
0.063	32	SILT/CLAY
0.038	28	
0.027	25	
0.017	22	
0.010	19	
0.007	17	
0.005	15	
0.002	11	

Contract No.	25882	Report No.	R1712054	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH14			
Sample No.*	AA225164	Lab. Sample No.		A25/2823
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		29/07/2025
Description:	Brown slightly sandy, slightly gravelly, SILT/CLAY with some cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size ddi not meet the requirements of BS1377



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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

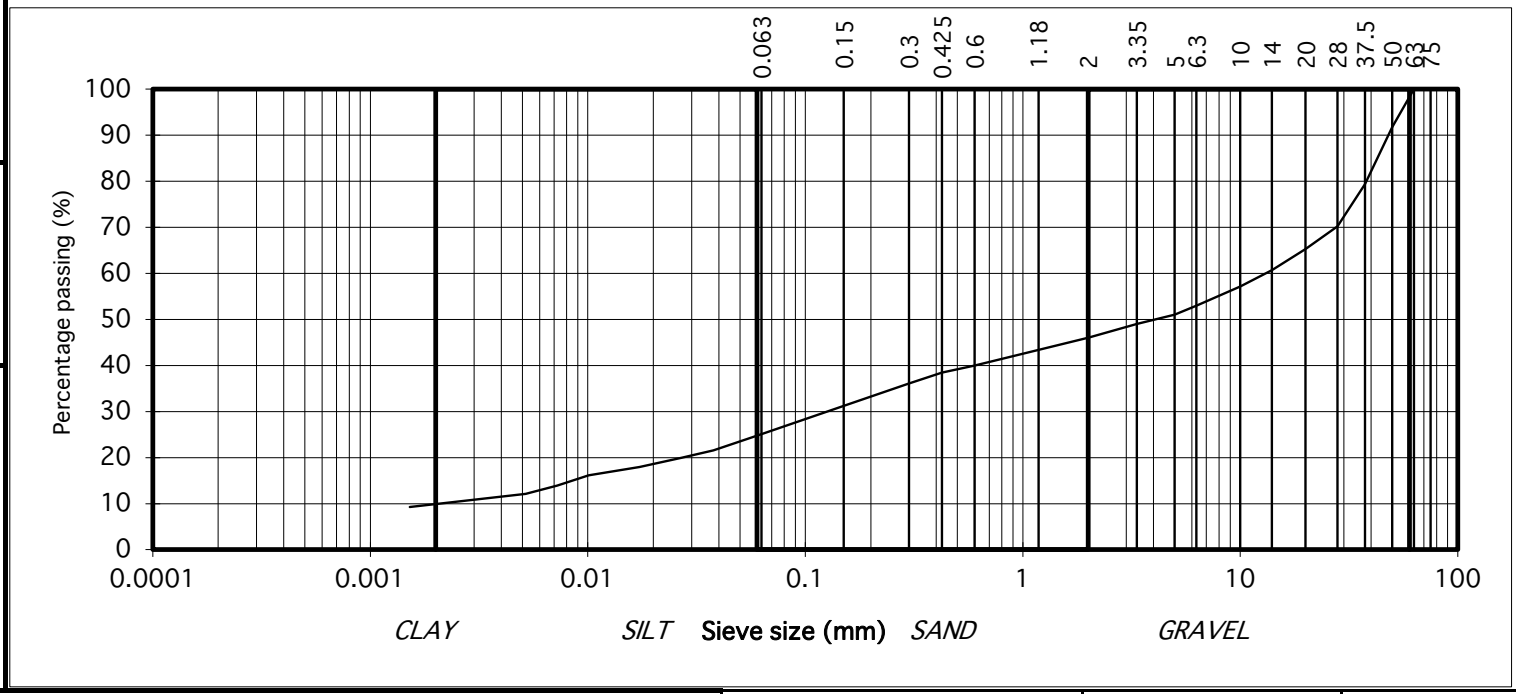
particle size	% passing	
75	100	COBBLES
63	100	
50	92	GRAVEL
37.5	79	
28	70	
20	65	
14	61	
10	57	
6.3	53	
5	51	
3.35	49	
2	46	
1.18	43	SAND
0.6	40	
0.425	38	
0.3	36	
0.15	31	
0.063	25	SILT/CLAY
0.038	22	
0.027	20	
0.017	18	
0.010	16	
0.007	14	
0.005	12	
0.002	9	

Contract No.	25882	Report No.	R1712055	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH40			
Sample No.*	AA213904	Lab. Sample No.		A25/2825
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		29/07/2025
Description:	Grey slightly sandy, gravelly, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

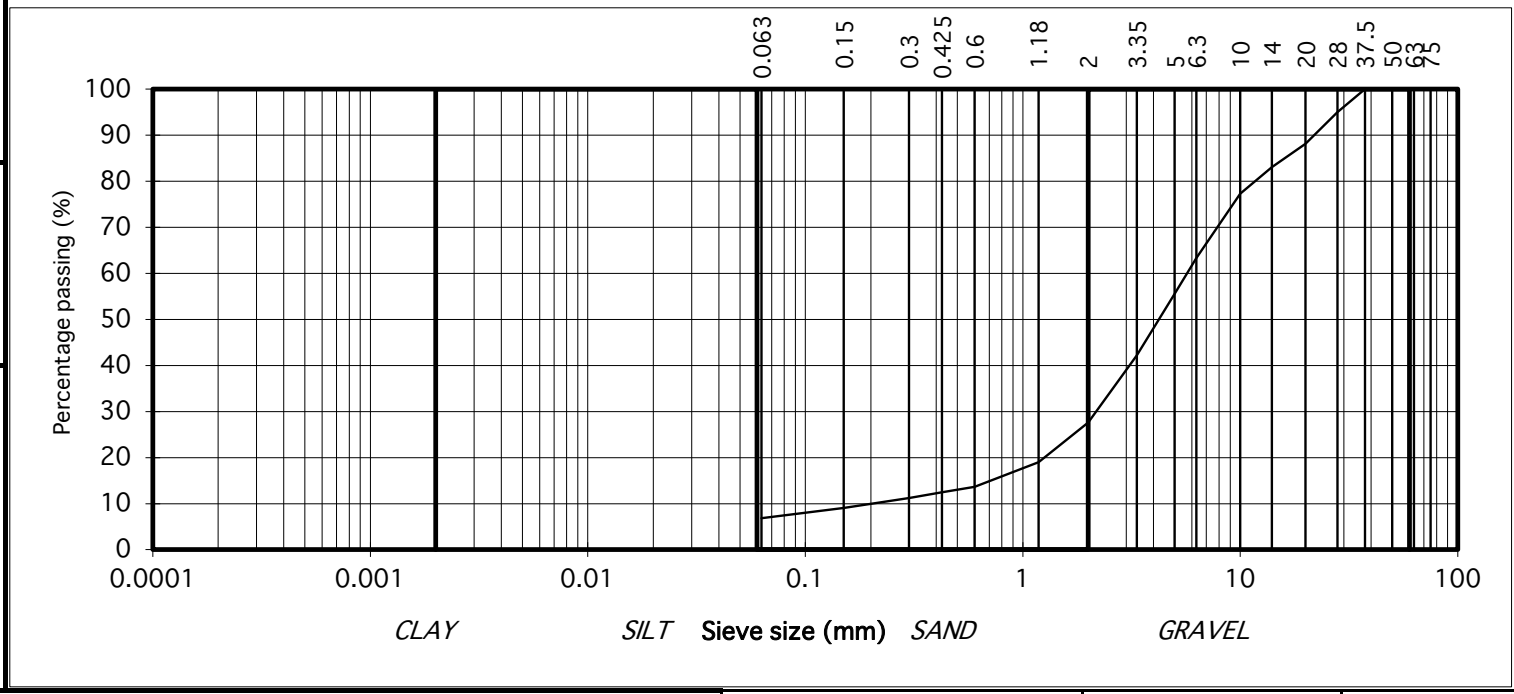
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	95	
20	88	
14	83	
10	77	
6.3	63	
5	56	
3.35	42	
2	28	
1.18	19	SAND
0.6	14	
0.425	12	
0.3	11	
0.15	9	
0.063	7	SILT/CLAY

Contract No.	25882	Report No.	R171425	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH40			
Sample No.*	AA213906	Lab. Sample No.		A25/2826
Sample Type:	B			
Depth* (m)	5.50	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		29/07/2025
Description:	Brown clayey/silty, very sandy, GRAVEL			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

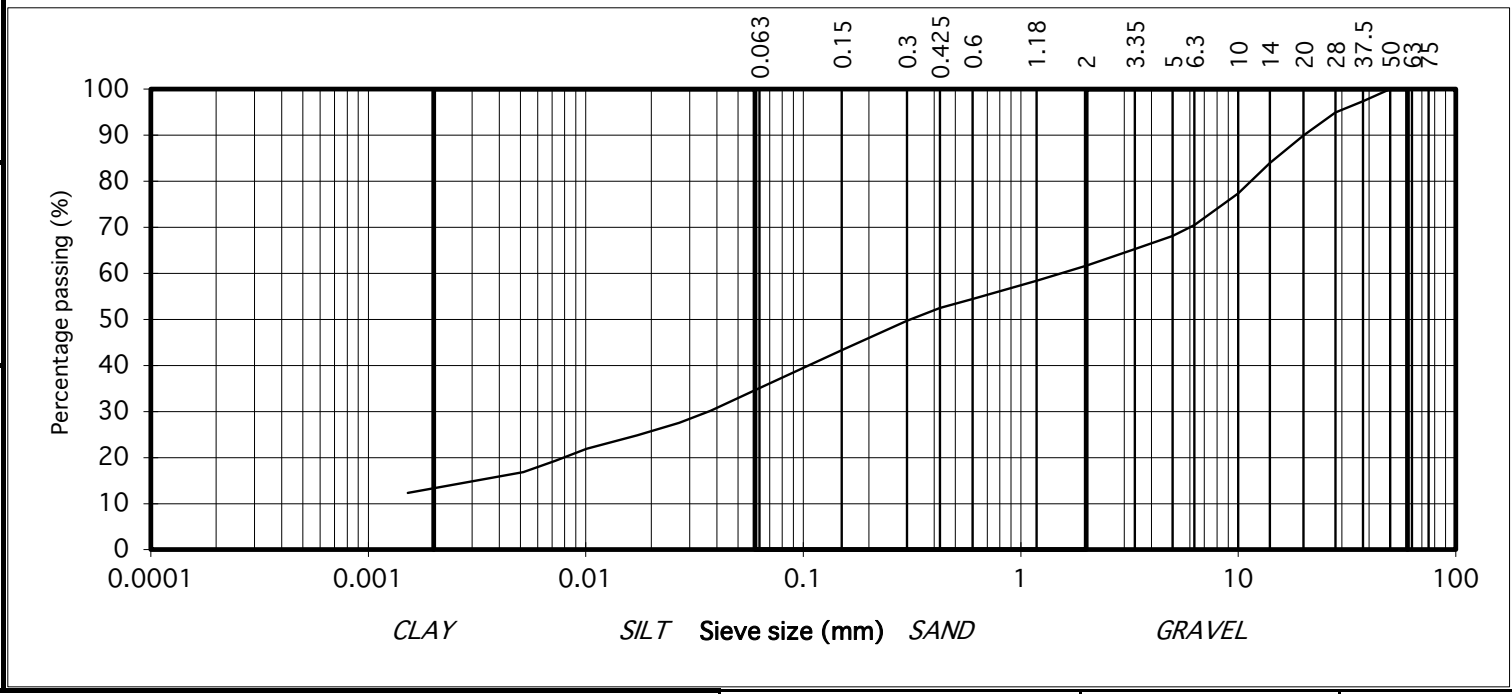
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	97	
28	95	
20	90	
14	84	
10	77	
6.3	71	
5	68	
3.35	65	
2	62	
1.18	58	SAND
0.6	54	
0.425	52	
0.3	50	
0.15	43	
0.063	35	SILT/CLAY
0.038	30	
0.027	28	
0.017	25	
0.010	22	
0.007	19	
0.005	17	
0.002	12	

Contract No.	25882	Report No.	R171426	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH42			
Sample No.*	AA223917	Lab. Sample No.		A25/2828
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		29/07/2025
Description:	Brown slightly sandy, gravelly, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

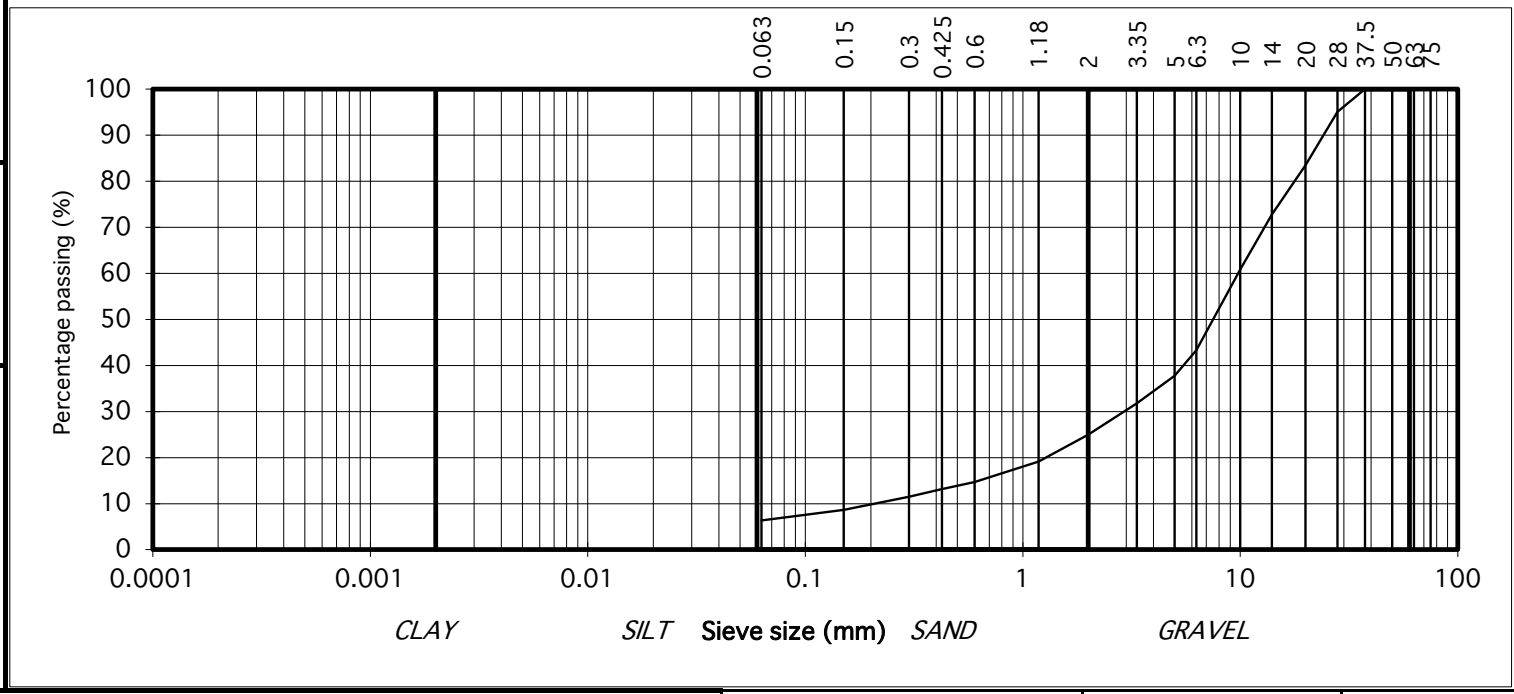
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	95	
20	83	
14	73	
10	61	
6.3	43	
5	38	
3.35	32	
2	25	
1.18	19	SAND
0.6	15	
0.425	13	
0.3	11	
0.15	9	
0.063	6	SILT/CLAY

Contract No.	25882	Report No.	R171427
Contract Name :	Gas to Edenderry		
BH/TP No.	BH42		
Sample No.*	AA223920	Lab. Sample No.	A25/2829
Sample Type:	B		
Depth* (m)	6.00	Customer:	MIL
Date Received	07/07/2025	Date Testing started	29/07/2025
Description:	Grey clayey/silty, sandy, GRAVEL		

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

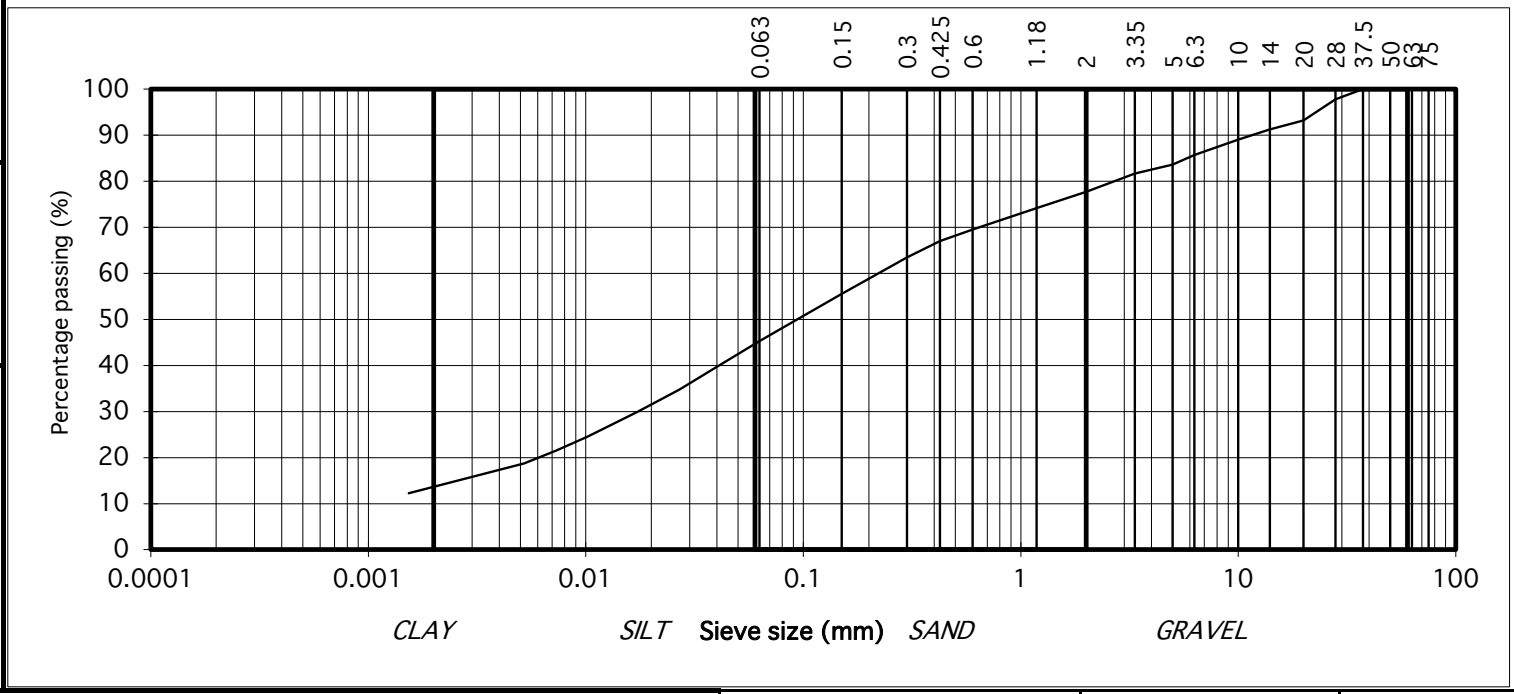
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	98	
20	93	
14	91	
10	89	
6.3	86	
5	84	
3.35	82	
2	78	
1.18	74	SAND
0.6	70	
0.425	67	
0.3	63	
0.15	56	
0.063	45	SILT/CLAY
0.037	39	
0.027	35	
0.017	30	
0.010	25	
0.007	21	
0.005	19	
0.002	12	

Contract No.	25882	Report No.	R172136	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH43			
Sample No.*	AA223909	Lab. Sample No.		A25/2831
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		29/07/2025
Description:	Brown slightly sandy, slightly gravelly, CLAY			

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
H Byrne	07/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

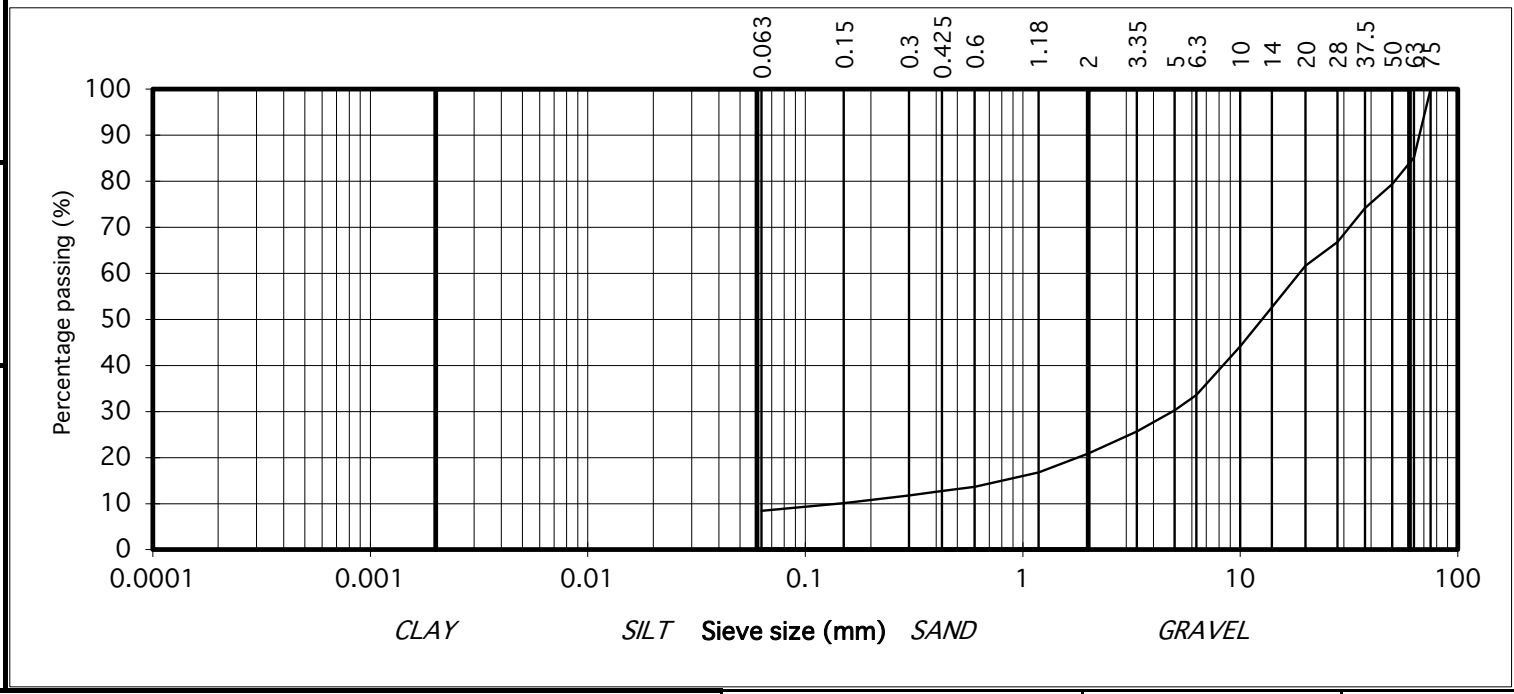
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	85	
50	79	GRAVEL
37.5	74	
28	67	
20	62	
14	53	
10	44	
6.3	34	
5	30	
3.35	26	
2	21	
1.18	17	SAND
0.6	14	
0.425	13	
0.3	12	
0.15	10	
0.063	8	SILT/CLAY

Contract No.	25882	Report No.	R171428
Contract Name :	Gas to Edenderry		
BH/TP No.	BH43		
Sample No.*	AA223910	Lab. Sample No.	A25/2832
Sample Type:	B		
Depth* (m)	4.00	Customer:	MIL
Date Received	07/07/2025	Date Testing started	29/07/2025
Description:	Brown clayey/silty, sandy, GRAVEL with some cobbles		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

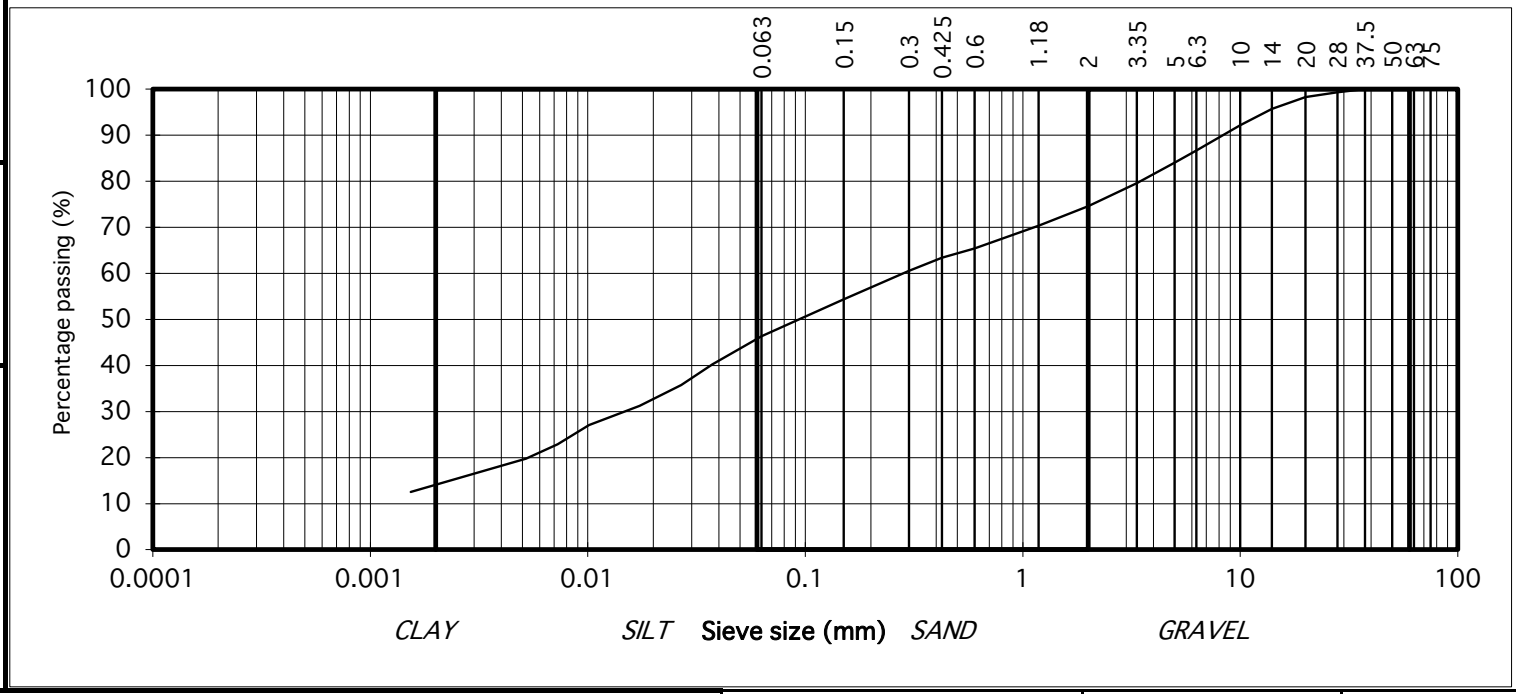
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	99	
20	98	
14	96	
10	92	
6.3	87	
5	84	
3.35	80	
2	75	
1.18	70	SAND
0.6	65	
0.425	63	
0.3	61	
0.15	54	
0.063	46	SILT/CLAY
0.037	40	
0.027	36	
0.017	31	
0.010	27	
0.007	23	
0.005	20	
0.002	12	

Contract No. 25882 Report No. R171429
Contract Name : Gas to Edenderry
BH/TP No. BH43
Sample No.* AA223913 Lab. Sample No. A25/2834
Sample Type: B
Depth* (m) 7.00 Customer: MIL
Date Received 07/07/2025 Date Testing started 29/07/2025
Description: Brown slightly sandy, slightly gravelly, CLAY

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

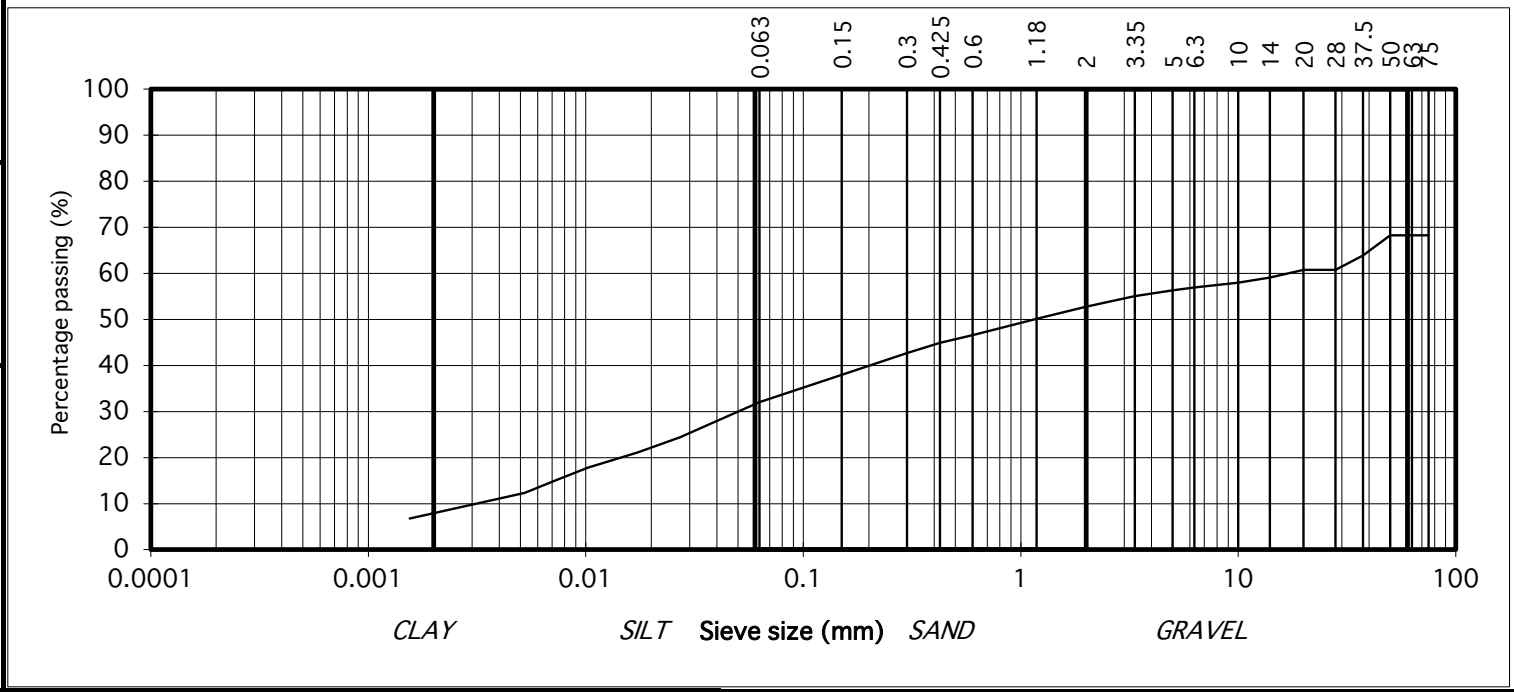
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	68	COBBLES
63	68	
50	68	GRAVEL
37.5	64	
28	61	
20	61	
14	59	
10	58	
6.3	57	
5	56	
3.35	55	
2	53	
1.18	50	SAND
0.6	47	
0.425	45	
0.3	43	
0.15	38	
0.063	32	SILT/CLAY
0.038	27	
0.027	24	
0.017	21	
0.010	18	
0.007	15	
0.005	12	
0.002	7	

Contract No.	25882	Report No.	R171430	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH45			
Sample No.*	AA223923	Lab. Sample No.		A25/2836
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		29/07/2025
Description:	Grey/brown slightly sandy, slightly gravelly, SILT with many cobbles			
Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377			

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

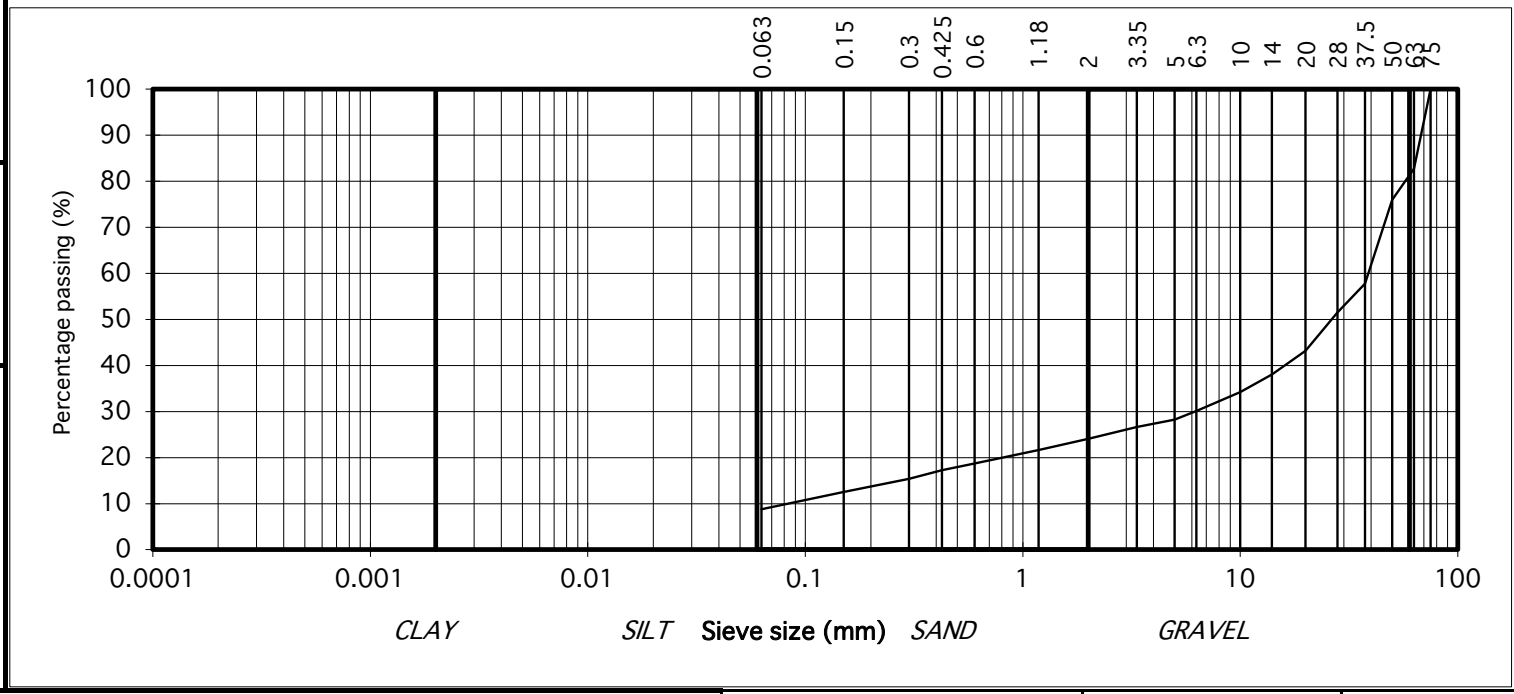
particle size	% passing	
75	100	COBBLES
63	83	
50	76	GRAVEL
37.5	58	
28	52	
20	43	
14	38	
10	34	
6.3	30	
5	28	
3.35	27	
2	24	
1.18	22	SAND
0.6	19	
0.425	17	
0.3	15	
0.15	13	
0.063	9	SILT/CLAY

Contract No.	25882	Report No.	R172138	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH45			
Sample No.*	AA223925	Lab. Sample No.		A25/2837
Sample Type:	B			
Depth* (m)	5.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		29/07/2025
Description:	Brown clayey/silty, sandy, GRAVEL with some cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

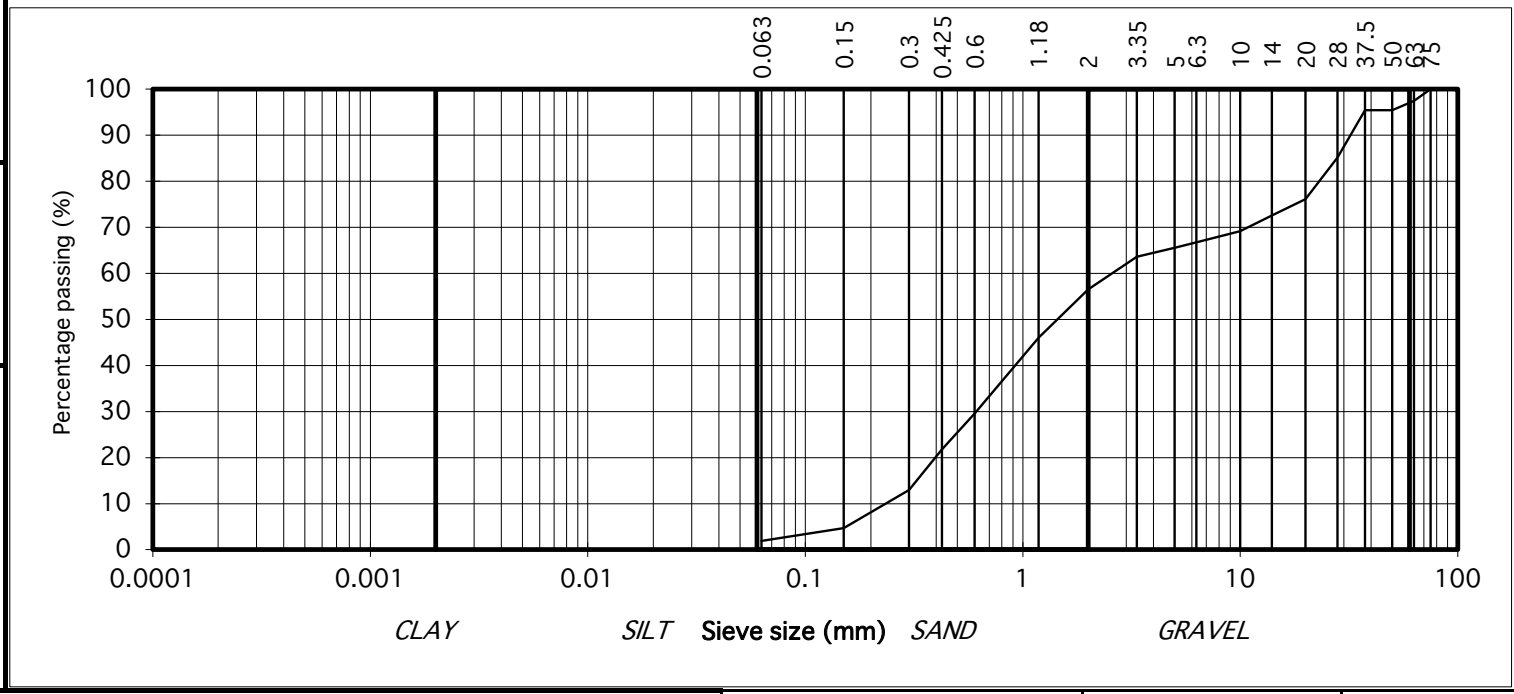
TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	97	
50	95	GRAVEL
37.5	95	
28	85	
20	76	
14	73	
10	69	
6.3	67	
5	66	
3.35	64	
2	57	
1.18	46	SAND
0.6	30	
0.425	22	
0.3	13	
0.15	5	
0.063	2	SILT/CLAY

Contract No.	25882	Report No.	R172137	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH45			
Sample No.*	AA223927	Lab. Sample No.		A25/2838
Sample Type:	B			
Depth* (m)	6.50	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		29/07/2025
Description:	Brown slightly clayey/silty, very gravelly, SAND with occasional cobbles			
Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .			

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.1331

Report No. **R171431** Contract No. 25882 Contract Name: Gas to Edenderry

Customer MIL

Samples Received: 18/07/25 Date Tested: Various

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH05	AA223936	2.0	A25/3110	B	17.2	24	12	12	83	WS	4.4	C L	Grey sandy slightly gravelly CLAY
BH05	AA223939	4.0	A25/3111	B	11.6	29	14	15	69	WS	4.4	C L	Brown slightly sandy, slightly gravelly, CLAY
BH06	AA223945	3.0	A25/3113	B	9.2	22	12	10	53	WS	4.4	C L	Brown slightly sandy, gravelly, CLAY
BH06	AA223948	6.0	A25/3114	B	4.7	18	NP	NP	18	WS	4.4		Grey sandy GRAVEL
BH07	AA238660	2.0	A25/3116	B	10.2	20	NP	NP	47	WS	4.4		Brown sandy gravelly SILT
BH07	AA238663	5.0	A25/3117	B	12.6	22	NP	NP	49	WS	4.4		Brown slightly sandy, slightly gravelly, SILT with many cobbles
BH07	AA238666	8.0	A25/3118	B	8.9	22	NP	NP	10	WS	4.4		Grey sandy gravelly SILT
BH08	AA258619	2.0	A25/3119	B	20.6	29	NP	NP	79	WS	4.4		Grey sandy gravelly SILT
BH08	AA258623	6.0	A25/3120	B	9.6	25	13	12	54	WS	4.4	C L	Grey sandy gravelly CLAY
BH08	AA258626	9.0	A25/3121	B	8.9	23	NP	NP	56	WS	4.4		Grey sandy gravelly SILT with cobbles
BH09	0	2.0	A25/3122	B	21.3	37	18	19	93	WS	4.4	C I	Grey sandy slightly gravelly CLAY
BH09	0	4.0	A25/3123	B	13.1	29	15	14	86	WS	4.4	C L	Grey sandy slightly gravelly CLAY
BH09	AA258632	7.0	A25/3124	B	13.2	28	19	9	62	WS	4.4	C L	Grey sandy gravelly CLAY
BH11	AA254603	2.0	A25/3125	B	12.4	22	NP	NP	56	WS	4.4		Grey sandy gravelly SILT
BH11	AA254606	5.0	A25/3126	B	10.0	23	11	12	54	WS	4.4	C L	Grey sandy gravelly CLAY

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method
4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.
NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12.
Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.
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IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by: H Byrne

Date: 19/08/25

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**

Report No. **R172763** Contract No. 25882 Contract Name: Gas to Edenderry

Customer MIL

Samples Received: 18/07/25 Date Tested: Various

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH12	AA258636	2.0	A25/3128	B	11.1	25	14	11	63	WS	4.4	C L	Brown sandy gravelly CLAY
BH12	AA258640	6.0	A25/3129	B	12.7	25	12	13	64	WS	4.4	C L	Grey slightly sandy, slightly gravelly, CLAY
BH44	AA223929	2.0	A25/3130	B	10.4	28	13	15	56	WS	4.4	C L	Brown sandy gravelly SILT
BH44	AA223932	5.0	A25/3132	B	9.2	20	NP	NP	42	WS	4.4		Brown sandy very gravelly SILT
BH46	AA238652	2.0	A25/3134	B	11.0	24	NP	NP	23	WS	4.4		Brown sandy gravelly SILT
BH46	AA238654	4.0	A25/3135	B	8.2	20	NP	NP	44	WS	4.4		Brown sandy gravelly SILT
BH46	AA238658	8.0	A25/3138	B	12.2	23	11	21	48	WS	4.4	C L	Brown sandy gravelly CLAY

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method
4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.
NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12.
Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.
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IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by: H Byrne

Date: 19/08/25

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

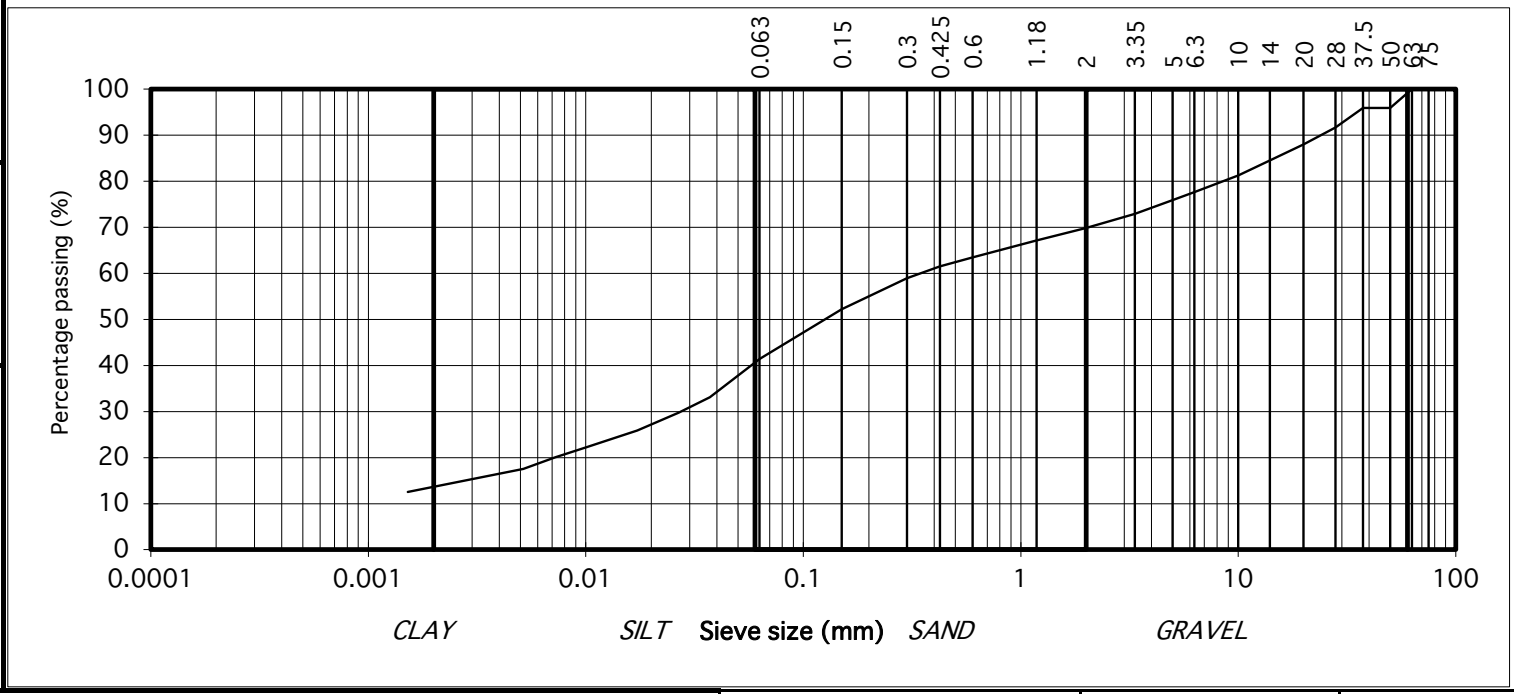
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	96	GRAVEL
37.5	96	
28	92	
20	88	
14	85	
10	81	
6.3	78	
5	76	
3.35	73	
2	70	
1.18	67	SAND
0.6	63	
0.425	62	
0.3	59	
0.15	52	
0.063	41	SILT/CLAY
0.037	33	
0.027	30	
0.017	26	
0.010	22	
0.007	20	
0.005	18	
0.002	13	

Contract No.	25882	Report No.	R171432	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH05			
Sample No.*	AA223939	Lab. Sample No.		A25/3111
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	18/07/2025	Date Testing started		26/07/2025
Description:	Brown slightly sandy, slightly gravelly, CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

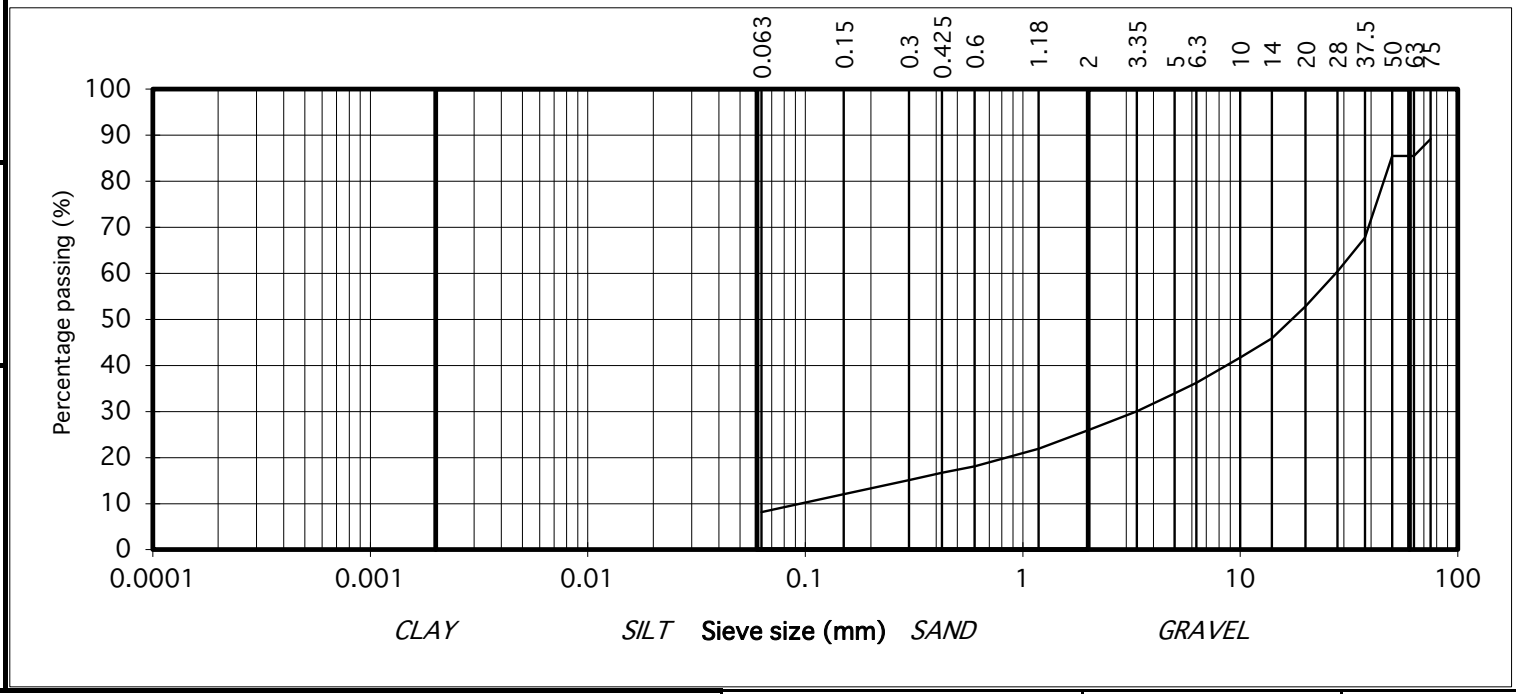
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	89	COBBLES
63	85	
50	85	GRAVEL
37.5	68	
28	60	
20	53	
14	46	
10	42	
6.3	36	
5	34	
3.35	30	
2	26	
1.18	22	SAND
0.6	18	
0.425	17	
0.3	15	
0.15	12	
0.063	8	SILT/CLAY

Contract No.	25882	Report No.	R171433
Contract Name :	Gas to Edenderry		
BH/TP No.	BH05		
Sample No.*	AA223941	Lab. Sample No.	A25/3112
Sample Type:	B		
Depth* (m)	6.00	Customer:	MIL
Date Received	18/07/2025	Date Testing started	29/07/2025
Description:	Grey clayey/silty, sandy, GRAVEL with some cobbles		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

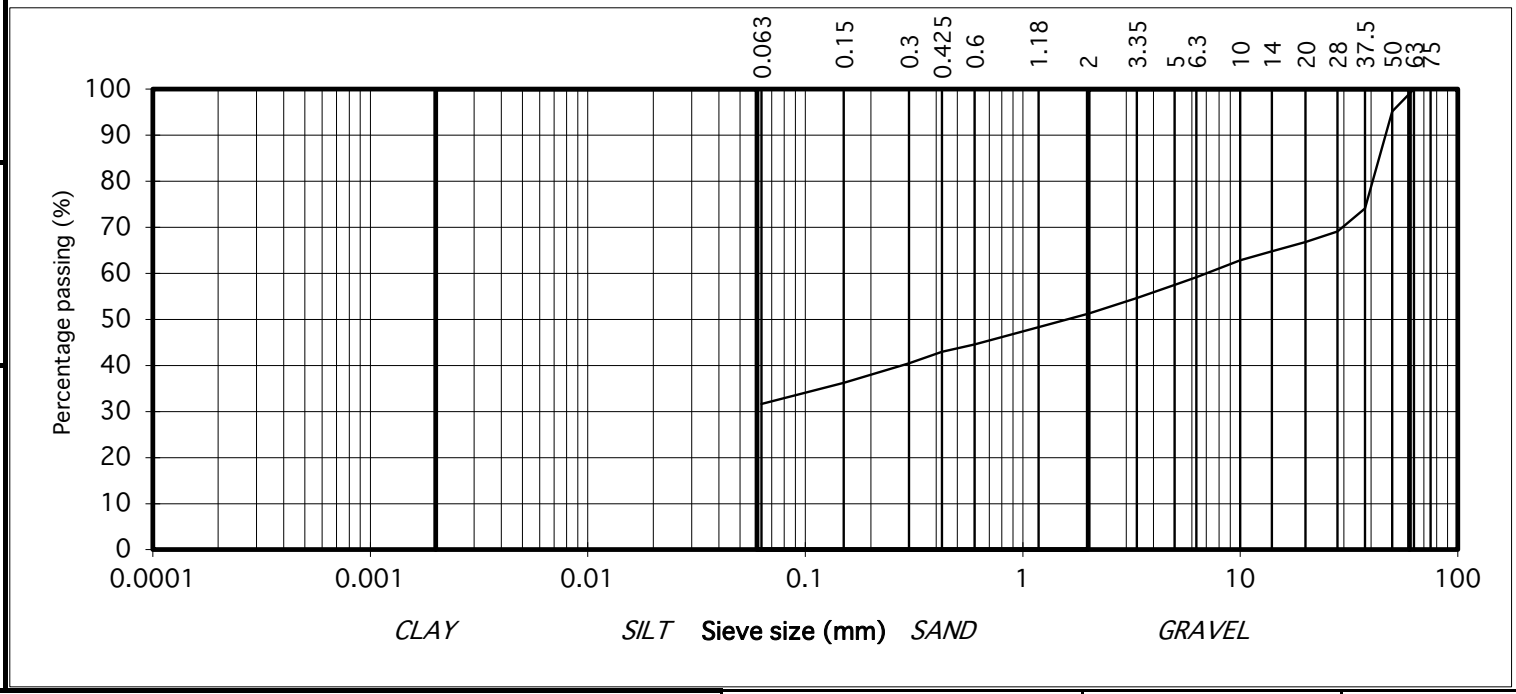
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	95	GRAVEL
37.5	74	
28	69	
20	67	
14	65	
10	63	
6.3	59	
5	57	
3.35	55	
2	51	
1.18	48	SAND
0.6	45	
0.425	43	
0.3	40	
0.15	36	
0.063	32	SILT/CLAY

Contract No.	25882	Report No.	R172761
Contract Name :	Gas to Edenderry		
BH/TP No.	BH06		
Sample No.*	AA223945	Lab. Sample No.	A25/3113
Sample Type:	B		
Depth* (m)	3.00	Customer:	MIL
Date Received	18/07/2025	Date Testing started	13/08/2025
Description:	Brown slightly sandy, gravelly, CLAY		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

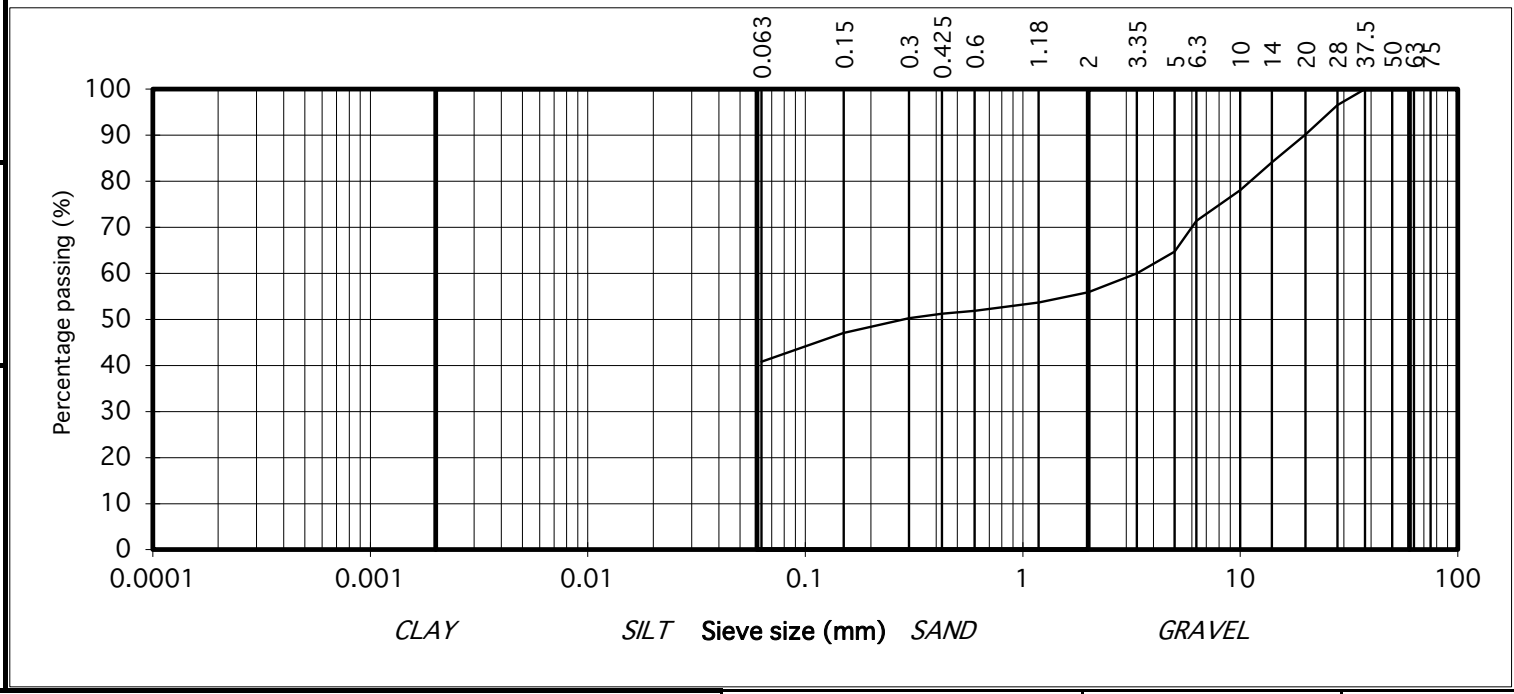
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	97	
20	90	
14	84	
10	78	
6.3	71	
5	65	
3.35	60	
2	56	
1.18	54	SAND
0.6	52	
0.425	51	
0.3	50	
0.15	47	
0.063	41	SILT/CLAY

Contract No.	25882	Report No.	R171434	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH06			
Sample No.*	AA223950	Lab. Sample No.		A25/3115
Sample Type:	B			
Depth* (m)	7.60	Customer:	MIL	
Date Received	18/07/2025	Date Testing started		29/07/2025
Description:	Brown slightly sandy, gravelly, SILT/CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	07/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing
75	77
63	70
50	62
37.5	61
28	59
20	55
14	54
10	52
6.3	49
5	47
3.35	45
2	43
1.18	41
0.6	38
0.425	36
0.3	34
0.15	30
0.063	24

COBBLES

GRAVEL

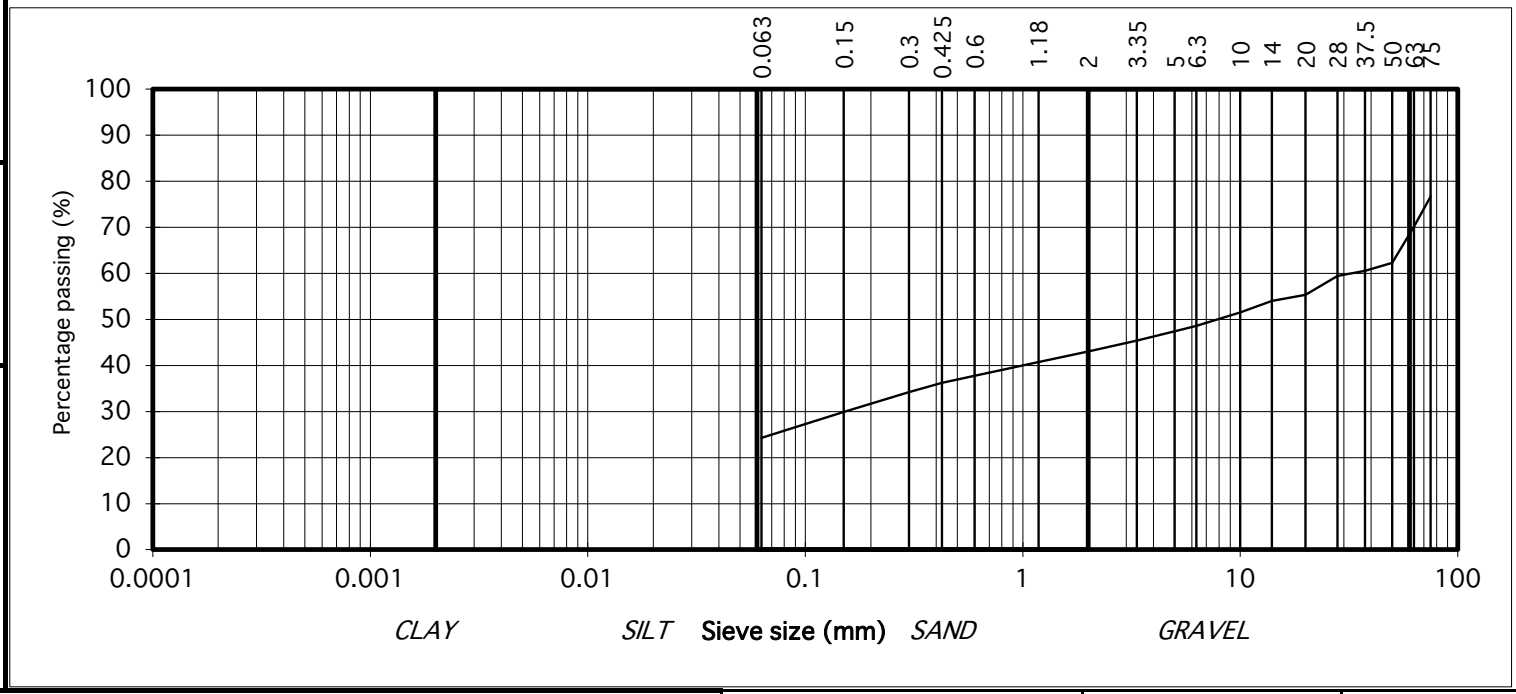
SAND

SILT/CLAY

Contract No. 25882 Report No. R172762
Contract Name : Gas to Edenderry
BH/TP No. BH07
Sample No.* AA238663 Lab. Sample No. A25/3117
Sample Type: B
Depth* (m) 5.00 Customer: MIL
Date Received 18/07/2025 Date Testing started 13/08/2025
Description: Brown slightly sandy, slightly gravelly, SILT with many cobbles

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	19/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

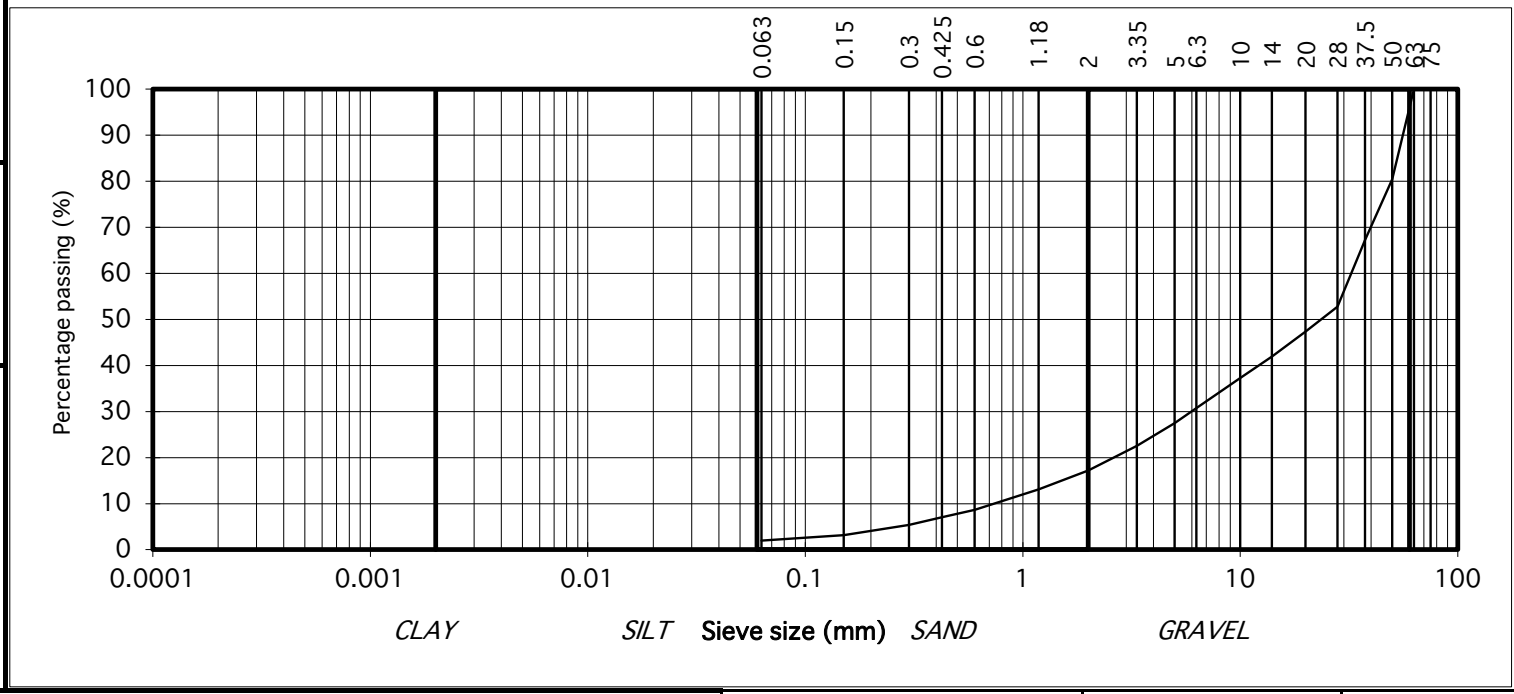
particle size	% passing	
75	100	COBBLES
63	100	
50	80	GRAVEL
37.5	67	
28	53	
20	47	
14	42	
10	37	
6.3	31	
5	27	
3.35	23	
2	17	
1.18	13	SAND
0.6	9	
0.425	7	
0.3	5	
0.15	3	
0.063	2	SILT/CLAY

Contract No.	25882	Report No.	R172760
Contract Name :	Gas to Edenderry		
BH/TP No.	BH11		
Sample No.*	AA254608	Lab. Sample No.	A25/3127
Sample Type:	B		
Depth* (m)	7.00	Customer:	MIL
Date Received	18/07/2025	Date Testing started	13/08/2025
Description:	Grey slightly clayey/silty, sandy, GRAVEL		

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	19/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

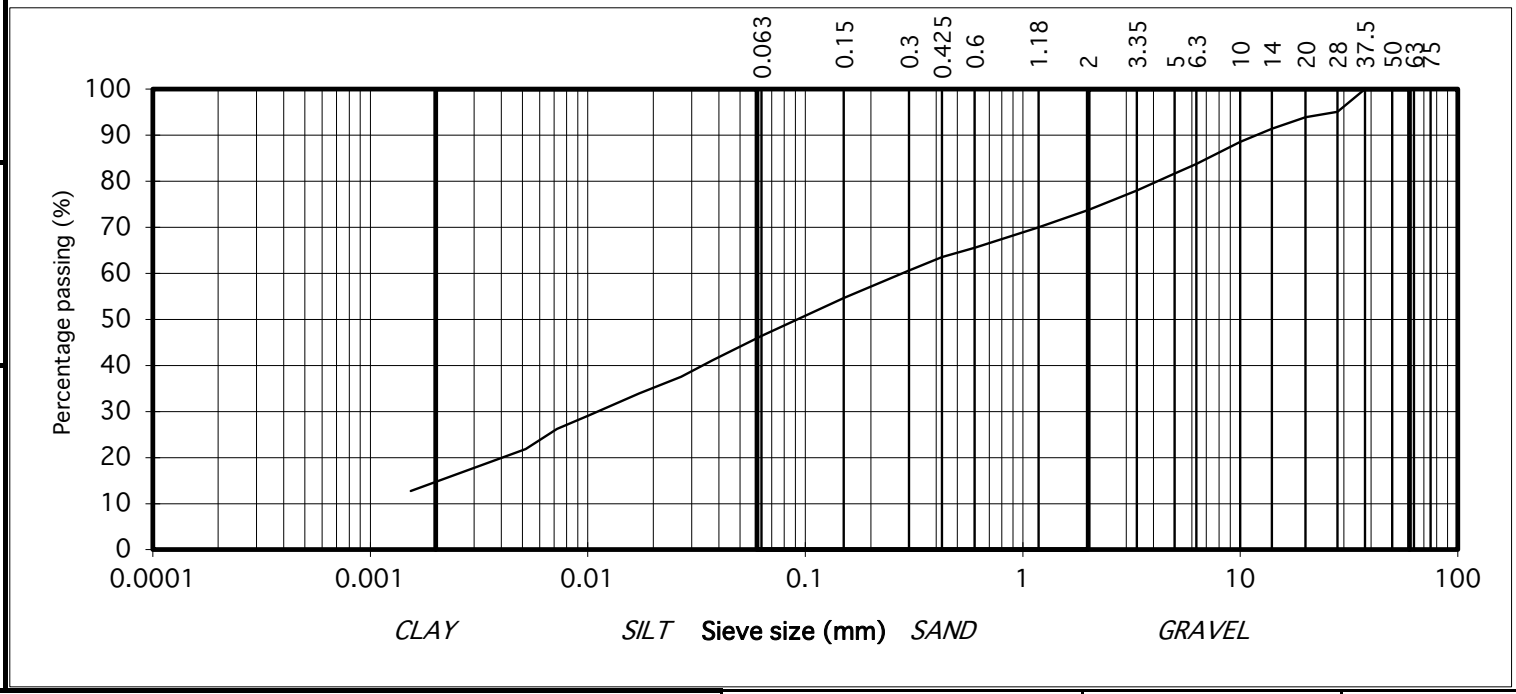
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	95	
20	94	
14	91	
10	89	
6.3	84	
5	82	
3.35	78	
2	74	
1.18	70	SAND
0.6	66	
0.425	64	
0.3	61	
0.15	55	
0.063	46	SILT/CLAY
0.038	41	
0.027	38	
0.017	34	
0.010	29	
0.007	26	
0.005	22	
0.002	13	

Contract No.	25882	Report No.	R171435	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH12			
Sample No.*	AA258640	Lab. Sample No.		A25/3129
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	18/07/2025	Date Testing started		29/07/2025
Description:	Grey slightly sandy, slightly gravelly, CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	07/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

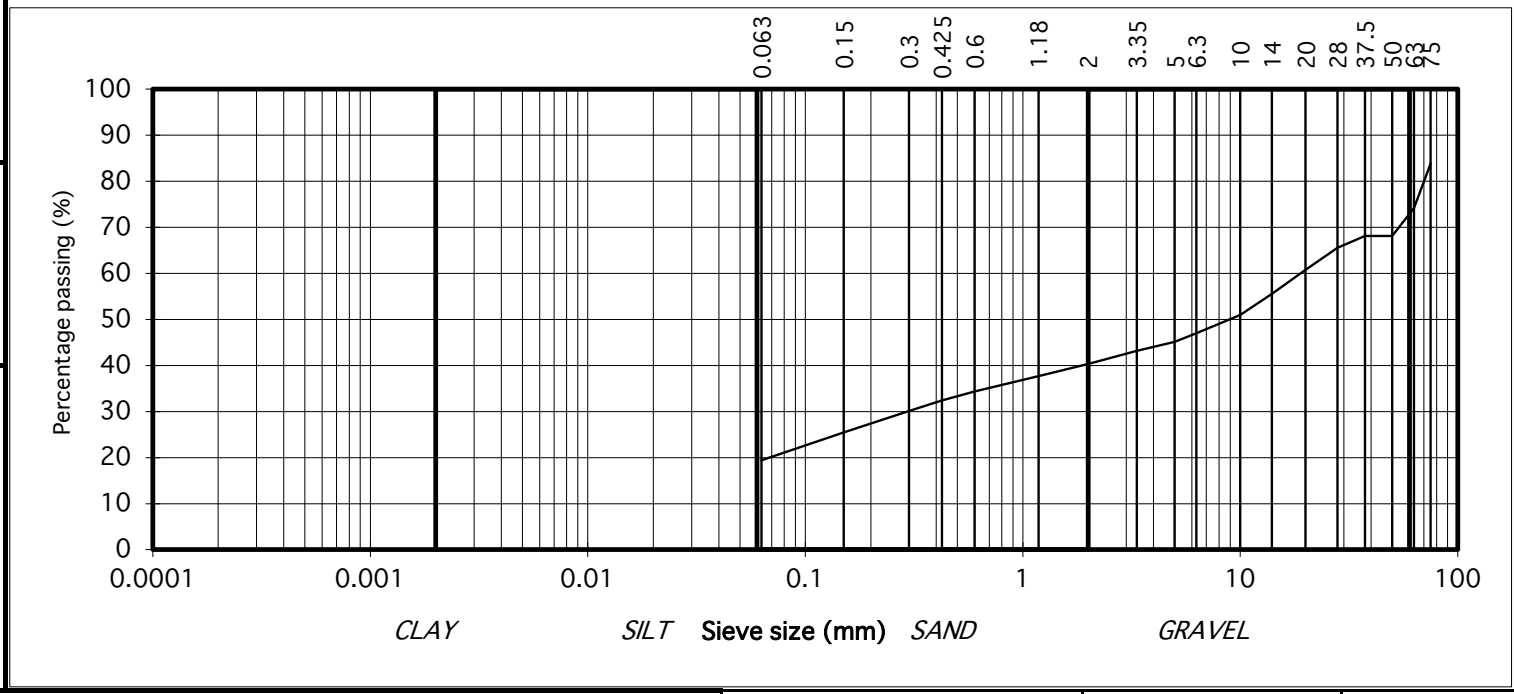
particle size	% passing	
75	84	COBBLES
63	74	
50	68	GRAVEL
37.5	68	
28	66	
20	61	
14	56	
10	51	
6.3	47	
5	45	
3.35	43	
2	40	
1.18	38	SAND
0.6	34	
0.425	32	
0.3	30	
0.15	25	
0.063	19	SILT/CLAY

Contract No.	25882	Report No.	R172758	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH44			
Sample No.*	AA223931	Lab. Sample No.		A25/3136
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	18/07/2025	Date Testing started		01/08/2025
Description:	Brown clayey/silty, very sandy, GRAVEL with many cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	19/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing
75	53
63	38
50	34
37.5	28
28	25
20	24
14	23
10	22
6.3	21
5	21
3.35	20
2	18
1.18	15
0.6	10
0.425	8
0.3	6
0.15	4
0.063	2

COBBLES

GRAVEL

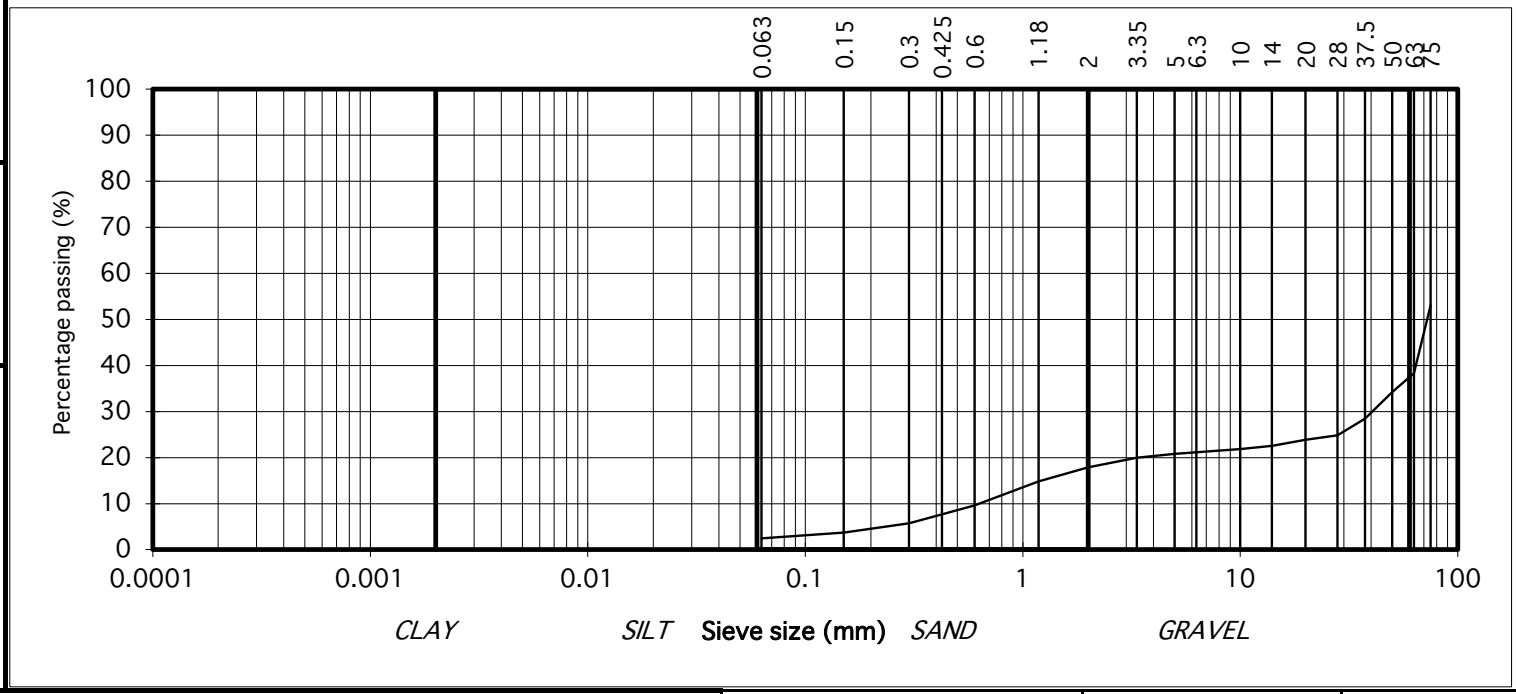
SAND

SILT/CLAY

Contract No. 25882 Report No. R172759
Contract Name : Gas to Edenderry
BH/TP No. BH44
Sample No.* AA223933 Lab. Sample No. A25/3133
Sample Type: B
Depth* (m) 6.00 Customer: MIL
Date Received 18/07/2025 Date Testing started 02/08/2025
Description: COBBLES with brown slightly clayey/silty, sandy, gravel

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377

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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	19/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

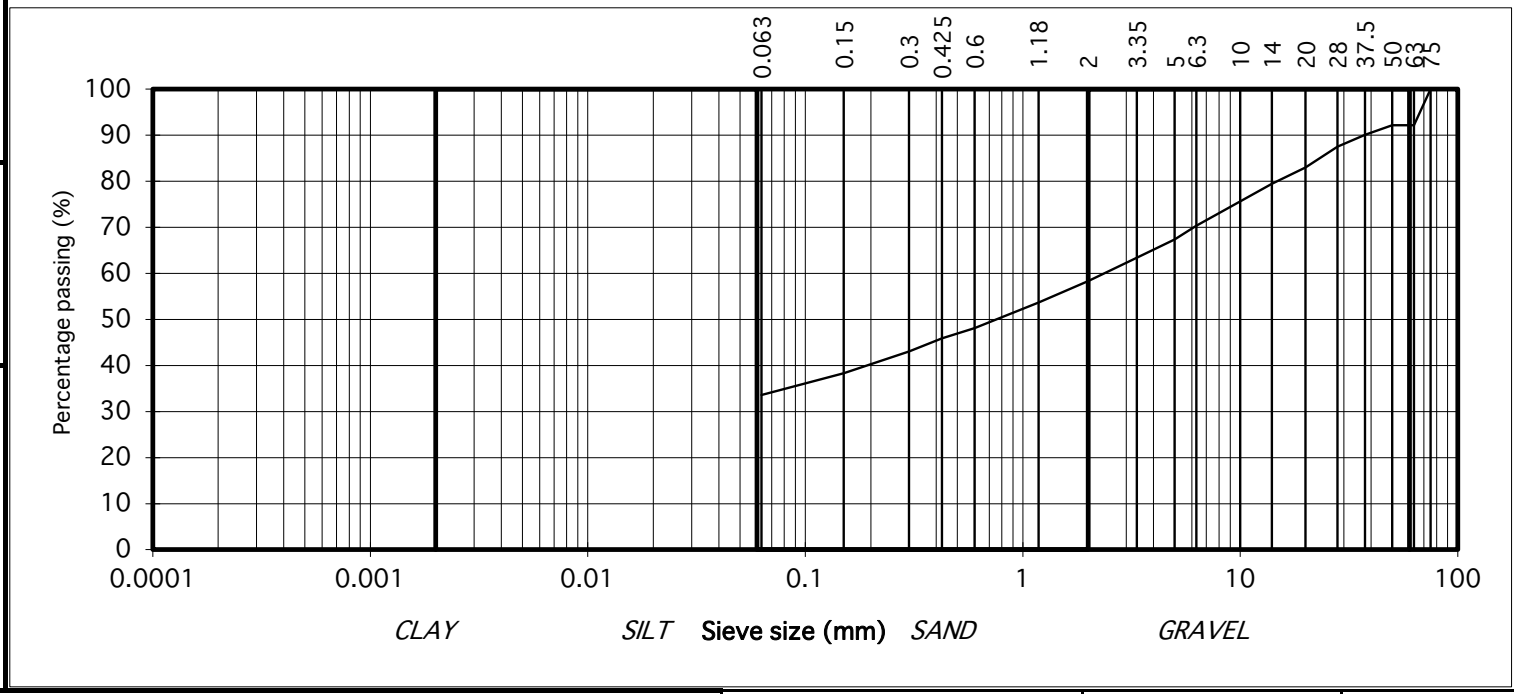
particle size	% passing	
75	100	COBBLES
63	92	
50	92	GRAVEL
37.5	90	
28	88	
20	83	
14	79	
10	76	
6.3	70	
5	67	
3.35	63	
2	58	
1.18	54	SAND
0.6	48	
0.425	46	
0.3	43	
0.15	38	
0.063	34	SILT/CLAY

Contract No.	25882	Report No.	R172056	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH46			
Sample No.*	AA238655	Lab. Sample No.		A25/3136
Sample Type:	B			
Depth* (m)	5.00	Customer:	MIL	
Date Received	18/07/2025	Date Testing started		01/08/2025
Description:	Brown slightly sandy, gravelly, SILT/CLAY with some cobbles			

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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	19/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

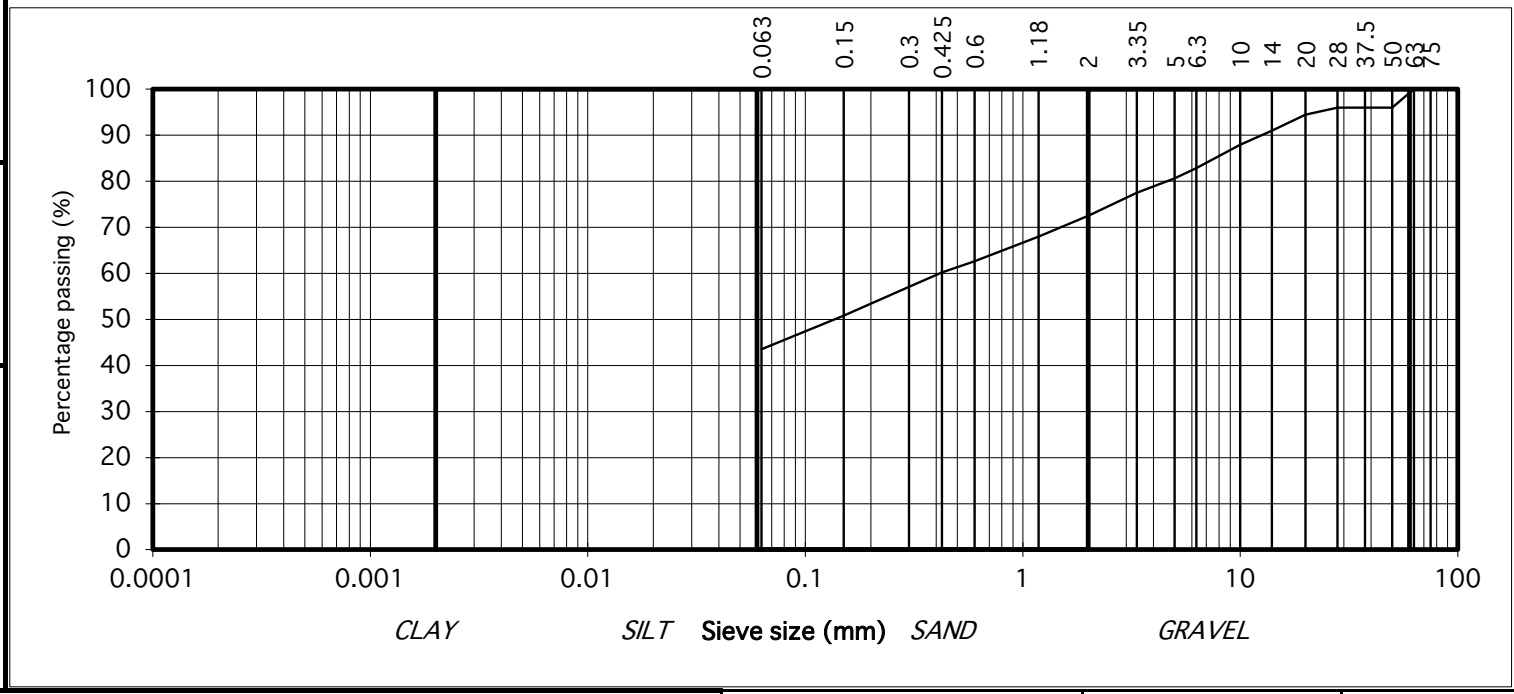
particle size	% passing	
75	100	COBBLES
63	100	
50	96	GRAVEL
37.5	96	
28	96	
20	94	
14	91	
10	88	
6.3	83	
5	81	
3.35	77	
2	72	
1.18	68	SAND
0.6	63	
0.425	60	
0.3	57	
0.15	51	
0.063	44	SILT/CLAY

Contract No.	25882	Report No.	R172057
Contract Name :	Gas to Edenderry		
BH/TP No.	BH46		
Sample No.*	AA238657	Lab. Sample No.	A25/3137
Sample Type:	B		
Depth* (m)	7.00	Customer:	MIL
Date Received	18/07/2025	Date Testing started	01/08/2025
Description:	Brown slightly sandy, slightly gravelly, SILT/CLAY		

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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	19/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Water Content, Liquid & Plastic Limits

Tested in accordance with BS1377-2-2022/EN17892-1 and EN17892-12

Report No. **R172058** Contract No. 25882 Contract Name: Gas to Edenderry

Customer MIL

Samples Received: 29/07/25 Date Tested: Various

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH10	AA254611	2.0	A25/3245	B	19.8	31	16	15	80	WS	5.3	C L	Brown sandy gravelly CLAY
BH10	AA254614	5.0	A25/3246	B	8.7	26	14	12	57	WS	5.3	C L	Brown sandy gravelly CLAY
BH13A	AA234947	1.0	A25/3249	B	15.7	20	NP	NP	70	WS	5.3		Brown sandy gravelly SILT
BH13A	AA234949	3.0	A25/3250	B	11.7	26	13	13	68	WS	5.3	C L	Brown slightly sandy, slightly gravelly, CLAY
BH13A	AA234952	6.0	A25/3251	B	9.6	28	13	15	72	WS	5.3	C L	Brown slightly sandy, slightly gravelly, CLAY
BH48	AA254618	1.0	A25/3256	B	22.8	27	NP	NP	82	WS	5.3		Brown sandy gravelly SILT
BH48	AA254620	3.0	A25/3257	B	13.4	26	13	13	77	WS	5.3	C L	Grey slightly sandy, slightly gravelly, CLAY
BH48	AA254622	5.0	A25/3258	B	9.6	20	NP	NP	57	WS	5.3		Brown sandy gravelly SILT
BH48	AA254624	7.0	A25/3259	B	1.8	42	NP	NP	8	WS	5.3		Grey slightly silty, slightly sandy, GRAVEL with many cobbles
BH49A	AA243629	2.0	A25/3260	B	11.8	24	NP	NP	51	WS	5.3		Brown sandy gravelly SILT
BH49A	AA243631	4.0	A25/3261	B	10.1	26	12	14	50	WS	5.3	C L	Grey slightly sandy, gravelly, CLAY
BH49A	AA243634	7.0	A25/3262	B	6.1	22	NP	NP	17	WS	5.3		Brown silty, sandy, GRAVEL with some cobbles
BH56	AA212754	3.0	A25/3263	B	25.8	28	NP	NP	99	WS	5.3		Grey sandy SILT

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 5.2 Cone Penetrometer definitive method
5.3 Cone Penetrometer single point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.

Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.

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IGSL Ltd Materials Laboratory

Persons authorized to approve reports

H Byrne (Laboratory Manager)

Approved by: H Byrne

Date: 19/08/25

Page: 1 of 1

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

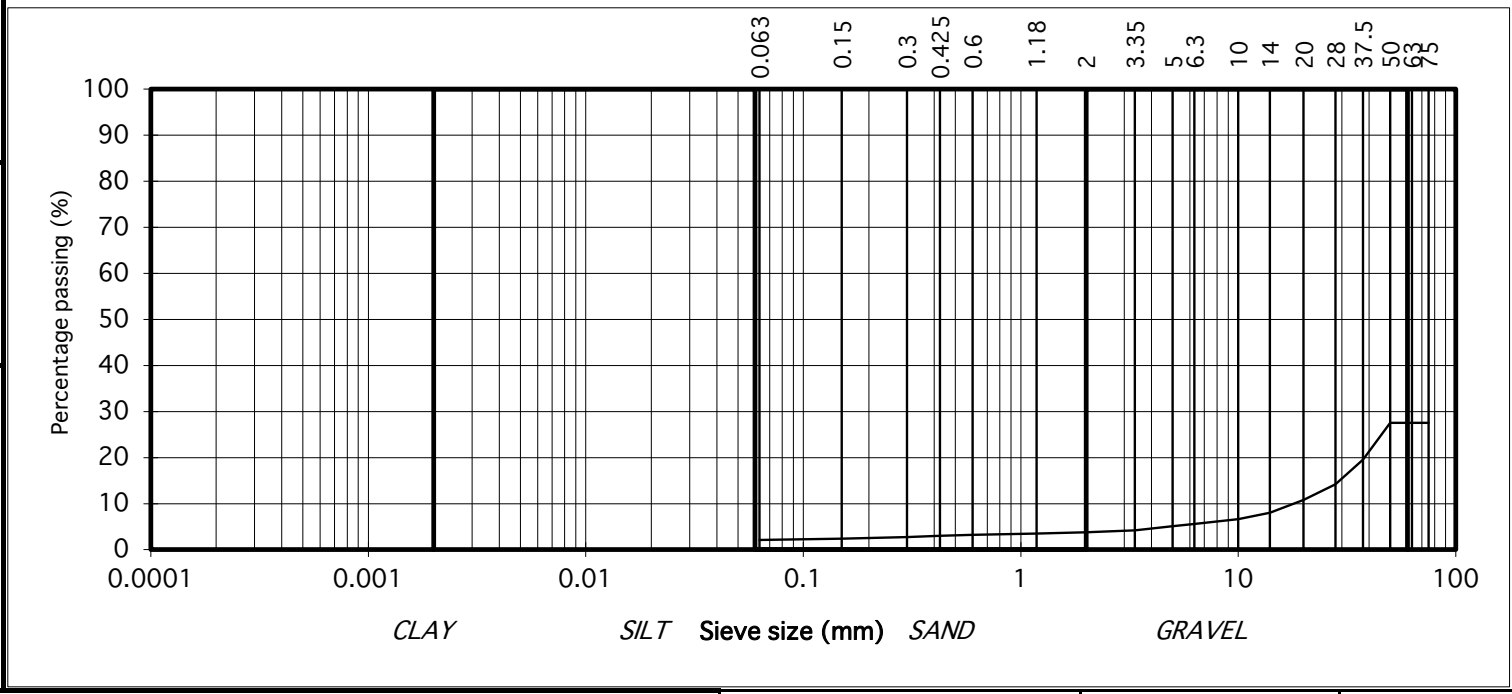
particle size	% passing	
75	28	COBBLES
63	28	
50	28	GRAVEL
37.5	20	
28	14	
20	11	
14	8	
10	7	
6.3	6	
5	5	
3.35	4	
2	4	
1.18	4	SAND
0.6	3	
0.425	3	
0.3	3	
0.15	2	
0.063	2	SILT/CLAY

Contract No.	25882	Report No.	R172220	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH10			
Sample No.*	AA254616	Lab. Sample No.		A25/3247
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		02/08/2025
Description:	COBBLES with brown slightly clayey/silty, slightly sandy, gravel			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	21/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

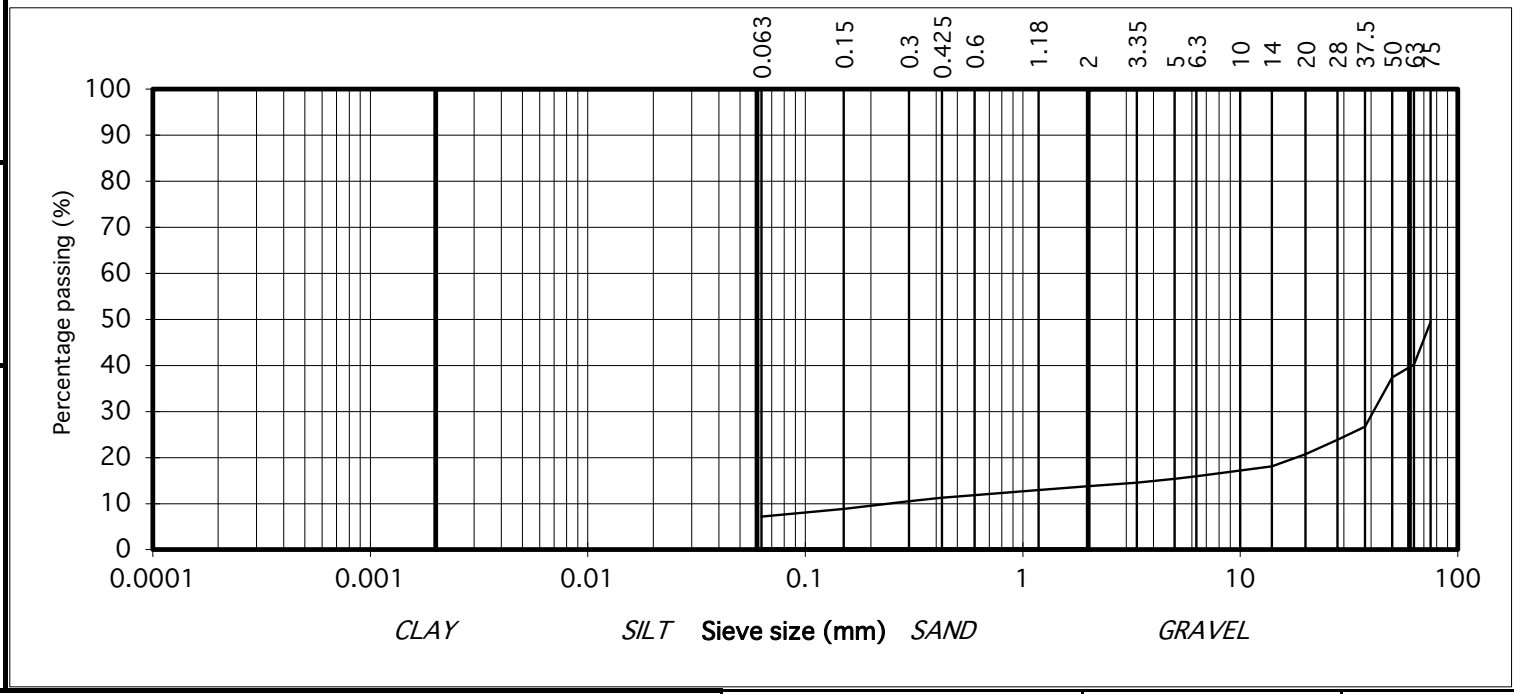
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	49	COBBLES
63	40	
50	37	GRAVEL
37.5	27	
28	24	
20	21	
14	18	
10	17	
6.3	16	
5	15	
3.35	15	
2	14	
1.18	13	SAND
0.6	12	
0.425	11	
0.3	11	
0.15	9	
0.063	7	SILT/CLAY

Contract No.	25882	Report No.	R1712059	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH10			
Sample No.*	AA254616	Lab. Sample No.		A25/3248
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		02/08/2025
Description:	COBBLES with brown clayey/silty, sandy, gravel			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	19/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

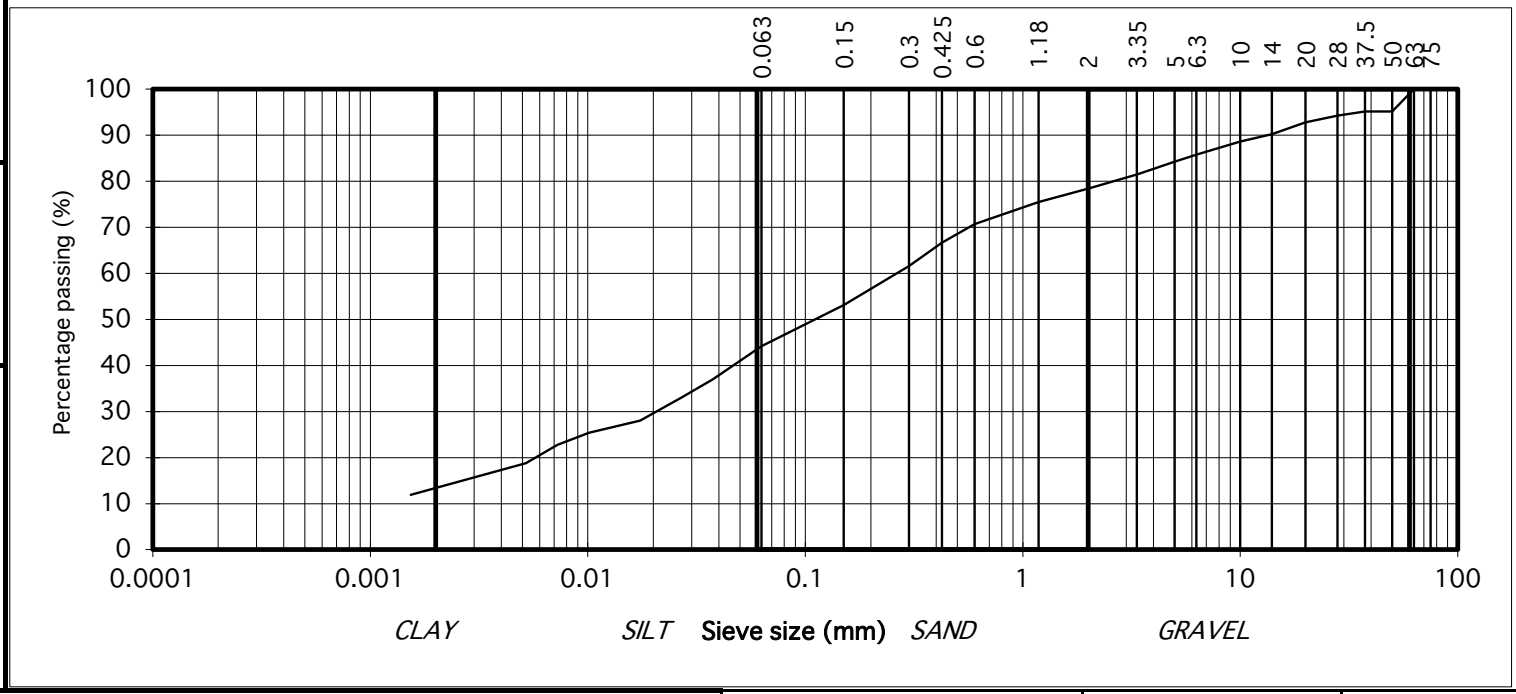
particle size	% passing	
75	100	COBBLES
63	100	
50	95	GRAVEL
37.5	95	
28	94	
20	93	
14	90	
10	89	
6.3	86	
5	84	
3.35	82	
2	78	
1.18	76	SAND
0.6	71	
0.425	67	
0.3	62	
0.15	53	
0.063	44	SILT/CLAY
0.038	37	
0.027	33	
0.017	28	
0.010	25	
0.007	23	
0.005	19	
0.002	12	

Contract No.	25882	Report No.	R1712060	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH13A			
Sample No.*	AA234949	Lab. Sample No.		A25/3250
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		01/08/2025
Description:	Brown slightly sandy, slightly gravelly, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	19/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

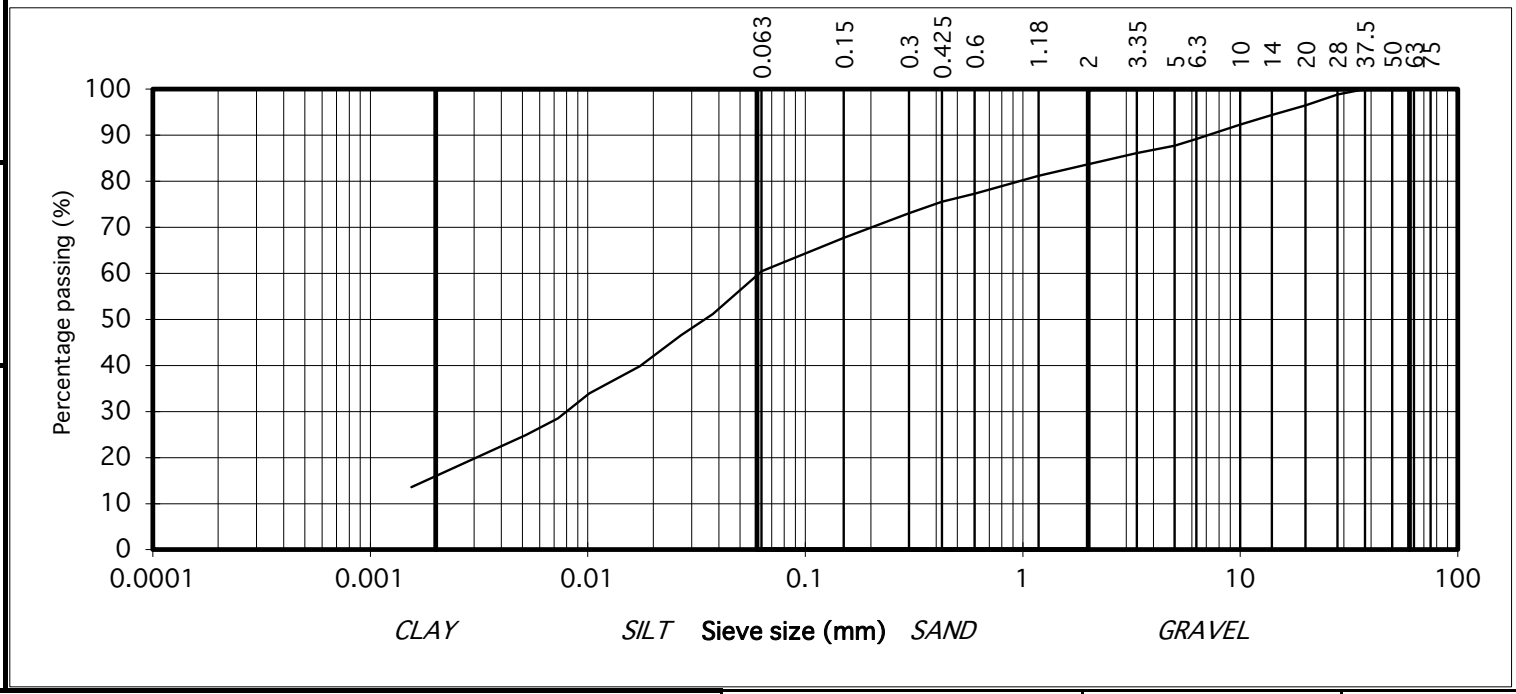
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	99	
20	96	
14	94	
10	92	
6.3	89	
5	88	
3.35	86	
2	84	
1.18	81	SAND
0.6	77	
0.425	76	
0.3	73	
0.15	68	
0.063	60	SILT/CLAY
0.038	51	
0.027	47	
0.017	40	
0.010	34	
0.007	29	
0.005	25	
0.002	14	

Contract No.	25882	Report No.	R172750	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH13A			
Sample No.*	AA234952	Lab. Sample No.		A25/3251
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		01/08/2025
Description:	Brown slightly sandy, slightly gravelly, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

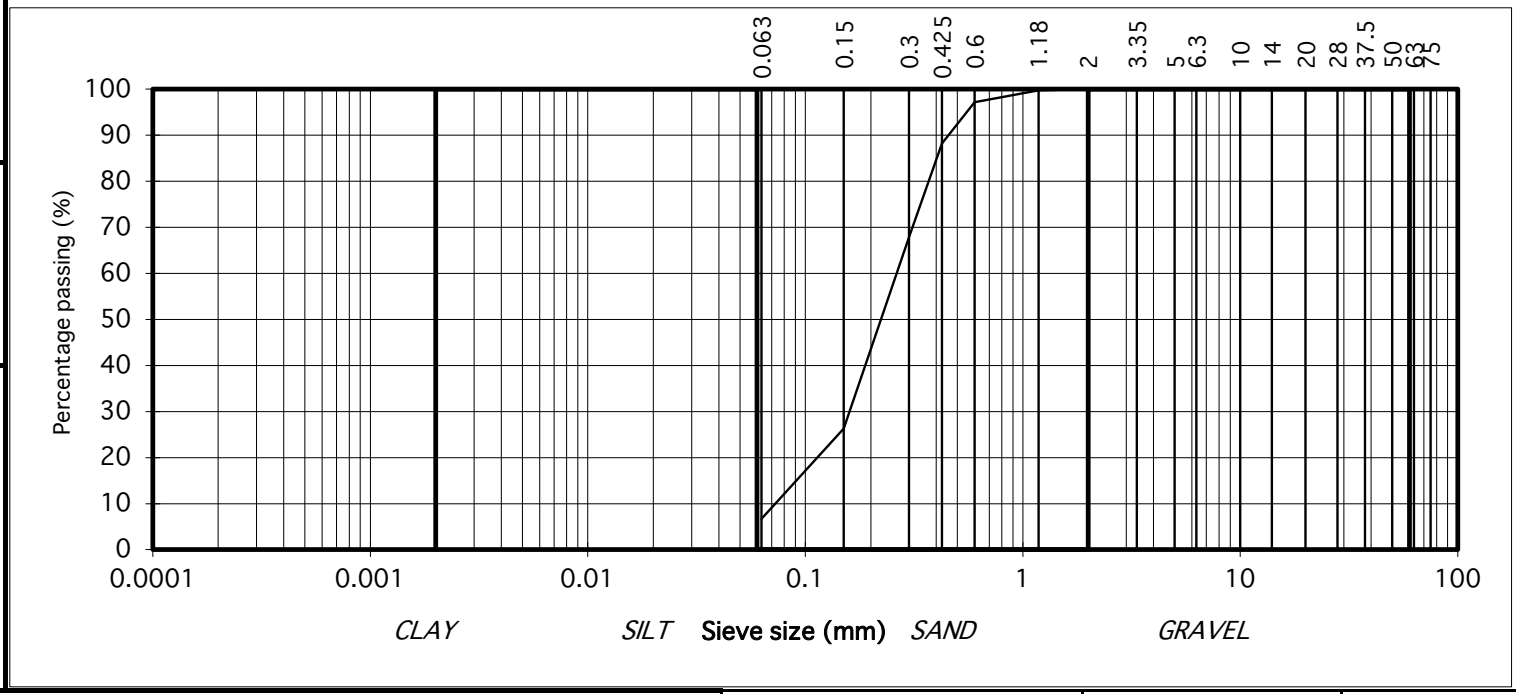
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	97	
0.425	88	
0.3	68	
0.15	26	
0.063	7	SILT/CLAY

Contract No.	25882	Report No.	R172263	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH34			
Sample No.*	AA212760	Lab. Sample No.		A25/3252
Sample Type:	B			
Depth* (m)	2.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		16/08/2025
Description:	Grey clayey/silty, SAND			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

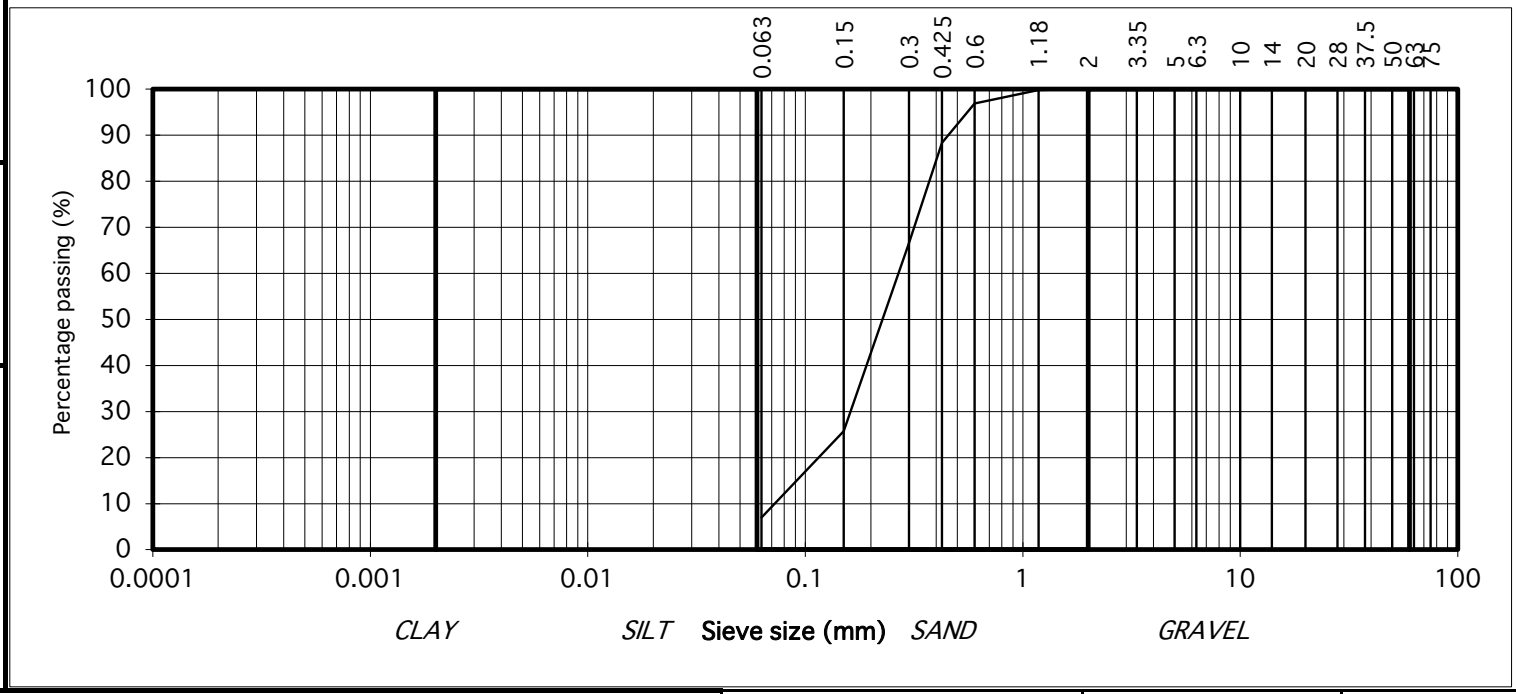
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	97	
0.425	88	
0.3	67	
0.15	26	
0.063	7	SILT/CLAY

Contract No.	25882	Report No.	R172264	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH34			
Sample No.*	AA212762	Lab. Sample No.		A25/3253
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		16/08/2025
Description:	Grey clayey/silty, SAND			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

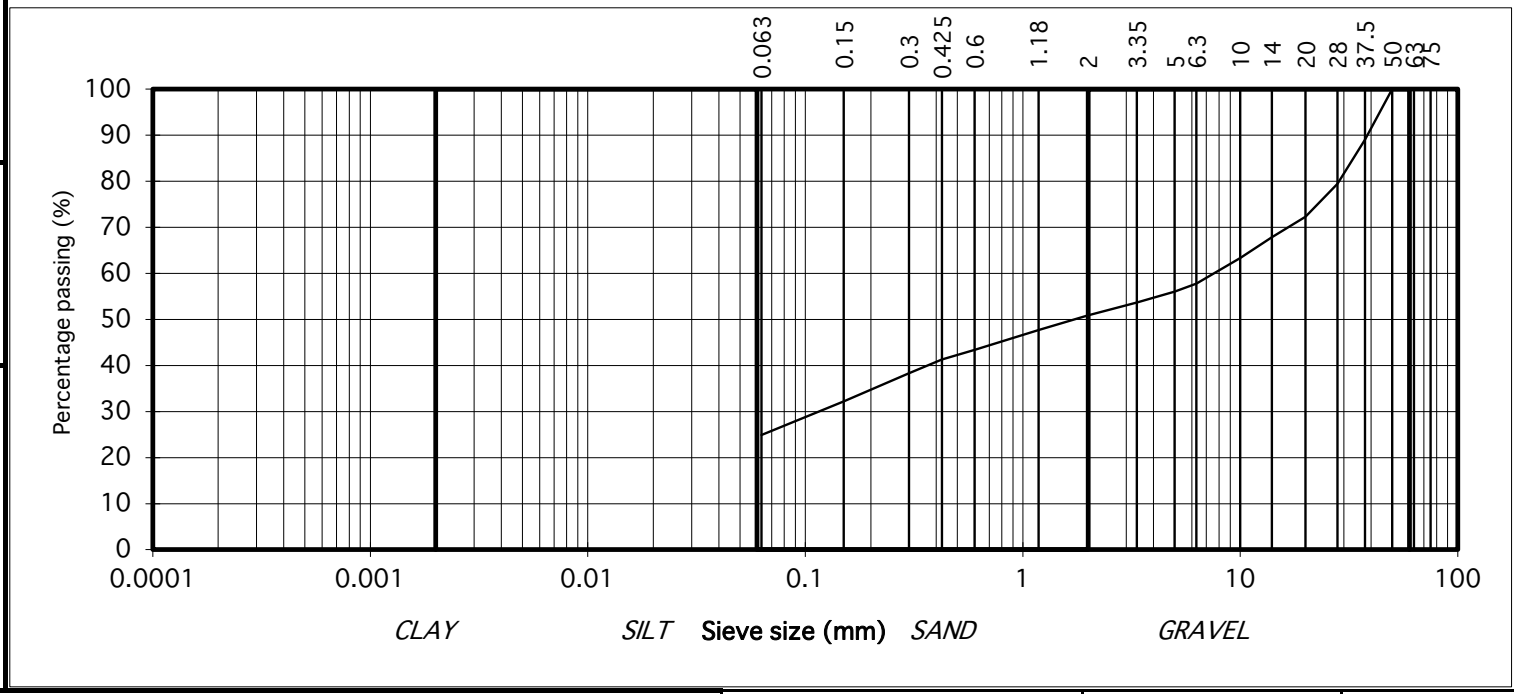
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	89	
28	79	
20	72	
14	68	
10	63	
6.3	58	
5	56	
3.35	54	
2	51	
1.18	48	SAND
0.6	43	
0.425	41	
0.3	38	
0.15	32	
0.063	25	SILT/CLAY

Contract No.	25882	Report No.	R172748
Contract Name :	Gas to Edenderry		
BH/TP No.	BH34		
Sample No.*	AA212763	Lab. Sample No.	A25/3254
Sample Type:	B		
Depth* (m)	5.00	Customer:	MIL
Date Received	29/07/2025	Date Testing started	16/08/2025
Description:	Grey slightly sandy, gravelly, SILT/CLAY		

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

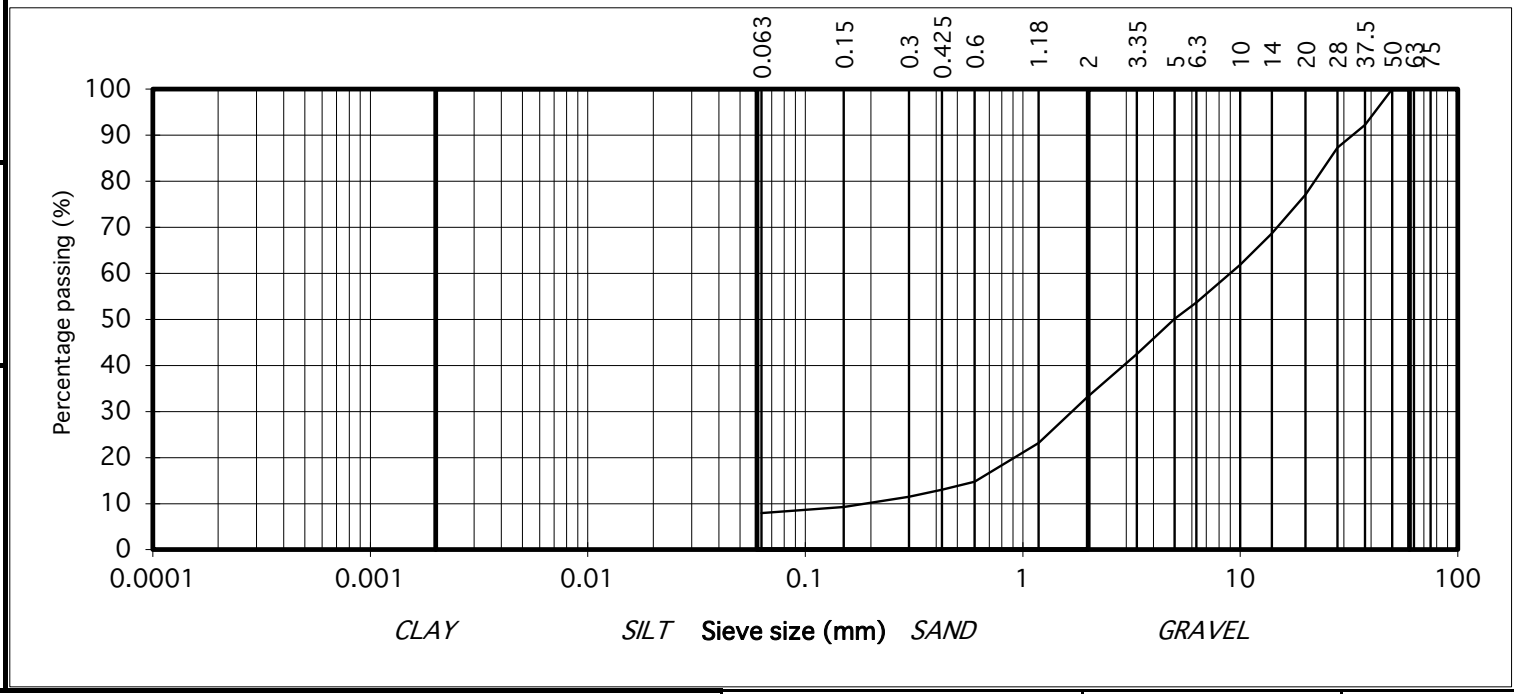
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	92	
28	87	
20	77	
14	69	
10	62	
6.3	54	
5	50	
3.35	43	
2	33	
1.18	23	SAND
0.6	15	
0.425	13	
0.3	12	
0.15	9	
0.063	8	SILT/CLAY

Contract No.	25882	Report No.	R172749
Contract Name :	Gas to Edenderry		
BH/TP No.	BH34		
Sample No.*	AA212765	Lab. Sample No.	A25/3255
Sample Type:	B		
Depth* (m)	7.00	Customer:	MIL
Date Received	29/07/2025	Date Testing started	13/08/2025
Description:	Grey clayey/silty, very sandy, GRAVEL		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

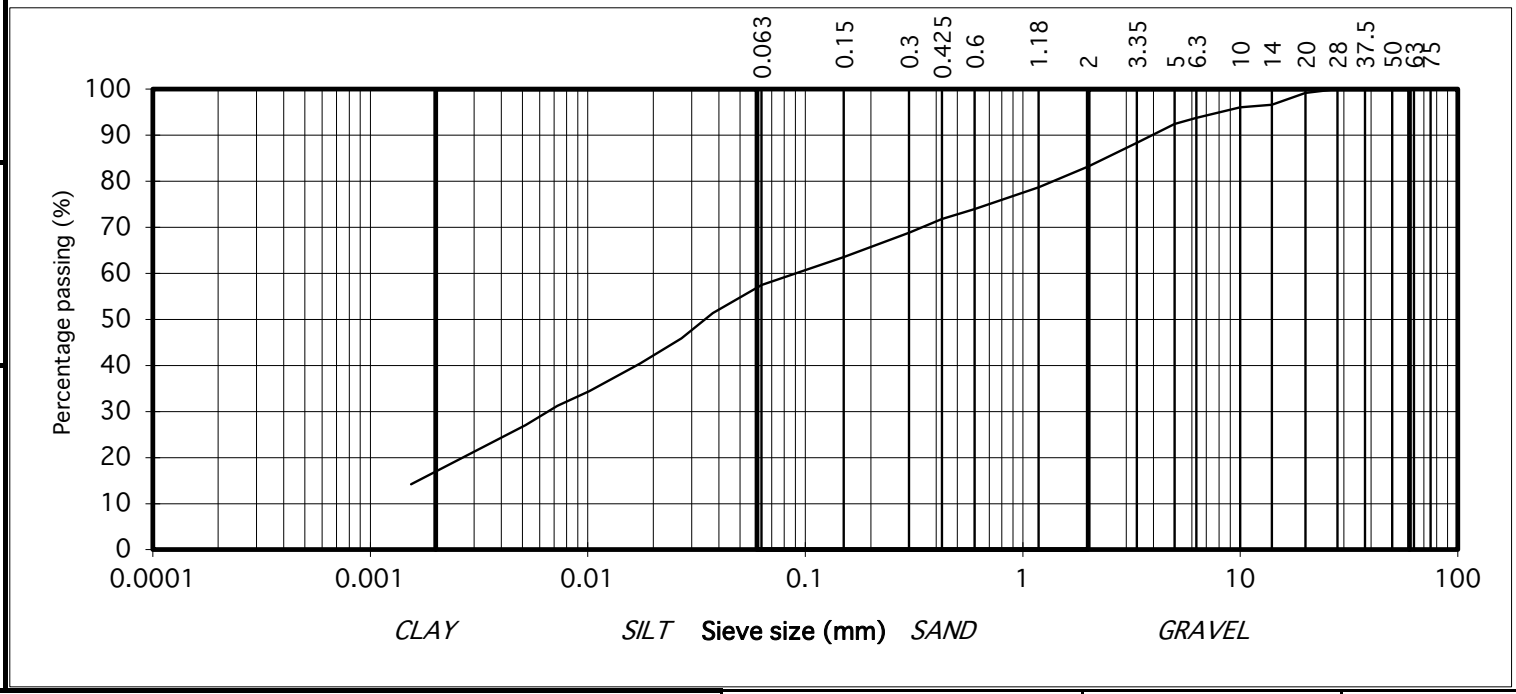
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	99	
14	97	
10	96	
6.3	94	
5	92	
3.35	88	
2	83	
1.18	79	SAND
0.6	74	
0.425	72	
0.3	69	
0.15	64	
0.063	58	SILT/CLAY
0.038	51	
0.027	46	
0.017	40	
0.010	34	
0.007	31	
0.005	27	
0.002	14	

Contract No.	25882	Report No.	R172751	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH48			
Sample No.*	AA254620	Lab. Sample No.		A25/3257
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		14/08/2025
Description:	Grey slightly sandy, slightly gravelly, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4



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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing
75	86
63	55
50	39
37.5	34
28	25
20	21
14	17
10	14
6.3	11
5	9
3.35	6
2	4
1.18	3
0.6	2
0.425	2
0.3	2
0.15	2
0.063	2

COBBLES

GRAVEL

SAND

SILT/CLAY

Contract No. 25882 Report No. R1712061

Contract Name : Gas to Edenderry

BH/TP No. BH48

Sample No.* AA254624 Lab. Sample No. A25/3259

Sample Type: B

Depth* (m) 7.00 Customer: MIL

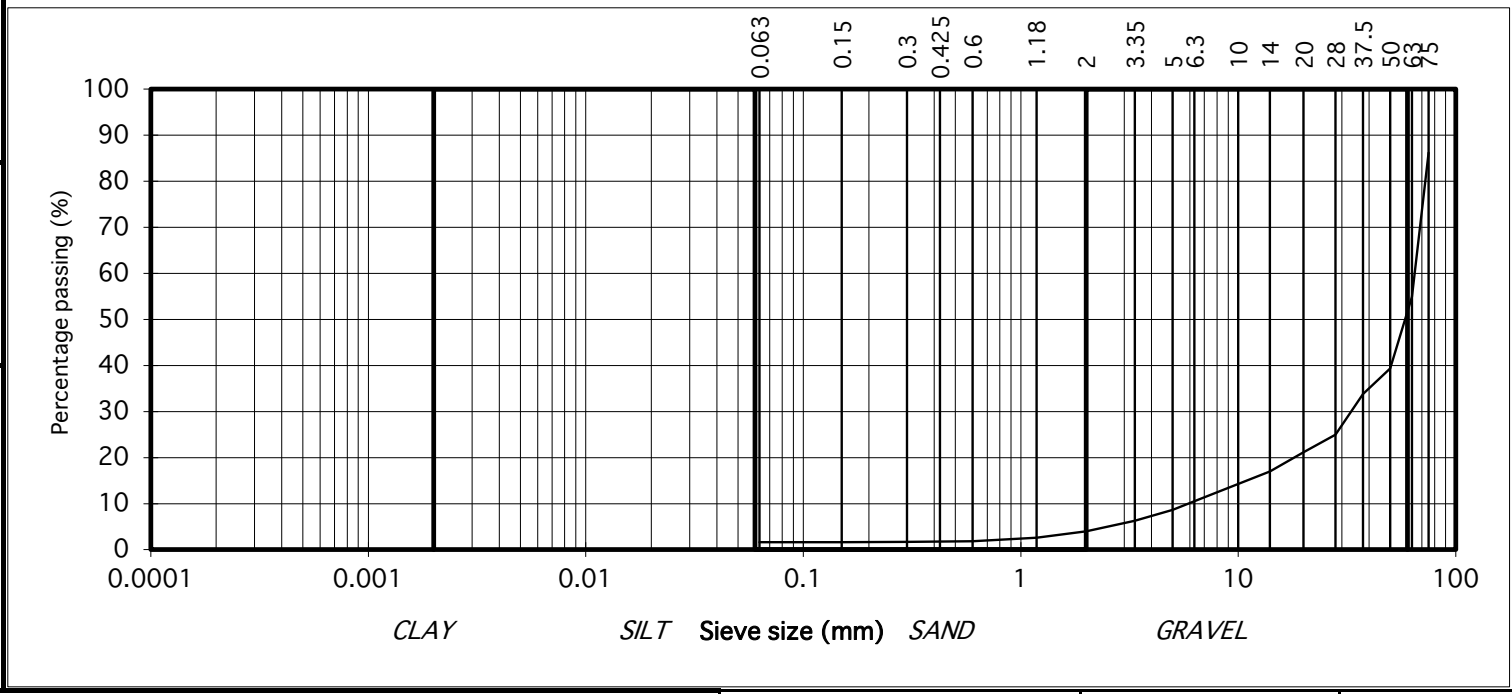
Date Received 29/07/2025 Date Testing started 01/08/2025

Description: Grey slightly silty, slightly sandy, GRAVEL with many cobbles

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377

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TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

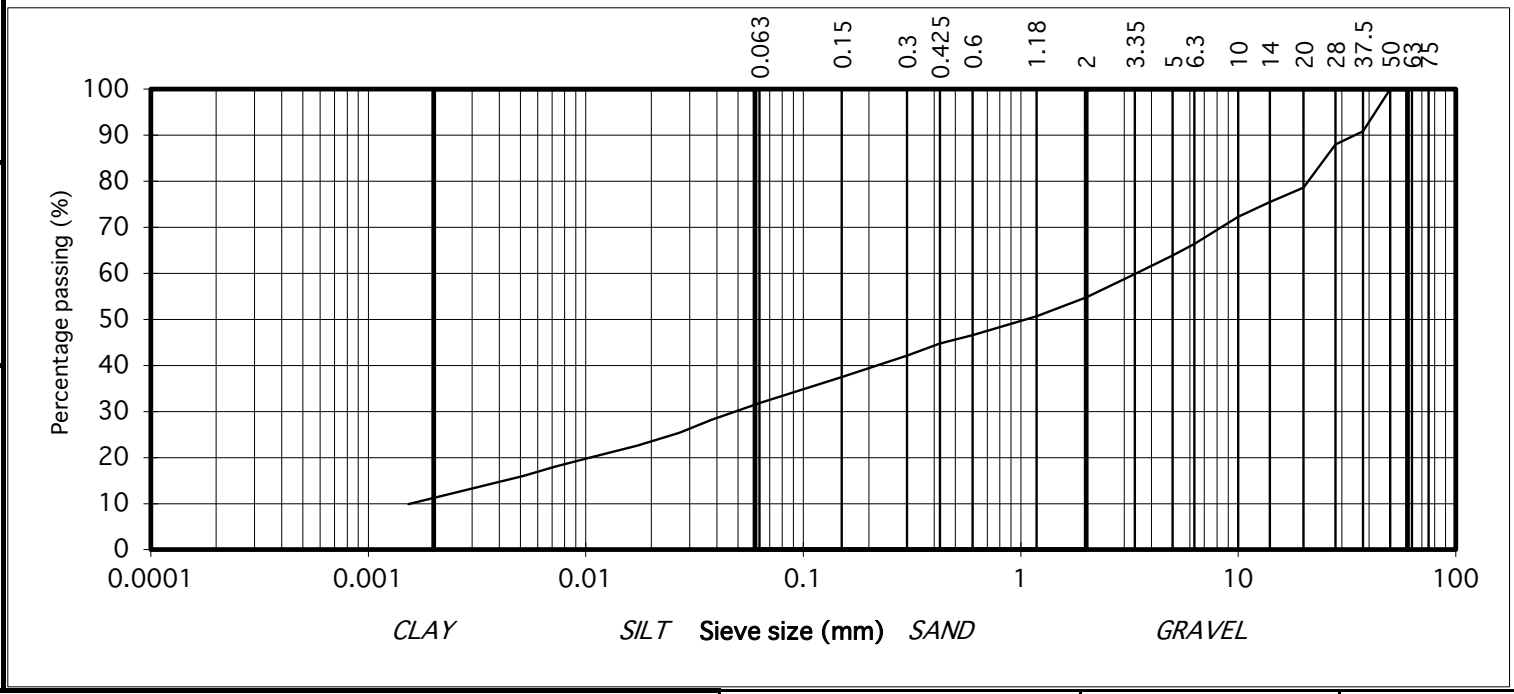
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	91	
28	88	
20	79	
14	75	
10	72	
6.3	66	
5	64	
3.35	60	
2	55	
1.18	51	SAND
0.6	47	
0.425	45	
0.3	42	
0.15	37	
0.063	32	SILT/CLAY
0.038	28	
0.027	25	
0.017	23	
0.010	20	
0.007	18	
0.005	16	
0.002	10	

Contract No.	25882	Report No.	R172752	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH49A			
Sample No.*	AA243631	Lab. Sample No.		A25/3261
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		14/08/2025
Description:	Grey slightly sandy, gravelly, CLAY			

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

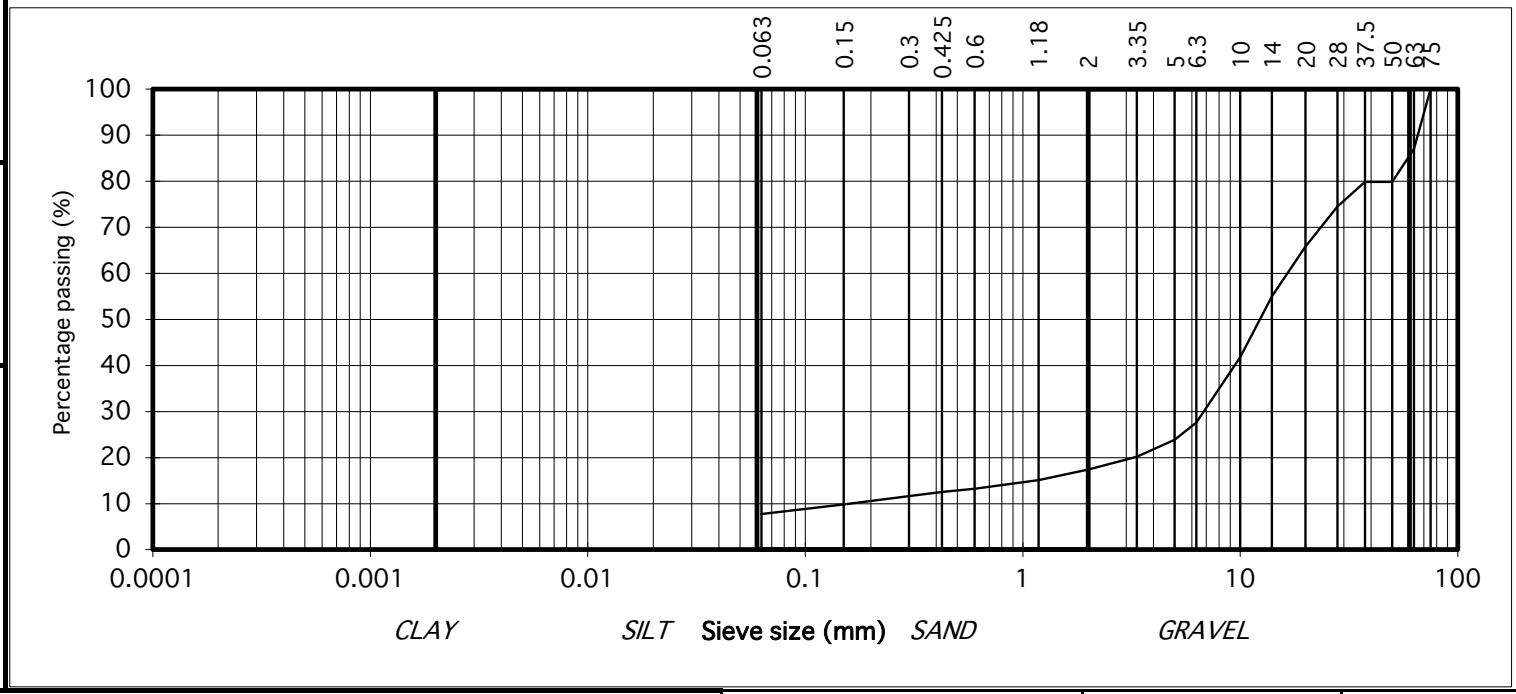
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	87	
50	80	GRAVEL
37.5	80	
28	75	
20	66	
14	55	
10	42	
6.3	28	
5	24	
3.35	20	
2	17	
1.18	15	SAND
0.6	13	
0.425	13	
0.3	12	
0.15	10	
0.063	8	SILT/CLAY

Contract No.	25882	Report No.	R172753	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH49A			
Sample No.*	AA243634	Lab. Sample No.		A25/3262
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		14/08/2025
Description:	Brown silty, sandy, GRAVEL with some cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



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TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

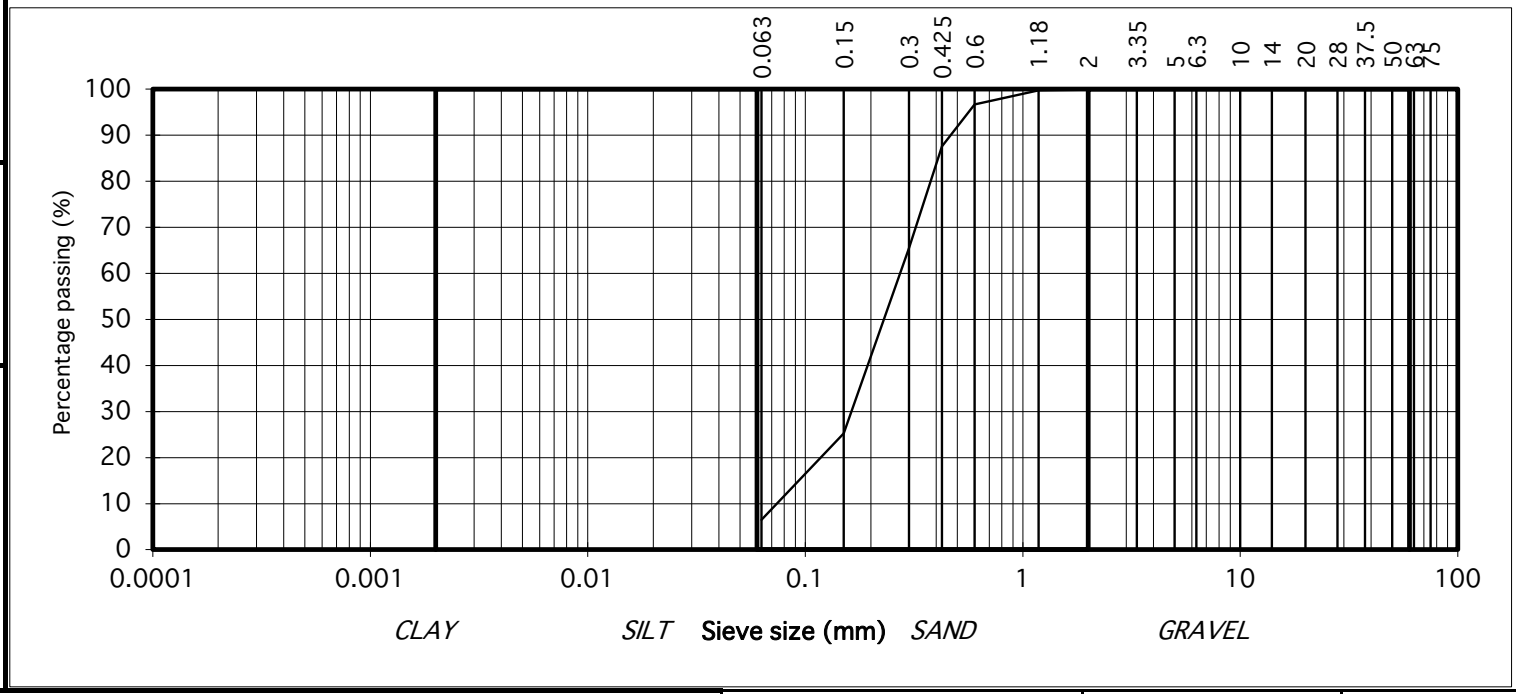
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	97	
0.425	88	
0.3	66	
0.15	25	
0.063	7	SILT/CLAY

Contract No.	25882	Report No.	R172265	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH56			
Sample No.*	AA212755	Lab. Sample No.		A25/3256
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		16/08/2025
Description:	Grey clayey/silty, SAND			

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

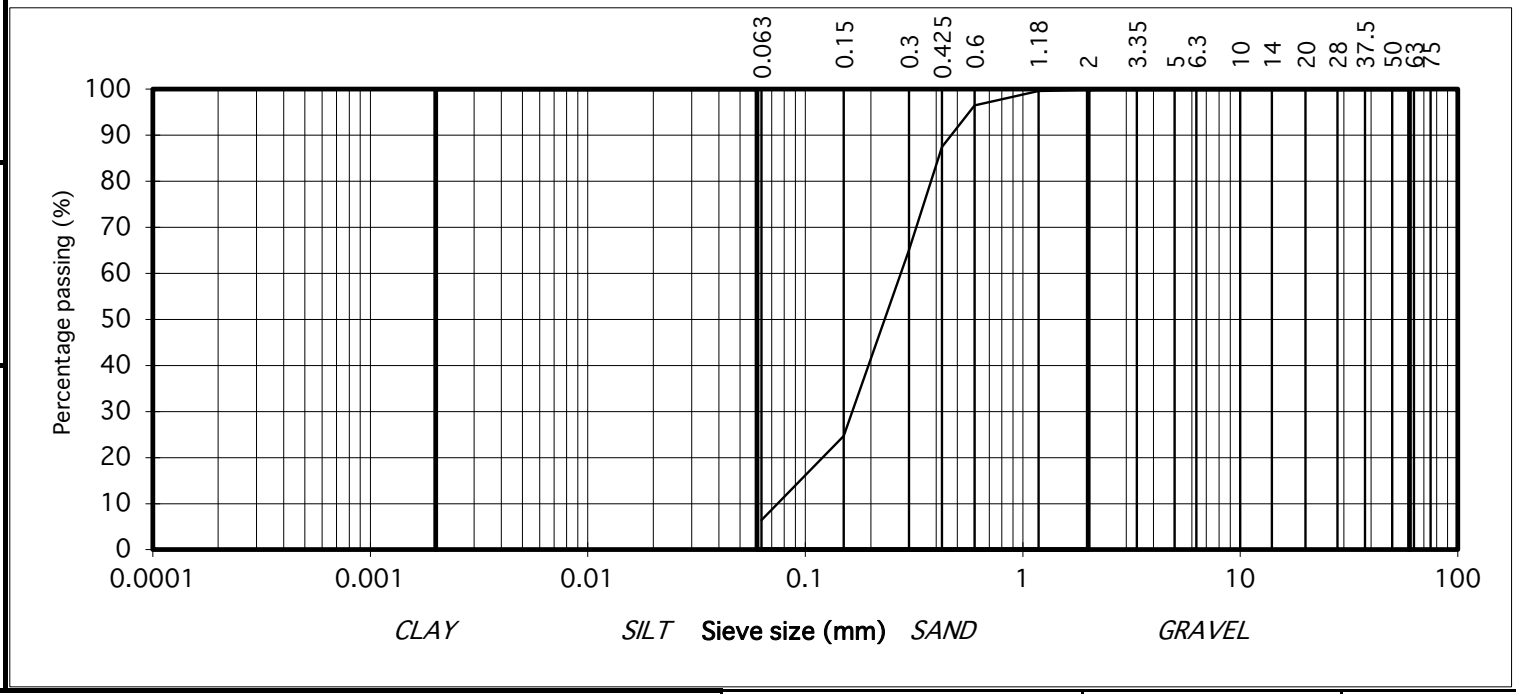
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	97	
0.425	87	
0.3	65	
0.15	25	
0.063	6	SILT/CLAY

Contract No.	25882	Report No.	R172266	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH56			
Sample No.*	AA212757	Lab. Sample No.		A25/3265
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		16/08/2025
Description:	Grey clayey/silty, SAND			

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

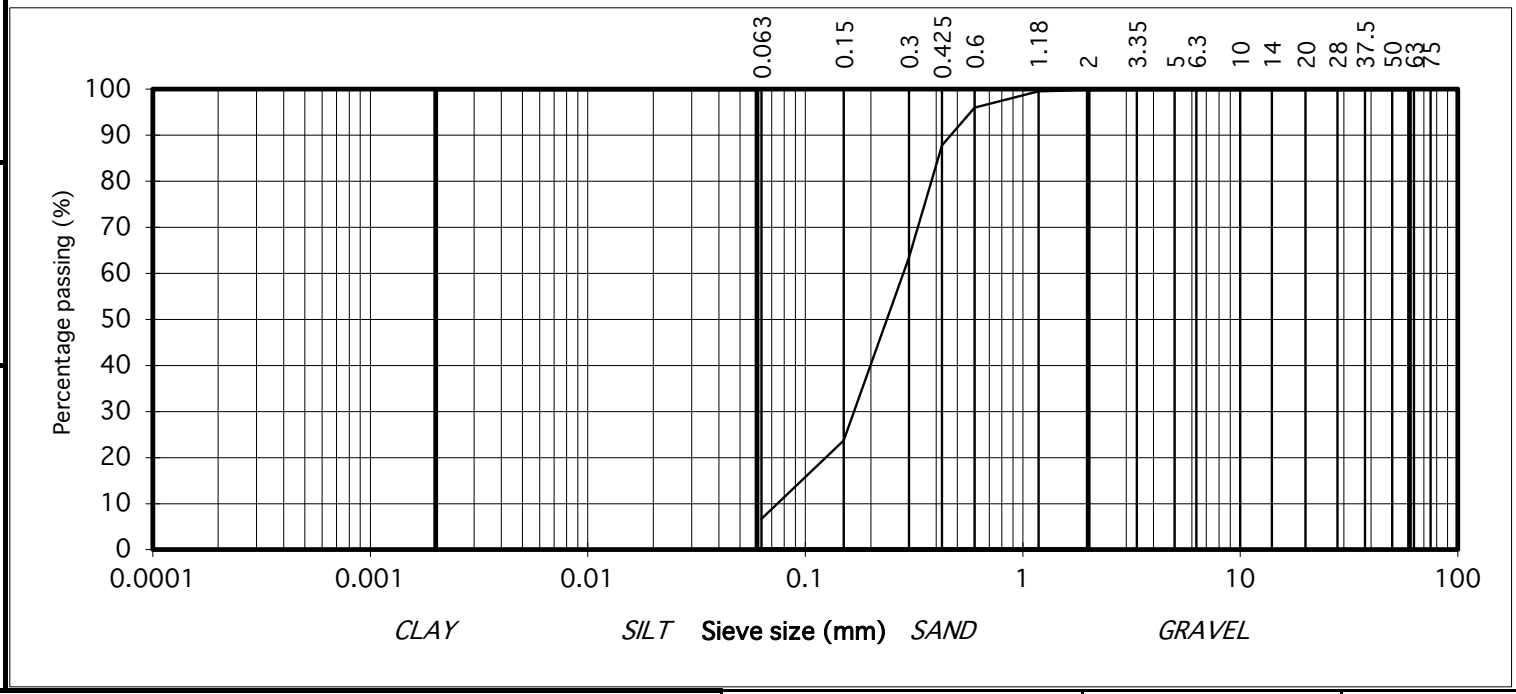
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	96	
0.425	88	
0.3	63	
0.15	24	
0.063	7	SILT/CLAY

Contract No.	25882	Report No.	R172267	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH56			
Sample No.*	AA212758	Lab. Sample No.		A25/3266
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		16/08/2025
Description:	Grey clayey/silty, SAND			

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

Appendix 9

Chemical / Environmental Laboratory Results (Soil)

25-16703

25-17444

25-20057

25-21003

25-21684

25-23231

25-24474

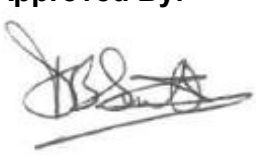
25-24940

25-25515

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	25-16703-1
Initial Date of Issue:	03-Jun-2025
Re-Issue Details:	
Client	*IGSL*
Client Address:	*M7 Business Park* *Naas* *County Kildare* *Ireland*
Contact(s):	*Darren Keogh*
Project	*25882 Edenderry*
Quotation No.:	*Q24-35198*
Order No.:	
No. of Samples:	*21*
Turnaround (Wkdays):	7
Date Approved:	03-Jun-2025
Approved By:	



Date Received:	20-May-2025
Date Instructed:	20-May-2025
Results Due:	29-May-2025

Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: 25882 Edenderry

Client: IGSL				**Chemtest Job No.:**		25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198				**Chemtest Sample ID.:**		1975518	1975520	1975523	1975525	1975527	1975528	1975529	1975531
				Client Reference:		*BH30*	*BH36*	*BH39*	*BH58*	*TP1.1*	*TP1.2*	*TP2.1*	*TP2.2*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*0.50*	*1.00*	*0.50*	*0.50*	*0.15*	*0.20*
				Date Sampled:		*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**								
Ammonium	U	1220	10:1	mg/l	0.050	0.66	0.79	0.82	0.79	0.51	0.54	0.56	0.64
Ammonium	N	1220	10:1	mg/kg	0.10	8.1	9.6	10	10	5.8	5.9	6.1	6.9

Results - Leachate

Project: 25882 Edenderry

Client: IGSL				**Chemtest Job No.:**		25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198				**Chemtest Sample ID.:**		1975532	1975534	1975535	1975537	1975538
				Client Reference:		*TP3.1*	*TP3.2*	*TP3.3*	*TP3.4*	*TP3.5*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*0.50*	*0.50*	*0.50*	*0.50*
				Date Sampled:		*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**					
Ammonium	U	1220	10:1	mg/l	0.050	0.62	0.73	0.84	0.94	0.93
Ammonium	N	1220	10:1	mg/kg	0.10	6.8	8.0	9.0	10	10

Results - Soil

Project: 25882 Edenderry

Client: IGSL				**Chemtest Job No.:**		25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198				**Chemtest Sample ID.:**		1975518	1975519	1975520	1975521	1975522	1975523	1975524
				Client Reference:		*BH30*	*BH35*	*BH36*	*BH37*	*BH38*	*BH39*	*BH39*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*0.50*	*1.00*	*1.00*	*7.00*	*0.50*	*2.00*
				Date Sampled:		*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
				Asbestos Lab:		DURHAM		DURHAM			DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		N	2192		N/A	-		-			-	
Asbestos Identification		U	2192		N/A	No Asbestos Detected		No Asbestos Detected			No Asbestos Detected	
Moisture		N	2030	%	0.020	8.2	59	22	18	14	19	35
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones	Stones and Roots	Stones and Roots	Stones	None	Stones and Roots	None
Soil Texture		N	2030		N/A	Sand	Loam	Clay	Clay	Sand	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0		8.1		8.3	8.0		8.0
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40		< 0.40			< 0.40	
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010		< 0.010	< 0.010		< 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		< 0.010		0.081	0.050		0.026
Total Sulphur		U	2175	%	0.010		0.35		0.080	0.070		0.10
Sulphur (Elemental)		M	2180	mg/kg	1.0	< 1.0		3.6			6.7	
Chloride (Water Soluble)		M	2220	g/l	0.010		U/S		< 0.010	< 0.010		< 0.010
Nitrate (Water Soluble)		N	2220	g/l	0.010		U/S		< 0.010	< 0.010		0.016
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50		< 0.50			< 0.50	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	9.5		28			5.3	
Ammonium (Water Soluble)		M	2220	g/l	0.01		U/S		< 0.01	< 0.01		< 0.01
Sulphate (Total)		U	2430	%	0.010	0.054		0.16			0.098	
Sulphate (Acid Soluble)		U	2430	%	0.010		0.072		0.051	0.045		0.057
Arsenic		M	2455	mg/kg	0.5	4.2		5.5			6.2	
Barium		M	2455	mg/kg	0.5	34		59			55	
Cadmium		M	2455	mg/kg	0.10	1.2		0.62			0.70	
Chromium		M	2455	mg/kg	0.5	18		8.9			10	
Molybdenum		M	2455	mg/kg	0.5	0.7		1.4			0.5	
Antimony		N	2455	mg/kg	2.0	< 2.0		< 2.0			< 2.0	
Copper		M	2455	mg/kg	0.50	10		9.9			10	
Mercury		M	2455	mg/kg	0.05	0.05		< 0.05			< 0.05	
Nickel		M	2455	mg/kg	0.50	32		25			27	
Lead		M	2455	mg/kg	0.50	13		10			10	
Selenium		M	2455	mg/kg	0.25	0.43		0.64			0.58	
Zinc		M	2455	mg/kg	0.50	65		46			49	
Chromium (Trivalent)		N	2490	mg/kg	1.0	18		8.9			10	
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50		< 0.50			< 0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05			< 0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05			< 0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05			< 0.05	
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05			< 0.05	

Results - Soil

Project: 25882 Edenderry

Client: IGSL				**Chemtest Job No.:**		25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198				**Chemtest Sample ID.:**		1975518	1975519	1975520	1975521	1975522	1975523	1975524
				Client Reference:		*BH30*	*BH35*	*BH36*	*BH37*	*BH38*	*BH39*	*BH39*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*0.50*	*1.00*	*1.00*	*7.00*	*0.50*	*2.00*
				Date Sampled:		*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
				Asbestos Lab:		DURHAM		DURHAM			DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25		< 0.25			< 0.25	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	10		15			11	
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	14		15			11	
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	9.9		22			19	
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	39		48			40	
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	24		26			26	
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	73		99			82	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05			< 0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05			< 0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05			< 0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25		< 0.25			< 0.25	
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	82		100			95	
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	130		140			120	
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	110		140			130	
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	41		90			57	
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	31		48			43	
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	360		470			400	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50		< 0.50			< 0.50	
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	430		570			480	
Mineral Oil EPH		N	2670	mg/kg	10	97		130			110	
Benzene		M	2760	µg/kg	1.0	< 1.0		< 1.0			< 1.0	
Toluene		M	2760	µg/kg	1.0	< 1.0		< 1.0			< 1.0	
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0		< 1.0			< 1.0	
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0			< 1.0	
o-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0			< 1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0		< 1.0			< 1.0	
Naphthalene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Acenaphthene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Fluorene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Phenanthrene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Chrysene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	

Results - Soil

Project: 25882 Edenderry

Client: IGSL				**Chemtest Job No.:**		25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198				**Chemtest Sample ID.:**		1975518	1975519	1975520	1975521	1975522	1975523	1975524
				Client Reference:		*BH30*	*BH35*	*BH36*	*BH37*	*BH38*	*BH39*	*BH39*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*0.50*	*1.00*	*1.00*	*7.00*	*0.50*	*2.00*
				Date Sampled:		*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
				Asbestos Lab:		DURHAM		DURHAM			DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Coronene		N	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
PCB 28		U	2815	mg/kg	0.010	< 0.010		< 0.010			< 0.010	
PCB 52		U	2815	mg/kg	0.010	< 0.010		< 0.010			< 0.010	
PCB 101		U	2815	mg/kg	0.010	< 0.010		< 0.010			< 0.010	
PCB 118		U	2815	mg/kg	0.010	< 0.010		< 0.010			< 0.010	
PCB 153		U	2815	mg/kg	0.010	< 0.010		< 0.010			< 0.010	
PCB 138		U	2815	mg/kg	0.010	< 0.010		< 0.010			< 0.010	
PCB 180		U	2815	mg/kg	0.010	< 0.010		< 0.010			< 0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05		< 0.05			< 0.05	
Total Phenols		M	2920	mg/kg	0.10	< 0.10		< 0.10			< 0.10	

Results - Soil

Project: 25882 Edenderry

Client: IGSL			**Chemtest Job No.:**			25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198			**Chemtest Sample ID.:**			1975525	1975526	1975527	1975528	1975529	1975530	1975531
			Client Reference:			*BH58*	*BH59*	*TP1.1*	*TP1.2*	*TP2.1*	*TP2.1*	*TP2.2*
			Sample Type:			*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
			Top Depth (m):			*1.00*	*1.00*	*0.50*	*0.50*	*0.15*	*2.00*	*0.20*
			Date Sampled:			*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
			Asbestos Lab:			DURHAM		DURHAM	DURHAM	DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		N	2192		N/A	-		-	-	-		-
Asbestos Identification		U	2192		N/A	No Asbestos Detected		No Asbestos Detected	No Asbestos Detected	No Asbestos Detected		No Asbestos Detected
Moisture		N	2030	%	0.020	18	35	17	16	17	16	16
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones	Stones and Roots	Stones	Stones and Roots	Stones and Roots	Stones	Roots
Soil Texture		N	2030		N/A	Clay	Clay	Clay	Clay	Clay	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0		7.6				8.0	
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40		< 0.40	< 0.40	< 0.40		< 0.40
Magnesium (Water Soluble)		N	2120	g/l	0.010		0.013				< 0.010	
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		0.18				0.019	
Total Sulphur		U	2175	%	0.010		0.10				0.030	
Sulphur (Elemental)		M	2180	mg/kg	1.0	1.3		< 1.0	< 1.0	< 1.0		1.1
Chloride (Water Soluble)		M	2220	g/l	0.010		< 0.010				< 0.010	
Nitrate (Water Soluble)		N	2220	g/l	0.010		0.022				0.038	
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50		< 0.50	< 0.50	< 0.50		< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	16		6.1	3.1	6.7		5.6
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01				< 0.01	
Sulphate (Total)		U	2430	%	0.010	0.057		0.058	0.069	0.10		0.11
Sulphate (Acid Soluble)		U	2430	%	0.010		0.081				0.028	
Arsenic		M	2455	mg/kg	0.5	5.7		11	9.5	6.1		6.2
Barium		M	2455	mg/kg	0.5	87		160	100	71		69
Cadmium		M	2455	mg/kg	0.10	1.2		1.2	1.8	0.95		1.1
Chromium		M	2455	mg/kg	0.5	15		30	31	14		14
Molybdenum		M	2455	mg/kg	0.5	0.8		2.0	2.1	1.0		0.8
Antimony		N	2455	mg/kg	2.0	< 2.0		< 2.0	< 2.0	< 2.0		< 2.0
Copper		M	2455	mg/kg	0.50	17		20	30	14		16
Mercury		M	2455	mg/kg	0.05	0.06		0.08	0.07	< 0.05		< 0.05
Nickel		M	2455	mg/kg	0.50	41		74	74	36		37
Lead		M	2455	mg/kg	0.50	16		23	24	13		15
Selenium		M	2455	mg/kg	0.25	0.75		1.3	1.5	0.90		1.0
Zinc		M	2455	mg/kg	0.50	71		120	120	60		67
Chromium (Trivalent)		N	2490	mg/kg	1.0	15		30	31	14		14
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50		< 0.50	< 0.50	< 0.50		< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05	< 0.05		< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05	< 0.05		< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05	< 0.05		< 0.05
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05	< 0.05		< 0.05

Results - Soil

Project: 25882 Edenderry

Client: IGSL				**Chemtest Job No.:**		25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198				**Chemtest Sample ID.:**		1975525	1975526	1975527	1975528	1975529	1975530	1975531
				Client Reference:		*BH58*	*BH59*	*TP1.1*	*TP1.2*	*TP2.1*	*TP2.1*	*TP2.2*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*0.50*	*0.50*	*0.15*	*2.00*	*0.20*
				Date Sampled:		*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
				Asbestos Lab:		DURHAM		DURHAM	DURHAM	DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25		< 0.25	< 0.25	< 0.25		< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	11		8.7	10	8.8		9.3
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	12		2.2	2.1	2.4		2.3
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	13		< 2.0	< 2.0	< 2.0		< 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	36		< 3.0	< 3.0	7.3		16
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	29		< 10	< 10	< 10		< 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	73		12	13	18		29
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05	< 0.05		< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05	< 0.05		< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05	< 0.05		< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25		< 0.25	< 0.25	< 0.25		< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	89		< 1.0	< 1.0	< 1.0		< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	130		< 1.0	< 1.0	< 1.0		< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	110		< 2.0	< 2.0	< 2.0		< 2.0
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	42		< 2.0	< 2.0	5.4		18
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	38		1.1	4.0	< 1.0		4.0
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	380		< 5.0	< 5.0	6.2		20
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50		< 0.50	< 0.50	< 0.50		< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	450		13	15	25		49
Mineral Oil EPH		N	2670	mg/kg	10	100		12	13	18		29
Benzene		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0	< 1.0		< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0	< 1.0		< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0	< 1.0		< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0	< 1.0		< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0	< 1.0		< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0	< 1.0		< 1.0
Naphthalene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10

Results - Soil

Project: 25882 Edenderry

Client: IGSL				**Chemtest Job No.:**		25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198				**Chemtest Sample ID.:**		1975525	1975526	1975527	1975528	1975529	1975530	1975531
				Client Reference:		*BH58*	*BH59*	*TP1.1*	*TP1.2*	*TP2.1*	*TP2.1*	*TP2.2*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*0.50*	*0.50*	*0.15*	*2.00*	*0.20*
				Date Sampled:		*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
				Asbestos Lab:		DURHAM		DURHAM	DURHAM	DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Coronene		N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
PCB 28		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010	< 0.010		< 0.010
PCB 52		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010	< 0.010		< 0.010
PCB 101		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010	< 0.010		< 0.010
PCB 118		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010	< 0.010		< 0.010
PCB 153		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010	< 0.010		< 0.010
PCB 138		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010	< 0.010		< 0.010
PCB 180		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010	< 0.010		< 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05		< 0.05	< 0.05	< 0.05		< 0.05
Total Phenols		M	2920	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10

Results - Soil

Project: 25882 Edenderry

Client: IGSL				**Chemtest Job No.:**		25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198				**Chemtest Sample ID.:**		1975532	1975533	1975534	1975535	1975536	1975537	1975538
				Client Reference:		*TP3.1*	*TP3.1*	*TP3.2*	*TP3.3*	*TP3.3*	*TP3.4*	*TP3.5*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*0.50*	*0.50*	*1.00*	*0.50*	*0.50*
				Date Sampled:		*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
				Asbestos Lab:		DURHAM		DURHAM	DURHAM		DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		N	2192		N/A	-		-	-		-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected		No Asbestos Detected	No Asbestos Detected		No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	11	9.4	12	14	11	16	16
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture		N	2030		N/A	Clay	Clay	Clay	Clay	Clay	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0		8.5			8.6		
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40		< 0.40	< 0.40		< 0.40	< 0.40
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010			< 0.010		
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		< 0.010			< 0.010		
Total Sulphur		U	2175	%	0.010		0.026			0.020		
Sulphur (Elemental)		M	2180	mg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0
Chloride (Water Soluble)		M	2220	g/l	0.010		< 0.010			< 0.010		
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010			< 0.010		
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50		< 0.50	< 0.50		< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	5.9		9.5	5.7		2.8	15
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01			< 0.01		
Sulphate (Total)		U	2430	%	0.010	0.041		0.046	0.026		0.033	0.023
Sulphate (Acid Soluble)		U	2430	%	0.010		0.013			0.013		
Arsenic		M	2455	mg/kg	0.5	11		6.1	5.7		6.0	4.6
Barium		M	2455	mg/kg	0.5	35		33	52		34	35
Cadmium		M	2455	mg/kg	0.10	1.9		1.7	0.90		1.0	0.71
Chromium		M	2455	mg/kg	0.5	20		18	16		17	16
Molybdenum		M	2455	mg/kg	0.5	1.5		0.7	0.6		< 0.5	0.6
Antimony		N	2455	mg/kg	2.0	< 2.0		< 2.0	< 2.0		< 2.0	< 2.0
Copper		M	2455	mg/kg	0.50	18		16	11		17	14
Mercury		M	2455	mg/kg	0.05	0.07		0.07	0.06		0.08	0.08
Nickel		M	2455	mg/kg	0.50	47		40	38		44	36
Lead		M	2455	mg/kg	0.50	17		13	12		13	13
Selenium		M	2455	mg/kg	0.25	0.84		0.77	0.60		0.81	0.55
Zinc		M	2455	mg/kg	0.50	100		73	76		81	79
Chromium (Trivalent)		N	2490	mg/kg	1.0	20		18	16		17	16
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50		< 0.50	< 0.50		< 0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	< 0.05
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	< 0.05

Results - Soil

Project: 25882 Edenderry

Client: IGSL				**Chemtest Job No.:**		25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198				**Chemtest Sample ID.:**		1975532	1975533	1975534	1975535	1975536	1975537	1975538
				Client Reference:		*TP3.1*	*TP3.1*	*TP3.2*	*TP3.3*	*TP3.3*	*TP3.4*	*TP3.5*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*0.50*	*0.50*	*1.00*	*0.50*	*0.50*
				Date Sampled:		*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
				Asbestos Lab:		DURHAM		DURHAM	DURHAM		DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25		< 0.25	< 0.25		< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	7.5		8.3	8.0		4.9	5.7
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	2.2		1.6	2.3		2.0	1.8
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0		< 2.0	< 2.0		< 2.0	< 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	< 3.0		< 3.0	< 3.0		< 3.0	< 3.0
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10		< 10	< 10		< 10	< 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	9.7		10	10		6.9	7.4
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25		< 0.25	< 0.25		< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	< 2.0		< 2.0	< 2.0		< 2.0	< 2.0
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	< 2.0		< 2.0	< 2.0		< 2.0	< 2.0
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	< 1.0		< 1.0	2.5		< 1.0	< 1.0
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	< 5.0		< 5.0	< 5.0		< 5.0	< 5.0
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50		< 0.50	< 0.50		< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	11		12	12		< 10	< 10
Mineral Oil EPH		N	2670	mg/kg	10	< 10		10	10		< 10	< 10
Benzene		M	2760	µg/kg	1.0	< 1.0		< 1.0	1.3		< 1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0		< 1.0	2.8		< 1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10

Results - Soil

Project: 25882 Edenderry

Client: IGSL				**Chemtest Job No.:**		25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198				**Chemtest Sample ID.:**		1975532	1975533	1975534	1975535	1975536	1975537	1975538
				Client Reference:		*TP3.1*	*TP3.1*	*TP3.2*	*TP3.3*	*TP3.3*	*TP3.4*	*TP3.5*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*0.50*	*0.50*	*1.00*	*0.50*	*0.50*
				Date Sampled:		*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
				Asbestos Lab:		DURHAM		DURHAM	DURHAM		DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Coronene		N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
PCB 28		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	< 0.010
PCB 52		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	< 0.010
PCB 101		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	< 0.010
PCB 118		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	< 0.010
PCB 153		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	< 0.010
PCB 138		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	< 0.010
PCB 180		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	< 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	< 0.05
Total Phenols		M	2920	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10

Results - Single Stage WAC

Project: 25882 Edenderry

Chemtest Job No:	25-16703					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	1975518							
Sample Ref:								
Sample ID:								
Client Reference:	*BH30*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.38	3	5	6
Loss On Ignition	2610		M	%	0.88	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.6	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.028	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0003	0.0025	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0008	0.0076	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0003	0.0029	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.004	0.040	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.099	< 1.0	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	250	2500	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.0	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	3.7
WAC Sample Weight	1053

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-16703							
Chemtest Sample ID:	1975520							
Sample Ref:								
Sample ID:								
Client Reference:	*BH36*							
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	3.1	3	5	6
Loss On Ignition	2610		M	%	6.3	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		7.8	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.072	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0012	0.012	0.5	2	25
Barium	1455		U	0.019	0.19	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0017	0.017	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0034	0.034	0.5	10	30
Nickel	1455		U	0.0007	0.0075	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.009	0.093	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.10	1.0	10	150	500
Sulphate	1220		U	7.6	76	1000	20000	50000
Total Dissolved Solids	1020		N	120	1200	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.6	56	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.1
WAC Sample Weight	716.4

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

Chemtest Job No:	25-16703					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	1975523							
Sample Ref:								
Sample ID:								
Client Reference:	*BH39*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	1.4	3	5	6
Loss On Ignition	2610		M	%	3.9	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.3	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.067	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0007	0.0067	0.5	2	25
Barium	1455		U	0.011	0.11	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0015	0.015	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0003	0.0033	0.5	10	30
Nickel	1455		U	0.0009	0.0094	0.4	10	40
Lead	1455		U	0.0008	0.0081	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.006	0.062	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.095	< 1.0	10	150	500
Sulphate	1220		U	2.0	20	1000	20000	50000
Total Dissolved Solids	1020		N	61	610	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.9	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.5
WAC Sample Weight	1048

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-16703							
Chemtest Sample ID:	1975525							
Sample Ref:								
Sample ID:								
Client Reference:	*BH58*							
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	2.5	3	5	6
Loss On Ignition	2610		M	%	2.4	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.058	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0007	0.0075	0.5	2	25
Barium	1455		U	0.008	0.082	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0021	0.021	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	< 0.0002	< 0.0020	0.5	10	30
Nickel	1455		U	0.0015	0.015	0.4	10	40
Lead	1455		U	0.0010	0.010	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.006	0.061	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.098	< 1.0	10	150	500
Sulphate	1220		U	1.4	14	1000	20000	50000
Total Dissolved Solids	1020		N	43	430	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.8	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	12
WAC Sample Weight	1074

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-16703							
Chemtest Sample ID:	1975527							
Sample Ref:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:	*TP1.1*							
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	1.0	3	5	6
Loss On Ignition	2610		M	%	2.4	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.2	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.020	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0044	0.044	0.5	2	25
Barium	1455		U	0.010	0.10	20	100	300
Cadmium	1455		U	0.00021	0.0021	0.04	1	5
Chromium	1455		U	0.0019	0.019	0.5	10	70
Copper	1455		U	0.0049	0.049	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0014	0.014	0.5	10	30
Nickel	1455		U	0.0032	0.032	0.4	10	40
Lead	1455		U	0.0029	0.029	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0007	0.0066	0.1	0.5	7
Zinc	1455		U	0.009	0.089	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.12	1.2	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	38	380	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	6.4	64	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	1.5
WAC Sample Weight	955.8

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

Chemtest Job No:	25-16703					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	1975528							
Sample Ref:								
Sample ID:								
Client Reference:	*TP1.2*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.53	3	5	6
Loss On Ignition	2610		M	%	2.3	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.3	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.024	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0031	0.031	0.5	2	25
Barium	1455		U	0.007	0.066	20	100	300
Cadmium	1455		U	0.00024	0.0024	0.04	1	5
Chromium	1455		U	0.0017	0.017	0.5	10	70
Copper	1455		U	0.0056	0.056	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0011	0.011	0.5	10	30
Nickel	1455		U	0.0037	0.037	0.4	10	40
Lead	1455		U	0.0039	0.039	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0010	0.0097	0.1	0.5	7
Zinc	1455		U	0.010	0.10	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.11	1.1	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	32	320	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.8	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	2.6
WAC Sample Weight	678.9

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-16703							
Chemtest Sample ID:	1975529							
Sample Ref:								
Sample ID:								
Client Reference:	*TP2.1*							
Top Depth(m):	*0.15*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	1.3	3	5	6
Loss On Ignition	2610		M	%	3.6	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.1	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.052	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0005	0.0055	0.5	2	25
Barium	1455		U	0.012	0.12	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0018	0.018	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0003	0.0030	0.5	10	30
Nickel	1455		U	0.0010	0.0096	0.4	10	40
Lead	1455		U	0.0007	0.0066	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.009	0.090	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.096	< 1.0	10	150	500
Sulphate	1220		U	2.2	22	1000	20000	50000
Total Dissolved Solids	1020		N	48	480	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	3.7
WAC Sample Weight	783.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-16703							
Chemtest Sample ID:	1975531							
Sample Ref:								
Sample ID:								
Client Reference:	*TP2.2*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Top Depth(m):	*0.20*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	2.1	3	5	6
Loss On Ignition	2610		M	%	3.4	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		7.9	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.097	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0007	0.0068	0.5	2	25
Barium	1455		U	0.010	0.10	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0016	0.016	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0004	0.0040	0.5	10	30
Nickel	1455		U	0.0008	0.0078	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.011	0.11	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.096	< 1.0	10	150	500
Sulphate	1220		U	6.4	64	1000	20000	50000
Total Dissolved Solids	1020		N	74	740	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.2	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	4.8
WAC Sample Weight	689.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-16703							
Chemtest Sample ID:	1975532							
Sample Ref:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:	*TP3.1*							
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.64	3	5	6
Loss On Ignition	2610		M	%	1.3	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.044	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0028	0.028	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	0.00019	0.0019	0.04	1	5
Chromium	1455		U	0.0016	0.016	0.5	10	70
Copper	1455		U	0.0055	0.055	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0008	0.0085	0.5	10	30
Nickel	1455		U	0.0068	0.068	0.4	10	40
Lead	1455		U	0.0023	0.023	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.019	0.19	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.22	2.2	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	55	550	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.7	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	3.0
WAC Sample Weight	868.6

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-16703							
Chemtest Sample ID:	1975534							
Sample Ref:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:	*TP3.2*							
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	1.3	3	5	6
Loss On Ignition	2610		M	%	1.2	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.1	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.022	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0015	0.015	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	0.00014	0.0014	0.04	1	5
Chromium	1455		U	0.0012	0.012	0.5	10	70
Copper	1455		U	0.0038	0.038	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0003	0.0025	0.5	10	30
Nickel	1455		U	0.0030	0.030	0.4	10	40
Lead	1455		U	0.0013	0.013	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.011	0.11	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.13	1.3	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	50	500	4000	60000	100000
Phenol Index	1920		U	0.16	1.6	1	-	-
Dissolved Organic Carbon	1610		U	4.0	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	5.5
WAC Sample Weight	790.4

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

Chemtest Job No:	25-16703					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	1975535							
Sample Ref:								
Sample ID:								
Client Reference:	*TP3.3*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.21	3	5	6
Loss On Ignition	2610		M	%	1.4	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.1	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.023	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0012	0.013	0.5	2	25
Barium	1455		U	0.006	0.065	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0009	0.0094	0.5	10	70
Copper	1455		U	0.0029	0.029	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0003	0.0028	0.5	10	30
Nickel	1455		U	0.0019	0.019	0.4	10	40
Lead	1455		U	0.0011	0.011	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.012	0.12	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.14	1.4	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	51	510	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.0	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.1
WAC Sample Weight	750.4

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

Chemtest Job No:	25-16703					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	1975537							
Sample Ref:								
Sample ID:								
Client Reference:	*TP3.4*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.22	3	5	6
Loss On Ignition	2610		M	%	1.5	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.1	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.034	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0004	0.0042	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0020	0.020	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	< 0.0002	< 0.0020	0.5	10	30
Nickel	1455		U	0.0013	0.013	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.006	0.061	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.12	1.2	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	39	390	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.7	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	16
WAC Sample Weight	957.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-16703							
Chemtest Sample ID:	1975538							
Sample Ref:								
Sample ID:								
Client Reference:	*TP3.5*							
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.71	3	5	6
Loss On Ignition	2610		M	%	1.6	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.1	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.090	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0008	0.0082	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0009	0.0087	0.5	10	70
Copper	1455		U	0.0022	0.022	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0002	0.0024	0.5	10	30
Nickel	1455		U	0.0029	0.029	0.4	10	40
Lead	1455		U	0.0011	0.011	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.010	0.097	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.10	1.0	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	39	390	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.9	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	14
WAC Sample Weight	753.1

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
1975518			*BH30*	*15-May-2025*	E	Amber Glass 250ml
1975518			*BH30*	*15-May-2025*	E	Plastic Tub 500g
1975520			*BH36*	*15-May-2025*	E	Amber Glass 250ml
1975520			*BH36*	*15-May-2025*	E	Plastic Tub 500g
1975523			*BH39*	*15-May-2025*	E	Amber Glass 250ml
1975523			*BH39*	*15-May-2025*	E	Plastic Tub 500g
1975525			*BH58*	*15-May-2025*	E	Amber Glass 250ml
1975525			*BH58*	*15-May-2025*	E	Plastic Tub 500g
1975527			*TP1.1*	*15-May-2025*	E	Amber Glass 250ml
1975527			*TP1.1*	*15-May-2025*	E	Plastic Tub 500g
1975528			*TP1.2*	*15-May-2025*	E	Amber Glass 250ml
1975528			*TP1.2*	*15-May-2025*	E	Plastic Tub 500g
1975529			*TP2.1*	*15-May-2025*	E	Amber Glass 250ml
1975529			*TP2.1*	*15-May-2025*	E	Plastic Tub 500g
1975531			*TP2.2*	*15-May-2025*	E	Amber Glass 250ml
1975531			*TP2.2*	*15-May-2025*	E	Plastic Tub 500g
1975532			*TP3.1*	*15-May-2025*	E	Amber Glass 250ml
1975532			*TP3.1*	*15-May-2025*	E	Plastic Tub 500g
1975534			*TP3.2*	*15-May-2025*	E	Amber Glass 250ml
1975534			*TP3.2*	*15-May-2025*	E	Plastic Tub 500g
1975535			*TP3.3*	*15-May-2025*	E	Amber Glass 250ml
1975535			*TP3.3*	*15-May-2025*	E	Plastic Tub 500g
1975537			*TP3.4*	*15-May-2025*	E	Amber Glass 250ml
1975537			*TP3.4*	*15-May-2025*	E	Plastic Tub 500g
1975538			*TP3.5*	*15-May-2025*	E	Amber Glass 250ml
1975538			*TP3.5*	*15-May-2025*	E	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.: 25-17444-1

Initial Date of Issue: 17-Jun-2025

Re-Issue Details:

Client *IGSL*

Client Address: *M7 Business Park*
Naas
County Kildare
Ireland

Contact(s): *Darren Keogh*

Project *Edenderry*

Quotation No.: *Q24-34387* **Date Received:** 27-May-2025

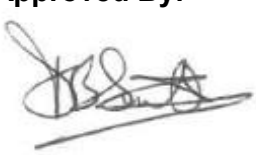
Order No.: **Date Instructed:** 27-May-2025

No. of Samples: *7*

Turnaround (Wkdays): 7 **Results Due:** 04-Jun-2025

Date Approved: 17-Jun-2025

Approved By:



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: Edenderry

Client: IGSL				**Chemtest Job No.:**		25-17444	25-17444	25-17444	25-17444
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1978296	1978299	1978301	1978302
Order No.:				*Client Sample Ref.:*		*BH26*	*BH33*	*BH28A*	*BH65*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.50*	*1.00*	*1.00*
				Date Sampled:		*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**				
Ammonium	U	1220	10:1	mg/l	0.050	< 0.050	< 0.050	< 0.050	< 0.050
Ammonium	N	1220	10:1	mg/kg	0.10	0.21	0.46	0.36	0.34

Results - Soil

Project: Edenderry

Client: IGSL				**Chemtest Job No.:**		25-17444	25-17444	25-17444	25-17444	25-17444	25-17444	25-17444
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1978296	1978297	1978298	1978299	1978300	1978301	1978302
Order No.:				*Client Sample Ref.:*		*BH26*	*BH26*	*BH29*	*BH33*	*BH33*	*BH28A*	*BH65*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*1.00*	*1.50*	*2.50*	*1.00*	*1.00*
				Date Sampled:		*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*
				Asbestos Lab:		DURHAM			DURHAM		DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		N	2192		N/A	-			-		-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected			No Asbestos Detected		No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	19	9.2	12	5.7	9.8	11	10
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones and Roots	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture		N	2030		N/A	Clay	Clay	Clay	Clay	Clay	Loam	Clay
pH (2.5:1) at 20C		N	2010		4.0		8.6	8.6		8.7		
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40			< 0.40		< 0.40	< 0.40
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010	< 0.010		< 0.010		
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		< 0.010	< 0.010		< 0.010		
Total Sulphur		U	2175	%	0.010		0.020	0.030		0.050		
Sulphur (Elemental)		M	2180	mg/kg	1.0	< 1.0			< 1.0		< 1.0	< 1.0
Chloride (Water Soluble)		M	2220	g/l	0.010		< 0.010	< 0.010		< 0.010		
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010	< 0.010		< 0.010		
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50			< 0.50		< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.2			2.5		2.4	1.7
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01	< 0.01		< 0.01		
Sulphate (Total)		U	2430	%	0.010	0.030			0.018		0.027	0.019
Sulphate (Acid Soluble)		U	2430	%	0.010		0.022	0.016		0.020		
Arsenic		M	2455	mg/kg	0.5	3.3			2.4		4.7	3.6
Barium		M	2455	mg/kg	0.5	32			25		39	27
Cadmium		M	2455	mg/kg	0.10	0.44			0.45		0.69	0.67
Chromium		M	2455	mg/kg	0.5	17			12		24	16
Molybdenum		M	2455	mg/kg	0.5	< 0.5			< 0.5		0.6	< 0.5
Antimony		N	2455	mg/kg	2.0	< 2.0			< 2.0		< 2.0	< 2.0
Copper		M	2455	mg/kg	0.50	9.5			8.2		12	11
Mercury		M	2455	mg/kg	0.05	< 0.05			< 0.05		< 0.05	< 0.05
Nickel		M	2455	mg/kg	0.50	30			25		38	35
Lead		M	2455	mg/kg	0.50	9.0			7.9		11	8.2
Selenium		M	2455	mg/kg	0.25	< 0.25			< 0.25		< 0.25	0.26
Zinc		M	2455	mg/kg	0.50	43			36		53	47
Chromium (Trivalent)		N	2490	mg/kg	1.0	17			12		24	16
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50			< 0.50		< 0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05			< 0.05		< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05			< 0.05		< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05			< 0.05		< 0.05	< 0.05
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05			< 0.05		< 0.05	< 0.05

Results - Soil

Project: Edenderry

Client: IGSL				**Chemtest Job No.:**		25-17444	25-17444	25-17444	25-17444	25-17444	25-17444	25-17444
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1978296	1978297	1978298	1978299	1978300	1978301	1978302
Order No.:				*Client Sample Ref.:*		*BH26*	*BH26*	*BH29*	*BH33*	*BH33*	*BH28A*	*BH65*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*1.00*	*1.50*	*2.50*	*1.00*	*1.00*
				Date Sampled:		*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*
				Asbestos Lab:		DURHAM			DURHAM		DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25			< 0.25		< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0			< 2.0		< 2.0	< 2.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0			< 1.0		< 1.0	1.3
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0			< 2.0		< 2.0	2.7
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	15			11		9.5	14
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10			< 10		< 10	< 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	16			11		9.5	18
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05			< 0.05		< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05			< 0.05		< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05			< 0.05		< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25			< 0.25		< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0			< 1.0		< 1.0	< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0			< 1.0		< 1.0	< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	13			12		12	13
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	5.5			< 2.0		< 2.0	2.0
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	11			7.8		7.8	8.1
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	19			14		14	15
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50			< 0.50		< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	34			25		23	33
Mineral Oil EPH		N	2670	mg/kg	10	16			11		< 10	18
Benzene		M	2760	µg/kg	1.0	< 1.0			< 1.0		< 1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0			< 1.0		< 1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0			< 1.0		< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0			< 1.0		< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0			< 1.0		< 1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0			< 1.0		< 1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	0.13			< 0.10		< 0.10	< 0.10
Pyrene		M	2800	mg/kg	0.10	0.12			< 0.10		< 0.10	< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10

Results - Soil

Project: Edenderry

Client: IGSL				**Chemtest Job No.:**		25-17444	25-17444	25-17444	25-17444	25-17444	25-17444	25-17444
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1978296	1978297	1978298	1978299	1978300	1978301	1978302
Order No.:				*Client Sample Ref.:*		*BH26*	*BH26*	*BH29*	*BH33*	*BH33*	*BH28A*	*BH65*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*1.00*	*1.50*	*2.50*	*1.00*	*1.00*
				Date Sampled:		*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*
				Asbestos Lab:		DURHAM			DURHAM		DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Coronene		N	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
PCB 28		U	2815	mg/kg	0.010	< 0.010			< 0.010		< 0.010	< 0.010
PCB 52		U	2815	mg/kg	0.010	< 0.010			< 0.010		< 0.010	< 0.010
PCB 101		U	2815	mg/kg	0.010	< 0.010			< 0.010		< 0.010	< 0.010
PCB 118		U	2815	mg/kg	0.010	< 0.010			< 0.010		< 0.010	< 0.010
PCB 153		U	2815	mg/kg	0.010	< 0.010			< 0.010		< 0.010	< 0.010
PCB 138		U	2815	mg/kg	0.010	< 0.010			< 0.010		< 0.010	< 0.010
PCB 180		U	2815	mg/kg	0.010	< 0.010			< 0.010		< 0.010	< 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05			< 0.05		< 0.05	< 0.05
Total Phenols		M	2920	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10

Results - Single Stage WAC

Project: Edenderry

Chemtest Job No:	25-17444					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	1978296							
Sample Ref:	*BH26*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*20-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.98	3	5	6
Loss On Ignition	2610		M	%	3.8	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		7.8	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0080	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0006	0.0060	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0013	0.013	0.5	10	70
Copper	1455		U	0.0025	0.025	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0013	0.013	0.5	10	30
Nickel	1455		U	0.0016	0.016	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0006	0.0057	0.1	0.5	7
Zinc	1455		U	0.005	0.050	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.37	3.7	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	65	650	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.0	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	9.0
WAC Sample Weight	855.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: Edenderry

Chemtest Job No:	25-17444					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	1978299							
Sample Ref:	*BH33*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*1.50*							
Bottom Depth(m):								
Sampling Date:	*20-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.58	3	5	6
Loss On Ignition	2610		M	%	0.98	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.011	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	< 0.0002	< 0.0020	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0008	0.0078	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0039	0.039	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.003	0.031	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.18	1.8	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	46	460	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.8	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	2.6
WAC Sample Weight	807.9

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: Edenderry

Chemtest Job No:	25-17444					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	1978301							
Sample Ref:	*BH28A*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*20-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.32	3	5	6
Loss On Ignition	2610		M	%	1.7	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.021	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0003	0.0029	0.5	2	25
Barium	1455		U	0.006	0.065	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0014	0.014	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0027	0.027	0.5	10	30
Nickel	1455		U	0.0005	0.0051	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.004	0.039	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.24	2.4	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	44	440	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.6	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	4.4
WAC Sample Weight	936.8

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: Edenderry

Chemtest Job No:	25-17444					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	1978302							
Sample Ref:	*BH65*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*20-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.93	3	5	6
Loss On Ignition	2610		M	%	1.4	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.5	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.022	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	< 0.0002	< 0.0020	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0010	0.010	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0005	0.0048	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.003	0.030	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.19	1.9	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	39	390	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	< 2.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	13
WAC Sample Weight	1096

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
1978296	*BH26*			*20-May-2025*	E	Amber Glass 250ml
1978296	*BH26*			*20-May-2025*	E	Plastic Tub 500g
1978299	*BH33*			*20-May-2025*	E	Amber Glass 250ml
1978299	*BH33*			*20-May-2025*	E	Plastic Tub 500g
1978301	*BH28A*			*20-May-2025*	E	Amber Glass 250ml
1978301	*BH28A*			*20-May-2025*	E	Plastic Tub 500g
1978302	*BH65*			*20-May-2025*	E	Amber Glass 250ml
1978302	*BH65*			*20-May-2025*	E	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.: 25-20057-1

Initial Date of Issue: 30-Jun-2025

Re-Issue Details:

Client *IGSL*

Client Address: *M7 Business Park*
Naas
County Kildare
Ireland

Contact(s): *Darren Keogh*

Project *25882 Gas to Edenberry GNI*

Quotation No.: *Q24-34387* **Date Received:** 17-Jun-2025

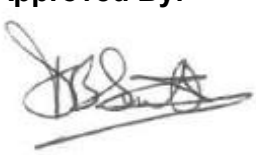
Order No.: **Date Instructed:** 17-Jun-2025

No. of Samples: *14*

Turnaround (Wkdays): 7 **Results Due:** 25-Jun-2025

Date Approved: 30-Jun-2025

Approved By:



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: 25882 Gas to Edenberry GNI

Client: IGSL				**Chemtest Job No.:**		25-20057	25-20057	25-20057	25-20057	25-20057	25-20057	25-20057
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1987719	1987721	1987723	1987725	1987727	1987729	1987731
Order No.:				*Client Sample Ref.:*		*BH16A*	*BH17*	*BH18*	*BH19*	*BH24*	*BH25*	*BH51A*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*0.50*	*1.00*	*0.50*	*1.00*	*0.50*	*1.00*
				Date Sampled:		*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**							
Ammonium	U	1220	10:1	mg/l	0.050	0.35	0.35	0.41	0.38	0.31	0.48	0.37
Ammonium	N	1220	10:1	mg/kg	0.10	4.4	4.0	4.4	4.0	4.1	5.3	4.0

Results - Soil

Project: 25882 Gas to Edenberry GNI

Client: IGSL				**Chemtest Job No.:**		25-20057	25-20057	25-20057	25-20057	25-20057	25-20057	25-20057
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1987719	1987720	1987721	1987722	1987723	1987724	1987725
Order No.:				*Client Sample Ref.:*		*BH16A*	*BH16A*	*BH17*	*BH17*	*BH18*	*BH18*	*BH19*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*0.50*	*1.00*	*1.00*	*2.00*	*0.50*
				Date Sampled:		*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*
				Asbestos Lab:		DURHAM		DURHAM		DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		N	2192		N/A	-		-		-		-
Asbestos Identification		U	2192		N/A	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected
Moisture		N	2030	%	0.020	14	9.8	19	19	20	12	15
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones	Stones	Stones	Stones and Roots	Stones	Stones	Stones
Soil Texture		N	2030		N/A	Sand	Clay	Loam	Clay	Clay	Clay	Loam
pH (2.5:1) at 20C		N	2010		4.0		8.4		8.3		8.5	
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40		< 0.40		< 0.40		< 0.40
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010		< 0.010		< 0.010	
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		< 0.010		< 0.010		< 0.010	
Total Sulphur		U	2175	%	0.010		0.030		0.020		0.030	
Sulphur (Elemental)		M	2180	mg/kg	1.0	1.9		< 1.0		< 1.0		< 1.0
Chloride (Water Soluble)		M	2220	g/l	0.010		< 0.010		< 0.010		< 0.010	
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010		< 0.010		< 0.010	
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50		< 0.50		< 0.50		< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.9		3.1		3.4		2.0
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01		< 0.01		< 0.01	
Sulphate (Total)		U	2430	%	0.010	0.015		0.011		0.014		0.024
Sulphate (Acid Soluble)		U	2430	%	0.010		< 0.010		0.011		< 0.010	
Arsenic		M	2455	mg/kg	0.5	3.0		2.9		2.9		4.8
Barium		M	2455	mg/kg	0.5	16		8.6		13		20
Cadmium		M	2455	mg/kg	0.10	0.35		0.83		0.67		0.71
Chromium		M	2455	mg/kg	0.5	4.8		5.2		6.8		5.4
Molybdenum		M	2455	mg/kg	0.5	< 0.5		< 0.5		0.5		0.6
Antimony		N	2455	mg/kg	2.0	< 2.0		< 2.0		< 2.0		< 2.0
Copper		M	2455	mg/kg	0.50	4.6		5.4		8.9		6.2
Mercury		M	2455	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Nickel		M	2455	mg/kg	0.50	12		16		18		16
Lead		M	2455	mg/kg	0.50	4.1		5.0		5.3		7.3
Selenium		M	2455	mg/kg	0.25	0.39		0.50		0.50		0.53
Zinc		M	2455	mg/kg	0.50	27		32		38		36
Chromium (Trivalent)		N	2490	mg/kg	1.0	4.8		5.2		6.8		5.4
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50		< 0.50		< 0.50		< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05

Results - Soil

Project: 25882 Gas to Edenberry GNI

Client: IGSL				**Chemtest Job No.:**		25-20057	25-20057	25-20057	25-20057	25-20057	25-20057	25-20057
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1987719	1987720	1987721	1987722	1987723	1987724	1987725
Order No.:				*Client Sample Ref.:*		*BH16A*	*BH16A*	*BH17*	*BH17*	*BH18*	*BH18*	*BH19*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*0.50*	*1.00*	*1.00*	*2.00*	*0.50*
				Date Sampled:		*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*
				Asbestos Lab:		DURHAM		DURHAM		DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25		< 0.25		< 0.25		< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	4.2		3.9		< 2.0		< 2.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0		1.2		< 1.0		< 1.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	2.9		2.2		< 2.0		< 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	15		14		16		13
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	14		10		12		11
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	23		21		19		15
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25		< 0.25		< 0.25		< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		< 1.0		< 1.0		< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		< 1.0		< 1.0		< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	3.6		4.5		6.3		6.0
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	16		19		9.1		17
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	13		12		9.8		8.9
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	20		24		15		23
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50		< 0.50		< 0.50		< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	43		44		34		38
Mineral Oil EPH		N	2670	mg/kg	10	37		31		31		26
Benzene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Naphthalene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10

Results - Soil

Project: 25882 Gas to Edenberry GNI

Client: IGSL				**Chemtest Job No.:**		25-20057	25-20057	25-20057	25-20057	25-20057	25-20057	25-20057
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1987719	1987720	1987721	1987722	1987723	1987724	1987725
Order No.:				*Client Sample Ref.:*		*BH16A*	*BH16A*	*BH17*	*BH17*	*BH18*	*BH18*	*BH19*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*0.50*	*1.00*	*1.00*	*2.00*	*0.50*
				Date Sampled:		*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*
				Asbestos Lab:		DURHAM		DURHAM		DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Coronene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
PCB 28		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 52		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 101		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 118		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 153		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 138		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 180		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Total Phenols		M	2920	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10

Results - Soil

Project: 25882 Gas to Edenberry GNI

Client: IGSL				**Chemtest Job No.:**		25-20057	25-20057	25-20057	25-20057	25-20057	25-20057	25-20057
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1987726	1987727	1987728	1987729	1987730	1987731	1987732
Order No.:				*Client Sample Ref.:*		*BH19*	*BH24*	*BH24*	*BH25*	*BH25*	*BH51A*	*BH51A*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*2.00*	*0.50*	*1.00*	*1.00*	*2.00*
				Date Sampled:		*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*
				Asbestos Lab:			DURHAM		DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		N	2192		N/A		-		-		-	
Asbestos Identification		U	2192		N/A		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected	
Moisture		N	2030	%	0.020	17	11	7.4	20	16	17	11
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones	Stones	Stones	Stones	None	Stones	Stones
Soil Texture		N	2030		N/A	Clay	Loam	Clay	Clay	Sand	Loam	Clay
pH (2.5:1) at 20C		N	2010		4.0	8.2		8.4		8.4		8.3
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40		< 0.40		< 0.40		< 0.40	
Magnesium (Water Soluble)		N	2120	g/l	0.010	< 0.010		< 0.010		< 0.010		< 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	< 0.010		< 0.010		< 0.010		< 0.010
Total Sulphur		U	2175	%	0.010	0.030		0.030		0.030		0.040
Sulphur (Elemental)		M	2180	mg/kg	1.0		< 1.0		< 1.0		< 1.0	
Chloride (Water Soluble)		M	2220	g/l	0.010	< 0.010		< 0.010		< 0.010		< 0.010
Nitrate (Water Soluble)		N	2220	g/l	0.010	< 0.010		< 0.010		< 0.010		< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50		< 0.50		< 0.50		< 0.50	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50		3.6		4.8		2.3	
Ammonium (Water Soluble)		M	2220	g/l	0.01	< 0.01		< 0.01		< 0.01		< 0.01
Sulphate (Total)		U	2430	%	0.010		0.033		0.16		0.025	
Sulphate (Acid Soluble)		U	2430	%	0.010	0.019		< 0.010		< 0.010		< 0.010
Arsenic		M	2455	mg/kg	0.5		2.6		1.8		5.8	
Barium		M	2455	mg/kg	0.5		25		21		21	
Cadmium		M	2455	mg/kg	0.10		0.41		0.37		0.77	
Chromium		M	2455	mg/kg	0.5		6.7		3.7		6.1	
Molybdenum		M	2455	mg/kg	0.5		< 0.5		< 0.5		0.6	
Antimony		N	2455	mg/kg	2.0		< 2.0		< 2.0		< 2.0	
Copper		M	2455	mg/kg	0.50		5.1		5.7		7.1	
Mercury		M	2455	mg/kg	0.05		< 0.05		< 0.05		< 0.05	
Nickel		M	2455	mg/kg	0.50		13		13		19	
Lead		M	2455	mg/kg	0.50		4.0		4.2		8.4	
Selenium		M	2455	mg/kg	0.25		0.46		0.41		0.57	
Zinc		M	2455	mg/kg	0.50		28		25		41	
Chromium (Trivalent)		N	2490	mg/kg	1.0		6.7		3.7		6.1	
Chromium (Hexavalent)		N	2490	mg/kg	0.50		< 0.50		< 0.50		< 0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05		U/S		< 0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05		U/S		< 0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05		U/S		< 0.05	
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05		U/S		< 0.05	

Results - Soil

Project: 25882 Gas to Edenberry GNI

Client: IGSL				**Chemtest Job No.:**		25-20057	25-20057	25-20057	25-20057	25-20057	25-20057	25-20057
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1987726	1987727	1987728	1987729	1987730	1987731	1987732
Order No.:				*Client Sample Ref.:*		*BH19*	*BH24*	*BH24*	*BH25*	*BH25*	*BH51A*	*BH51A*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*2.00*	*0.50*	*1.00*	*1.00*	*2.00*
				Date Sampled:		*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*
				Asbestos Lab:			DURHAM		DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25		< 0.25		U/S		< 0.25	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00		< 2.0		< 2.0		< 2.0	
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00		< 1.0		< 1.0		< 1.0	
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00		< 2.0		3.0		2.7	
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00		8.4		16		16	
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00		10		11		11	
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00		9.6		19		20	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05		< 0.05		U/S		< 0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05		< 0.05		U/S		< 0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05		< 0.05		U/S		< 0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25		< 0.25		U/S		< 0.25	
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00		< 1.0		< 1.0		< 1.0	
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00		< 1.0		< 1.0		< 1.0	
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00		5.4		7.3		8.8	
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00		5.4		9.6		23	
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00		8.7		9.8		12	
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00		11		17		32	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50		< 0.50		U/S		< 0.50	
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00		20		35		52	
Mineral Oil EPH		N	2670	mg/kg	10		20		30		31	
Benzene		M	2760	µg/kg	1.0		< 1.0		< 1.0		< 1.0	
Toluene		M	2760	µg/kg	1.0		< 1.0		< 1.0		< 1.0	
Ethylbenzene		M	2760	µg/kg	1.0		< 1.0		< 1.0		< 1.0	
m & p-Xylene		M	2760	µg/kg	1.0		< 1.0		< 1.0		< 1.0	
o-Xylene		M	2760	µg/kg	1.0		< 1.0		< 1.0		< 1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0		< 1.0		< 1.0		< 1.0	
Naphthalene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Acenaphthylene		N	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Acenaphthene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Fluorene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Phenanthrene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Anthracene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Fluoranthene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Pyrene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Benzo[a]anthracene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Chrysene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Benzo[a]pyrene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	

Results - Soil

Project: 25882 Gas to Edenberry GNI

Client: IGSL				**Chemtest Job No.:**		25-20057	25-20057	25-20057	25-20057	25-20057	25-20057	25-20057
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1987726	1987727	1987728	1987729	1987730	1987731	1987732
Order No.:				*Client Sample Ref.:*		*BH19*	*BH24*	*BH24*	*BH25*	*BH25*	*BH51A*	*BH51A*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*2.00*	*0.50*	*1.00*	*1.00*	*2.00*
				Date Sampled:		*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*
				Asbestos Lab:			DURHAM		DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Coronene		N	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
PCB 28		U	2815	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
PCB 52		U	2815	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
PCB 101		U	2815	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
PCB 118		U	2815	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
PCB 153		U	2815	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
PCB 138		U	2815	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
PCB 180		U	2815	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05		< 0.05		< 0.05		< 0.05	
Total Phenols		M	2920	mg/kg	0.10		< 0.10		< 0.10		< 0.10	

Results - Single Stage WAC

Project: 25882 Gas to Edenberry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-20057							
Chemtest Sample ID:	1987719							
Sample Ref:	*BH16A*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*16-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.33	3	5	6
Loss On Ignition	2610		M	%	1.5	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.8	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.056	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0012	0.012	0.5	2	25
Barium	1455		U	0.007	0.069	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0008	0.0080	0.5	10	70
Copper	1455		U	0.0018	0.018	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0014	0.014	0.5	10	30
Nickel	1455		U	0.0007	0.0072	0.4	10	40
Lead	1455		U	0.0009	0.0089	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.008	0.083	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.23	2.3	10	150	500
Sulphate	1220		U	1.1	11	1000	20000	50000
Total Dissolved Solids	1020		N	64	640	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.8	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	3.3
WAC Sample Weight	1133

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenberry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-20057							
Chemtest Sample ID:	1987721							
Sample Ref:	*BH17*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*16-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.60	3	5	6
Loss On Ignition	2610		M	%	3.0	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.5	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.010	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0012	0.012	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	0.00015	0.0015	0.04	1	5
Chromium	1455		U	0.0016	0.016	0.5	10	70
Copper	1455		U	0.0030	0.030	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0007	0.0072	0.5	10	30
Nickel	1455		U	0.0018	0.018	0.4	10	40
Lead	1455		U	0.0015	0.015	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.015	0.15	4	50	200
Chloride	1220		U	1.1	11	800	15000	25000
Fluoride	1220		U	0.34	3.4	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	58	580	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.9	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	3.6
WAC Sample Weight	762.4

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenberry GNI

Chemtest Job No:	25-20057					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	1987723							
Sample Ref:	*BH18*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*16-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.25	3	5	6
Loss On Ignition	2610		M	%	1.9	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.5	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.015	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0005	0.0048	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0019	0.019	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0025	0.025	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	< 0.003	< 0.025	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.22	2.2	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	53	530	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.0	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	6.4
WAC Sample Weight	1054

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenberry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-20057							
Chemtest Sample ID:	1987725							
Sample Ref:	*BH19*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*16-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.89	3	5	6
Loss On Ignition	2610		M	%	3.8	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0060	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0011	0.011	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0009	0.0089	0.5	10	70
Copper	1455		U	0.0024	0.024	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0009	0.0087	0.5	10	30
Nickel	1455		U	0.0009	0.0095	0.4	10	40
Lead	1455		U	0.0009	0.0095	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.009	0.087	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.32	3.2	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	57	570	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.2	52	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.8
WAC Sample Weight	732.0

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenberry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-20057							
Chemtest Sample ID:	1987727							
Sample Ref:	*BH24*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*16-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.55	3	5	6
Loss On Ignition	2610		M	%	1.2	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.7	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.10	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0014	0.014	0.5	2	25
Barium	1455		U	0.017	0.17	20	100	300
Cadmium	1455		U	0.00017	0.0017	0.04	1	5
Chromium	1455		U	0.0008	0.0082	0.5	10	70
Copper	1455		U	0.0035	0.035	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0016	0.016	0.5	10	30
Nickel	1455		U	0.0012	0.012	0.4	10	40
Lead	1455		U	0.0013	0.013	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0005	0.0051	0.1	0.5	7
Zinc	1455		U	0.012	0.12	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.17	1.7	10	150	500
Sulphate	1220		U	1.4	14	1000	20000	50000
Total Dissolved Solids	1020		N	44	440	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.9	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.6
WAC Sample Weight	123.0

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenberry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-20057							
Chemtest Sample ID:	1987729							
Sample Ref:	*BH25*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*16-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.21	3	5	6
Loss On Ignition	2610		M	%	1.2	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.019	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0007	0.0073	0.5	2	25
Barium	1455		U	0.11	1.1	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0011	0.011	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0004	0.0036	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	0.0034	0.034	0.06	0.7	5
Selenium	1455		U	0.0018	0.018	0.1	0.5	7
Zinc	1455		U	0.007	0.070	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.13	1.3	10	150	500
Sulphate	1220		U	4.5	45	1000	20000	50000
Total Dissolved Solids	1020		N	72	720	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	< 2.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.9
WAC Sample Weight	1049

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenberry GNI

Chemtest Job No:	25-20057					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	1987731							
Sample Ref:	*BH51A*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*16-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.98	3	5	6
Loss On Ignition	2610		M	%	3.2	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.3	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0050	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0023	0.023	0.5	2	25
Barium	1455		U	0.009	0.091	20	100	300
Cadmium	1455		U	0.00015	0.0015	0.04	1	5
Chromium	1455		U	0.0028	0.028	0.5	10	70
Copper	1455		U	0.0030	0.030	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0009	0.0089	0.5	10	30
Nickel	1455		U	0.0031	0.031	0.4	10	40
Lead	1455		U	0.0018	0.018	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0007	0.0068	0.1	0.5	7
Zinc	1455		U	0.018	0.18	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.33	3.3	10	150	500
Sulphate	1220		U	1.0	10	1000	20000	50000
Total Dissolved Solids	1020		N	58	580	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.7	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	10
WAC Sample Weight	741.2

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
1987719	*BH16A*			*16-Jun-2025*	E,H	Amber Glass 250ml
1987719	*BH16A*			*16-Jun-2025*	E,H	Plastic Tub 500g
1987720	*BH16A*			*16-Jun-2025*	H	Amber Glass 250ml
1987720	*BH16A*			*16-Jun-2025*	H	Plastic Tub 500g
1987721	*BH17*			*16-Jun-2025*	E,H	Amber Glass 250ml
1987721	*BH17*			*16-Jun-2025*	E,H	Plastic Tub 500g
1987722	*BH17*			*16-Jun-2025*	H	Amber Glass 250ml
1987722	*BH17*			*16-Jun-2025*	H	Plastic Tub 500g
1987723	*BH18*			*16-Jun-2025*	E,H	Amber Glass 250ml
1987723	*BH18*			*16-Jun-2025*	E,H	Plastic Tub 500g
1987724	*BH18*			*16-Jun-2025*	H	Amber Glass 250ml
1987724	*BH18*			*16-Jun-2025*	H	Plastic Tub 500g
1987725	*BH19*			*16-Jun-2025*	E,H	Amber Glass 250ml
1987725	*BH19*			*16-Jun-2025*	E,H	Plastic Tub 500g
1987726	*BH19*			*16-Jun-2025*	H	Amber Glass 250ml
1987726	*BH19*			*16-Jun-2025*	H	Plastic Tub 500g
1987727	*BH24*			*16-Jun-2025*	E,H	Amber Glass 250ml
1987727	*BH24*			*16-Jun-2025*	E,H	Plastic Tub 500g
1987728	*BH24*			*16-Jun-2025*	H	Amber Glass 250ml
1987728	*BH24*			*16-Jun-2025*	H	Plastic Tub 500g
1987729	*BH25*			*16-Jun-2025*	E,H	Amber Glass 250ml
1987729	*BH25*			*16-Jun-2025*	E,H	Plastic Tub 500g
1987730	*BH25*			*16-Jun-2025*	H	Amber Glass 250ml
1987730	*BH25*			*16-Jun-2025*	H	Plastic Tub 500g
1987731	*BH51A*			*16-Jun-2025*	E,H	Amber Glass 250ml
1987731	*BH51A*			*16-Jun-2025*	E,H	Plastic Tub 500g
1987732	*BH51A*			*16-Jun-2025*	H	Amber Glass 250ml
1987732	*BH51A*			*16-Jun-2025*	H	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	25-21003-1
Initial Date of Issue:	03-Jul-2025
Re-Issue Details:	
Client	*IGSL*
Client Address:	*M7 Business Park* *Naas* *County Kildare* *Ireland*
Contact(s):	*Darren Keogh*
Project	*25882 Gas to Edenderry GNI (MIL)*
Quotation No.:	*Q24-34387*
Order No.:	
No. of Samples:	*9*
Turnaround (Wkdays):	7
Date Approved:	03-Jul-2025
Approved By:	
Details:	David Smith, Technical Director

Date Received:	25-Jun-2025
Date Instructed:	25-Jun-2025
Results Due:	03-Jul-2025

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21003	25-21003	25-21003	25-21003	25-21003
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1991317	1991319	1991320	1991322	1991324
Order No.:				*Client Sample Ref.:*		*BH15*	*BH22*	*BH23A*	*BH53*	*BH54*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*0.50*	*0.50*	*0.50*	*0.50*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**					
Ammonium	U	1220	10:1	mg/l	0.050	0.33	0.39	0.42	0.29	0.40
Ammonium	N	1220	10:1	mg/kg	0.10	3.3	4.0	4.3	3.3	4.2

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21003	25-21003	25-21003	25-21003	25-21003	25-21003	25-21003
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1991317	1991318	1991319	1991320	1991321	1991322	1991323
Order No.:				*Client Sample Ref.:*		*BH15*	*BH15*	*BH22*	*BH23A*	*BH23A*	*BH53*	*BH53*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*3.00*	*0.50*	*0.50*	*1.00*	*0.50*	*1.00*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*
				Asbestos Lab:		DURHAM		DURHAM	DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		N	2192		N/A	-		-	-		-	
Asbestos Identification		U	2192		N/A	No Asbestos Detected		No Asbestos Detected	No Asbestos Detected		No Asbestos Detected	
Moisture		N	2030	%	0.020	41	37	43	30	32	11	16
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones and Roots	Stones and Roots	Roots	Stones and Roots	Stones and Roots	Stones	Stones and Roots
Soil Texture		N	2030		N/A	Loam	Loam	Loam	Loam	Loam	Sand	Clay
pH (2.5:1) at 20C		N	2010		4.0		7.4			7.5		8.6
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	1.2		0.66	0.94		< 0.40	
Magnesium (Water Soluble)		N	2120	g/l	0.010		0.010			< 0.010		< 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		0.67			0.70		< 0.010
Total Sulphur		U	2175	%	0.010		0.28			0.23		< 0.010
Sulphur (Elemental)		M	2180	mg/kg	1.0	7.0		7.2	7.8		1.4	
Chloride (Water Soluble)		M	2220	g/l	0.010		0.015			< 0.010		< 0.010
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010			< 0.010		< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50		0.90	< 0.50		< 0.50	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.3		1.8	2.1		2.4	
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01			< 0.01		< 0.01
Sulphate (Total)		U	2430	%	0.010	0.29		0.15	0.22		0.039	
Sulphate (Acid Soluble)		U	2430	%	0.010		0.085			0.078		< 0.010
Arsenic		M	2455	mg/kg	0.5	3.3		9.6	5.4		5.9	
Barium		M	2455	mg/kg	0.5	22		100	43		20	
Cadmium		M	2455	mg/kg	0.10	0.24		1.1	0.39		1.4	
Chromium		M	2455	mg/kg	0.5	2.6		6.7	4.7		8.9	
Molybdenum		M	2455	mg/kg	0.5	< 0.5		< 0.5	< 0.5		< 0.5	
Antimony		N	2455	mg/kg	2.0	< 2.0		< 2.0	< 2.0		< 2.0	
Copper		M	2455	mg/kg	0.50	2.5		6.3	4.2		15	
Mercury		M	2455	mg/kg	0.05	< 0.05		0.05	< 0.05		0.05	
Nickel		M	2455	mg/kg	0.50	5.5		11	8.9		24	
Lead		M	2455	mg/kg	0.50	1.9		6.3	3.5		8.4	
Selenium		M	2455	mg/kg	0.25	0.58		1.8	0.95		0.32	
Zinc		M	2455	mg/kg	0.50	18		46	25		53	
Chromium (Trivalent)		N	2490	mg/kg	1.0	2.6		6.7	4.7		8.9	
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50		< 0.50	< 0.50		< 0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21003	25-21003	25-21003	25-21003	25-21003	25-21003	25-21003
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1991317	1991318	1991319	1991320	1991321	1991322	1991323
Order No.:				*Client Sample Ref.:*		*BH15*	*BH15*	*BH22*	*BH23A*	*BH23A*	*BH53*	*BH53*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*3.00*	*0.50*	*0.50*	*1.00*	*0.50*	*1.00*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*
				Asbestos Lab:		DURHAM		DURHAM	DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25		< 0.25	< 0.25		< 0.25	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	4.7		4.3	4.1		5.1	
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0		< 1.0	2.5		2.2	
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	9.9		8.9	9.5		3.3	
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	90		86	70		5.4	
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10		11	12		< 10	
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	100		99	86		16	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25		< 0.25	< 0.25		< 0.25	
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		< 1.0	< 1.0		4.4	
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		1.7	< 1.0		7.8	
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	16		28	16		13	
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	85		66	62		17	
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	36		17	26		3.2	
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	100		97	78		42	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50		< 0.50	< 0.50		< 0.50	
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	210		200	160		58	
Mineral Oil EPH		N	2670	mg/kg	10	100		110	98		16	
Benzene		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	
Toluene		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	
o-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	
Naphthalene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Acenaphthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Fluorene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Phenanthrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Chrysene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21003	25-21003	25-21003	25-21003	25-21003	25-21003	25-21003
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1991317	1991318	1991319	1991320	1991321	1991322	1991323
Order No.:				*Client Sample Ref.:*		*BH15*	*BH15*	*BH22*	*BH23A*	*BH23A*	*BH53*	*BH53*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*3.00*	*0.50*	*0.50*	*1.00*	*0.50*	*1.00*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*
				Asbestos Lab:		DURHAM		DURHAM	DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Coronene		N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
PCB 28		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	
PCB 52		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	
PCB 101		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	
PCB 118		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	
PCB 153		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	
PCB 138		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	
PCB 180		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	
Total Phenols		M	2920	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21003	25-21003
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1991324	1991325
Order No.:				*Client Sample Ref.:*		*BH54*	*BH54*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*1.00*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*
				Asbestos Lab:		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type		N	2192		N/A	-	
Asbestos Identification		U	2192		N/A	No Asbestos Detected	
Moisture		N	2030	%	0.020	13	11
Soil Colour		N	2030		N/A	Brown	Brown
Other Material		N	2030		N/A	Stones and Roots	Stones and Roots
Soil Texture		N	2030		N/A	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0		8.3
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40	
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		< 0.010
Total Sulphur		U	2175	%	0.010		0.040
Sulphur (Elemental)		M	2180	mg/kg	1.0	1.7	
Chloride (Water Soluble)		M	2220	g/l	0.010		< 0.010
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.0	
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01
Sulphate (Total)		U	2430	%	0.010	0.028	
Sulphate (Acid Soluble)		U	2430	%	0.010		< 0.010
Arsenic		M	2455	mg/kg	0.5	4.4	
Barium		M	2455	mg/kg	0.5	39	
Cadmium		M	2455	mg/kg	0.10	0.48	
Chromium		M	2455	mg/kg	0.5	8.5	
Molybdenum		M	2455	mg/kg	0.5	< 0.5	
Antimony		N	2455	mg/kg	2.0	< 2.0	
Copper		M	2455	mg/kg	0.50	6.3	
Mercury		M	2455	mg/kg	0.05	< 0.05	
Nickel		M	2455	mg/kg	0.50	17	
Lead		M	2455	mg/kg	0.50	5.4	
Selenium		M	2455	mg/kg	0.25	0.42	
Zinc		M	2455	mg/kg	0.50	30	
Chromium (Trivalent)		N	2490	mg/kg	1.0	8.5	
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21003	25-21003
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1991324	1991325
Order No.:				*Client Sample Ref.:*		*BH54*	*BH54*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*1.00*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*
				Asbestos Lab:		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	1.6	
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	2.6	
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	8.7	
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	15	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	3.1	
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	8.1	
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	6.8	
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	29	
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	4.8	
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	47	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	61	
Mineral Oil EPH		N	2670	mg/kg	10	15	
Benzene		M	2760	µg/kg	1.0	< 1.0	
Toluene		M	2760	µg/kg	1.0	< 1.0	
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	
o-Xylene		M	2760	µg/kg	1.0	< 1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	
Naphthalene		M	2800	mg/kg	0.10	< 0.10	
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	
Fluorene		M	2800	mg/kg	0.10	< 0.10	
Phenanthrene		M	2800	mg/kg	0.10	< 0.10	
Anthracene		M	2800	mg/kg	0.10	< 0.10	
Fluoranthene		M	2800	mg/kg	0.10	< 0.10	
Pyrene		M	2800	mg/kg	0.10	< 0.10	
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10	
Chrysene		M	2800	mg/kg	0.10	< 0.10	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10	
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21003	25-21003
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1991324	1991325
Order No.:				*Client Sample Ref.:*		*BH54*	*BH54*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*1.00*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*
				Asbestos Lab:		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10	
Coronene		N	2800	mg/kg	0.10	< 0.10	
PCB 28		U	2815	mg/kg	0.010	< 0.010	
PCB 52		U	2815	mg/kg	0.010	< 0.010	
PCB 101		U	2815	mg/kg	0.010	< 0.010	
PCB 118		U	2815	mg/kg	0.010	< 0.010	
PCB 153		U	2815	mg/kg	0.010	< 0.010	
PCB 138		U	2815	mg/kg	0.010	< 0.010	
PCB 180		U	2815	mg/kg	0.010	< 0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05	
Total Phenols		M	2920	mg/kg	0.10	< 0.10	

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-21003							
Chemtest Sample ID:	1991317							
Sample Ref:	*BH15*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*23-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	16	3	5	6
Loss On Ignition	2610		M	%	18	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		7.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0020	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0007	0.0067	0.5	2	25
Barium	1455		U	0.022	0.22	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0009	0.0095	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0046	0.046	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0013	0.013	0.1	0.5	7
Zinc	1455		U	0.006	0.056	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.15	1.5	10	150	500
Sulphate	1220		U	56	560	1000	20000	50000
Total Dissolved Solids	1020		N	150	1500	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.3	53	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	15
WAC Sample Weight	568.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-21003							
Chemtest Sample ID:	1991319							
Sample Ref:	*BH22*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*23-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	8.4	3	5	6
Loss On Ignition	2610		M	%	17	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		7.2	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0007	0.0068	0.5	2	25
Barium	1455		U	0.028	0.28	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0012	0.012	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0004	0.0042	0.5	10	30
Nickel	1455		U	0.0016	0.016	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0068	0.068	0.1	0.5	7
Zinc	1455		U	0.019	0.19	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.12	1.2	10	150	500
Sulphate	1220		U	92	920	1000	20000	50000
Total Dissolved Solids	1020		N	160	1600	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	8.5	85	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	13
WAC Sample Weight	492.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-21003							
Chemtest Sample ID:	1991320							
Sample Ref:	*BH23A*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*23-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	7.6	3	5	6
Loss On Ignition	2610		M	%	15	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		7.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.011	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0007	0.0074	0.5	2	25
Barium	1455		U	0.020	0.20	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0015	0.015	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0019	0.019	0.5	10	30
Nickel	1455		U	0.0015	0.015	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0011	0.011	0.1	0.5	7
Zinc	1455		U	0.003	0.027	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.16	1.6	10	150	500
Sulphate	1220		U	19	190	1000	20000	50000
Total Dissolved Solids	1020		N	100	1000	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.8	58	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.9
WAC Sample Weight	547.4

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

Chemtest Job No:	25-21003					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	1991322							
Sample Ref:	*BH53*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*23-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.84	3	5	6
Loss On Ignition	2610		M	%	0.98	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.5	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.033	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0033	0.033	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0014	0.014	0.5	10	70
Copper	1455		U	0.0054	0.054	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0013	0.013	0.5	10	30
Nickel	1455		U	0.0046	0.046	0.4	10	40
Lead	1455		U	0.0019	0.019	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0006	0.0055	0.1	0.5	7
Zinc	1455		U	0.015	0.15	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.15	1.5	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	42	420	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.1	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	11
WAC Sample Weight	1004

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-21003							
Chemtest Sample ID:	1991324							
Sample Ref:	*BH54*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*23-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.68	3	5	6
Loss On Ignition	2610		M	%	10	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.1	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.026	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0020	0.020	0.5	2	25
Barium	1455		U	0.054	0.54	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0008	0.0082	0.5	10	70
Copper	1455		U	0.0073	0.073	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0017	0.017	0.5	10	30
Nickel	1455		U	0.0023	0.023	0.4	10	40
Lead	1455		U	0.0013	0.013	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0015	0.016	0.1	0.5	7
Zinc	1455		U	0.004	0.042	4	50	200
Chloride	1220		U	5.4	54	800	15000	25000
Fluoride	1220		U	0.15	1.5	10	150	500
Sulphate	1220		U	6.0	60	1000	20000	50000
Total Dissolved Solids	1020		N	120	1200	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	6.7	67	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	11
WAC Sample Weight	1784

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
1991317	*BH15*			*23-Jun-2025*	E,H	Amber Glass 250ml
1991317	*BH15*			*23-Jun-2025*	E,H	Plastic Tub 500g
1991318	*BH15*			*23-Jun-2025*	H	Amber Glass 250ml
1991318	*BH15*			*23-Jun-2025*	H	Plastic Tub 500g
1991319	*BH22*			*23-Jun-2025*	E,H	Amber Glass 250ml
1991319	*BH22*			*23-Jun-2025*	E,H	Plastic Tub 500g
1991320	*BH23A*			*23-Jun-2025*	E,H	Amber Glass 250ml
1991320	*BH23A*			*23-Jun-2025*	E,H	Plastic Tub 500g
1991321	*BH23A*			*23-Jun-2025*	H	Amber Glass 250ml
1991321	*BH23A*			*23-Jun-2025*	H	Plastic Tub 500g
1991322	*BH53*			*23-Jun-2025*	C,E,H	Plastic Tub 500g
1991323	*BH53*			*23-Jun-2025*	H	Amber Glass 250ml
1991323	*BH53*			*23-Jun-2025*	H	Plastic Tub 500g
1991324	*BH54*			*23-Jun-2025*	E,H	Amber Glass 250ml
1991325	*BH54*			*23-Jun-2025*	H	Amber Glass 250ml
1991325	*BH54*			*23-Jun-2025*	H	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

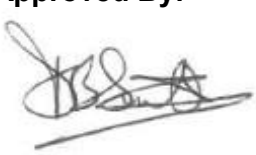
Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: cs@etuki.eurofins.com

Final Report

Report No.:	25-21684-1
Initial Date of Issue:	23-Jul-2025
Re-Issue Details:	
Client	*IGSL*
Client Address:	*M7 Business Park* *Naas* *County Kildare* *Ireland*
Contact(s):	*Darren Keogh*
Project	*25882 Gas to Edenderry GNI (MIL)*
Quotation No.:	*Q24-34387*
Order No.:	
No. of Samples:	*5*
Turnaround (Wkdays):	7
Date Approved:	23-Jul-2025
Approved By:	



Details:	David Smith, Technical Director

Date Received:	01-Jul-2025		
Date Instructed:	01-Jul-2025		
Results Due:	09-Jul-2025		

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21684	25-21684
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1993511	1993514
Order No.:				*Client Sample Ref.:*		*BH22*	*BH54*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*0.50*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
Ammonium	U	1220	10:1	mg/l	0.050	0.30	0.26
Ammonium	N	1220	10:1	mg/kg	0.10	3.1	3.2

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21684	25-21684	25-21684	25-21684	25-21684
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1993511	1993512	1993513	1993514	1993515
Order No.:				*Client Sample Ref.:*		*BH22*	*BH23A*	*BH53*	*BH54*	*BH54*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*1.00*	*1.00*	*0.50*	*1.00*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*
				Asbestos Lab:		DURHAM			DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
ACM Type		N	2192		N/A	-			-	
Asbestos Identification		U	2192		N/A	No Asbestos Detected			No Asbestos Detected	
Moisture		N	2030	%	0.020	42	34	15	19	14
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Roots	Stones and Roots	Stones and Roots	Roots and Stones	Stones and Roots
Soil Texture		N	2030		N/A	Loam	Loam	Clay	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0		7.5	8.2		8.1
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	0.80			< 0.40	
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010	< 0.010		< 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		0.38	< 0.010		< 0.010
Total Sulphur		U	2175	%	0.010		0.44	0.030		0.050
Sulphur (Elemental)		M	2180	mg/kg	1.0	< 1.0			< 1.0	
Chloride (Water Soluble)		M	2220	g/l	0.010		0.011	< 0.010		< 0.010
Nitrate (Water Soluble)		N	2220	g/l	0.010		0.019	< 0.010		< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50			< 0.50	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.1			4.7	
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01	< 0.01		< 0.01
Sulphate (Total)		U	2430	%	0.010	< 0.010			0.10	
Sulphate (Acid Soluble)		U	2430	%	0.010		0.031	0.040		0.040
Arsenic		M	2455	mg/kg	0.5	0.7			8.2	
Barium		M	2455	mg/kg	0.5	11			110	
Cadmium		M	2455	mg/kg	0.10	< 0.10			0.75	
Chromium		M	2455	mg/kg	0.5	0.9			8.2	
Molybdenum		M	2455	mg/kg	0.5	< 0.5			< 0.5	
Antimony		N	2455	mg/kg	2.0	< 2.0			< 2.0	
Copper		M	2455	mg/kg	0.50	0.71			7.6	
Mercury		M	2455	mg/kg	0.05	< 0.05			< 0.05	
Nickel		M	2455	mg/kg	0.50	1.1			11	
Lead		M	2455	mg/kg	0.50	0.68			6.8	
Selenium		M	2455	mg/kg	0.25	< 0.25			1.5	
Zinc		M	2455	mg/kg	0.50	4.4			34	
Chromium (Trivalent)		N	2490	mg/kg	1.0	< 1.0			8.2	
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50			< 0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05			< 0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05			< 0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05			< 0.05	
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05			< 0.05	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21684	25-21684	25-21684	25-21684	25-21684
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1993511	1993512	1993513	1993514	1993515
Order No.:				*Client Sample Ref.:*		*BH22*	*BH23A*	*BH53*	*BH54*	*BH54*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*1.00*	*1.00*	*0.50*	*1.00*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*
				Asbestos Lab:		DURHAM			DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25			< 0.25	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0			< 2.0	
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	1.3			< 1.0	
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	3.8			2.0	
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	11			12	
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10			< 10	
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	16			15	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05			< 0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05			< 0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05			< 0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25			< 0.25	
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0			< 1.0	
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0			2.4	
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	6.9			5.3	
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	19			18	
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	< 1.0			< 1.0	
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	26			26	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50			< 0.50	
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	42			41	
Mineral Oil EPH		N	2670	mg/kg	10	16			15	
Benzene		M	2760	µg/kg	1.0	< 1.0			< 1.0	
Toluene		M	2760	µg/kg	1.0	< 1.0			< 1.0	
Ethylbenzene		M	2760	µg/kg	1.0	1.9			< 1.0	
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0			< 1.0	
o-Xylene		M	2760	µg/kg	1.0	12			< 1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0			< 1.0	
Naphthalene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10			< 0.10	
Acenaphthene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Fluorene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Phenanthrene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Anthracene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Fluoranthene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Pyrene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Chrysene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10			< 0.10	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21684	25-21684	25-21684	25-21684	25-21684
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1993511	1993512	1993513	1993514	1993515
Order No.:				*Client Sample Ref.:*		*BH22*	*BH23A*	*BH53*	*BH54*	*BH54*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*1.00*	*1.00*	*0.50*	*1.00*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*
				Asbestos Lab:		DURHAM			DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10			< 0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Coronene		N	2800	mg/kg	0.10	< 0.10			< 0.10	
PCB 28		U	2815	mg/kg	0.010	< 0.010			< 0.010	
PCB 52		U	2815	mg/kg	0.010	< 0.010			< 0.010	
PCB 101		U	2815	mg/kg	0.010	< 0.010			< 0.010	
PCB 118		U	2815	mg/kg	0.010	< 0.010			< 0.010	
PCB 153		U	2815	mg/kg	0.010	< 0.010			< 0.010	
PCB 138		U	2815	mg/kg	0.010	< 0.010			< 0.010	
PCB 180		U	2815	mg/kg	0.010	< 0.010			< 0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05			< 0.05	
Total Phenols		M	2920	mg/kg	0.10	< 0.10			< 0.10	

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-21684							
Chemtest Sample ID:	1993511							
Sample Ref:	*BH22*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*23-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	8.2	3	5	6
Loss On Ignition	2610		M	%	20	--	--	10
Total BTEX	2760		M	mg/kg	0.014	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	I/S	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		7.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0030	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0003	0.0029	0.5	2	25
Barium	1455		U	0.007	0.074	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0008	0.0081	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	< 0.0002	< 0.0020	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0009	0.0094	0.1	0.5	7
Zinc	1455		U	0.003	0.034	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.12	1.2	10	150	500
Sulphate	1220		U	14	140	1000	20000	50000
Total Dissolved Solids	1020		N	44	440	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.2	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	14
WAC Sample Weight	233.6

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-21684					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Chemtest Sample ID:	1993514							
Sample Ref:	*BH54*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*23-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	1.2	3	5	6
Loss On Ignition	2610		M	%	4.7	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		I/S	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0080	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0007	0.0068	0.5	2	25
Barium	1455		U	0.015	0.15	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0015	0.015	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0004	0.0036	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0007	0.0070	0.1	0.5	7
Zinc	1455		U	0.004	0.044	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.12	1.2	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	65	650	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.1	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	17
WAC Sample Weight	608.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
1993511	*BH22*			*23-Jun-2025*	E,H	Amber Glass 250ml
1993512	*BH23A*			*23-Jun-2025*	H	Amber Glass 250ml
1993513	*BH53*			*23-Jun-2025*	H	Amber Glass 250ml
1993514	*BH54*			*23-Jun-2025*	C,E,H	Plastic Tub 500g
1993515	*BH54*			*23-Jun-2025*	H	Amber Glass 250ml
1993515	*BH54*			*23-Jun-2025*	H	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: cs@etuki.eurofins.com

Final Report

Report No.:	25-23231-1
Initial Date of Issue:	06-Aug-2025
Re-Issue Details:	
Client	*IGSL*
Client Address:	*M7 Business Park* *Naas* *County Kildare* *Ireland*
Contact(s):	*Darren Keogh*
Project	*25882 Gas to Edenderry GNI*
Quotation No.:	*Q24-34387*
Order No.:	
No. of Samples:	*16*
Turnaround (Wkdays):	7
Date Approved:	06-Aug-2025
Approved By:	
Details:	David Smith, Technical Director

Date Received:	15-Jul-2025
Date Instructed:	15-Jul-2025
Results Due:	23-Jul-2025

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: 25882 Gas to Edenderry GNI

Client: IGSL				**Chemtest Job No.:**		25-23231	25-23231	25-23231	25-23231	25-23231	25-23231	25-23231	25-23231
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2000896	2000898	2000900	2000902	2000903	2000905	2000907	2000910
Order No.:				*Client Sample Ref.:*		*BH01*	*BH02*	*BH03*	*BH04*	*BH14*	*BH40*	*BH42*	*BH45*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*1.00*	*1.00*	*1.00*	*0.50*	*1.00*	*0.80*	*1.00*
				Date Sampled:		*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**								
Ammonium	U	1220	10:1	mg/l	0.050	0.37	0.29	0.26	0.22	0.22	0.26	0.25	0.26
Ammonium	N	1220	10:1	mg/kg	0.10	4.4	3.4	2.9	2.6	2.4	2.9	2.8	2.9

Results - Soil

Project: 25882 Gas to Edenderry GNI

Client: IGSL				**Chemtest Job No.:**		25-23231	25-23231	25-23231	25-23231	25-23231	25-23231	25-23231
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2000896	2000897	2000898	2000899	2000900	2000901	2000902
Order No.:				*Client Sample Ref.:*		*BH01*	*BH01*	*BH02*	*BH02*	*BH03*	*BH03*	*BH04*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*1.00*	*1.00*	*2.00*	*1.00*	*2.00*	*1.00*
				Date Sampled:		*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*
				Asbestos Lab:		DURHAM		NEW-ASB		DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		N	2192		N/A	-		-		-		-
Asbestos Identification		U	2192		N/A	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected
Moisture		N	2030	%	0.020	18	14	13	10	18	12	15
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones and Roots	Stones	Stones	Stones	Stones and Roots	Stones	Stones and Roots
Soil Texture		N	2030		N/A	Clay	Clay	Clay	Clay	Clay	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0		8.7		8.5		8.5	
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40		< 0.40		< 0.40		< 0.40
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010		< 0.010		< 0.010	
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		0.017		0.022		0.020	
Total Sulphur		U	2175	%	0.010		0.020		0.020		0.020	
Sulphur (Elemental)		M	2180	mg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Chloride (Water Soluble)		M	2220	g/l	0.010		< 0.010		< 0.010		< 0.010	
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010		0.021		< 0.010	
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50		< 0.50		< 0.50		< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.8		15		3.8		12
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01		< 0.01		< 0.01	
Sulphate (Total)		U	2430	%	0.010	0.032		0.047		0.062		0.013
Sulphate (Acid Soluble)		U	2430	%	0.010		< 0.010		< 0.010		< 0.010	
Arsenic		M	2455	mg/kg	0.5	4.4		11		6.9		5.6
Barium		M	2455	mg/kg	0.5	52		70		83		65
Cadmium		M	2455	mg/kg	0.10	0.32		2.8		1.7		1.2
Chromium		M	2455	mg/kg	0.5	7.8		16		11		17
Molybdenum		M	2455	mg/kg	0.5	0.7		2.1		1.4		1.4
Antimony		N	2455	mg/kg	2.0	< 2.0		< 2.0		< 2.0		< 2.0
Copper		M	2455	mg/kg	0.50	4.9		25		17		19
Mercury		M	2455	mg/kg	0.05	< 0.05		0.08		0.07		0.07
Nickel		M	2455	mg/kg	0.50	19		46		29		47
Lead		M	2455	mg/kg	0.50	6.5		17		11		17
Selenium		M	2455	mg/kg	0.25	< 0.25		0.43		0.74		0.62
Zinc		M	2455	mg/kg	0.50	33		110		63		96
Chromium (Trivalent)		N	2490	mg/kg	1.0	7.8		16		11		17
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50		< 0.50		< 0.50		< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05

Results - Soil

Project: 25882 Gas to Edenderry GNI

Client: IGSL				**Chemtest Job No.:**		25-23231	25-23231	25-23231	25-23231	25-23231	25-23231	25-23231
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2000896	2000897	2000898	2000899	2000900	2000901	2000902
Order No.:				*Client Sample Ref.:*		*BH01*	*BH01*	*BH02*	*BH02*	*BH03*	*BH03*	*BH04*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*1.00*	*1.00*	*2.00*	*1.00*	*2.00*	*1.00*
				Date Sampled:		*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*
				Asbestos Lab:		DURHAM		NEW-ASB		DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25		< 0.25		< 0.25		< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0		2.6		6.3		2.1
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0		2.5		7.2		< 1.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0		5.3		7.1		3.7
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	5.2		6.3		7.5		< 3.0
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10		< 10		< 10		< 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	7.8		17		28		9.7
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25		< 0.25		< 0.25		< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		1.4		60		< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		< 1.0		60		< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	5.5		3.3		17		4.8
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	13		9.4		20		7.6
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	2.7		1.7		2.0		1.2
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	18		14		160		13
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50		< 0.50		< 0.50		< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	26		31		180		23
Mineral Oil EPH		N	2670	mg/kg	10	< 10		17		28		< 10
Benzene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Naphthalene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10

Results - Soil

Project: 25882 Gas to Edenderry GNI

Client: IGSL				**Chemtest Job No.:**		25-23231	25-23231	25-23231	25-23231	25-23231	25-23231	25-23231
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2000896	2000897	2000898	2000899	2000900	2000901	2000902
Order No.:				*Client Sample Ref.:*		*BH01*	*BH01*	*BH02*	*BH02*	*BH03*	*BH03*	*BH04*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*1.00*	*1.00*	*2.00*	*1.00*	*2.00*	*1.00*
				Date Sampled:		*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*
				Asbestos Lab:		DURHAM		NEW-ASB		DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Coronene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
PCB 28		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 52		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 101		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 118		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 153		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 138		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 180		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Total Phenols		M	2920	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10

Results - Soil

Project: 25882 Gas to Edenderry GNI

Client: IGSL				**Chemtest Job No.:**		25-23231	25-23231	25-23231	25-23231	25-23231	25-23231	25-23231
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2000903	2000904	2000905	2000906	2000907	2000908	2000909
Order No.:				*Client Sample Ref.:*		*BH14*	*BH14*	*BH40*	*BH40*	*BH42*	*BH42*	*BH43*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*1.00*	*1.00*	*2.00*	*0.80*	*1.00*	*2.00*
				Date Sampled:		*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*
				Asbestos Lab:		DURHAM		DURHAM		DURHAM		
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		N	2192		N/A	-		-		-		
Asbestos Identification		U	2192		N/A	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		
Moisture		N	2030	%	0.020	22	18	15	11	19	13	11
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Roots and Stones	Stones and Roots	Stones and Roots	Stones and Roots	Stones and Roots	Stones	Stones
Soil Texture		N	2030		N/A	Clay	Clay	Clay	Clay	Loam	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0		8.4		8.4		8.2	8.5
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40		< 0.40		< 0.40		
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010		< 0.010		< 0.010	< 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		< 0.010		< 0.010		< 0.010	< 0.010
Total Sulphur		U	2175	%	0.010		0.010		0.020		0.010	0.010
Sulphur (Elemental)		M	2180	mg/kg	1.0	< 1.0		< 1.0		< 1.0		
Chloride (Water Soluble)		M	2220	g/l	0.010		< 0.010		< 0.010		< 0.010	< 0.010
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010		< 0.010		0.012	< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50		< 0.50		< 0.50		
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.4		2.9		2.7		
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01		< 0.01		< 0.01	< 0.01
Sulphate (Total)		U	2430	%	0.010	0.026		0.019		0.036		
Sulphate (Acid Soluble)		U	2430	%	0.010		0.011		< 0.010		< 0.010	< 0.010
Arsenic		M	2455	mg/kg	0.5	3.5		3.6		3.8		
Barium		M	2455	mg/kg	0.5	21		29		16		
Cadmium		M	2455	mg/kg	0.10	0.73		0.71		0.50		
Chromium		M	2455	mg/kg	0.5	7.8		11		4.8		
Molybdenum		M	2455	mg/kg	0.5	< 0.5		< 0.5		< 0.5		
Antimony		N	2455	mg/kg	2.0	< 2.0		< 2.0		< 2.0		
Copper		M	2455	mg/kg	0.50	8.9		6.8		5.4		
Mercury		M	2455	mg/kg	0.05	< 0.05		0.08		< 0.05		
Nickel		M	2455	mg/kg	0.50	20		21		10		
Lead		M	2455	mg/kg	0.50	7.7		9.9		5.3		
Selenium		M	2455	mg/kg	0.25	< 0.25		0.25		< 0.25		
Zinc		M	2455	mg/kg	0.50	51		48		23		
Chromium (Trivalent)		N	2490	mg/kg	1.0	7.8		11		4.8		
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50		< 0.50		< 0.50		
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		

Results - Soil

Project: 25882 Gas to Edenderry GNI

Client: IGSL				**Chemtest Job No.:**		25-23231	25-23231	25-23231	25-23231	25-23231	25-23231	25-23231
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2000903	2000904	2000905	2000906	2000907	2000908	2000909
Order No.:				*Client Sample Ref.:*		*BH14*	*BH14*	*BH40*	*BH40*	*BH42*	*BH42*	*BH43*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*1.00*	*1.00*	*2.00*	*0.80*	*1.00*	*2.00*
				Date Sampled:		*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*
				Asbestos Lab:		DURHAM		DURHAM		DURHAM		
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25		< 0.25		< 0.25		
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0		< 2.0		2.2		
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0		< 1.0		< 1.0		
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0		< 2.0		4.7		
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	< 3.0		< 3.0		11		
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10		< 10		< 10		
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	< 5.0		< 5.0		18		
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25		< 0.25		< 0.25		
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		< 1.0		4.5		
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		< 1.0		< 1.0		
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	8.5		5.2		7.9		
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	5.9		7.3		38		
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	< 1.0		< 1.0		7.6		
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	15		12		50		
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50		< 0.50		< 0.50		
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	20		17		68		
Mineral Oil EPH		N	2670	mg/kg	10	< 10		< 10		18		
Benzene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		
Toluene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		
o-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		
Naphthalene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		
Acenaphthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		
Fluorene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		
Phenanthrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		
Anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		
Fluoranthene		M	2800	mg/kg	0.10	< 0.10		0.24		< 0.10		
Pyrene		M	2800	mg/kg	0.10	< 0.10		0.28		< 0.10		
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10		0.29		< 0.10		
Chrysene		M	2800	mg/kg	0.10	< 0.10		0.22		< 0.10		
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10		0.41		< 0.10		
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10		0.29		< 0.10		
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10		0.35		< 0.10		

Results - Soil

Project: 25882 Gas to Edenderry GNI

Client: IGSL				**Chemtest Job No.:**		25-23231	25-23231	25-23231	25-23231	25-23231	25-23231	25-23231
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2000903	2000904	2000905	2000906	2000907	2000908	2000909
Order No.:				*Client Sample Ref.:*		*BH14*	*BH14*	*BH40*	*BH40*	*BH42*	*BH42*	*BH43*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*1.00*	*1.00*	*2.00*	*0.80*	*1.00*	*2.00*
				Date Sampled:		*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*	*09-Jul-2025*
				Asbestos Lab:		DURHAM		DURHAM		DURHAM		
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10		0.52		< 0.10		
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10		0.28		< 0.10		
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10		0.42		< 0.10		
Coronene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		
PCB 28		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		
PCB 52		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		
PCB 101		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		
PCB 118		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		
PCB 153		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		
PCB 138		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		
PCB 180		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05		< 0.05		< 0.05		
Total Phenols		M	2920	mg/kg	0.10	< 0.10		0.35		< 0.10		

Results - Soil

Project: 25882 Gas to Edenderry GNI

Client: IGSL				**Chemtest Job No.:**		25-23231	25-23231
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2000910	2000911
Order No.:				*Client Sample Ref.:*		*BH45*	*BH45*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*
				Date Sampled:		*09-Jul-2025*	*09-Jul-2025*
				Asbestos Lab:		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type		N	2192		N/A	-	
Asbestos Identification		U	2192		N/A	No Asbestos Detected	
Moisture		N	2030	%	0.020	14	11
Soil Colour		N	2030		N/A	Brown	Brown
Other Material		N	2030		N/A	Stones and Roots	Stones
Soil Texture		N	2030		N/A	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0		8.5
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40	
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		< 0.010
Total Sulphur		U	2175	%	0.010		0.010
Sulphur (Elemental)		M	2180	mg/kg	1.0	< 1.0	
Chloride (Water Soluble)		M	2220	g/l	0.010		< 0.010
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	4.6	
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01
Sulphate (Total)		U	2430	%	0.010	0.016	
Sulphate (Acid Soluble)		U	2430	%	0.010		< 0.010
Arsenic		M	2455	mg/kg	0.5	3.8	
Barium		M	2455	mg/kg	0.5	23	
Cadmium		M	2455	mg/kg	0.10	0.89	
Chromium		M	2455	mg/kg	0.5	10	
Molybdenum		M	2455	mg/kg	0.5	< 0.5	
Antimony		N	2455	mg/kg	2.0	< 2.0	
Copper		M	2455	mg/kg	0.50	12	
Mercury		M	2455	mg/kg	0.05	0.07	
Nickel		M	2455	mg/kg	0.50	25	
Lead		M	2455	mg/kg	0.50	9.4	
Selenium		M	2455	mg/kg	0.25	0.26	
Zinc		M	2455	mg/kg	0.50	56	
Chromium (Trivalent)		N	2490	mg/kg	1.0	10	
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	

Results - Soil

Project: 25882 Gas to Edenderry GNI

Client: IGSL				**Chemtest Job No.:**		25-23231	25-23231
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2000910	2000911
Order No.:				*Client Sample Ref.:*		*BH45*	*BH45*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*
				Date Sampled:		*09-Jul-2025*	*09-Jul-2025*
				Asbestos Lab:		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	2.4	
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	3.7	
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	< 3.0	
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	9.0	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	3.7	
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	3.2	
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	1.2	
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	7.4	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	16	
Mineral Oil EPH		N	2670	mg/kg	10	< 10	
Benzene		M	2760	µg/kg	1.0	< 1.0	
Toluene		M	2760	µg/kg	1.0	< 1.0	
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	
o-Xylene		M	2760	µg/kg	1.0	< 1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	
Naphthalene		M	2800	mg/kg	0.10	< 0.10	
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	
Fluorene		M	2800	mg/kg	0.10	< 0.10	
Phenanthrene		M	2800	mg/kg	0.10	< 0.10	
Anthracene		M	2800	mg/kg	0.10	< 0.10	
Fluoranthene		M	2800	mg/kg	0.10	< 0.10	
Pyrene		M	2800	mg/kg	0.10	< 0.10	
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10	
Chrysene		M	2800	mg/kg	0.10	< 0.10	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10	
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10	

Results - Soil

Project: 25882 Gas to Edenderry GNI

Client: IGSL				**Chemtest Job No.:**		25-23231	25-23231
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2000910	2000911
Order No.:				*Client Sample Ref.:*		*BH45*	*BH45*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*
				Date Sampled:		*09-Jul-2025*	*09-Jul-2025*
				Asbestos Lab:		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10	
Coronene		N	2800	mg/kg	0.10	< 0.10	
PCB 28		U	2815	mg/kg	0.010	< 0.010	
PCB 52		U	2815	mg/kg	0.010	< 0.010	
PCB 101		U	2815	mg/kg	0.010	< 0.010	
PCB 118		U	2815	mg/kg	0.010	< 0.010	
PCB 153		U	2815	mg/kg	0.010	< 0.010	
PCB 138		U	2815	mg/kg	0.010	< 0.010	
PCB 180		U	2815	mg/kg	0.010	< 0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05	
Total Phenols		M	2920	mg/kg	0.10	< 0.10	

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI

Chemtest Job No:	25-23231					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	2000896							
Sample Ref:	*BH01*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*09-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	1.4	3	5	6
Loss On Ignition	2610		M	%	3.8	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		7.8	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0080	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0027	0.027	0.5	2	25
Barium	1455		U	0.009	0.091	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0010	0.010	0.5	10	70
Copper	1455		U	0.0027	0.027	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0013	0.013	0.5	10	30
Nickel	1455		U	0.0015	0.015	0.4	10	40
Lead	1455		U	0.0018	0.018	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.010	0.097	4	50	200
Chloride	1220		U	1.4	14	800	15000	25000
Fluoride	1220		U	0.23	2.3	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	110	1100	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	8.5	85	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	9.2
WAC Sample Weight	628.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-23231							
Chemtest Sample ID:	2000898							
Sample Ref:	*BH02*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*09-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.89	3	5	6
Loss On Ignition	2610		M	%	2.2	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.2	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0090	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0072	0.072	0.5	2	25
Barium	1455		U	0.014	0.14	20	100	300
Cadmium	1455		U	0.00047	0.0047	0.04	1	5
Chromium	1455		U	0.0035	0.035	0.5	10	70
Copper	1455		U	0.011	0.11	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0026	0.026	0.5	10	30
Nickel	1455		U	0.012	0.11	0.4	10	40
Lead	1455		U	0.0054	0.054	0.5	10	50
Antimony	1455		U	0.0007	0.0071	0.06	0.7	5
Selenium	1455		U	0.0005	0.0051	0.1	0.5	7
Zinc	1455		U	0.039	0.39	4	50	200
Chloride	1220		U	1.2	12	800	15000	25000
Fluoride	1220		U	0.18	1.8	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	52	520	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.6	56	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	3.4
WAC Sample Weight	709.1

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-23231							
Chemtest Sample ID:	2000900							
Sample Ref:	*BH03*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*09-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	1.4	3	5	6
Loss On Ignition	2610		M	%	4.2	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.2	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.011	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0030	0.030	0.5	2	25
Barium	1455		U	0.018	0.18	20	100	300
Cadmium	1455		U	0.00016	0.0016	0.04	1	5
Chromium	1455		U	0.0016	0.016	0.5	10	70
Copper	1455		U	0.0062	0.062	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0019	0.019	0.5	10	30
Nickel	1455		U	0.0049	0.049	0.4	10	40
Lead	1455		U	0.0022	0.022	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.014	0.14	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.16	1.6	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	44	440	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	7.1	71	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	10
WAC Sample Weight	736.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-23231							
Chemtest Sample ID:	2000902							
Sample Ref:	*BH04*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*09-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.35	3	5	6
Loss On Ignition	2610		M	%	2.1	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.3	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.013	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0051	0.051	0.5	2	25
Barium	1455		U	0.008	0.084	20	100	300
Cadmium	1455		U	0.00030	0.0030	0.04	1	5
Chromium	1455		U	0.0031	0.031	0.5	10	70
Copper	1455		U	0.0063	0.063	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0025	0.025	0.5	10	30
Nickel	1455		U	0.0067	0.067	0.4	10	40
Lead	1455		U	0.0046	0.046	0.5	10	50
Antimony	1455		U	0.0007	0.0068	0.06	0.7	5
Selenium	1455		U	0.0008	0.0082	0.1	0.5	7
Zinc	1455		U	0.021	0.21	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.16	1.6	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	32	320	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	7.0	70	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.6
WAC Sample Weight	661.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-23231							
Chemtest Sample ID:	2000903							
Sample Ref:	*BH14*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*09-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	1.1	3	5	6
Loss On Ignition	2610		M	%	3.6	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.2	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.014	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0005	0.0054	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0017	0.017	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0011	0.011	0.5	10	30
Nickel	1455		U	0.0017	0.017	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.012	0.12	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.17	1.7	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	52	520	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.5
WAC Sample Weight	935.0

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-23231							
Chemtest Sample ID:	2000905							
Sample Ref:	*BH40*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*09-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.68	3	5	6
Loss On Ignition	2610		M	%	1.9	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	3.3	100	--	--
pH at 20C	2010		M		8.1	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.012	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0031	0.031	0.5	2	25
Barium	1455		U	0.006	0.058	20	100	300
Cadmium	1455		U	0.00024	0.0024	0.04	1	5
Chromium	1455		U	0.0027	0.027	0.5	10	70
Copper	1455		U	0.0050	0.050	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0011	0.011	0.5	10	30
Nickel	1455		U	0.0057	0.057	0.4	10	40
Lead	1455		U	0.0036	0.036	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.019	0.19	4	50	200
Chloride	1220		U	1.0	10	800	15000	25000
Fluoride	1220		U	0.20	2.0	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	42	420	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.8	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	12
WAC Sample Weight	640.1

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-23231							
Chemtest Sample ID:	2000907							
Sample Ref:	*BH42*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.80*							
Bottom Depth(m):								
Sampling Date:	*09-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	3.1	3	5	6
Loss On Ignition	2610		M	%	6.0	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		7.8	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.014	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0035	0.035	0.5	2	25
Barium	1455		U	0.007	0.066	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0013	0.013	0.5	10	70
Copper	1455		U	0.0044	0.044	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0008	0.0085	0.5	10	30
Nickel	1455		U	0.0046	0.046	0.4	10	40
Lead	1455		U	0.0018	0.018	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.013	0.13	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.24	2.4	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	61	610	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.2	52	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	9.5
WAC Sample Weight	619.2

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-23231							
Chemtest Sample ID:	2000910							
Sample Ref:	*BH45*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*09-Jul-2025*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.32	3	5	6
Loss On Ignition	2610		M	%	2.2	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.5	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.019	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0020	0.020	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	0.00013	0.0013	0.04	1	5
Chromium	1455		U	0.0017	0.017	0.5	10	70
Copper	1455		U	0.0040	0.040	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0008	0.0085	0.5	10	30
Nickel	1455		U	0.0063	0.063	0.4	10	40
Lead	1455		U	0.0017	0.017	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.016	0.16	4	50	200
Chloride	1220		U	1.6	16	800	15000	25000
Fluoride	1220		U	0.18	1.8	10	150	500
Sulphate	1220		U	1.2	12	1000	20000	50000
Total Dissolved Solids	1020		N	47	470	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.3	53	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.1
WAC Sample Weight	695.4

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
2000896	*BH01*			*09-Jul-2025*	E	Amber Glass 250ml
2000896	*BH01*			*09-Jul-2025*	E	Plastic Tub 500g
2000898	*BH02*			*09-Jul-2025*	E	Amber Glass 250ml
2000898	*BH02*			*09-Jul-2025*	E	Plastic Tub 500g
2000900	*BH03*			*09-Jul-2025*	E	Amber Glass 250ml
2000900	*BH03*			*09-Jul-2025*	E	Plastic Tub 500g
2000902	*BH04*			*09-Jul-2025*	E	Amber Glass 250ml
2000902	*BH04*			*09-Jul-2025*	E	Plastic Tub 500g
2000903	*BH14*			*09-Jul-2025*	E	Amber Glass 250ml
2000903	*BH14*			*09-Jul-2025*	E	Plastic Tub 500g
2000905	*BH40*			*09-Jul-2025*	E	Amber Glass 250ml
2000905	*BH40*			*09-Jul-2025*	E	Plastic Tub 500g
2000907	*BH42*			*09-Jul-2025*	E	Amber Glass 250ml
2000907	*BH42*			*09-Jul-2025*	E	Plastic Tub 500g
2000910	*BH45*			*09-Jul-2025*	E	Amber Glass 250ml
2000910	*BH45*			*09-Jul-2025*	E	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

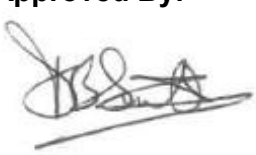
Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: cs@etuki.eurofins.com

Final Report

Report No.:	25-24474-1
Initial Date of Issue:	07-Aug-2025
Re-Issue Details:	
Client	*IGSL*
Client Address:	*M7 Business Park* *Naas* *County Kildare* *Ireland*
Contact(s):	*Darren Keogh*
Project	*25882 Gas to Edenderry GNI (MIL)*
Quotation No.:	*Q24-34387*
Order No.:	
No. of Samples:	*9*
Turnaround (Wkdays):	7
Date Approved:	07-Aug-2025
Approved By:	



Details:	David Smith, Technical Director

Date Received:	24-Jul-2025		
Date Instructed:	24-Jul-2025		
Results Due:	01-Aug-2025		

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-24474	25-24474	25-24474	25-24474	25-24474	25-24474
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2005601	2005602	2005606	2005608	2005609	2005610
Order No.:				*Client Sample Ref.:*		*BH05*	*BH06*	*BH08*	*BH09*	*BH11*	*BH12*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*0.50*	*0.50*	*1.00*	*0.50*
				Date Sampled:		*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**						
Ammonium	U	1220	10:1	mg/l	0.050	0.059	0.055	0.051	0.056	0.053	0.075
Ammonium	N	1220	10:1	mg/kg	0.10	0.64	0.69	0.68	0.65	0.61	0.92

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-24474	25-24474	25-24474	25-24474	25-24474	25-24474	25-24474
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2005601	2005602	2005603	2005606	2005607	2005608	2005609
Order No.:				*Client Sample Ref.:*		*BH05*	*BH06*	*BH06*	*BH08*	*BH08*	*BH09*	*BH11*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*2.00*	*0.50*	*1.00*	*0.50*	*1.00*
				Date Sampled:		*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*
				Asbestos Lab:		NEW-ASB	NEW-ASB		NEW-ASB		NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		N	2192		N/A	-	-		-		-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	19	16	12	10	11	16	16
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones and Roots	Stones and Roots	Stones	Stones	Stones	Stones and Roots	Stones and Roots
Soil Texture		N	2030		N/A	Clay	Clay	Clay	Clay	Clay	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0			8.4		8.5		
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40	< 0.40		< 0.40		< 0.40	< 0.40
Magnesium (Water Soluble)		N	2120	g/l	0.010			< 0.010		< 0.010		
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010			< 0.010		< 0.010		
Total Sulphur		U	2175	%	0.010			0.020		0.040		
Sulphur (Elemental)		M	2180	mg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0	< 1.0
Chloride (Water Soluble)		M	2220	g/l	0.010			< 0.010		< 0.010		
Nitrate (Water Soluble)		N	2220	g/l	0.010			< 0.010		< 0.010		
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50		< 0.50		< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.9	3.5		3.2		2.5	1.6
Ammonium (Water Soluble)		M	2220	g/l	0.01			< 0.01		< 0.01		
Sulphate (Total)		U	2430	%	0.010	0.079	0.052		0.079		0.055	0.062
Sulphate (Acid Soluble)		U	2430	%	0.010			0.014		0.020		
Arsenic		M	2455	mg/kg	0.5	7.0	10		9.3		19	34
Barium		M	2455	mg/kg	0.5	40	62		140		500	380
Cadmium		M	2455	mg/kg	0.10	1.1	2.0		2.4		1.3	1.8
Chromium		M	2455	mg/kg	0.5	10	17		18		8.7	9.0
Molybdenum		M	2455	mg/kg	0.5	0.8	1.1		1.6		2.6	3.9
Antimony		N	2455	mg/kg	2.0	< 2.0	< 2.0		< 2.0		< 2.0	< 2.0
Copper		M	2455	mg/kg	0.50	10	23		23		8.5	7.3
Mercury		M	2455	mg/kg	0.05	0.09	0.09		0.08		0.06	0.07
Nickel		M	2455	mg/kg	0.50	21	56		54		24	22
Lead		M	2455	mg/kg	0.50	13	18		16		11	7.8
Selenium		M	2455	mg/kg	0.25	0.42	0.67		1.0		0.74	1.2
Zinc		M	2455	mg/kg	0.50	47	100		92		72	76
Chromium (Trivalent)		N	2490	mg/kg	1.0	10	17		18		8.7	9.0
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50		< 0.50		< 0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05	< 0.05
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05	< 0.05

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-24474	25-24474	25-24474	25-24474	25-24474	25-24474	25-24474
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2005601	2005602	2005603	2005606	2005607	2005608	2005609
Order No.:				*Client Sample Ref.:*		*BH05*	*BH06*	*BH06*	*BH08*	*BH08*	*BH09*	*BH11*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*2.00*	*0.50*	*1.00*	*0.50*	*1.00*
				Date Sampled:		*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*
				Asbestos Lab:		NEW-ASB	NEW-ASB		NEW-ASB		NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25		< 0.25		< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	< 2.0		< 2.0		< 2.0	< 2.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0	< 1.0		< 1.0		< 1.0	1.3
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	< 2.0		< 2.0		< 2.0	< 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	< 3.0	< 3.0		< 3.0		< 3.0	< 3.0
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	< 10		< 10		< 10	< 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	< 5.0	< 5.0		< 5.0		< 5.0	5.5
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25		< 0.25		< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0		< 1.0		< 1.0	< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0		< 1.0		< 1.0	< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	3.6	2.3		2.9		3.2	3.1
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	6.0	2.6		< 2.0		3.8	5.7
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	< 1.0	< 1.0		< 1.0		< 1.0	< 1.0
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	9.7	< 5.0		< 5.0		7.0	8.8
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50		< 0.50		< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	12	< 10		< 10		< 10	14
Mineral Oil EPH		N	2670	mg/kg	10	< 10	< 10		< 10		< 10	< 10
Benzene		M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-24474	25-24474	25-24474	25-24474	25-24474	25-24474	25-24474
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2005601	2005602	2005603	2005606	2005607	2005608	2005609
Order No.:				*Client Sample Ref.:*		*BH05*	*BH06*	*BH06*	*BH08*	*BH08*	*BH09*	*BH11*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*2.00*	*0.50*	*1.00*	*0.50*	*1.00*
				Date Sampled:		*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*
				Asbestos Lab:		NEW-ASB	NEW-ASB		NEW-ASB		NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Coronene		N	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
PCB 28		U	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010		< 0.010	< 0.010
PCB 52		U	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010		< 0.010	< 0.010
PCB 101		U	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010		< 0.010	< 0.010
PCB 118		U	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010		< 0.010	< 0.010
PCB 153		U	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010		< 0.010	< 0.010
PCB 138		U	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010		< 0.010	< 0.010
PCB 180		U	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010		< 0.010	< 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05	< 0.05
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-24474	25-24474
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2005610	2005611
Order No.:				*Client Sample Ref.:*		*BH12*	*BH12*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*2.00*
				Date Sampled:		*23-Jul-2025*	*23-Jul-2025*
				Asbestos Lab:		NEW-ASB	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type		N	2192		N/A	-	
Asbestos Identification		U	2192		N/A	No Asbestos Detected	
Moisture		N	2030	%	0.020	10	9.8
Soil Colour		N	2030		N/A	Brown	Brown
Other Material		N	2030		N/A	Stones	Stones
Soil Texture		N	2030		N/A	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0		8.4
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40	
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		0.021
Total Sulphur		U	2175	%	0.010		0.11
Sulphur (Elemental)		M	2180	mg/kg	1.0	< 1.0	
Chloride (Water Soluble)		M	2220	g/l	0.010		< 0.010
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	10	
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01
Sulphate (Total)		U	2430	%	0.010	0.21	
Sulphate (Acid Soluble)		U	2430	%	0.010		0.024
Arsenic		M	2455	mg/kg	0.5	12	
Barium		M	2455	mg/kg	0.5	90	
Cadmium		M	2455	mg/kg	0.10	1.7	
Chromium		M	2455	mg/kg	0.5	14	
Molybdenum		M	2455	mg/kg	0.5	1.6	
Antimony		N	2455	mg/kg	2.0	< 2.0	
Copper		M	2455	mg/kg	0.50	17	
Mercury		M	2455	mg/kg	0.05	0.07	
Nickel		M	2455	mg/kg	0.50	48	
Lead		M	2455	mg/kg	0.50	12	
Selenium		M	2455	mg/kg	0.25	1.1	
Zinc		M	2455	mg/kg	0.50	93	
Chromium (Trivalent)		N	2490	mg/kg	1.0	14	
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-24474	25-24474
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2005610	2005611
Order No.:				*Client Sample Ref.:*		*BH12*	*BH12*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*2.00*
				Date Sampled:		*23-Jul-2025*	*23-Jul-2025*
				Asbestos Lab:		NEW-ASB	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0	
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	< 3.0	
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	< 5.0	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	2.9	
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	2.4	
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	< 1.0	
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	5.3	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	< 10	
Mineral Oil EPH		N	2670	mg/kg	10	< 10	
Benzene		M	2760	µg/kg	1.0	< 1.0	
Toluene		M	2760	µg/kg	1.0	< 1.0	
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	
o-Xylene		M	2760	µg/kg	1.0	< 1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	
Naphthalene		M	2800	mg/kg	0.10	< 0.10	
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	
Fluorene		M	2800	mg/kg	0.10	< 0.10	
Phenanthrene		M	2800	mg/kg	0.10	< 0.10	
Anthracene		M	2800	mg/kg	0.10	< 0.10	
Fluoranthene		M	2800	mg/kg	0.10	< 0.10	
Pyrene		M	2800	mg/kg	0.10	< 0.10	
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10	
Chrysene		M	2800	mg/kg	0.10	< 0.10	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10	
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-24474	25-24474
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2005610	2005611
Order No.:				*Client Sample Ref.:*		*BH12*	*BH12*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*2.00*
				Date Sampled:		*23-Jul-2025*	*23-Jul-2025*
				Asbestos Lab:		NEW-ASB	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10	
Coronene		N	2800	mg/kg	0.10	< 0.10	
PCB 28		U	2815	mg/kg	0.010	< 0.010	
PCB 52		U	2815	mg/kg	0.010	< 0.010	
PCB 101		U	2815	mg/kg	0.010	< 0.010	
PCB 118		U	2815	mg/kg	0.010	< 0.010	
PCB 153		U	2815	mg/kg	0.010	< 0.010	
PCB 138		U	2815	mg/kg	0.010	< 0.010	
PCB 180		U	2815	mg/kg	0.010	< 0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05	
Total Phenols		M	2920	mg/kg	0.10	< 0.10	

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-24474							
Chemtest Sample ID:	2005601							
Sample Ref:	*BH05*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*23-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	1.0	3	5	6
Loss On Ignition	2610		M	%	3.0	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.6	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.024	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0011	0.011	0.5	2	25
Barium	1455		U	0.006	0.061	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0005	0.0053	0.5	10	70
Copper	1455		U	0.0025	0.025	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0011	0.011	0.5	10	30
Nickel	1455		U	0.0012	0.012	0.4	10	40
Lead	1455		U	0.0010	0.010	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0005	0.0050	0.1	0.5	7
Zinc	1455		U	0.012	0.12	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.50	5.0	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	62	620	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.3	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.8
WAC Sample Weight	760.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-24474							
Chemtest Sample ID:	2005602							
Sample Ref:	*BH06*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*23-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.51	3	5	6
Loss On Ignition	2610		M	%	2.1	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		9.3	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.040	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0003	0.0031	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0007	0.0065	0.5	10	70
Copper	1455		U	0.0018	0.018	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0012	0.012	0.5	10	30
Nickel	1455		U	0.0008	0.0076	0.4	10	40
Lead	1455		U	0.0007	0.0070	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.030	0.30	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.33	3.3	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	52	520	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.9	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.3
WAC Sample Weight	831.3

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

Chemtest Job No:	25-24474					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	2005606							
Sample Ref:	*BH08*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*23-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.71	3	5	6
Loss On Ignition	2610		M	%	1.2	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.9	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.043	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0005	0.0049	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0009	0.0091	0.5	10	70
Copper	1455		U	0.0016	0.016	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0026	0.026	0.5	10	30
Nickel	1455		U	0.0010	0.0095	0.4	10	40
Lead	1455		U	0.0008	0.0079	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0007	0.0070	0.1	0.5	7
Zinc	1455		U	0.006	0.060	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.19	1.9	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	46	460	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	11
WAC Sample Weight	867.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-24474							
Chemtest Sample ID:	2005608							
Sample Ref:	*BH09*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*23-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.89	3	5	6
Loss On Ignition	2610		M	%	2.4	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.6	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.027	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	< 0.0002	< 0.0020	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	0.0079	0.079	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0061	0.061	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0009	0.0087	0.5	10	30
Nickel	1455		U	0.0019	0.020	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.066	0.66	4	50	200
Chloride	1220		U	1.2	12	800	15000	25000
Fluoride	1220		U	0.30	3.0	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	70	700	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.3	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.4
WAC Sample Weight	753.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

Chemtest Job No:	25-24474					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	2005609							
Sample Ref:	*BH11*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*23-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	1.1	3	5	6
Loss On Ignition	2610		M	%	1.8	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.031	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0009	0.0088	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	0.00021	0.0021	0.04	1	5
Chromium	1455		U	0.0006	0.0065	0.5	10	70
Copper	1455		U	0.0015	0.015	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0010	0.010	0.5	10	30
Nickel	1455		U	0.0008	0.0077	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0005	0.0055	0.1	0.5	7
Zinc	1455		U	0.011	0.11	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.21	2.1	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	56	560	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.6	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	11
WAC Sample Weight	811.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-24474							
Chemtest Sample ID:	2005610							
Sample Ref:	*BH12*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*23-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.93	3	5	6
Loss On Ignition	2610		M	%	1.1	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.8	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.032	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	< 0.0002	< 0.0020	0.5	2	25
Barium	1455		U	0.007	0.065	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0018	0.018	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0033	0.033	0.5	10	30
Nickel	1455		U	0.0006	0.0059	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0006	0.0056	0.1	0.5	7
Zinc	1455		U	0.008	0.081	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.26	2.6	10	150	500
Sulphate	1220		U	2.2	22	1000	20000	50000
Total Dissolved Solids	1020		N	51	510	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.7	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	9.2
WAC Sample Weight	1091

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
2005601	*BH05*			*23-Jul-2025*	E	Amber Glass 250ml
2005601	*BH05*			*23-Jul-2025*	E	Plastic Tub 500g
2005602	*BH06*			*23-Jul-2025*	E	Amber Glass 250ml
2005602	*BH06*			*23-Jul-2025*	E	Plastic Tub 500g
2005606	*BH08*			*23-Jul-2025*	E	Amber Glass 250ml
2005606	*BH08*			*23-Jul-2025*	E	Plastic Tub 500g
2005608	*BH09*			*23-Jul-2025*	E	Amber Glass 250ml
2005608	*BH09*			*23-Jul-2025*	E	Plastic Tub 500g
2005609	*BH11*			*23-Jul-2025*	E	Amber Glass 250ml
2005609	*BH11*			*23-Jul-2025*	E	Plastic Tub 500g
2005610	*BH12*			*23-Jul-2025*	E	Amber Glass 250ml
2005610	*BH12*			*23-Jul-2025*	E	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: cs@etuki.eurofins.com

Final Report

Report No.:	25-24940-1
Initial Date of Issue:	14-Aug-2025
Re-Issue Details:	
Client	*IGSL*
Client Address:	*M7 Business Park* *Naas* *County Kildare* *Ireland*
Contact(s):	*Darren Keogh*
Project	*25882 Gas to Edenderry GN1 (M1L)*
Quotation No.:	*Q25-38495*
Order No.:	
No. of Samples:	*4*
Turnaround (Wkdays):	10
Date Approved:	14-Aug-2025
Approved By:	
Details:	David Smith, Technical Director

Date Received:	29-Jul-2025
Date Instructed:	29-Jul-2025
Results Due:	11-Aug-2025

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: 25882 Gas to Edenderry GN1 (M1L)

Client: IGSL				**Chemtest Job No.:**		25-24940	25-24940
Quotation No.: Q25-38495				**Chemtest Sample ID.:**		2007560	2007562
Order No.:				*Client Sample Ref.:*		*BH07*	*BH46*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*
				Date Sampled:		*25-Jul-2025*	*25-Jul-2025*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
Ammonium	U	1220	10:1	mg/l	0.050	0.18	0.18
Ammonium	N	1220	10:1	mg/kg	0.10	2.1	2.3

Results - Soil

Project: 25882 Gas to Edenderry GN1 (M1L)

Client: IGSL				**Chemtest Job No.:**		25-24940	25-24940	25-24940	25-24940
Quotation No.: Q25-38495				**Chemtest Sample ID.:**		2007560	2007561	2007562	2007563
Order No.:				*Client Sample Ref.:*		*BH07*	*BH07*	*BH46*	*BH46*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*3.00*	*1.00*	*2.00*
				Date Sampled:		*25-Jul-2025*	*25-Jul-2025*	*25-Jul-2025*	*25-Jul-2025*
				Asbestos Lab:		DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**				
ACM Type		N	2192		N/A	-		-	
Asbestos Identification		U	2192		N/A	No Asbestos Detected		No Asbestos Detected	
Moisture		N	2030	%	0.020	11	9.1	13	18
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones and Roots	Stones	Stones	Stones and Roots
Soil Texture		N	2030		N/A	Clay	Clay	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0		8.2		8.3
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40		< 0.40	
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010		< 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		0.12		0.14
Total Sulphur		U	2175	%	0.010		0.35		0.15
Sulphur (Elemental)		M	2180	mg/kg	1.0	< 1.0		< 1.0	
Chloride (Water Soluble)		M	2220	g/l	0.010		0.012		< 0.010
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010		< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50		< 0.50	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	3.1		6.1	
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01		< 0.01
Sulphate (Total)		U	2430	%	0.010	0.038		0.082	
Sulphate (Acid Soluble)		U	2430	%	0.010		0.047		0.031
Arsenic		M	2455	mg/kg	0.5	4.0		8.6	
Barium		M	2455	mg/kg	0.5	58		110	
Cadmium		M	2455	mg/kg	0.10	< 0.10		0.44	
Chromium		M	2455	mg/kg	0.5	6.0		9.7	
Molybdenum		M	2455	mg/kg	0.5	< 0.5		< 0.5	
Antimony		N	2455	mg/kg	2.0	< 2.0		< 2.0	
Copper		M	2455	mg/kg	0.50	6.9		11	
Mercury		M	2455	mg/kg	0.05	< 0.05		< 0.05	
Nickel		M	2455	mg/kg	0.50	20		32	
Lead		M	2455	mg/kg	0.50	5.7		8.8	
Selenium		M	2455	mg/kg	0.25	< 0.25		0.39	
Zinc		M	2455	mg/kg	0.50	35		58	
Chromium (Trivalent)		N	2490	mg/kg	1.0	6.0		9.7	
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50		< 0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	

Results - Soil

Project: 25882 Gas to Edenderry GN1 (M1L)

Client: IGSL				**Chemtest Job No.:**		25-24940	25-24940	25-24940	25-24940
Quotation No.: Q25-38495				**Chemtest Sample ID.:**		2007560	2007561	2007562	2007563
Order No.:				*Client Sample Ref.:*		*BH07*	*BH07*	*BH46*	*BH46*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*3.00*	*1.00*	*2.00*
				Date Sampled:		*25-Jul-2025*	*25-Jul-2025*	*25-Jul-2025*	*25-Jul-2025*
				Asbestos Lab:		DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**				
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25		< 0.25	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0		3.1	
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0		3.5	
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0		< 2.0	
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	< 3.0		< 3.0	
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10		< 10	
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	< 5.0		9.5	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25		< 0.25	
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		34	
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		34	
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	7.2		14	
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	5.8		5.2	
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	< 1.0		< 1.0	
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	13		87	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50		< 0.50	
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	16		96	
Mineral Oil EPH		N	2670	mg/kg	10	< 10		< 10	
Benzene		M	2760	µg/kg	1.0	< 1.0		< 1.0	
Toluene		M	2760	µg/kg	1.0	< 1.0		< 1.0	
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0		< 1.0	
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0	
o-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0		< 1.0	
Naphthalene		M	2800	mg/kg	0.10	0.32		< 0.10	
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10		< 0.10	
Acenaphthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	
Fluorene		M	2800	mg/kg	0.10	< 0.10		< 0.10	
Phenanthrene		M	2800	mg/kg	0.10	0.47		< 0.10	
Anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10	
Fluoranthene		M	2800	mg/kg	0.10	0.13		< 0.10	
Pyrene		M	2800	mg/kg	0.10	0.15		< 0.10	
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10	
Chrysene		M	2800	mg/kg	0.10	< 0.10		< 0.10	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	

Results - Soil

Project: 25882 Gas to Edenderry GN1 (M1L)

Client: IGSL				**Chemtest Job No.:**		25-24940	25-24940	25-24940	25-24940
Quotation No.: Q25-38495				**Chemtest Sample ID.:**		2007560	2007561	2007562	2007563
Order No.:				*Client Sample Ref.:*		*BH07*	*BH07*	*BH46*	*BH46*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*3.00*	*1.00*	*2.00*
				Date Sampled:		*25-Jul-2025*	*25-Jul-2025*	*25-Jul-2025*	*25-Jul-2025*
				Asbestos Lab:		DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**				
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10		< 0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10		< 0.10	
Coronene		N	2800	mg/kg	0.10	< 0.10		< 0.10	
PCB 28		U	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 52		U	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 101		U	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 118		U	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 153		U	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 138		U	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 180		U	2815	mg/kg	0.010	< 0.010		< 0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05		< 0.05	
Total Phenols		M	2920	mg/kg	0.10	< 0.10		< 0.10	

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GN1 (M1L)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-24940							
Chemtest Sample ID:	2007560							
Sample Ref:	*BH07*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*25-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.61	3	5	6
Loss On Ignition	2610		M	%	1.8	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	1.1	100	--	--
pH at 20C	2010		M		8.0	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.011	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0012	0.012	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0008	0.0080	0.5	10	70
Copper	1455		U	0.0016	0.016	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0035	0.035	0.5	10	30
Nickel	1455		U	0.0012	0.012	0.4	10	40
Lead	1455		U	0.0008	0.0082	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.006	0.057	4	50	200
Chloride	1220		U	1.2	12	800	15000	25000
Fluoride	1220		U	0.32	3.2	10	150	500
Sulphate	1220		U	1.7	17	1000	20000	50000
Total Dissolved Solids	1020		N	50	500	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.7	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	20
WAC Sample Weight	782.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GN1 (M1L)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-24940							
Chemtest Sample ID:	2007562							
Sample Ref:	*BH46*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*25-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.46	3	5	6
Loss On Ignition	2610		M	%	1.5	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.3	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.024	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0011	0.011	0.5	2	25
Barium	1455		U	0.005	0.054	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0015	0.015	0.5	10	70
Copper	1455		U	0.0030	0.030	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0029	0.030	0.5	10	30
Nickel	1455		U	0.0027	0.027	0.4	10	40
Lead	1455		U	0.0015	0.015	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.009	0.088	4	50	200
Chloride	1220		U	1.1	11	800	15000	25000
Fluoride	1220		U	0.85	8.5	10	150	500
Sulphate	1220		U	5.7	57	1000	20000	50000
Total Dissolved Solids	1020		N	54	540	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	11
WAC Sample Weight	721.3

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
2007560	*BH07*			*25-Jul-2025*	E	Amber Glass 250ml
2007560	*BH07*			*25-Jul-2025*	E	Plastic Tub 500g
2007562	*BH46*			*25-Jul-2025*	E	Amber Glass 250ml
2007562	*BH46*			*25-Jul-2025*	E	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	PL GW
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

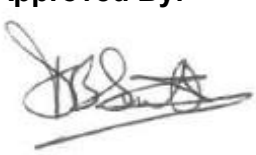
Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: cs@etuki.eurofins.com

Final Report

Report No.:	25-25515-1
Initial Date of Issue:	19-Aug-2025
Re-Issue Details:	
Client	*IGSL*
Client Address:	*M7 Business Park* *Naas* *County Kildare* *Ireland*
Contact(s):	*Darren Keogh*
Project	*25882 Gas to Edenderry GNI (MIL)*
Quotation No.:	*Q24-34387*
Order No.:	
No. of Samples:	*8*
Turnaround (Wkdays):	10
Date Approved:	19-Aug-2025
Approved By:	



Details:	David Smith, Technical Director

Date Received:	02-Aug-2025		
Date Instructed:	02-Aug-2025		
Results Due:	14-Aug-2025		

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-25515	25-25515	25-25515	25-25515
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2009583	2009585	2009587	2009589
Order No.:				*Client Sample Ref.:*		*BH10*	*BH13A*	*BH48*	*BH49A*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*0.5*	*0.5*	*0.5*
				Date Sampled:		*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**				
Ammonium	U	1220	10:1	mg/l	0.050	< 0.050	< 0.050	< 0.050	< 0.050
Ammonium	N	1220	10:1	mg/kg	0.10	0.27	0.15	0.18	0.30

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-25515	25-25515	25-25515	25-25515	25-25515	25-25515	25-25515
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2009583	2009584	2009585	2009586	2009587	2009588	2009589
Order No.:				*Client Sample Ref.:*		*BH10*	*BH10*	*BH13A*	*BH13A*	*BH48*	*BH48*	*BH49A*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*0.5*	*1.00*	*0.5*	*1.00*	*0.5*
				Date Sampled:		*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*
				Asbestos Lab:		DURHAM		DURHAM		DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		N	2192		N/A	-		-		-		-
Asbestos Identification		U	2192		N/A	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected
Moisture		N	2030	%	0.020	13	20	15	12	14	18	18
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones	None	Roots and Stones	Stones	Stones	Stones	None
Soil Texture		N	2030		N/A	Clay	Clay	Clay	Clay	Sand	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0		8.3		8.6		8.7	
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40		< 0.40		< 0.40		< 0.40
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010		< 0.010		< 0.010	
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		0.021		< 0.010		< 0.010	
Total Sulphur		U	2175	%	0.010		0.076		0.018		0.022	
Sulphur (Elemental)		M	2180	mg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Chloride (Water Soluble)		M	2220	g/l	0.010		< 0.010		< 0.010		< 0.010	
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010		< 0.010		< 0.010	
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50		< 0.50		< 0.50		< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.5		2.5		2.1		2.3
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01		< 0.01		< 0.01	
Sulphate (Total)		U	2430	%	0.010	0.069		0.058		0.027		0.030
Sulphate (Acid Soluble)		U	2430	%	0.010		< 0.010		0.013		0.019	
Arsenic		M	2455	mg/kg	0.5	10		6.4		3.1		11
Barium		M	2455	mg/kg	0.5	130		44		23		67
Cadmium		M	2455	mg/kg	0.10	0.82		0.87		< 0.10		2.1
Chromium		M	2455	mg/kg	0.5	14		19		11		22
Molybdenum		M	2455	mg/kg	0.5	< 0.5		< 0.5		< 0.5		< 0.5
Antimony		N	2455	mg/kg	2.0	< 2.0		< 2.0		< 2.0		< 2.0
Copper		M	2455	mg/kg	0.50	14		20		10		27
Mercury		M	2455	mg/kg	0.05	0.05		0.05		< 0.05		0.09
Nickel		M	2455	mg/kg	0.50	34		50		20		77
Lead		M	2455	mg/kg	0.50	16		17		8.3		21
Selenium		M	2455	mg/kg	0.25	0.81		0.42		< 0.25		0.66
Zinc		M	2455	mg/kg	0.50	72		97		56		130
Chromium (Trivalent)		N	2490	mg/kg	1.0	14		19		11		22
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50		< 0.50		< 0.50		< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-25515	25-25515	25-25515	25-25515	25-25515	25-25515	25-25515
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2009583	2009584	2009585	2009586	2009587	2009588	2009589
Order No.:				*Client Sample Ref.:*		*BH10*	*BH10*	*BH13A*	*BH13A*	*BH48*	*BH48*	*BH49A*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*0.5*	*1.00*	*0.5*	*1.00*	*0.5*
				Date Sampled:		*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*
				Asbestos Lab:		DURHAM		DURHAM		DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25		< 0.25		< 0.25		< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	2.2		2.3		2.6		2.5
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0		< 1.0		< 1.0		< 1.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0		< 2.0		< 2.0		< 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	< 3.0		< 3.0		< 3.0		< 3.0
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10		< 10		< 10		< 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	< 5.0		5.4		< 5.0		< 5.0
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25		< 0.25		< 0.25		< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		< 1.0		< 1.0		< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		< 1.0		< 1.0		< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	< 2.0		< 2.0		< 2.0		< 2.0
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	6.7		7.1		< 2.0		6.0
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	6.3		< 1.0		< 1.0		< 1.0
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	7.2		7.1		< 5.0		6.9
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50		< 0.50		< 0.50		< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	11		12		< 10		10
Mineral Oil EPH		N	2670	mg/kg	10	< 10		< 10		< 10		< 10
Benzene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Naphthalene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-25515	25-25515	25-25515	25-25515	25-25515	25-25515	25-25515
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2009583	2009584	2009585	2009586	2009587	2009588	2009589
Order No.:				*Client Sample Ref.:*		*BH10*	*BH10*	*BH13A*	*BH13A*	*BH48*	*BH48*	*BH49A*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*0.5*	*1.00*	*0.5*	*1.00*	*0.5*
				Date Sampled:		*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*
				Asbestos Lab:		DURHAM		DURHAM		DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Coronene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
PCB 28		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 52		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 101		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 118		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 153		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 138		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 180		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Total Phenols		M	2920	mg/kg	0.10	1.1		0.25		< 0.10		< 0.10

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-25515
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2009590
Order No.:				*Client Sample Ref.:*		*BH49A*
				Sample Type:		*SOIL*
				Top Depth (m):		*1.00*
				Date Sampled:		*30-Jul-2025*
				Asbestos Lab:		
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**	
ACM Type		N	2192		N/A	
Asbestos Identification		U	2192		N/A	
Moisture		N	2030	%	0.020	13
Soil Colour		N	2030		N/A	Brown
Other Material		N	2030		N/A	Stones
Soil Texture		N	2030		N/A	Clay
pH (2.5:1) at 20C		N	2010		4.0	8.6
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	
Magnesium (Water Soluble)		N	2120	g/l	0.010	< 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.011
Total Sulphur		U	2175	%	0.010	0.018
Sulphur (Elemental)		M	2180	mg/kg	1.0	
Chloride (Water Soluble)		M	2220	g/l	0.010	< 0.010
Nitrate (Water Soluble)		N	2220	g/l	0.010	< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	
Ammonium (Water Soluble)		M	2220	g/l	0.01	< 0.01
Sulphate (Total)		U	2430	%	0.010	
Sulphate (Acid Soluble)		U	2430	%	0.010	< 0.010
Arsenic		M	2455	mg/kg	0.5	
Barium		M	2455	mg/kg	0.5	
Cadmium		M	2455	mg/kg	0.10	
Chromium		M	2455	mg/kg	0.5	
Molybdenum		M	2455	mg/kg	0.5	
Antimony		N	2455	mg/kg	2.0	
Copper		M	2455	mg/kg	0.50	
Mercury		M	2455	mg/kg	0.05	
Nickel		M	2455	mg/kg	0.50	
Lead		M	2455	mg/kg	0.50	
Selenium		M	2455	mg/kg	0.25	
Zinc		M	2455	mg/kg	0.50	
Chromium (Trivalent)		N	2490	mg/kg	1.0	
Chromium (Hexavalent)		N	2490	mg/kg	0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-25515
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2009590
Order No.:				*Client Sample Ref.:*		*BH49A*
				Sample Type:		*SOIL*
				Top Depth (m):		*1.00*
				Date Sampled:		*30-Jul-2025*
				Asbestos Lab:		
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**	
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	
Mineral Oil EPH		N	2670	mg/kg	10	
Benzene		M	2760	µg/kg	1.0	
Toluene		M	2760	µg/kg	1.0	
Ethylbenzene		M	2760	µg/kg	1.0	
m & p-Xylene		M	2760	µg/kg	1.0	
o-Xylene		M	2760	µg/kg	1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	
Naphthalene		M	2800	mg/kg	0.10	
Acenaphthylene		N	2800	mg/kg	0.10	
Acenaphthene		M	2800	mg/kg	0.10	
Fluorene		M	2800	mg/kg	0.10	
Phenanthrene		M	2800	mg/kg	0.10	
Anthracene		M	2800	mg/kg	0.10	
Fluoranthene		M	2800	mg/kg	0.10	
Pyrene		M	2800	mg/kg	0.10	
Benzo[a]anthracene		M	2800	mg/kg	0.10	
Chrysene		M	2800	mg/kg	0.10	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	
Benzo[a]pyrene		M	2800	mg/kg	0.10	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-25515
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2009590
Order No.:				*Client Sample Ref.:*		*BH49A*
				Sample Type:		*SOIL*
				Top Depth (m):		*1.00*
				Date Sampled:		*30-Jul-2025*
				Asbestos Lab:		
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**	
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	
Coronene		N	2800	mg/kg	0.10	
PCB 28		U	2815	mg/kg	0.010	
PCB 52		U	2815	mg/kg	0.010	
PCB 101		U	2815	mg/kg	0.010	
PCB 118		U	2815	mg/kg	0.010	
PCB 153		U	2815	mg/kg	0.010	
PCB 138		U	2815	mg/kg	0.010	
PCB 180		U	2815	mg/kg	0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	
Total Phenols		M	2920	mg/kg	0.10	

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-25515							
Chemtest Sample ID:	2009583							
Sample Ref:	*BH10*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*30-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	1.1	3	5	6
Loss On Ignition	2610		M	%	1.2	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.8	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.027	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0004	0.0042	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0016	0.016	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0016	0.016	0.5	10	30
Nickel	1455		U	0.0011	0.011	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.005	0.048	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.15	1.5	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	63	630	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	< 2.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	12
WAC Sample Weight	1110

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

Chemtest Job No:	25-25515					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	2009585							
Sample Ref:	*BH13A*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*0.5*							
Bottom Depth(m):								
Sampling Date:	*30-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.61	3	5	6
Loss On Ignition	2610		M	%	2.6	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.6	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.025	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0014	0.014	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0011	0.011	0.5	10	70
Copper	1455		U	0.0048	0.048	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0012	0.012	0.5	10	30
Nickel	1455		U	0.0067	0.067	0.4	10	40
Lead	1455		U	0.0016	0.016	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.018	0.18	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.13	1.3	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	56	550	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	15
WAC Sample Weight	989.6

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-25515							
Chemtest Sample ID:	2009587							
Sample Ref:	*BH48*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.5*							
Bottom Depth(m):								
Sampling Date:	*30-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.31	3	5	6
Loss On Ignition	2610		M	%	1.7	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.6	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.023	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0010	0.010	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0016	0.016	0.5	10	70
Copper	1455		U	0.0050	0.050	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0008	0.0081	0.5	10	30
Nickel	1455		U	0.0035	0.035	0.4	10	40
Lead	1455		U	0.0014	0.014	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.020	0.20	4	50	200
Chloride	1220		U	1.5	15	800	15000	25000
Fluoride	1220		U	0.22	2.2	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	58	580	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.9	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	15
WAC Sample Weight	808.9

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

Chemtest Job No:	25-25515					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	2009589							
Sample Ref:	*BH49A*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*0.5*							
Bottom Depth(m):								
Sampling Date:	*30-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.25	3	5	6
Loss On Ignition	2610		M	%	2.5	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.3	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.021	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0003	0.0035	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0016	0.016	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0030	0.030	0.5	10	30
Nickel	1455		U	0.0026	0.026	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.004	0.039	4	50	200
Chloride	1220		U	2.2	22	800	15000	25000
Fluoride	1220		U	0.22	2.2	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	76	760	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.8	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	21
WAC Sample Weight	1012

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
2009583	*BH10*			*30-Jul-2025*	E	Amber Glass 250ml
2009583	*BH10*			*30-Jul-2025*	E	Plastic Tub 500g
2009585	*BH13A*			*30-Jul-2025*	E	Amber Glass 250ml
2009585	*BH13A*			*30-Jul-2025*	E	Plastic Tub 500g
2009587	*BH48*			*30-Jul-2025*	E	Amber Glass 250ml
2009587	*BH48*			*30-Jul-2025*	E	Plastic Tub 500g
2009589	*BH49A*			*30-Jul-2025*	E	Amber Glass 250ml
2009589	*BH49A*			*30-Jul-2025*	E	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	PL GW
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Appendix 10

Geotechnical Laboratory Results (Rock)

HCC1 (PLSI + UCS)
HCC2 (PLSI + UCS)
HCC3 (PLSI + UCS)
HCC4 (PLSI + UCS)
Kilwarden (PLSI + UCS)

Slake Durability
Cerchar Abrasivity

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Gas to Bord na Mona
HCC1
Contract no. 25882

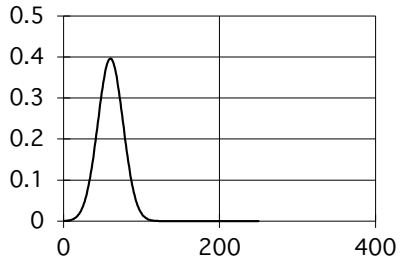
Sample Type: Core
Date of test: 08/08/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC16A	14.9	78	12.7	1.222	2.08	2.54	56	d	//
	16.6	78	16.9	1.222	2.77	3.38	74	d	//
	18.5	78	4.9	1.222	0.81	0.99	22	d	//
	18.7	78	8.1	1.222	1.33	1.62	36	d	//
	20.1	78	11.5	1.222	1.88	2.30	51	d	//
RC17	16.3	78	10.3	1.222	1.70	2.07	46	d	//
	17.8	78	12.1	1.222	1.99	2.43	54	d	//
	19.4	78	16.3	1.222	2.68	3.28	72	d	//
RC18	16.7	78	12.9	1.222	2.11	2.58	57	d	//
	18.7	78	16.6	1.222	2.72	3.33	73	d	//
	19.9	78	18.5	1.222	3.05	3.72	82	d	//
RC50	15.2	78	16.3	1.222	2.69	3.28	72	d	//
	16.4	78	13.7	1.222	2.26	2.76	61	d	//
	18.1	78	15.7	1.222	2.58	3.15	69	d	//
	19.3	78	14.5	1.222	2.39	2.92	64	d	//
	20.6	78	16.8	1.222	2.76	3.38	74	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	16	16
Minimum	0.99	22
Average	2.73	60
Maximum	3.72	82
Standard Dev.	0.73	16
Upper 95% Confidence Limit	4.17	91.70
Lower 95% Confidence Limit	1.30	28.57

Comments:
*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC16A
Depth (m):	17.50m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

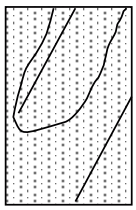
Sample Measurements

Length	189	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	189	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{189000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 39.55 (Mpa)

Bulk Density = 2.63 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC16A
Depth (m):	19.50m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

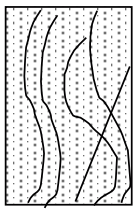
Sample Measurements

Length	1697	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	267	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength $= \dfrac{267000}{4775.94}$

$= \dfrac{1000 \times P}{\prod \times (Ø/2)^2}$

= 55.88 (Mpa)

Bulk Density = 2.64 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC17
Depth (m):	19.80m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE - Dolomitised

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

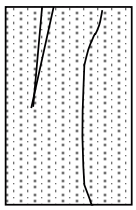
Sample Measurements

Length	198	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	216	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength $= \dfrac{216000}{4775.94}$

$= \dfrac{1000 \times P}{\prod \times (Ø/2)^2}$

$=$ 45.20 (Mpa)

Bulk Density $=$ 2.66 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC17
Depth (m):	20.20m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE - Dolomitised

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

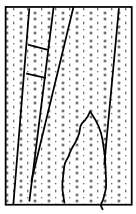
Sample Measurements

Length	196	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	220	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength $= \dfrac{220000}{4775.94}$

$= \dfrac{1000 \times P}{\prod \times (Ø/2)^2}$

= 46.04 (Mpa)

Bulk Density = 2.62 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC18
Depth (m):	17.40m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE - Dolomitised

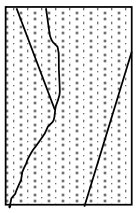
Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

Sample Measurements

Length	196	
Diameter (Ø)	78	mm

Sketch of Failure Surfaces



Testing

Load Rate	4.3	kN/min
Load at Failure (P)	120	kN

Strength Calculations

Uniaxial Compressive Strength $= \dfrac{120000}{4775.94}$

$= \dfrac{1000 \times P}{\prod \times (Ø/2)^2}$

$=$ 25.11 (Mpa)

Bulk Density $=$ 2.61 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC18
Depth (m):	17.90m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE - Dolomitised

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

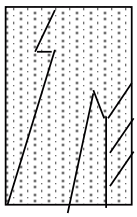
Sample Measurements

Length	194	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	217	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{217000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 45.41 (Mpa)

Bulk Density = 2.61 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC50
Depth (m):	16.60m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

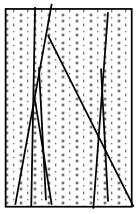
Sample Measurements

Length	196	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	292	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{292000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 61.11 (Mpa)

Bulk Density = 2.62 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC50
Depth (m):	19.70m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

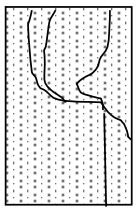
Sample Measurements

Length	197	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	60	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength $= \dfrac{60000}{4775.94}$

$= \dfrac{1000 \times P}{\prod \times (Ø/2)^2}$

= 12.56 (Mpa)

Bulk Density = 2.62 (Mg/m^3)

Notes:

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Gas to Bord Na Mona
Contract no. 25882

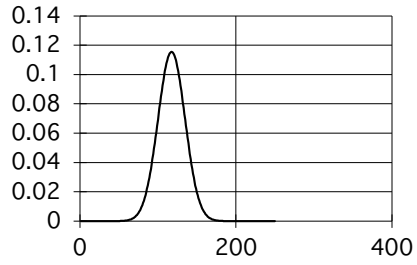
Sample Type: Core
Date of test: 18/09/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orientation
RC53	14.1	78	31.0	1.222	5.10	6.22	137	d	//
	15.8	78	28.0	1.222	4.60	5.62	124	d	//
	17.2	78	22.0	1.222	3.62	4.42	97	d	//
	18.1	78	29.0	1.222	4.77	5.82	128	d	//
	18.5	78	23.0	1.222	3.78	4.62	102	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	5	5
Minimum	4.42	97
Average	5.34	117
Maximum	6.22	137
Standard Dev.	0.79	17
Upper 95% Confidence Limit	6.88	151.36
Lower 95% Confidence Limit	3.80	83.63

Comments:
*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Gas to Bord Na Mona

Contract no. 25882

Sample Type: Core

Date of test: 18/09/2025

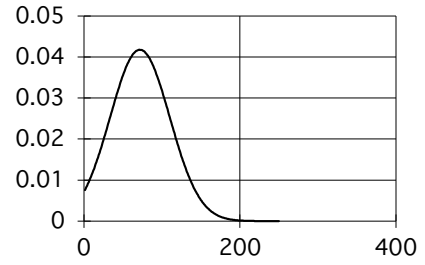
RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orientation
RC54	16.3	78	8.0	1.222	1.31	1.61	35	d	//
	17.6	78	10.0	1.222	1.64	2.01	44	d	//
	19.4	78	26.0	1.222	4.27	5.22	115	d	//
	20.3	78	21.0	1.222	3.45	4.22	93	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	4	4
Minimum	1.61	35
Average	3.26	72
Maximum	5.22	115
Standard Dev.	1.74	38
Upper 95% Confidence Limit	6.67	146.71
Lower 95% Confidence Limit	-0.14	-3.16

Comments:

*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

Uniaxial Compression Test Report Sheet | I.G.S.L.

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC53
Depth (m):	14.60m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

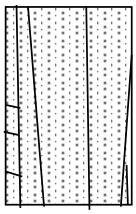
Sample Measurements

Length	197	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	214	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength $= \dfrac{214000}{4775.94}$

$= \dfrac{1000 \times P}{\prod \times (Ø/2)^2}$

= 44.79 (Mpa)

Bulk Density = 2.62 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC53
Depth (m):	18.50m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

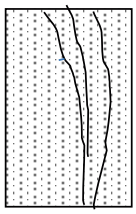
Sample Measurements

Length	197	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	305	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{305000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 63.83 (Mpa)

Bulk Density = 2.51 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC54
Depth (m):	18.60m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

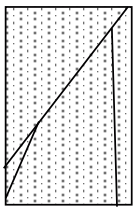
Sample Measurements

Length	198	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	298	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{298000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 62.36 (Mpa)

Bulk Density = 2.62 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | I.G.S.L.

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC54
Depth (m):	19.80m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

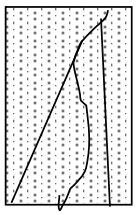
Sample Measurements

Length	194	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	342	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{342000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 71.57 (Mpa)

Bulk Density = 2.64 (Mg/m^3)

Notes:

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Gas to Bord Na Mona Edenderry
Contract no. 25882

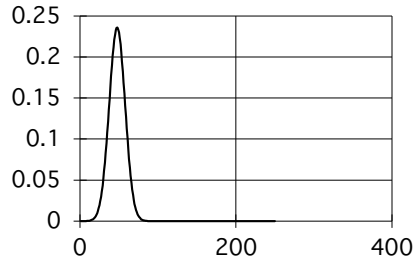
Sample Type: Core
Date of test: 19/08/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC08	15.0	78	12.8	1.222	2.10	2.57	51	d	//
	16.9	78	10.2	1.222	1.68	2.05	41	d	//
	17.0	78	8.6	1.222	1.41	1.73	35	d	//
	17.8	78	15.3	1.222	2.51	3.07	61	d	//
	18.4	78	13.9	1.222	2.28	2.78	56	d	//
	18.8	78	10.5	1.222	1.73	2.11	42	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	6	6
Minimum	1.73	35
Average	2.38	48
Maximum	3.07	61
Standard Dev.	0.51	10
Upper 95% Confidence Limit	3.38	67.59
Lower 95% Confidence Limit	1.39	27.80

Comments:
*UCS taken as k x Point Load Is(50): k= 20

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

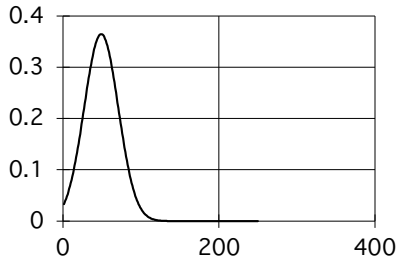
Contract: Gas to Bord Na Mona Edenderry
Contract no. 25882
Sample Type: Core
Date of test: 19/08/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC09	15.1	78	5.6	1.222	0.92	1.12	22	d	//
	16.5	78	2.5	1.222	0.41	0.50	10	d	//
	17.3	78	13.1	1.222	2.15	2.62	52	d	//
	17.5	78	15.4	1.222	2.53	3.09	62	d	//
	19.0	78	17.7	1.222	2.91	3.55	71	d	//
	19.6	78	15.8	1.222	2.60	3.17	63	d	//
RC10	10.5	78	3.8	1.222	0.63	0.76	15	d	//
	12.5	78	10.4	1.222	1.70	2.08	42	d	//
	13.3	78	12.8	1.222	2.11	2.57	51	d	//
	14.0	78	5.6	1.222	0.92	1.12	22	d	//
	14.8	78	3.3	1.222	0.54	0.66	13	d	//
	17.8	78	10.5	1.222	1.72	2.10	42	d	//
	18.5	78	16.6	1.222	2.73	3.33	67	d	//
	19.4	78	16.4	1.222	2.70	3.29	66	d	//
RC11	11.0	78	19.9	1.222	3.27	4.00	80	d	//
	11.6	78	18.6	1.222	3.05	3.73	75	d	//
	13.3	78	12.3	1.222	2.01	2.46	49	d	//
	13.6	78	14.2	1.222	2.34	2.86	57	d	//
	15.4	78	12.3	1.222	2.02	2.46	49	d	//
	16.8	78	17.8	1.222	2.93	3.57	71	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	20	20
Minimum	0.50	10
Average	2.45	49
Maximum	4.00	80
Standard Dev.	1.09	22
Upper 95% Confidence Limit	4.60	91.97
Lower 95% Confidence Limit	0.31	6.17

Comments:
*UCS taken as k x Point Load Is(50): k= 20

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Gas to Bord Na Mona Edenderry
Contract no. 25882

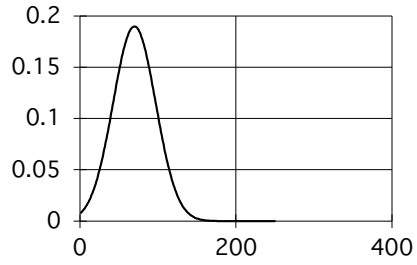
Sample Type: Core
Date of test: 19/08/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC12	10.0	78	29.9	1.222	4.91	6.00	120	d	//
	11.3	78	25.6	1.222	4.20	5.13	103	d	//
	12.2	78	18.7	1.222	3.07	3.75	75	d	//
	12.8	78	15.8	1.222	2.60	3.17	63	d	//
	14.0	78	17.6	1.222	2.90	3.54	71	d	//
	14.9	78	17.2	1.222	2.82	3.45	69	d	//
RC49A	10.0	78	4.6	1.222	0.75	0.91	18	d	//
	11.5	78	15.0	1.222	2.47	3.01	60	d	//
	12.4	78	11.2	1.222	1.84	2.25	45	d	//
	14.0	78	20.6	1.222	3.39	4.14	83	d	//
	14.8	78	18.2	1.222	2.99	3.65	73	d	//
	16.4	78	23.1	1.222	3.80	4.64	93	d	//
	17.1	78	8.7	1.222	1.42	1.74	35	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	13	13
Minimum	0.91	18
Average	3.49	70
Maximum	6.00	120
Standard Dev.	1.37	27
Upper 95% Confidence Limit	6.17	123.43
Lower 95% Confidence Limit	0.81	16.24

Comments:
*UCS taken as k x Point Load Is(50): k= 20

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Gas to Bord Na Mona
Contract no. 25882

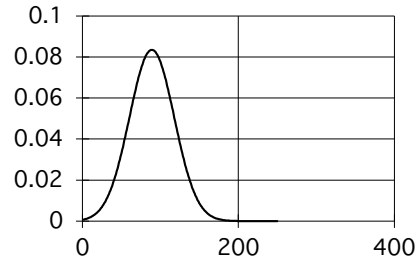
Sample Type: Core
Date of test: 18/09/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC07	12.7	78	11.0	1.222	1.81	2.21	49	d	//
	14.0	78	26.0	1.222	4.27	5.22	115	d	//
	16.0	78	28.0	1.222	4.60	5.62	124	d	//
	18.8	78	22.0	1.222	3.62	4.42	97	d	//
	18.9	78	15.0	1.222	2.47	3.01	66	d	//
	19.7	78	19.0	1.222	3.12	3.81	84	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	6	6
Minimum	2.21	49
Average	4.05	89
Maximum	5.62	124
Standard Dev.	1.30	29
Upper 95% Confidence Limit	6.60	145.30
Lower 95% Confidence Limit	1.49	32.86

Comments:
*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Gas to Bord Na Mona
Contract no. 25882

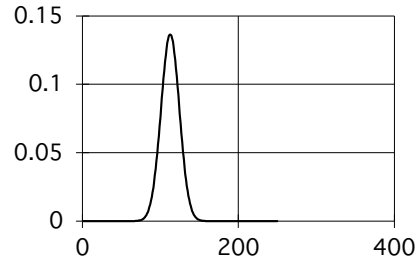
Sample Type: Core
Date of test: 18/09/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC46	12.0	78	28.0	1.222	4.60	5.62	124	d	//
	12.4	78	27.0	1.222	4.44	5.42	119	d	//
	15.3	78	22.0	1.222	3.62	4.42	97	d	//
	16.6	78	25.0	1.222	4.11	5.02	110	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	4	4
Minimum	4.42	97
Average	5.12	113
Maximum	5.62	124
Standard Dev.	0.53	12
Upper 95% Confidence Limit	6.16	135.54
Lower 95% Confidence Limit	4.08	89.73

Comments:
*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Gas to Bord Na Mona Edenderry
Contract no. 25882

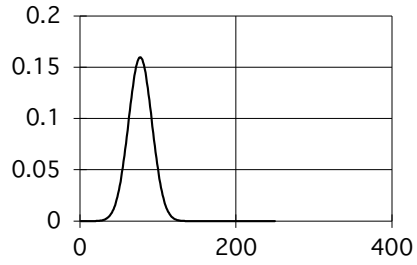
Sample Type: Core
Date of test: 02/09/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC48	10.5	78	14.0	1.222	2.30	2.81	62	d	//
	11.7	78	18.0	1.222	2.96	3.61	80	d	//
	12.7	78	17.0	1.222	2.79	3.41	75	d	//
	14.2	78	19.0	1.222	3.12	3.81	84	d	//
	15.0	78	14.0	1.222	2.30	2.81	62	d	//
	16.8	78	23.0	1.222	3.78	4.62	102	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	6	6
Minimum	2.81	62
Average	3.51	77
Maximum	4.62	102
Standard Dev.	0.68	15
Upper 95% Confidence Limit	4.85	106.66
Lower 95% Confidence Limit	2.18	47.94

Comments:
*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC07
Depth (m):	16.30m

Sample Description

Colour:	Dark grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

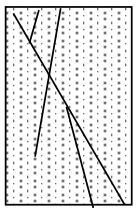
Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

Sample Measurements

Length	190	
Diameter (Ø)	78.1	mm

Sketch of Failure Surfaces



Testing

Load Rate	4.3	kN/min
Load at Failure (P)	338	kN

Strength Calculations

Uniaxial Compressive Strength = $\frac{338000}{4788.19385}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 70.55 (Mpa)

Bulk Density = 2.64 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC07
Depth (m):	17.80m

Sample Description

Colour:	Dark grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

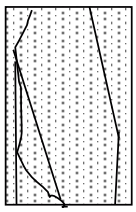
Sample Measurements

Length	191	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	219	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength $= \dfrac{219000}{4775.94}$

$= \dfrac{1000 \times P}{\prod \times (Ø/2)^{\wedge}2}$

$=$ 45.83 (Mpa)

Bulk Density $=$ 2.62 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC08
Depth (m):	16.80m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

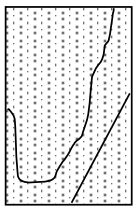
Sample Measurements

Length	196	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	99	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength $= \dfrac{99000}{4775.94}$

$= \dfrac{1000 \times P}{\prod \times (Ø/2)^{\wedge}2}$

$=$ 20.72 (Mpa)

Bulk Density $=$ 2.61 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC08
Depth (m):	18.40m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

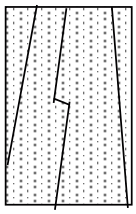
Sample Measurements

Length	196	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	167	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{167000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 34.95 (Mpa)

Bulk Density = 2.64 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC09
Depth (m):	16.90m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

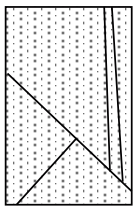
Sample Measurements

Length	199	
Diameter (Ø)	78.1	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	72	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{72000}{4788.19385}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^{\wedge}2}$

= 15.03 (Mpa)

Bulk Density = 2.64 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC09
Depth (m):	18.70m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

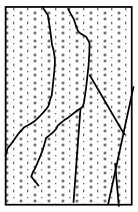
Sample Measurements

Length	201	
Diameter (Ø)	78.1	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	216	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{216000}{4788.19385}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 45.09 (Mpa)

Bulk Density = 2.63 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC10
Depth (m):	14.60m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE - Dolomitised

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

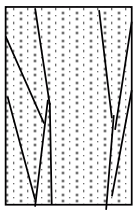
Sample Measurements

Length	197	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	123	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{123000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 25.74 (Mpa)

Bulk Density = 2.65 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC10
Depth (m):	15.80m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE - Dolomitised

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

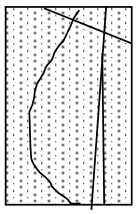
Sample Measurements

Length	197	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	198	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{198000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 41.44 (Mpa)

Bulk Density = 2.63 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC11
Depth (m):	11.40m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

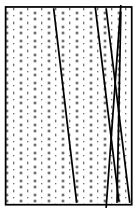
Sample Measurements

Length	199	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	188	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{188000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 39.34 (Mpa)

Bulk Density = 2.65 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | I.G.S.L.

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC11
Depth (m):	16.30m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

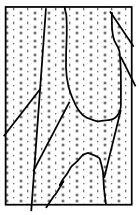
Sample Measurements

Length	194	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	156	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{156000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 32.65 (Mpa)

Bulk Density = 2.61 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC12
Depth (m):	13.90m

Sample Description

Colour:	Dark grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE - Muddy

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

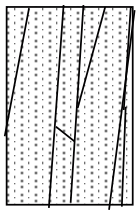
Sample Measurements

Length	197	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	170	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{170000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 35.58 (Mpa)

Bulk Density = 2.63 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC12
Depth (m):	14.80m

Sample Description

Colour:	Dark grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE - Muddy

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

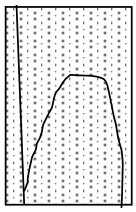
Sample Measurements

Length	196	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	137	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength $= \dfrac{137000}{4775.94}$

$= \dfrac{1000 \times P}{\prod \times (Ø/2)^2}$

$=$ 28.67 (Mpa)

Bulk Density $=$ 2.64 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC46
Depth (m):	14.00m

Sample Description

Colour:	Light grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

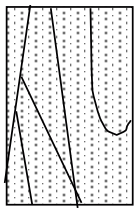
Sample Measurements

Length	196	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	259	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{259000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 54.20 (Mpa)

Bulk Density = 2.60 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC48
Depth (m):	12.90m

Sample Description

Colour:	Dark grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

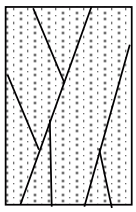
Sample Measurements

Length	194	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	197	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{197000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 41.23 (Mpa)

Bulk Density = 2.63 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC48
Depth (m):	15.80m

Sample Description

Colour:	Dark grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

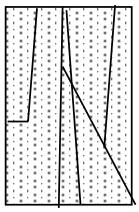
Sample Measurements

Length	197	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	362	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength $= \dfrac{362000}{4775.94}$

$= \dfrac{1000 \times P}{\prod \times (Ø/2)^2}$

= 75.76 (Mpa)

Bulk Density = 2.64 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC49A
Depth (m):	12.60m

Sample Description

Colour:	Dark grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

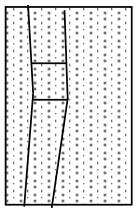
Sample Measurements

Length	197	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	182	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength $= \dfrac{182000}{4775.94}$

$= \dfrac{1000 \times P}{\prod \times (Ø/2)^2}$

= 38.09 (Mpa)

Bulk Density = 2.63 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | I.G.S.L.

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC49A
Depth (m):	14.00m

Sample Description

Colour:	Dark grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

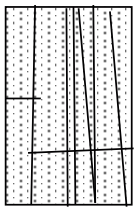
Sample Measurements

Length	199	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	260	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{260000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 54.41 (Mpa)

Bulk Density = 2.62 (Mg/m^3)

Notes:

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

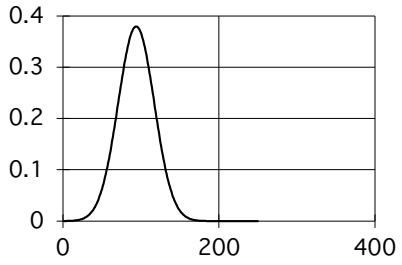
Contract: Gas to Bord na Mona Edenderry
Contract no. 25882
Sample Type: Core
Date of test: 03/09/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC28A	12.3	78	20.0	1.222	3.29	4.02	88	d	//
	15.6	78	23.0	1.222	3.78	4.62	102	d	//
	16.5	78	15.0	1.222	2.47	3.01	66	d	//
	17.8	78	16.0	1.222	2.63	3.21	71	d	//
	18.6	78	17.0	1.222	2.79	3.41	75	d	//
RC29	8.8	78	18.0	1.222	2.96	3.61	80	d	//
	11.4	78	16.0	1.222	2.63	3.21	71	d	//
	14.2	78	20.0	1.222	3.29	4.02	88	d	//
	16.0	78	22.0	1.222	3.62	4.42	97	d	//
	16.5	78	19.0	1.222	3.12	3.81	84	d	//
RC30A	6.9	78	15.0	1.222	2.47	3.01	66	d	//
	8.1	78	13.0	1.222	2.14	2.61	57	d	//
	9.8	78	21.0	1.222	3.45	4.22	93	d	//
	10.1	78	33.0	1.222	5.42	6.63	146	d	//
	14.2	78	29.0	1.222	4.77	5.82	128	d	//
	15.8	78	27.0	1.222	4.44	5.42	119	d	//
RC31A	6.4	78	26.0	1.222	4.27	5.22	115	d	//
	9.7	78	28.0	1.222	4.60	5.62	124	d	//
	10.4	78	21.0	1.222	3.45	4.22	93	d	//
	13.7	78	19.0	1.222	3.12	3.81	84	d	//
	16.0	78	24.0	1.222	3.94	4.82	106	d	//
	17.0	78	26.0	1.222	4.27	5.22	115	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	22	22
Minimum	2.61	57
Average	4.27	94
Maximum	6.63	146
Standard Dev.	1.05	23
Upper 95% Confidence Limit	6.33	139.32
Lower 95% Confidence Limit	2.21	48.61

Comments:
*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC28A
Depth (m):	15.60m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE - Dolomitised

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

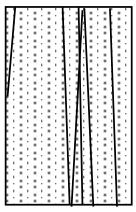
Sample Measurements

Length	198	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	314	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength $= \dfrac{314000}{4775.94}$

$= \dfrac{1000 \times P}{\prod \times (Ø/2)^2}$

= 65.71 (Mpa)

Bulk Density = 2.61 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC28A
Depth (m):	18.70m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE - Dolomitised

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

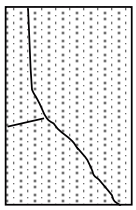
Sample Measurements

Length	198	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	174	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{174000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 36.41 (Mpa)

Bulk Density = 2.58 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC29
Depth (m):	10.70m

Sample Description

Colour:	Dark grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE - Muddy

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

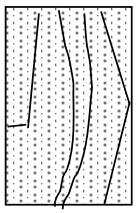
Sample Measurements

Length	196	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	299	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength $= \dfrac{299000}{4775.94}$

$= \dfrac{1000 \times P}{\prod \times (Ø/2)^2}$

= 62.57 (Mpa)

Bulk Density = 2.62 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC29
Depth (m):	13.70m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

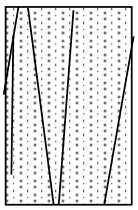
Sample Measurements

Length	197	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	546	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{546000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 114.27 (Mpa)

Bulk Density = 2.63 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | I.G.S.L.

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC30A
Depth (m):	10.5m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

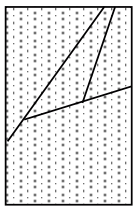
Sample Measurements

Length	196	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	223	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{223000}{4775.94}$

$= \frac{1000 \times P}{\Pi \times (Ø/2)^2}$

= 46.67 (Mpa)

Bulk Density = 2.62 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC30A
Depth (m):	16.20m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

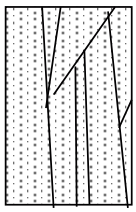
Sample Measurements

Length	199	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	549	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{549000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 114.89 (Mpa)

Bulk Density = 2.66 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | I.G.S.L.

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC31A
Depth (m):	13.00m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

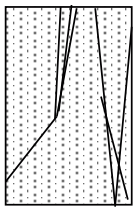
Sample Measurements

Length	198	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	456	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{456000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 95.43 (Mpa)

Bulk Density = 2.62 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC31A
Depth (m):	17.10m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

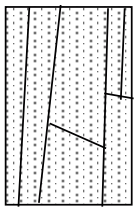
Sample Measurements

Length	197	
Diameter (Ø)	78.1	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	335	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{335000}{4788.19385}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 69.93 (Mpa)

Bulk Density = 2.62 (Mg/m^3)

Notes:

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Gas to Bord Na Mona

Contract no. 25882

Sample Type: Core

Date of test: 01/09/2025

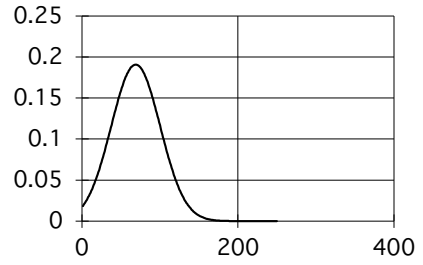
RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC01	10.1	78	20.0	1.222	3.29	4.02	88	d	//
	10.5	78	12.0	1.222	1.97	2.41	53	d	//
	14.5	78	21.0	1.222	3.45	4.22	93	d	//
	15.7	78	19.0	1.222	3.12	3.81	84	d	//
	17.7	78	11.0	1.222	1.81	2.21	49	d	//
	18.8	78	20.0	1.222	3.29	4.02	88	d	//
RC04	8.6	78	21.0	1.222	3.45	4.22	93	d	//
	9.4	78	18.0	1.222	2.96	3.61	80	d	//
	12.1	78	26.0	1.222	4.27	5.22	115	d	//
	15.4	78	14.0	1.222	2.30	2.81	62	d	//
	19.4	78	24.0	1.222	3.94	4.82	106	d	//
RC40	8.8	78	11.0	1.222	1.81	2.21	49	d	//
	9.9	78	3.0	1.222	0.49	0.60	13	d	//
	10.2	78	12.0	1.222	1.97	2.41	53	d	//
	11.6	78	2.0	1.222	0.33	0.40	9	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	15	15
Minimum	0.40	9
Average	3.13	69
Maximum	5.22	115
Standard Dev.	1.43	31
Upper 95% Confidence Limit	5.93	130.46
Lower 95% Confidence Limit	0.33	7.36

Comments:

*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Gas to Bord Na Mona Edenderry
Contract no. 25882

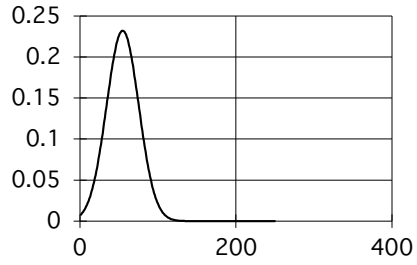
Sample Type: Core
Date of test: 19/08/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC02	9.9	78	13.2	1.222	2.17	2.65	58	d	//
	12.9	78	12.8	1.222	2.10	2.56	56	d	//
	13.8	78	6.9	1.222	1.14	1.39	31	d	//
	14.3	78	14.4	1.222	2.36	2.89	63	d	//
RC03	13.9	78	13.9	1.222	2.29	2.79	61	d	//
	14.2	78	15.3	1.222	2.52	3.08	68	d	//
	15.0	78	1.9	1.222	0.31	0.37	8	d	//
	15.6	78	15.6	1.222	2.56	3.13	69	d	//
	17.2	78	18.0	1.222	2.96	3.61	80	d	//
	17.6	78	17.5	1.222	2.87	3.51	77	d	//
	19.4	78	10.4	1.222	1.71	2.09	46	d	//
	19.9	78	8.9	1.222	1.47	1.79	39	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	12	12
Minimum	0.37	8
Average	2.49	55
Maximum	3.61	80
Standard Dev.	0.94	21
Upper 95% Confidence Limit	4.33	95.22
Lower 95% Confidence Limit	0.65	14.30

Comments:
*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

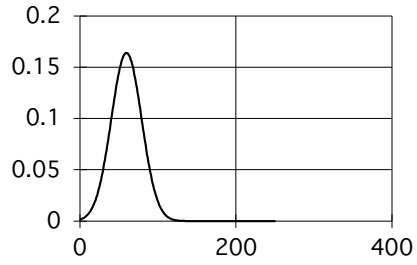
Contract: Gas to Bord Na Mona Edenderry
Contract no. 25882
Sample Type: Core
Date of test: 02/09/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC41	9.0	78	12.0	1.222	1.97	2.41	53	d	//
	9.5	78	10.0	1.222	1.64	2.01	44	d	//
	10.1	78	15.0	1.222	2.47	3.01	66	d	//
	11.1	78	14.0	1.222	2.30	2.81	62	d	//
RC43	11.8	78	6.0	1.222	0.99	1.20	27	d	//
	12.9	78	21.0	1.222	3.45	4.22	93	d	//
	13.5	78	14.0	1.222	2.30	2.81	62	d	//
	13.7	78	16.0	1.222	2.63	3.21	71	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	8	8
Minimum	1.20	27
Average	2.71	60
Maximum	4.22	93
Standard Dev.	0.88	19
Upper 95% Confidence Limit	4.45	97.79
Lower 95% Confidence Limit	0.98	21.47

Comments:
*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Gas to Bord Na Mona

Contract no. 25882

Sample Type: Core

Date of test: 22/09/2025

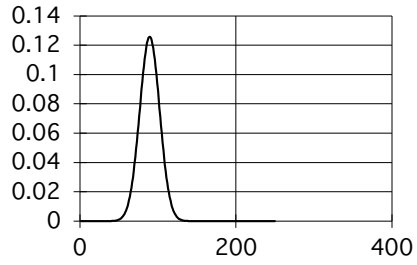
RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC42	10.5	78	22.0	1.222	3.62	4.42	97	d	//
	10.6	78	16.0	1.222	2.63	3.21	71	d	//
	11.8	78	21.0	1.222	3.45	4.22	93	d	//
	11.9	78	22.0	1.222	3.62	4.42	97	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	4	4
Minimum	3.21	71
Average	4.07	89
Maximum	4.42	97
Standard Dev.	0.58	13
Upper 95% Confidence Limit	5.20	114.31
Lower 95% Confidence Limit	2.94	64.58

Comments:

*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Gas to Bord Na Mona
Contract no. 25882

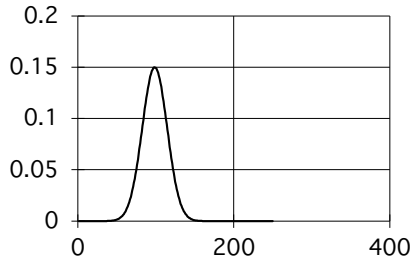
Sample Type: Core
Date of test: 22/09/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC44	14.9	78	18.0	1.222	2.96	3.61	80	d	//
	15.5	78	22.0	1.222	3.62	4.42	97	d	//
	16.7	78	27.0	1.222	4.44	5.42	119	d	//
	17.2	78	26.0	1.222	4.27	5.22	115	d	//
	17.6	78	19.0	1.222	3.12	3.81	84	d	//
	17.9	78	22.0	1.222	3.62	4.42	97	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	6	6
Minimum	3.61	80
Average	4.48	99
Maximum	5.42	119
Standard Dev.	0.73	16
Upper 95% Confidence Limit	5.91	129.94
Lower 95% Confidence Limit	3.06	67.35

Comments:
*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Gas to Bord Na Mona
Contract no. 25882

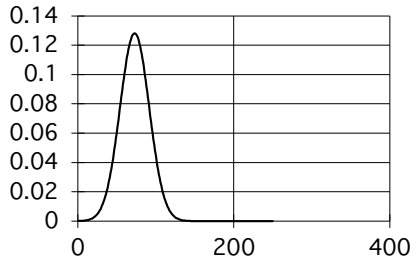
Sample Type: Core
Date of test: 22/09/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC45	10.1	78	11.0	1.222	1.81	2.21	49	d	//
	11.0	78	18.0	1.222	2.96	3.61	80	d	//
	11.5	78	12.0	1.222	1.97	2.41	53	d	//
	11.9	78	22.0	1.222	3.62	4.42	97	d	//
	12.9	78	19.0	1.222	3.12	3.81	84	d	//
	13.2	78	17.0	1.222	2.79	3.41	75	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	6	6
Minimum	2.21	49
Average	3.31	73
Maximum	4.42	97
Standard Dev.	0.85	19
Upper 95% Confidence Limit	4.98	109.51
Lower 95% Confidence Limit	1.65	36.25

Comments:
*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC01
Depth (m):	14.50m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

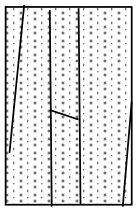
Sample Measurements

Length	196	
Diameter (Ø)	78.1	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	356	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{356000}{4788.19385}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 74.31 (Mpa)

Bulk Density = 2.62 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC02
Depth (m):	14.30m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

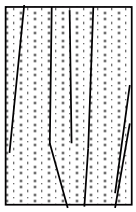
Sample Measurements

Length	196	
Diameter (Ø)	78.1	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	307	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{307000}{4788.19385}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 64.08 (Mpa)

Bulk Density = 2.64 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | I.G.S.L.

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC03
Depth (m):	16.80m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

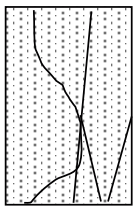
Sample Measurements

Length	196	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	105	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{105000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 21.97 (Mpa)

Bulk Density = 2.60 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC04
Depth (m):	17.70m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

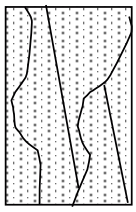
Sample Measurements

Length	192	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	84	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{84000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 17.58 (Mpa)

Bulk Density = 2.62 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC40
Depth (m):	9.40m

Sample Description

Colour:	Dark grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

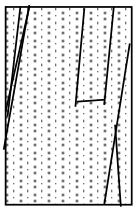
Sample Measurements

Length	199	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	368	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength $= \dfrac{368000}{4775.94}$

$= \dfrac{1000 \times P}{\prod \times (Ø/2)^2}$

= 77.01 (Mpa)

Bulk Density = 2.63 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC41
Depth (m):	10.60m

Sample Description

Colour:	Light grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

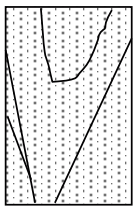
Sample Measurements

Length	196	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	165	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{165000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 34.53 (Mpa)

Bulk Density = 2.63 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | *I.G.S.L.*

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC44
Depth (m):	17.30m

Sample Description

Colour:	Light blueish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

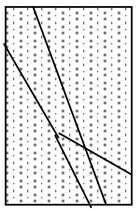
Sample Measurements

Length	187	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	112	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{112000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 23.44 (Mpa)

Bulk Density = 2.61 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet | I.G.S.L.

Sample Identification

Contract Name:	Gas to Bord Na Mona
Job Number:	25882
Hole No:	RC45
Depth (m):	11.00m

Sample Description

Colour:	Dark grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

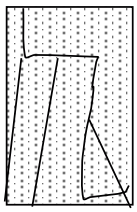
Sample Measurements

Length	196	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	288	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{288000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 60.27 (Mpa)

Bulk Density = 2.65 (Mg/m^3)

Notes:

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Slake Durability

Tested in accordance with ISRM Part 2 (1981)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 1331

Report No.	**R174340**
Contract No.	25882
Contract Name:	Gas to Eddenderry
Client*:	MIL
Sample No.	A25/4292
Client Ref*:	RC07 11.5-20.0m
Location*:	RC07 11.5-20.0m
Sample Certificate	Not Provided
Date Received	17/10/25
Date Tested	17/10/25
Slake Durability	
Cycle 1	99.5
Cycle 2	99.0

Description of the rock

Pre Test: Limestone

Post Test: Limestone

The slaking fluid is tap water at 20°C unless otherwise stated in this report.

Results relate only to the specimen tested, in as received condition unless otherwise noted.
Opinions and interpretations are outside the scope of accreditation.
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Persons authorised to approve report

J Barrett (Quality Manager)
H Byrne (Laboratory Manager)

IGSL Materials Laboratory	Approved by	Date	Page
	H Byrne	30/10/25	1 of 1

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Slake Durability

Tested in accordance with ISRM Part 2 (1981)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 1331

Report No.	**R174341**
Contract No.	25882
Contract Name:	Gas to Eddenderry
Client*:	MIL
Sample No.	A25/4293
Client Ref*:	RC16A 14.8-20.2m
Location*:	RC16A 14.8-20.2m
Sample Certificate	Not Provided
Date Received	17/10/25
Date Tested	17/10/25
Slake Durability	
Cycle 1	88.9
Cycle 2	87.2

Description of the rock

Pre Test: Limestone

Post Test: Limestone

The slaking fluid is tap water at 20°C unless otherwise stated in this report.

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	H Byrne	30/10/25	1 of 1

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Co. Kildare
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Test Report

Slake Durability

Tested in accordance with ISRM Part 2 (1981)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 1331

Report No.	**R174342**
Contract No.	25882
Contract Name:	Gas to Eddenderry
Client*:	MIL
Sample No.	A25/4294
Client Ref*:	RC28A 11.8-20.0m
Location*:	RC28A 11.8-20.0m
Sample Certificate	Not Provided
Date Received	17/10/25
Date Tested	17/10/25
Slake Durability	
Cycle 1	99.3
Cycle 2	98.9

Description of the rock

Pre Test: Limestone

Post Test: Limestone

The slaking fluid is tap water at 20°C unless otherwise stated in this report.

Results relate only to the specimen tested, in as received condition unless otherwise noted.
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IGSL Materials Laboratory	Approved by	Date	Page
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Test Report

Slake Durability

Tested in accordance with ISRM Part 2 (1981)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 1331

Report No.	**R174343**
Contract No.	25882
Contract Name:	Gas to Eddenderry
Client*:	MIL
Sample No.	A25/4295
Client Ref*:	RC29 7.2-18.3m
Location*:	RC29 7.2-18.3m
Sample Certificate	Not Provided
Date Received	17/10/25
Date Tested	17/10/25
Slake Durability	
Cycle 1	99.6
Cycle 2	99.3

Description of the rock

Pre Test: Limestone

Post Test: Limestone

The slaking fluid is tap water at 20°C unless otherwise stated in this report.

Results relate only to the specimen tested, in as received condition unless otherwise noted.
Opinions and interpretations are outside the scope of accreditation.
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J Barrett (Quality Manager)
H Byrne (Laboratory Manager)

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	H Byrne	30/10/25	1 of 1

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Newhall, Naas
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045 846176

Test Report

Slake Durability

Tested in accordance with ISRM Part 2 (1981)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 1331

Report No.	**R174344**
Contract No.	25882
Contract Name:	Gas to Eddenderry
Client*:	MIL
Sample No.	A25/4296
Client Ref*:	RC46 11.5-20.6m
Location*:	RC46 11.5-20.6m
Sample Certificate	Not Provided
Date Received	17/10/25
Date Tested	17/10/25
Slake Durability	
Cycle 1	99.0
Cycle 2	98.9

Description of the rock

Pre Test: Limestone

Post Test: Limestone

The slaking fluid is tap water at 20°C unless otherwise stated in this report.

Results relate only to the specimen tested, in as received condition unless otherwise noted.
Opinions and interpretations are outside the scope of accreditation.
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Persons authorised to approve report

J Barrett (Quality Manager)
H Byrne (Laboratory Manager)

IGSL Materials Laboratory	Approved by	Date	Page
	H Byrne	30/10/25	1 of 1

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Slake Durability

Tested in accordance with ISRM Part 2 (1981)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 1331

Report No.	**R174345**
Contract No.	25882
Contract Name:	Gas to Eddenderry
Client*:	MIL
Sample No.	A25/4297
Client Ref*:	RC54 16.2-20.4m
Location*:	RC54 16.2-20.4m
Sample Certificate	Not Provided
Date Received	17/10/25
Date Tested	17/10/25
Slake Durability	
Cycle 1	99.5
Cycle 2	99.0

Description of the rock

Pre Test: Limestone

Post Test: Limestone

The slaking fluid is tap water at 20°C unless otherwise stated in this report.

Results relate only to the specimen tested, in as received condition unless otherwise noted.
Opinions and interpretations are outside the scope of accreditation.
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Persons authorised to approve report

J Barrett (Quality Manager)
H Byrne (Laboratory Manager)

IGSL Materials Laboratory	Approved by	Date	Page
	H Byrne	30/10/25	1 of 1

Laboratory Report

UKAS TESTING 2788

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES A PHENNA GROUP COMPANY

Contract Number: 81758

Client Ref: **25882**
Client PO: **25882**

Date Received: **17-10-2025**
Date Completed: **29-10-2025**
Report Date: **29-10-2025**

Client: **Irish Geotechnical Services Limited**

Contract Title: **25882**
For the attention of: **Hugh Byrne**

This report has been checked and approved by:



Richard John
Quality/Technical Manager

Description	Qty
Determination of the Cerchar abrasivity value per set of four values. The Cerchar Abrasiveness Index Document October 1986 - @ Non Accredited Test	6

Notes: **Observations and Interpretations are outside the UKAS Accreditation**
*** - denotes test included in laboratory scope of accreditation**
 # - denotes test carried out by approved contractor
@ - denotes non accredited tests

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Approved Signatories:
Brendan Evans (Business Support Co-ordinator) - Darren Bourne (Quality Senior Technician) - Luke Williams (Senior Laboratory Technician)
Paul Evans (Director) - Richard John (Quality/Technical Manager) - Shaun Jones (Laboratory manager)
Shaun Thomas (Site Manager) - Wayne Honey (HR & HSE Manager)

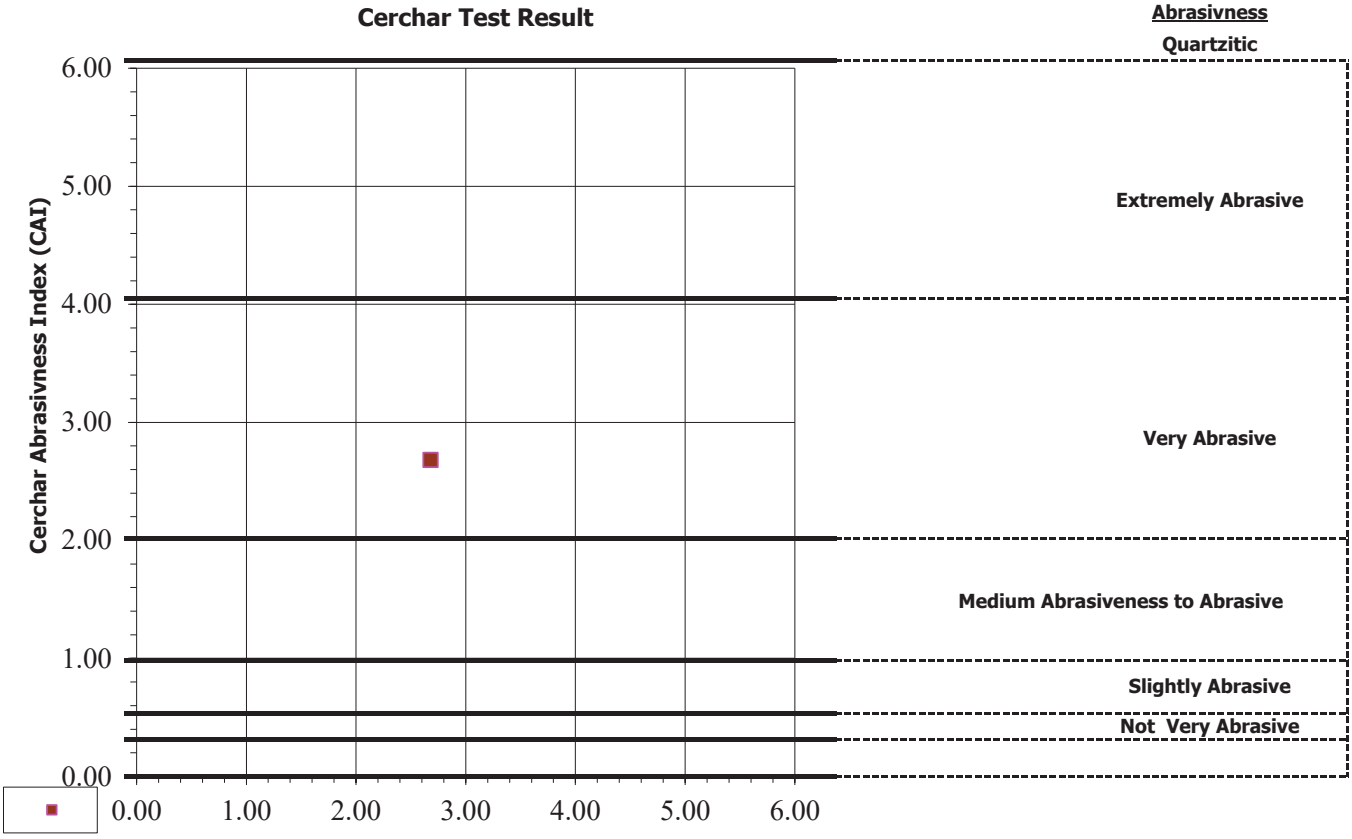
GEO Site & Testing Services Ltd
Unit 3-4 Heol Aur, Dafen Ind Est, Llanelli, Carmarthenshire SA14 8QN
Tel: 01554 784 040 Fax: 01554 784 040 info@gstl.co.uk https://gstl.co.uk

Test Report: The Cerchar Abrasiveness Index Test

Test Method : The Cerchar Abrasiveness Index (1986) GAI-JTr/JS No. 86-538

Client ref:	**25882**	Hygrometrice Testing Conditions:	**Natural**
Project Name:	**25882**	Type of Rock:	**Homogeneous**
Contract Number:	**81758**	Maximum Grain Size (mm):	
Date tested:	**20/10/2025**	Surface Roughness:	**Rough**
BH Number:	**RC07**		
Sample Number:			
Depth (m) :	**11.50**		
Sample Type:	**C**	**Tested By**	Julian Jones

Mean Test Result (5 pins)	**0.27**	**(mm)**
C.A.I	**2.68**	



Sample Tested with a pin of hardened steel with a Rockwell hardness HRC of 54-56

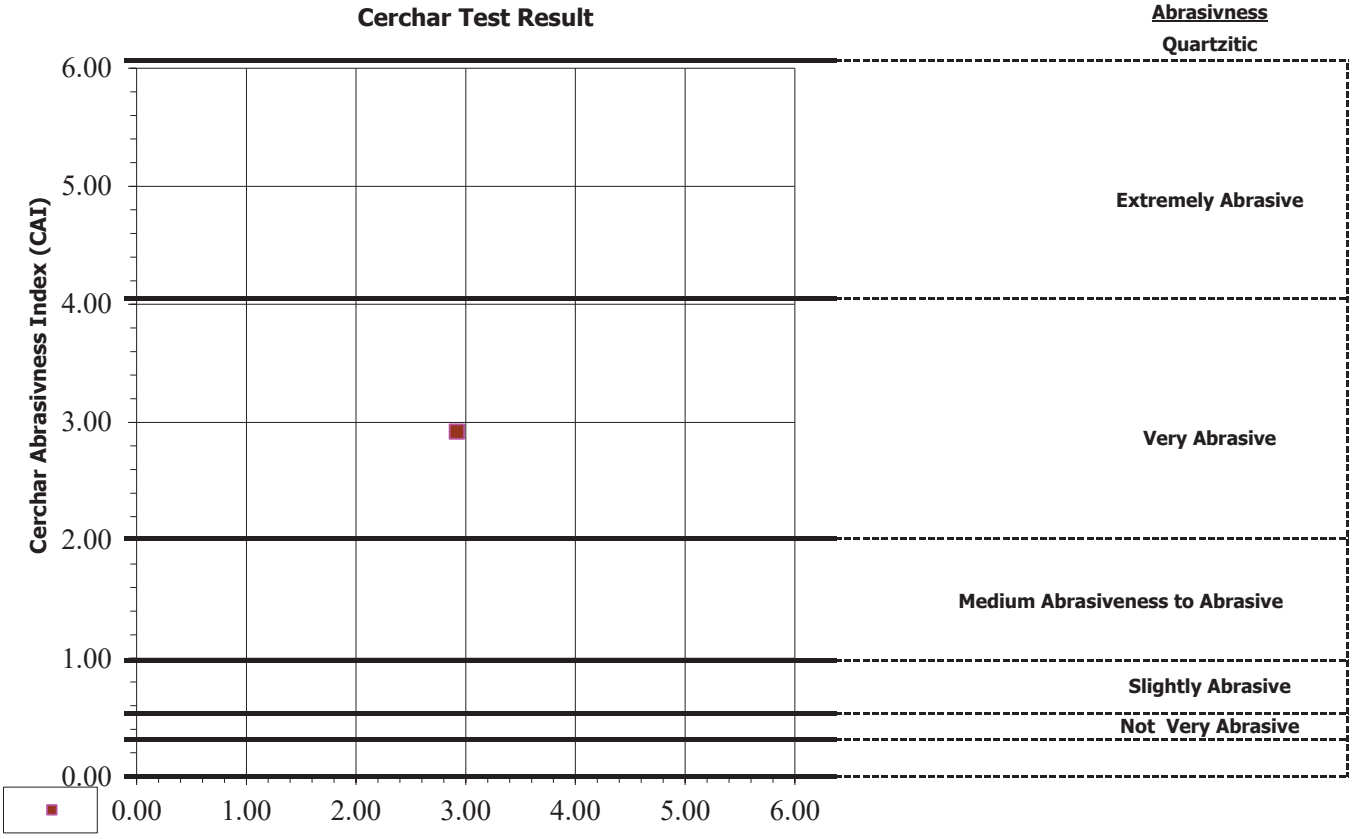
GSTL
GEOTECHNICAL SITE & TESTING LABORATORIES

Test Report: The Cerchar Abrasiveness Index Test

Test Method : The Cerchar Abrasiveness Index (1986) GAI-JTr/JS No. 86-538

Client ref:	**25882**	Hygrometrice Testing Conditions:	**Natural**
Project Name:	**25882**	Type of Rock:	**Homogeneous**
Contract Number:	**81758**	Maximum Grain Size (mm):	
Date tested:	**20/10/2025**	Surface Roughness:	**Rough**
BH Number:	**RC28A**		
Sample Number:			
Depth (m) :	**11.80**		
Sample Type:	**C**	**Tested By**	Julian Jones

Mean Test Result (5 pins)	**0.29**	**(mm)**
C.A.I	**2.92**	



Sample Tested with a pin of hardened steel with a Rockwell hardness HRC of 54-56

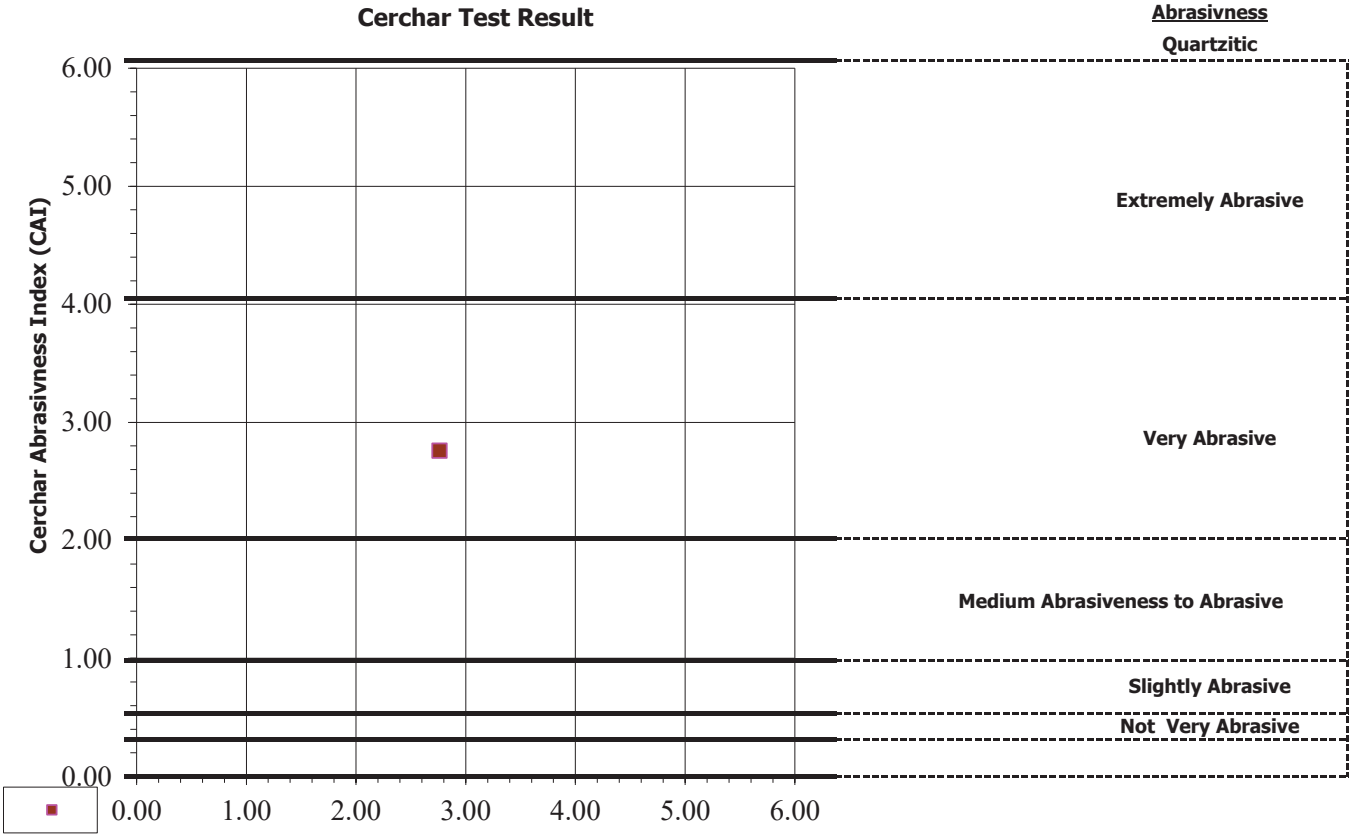
GSTL
GEOTECHNICAL SITE & TESTING LABORATORIES

Test Report: The Cerchar Abrasiveness Index Test

Test Method : The Cerchar Abrasiveness Index (1986) GAI-JTr/JS No. 86-538

Client ref:	**25882**	Hygrometrice Testing Conditions:	**Natural**
Project Name:	**25882**	Type of Rock:	**Homogeneous**
Contract Number:	**81758**	Maximum Grain Size (mm):	
Date tested:	**20/10/2025**	Surface Roughness:	**Rough**
BH Number:	**RC29**		
Sample Number:			
Depth (m) :	**7.20**		
Sample Type:	**C**	**Tested By**	Julian Jones

Mean Test Result (5 pins)	**0.28**	**(mm)**
C.A.I	**2.76**	



Sample Tested with a pin of hardened steel with a Rockwell hardness HRC of 54-56

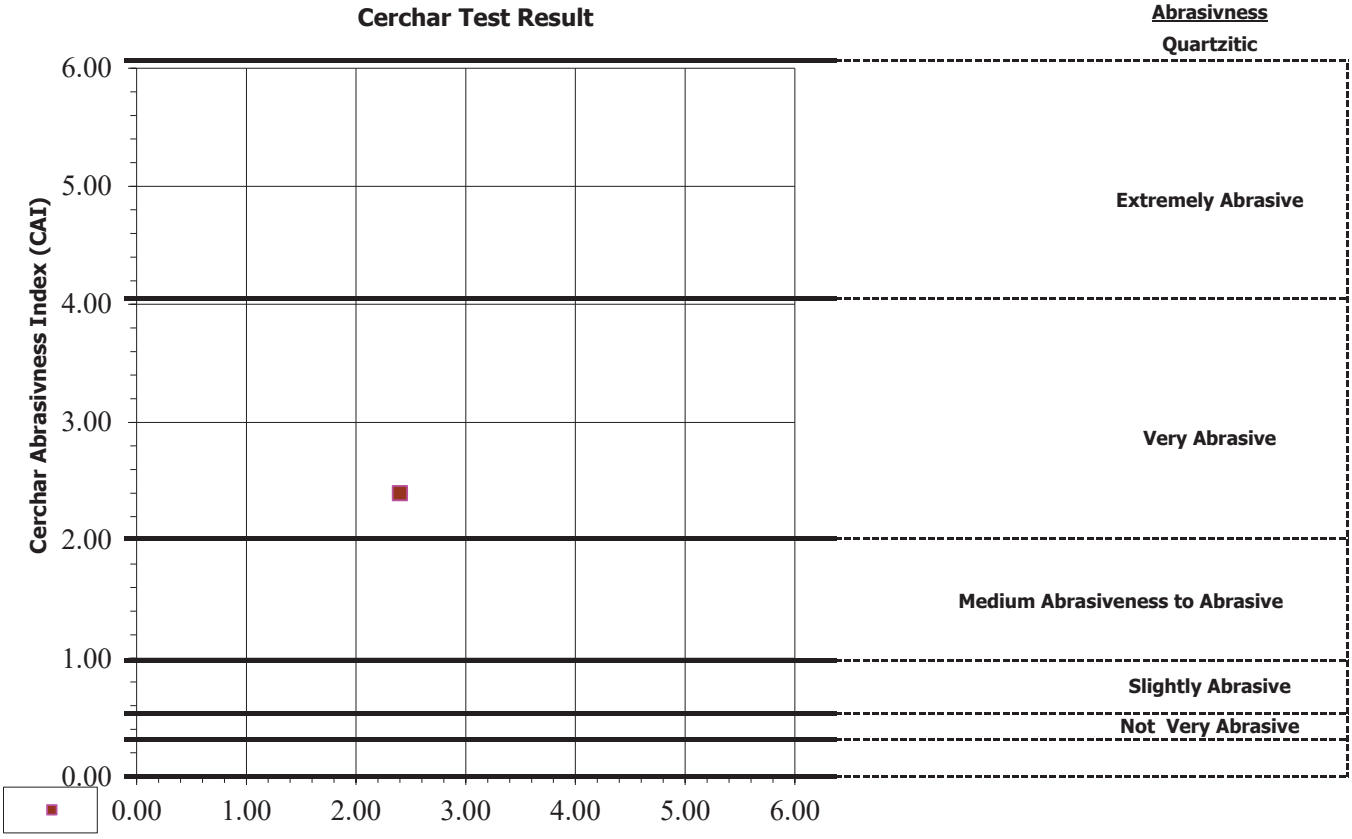
GSTL
GEOTECHNICAL SITE & TESTING LABORATORIES

Test Report: The Cerchar Abrasiveness Index Test

Test Method : The Cerchar Abrasiveness Index (1986) GAI-JTr/JS No. 86-538

Client ref:	**25882**	Hygrometrice Testing Conditions:	**Natural**
Project Name:	**25882**	Type of Rock:	**Homogeneous**
Contract Number:	**81758**	Maximum Grain Size (mm):	
Date tested:	**20/10/2025**	Surface Roughness:	**Rough**
BH Number:	**RC46**		
Sample Number:			
Depth (m) :	**11.50**		
Sample Type:	**C**	**Tested By**	Julian Jones

Mean Test Result (5 pins)	**0.24**	**(mm)**
C.A.I	**2.40**	



Sample Tested with a pin of hardened steel with a Rockwell hardness HRC of 54-56

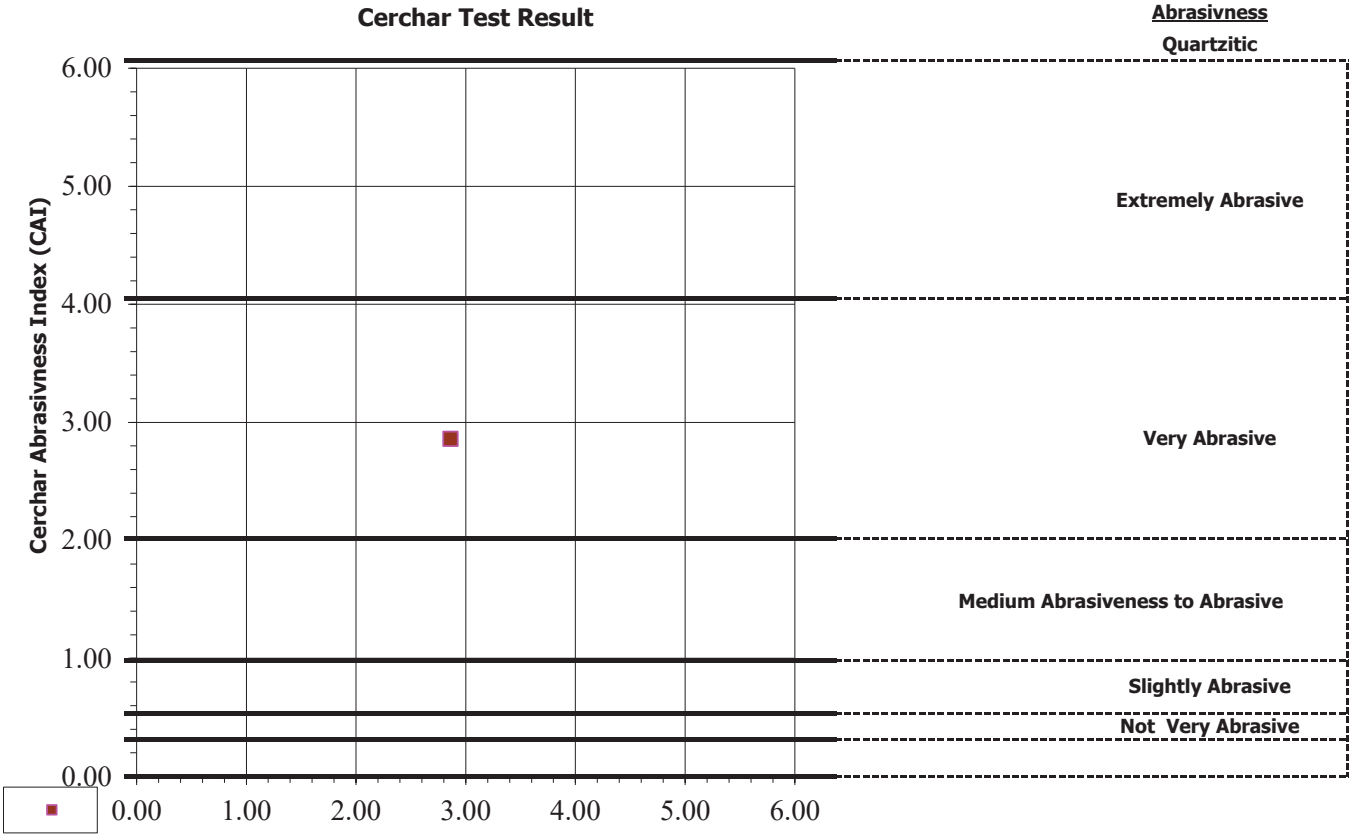
GSTL
GEOTECHNICAL SITE & TESTING LABORATORIES

Test Report: The Cerchar Abrasiveness Index Test

Test Method : The Cerchar Abrasiveness Index (1986) GAI-JTr/JS No. 86-538

Client ref:	**25882**	Hygrometrice Testing Conditions:	**Natural**
Project Name:	**25882**	Type of Rock:	**Homogeneous**
Contract Number:	**81758**	Maximum Grain Size (mm):	
Date tested:	**20/10/2025**	Surface Roughness:	**Rough**
BH Number:	**RC54**		
Sample Number:			
Depth (m) :	**16.20**		
Sample Type:	**C**	**Tested By**	Julian Jones

Mean Test Result (5 pins)	**0.29**	**(mm)**
C.A.I	**2.86**	



Sample Tested with a pin of hardened steel with a Rockwell hardness HRC of 54-56

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GEOTECHNICAL SITE & TESTING LABORATORIES

Appendix 11

Chemical / Environmental Laboratory Results (Water)

25-35724

25-35726

25-35744

25-37315

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: cs@etuki.eurofins.com

Final Report

Report No.: 25-35724-1

Initial Date of Issue: 14-Nov-2025

Re-Issue Details:

Client *IGSL*

Client Address: *M7 Business Park*
Naas
County Kildare
Ireland

Contact(s): *Darren Keogh*

Project *25882 GAS TO EDENDERRY*

Quotation No.: **Date Received:** 06-Nov-2025

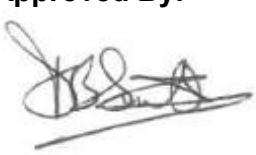
Order No.: **Date Instructed:** 06-Nov-2025

No. of Samples: *5*

Turnaround (Wkdays): 5 **Results Due:** 12-Nov-2025

Date Approved: 14-Nov-2025

Approved By:



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Water

Project: 25882 GAS TO EDENDERRY

Client: IGSL				**Chemtest Job No.:**		25-35724	25-35724	25-35724	25-35724	25-35724
Quotation No.:				**Chemtest Sample ID.:**		2049875	2049876	2049877	2049878	2049879
Order No.:				*Client Sample Ref.:*		*BH27*	*RC18*	*BH34*	*RC03*	*RC04*
				Client Reference:		*BH27*	*RC18*	*BH34*	*RC03*	*RC04*
				Sample Type:		*WATER*	*WATER*	*WATER*	*WATER*	*WATER*
				Sample Sub Type:						
				Top Depth (m):		*1.1*	*2.7*	*1.13*	*0.79*	*0.45*
				Date Sampled:		*31-Oct-2025*	*31-Oct-2025*	*31-Oct-2025*	*30-Oct-2025*	*30-Oct-2025*
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
pH at 20C		U	1010		4.0	8.1	7.5	7.7	8.4	8.5
Sulphate		U	1220	mg/l	1.0	11	16	240	26	38
Cyanide (Total)		U	1300	mg/l	0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Arsenic (Dissolved)		U	1455	µg/l	0.20	< 0.20	< 0.20	0.38	3.9	< 0.20
Boron (Dissolved)		U	1455	µg/l	10.0	19	17	24	12	30
Cadmium (Dissolved)		U	1455	µg/l	0.11	< 0.11	< 0.11	0.59	0.44	< 0.11
Copper (Dissolved)		U	1455	µg/l	0.50	5.5	4.5	13	18	8.5
Mercury (Dissolved)		U	1455	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Dissolved)		U	1455	µg/l	0.50	3.0	1.4	52	32	8.3
Lead (Dissolved)		U	1455	µg/l	0.50	0.60	0.60	0.55	0.93	0.58
Zinc (Dissolved)		U	1455	µg/l	2.5	4.7	5.0	39	13	5.3
Chromium (Total)		N	1455	µg/l	0.50	2.8	4.9	5.3	3.3	5.6
Total TPH >C6-C40	EH_1D_Total	U	1670	µg/l	10	< 10	< 10	< 10	< 10	< 10
Naphthalene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's		U	1800	µg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total Phenols		U	1920	mg/l	0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	RE PW TE TS PL DW GW
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.	GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1670	Total Petroleum Hydrocarbons (TPH) in Waters by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO	Pentane extraction / GC FID detection	PL GW
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection	PL GW SW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	PL GW

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

Where analysis is performed on a dried and crushed sample, it has been prepared by crushing all of the sample. If material has been removed prior to crushing, or by request of the client, this will be stated on the report.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water (Non-Regulatory)
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
cs@etuki.eurofins.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: cs@etuki.eurofins.com

Final Report

Report No.: 25-35726-1

Initial Date of Issue: 14-Nov-2025

Re-Issue Details:

Client *IGSL*

Client Address: *M7 Business Park*
Naas
County Kildare
Ireland

Contact(s): *Darren Keogh*

Project *25882 GAS TO EDENDERRY*

Quotation No.: **Date Received:** 06-Nov-2025

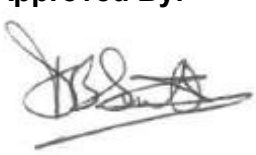
Order No.: **Date Instructed:** 06-Nov-2025

No. of Samples: *6*

Turnaround (Wkdays): 5 **Results Due:** 12-Nov-2025

Date Approved: 14-Nov-2025

Approved By:



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Water

Project: 25882 GAS TO EDENDERRY

Client: IGSL				**Chemtest Job No.:**		25-35726	25-35726	25-35726	25-35726	25-35726	25-35726
Quotation No.:				**Chemtest Sample ID.:**		2049882	2049883	2049884	2049885	2049886	2049887
Order No.:				*Client Sample Ref.:*		*RC24*	*BH14*	*BH06*	*BH42*	*RC30*	*BH43*
				Client Reference:		*RC24*	*BH14*	*BH06*	*BH42*	*RC30*	*BH43*
				Sample Type:		*WATER*	*WATER*	*WATER*	*WATER*	*WATER*	*WATER*
				Sample Sub Type:							
				Top Depth (m):		*2.7*	*3.4*	*0.53*	*0.62*	*2.28*	*0.56*
				Date Sampled:		*31-Oct-2025*	*31-Oct-2025*	*31-Oct-2025*	*30-Oct-2025*	*31-Oct-2025*	*30-Oct-2025*
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**						
pH at 20C		U	1010		4.0	8.3	8.1	8.0	8.0	8.1	7.8
Sulphate		U	1220	mg/l	1.0	40	13	22	77	10	42
Cyanide (Total)		U	1300	mg/l	0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Arsenic (Dissolved)		U	1455	µg/l	0.20	< 0.20	< 0.20	< 0.20	0.76	< 0.20	< 0.20
Boron (Dissolved)		U	1455	µg/l	10.0	14	< 10	16	50	17	23
Cadmium (Dissolved)		U	1455	µg/l	0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Copper (Dissolved)		U	1455	µg/l	0.50	23	4.0	5.2	11	5.1	8.9
Mercury (Dissolved)		U	1455	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Dissolved)		U	1455	µg/l	0.50	4.0	0.77	3.9	8.7	1.4	6.1
Lead (Dissolved)		U	1455	µg/l	0.50	0.51	< 0.50	0.52	0.69	< 0.50	0.59
Zinc (Dissolved)		U	1455	µg/l	2.5	9.3	6.6	9.5	25	5.4	5.4
Chromium (Total)		N	1455	µg/l	0.50	2.9	4.2	3.9	4.2	6.9	4.9
Total TPH >C6-C40	EH_1D_Total	U	1670	µg/l	10	< 10	< 10	< 10	< 10	< 10	< 10
Naphthalene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's		U	1800	µg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total Phenols		U	1920	mg/l	0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	RE PW TE TS PL DW GW
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.	GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1670	Total Petroleum Hydrocarbons (TPH) in Waters by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO	Pentane extraction / GC FID detection	PL GW
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection	PL GW SW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	PL GW

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
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SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

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Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

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Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

Where analysis is performed on a dried and crushed sample, it has been prepared by crushing all of the sample. If material has been removed prior to crushing, or by request of the client, this will be stated on the report.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water (Non-Regulatory)
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
cs@etuki.eurofins.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: cs@etuki.eurofins.com

Final Report

Report No.: 25-35744-1

Initial Date of Issue: 18-Nov-2025

Re-Issue Details:

Client *IGSL*

Client Address: *M7 Business Park*
Naas
County Kildare
Ireland

Contact(s): *Darren Keogh*

Project *25882 Gas to Edenderry*

Quotation No.: **Date Received:** 06-Nov-2025

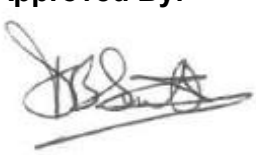
Order No.: **Date Instructed:** 06-Nov-2025

No. of Samples: *3*

Turnaround (Wkdays): 7 **Results Due:** 14-Nov-2025

Date Approved: 18-Nov-2025

Approved By:



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Water

Project: 25882 Gas to Edenderry

Client: IGSL				**Chemtest Job No.:**		25-35744	25-35744	25-35744
Quotation No.:				**Chemtest Sample ID.:**		2049960	2049961	2049962
Order No.:				*Client Sample Ref.:*		*BH45*	*RC01*	*BH40*
				Client Reference:		*BH45*	*RC01*	*BH40*
				Sample Type:		*WATER*	*WATER*	*WATER*
				Sample Sub Type:		*Ground Water*	*Ground Water*	*Ground Water*
				Top Depth (m):		*0.33*	*0.13*	*0.97*
				Date Sampled:		*30-Oct-2025*	*30-Oct-2025*	*30-Oct-2025*
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
pH at 20C		U	1010		4.0	8.3	8.0	8.1
Sulphate		U	1220	mg/l	1.0	11	7.7	15
Cyanide (Total)		U	1300	mg/l	0.050	< 0.050	< 0.050	< 0.050
Arsenic (Dissolved)		U	1455	µg/l	0.20	< 0.20	0.23	< 0.20
Boron (Dissolved)		U	1455	µg/l	10.0	26	< 10	11
Cadmium (Dissolved)		U	1455	µg/l	0.11	< 0.11	< 0.11	< 0.11
Copper (Dissolved)		U	1455	µg/l	0.50	4.4	5.5	3.6
Mercury (Dissolved)		U	1455	µg/l	0.05	< 0.05	< 0.05	< 0.05
Nickel (Dissolved)		U	1455	µg/l	0.50	3.6	17	5.5
Lead (Dissolved)		U	1455	µg/l	0.50	0.57	0.61	0.60
Zinc (Dissolved)		U	1455	µg/l	2.5	5.4	30	6.9
Chromium (Total)		N	1455	µg/l	0.50	2.4	2.4	2.5
Total TPH >C6-C40	EH_1D_Total	U	1670	µg/l	10	< 10	< 10	< 10
Naphthalene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10
Acenaphthene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10
Fluorene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10
Phenanthrene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10
Anthracene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10
Fluoranthene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10
Pyrene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10
Chrysene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's		U	1800	µg/l	2.0	< 2.0	< 2.0	< 2.0
Total Phenols		U	1920	mg/l	0.030	< 0.030	< 0.030	< 0.030

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
2049960	*BH45*		*BH45*	*30-Oct-2025*	H	Coloured Winchester 1000ml
2049961	*RC01*		*RC01*	*30-Oct-2025*	H	Coloured Winchester 1000ml
2049962	*BH40*		*BH40*	*30-Oct-2025*	H	Coloured Winchester 1000ml

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	RE PW TE TS PL DW GW
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.	GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1670	Total Petroleum Hydrocarbons (TPH) in Waters by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO	Pentane extraction / GC FID detection	PL GW
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection	PL GW SW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	PL GW

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DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

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Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

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SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

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MC - Mathematical Clean Up
FC - Florisil Clean Up

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HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
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Total - Aliphatics & Aromatics
AL - Aliphatics only
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2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
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Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

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Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: cs@etuki.eurofins.com

Final Report

Report No.: 25-37315-1

Initial Date of Issue: 28-Nov-2025

Re-Issue Details:

Client *IGSL*

Client Address: *M7 Business Park*
Naas
County Kildare
Ireland

Contact(s): *Darren Keogh*

Project *25882 Gas To Edenderry*

Quotation No.: **Date Received:** 20-Nov-2025

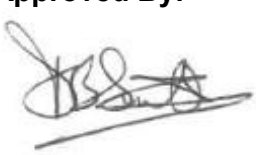
Order No.: **Date Instructed:** 20-Nov-2025

No. of Samples: *4*

Turnaround (Wkdays): 7 **Results Due:** 28-Nov-2025

Date Approved: 28-Nov-2025

Approved By:



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Water

Project: 25882 Gas To Edenderry

Client: IGSL				**Chemtest Job No.:**		25-37315	25-37315	25-37315	25-37315
Quotation No.:				**Chemtest Sample ID.:**		2055527	2055528	2055529	2055530
				Client Reference:		*RC-04*	*BH-14*	*BH-40*	*BH-43*
				Sample Type:		*WATER*	*WATER*	*WATER*	*WATER*
				Sample Sub Type:		*Ground Water*	*Ground Water*	*Ground Water*	*Ground Water*
				Top Depth (m):		*1.14*	*2.82*	*0.89*	*0.52*
				Date Sampled:		*17-Nov-2025*	*17-Nov-2025*	*17-Nov-2025*	*17-Nov-2025*
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**				
pH at 20C		U	1010		4.0	8.2	8.2	8.1	8.1
Sulphate		U	1220	mg/l	1.0	39	6.0	17	46
Cyanide (Total)		U	1300	mg/l	0.050	< 0.050	< 0.050	< 0.050	< 0.050
Arsenic (Dissolved)		U	1455	µg/l	0.20	0.69	< 0.20	1.7	0.45
Boron (Dissolved)		U	1455	µg/l	10.0	35	12	26	23
Cadmium (Dissolved)		U	1455	µg/l	0.11	< 0.11	< 0.11	< 0.11	0.15
Copper (Dissolved)		U	1455	µg/l	0.50	6.2	3.3	3.8	8.2
Mercury (Dissolved)		U	1455	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Dissolved)		U	1455	µg/l	0.50	12	1.0	9.3	7.9
Lead (Dissolved)		U	1455	µg/l	0.50	0.56	0.56	0.89	0.59
Zinc (Dissolved)		U	1455	µg/l	2.5	5.8	4.9	12	12
Chromium (Total)		N	1455	µg/l	0.50	1.3	2.1	0.76	1.2
Total TPH >C6-C40	EH_1D_Total	U	1670	µg/l	10	< 10	< 10	< 10	< 10
Naphthalene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
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Benzo[g,h,i]perylene		U	1800	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's		U	1800	µg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total Phenols		U	1920	mg/l	0.030	< 0.030	< 0.030	< 0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
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1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.	GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1670	Total Petroleum Hydrocarbons (TPH) in Waters by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO	Pentane extraction / GC FID detection	PL GW
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1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	PL GW

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DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

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A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

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All water samples will be retained for 14 days from the date of receipt.

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Report Information

Water Sample Category Key for Accreditation

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1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
cs@etuki.eurofins.com

Appendix 12

Exploratory Hole Location Plans

DWG01 – DWG08

(Drawings do not include HCC Locations)

25882 - Gas to Bord na Mona, Edenderry, Phase 1 GI

Exploratory Hole Location Plan - DWG01



25882 - Gas to Bord na Mona, Edenderry, Phase 1 GI

Exploratory Hole Location Plan - DWG02



25882 - Gas to Bord na Mona, Edenderry, Phase 1 GI

Exploratory Hole Location Plan - DWG03



25882 - Gas to Bord na Mona, Edenderry, Phase 1 GI

Exploratory Hole Location Plan - DWG04



25882 - Gas to Bord na Mona, Edenderry, Phase 1 GI

Exploratory Hole Location Plan - DWG05

Legend

- Cable Percussion Borehole



25882 - Gas to Bord na Mona, Edenderry, Phase 1 GI

Exploratory Hole Location Plan - DWG06

Legend

- Cable Percussion Borehole



25882 - Gas to Bord na Mona, Edenderry, Phase 1 GI

Exploratory Hole Location Plan - DWG07



25882 - Gas to Bord na Mona, Edenderry, Phase 1 GI

Exploratory Hole Location Plan - DWG08

Legend

- Cable Percussion Borehole / Rotary Drillhole
- Trial Pit / Plate Bearing Test
- Trial Pit / Plate Bearing Test / Soakaway Test



Appendix 13

HCC1 Report

(issued 12-08-25)

IGSL Ltd

Gas to Bord na Mona, Edenderry Phase 1 GI – HCC1

Geotechnical Interpretative Report

Project No. 25882

August 2025

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FOREWORD
The following conditions and notes on the geotechnical site investigation procedures should be read in conjunction with this report.

Standards
The ground investigation works for this project (**Gas to Bord na Mona, Edenderry, Phase 1 GI**) have been carried out by IGSL in accordance with Eurocode 7 - Part 2: Ground Investigation & Testing (EN 1997-2:2007). This has been used together with complementary documents such as Engineers Ireland Specification for Ground Investigation (2nd Ed, 2016), BS 5930 (2015+A1:2020) and BS 1377 (Parts 1 to 9) and the following European Norms:

- EN 1997-2 Eurocode 7: 2007 – Geotechnical Design – Part 2: Ground Investigation & Testing
- EN ISO 22475-1:2006 Geotechnical Investigation and Sampling – Sampling Methods & Groundwater Measurements
- EN ISO 14688-1:2017 Geotechnical Investigation and Testing – Identification and Classification of Soil, Part 1: Identification and Description
- EN ISO 14688-2:2017 Geotechnical Investigation and Testing – Identification and Classification of Soil, Part 2: Principles for a classification
- EN ISO 14689-1:2017 Geotechnical Investigation and Testing – Identification, description & classification of rock

The Eurocode 7, Part 2 – Ground Investigation and Testing GI specification shall be read in conjunction with the Specification and Related Documents for Ground Investigation in Ireland, 2nd Edition, published by Engineers Ireland in 2016.

Reporting
No responsibility can be held by IGSL Ltd for ground conditions between exploratory hole locations. The engineering logs provide ground profiles and configuration of strata relevant to the investigation depths achieved and caution should be taken when extrapolating between exploratory points. No liability is accepted for ground conditions extraneous to the investigation points. Unless specifically stated, no account has been taken of possible subsidence due to mineral extraction, mining works or karstification below or close to the site.

This report has been prepared for Murphy International Limited and Fingleton White and the information should not be used without their prior written permission. IGSL Ltd accepts no responsibility or liability for this document being used other than for the purposes for which it was intended.

Boring Procedures
Where required, 'shell and auger' or cable percussive boring technique is employed as defined by Section 6.3 of IS EN ISO 22475-1:2006. The boring operations, sampling and in-situ testing meet with the recommendations set out in IS EN 1997-2:2007 and BS 1377:1990 and EN ISO 22476-3:2005. The shell and auger boring technique allows for continuous sampling in clay and silt above the water table and sand and gravel below the water table (Table 2 of IS EN ISO 22475-1:2006).

It is highlighted that some disturbance and variation is unavoidable in particular ground (e.g. blowing sands, gravel / cobble dominant glacial deposits etc). Attention is drawn to this condition, whenever it is suspected. Where cobbles and boulders are recorded, no conclusion should be drawn concerning the size, presence, lithological nature, or numbers per unit volume of ground.

In-Situ Testing
Where required, Standard Penetration Tests (SPT's) are conducted strictly in accordance with Section 4.6 of IS EN 1997-2:2007. The SPT equipment (hammer energy test) has been calibrated

in accordance with EN ISO 22476-3:2005 and the Energy Ratio (E_r). A calibration certificate is available upon request. The E_r is defined as the ratio of the actual energy E_{meas} (measured energy during calibration) delivered to the drive weight assembly into the drive rod below the anvil, to the theoretical energy (E_{theor}) as calculated from the drive weight assembly. The measured number of blows (N) reported on the engineering logs are uncorrected. In sands, the energy losses due to rod length and the effect of the overburden pressure should be taken into account (see IS EN ISO 22476-3:2005).

Soil Sampling

Three categories of sampling methods are outlined in EN ISO 22475-1:2006. The categories are referenced A, B and C for any given ground conditions and are shown in Tables 1 and 2 of EN ISO 22475-1:2006. Reference should be made to EN 1997-2:2002 for guidelines on sample class and quality for strength and compressibility testing. Samples of quality classes 1 or 2 can only be obtained by using Category A sampling methods.

Class 1 thin wall undisturbed tube samples (UT100) are obtainable in fine grained soils. They strictly meet the requirements of EN 1997-2:2002 and EN ISO 22475-1:2006. Soil samples for laboratory tests are divided into five classes with respect to the soil properties that are assumed to remain unchanged during sampling, handling transport and storage. The minimum sample quality required for testing purposes to Eurocode 7 compatibility (EN 1997-2:2002) is shown in Table A.

Table A – Details of Sample Quality Requirements

EN 1997 Clause	Test	Minimum Sample Quality Class
5.5.3	Water Content	3
5.5.4	Bulk Density	2
5.5.5	Particle Density	N/S
5.5.6	Particle Size Analysis	N/S
5.5.7	Consistency Limits	4
5.5.8	Density Index	N/S
5.5.9	Soil Dispersivity	N/S
5.5.10	Frost Susceptibility	N/S
5.6.2	Organic Content	4
5.6.3	Carbonate Content	3
5.6.4	Sulphate Content	3
5.6.5	pH	3
5.6.6	Chloride Content	3
5.7	Strength Index	1
5.8	Strength Tests	1
5.9	Compressibility Tests	1
5.10	Compaction Tests	N/S
5.11	Permeability	2

N/S – not stated. Presume a representative sample of appropriate size.

Samples recovered from trial pits or trenches meet the requirements of IS EN ISO 22475-1. It is highlighted that unforeseen circumstances such as variations in geological strata may lead to lower quality sample classes being obtained.

Groundwater

The depth of entry of any influx of groundwater is recorded during the course of boring operations. However, the normal rate of boring does not usually permit the recording of an equilibrium level for any one water strike. Where possible, drilling is suspended for a period of twenty minutes to monitor the subsequent rise in water level. Groundwater conditions observed in the borings or pits are those appertaining to the period of investigation. It should be noted however, that groundwater levels are

subject to diurnal, seasonal and climatic variations and can also be affected by drainage conditions, tidal variations etc.

Engineering Logging

Soil and rock identification has been based on the examination of the samples recovered and conforms with IS EN ISO 14688-1:2017 and IS EN ISO 14688-2:2017. Rock weathering classification conforms to IS EN ISO 14689-1:2017 along with discontinuities (bedding planes, joints, cleavages, faults etc) as classified in Section 6.4 of IS EN ISO 14689-1:2017 and Annex C of same. Rock mechanical indices (TCR, SCR, RQD) are defined in accordance with IS EN ISO 22475-1:2006.

Where peat has been encountered, samples have been logged in accordance with the Von Post Classification (ref. Von Post, L. 1992. Sveriges Gologiska Undersoknings torvinventering och nogra av dess hittils vunna resultat (SGU peat inventory and some preliminary results) Svenska Mosskulturforeningens Tidskrift, Jonkoping, Swedden, 36, 1-37 and Hobbs N. B. Mire morphology and the properties of some British and foreign peats. QJEG, Vol. 19, 1986.

Retention of Samples

After satisfactory completion of all the scheduled laboratory tests on any sample, the remaining material will be discarded. Unless a period of retention of samples is agreed, it is our normal practice to discard all soil samples one month after submission of our final report.

1. INTRODUCTION

IGSL Limited has undertaken a programme of geotechnical site investigation works for a new gas pipeline (GNI143 Ballykilleen Pipeline), hot tap and AGI required to connect the existing Bord na Mona (BnaM) power station in Ballykilleen, Edenderry, Co. Offaly, to the gas transmission network 23 kilometres north in the townland of Kilwarden, County Meath. The works were undertaken for Murphy International Limited on behalf of their client Gas Networks Ireland. This Phase 1 investigation focused on both the "Offtake" installation at Kilwarden and the AGI at Edenderry as well as a number of crossing points where the gas pipeline infrastructure encounters public roads, the M4 motorway, the Grand Canal and river courses, namely the Kilwarden River and the Yellow River.

Figure 1 – Site Location Plan (pipeline plotted)

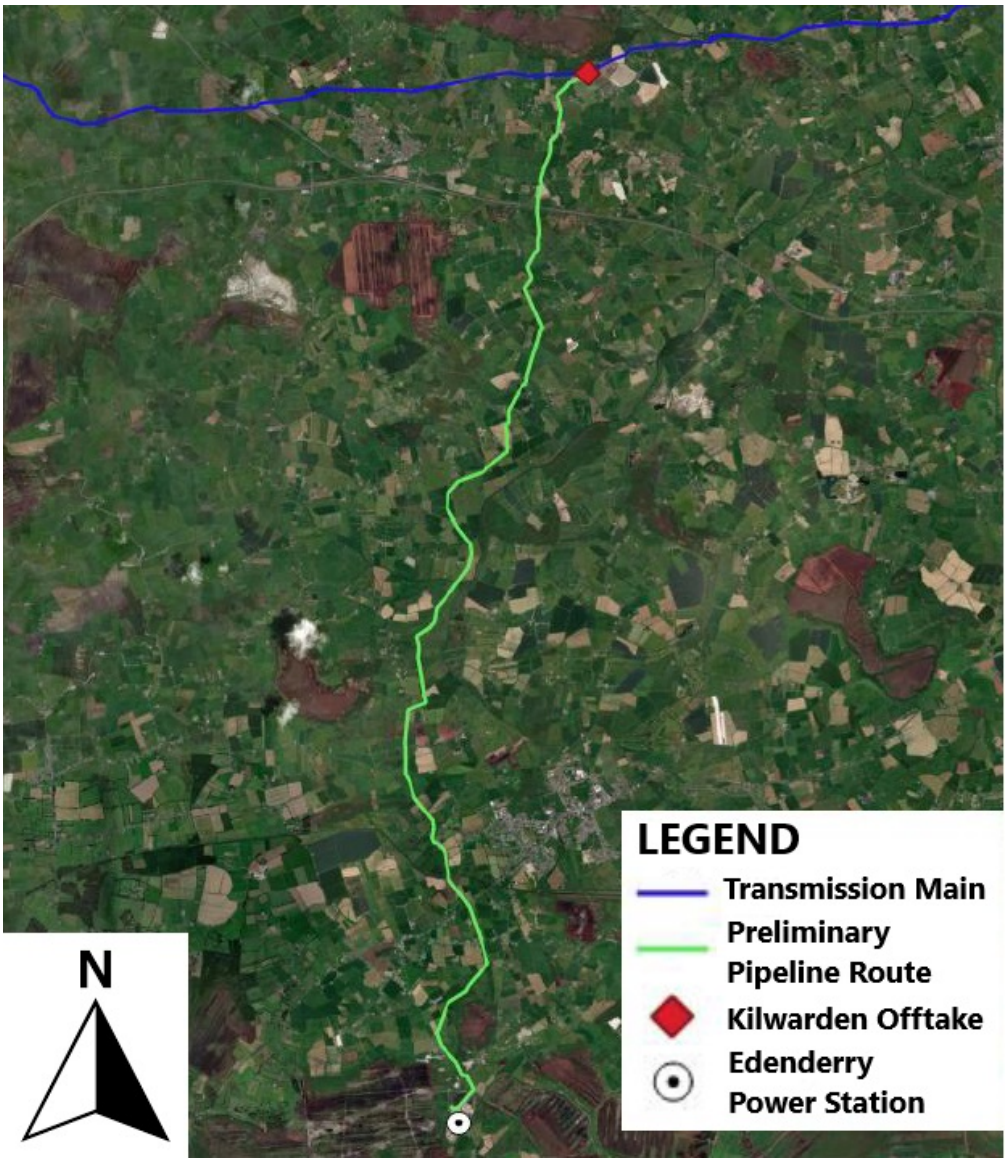


Fig 1 reproduced from Fingleton White 1718-CG-03001-R1 Phase 1 GI Scope of Works, Figure 1

The investigation comprised rotary drilling, cable percussion boring, trial pitting and soakaway tests to BRE365. The investigations were executed in accordance with BS 5930, Code of Practice for Site

Investigations (BS 5930:2015 +A1:2020) and EN 1997-2 Eurocode 7 Part 2 Ground Investigation & Testing and supervised by an IGSL geotechnical engineer.

Geotechnical, chemical and environmental laboratory testing was scheduled on a range of soil and rock samples. The geotechnical soil testing included moisture contents, Atterberg Limits and particle size distribution [PSD] testing. Suites of both chemical testing and environmental testing were undertaken on soils. Where recovered, rock strength testing was completed on recovered cores. This comprised point load strength index testing [PLSI] testing.

This report presents an evaluation of the ground and groundwater conditions and an assessment of the key geotechnical issues pertaining to the high consequence crossing (HCC) 01. This refers to an area in the townland of Ardnamullen, Clonard, County Meath through which the M4 motorway traverses in an east-west trend. The holes extend approximately 150m from the mainline motorway in both north and south directions, perpendicular to the motorway. The exploratory hole locations which are referenced in this preliminary report are listed in Table 1.

Table 1 – M4 Motorway (RDX 4) exploratory hole locations

High Consequence Crossing 1 (HCC1)	Cable Percussion Borehole	Rotary Drillhole
M4 Motorway (North of)	BH16 / BH16A	RC16A
	BH17	RC17
	BH50	RC50
M4 Motorway (South of)	BH18	RC18
	BH19	RC19
	BH51 / BH51A	RC51A

2. FIELDWORKS

2.1 General

The geotechnical investigations at the HCC1 crossing were carried out in two phases. In May 2025, cable percussion boreholes were constructed. Rotary drilling followed in July 2025. The site works comprised the following:

- Cable Percussion Boring (8 No.*)
- Rotary Drillholes (6 No.)
- Groundwater Monitoring
- Surveying of Exploratory Hole Locations

**Cable Percussion re-setups undertaken at locations BH16A and BH51A following shallow refusals*

2.2 Cable Percussion Boreholes

Cable percussion boring (200mm diameter) methods were deployed initially at each of six locations [BH_] using a Dando 2000 rig. Following shallow obstructions, two re-setups were required in order to achieve greater depths at both BH16 and BH51. Similar setup locations were used when following on with rotary drilling at each of the six locations. When considering re-setups, the boreholes extended to depths of between 1.0m and 13.0m, the deepest hole located to the south (BH51A). At all locations, boring commenced through hand-dug service inspection pits. Disturbed bulk samples were recovered at 1m intervals or change of strata during boring and these are denoted 'B' on the engineering logs.

Standard Penetration Tests (SPT's) were performed in the boreholes and given the nature of the soils, a solid cone was used. It is noted that the SPT N-Values reported are the number of blows for 300mm increment penetration (e.g. BH19 at 3.0m where N=8). These exclude the seating blow values, which represent the initial 150mm depth of penetration. Where partial penetration was achieved during testing, the number of blows is shown for the actual penetration depth achieved (e.g. BH19 at 2.0m where N=50/150mm). In accordance with Eurocode 7, the SPT hammer has been calibrated. It is highlighted that the SPT N-Values reported on the engineering logs are uncorrected for energy ratio.

Descriptions of the soils encountered, in-situ tests undertaken and samples recovered are presented on the borehole records in Appendix 1. Details of groundwater strikes and hard strata boring (i.e. chiselling) are also presented on the aforementioned records.

2.3 Rotary Drillholes

Rotary drilling was carried out (holes denoted RC_) at each of the six holes positioned either side of the M4 motorway. Drilling works were completed using a Beretta T44. Symmetrex drilling was utilised within the overlying superficial deposits with coring techniques used in the underlying bedrock if or when encountered. The drillholes were each taken to required depths of approximately 20m. In situ SPT testing was carried out in overburden soils, below the end depth of cable percussion bores, shy of eventual bedrock.

Where rockhead was met, the rotary drilling in bedrock produced 78mm diameter cores. Bedrock was described as fresh to slightly weathered, medium strong to strong, often massively bedded, pale grey, fine-grained slightly dolomitised crystalline calcisiltite LIMESTONE.

The cores were placed in 3m capacity timber boxes and logged by an IGSL engineering geologist. This included photography of the cores with a digital camera. Where rock core was recovered, a graphic fracture log is also presented alongside the mechanical indices. This illustrates the fracture state of the rock cores and allows easy identification of highly fractured / non-intact zones and discontinuity spacings. It should be noted that no correction for dip of the joints has been made and that the spacings shown are successive joint / core intersections within the core.

A groundwater monitoring standpipe was installed in drillhole RC18 on the southern side of the M4 motorway. The standpipe consisted of 50mm diameter HDPE pipework with proprietary 1mm slots and incorporated a pea gravel filter pack and cement / bentonite grout seal. A headwork cover was fixed in place.

The core log records are presented in Appendix 2 and this includes engineering geological descriptions, details of the bedding / discontinuities and mechanical indices (TCR, SCR and RQD's) for each core run. Core photographs are also presented in the aforementioned Appendix 2 and these illustrate the structure and fracture state of the bedrock.

2.4 Groundwater Monitoring

Groundwater monitoring was undertaken following rotary drilling works. Groundwater levels were measured using an electric dipmeter. The levels recorded are shown in Appendix 3.

2.5 Surveying of Exploratory Hole Locations

Following completion of the exploratory works, surveying was carried out using GPS techniques. Co-ordinates (x, y) were measured to Irish Transverse Mercator and ground levels (z) established to Malin Head. The co-ordinates and ground levels are shown on the exploratory hole logs with locations shown on the exploratory hole plan in Appendix 7.

3. LABORATORY TESTING

Geotechnical laboratory testing was performed at IGSL's INAB-accredited laboratory in accordance with the methods set out in BS1377; British Standard Methods of Test for Soils for Civil Engineering Purposes; British Standards Institute:1990. The laboratory applies best practice management systems as per International Standard IS EN ISO/IEC 17025. The geotechnical testing included moisture contents, Atterberg Limits and particle size distribution [PSD] testing. The results from geotechnical testing on selected cable percussion borehole samples are presented in Appendix 4.

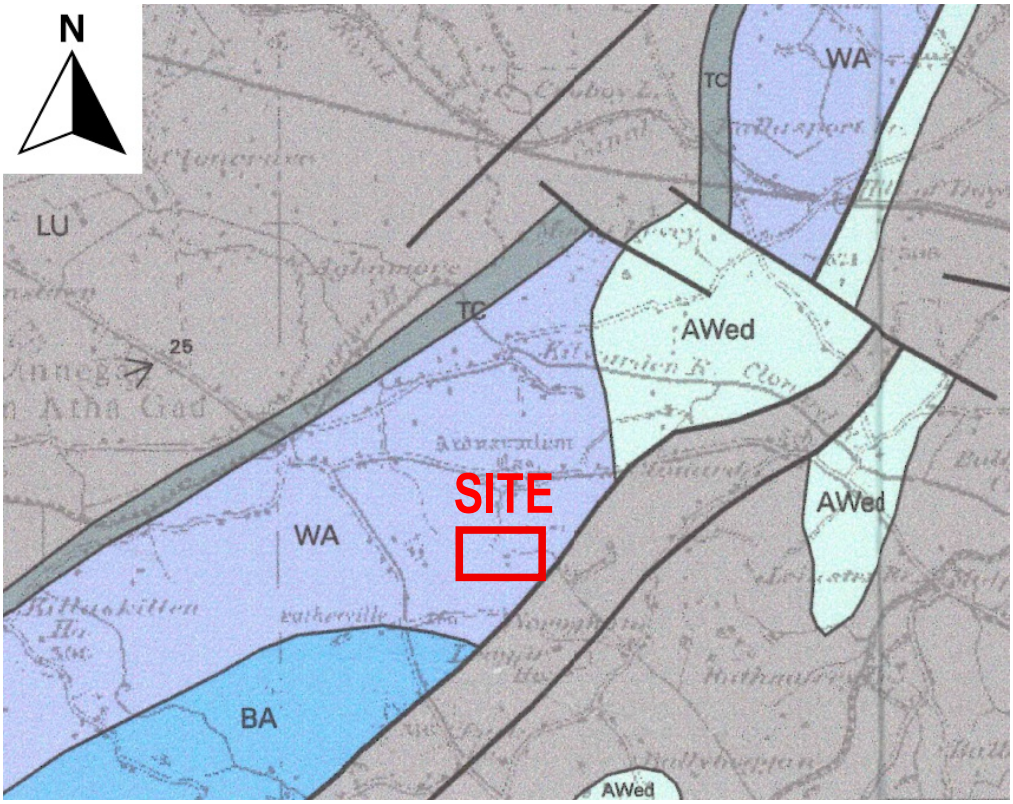
Chemical analysis incorporating BRE SD1 Suite D (Brownfield Site – Pyrite Present) were scheduled on recovered soils and undertaken by Chemtest Laboratories. The chemical results are presented in the factual report in Appendix 5. Soil samples were selected from borehole excavations for specialist WAC assessment using the *Rilta* Suite of environmental testing. These results are also presented in the same Chemtest report (25-20057).

Finally, geotechnical laboratory testing was scheduled on selected rock cores. Point load strength index (PLSI) tests were undertaken on the cores. These results are presented in Appendix 6.

4. DESK STUDY

Reference to the GSI map for the area (Figure 2, 1:100,000 Solid Geology Series: Sheet 13) shows that the site is underlain by Lower Carboniferous, Waulsortian Limestone. The Waulsortian Limestone (WA) largely consists of calcareous mudstones, wackestones and packstones many of them containing original cavities (including stromatactis) filled with internal sediments and fibrous and blocky sparry cements (Sevastopulo 1982). The very fine-grained carbonate lithology typical of the Waulsortian Limestones is also relatively pure and, in the right circumstances, amenable to dissolution and karst development. Blake *et al* (2015) suggest the Waulsortian limestone deposits within the Dublin Basin are massive and unbedded and are typically less prone to karstification. Waulsortian Limestone is also susceptible to Magnesium replacement and dolomitisation, which can further enhance permeability. McConnell & Philcox (1994) note the texture of the Waulsortian Limestone when dolomitized can make it almost indistinguishable from dolomitised Allenwood Formation limestones.

Figure 2 - Bedrock Geological Map for the M4 Site - GSI Sheet 13 (Geraghty & McConnell, 1999)



Key:			
	AW	=	Allenwood Formation
	AWed	=	Edenderry Oolite Member
	LU	=	Lucan Formation
	TC	=	Tober Colleen Formation
	WA	=	Waulsortian Limestones
	BA	=	Ballysteen Formation

5. GROUND CONDITIONS & GROUNDWATER

5.1 Ground Profile – Superficial Deposits

The following is a summary of the ground conditions encountered across the site as identified in the exploratory locations. Note that a geological cross section has been drafted to assist in illustrating the stratigraphic makeup at HCC1 (Appendix 8).

TOPSOIL

- Topsoil was generally found to be between 0.20m and 0.30m thick in the boreholes. The southernmost borehole, location 51, was flagged as having a "peaty TOPSOIL" to a depth of 0.50m. This borehole was located approximately 5m topographically lower than the nearest other borehole location (BH19).

SUPERFICIAL DEPOSITS – GLACIAL TILL

- BH50 was located furthest north of all holes at HCC1. A firm becoming stiff grey sandy gravelly CLAY was encountered beneath the Topsoil to an eventual end depth of 5.80m bgl (66.88m OD). An obstruction at this depth saw an end to cable percussion boring at BH50. Rotary drilling extended the exploratory hole to a depth of 13.80m before intercepting rockhead.

- From 5.80m bgl, RC50 reported a continuation of stiff and very stiff grey brown gravelly sandy CLAY with cobbles and boulders to 10.40m (62.28m OD). Minus obvious cobble and boulder content, the grey brown gravelly sandy CLAY continued to 12.10m before passing to a grey brown sandy clayey GRAVEL to eventual rockhead at 13.80m (58.88m OD).

- Limestone rock was cored at RC50 from 14.80m bgl (57.88m OD) to 20.70m bgl (51.98m OD).

- Both boreholes BH16A (BH16 was terminated on a shallow obstruction at 1.0m) and BH17 found a "soft" brown sandy gravelly SILT and SILT/CLAY initially from 0.20 / 0.30m to a depth of 2.20 / 2.40m. This "soft" consistency was proven by in situ SPT testing. A uniformly stiff and very stiff grey slightly sandy slightly gravelly CLAY completed the cable percussion boreholes 16A and 17 from ca. 2.20m to depths of 6.50m and 7.50m.

- Rotary drilling demonstrated the continuation of the stiff CLAY to a depth of 12.60m (RC16A) and 12.40m (RC17). A basal layer of silty/clayey sandy GRAVEL was then intercepted in both RC16A and RC17 prior to meeting rockhead at 14.50m (59.23m OD) and 15.40m (59.12m OD). A thin layer of CLAY was found within the Gravel in RC16A.

- Limestone rock was cored at RC16A and RC17 from 14.80m bgl (58.93m OD) and 16.10m (58.42m OD) respectively. This proves a consistent rockhead depth north of the M4 as depicted by the cross section featured in Appendix 8.

- South of the M4 motorway, the three cable percussion boreholes suggest the presence of soft to firm and firm surficial soils initially. These are made up of fine-grained CLAY and SILT soils. Once again, SPT testing suggests a stiffening with depth with SPT N-values increasing in both BH18 and BH51A indicative of stiff soils from ca. 3.50m depth. Both cable percussion holes BH18 and BH19 ended on obstruction at 6.0m and 8.50m bgl.

- BH51A found dark brown clayey/silty very sandy and sandy GRAVEL from 9.30m (61.27m OD) to its eventual end depth of 13.0m (57.57m OD).

- The presence of a deep-seated GRAVEL was proven by rotary open hole drilling in both RC18 and in RC19. As with holes north of the M4, a sizeable Gravel-dominant layer was logged beneath the very stiff CLAY in RC18 to eventual rockhead. The Gravel here was logged from ca. 10.10m (64.59m OD) to just shy of rockhead at 15.40m (59.29m OD).

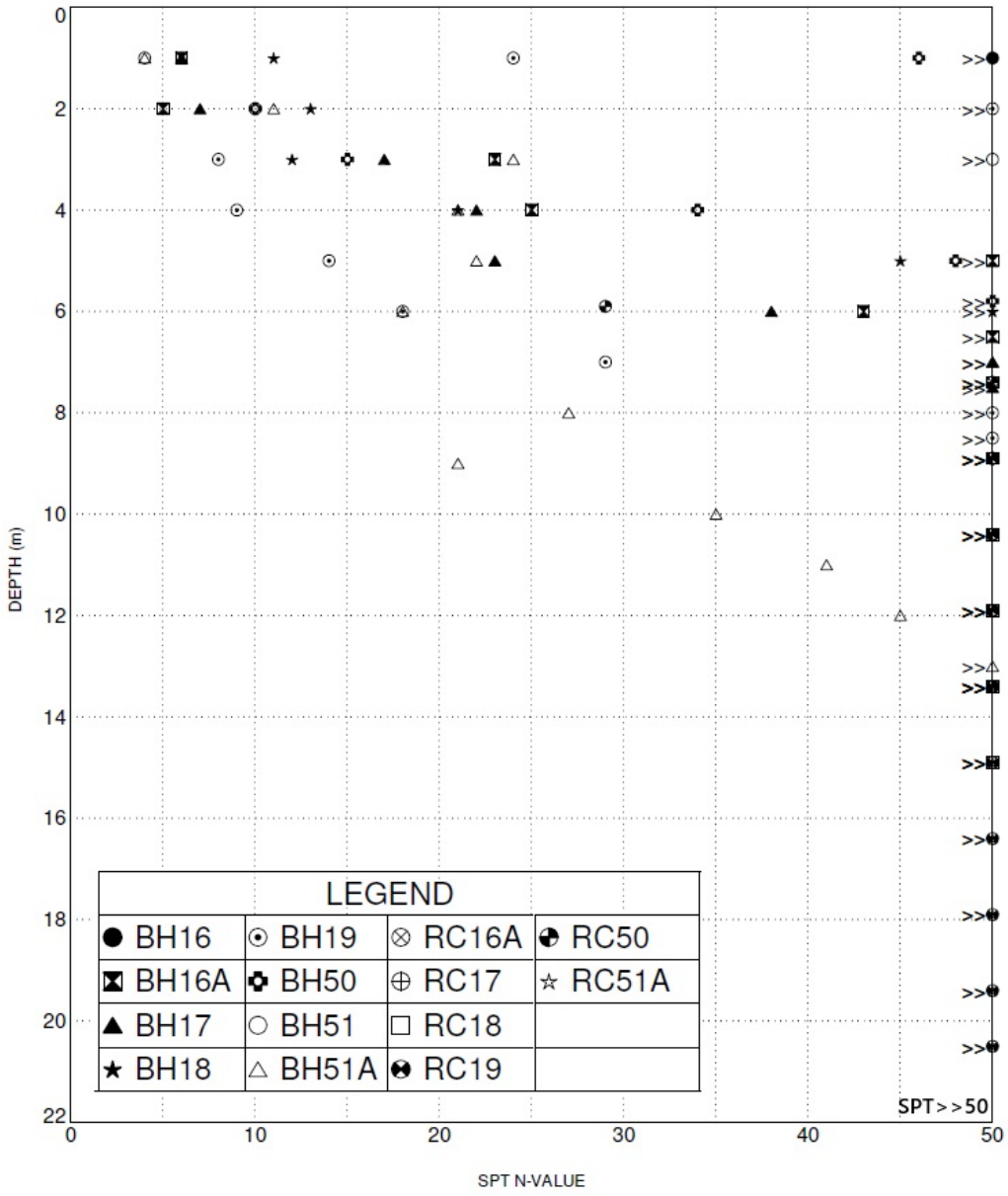
- Contrasting to RC18, although a Gravel layer was encountered, it was not recorded until a depth of 17.40m (58.11m OD). It continued to a hole end depth of 20.50m (55.01m OD). No rock was cored in RC19.

- As with RC19, at RC51A no rock was recorded to a hole end depth of 20.50m (50.07m OD). The Gravel logged in BH51A to 13.0m was found to continue to 16.80m (53.77m OD). A very stiff grey black gravelly CLAY took the hole to 20.50m bgl.

- SPT N-values recorded in boreholes suggest a soft to firm and firm mantle of indigenous CLAY/SILT extending to 3.0m depth in some cases. It may be the case that disturbance caused by boring coupled with water ingress diminished the in situ strength of the upper SILT soils which thereby delivered lower than expected or unrepresentative SPT results. The incidence of groundwater between 2 and 4m could have artificially softened the uppermost SILT soils.

The standard penetration test [SPT] allows for an appraisal of the ground stiffness. An SPT data plot showing N-Vales against depth is shown in Figure 3. It highlights the initially soft and soft to firm nature of soils in test drives in shallow clay/silt overburden. ‘Low strength’ deposits are those where N values of <10 blows are present.

Figure 3 – SPT Plot versus Depth for Cable Percussion Boreholes / Rotary Drillholes



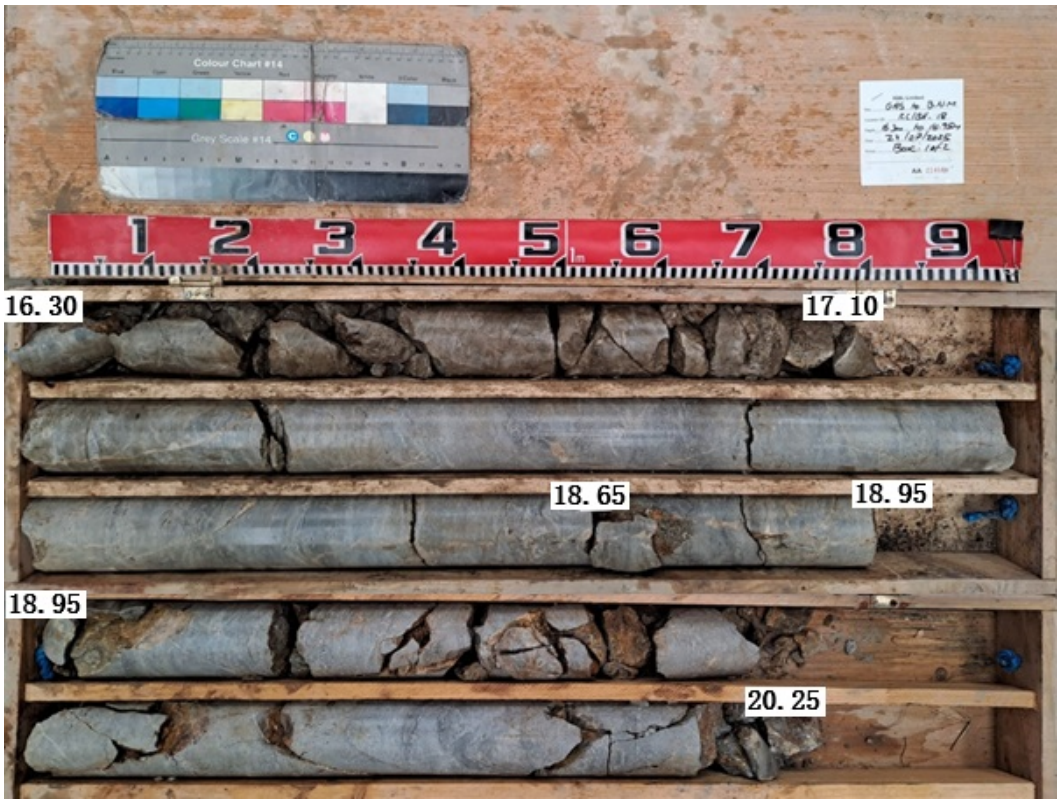
5.2 Bedrock

As referenced earlier in Section 4, the GSI rock map for the area (Figure 2, 1:100,000 Solid Geology series) shows that Waulsortian Limestones underlie the site. The formation is comprised of very fine-grained carbonate limestones more specifically pale grey biomicrite (a limestone consisting of skeletal debris and carbonate mud).

Rotary drilling was conducted at six locations at HCC1, both north and south of the M4 motorway. Drilling successfully proved rock at four of the six locations – the four northernmost holes. Drilling showed that cable percussion pre-bores terminated shy of rockhead in all cases. The mantle of glacial till soils comprised chiefly firm and stiff fine-grained CLAY/SILT overlying deeper GRAVEL deposits. Coring of the underlying bedrock commenced at depths ranging 14.80m (RC50 & RC16A) to 16.30m (RC18). These depths corresponded to elevations of 57.88 / 58.93m OD and 58.39m OD. Figure 4 shows the core recovery in RC18 to the south side of the M4.

The recovered cores consist of fresh to slightly weathered, medium strong to strong, often massively bedded, pale grey, fine-grained slightly dolomitised crystalline calcisiltite LIMESTONE.

Figure 4 – Bedrock cores in RC18



Discontinuity spacings in the rotary cores generally ranged from very closely (20 to 60mm) to widely spaced (600 to 2000mm) predominantly closely to medium spaced. The discontinuity surfaces were typically smooth and locally rough, planar to irregular. Apertures were tight to partly open, locally exhibiting clay smearing with some calcite veinfill. Dips were generally subhorizontal to 10°, locally 30-45°, rarely up to 75°.

The point load strength index (PLSI) test data produced $I_s(50)$ values ranging from 0.99 to 3.38 MPa with a mean value of 2.73 MPa. The PLSI strengths are suggestive of the presence of upperbound weak, predominantly medium strong and strong rock.

Using a correlation factor (K) of 22 to assess compressive strength, this suggests a characteristic strength envelope in the order of 22 to 82 MPa and categorizes the bedrock as weak (5 to 25MPa) to strong (50 to 100MPa).

5.3 Groundwater

Water ingress was recorded in both cable percussion boreholes and rotary drillholes. The cable percussion boreholes intercepted groundwater at its shallowest at 2.0m bgl (BH17) and at its deepest, 10.0m (BH51A) (See Table 2). Multiple deep-seated strikes were observed in BH51A where gravels were intercepted. The most forceful water strike was hosted in the gravel-dominant sequence at 10m in BH51A. Water rose rapidly upon intercepting the strike. Follow-on rotary openhole drilling at four of the six locations proved groundwater in the deeply buried gravelly strata between 12.10m and 17.40m bgl.

Table 2 outlines where water was met in each of the exploratory holes. The potential does exist for there to be seasonal changes in groundwater level. The works were carried out during May and July 2025. A standpipe installed in RC18 allows for ongoing monitoring.

Table 2 – Water measurements in on-site exploratory holes

	Exploratory Hole No.	Water Struck **m bgl**	Stratum Description	Rate of Flow	Remarks / Stratum of water ingress (m OD)
Cable Percussion Boreholes	BH17	**2.0 (72.52)**	Soft brown sandy gravelly SILT/CLAY with a low cobble content	Slow – water rose to **1.70m** in 20min	-
	BH18	**4.50 (70.19)**	Stiff to very stiff grey/brown slightly sandy gravelly SILT with cobbles	Slow – water rose to **4.0m** in 20min	-
	BH19	**3.50 (72.01)**	Firm brown/grey to brown sandy gravelly SILT	Slow - water rose to **3.30m** in 20min	-
	BH50	**3.50 (69.18)**	Firm becoming stiff grey sandy gravelly CLAY with cobbles	Slow - water rose to **3.0m** in 20min	-
	BH51A	**7.50 (63.07)**	Stiff grey sandy gravelly SILT with cobbles and occasional boulders	Slow - water rose to 7**.0m** in 20min	-
		10.0 (60.57)	Medium dense to dense dark brown clayey/silty very sandy GRAVEL with occasional cobbles	Rapid - water rose to **2.0m** in 20min	-

Rotary Drillholes	RC16A	**-**	-	-	Water was noted at **2.80m** bgl in the drillhole at the beginning of shift dated 17-07-25 - hole at 13.10m. Hole noted **DRY** upon completion. (20.20m) (17-07-25)
	RC17	**13.70 (60.82)**	Grey brown clayey sandy GRAVEL	-	Water was noted at **7.40m** bgl in the drillhole upon completion of coring. Casing at 16.10m – hole at 20.80m. (22-07-25)
	RC18	**12.50 (62.19)**	Grey brown clayey sandy GRAVEL	-	Water was noted at **7.0m** bgl in the drillhole upon completion of coring. Casing at 16.30m – hole at 20.25m. (24-07-25) Standpipe reading of **2.83m** (01-08-25)
	RC19	**17.40 (58.11)**	Sandy clayey GRAVEL	-	Water was noted at **9.40m** bgl in the drillhole upon completion of coring. Casing at 20.50m – hole at 20.50m. (29-07-25)
	RC50	**12.10 (60.58)**	Grey brown sandy clayey GRAVEL	-	Water was noted at **4.80m** bgl in the drillhole upon completion of coring. Casing at 14.80m – hole at 20.70m. (05-07-25)
	RC51A	**-**	-	-	Hole noted **DRY** upon completion. (20.50m) (26-07-25)

6. GROUND ASSESSMENT & ENGINEERING RECOMMENDATIONS

6.1 General

In light of the ground investigation findings, the following geotechnical issues are developed and discussed:

- Pipeline M4 Motorway (RDX 4) Crossing
- Groundwater
- Slopes / Batters
- Buried Concrete
- Waste Acceptance Criteria [WAC] & Environmental Testing - *Soils destined for Landfill*

6.2 Pipeline M4 Motorway (RDX 4) Crossing

(See Cross Section 'N-S' – Appendix 8)

Boreholes were constructed in fields both immediately to the north and south of the M4 motorway. They each encountered thick upper sequences of CLAY/SILT (stiffening with depth) with underlying deeper-seated, apparently water-bearing GRAVEL. Subsequent rotary coring at four of the six locations proved LIMESTONE bedrock from ca. 14.0 / 15.0m bgl. South of the motorway, bedrock fell away beyond 20m below ground level (RC end depth) and was subsequently not proven in either RC19 or RC51A. There is some variation in the uppermost cover of superficial deposits whereby a soft to firm and soft SILT was remarked initially in a number of holes to ca. 2.0 / 2.50m bgl.

Ahead of the construction of the pipe crossing, advice and consultation is recommended with specialist micro-tunnelling or HDD contractor.

The presence of potentially shallow variably soft to firm CLAY/SILT suggests use of ground support techniques (e.g. trench boxes). Water re-equilibration in RC18 (2.83m bgl / 71.86m OD) equaled or was coincident with a number of shallow water strikes encountered during cable percussion boring where slow water seepages were remarked between 2.0m and 4.50m bgl. Therefore, it is likely dewatering (pumping) would be required if deep excavations are envisaged. Further monitoring should be undertaken at RC18 to understand the seasonal fluctuations in water table level. Where soft ground conditions exist locally, over-excavation and placement of deep trench fill may be required to form a suitable bedding for pipework. This should be conducted in line with Clause 502 Excavation for Pipes and Chambers as featured in the Specification for Road Works Series 500 - Drainage and Service Ducts (TII, 2015);

> *"soft spots existing below the bottom of an excavation shall be removed and the resulting voids backfilled and compacted with Granular Material Type B complying with Clauses 803 or 804 or pipe bedding material complying with Clause 503, or mix ST1 concrete"*

Where encountered, soft and soft / firm upper soils would provide a safe or allowable bearing pressure of the order of 40-50 kPa. The cross section developed for the M4 crossing illustrates the presence of potential low strength soils (soft and soft to firm) extending to depths of up to 2.40m (BH17). Such soils present further risk for sidewall instability. Trial pitting at the location should further enhance our understanding of the in situ performance of the CLAY/SILT rather than relying entirely on SPT test results (See Figure 3).

The use of a geotextile separating layer between the backfill material and the underlying natural ground / trench base should also be considered. Where significant thickness of backfill is imported, a geogrid layer could be introduced to strengthen the backfill material. Excavation of open trenches in soft to firm soils will pose issues for stability with generous battering required to offset the risk of sidewall collapse. As an alternative to wide batters, as mentioned earlier, the use of trench boxes could be considered should there be a requirement for deeper excavation.

6.3 Groundwater

As outlined in Section 5.3, groundwater strikes in boreholes and drillholes were restricted to depths beyond 2.0m bgl with a groundwater dip measurement (in August 2025) of 2.83m (71.86m OD) recorded in RC18. Sump pumping may be required where shallow perched water entries are met. Elsewhere, where deep excavation in natural soils is required beyond 2.0 / 2.50m, this will likely necessitate dewatering. The water level in RC18 should be dipped as part of a longer-term monitoring programme. It may be the case that water re-equilibrates to higher depths than were recorded on site most especially during the wetter months of Winter / Spring.

Should water be encountered during deeper digs / excavations it is likely that de-watering will be required through a combination of strategic sump pumping. As mentioned in Section 5.3, the potential does exist for there to be seasonal changes in groundwater level. The works were carried out during Summer 2025. It may be the case that the various waterbodies at depth are subject to seasonal variations. As noted, readings should be taken at RC18 to assess equilibrated water levels.

6.4 Slopes / Batters

In the absence of trench stabilisation methods, a maximum temporary slope angle of 1V to 1.5H (33º) is anticipated for batters constructed within the upper low to medium and medium strength fine grained soils. A slope angle of 1V to 2H (26°) should be appropriate for long term batters in the same soils. Further investigation (dynamic probing / trial pitting) on the pipeline corridor should pinpoint any soft zones / stability issues in near surface SILT.

Where deep excavation works are required in the superficial deposits, the use of trench box support is advised. In addition, the uppermost fine subsoils will be susceptible to softening and degradation and surface water or groundwater ingress can lead to a significant reduction in shear strength. Perched water can exist locally and this should be considered in risk assessments for excavations.

Site operatives or personnel should not enter unsupported excavations and should be informed of potential risks. Where site operatives or engineering staff work in close proximity to temporary slopes or batters, these should be inspected and approved by a suitably experienced civil engineer, preferably with geotechnical experience. Where there is a risk of spalling of battered slopes, the use of a geogrid is recommended. The geogrid should be anchored at the top and bottom of the ridge face to contain particles such as gravel, cobbles and / or boulders that may become dislodged.

6.5 Buried Concrete

The chemical analysis tests show pH values of between 8.2 and 8.5 with sulphate aqueous extract (SO_4) values <10mg/l. This would categorise the upper natural soils as BRE Class DS-1. Table C1 ACEC for greenfield sites in BRE SD 1 (2005) could be used in the selection and design of concrete. With mobile groundwater conditions and given the pH values obtained, then ACEC class AC-1^d would be expected to be appropriate for buried concrete in natural soils.

In line with I.S. EN 206-1:2013 concrete could be manufactured to Class XA1 where founded or positioned in the upper soils (Class XA1 being ≥ 2000 and ≤ 3000 SO_4^{2-} mg/kg). However, based on the chemical results, there does not appear to be any issue with "chemical attack".

6.6 Waste Acceptance Criteria [WAC] & Environmental Testing – *Soils destined for Landfill*

Five shallow soil samples were selected from the boreholes at the M4. They were each analysed for compliance to the criteria set out in the 2002 European Landfill Directive (2003/33/EC). From the resultant testing, all samples can be classified as inert as per the 2002 European Landfill Directive (2003/33/EC).

The results obtained from the testing of the five inert borehole samples were also compared with published limits set out in the EPA Guidance on waste acceptance criteria at authorized soil recovery facilities (EPA, 2020). With regard to each of the criteria set for Total Organic Carbon and for the

organic compounds BTEX, Mineral Oil, PAH and PCB's, all five samples were found to satisfy the criteria stipulated by the EPA.

Furthermore, in relation to total metal concentrations, the EPA Guidance document employs a set of specific metal trigger limits to each of seven geochemical domains across the country. Depending on the domain in which the accepting recovery site falls, there are specific limits prescribed for certain metals. In order to further analyse the soils suitability for acceptance at an EPA recovery facility, the domain of the receiving facility would have to be known. For the purposes of this report, the maximum concentrations and / or trigger levels in soil and stone for soil recovery facilities for Geochemical Domain 2 (Carboniferous limestone and related rocks) are applied. In relation to the five samples, all exhibit metal concentrations within those published for Geochemical Domain 2 and would therefore, based on their metal and TOC / organic compound contents be accepted at an authorized soil recovery facility.

Furthermore, written into the EPA (2002) document, only "soil and stone containing up to 2% non-natural materials by weight is acceptable, ie., anthropogenic or man-made substances such as rubble, concrete, bricks, metal and bitumen that are non-natural to the environment from which the material was extracted". This 2% content level for man-made materials would have to be complied with should the soils be exported to an EPA-licenced Soil Recovery Facility.

In relation to sending the analysed samples to an EPA-licenced Soil Recovery Facility, the limits for acceptance at the nominated facility should be checked against the results listed in the test record sheet - final report.

Note that, depending on the extent and depth of envisaged excavations and quantities for soil removal (if required), a landfill or Soil Recovery Facility may require additional testing to achieve the frequency of analysis (i.e. number of samples per unit volume of excavation) that meets their licence requirements.

No asbestos was detected in screens ran on the five soil samples (See Chemtest report 25-20057-1 – Appendix 5).

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Appendix 1

Cable Percussion Borehole Logs

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH16**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,475.07 E 744,340.60 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	73.76	**BOREHOLE DEPTH (m)**	1.00
		DATE COMMENCED	14/05/2025
		DATE COMPLETED	14/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		73.46	0.30						
	Soft brown sandy slightly gravelly SILT with occasional cobbles		72.76	1.00						
1	Obstruction End of Borehole at 1.00 m				AA221709	B	1.00		N = 50/75 mm (25, 50)	
2										
3										
4										
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
0.9	1	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Obstruction encountered at 1.0m. Moved to BH16A and attempted rebore.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH16A**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,476.50 E 744,338.87 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	73.73	**BOREHOLE DEPTH (m)**	6.50
		DATE COMMENCED	14/05/2025
		DATE COMPLETED	15/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		73.43	0.30						
	Soft brown sandy slightly gravelly SILT with occasional cobbles				AA212801	B	0.50			
1					AA212802	B	1.00		N = 6 (1, 0, 1, 1, 2, 2)	
2			71.53	2.20	AA212803	B	2.00		N = 5 (1, 0, 0, 1, 2, 2)	
	Stiff to very stiff grey slightly sandy gravelly CLAY with some cobbles									
3					AA212804	B	3.00		N = 23 (4, 4, 5, 5, 6, 7)	
4					AA212805	B	4.00		N = 25 (3, 4, 6, 8, 6, 5)	
5					AA212806	B	5.00		N = 50/75 mm (12, 15, 50)	
6					AA212807	B	6.00		N = 43 (6, 8, 15, 10, 8, 10)	
			67.23	6.50					N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 6.50 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
6.3	6.5	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH17**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,499.41 E 744,312.61 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	74.52	**BOREHOLE DEPTH (m)**	7.50
		DATE COMMENCED	15/05/2025
		DATE COMPLETED	20/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		74.32	0.20						
	Soft brown sandy gravelly SILT/CLAY with a low cobble content				AA212807	B	0.50			
1					AA212808	B	1.00		N = 6 (1, 0, 1, 2, 1, 2)	
2			72.12	2.40	AA212809	B	2.00		N = 7 (1, 2, 1, 2, 2, 2)	
	Stiff grey slightly sandy slightly gravelly CLAY with a low cobble content									
3					AA212810	B	3.00		N = 17 (2, 3, 4, 4, 4, 5)	
4					AA212811	B	4.00		N = 22 (4, 4, 5, 5, 5, 7)	
5			69.02	5.50	AA212812	B	5.00		N = 23 (2, 3, 4, 4, 6, 9)	
	Very stiff grey slightly sandy gravelly SILT with a high cobble content									
6					AA212813	B	6.00		N = 38 (6, 10, 7, 9, 10, 12)	
7					AA212814	B	7.00		N = 50/150 mm (6, 10, 20, 30)	
			67.02	7.50					N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 7.50 m									
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
5.7	6	1	
7.3	7.5	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.00	2.00	No	1.70	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH18**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,462.68 E 744,221.94 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	74.69	**BOREHOLE DEPTH (m)**	6.00
		DATE COMMENCED	21/05/2025
		DATE COMPLETED	21/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		74.39	0.30						
	Soft to firm brown sandy SILT/CLAY				AA212817	B	0.50			
1					AA212818	B	1.00		N = 11 (2, 2, 3, 2, 3, 3)	
			72.89	1.80						
	Firm brown sandy gravelly CLAY				AA212819	B	2.00		N = 13 (2, 3, 5, 3, 2, 3)	
2										
3					AA212820	B	3.00		N = 12 (6, 4, 3, 3, 3, 3)	
			70.89	3.80						
	Stiff to very stiff grey/brown slightly sandy gravelly SILT with cobbles				AA212821	B	4.00		N = 21 (17, 8, 4, 4, 6, 7)	
4										
5					AA212822	B	5.00		N = 45 (6, 8, 9, 12, 12, 12)	
			68.69	6.00						
6	Obstruction End of Borehole at 6.00 m								N = 50/75 mm (25, 50)	
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4	4.2	1	
5.7	6	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.50	4.50	No	4.00	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH19**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,489.12 E 744,203.29 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	75.51	**BOREHOLE DEPTH (m)**	8.50
		DATE COMMENCED	22/05/2025
		DATE COMPLETED	26/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		75.11	0.40						
	Soft brown sandy SILT		74.51	1.00	AA212823	B	0.50			
1	Stiff grey/brown sandy gravelly CLAY with occasional cobbles				AA212824	B	1.00		N = 24 (3, 4, 6, 6, 6, 6)	
2			73.11	2.40	AA212825	B	2.00		N = 50/150 mm (16, 9, 40, 10)	
	Firm brown/grey to brown sandy gravelly SILT									
3					AA212826	B	3.00		N = 8 (1, 2, 2, 1, 2, 3)	
4					AA212827	B	4.00		N = 9 (2, 3, 2, 3, 2, 2)	
5					AA212828	B	5.00		N = 14 (3, 3, 2, 3, 3, 6)	
			69.51	6.00						
6	Stiff grey slightly gravelly slightly sandy CLAY with occasional cobbles				AA212829	B	6.00		N = 18 (3, 3, 4, 5, 4, 5)	
7					AA212830	B	7.00		N = 29 (3, 3, 4, 7, 8, 10)	
8			67.01	8.50					N = 50/75 mm (15, 10, 50)	
	Obstruction End of Borehole at 8.50 m								N = 50/75 mm (25, 50)	
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
2.1	2.4	1	
8.2	8.5	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.50	3.50	No	3.30	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH50**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,483.88 E 744,417.75 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	72.68	**BOREHOLE DEPTH (m)**	5.80
		DATE COMMENCED	20/05/2025
		DATE COMPLETED	21/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	JL

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		72.38	0.30						
	Firm brown sandy CLAY		72.18	0.50						
	Firm becoming stiff grey sandy gravelly CLAY with cobbles				AA212812	B	0.50-1.00			
1					AA212813	B	1.00-1.50		N = 46 (4, 5, 6, 10, 15, 15)	
2					AA212814	B	2.00-2.50		N = 10 (2, 3, 2, 3, 3, 2)	
3					AA212815	B	3.00-3.50		N = 15 (2, 3, 3, 3, 4, 5)	
4					AA212816	B	4.00-4.50		N = 34 (5, 5, 6, 9, 8, 11)	
5					AA212817	B	5.00-5.50		N = 48 (5, 8, 9, 12, 12, 15)	
			66.88	5.80					N = 50/0 mm (25, 50)	
6	Obstruction End of Borehole at 5.80 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
1.3	1.6	0.75	
5.5	5.8	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.50	3.50	No	3.00	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 11/8/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH51**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,511.02 E 744,093.63 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	70.71	**BOREHOLE DEPTH (m)**	3.00
		DATE COMMENCED	27/05/2025
		DATE COMPLETED	27/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	Peaty TOPSOIL		70.21	0.50						
	Soft grey sandy SILT/CLAY				AA212847	B	0.50			
1			69.41	1.30	AA212848	B	1.00		N = 4 (1, 0, 0, 1, 2, 1)	
	Firm grey sandy gravelly SILT with some cobbles									
2					AA212849	B	2.00		N = 10 (1, 0, 1, 4, 3, 2)	
			68.01	2.70						
	COBBLES & BOULDERS		67.71	3.00					N = 50/75 mm (25, 50)	
3	Obstruction End of Borehole at 3.00 m									
4										
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3	3	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 11/8/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH51A**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,510.06 E 744,092.51 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	70.57	**BOREHOLE DEPTH (m)**	13.00
		DATE COMMENCED	27/05/2025
		DATE COMPLETED	28/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	Peaty TOPSOIL		70.07	0.50						
	Soft grey sandy SILT/CLAY				AA22801	B	0.50			
1			69.37	1.20	AA22802	B	1.00		N = 4 (1, 0, 2, 1, 0, 1)	
	Firm grey sandy gravelly SILT with some cobbles									
2					AA22803	B	2.00		N = 11 (1, 1, 4, 3, 2, 2)	
			67.57	3.00						
3	Stiff grey slightly sandy slightly gravelly CLAY with cobbles & occasional boulders				AA22804	B	3.00		N = 24 (4, 5, 6, 6, 6, 6)	
4					AA22805	B	4.00		N = 21 (3, 3, 6, 4, 5, 6)	
			65.57	5.00						
5	Stiff grey sandy gravelly SILT with cobbles and occasional boulders				AA22806	B	5.00		N = 22 (3, 5, 6, 4, 6, 6)	
6					AA22807	B	6.00		N = 18 (2, 3, 3, 4, 4, 7)	
7					AA22808	B	7.00		N = 50/75 mm (25, 50)	
			62.57	8.00						
8	Stiff brown slightly sandy slightly gravelly CLAY with many cobbles				AA22809	B	8.00		N = 27 (7, 5, 7, 7, 7, 6)	
9			61.27	9.30	AA22810	B	9.00		N = 21 (3, 4, 4, 5, 6, 6)	
	Medium dense to dense dark brown clayey/silty very sandy GRAVEL with occasional cobbles									

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
7	7.3	1	
12.6	13	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
7.50	7.50	No	7.00	20	Slow
10.00	10.00	No	2.00	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 11/8/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH51A**
		SHEET	Sheet 2 of 2
CO-ORDINATES	662,510.06 E 744,092.51 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	70.57	**BOREHOLE DEPTH (m)**	13.00
		DATE COMMENCED	27/05/2025
		DATE COMPLETED	28/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
10	Medium dense to dense dark brown clayey/silty very sandy GRAVEL with occasional cobbles *(continued)*				AA22811	B	10.00		N = 35 (5, 6, 8, 9, 9, 9)	
11					AA22812	B	11.00		N = 41 (11, 6, 8, 10, 12, 11)	
			58.57	12.00						
12	Dense dark brown slightly clayey/silty sandy GRAVEL				AA22813	B	12.00		N = 45 (6, 7, 10, 10, 11, 14)	
			57.57	13.00						
13	Obstruction End of Borehole at 13.00 m								N = 50/75 mm (25, 50)	
14										
15										
16										
17										
18										
19										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
7	7.3	1	
12.6	13	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 11/8/25

Appendix 2

Rotary Drillhole Records & Photographs

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC16A**
		SHEET	Sheet 1 of 3
CO-ORDINATES	662,476.50 E 744,338.87 N		
GROUND LEVEL (mOD)	73.73	**DATE DRILLED**	16/07/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Description	Depth (m)	Elevation	SPT (N Value)
SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	73.43	
SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy slightly gravelly SILT with occasional cobbles	2.20	71.53	
SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy gravelly CLAY with some cobbles	6.50	67.23	
SYMMETRIX DRILLING: No recovery, observed by driller as returns of BOULDER	6.70	67.03	
SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly CLAY with a low to medium boulder content			N = 50/155 mm (8, 11, 16, 24, 10) N = 50/105 mm (19, 6, 27, 23)

REMARKS

Hole cased from 0.0-14.80m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 11/8/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC16A**
		SHEET	Sheet 2 of 3
CO-ORDINATES	662,476.50 E 744,338.87 N		
GROUND LEVEL (mOD)	73.73	**DATE DRILLED**	16/07/2025
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly CLAY with a low to medium boulder content *(continued)*				N = 50/100 mm (12, 13, 28, 22)
11												
12									12.60	61.13		N = 50/110 mm (10, 15, 20, 30)
13								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown silty sandy GRAVEL	13.10	60.63		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown gravelly CLAY	13.90	59.83		N = 50/40 mm (7, 18, 50)
14								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown clayey sandy GRAVEL	14.50	59.23		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of Possible ROCK	14.80	58.93		
15	15.70	100	22	0				Medium strong to strong thickly to thinly bedded to massively bedded pale grey slightly dolomitised / crystalline calcisiltite LIMESTONE. Weathering: Slightly to moderately weathered				
16		100	52	28				Discontinuities are closely to widely spaced, smooth to locally rough; fractures are planar to. locally irregular. Apertures are tight to open, clay smeared, local iron oxide staining. Dips are subhorizontal to 30°, locally 75°.				
17	17.30											
18		100	100	100								
	18.80											
19		100	99	99								

REMARKS

Hole cased from 0.0-14.80m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
17-07-25	13.10	13.10	2.80	Start of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC16A**
		SHEET	Sheet 3 of 3
CO-ORDINATES	662,476.50 E 744,338.87 N		
GROUND LEVEL (mOD)	73.73	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	16/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20	20.20							End of Borehole at 20.20 m	20.20	53.53		
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.0-14.80m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC17**
		SHEET	Sheet 1 of 3
CO-ORDINATES	662,499.41 E 744,312.61 N		
GROUND LEVEL (mOD)	74.52	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	18/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	74.32		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly SILT/CLAY with a low cobble content	2.40	72.12		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy slightly gravelly CLAY with a low cobble content	5.50	69.02		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy gravelly SILT with a high cobble content	7.50	67.02		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy clayey GRAVEL	8.30	66.22		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly CLAY				N = 50/175 mm (4, 7, 14, 18, 18)

REMARKS

Hole cased from 0.0-16.10m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
13.70	13.70				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC17**
		SHEET	Sheet 2 of 3
CO-ORDINATES	662,499.41 E 744,312.61 N		
GROUND LEVEL (mOD)	74.52	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	18/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly CLAY *(continued)*				N = 50/105 mm (6, 10, 20, 30)
11												
12									12.40	62.12		N = 50/60 mm (14, 11, 50)
13								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown very silty/clayey sandy GRAVEL	13.70	60.82		N = 50/60 mm (16, 9, 50)
14								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown clayey sandy GRAVEL				
15									15.40	59.12		N = 50/95 mm (25, 35, 15)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of Possible ROCK	16.10	58.42		
16		100	94	90				Medium strong to strong light grey fine grained massively bedded slightly fossiliferous slightly dolomitised / crystalline calcisiltite LIMESTONE with medium to widely spaced (600-800mm spaced) thin calcite veins (~10mm thick). Weathering: 18.40m Rare thin brown clay smear on fracture surfaces (up to 5mm thick). 18.33m Rare pitted discontinuity surface. Otherwise fresh to slightly weathered.				
17	17.70											
18		100	100	77				Discontinuities are very closely to medium spaced, predominantly closely to medium spaced, smooth; fractures are undulating to planar. Apertures are partly open to open, local calcite veinfill ~1mm to 10mm) occasionally resulting in 45-50° fractures. Dips are generally subhorizontal to 20°.				
19	19.30											

REMARKS

Hole cased from 0.0-16.10m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
13.70	13.70				

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
18-07-25	16.10	16.10	14.90	End of Shift
21-07-25	17.70	16.10	7.60	End of Shift

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC17**
		SHEET	Sheet 3 of 3
CO-ORDINATES	662,499.41 E 744,312.61 N		
GROUND LEVEL (mOD)	74.52	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	18/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20		100	95	95								
	20.80								20.80	53.72		
21								End of Borehole at 20.80 m				
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.0-16.10m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
13.70	13.70				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
22-07-25	20.80	16.10	7.40	Water levels recorded 5 mins after end of drilling.

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC18**
		SHEET	Sheet 1 of 3
CO-ORDINATES	662,462.68 E 744,221.94 N		
GROUND LEVEL (mOD)	74.69	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	23/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	74.39		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy SILT/CLAY	1.80	72.89		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly CLAY	3.80	70.89		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown slightly sandy gravelly SILT with cobbles	6.00	68.69		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly silty CLAY				N = 50/200 mm (8, 10, 17, 23, 10) N = 50/95 mm (12, 13, 33, 17)

REMARKS

Electric fencing required around rig / works area. Hole cased from 0.0-16.30m. Standpipe installed with fence surround.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
12.50	12.50	15.40			

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
24-07-25	15.00	1.00	15.00	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC18**
		SHEET	Sheet 2 of 3
CO-ORDINATES	662,462.68 E 744,221.94 N		
GROUND LEVEL (mOD)	74.69	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	23/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy clayey GRAVEL to gravelly CLAY	10.10	64.59		N = 50/45 mm (25, 50)
11												
12									12.50	62.19		N = 50/125 mm (14, 11, 21, 29)
13								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown clayey sandy GRAVEL				N = 50/100 mm (20, 5, 28, 22)
14												
15									15.40	59.29		N = 50/55 mm (25, 50)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly CLAY	16.00	58.69		
16								SYMMETRIX DRILLING: No recovery, observed by driller as returns of Possible ROCK	16.30	58.39		
		100	49	31				Medium strong to strong light grey to grey brown fine grained massively bedded slightly dolomitised / crystalline calcisiltite LIMESTONE. Rare medium spaced (200-600mm) very thin calcite veins (1-2mm thick). Weathering: Orange brown non-penetrative discolouration common on discontinuity surfaces. Otherwise fresh to slightly weathered.				
17	17.10				930							
18		100	100	100				Discontinuities are closely to medium spaced, smooth; fractures are planar to irregular. Apertures are tight to partly open. Local calcite veinfill (19.80m) resulting in rare 45-50° fractures. Dips generally subhorizontal to 10°.				
	18.65											
19		100	65	61								

REMARKS

Electric fencing required around rig / works area. Hole cased from 0.0-16.30m. Standpipe installed with fence surround.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
12.50	12.50	15.40			

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
23-07-25	16.30	16.30	Dry	End of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
24-07-25	15.00	1.00	15.00	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC18**
		SHEET	Sheet 3 of 3
CO-ORDINATES	662,462.68 E 744,221.94 N		
GROUND LEVEL (mOD)	74.69	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	23/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20	20.25							End of Borehole at 20.25 m	20.25	54.44		
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Electric fencing required around rig / works area. Hole cased from 0.0-16.30m. Standpipe installed with fence surround.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
12.50	12.50	15.40			

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
24-07-25	20.25	16.30	7.00	Water levels recorded 5 mins after end of drilling.

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
24-07-25	15.00	1.00	15.00	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC19**
		SHEET	Sheet 1 of 3
CO-ORDINATES	662,489.12 E 744,203.29 N		
GROUND LEVEL (mOD)	75.51	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	
		DATE DRILLED	28/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.40	75.11		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy SILT	1.00	74.51		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy gravelly CLAY with occasional cobbles				
2									2.40	73.11		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown/grey to brown sandy gravelly SILT				
3												
4												
5												
									6.00	69.51		
6								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly gravelly slightly sandy CLAY with occasional cobbles				
7												
8									8.50	67.01		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly silty CLAY				
9												N = 50/255 mm (6, 9, 10, 11, 16, 13)

REMARKS

Hole cased from 0.0-20.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
17.40	17.40				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC19**
		SHEET	Sheet 2 of 3
CO-ORDINATES	662,489.12 E 744,203.29 N		
GROUND LEVEL (mOD)	75.51	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	
		DATE DRILLED	28/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly silty CLAY *(continued)*				N = 50/220 mm (8, 14, 14, 16, 20)
11												
12												N = 50/155 mm (7, 15, 20, 25, 5)
13												
14												N = 50/100 mm (10, 15, 30, 20)
15												
16												N = 50/95 mm (25, 29, 21)
17									17.40	58.11		N = 50/60 mm (25, 50)
18								SYMMETRIX DRILLING: No recovery, observed by driller as returns of sandy clayey GRAVEL				N = 50/80 mm (25, 42, 8)
19												N = 50/65 mm (25, 50)

REMARKS

Hole cased from 0.0-20.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
17.40	17.40				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
28-07-25	12.00	12.00	Dry	Start of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC19**
		SHEET	Sheet 3 of 3
CO-ORDINATES	662,489.12 E 744,203.29 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	75.51	**FLUSH**	Air/Mist
		DATE DRILLED	28/07/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20								SYMMETRIX DRILLING: No recovery, observed by driller as returns of sandy clayey GRAVEL *(continued)*	20.50	55.01		N = 50/50 mm (25, 50)
								End of Borehole at 20.50 m				
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.0-20.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
17.40	17.40				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
29-07-25	20.50	20.50	9.40	Water levels recorded 5 mins after end of drilling.

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 11/8/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC50**
		SHEET	Sheet 1 of 3
CO-ORDINATES	662,483.88 E 744,417.75 N		
GROUND LEVEL (mOD)	72.68	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	04/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	72.38		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy CLAY	0.50	72.18		
1	1.60							SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY with cobbles				
2												
3												
4												
5									5.80	66.88		
6								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown gravelly sandy CLAY with a low to medium boulder content				N = 29 (2, 3, 5, 8, 8, 8)
7		0	0	0								N = 54 (4, 7, 10, 11, 16, 17)
8												
9		-10	-8	-8								N = 50/185 mm (7, 12, 15, 21, 14)

REMARKS

Hole cased from 0.0-14.80m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
12.10	12.10				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 11/8/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC50**
		SHEET	Sheet 2 of 3
CO-ORDINATES	662,483.88 E 744,417.75 N		
GROUND LEVEL (mOD)	72.68	**DATE DRILLED**	04/07/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
									10.40	62.28		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown gravelly sandy CLAY				N = 50/80 mm (14, 11, 35, 15)
									12.10	60.58		N = 50/50 mm (10, 15, 50)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy clayey GRAVEL				
									13.80	58.88		N = 50/15 mm (16, 9, 50)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of Possible ROCK				
	14.80								14.80	57.88		
		112	103	103				Medium strong to strong thickly to thinly bedded to massively bedded pale grey slightly dolomitised / crystalline calcisiltite LIMESTONE. Weathering: Fresh to slightly weathered Discontinuities are closely to widely spaced, smooth to locally rough; fractures are planar to. locally irregular. Apertures are tight to open. Local calcite veining. Dips are subhorizontal to 30°, locally 45°.				
	16.40											
		100	100	95		599.9999999999998						
	17.45											
		100	84	73								
	18.00					800.0000000000001						
						599.9999999999999						

REMARKS

Hole cased from 0.0-14.80m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
12.10	12.10				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC50**
		SHEET	Sheet 3 of 3
CO-ORDINATES	662,483.88 E 744,417.75 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	72.68	**FLUSH**	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	04/07/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20	20.70	100	100	100				End of Borehole at 20.70 m	20.70	51.98		
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.0-14.80m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
12.10	12.10				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
05-07-25	20.70	14.80	4.80	Water levels recorded 5 mins after end of drilling.

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC51A**
		SHEET	Sheet 1 of 3
CO-ORDINATES	662,510.06 E 744,092.51 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	70.57	**FLUSH**	Air/Mist
		DATE DRILLED	25/07/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of Peaty TOPSOIL	0.50	70.07		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy SILT/CLAY	1.20	69.37		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT with some cobbles	3.00	67.57		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy slightly gravelly CLAY with cobbles & occasional boulders	5.00	65.57		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT with cobbles and occasional boulders	8.00	62.57		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown slightly sandy slightly gravelly CLAY with many cobbles	9.30	61.27		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of dark brown clayey/silty very sandy GRAVEL with occasional cobbles				

REMARKS

Electric fencing required around rig / works area. Hole cased from 0.0-20.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC51A**
		SHEET	Sheet 2 of 3
CO-ORDINATES	662,510.06 E 744,092.51 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	70.57	**FLUSH**	Air/Mist
		DATE DRILLED	25/07/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								SYMMETRIX DRILLING: No recovery, observed by driller as returns of dark brown clayey/silty very sandy GRAVEL with occasional cobbles *(continued)*				
11												
12									12.00	58.57		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of dark brown slightly clayey/silty sandy GRAVEL				
13									13.00	57.57		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly CLAY with a low to medium boulder content	13.60	56.97		N = 50/95 mm (7, 12, 32, 18)
14								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy clayey GRAVEL				
									14.90	55.67		
15								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy silty/clayey GRAVEL				N = 50/85 mm (25, 30, 20)
16												N = 50/95 mm (25, 27, 23)
									16.80	53.77		
17								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey black gravelly CLAY				
18												N = 50/40 mm (25, 50)
19												N = 50/45 mm (25, 50)

REMARKS

Electric fencing required around rig / works area. Hole cased from 0.0-20.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
25-07-25	13.60	13.60	Dry	End of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC51A**
		SHEET	Sheet 3 of 3
CO-ORDINATES	662,510.06 E 744,092.51 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	70.57	**FLUSH**	Air/Mist
		DATE DRILLED	25/07/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey black gravelly CLAY *(continued)*	20.50	50.07		N = 50/30 mm (25, 50)
								End of Borehole at 20.50 m				
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Electric fencing required around rig / works area. Hole cased from 0.0-20.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
26-07-25	20.50	20.50	Dry	Water levels recorded 5 mins after end of drilling.

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

RC16A – Box 1 of 3 - 14.80-17.30m



RC16A – Box 2 of 3 – 17.30-19.40m



RC16A - Box 3 of 3 – 19.40-20.20m



RC17 – Box 1 of 2 - 16.10-18.70m



RC17 – Box 2 of 2 – 18.70-20.80m



RC18 – Box 1 of 2 - 16.30-18.95m



RC18 – Box 2 of 2 – 18.95-20.25m



RC50 – Box 1 of 3 – 14.80-17.45m



RC50 – Box 2 of 3 – 17.45-19.60m



RC50 – Box 3 of 3 – 19.60-20.70m



Appendix 3

Groundwater Monitoring Records

GROUNDWATER MONITORING SHEET

Project: Gas to Bord na Mona, Edenderry, Phase 1 GI – HCC1
IGSL Reference: 25882

Exploratory Hole No.	Ground Level m OD	Response Zone Top (m bgl)	Response Zone Base (m bgl)	Groundwater level (m bgl) **01/08/2025**	(m OD)	Groundwater level (m bgl)	(m OD)	Groundwater level (m bgl)	(m OD)
RC18	74.69	1.00	15.00	2.83	71.86				

Remarks:

Appendix 4

Geotechnical Laboratory Results (Soil)

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.1331

Report No. **R171146** Contract No. 25882 Contract Name: Gas to Edenderry

Customer MIL

Samples Received: 07/07/25 Date Tested: 07/07/25

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH16A	AA212803	2.0	A25/2519	B	9.5	22	NP	NP	46	WS	4.4		Brown sandy gravelly SILT
BH16A	AA212805	4.0	A25/2520	B	13	23	13	10	61	WS	4.4	C L	Grey slightly sandy, gravelly, CLAY
BH16A	AA212807	6.0	A25/2521	B	10	25	13	12	65	WS	4.4	C L	Grey slightly sandy, gravelly, CLAY with some cobbles
BH17	AA212808	1.0	A25/2522	B	25	30	NP	NP	79	WS	4.4		Brown sandy gravelly SILT
BH17	AA212810	3.0	A25/2523	B	13	22	11	11	55	WS	4.4	C L	Grey slightly sandy, slightly gravelly, CLAY
BH17	AA212812	5.0	A25/2524	B	11	24	13	11	55	WS	4.4	C L	Grey sandy gravelly CLAY
BH17	AA212814	7.0	A25/2525	B	8.8	22	NP	NP	57	WS	4.4		Grey slightly sandy, gravelly, SILT with some cobbles
BH18	AA212819	2.0	A25/2526	B	12	25	13	12	66	WS	4.4	C L	Brown sandy gravelly CLAY
BH18	AA212821	4.0	A25/2527	B	6.4	20	NP	NP	75	WS	4.4		Brown slightly sandy, gravelly, SILT with many cobbles
BH19	AA212826	3.0	A25/2528	B	12	23	NP	NP	45	WS	4.4		Brown sandy gravelly SILT
BH19	AA212828	5.0	A25/2529	B	9.9	21	NP	NP	57	WS	4.4		Grey sandy gravelly SILT
BH19	AA212830	7.0	A25/2530	B	13	25	13	12	58	WS	4.4	C L	Grey slightly sandy, slightly gravelly, CLAY
BH24	AA213977	2.0	A25/2531	B	6.0	23	NP	NP	28	WS	4.4		Brown sandy gravelly SILT
BH25	AA222793	1.0	A25/2536	B	21	32	18	14	82	WS	4.4	C L	Grey/brown sandy gravelly CLAY
BH25	AA222801	9.0	A25/2540	B	22	25	NP	NP	99	WS	4.4		Grey slightly sandy, slightly gravelly, SILT

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method
4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.
NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12.
Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.
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IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by: H Byrne

Date: 05/08/25

Page: 1 of 1

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.1331

Report No. **R171147** Contract No. 25882 Contract Name: Gas to Edenderry

Customer MIL

Samples Received: 07/07/25 Date Tested: 07/07/25

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH51A	AA22803	2.0	A25/2542	B	7.4	20	NP	NP	52	WS	4.4		Brown sandy gravelly SILT
BH51A	AA22805	4.0	A25/2543	B	13	27	14	13	59	WS	4.4	C L	Brown slightly sandy, slightly gravelly, CLAY
BH51A	AA22807	6.0	A25/2544	B	15	23	NP	NP	66	WS	4.4		Brown sandy gravelly SILT
BH51A	AA22809	8.0	A25/2545	B	10	26	14	12	57	WS	4.4	C L	Brown slightly sandy, slightly gravelly, CLAY with many cobbles

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method
4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.
NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12.
Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.
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IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by: H Byrne

Date: 05/08/25

Page: 1 of 1

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

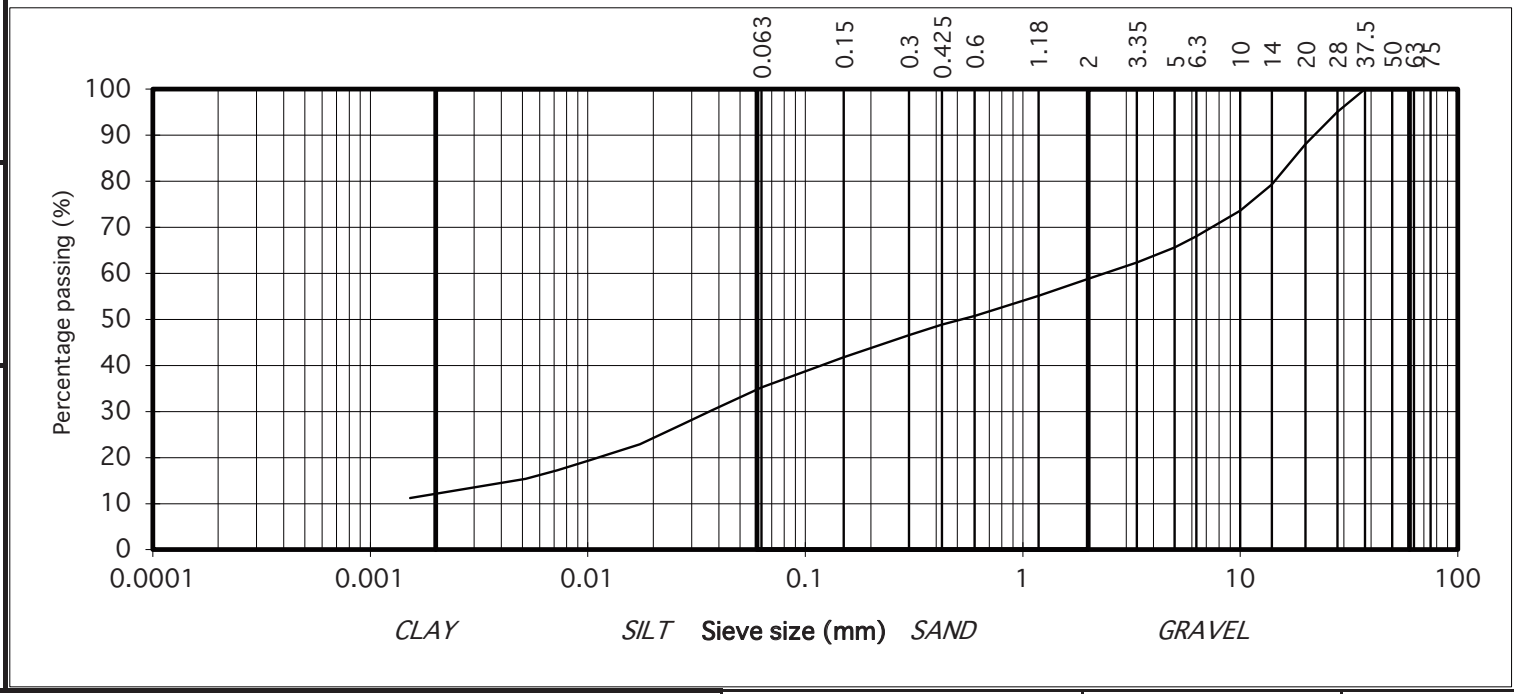
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	95	
20	88	
14	79	
10	74	
6.3	68	
5	66	
3.35	62	
2	59	
1.18	55	SAND
0.6	51	
0.425	49	
0.3	47	
0.15	42	
0.063	35	SILT/CLAY
0.037	30	
0.027	27	
0.017	23	
0.010	19	
0.007	17	
0.005	15	
0.002	11	

Contract No.	25882	Report No.	R171127	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH16A			
Sample No.*	AA212805	Lab. Sample No.		A25/2520
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		08/07/2025
Description:	Grey slightly sandy, gravelly, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

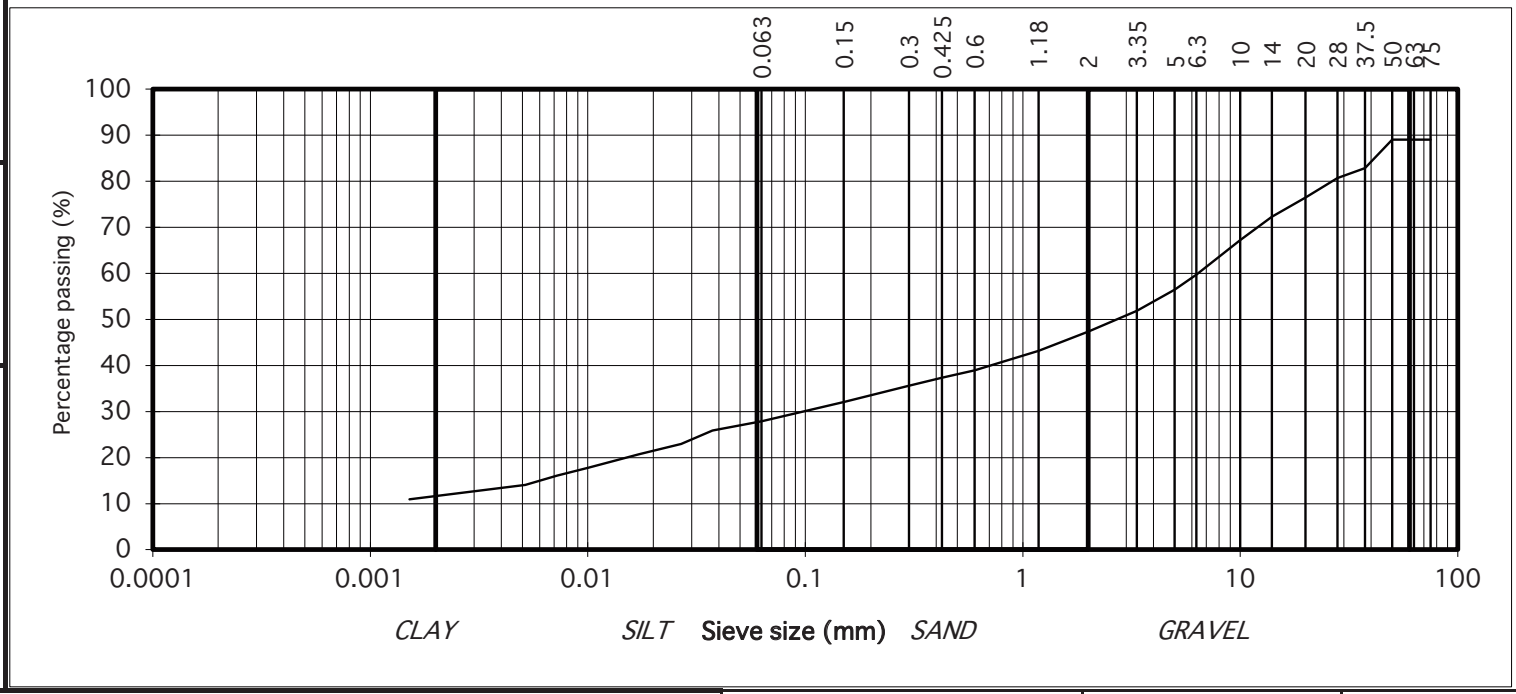
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	89	COBBLES
63	89	
50	89	GRAVEL
37.5	83	
28	81	
20	76	
14	72	
10	67	
6.3	60	
5	56	
3.35	52	
2	47	
1.18	43	SAND
0.6	39	
0.425	37	
0.3	36	
0.15	32	
0.063	28	SILT/CLAY
0.037	26	
0.027	23	
0.017	21	
0.010	18	
0.007	16	
0.005	14	
0.002	11	

Contract No.	25882	Report No.	R171613	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH16A			
Sample No.*	AA212807	Lab. Sample No.		A25/2521
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		08/07/2025
Description:	Grey slightly sandy, gravelly, CLAY with some cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Smple size ddi not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	05/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

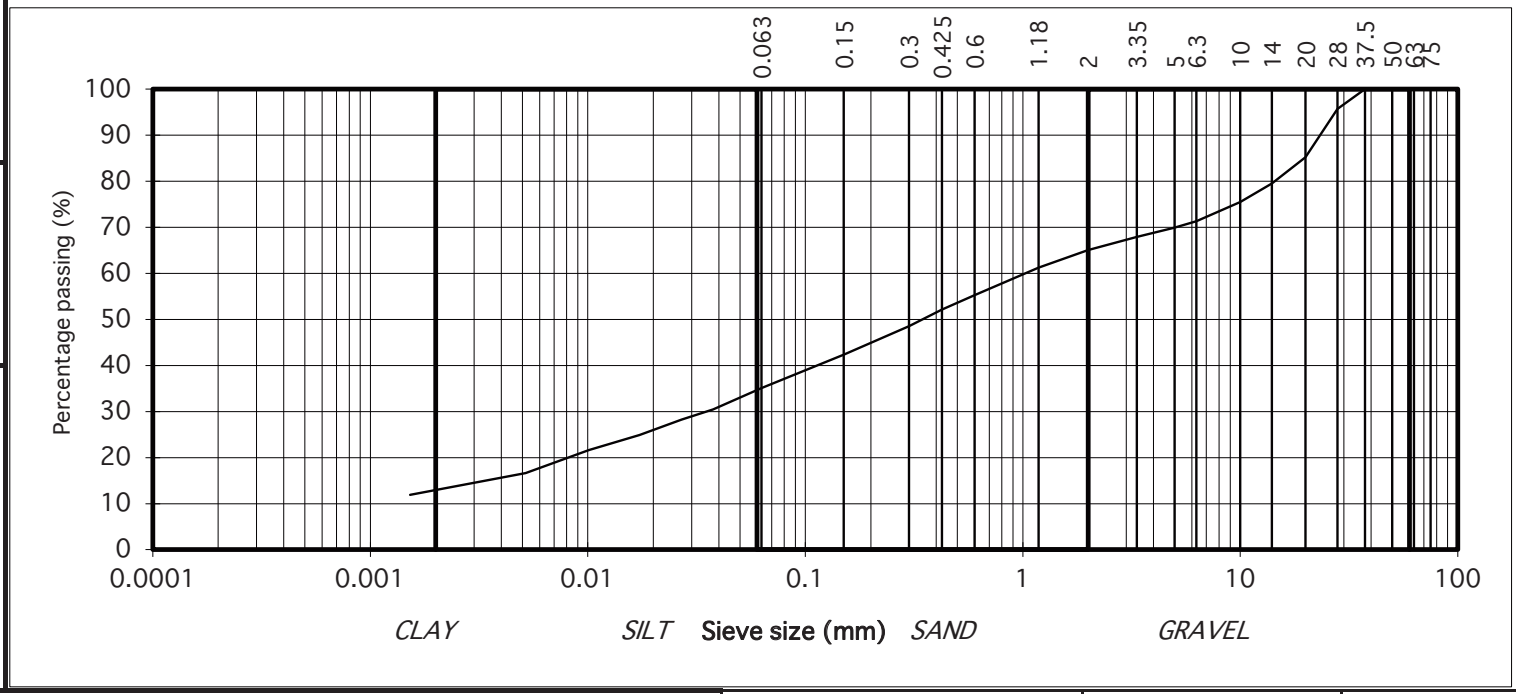
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	96	
20	85	
14	80	
10	76	
6.3	71	
5	70	
3.35	68	
2	65	
1.18	61	SAND
0.6	55	
0.425	52	
0.3	49	
0.15	42	
0.063	35	SILT/CLAY
0.038	30	
0.027	28	
0.017	25	
0.010	22	
0.007	19	
0.005	17	
0.002	12	

Contract No.	25882	Report No.	R171125	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH17			
Sample No.*	AA212810	Lab. Sample No.		A25/2523
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		08/07/2025
Description:	Grey slightly sandy, slightly gravelly, CLAY			

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

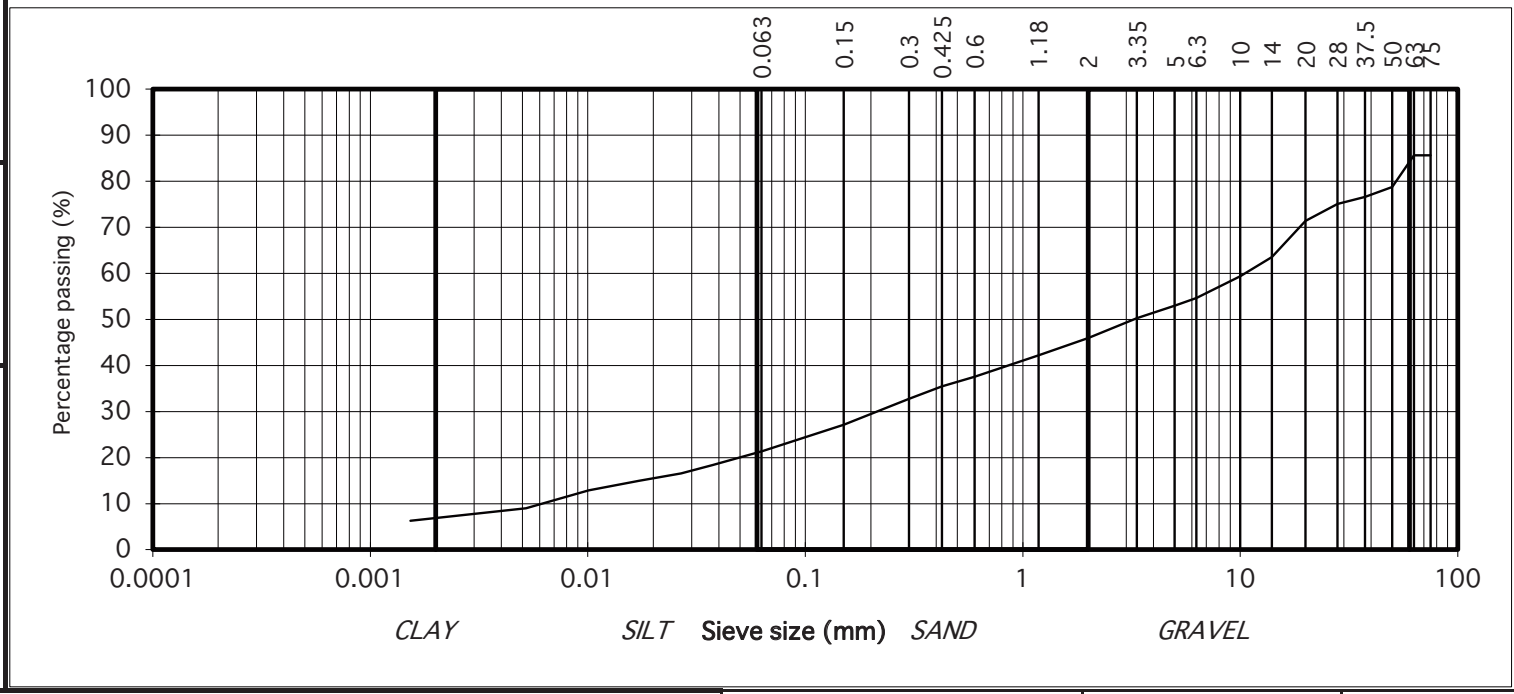
particle size	% passing	
75	86	COBBLES
63	86	
50	79	GRAVEL
37.5	77	
28	75	
20	71	
14	64	
10	59	
6.3	55	
5	53	
3.35	50	
2	46	
1.18	42	SAND
0.6	38	
0.425	35	
0.3	33	
0.15	27	
0.063	21	SILT/CLAY
0.037	18	
0.027	17	
0.017	15	
0.010	13	
0.007	11	
0.005	9	
0.002	6	

Contract No.	25882	Report No.	
Contract Name :	Gas to Edenderry		
BH/TP No.	BH17		
Sample No.*	AA212814	Lab. Sample No.	A25/2925
Sample Type:	B		
Depth* (m)	7.00	Customer: MIL	
Date Received	07/07/2025	Date Testing started	07/07/2025
Description:	Grey slightly sandy, gravelly, SILT with some cobbles		

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	05/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

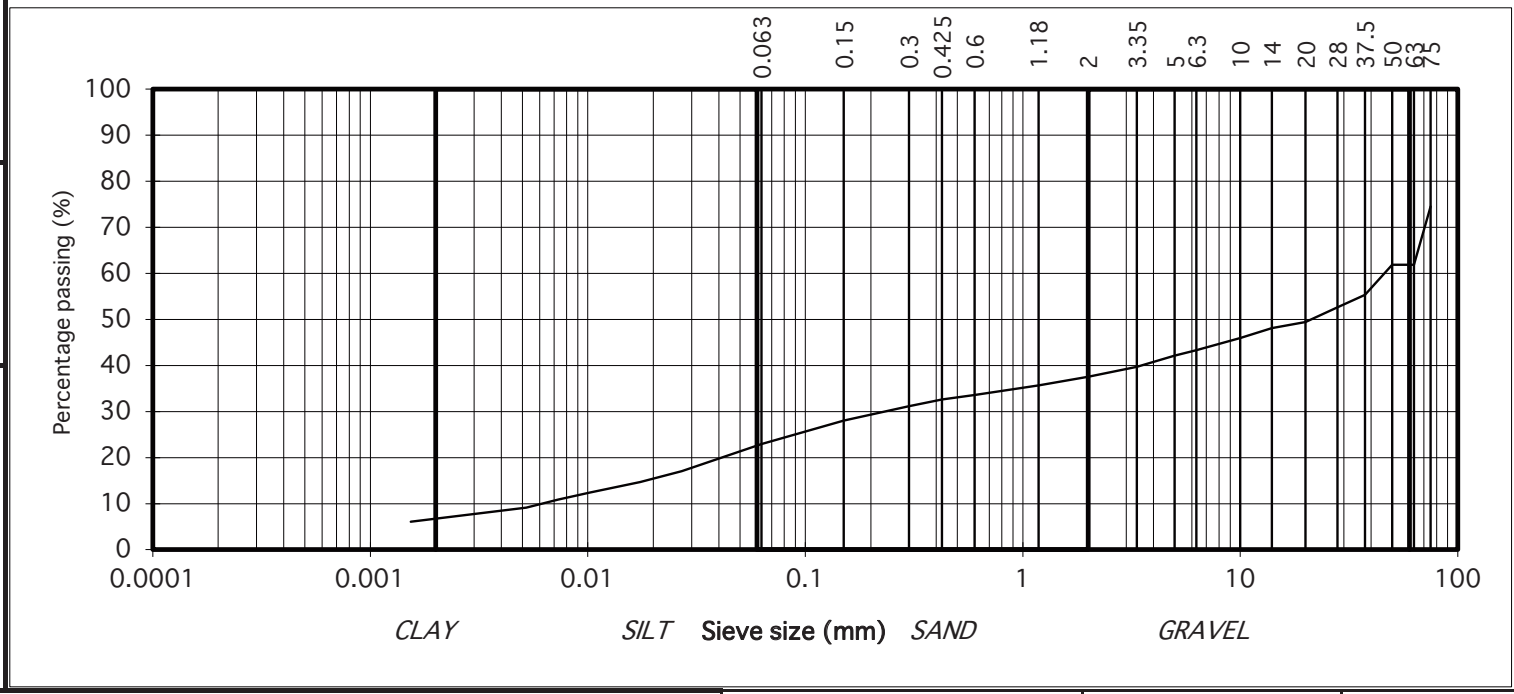
particle size	% passing	
75	75	COBBLES
63	62	
50	62	GRAVEL
37.5	55	
28	53	
20	49	
14	48	
10	46	
6.3	43	
5	42	
3.35	40	
2	38	
1.18	36	SAND
0.6	34	
0.425	33	
0.3	31	
0.15	28	
0.063	23	SILT/CLAY
0.038	19	
0.027	17	
0.017	15	
0.010	12	
0.007	11	
0.005	9	
0.002	6	

Contract No.	25882	Report No.	R171126	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH18			
Sample No.*	AA212821	Lab. Sample No.		A25/2527
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		07/07/2025
Description:	Brown slightly sandy, gravelly, SILT with many cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

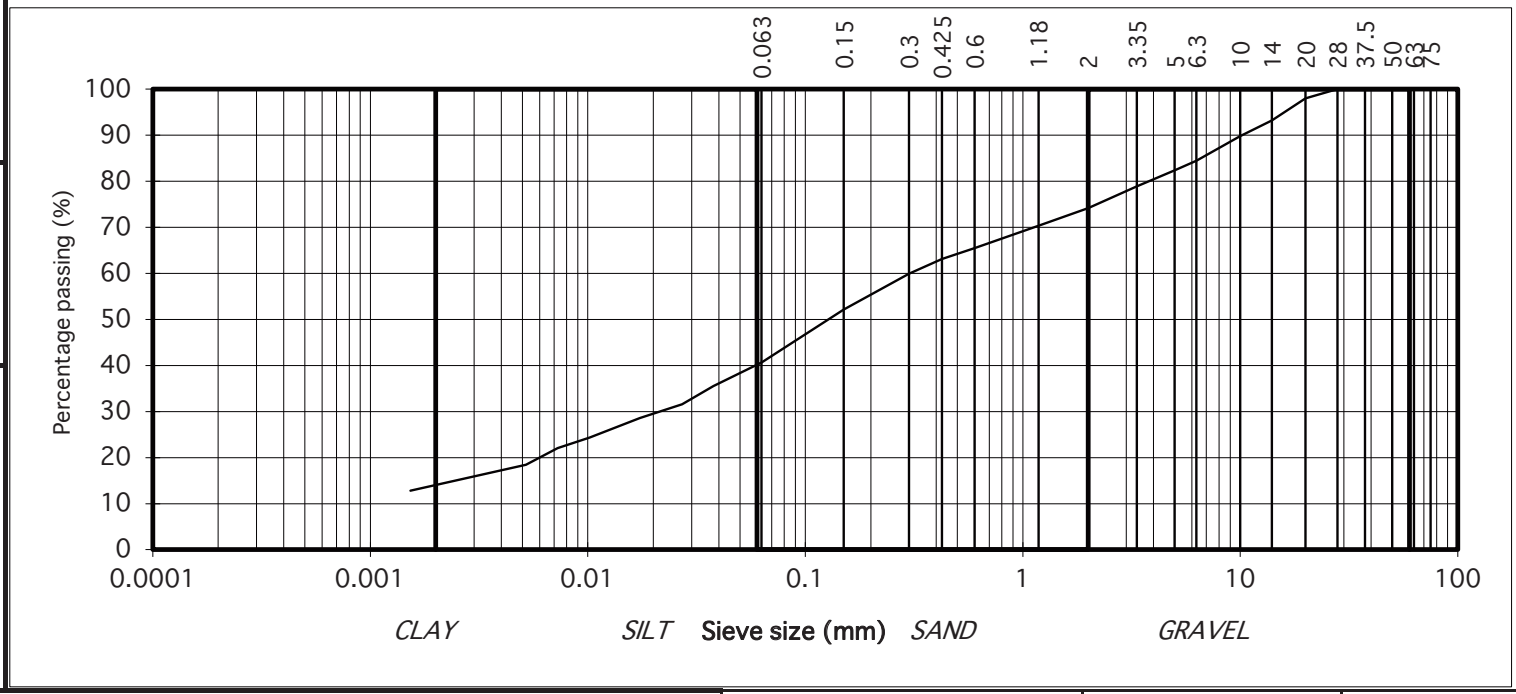
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	98	
14	93	
10	90	
6.3	84	
5	82	
3.35	79	
2	74	
1.18	70	SAND
0.6	65	
0.425	63	
0.3	60	
0.15	52	
0.063	41	SILT/CLAY
0.038	36	
0.027	32	
0.017	29	
0.010	24	
0.007	22	
0.005	18	
0.002	13	

Contract No.	25882	Report No.	R171128	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH19			
Sample No.*	AA212830	Lab. Sample No.		A25/2530
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		08/07/2025
Description:	Grey slightly sandy, slightly gravelly, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

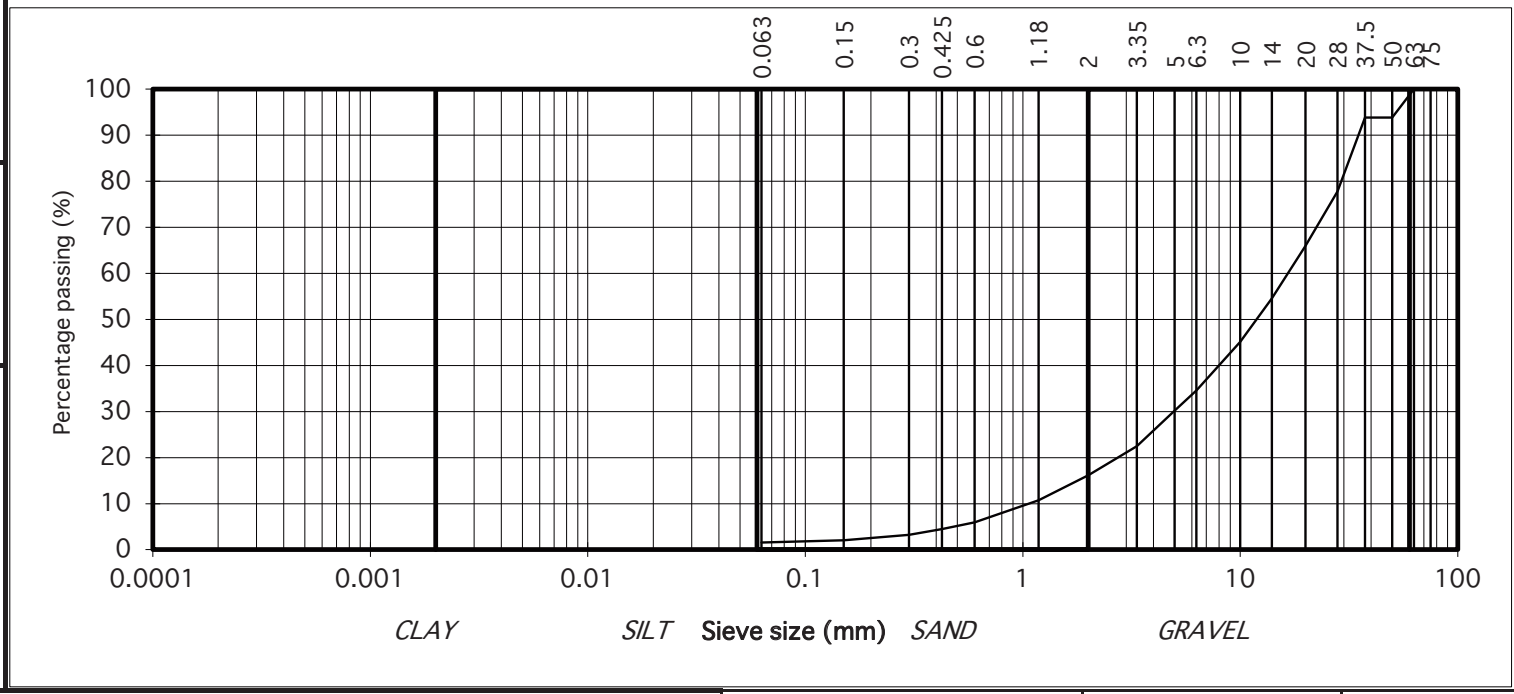
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	94	GRAVEL
37.5	94	
28	78	
20	66	
14	55	
10	45	
6.3	35	
5	30	
3.35	22	
2	16	
1.18	11	SAND
0.6	6	
0.425	4	
0.3	3	
0.15	2	
0.063	2	SILT/CLAY

Contract No.	25882	Report No.	R171117	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH24			
Sample No.*	AA213979	Lab. Sample No.		A25/2532
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		08/07/2025
Description:	Brown slightly clayey/silty, sandy, GRAVEL			
Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

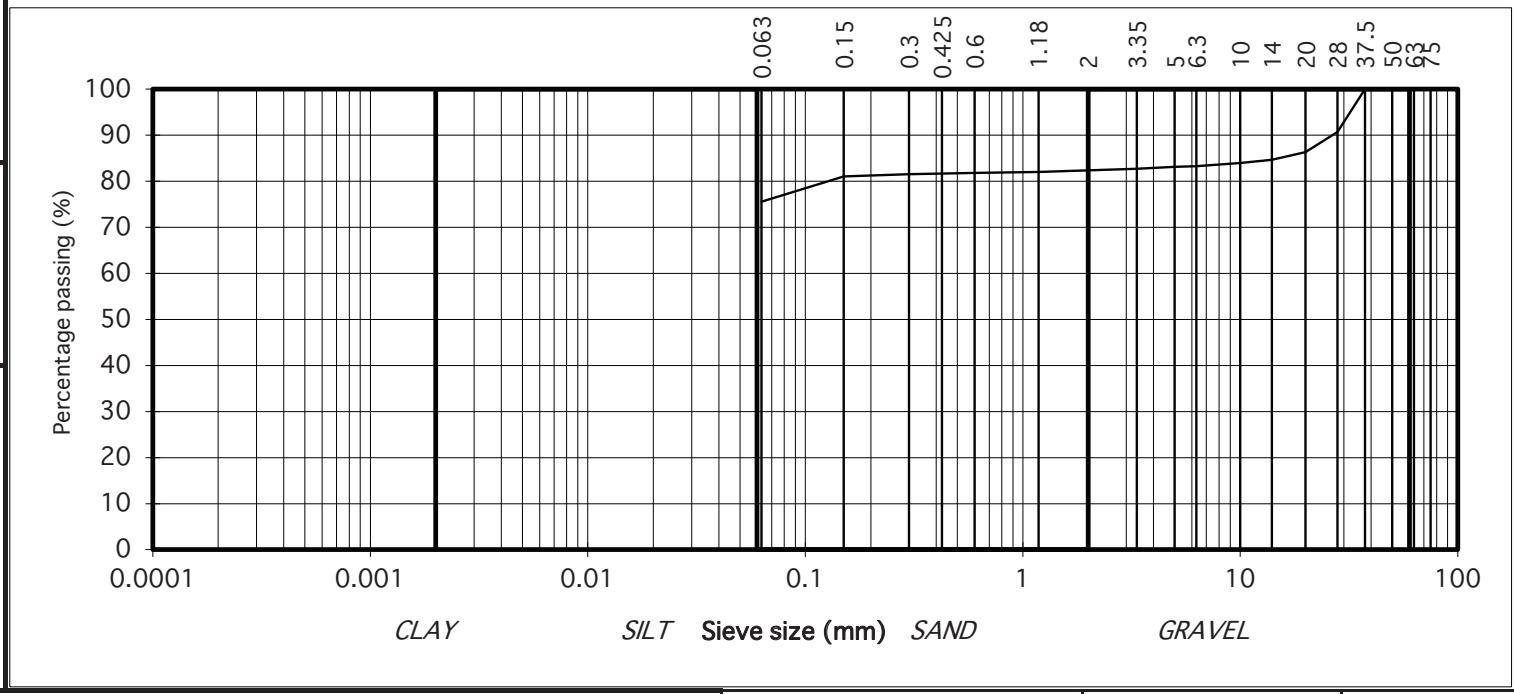
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	91	
20	86	
14	85	
10	84	
6.3	83	
5	83	
3.35	83	
2	82	
1.18	82	SAND
0.6	82	
0.425	82	
0.3	82	
0.15	81	
0.063	76	SILT/CLAY

Contract No. 25882 Report No. R171115
Contract Name : Gas to Edenderry
BH/TP No. BH24
Sample No.* AA213981 Lab. Sample No. A25/2533
Sample Type: B
Depth* (m) 6.00 Customer: MIL
Date Received 07/07/2025 Date Testing started 08/07/2025
Description: Brown slightly sandy, slightly gravelly, SILT/CLAY

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

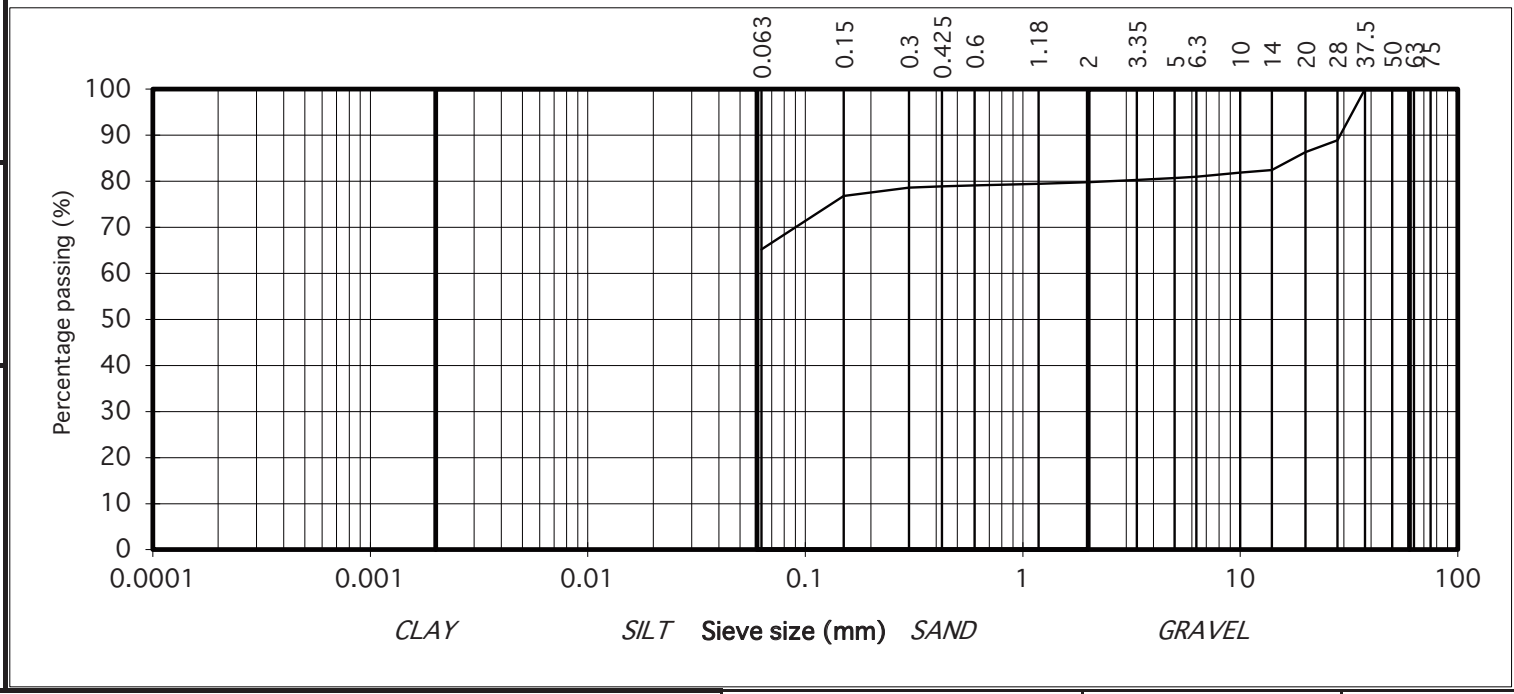
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	89	
20	86	
14	82	
10	82	
6.3	81	
5	81	
3.35	80	
2	80	
1.18	79	SAND
0.6	79	
0.425	79	
0.3	79	
0.15	77	
0.063	65	SILT/CLAY

Contract No. 25882 Report No. R171116
Contract Name : Gas to Edenderry
BH/TP No. BH24
Sample No.* AA213983 Lab. Sample No. A25/2534
Sample Type: B
Depth* (m) 8.00 Customer: MIL
Date Received 07/07/2025 Date Testing started 08/07/2025
Description: Grey slightly sandy, slightly gravelly, SILT/CLAY

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

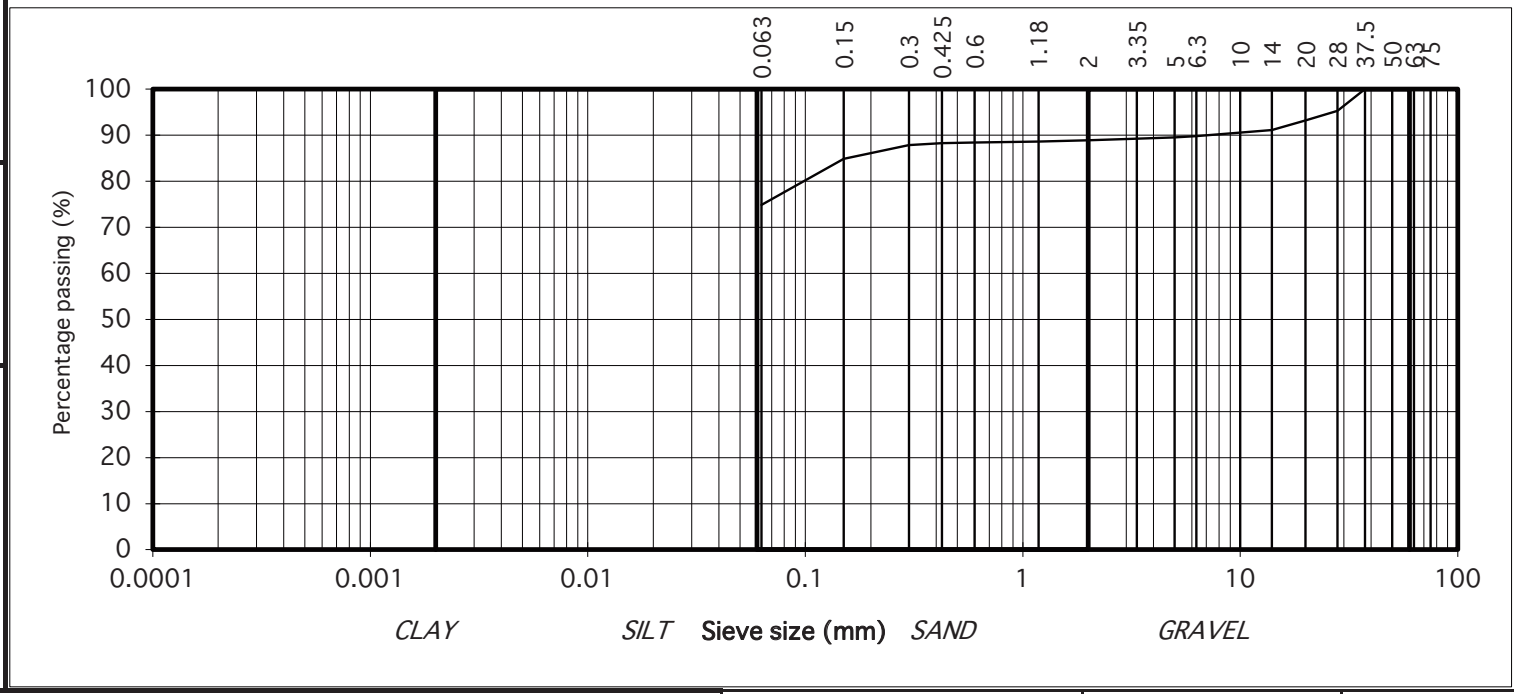
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	95	
20	93	
14	91	
10	91	
6.3	90	
5	90	
3.35	89	
2	89	
1.18	89	SAND
0.6	88	
0.425	88	
0.3	88	
0.15	85	
0.063	75	SILT/CLAY

Contract No. 25882 Report No. R171114
Contract Name : Gas to Edenderry
BH/TP No. BH24
Sample No.* AA213985 Lab. Sample No. A25/2535
Sample Type: B
Depth* (m) 10.00 Customer: MIL
Date Received 07/07/2025 Date Testing started 07/07/2025
Description: Brown slightly sandy, slightly gravelly, SILT/CLAY

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

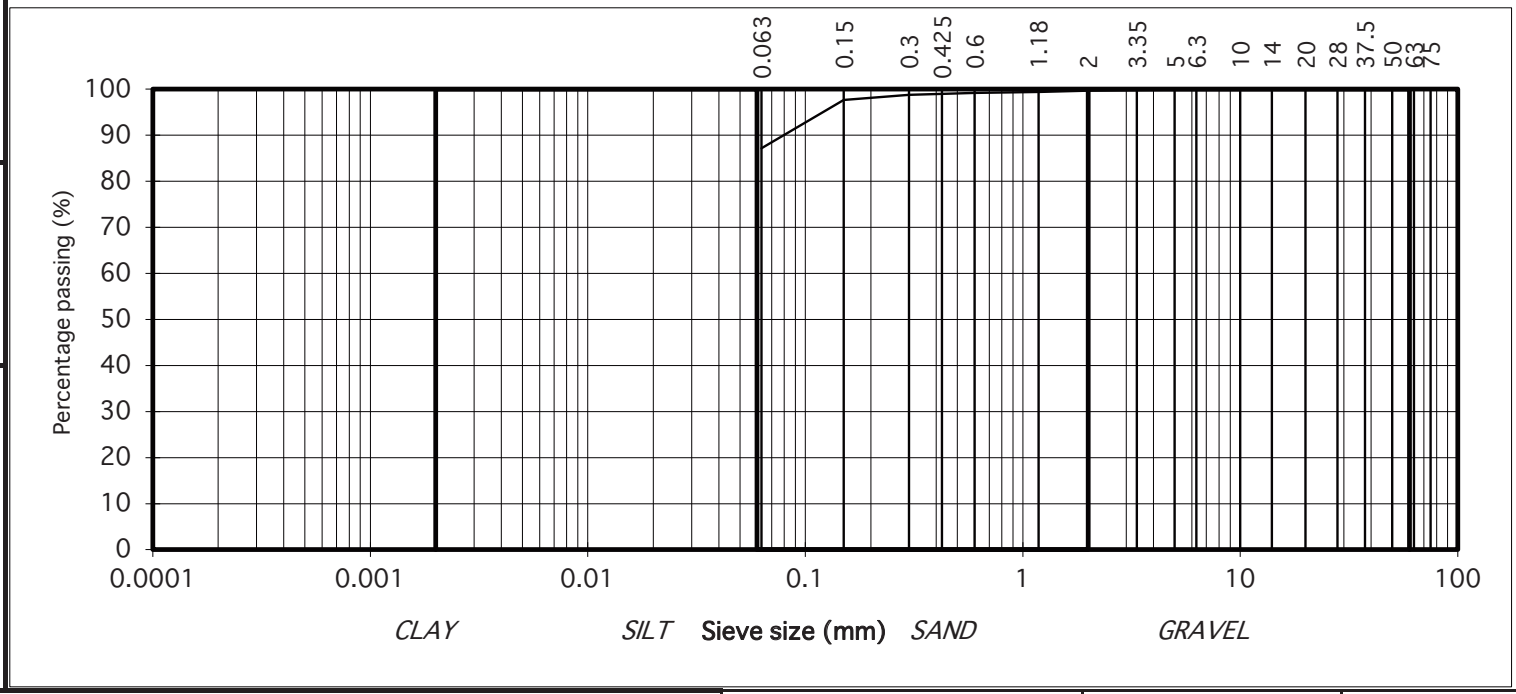
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	99	SAND
0.6	99	
0.425	99	
0.3	99	
0.15	98	
0.063	87	SILT/CLAY

Contract No.	25882	Report No.	R171119	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH25			
Sample No.*	AA222794	Lab. Sample No.		A25/2537
Sample Type:	B			
Depth* (m)	2.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		07/07/2025
Description:	Brown slightly sandy, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

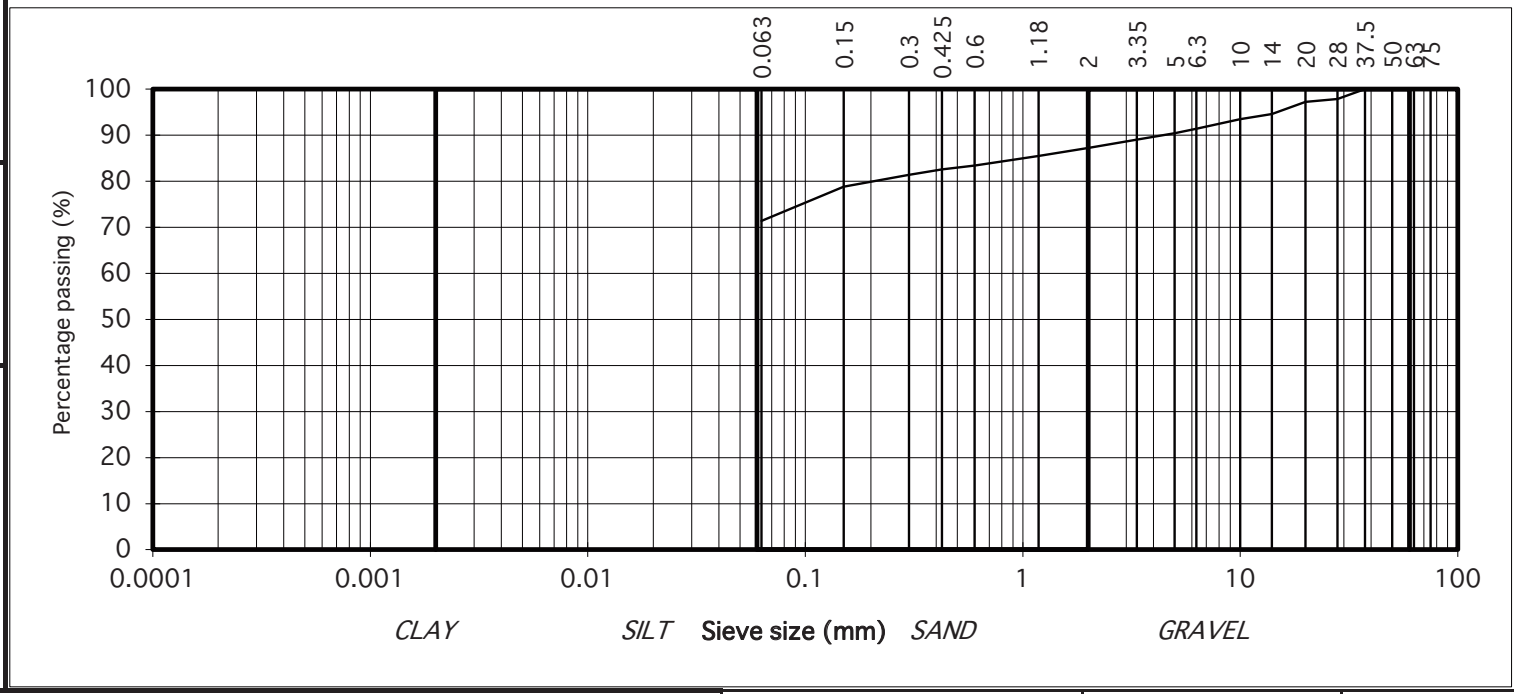
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	98	
20	97	
14	95	
10	94	
6.3	91	
5	90	
3.35	89	
2	87	
1.18	86	SAND
0.6	83	
0.425	83	
0.3	81	
0.15	79	
0.063	71	SILT/CLAY

Contract No.	25882	Report No.	R171120	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH25			
Sample No.*	AA222796	Lab. Sample No.		A25/2538
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		07/07/2025
Description:	Brown slightly sandy, slightly gravelly, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

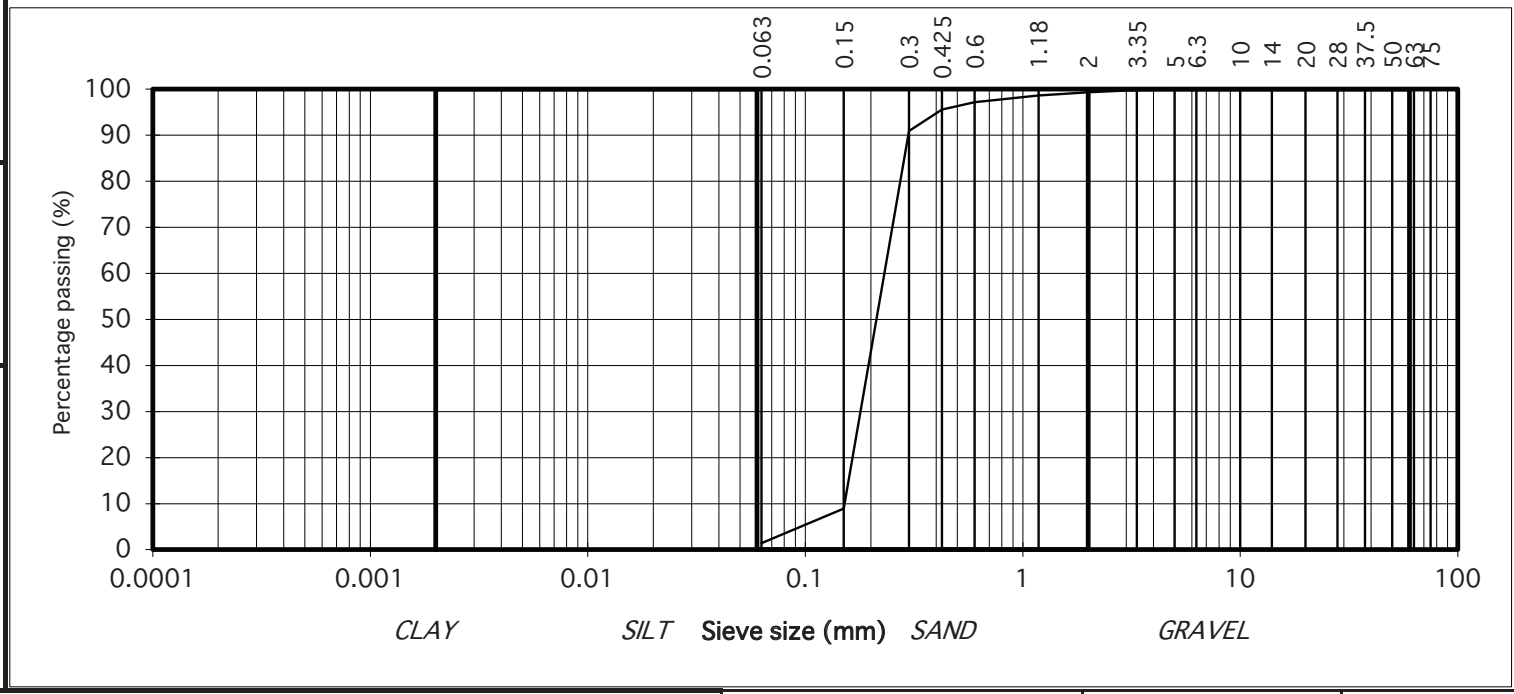
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	99	
1.18	99	SAND
0.6	97	
0.425	96	
0.3	91	
0.15	9	
0.063	1	SILT/CLAY

Contract No.	25882	Report No.	R171614	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH25			
Sample No.*	AA222798	Lab. Sample No.		A25/2539
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		07/07/2025
Description:	Grey slightly clayey/silty, slightly gravelly, SAND			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

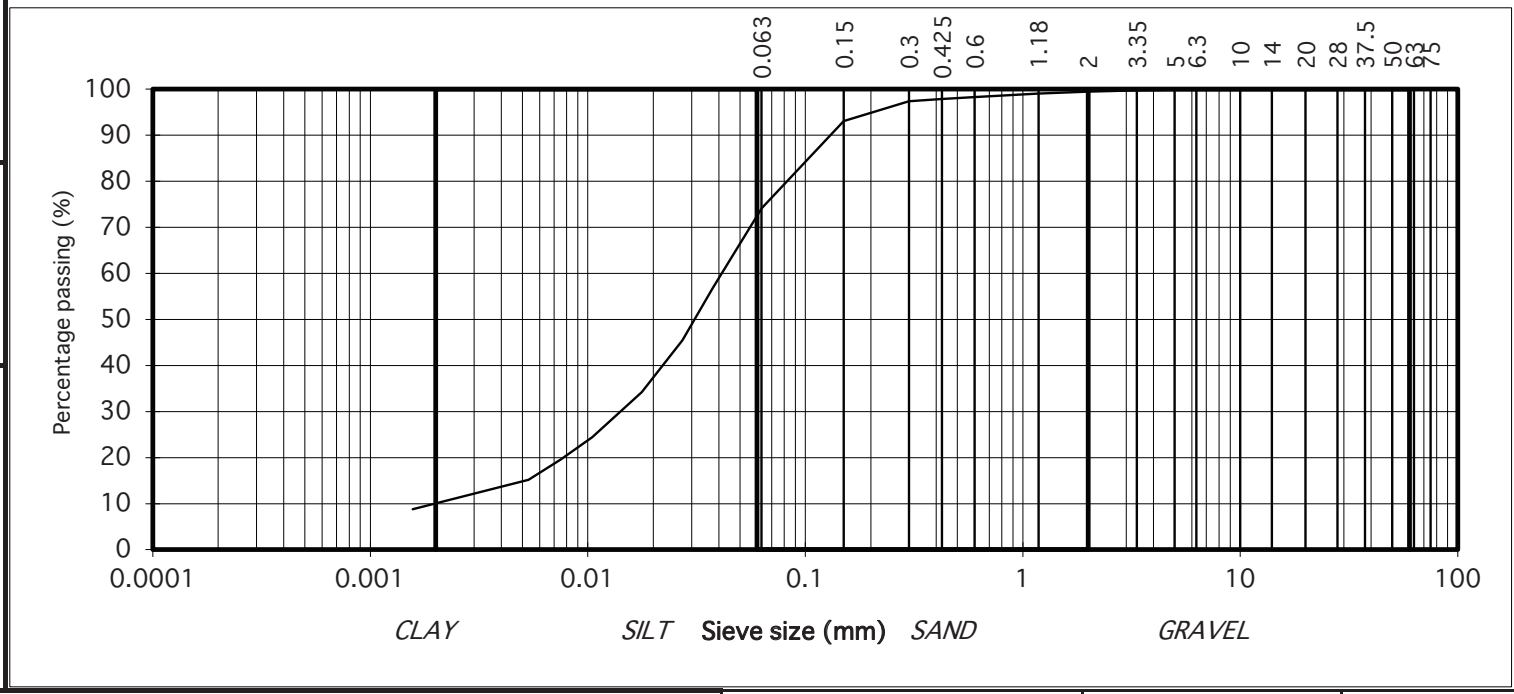
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	99	
1.18	99	SAND
0.6	98	
0.425	98	
0.3	97	
0.15	93	
0.063	74	SILT/CLAY
0.037	57	
0.027	45	
0.018	34	
0.010	24	
0.007	20	
0.005	15	
0.002	9	

Contract No.	25882	Report No.	R171118	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH25			
Sample No.*	AA222801	Lab. Sample No.		A25/2540
Sample Type:	B			
Depth* (m)	9.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		08/07/2025
Description:	Grey slightly sandy, slightly gravelly, SILT			

Remarks — Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

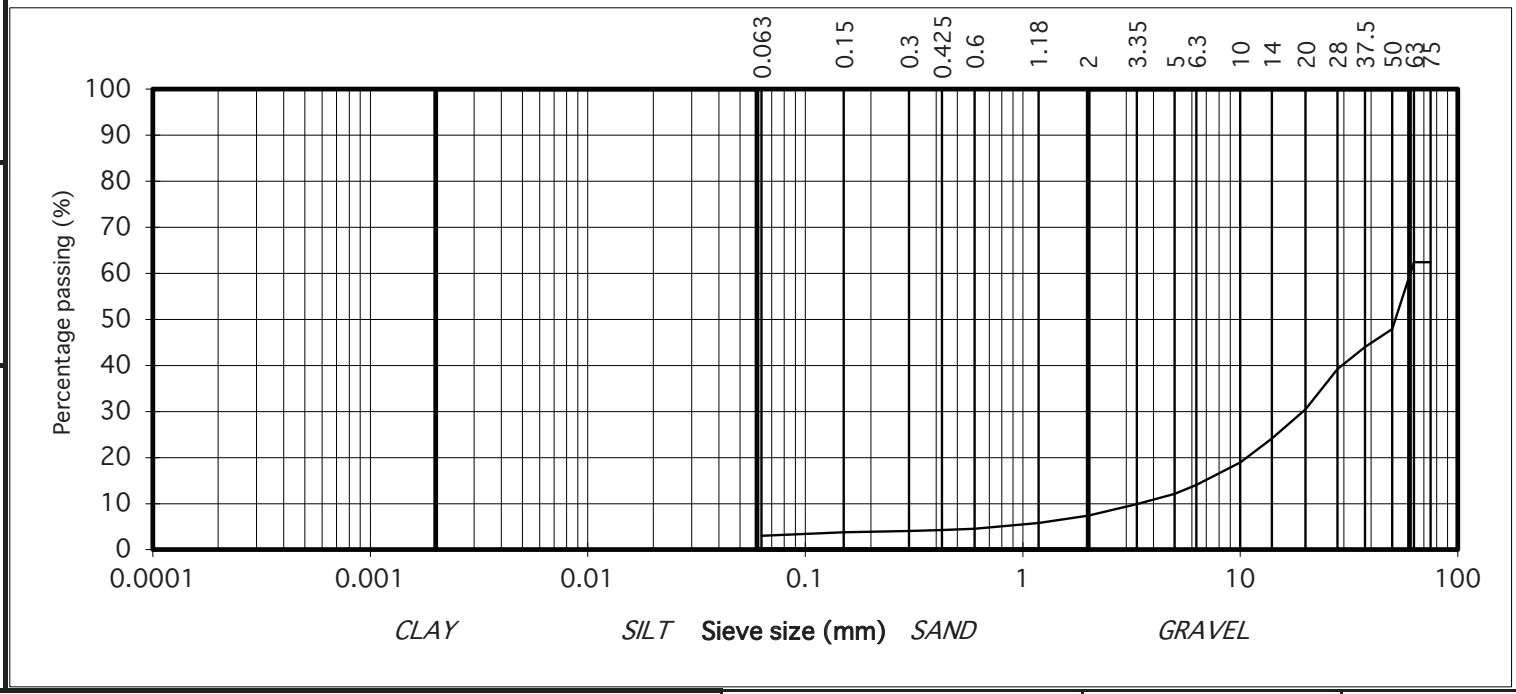
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	62	COBBLES
63	62	
50	48	GRAVEL
37.5	44	
28	39	
20	30	
14	24	
10	19	
6.3	14	
5	12	
3.35	10	
2	7	
1.18	6	SAND
0.6	5	
0.425	4	
0.3	4	
0.15	4	
0.063	3	SILT/CLAY

Contract No.	25882	Report No.	R171113	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH25			
Sample No.*	AA222803	Lab. Sample No.		A25/2541
Sample Type:	B			
Depth* (m)	11.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		07/07/2025
Description:	Brown slightly clayey/silty, slightly sandy, GRAVEL with many cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

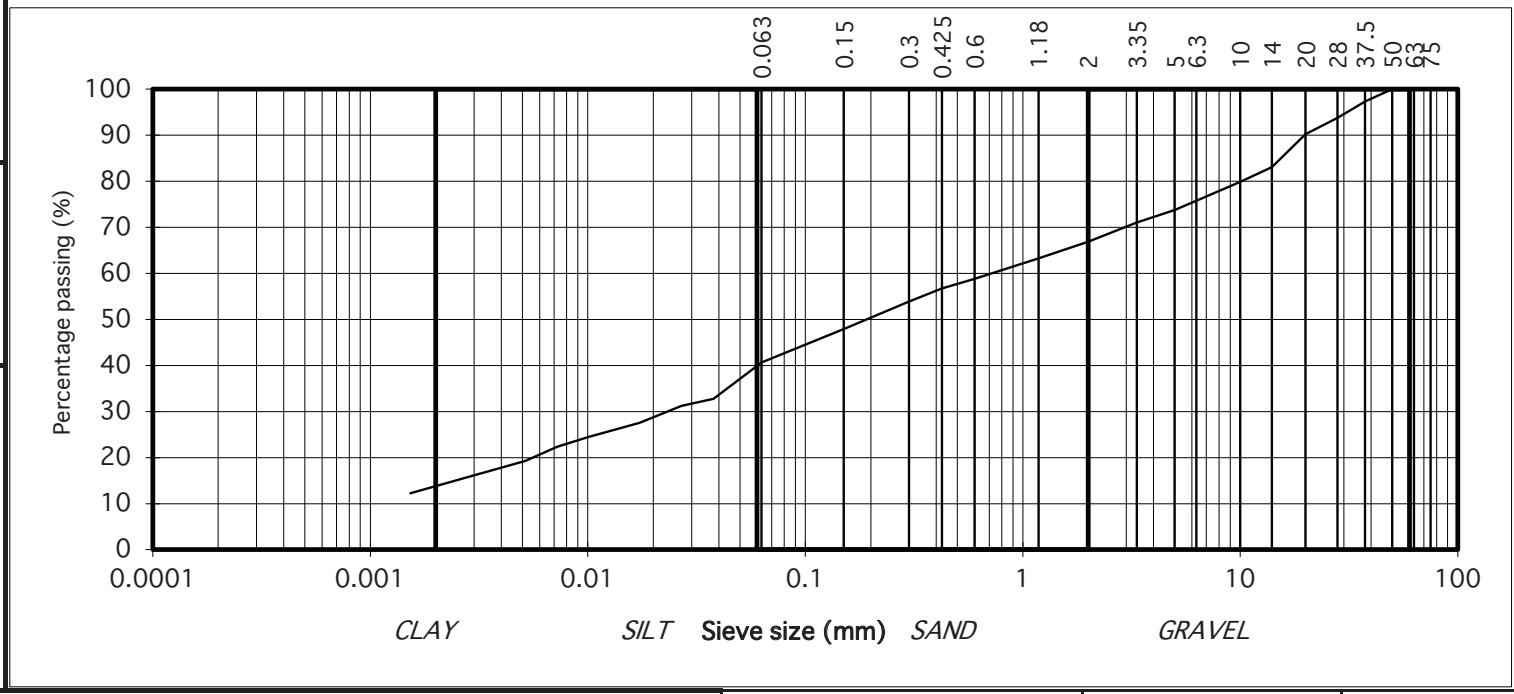
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	97	
28	94	
20	90	
14	83	
10	80	
6.3	76	
5	74	
3.35	71	
2	67	
1.18	63	SAND
0.6	59	
0.425	57	
0.3	54	
0.15	48	
0.063	41	SILT/CLAY
0.038	33	
0.027	31	
0.017	28	
0.010	24	
0.007	22	
0.005	19	
0.002	12	

Contract No.	25882	Report No.	R171124	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH51A			
Sample No.*	AA22805	Lab. Sample No.		A25/2543
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		07/07/2025
Description:	Brown slightly sandy, slightly gravelly, CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

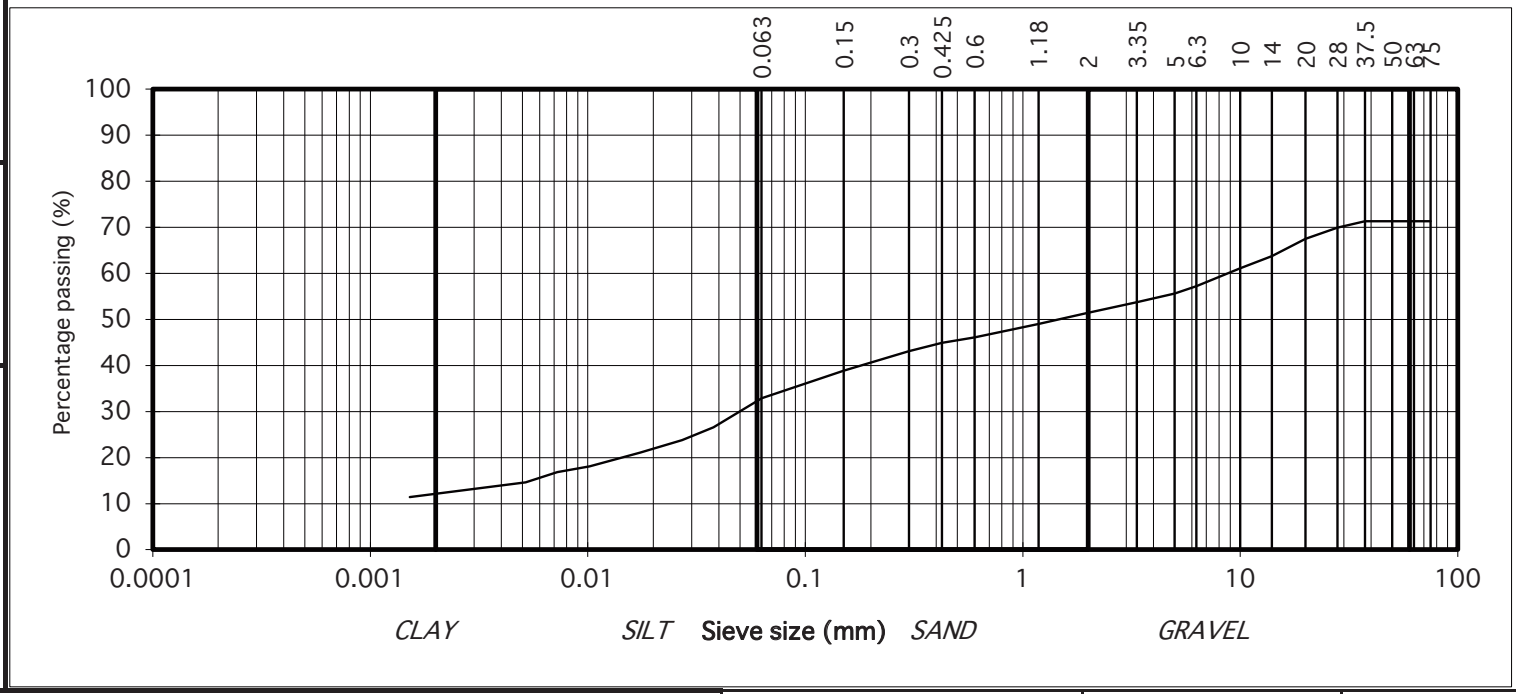
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	71	COBBLES
63	71	
50	71	GRAVEL
37.5	71	
28	70	
20	67	
14	64	
10	61	
6.3	57	
5	56	
3.35	54	
2	51	
1.18	49	SAND
0.6	46	
0.425	45	
0.3	43	
0.15	39	
0.063	33	SILT/CLAY
0.038	27	
0.027	24	
0.017	21	
0.010	18	
0.007	17	
0.005	15	
0.002	11	

Contract No.	25882	Report No.	R171123	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH51A			
Sample No.*	AA22809	Lab. Sample No.		A25/2545
Sample Type:	B			
Depth* (m)	8.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		07/07/2025
Description:	Brown slightly sandy, slightly gravelly, CLAY with many cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

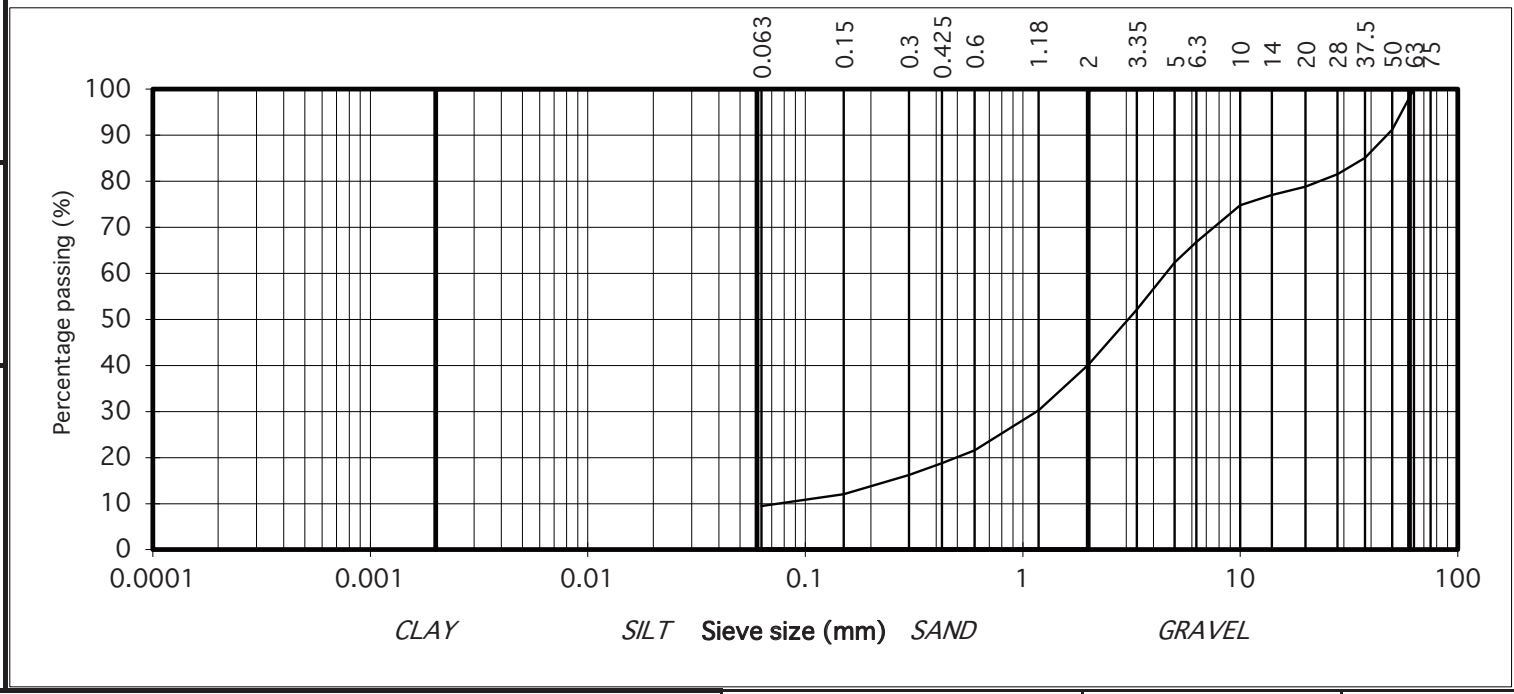
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	91	GRAVEL
37.5	85	
28	82	
20	79	
14	77	
10	75	
6.3	67	
5	62	
3.35	52	
2	40	
1.18	30	SAND
0.6	22	
0.425	19	
0.3	16	
0.15	12	
0.063	9	SILT/CLAY

Contract No.	25882	Report No.	R171122
Contract Name :	Gas to Edenderry		
BH/TP No.	BH51A		
Sample No.*	AA22811	Lab. Sample No.	A25/2546
Sample Type:	B		
Depth* (m)	10.00	Customer:	MIL
Date Received	07/07/2025	Date Testing started	07/07/2025
Description:	Brown clayey/silty, very sandy, GRAVEL		

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

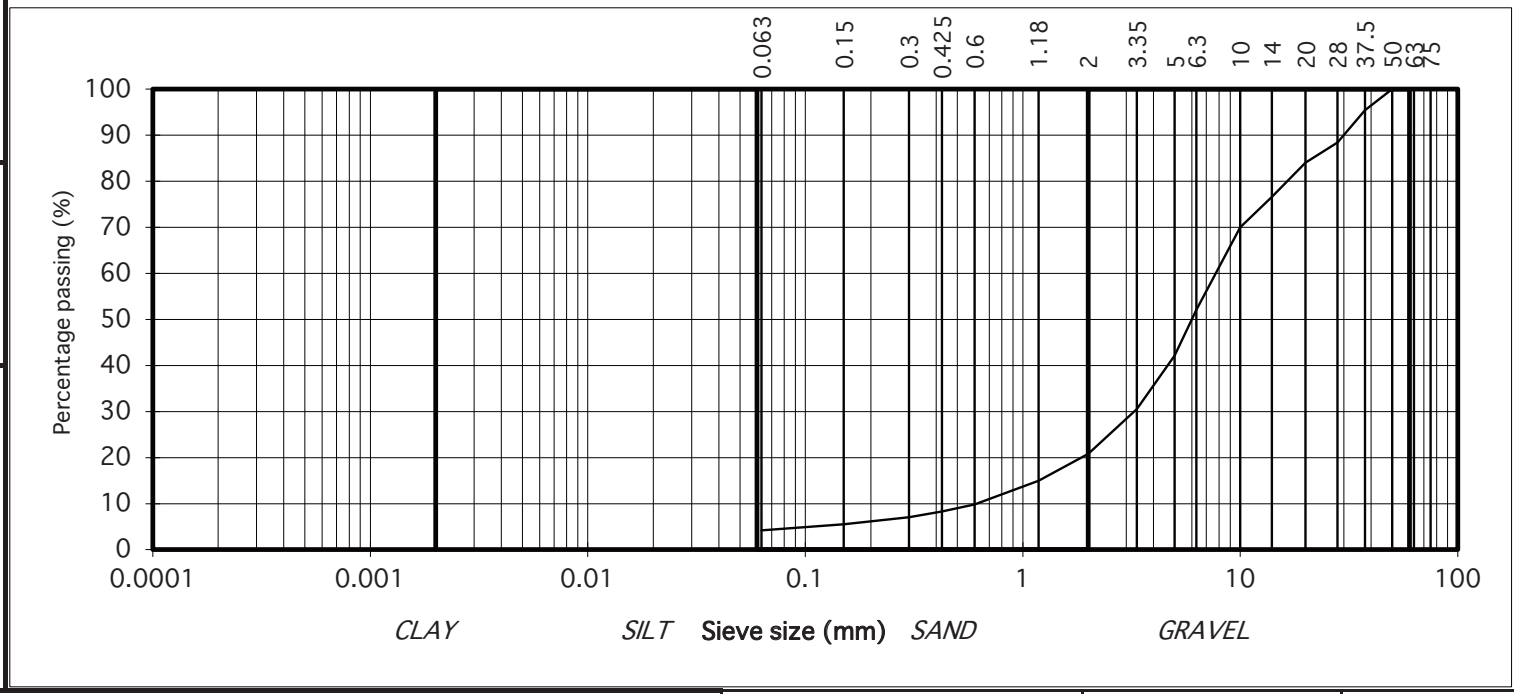
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	95	
28	88	
20	84	
14	77	
10	70	
6.3	52	
5	42	
3.35	31	
2	21	
1.18	15	SAND
0.6	10	
0.425	8	
0.3	7	
0.15	6	
0.063	4	SILT/CLAY

Contract No.	25882	Report No.	R171121
Contract Name :	Gas to Edenderry		
BH/TP No.	BH51A		
Sample No.*	AA22813	Lab. Sample No.	A25/2547
Sample Type:	B		
Depth* (m)	12.00	Customer:	MIL
Date Received	07/07/2025	Date Testing started	08/07/2025
Description:	Brown slightly clayey/silty, sandy, GRAVEL		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

Appendix 5

Chemical / Environmental Laboratory Results (Soil)

25-20057

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	25-20057-1
Initial Date of Issue:	30-Jun-2025
Re-Issue Details:	
Client	*IGSL*
Client Address:	*M7 Business Park* *Naas* *County Kildare* *Ireland*
Contact(s):	*Darren Keogh*
Project	*25882 Gas to Edenberry GNI*
Quotation No.:	*Q24-34387*
Date Received:	17-Jun-2025
Order No.:	
Date Instructed:	17-Jun-2025
No. of Samples:	*14*
Turnaround (Wkdays):	7
Results Due:	25-Jun-2025
Date Approved:	30-Jun-2025
Approved By:	



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: 25882 Gas to Edenberry GNI

Client: IGSL				**Chemtest Job No.:**		25-20057	25-20057	25-20057	25-20057	25-20057	25-20057	25-20057
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1987719	1987721	1987723	1987725	1987727	1987729	1987731
Order No.:				*Client Sample Ref.:*		*BH16A*	*BH17*	*BH18*	*BH19*	*BH24*	*BH25*	*BH51A*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*0.50*	*1.00*	*0.50*	*1.00*	*0.50*	*1.00*
				Date Sampled:		*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**							
Ammonium	U	1220	10:1	mg/l	0.050	0.35	0.35	0.41	0.38	0.31	0.48	0.37
Ammonium	N	1220	10:1	mg/kg	0.10	4.4	4.0	4.4	4.0	4.1	5.3	4.0

Results - Soil

Project: 25882 Gas to Edenberry GNI

Client: IGSL				**Chemtest Job No.:**		25-20057	25-20057	25-20057	25-20057	25-20057	25-20057	25-20057
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1987719	1987720	1987721	1987722	1987723	1987724	1987725
Order No.:				*Client Sample Ref.:*		*BH16A*	*BH16A*	*BH17*	*BH17*	*BH18*	*BH18*	*BH19*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*0.50*	*1.00*	*1.00*	*2.00*	*0.50*
				Date Sampled:		*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*
				Asbestos Lab:		DURHAM		DURHAM		DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		N	2192		N/A	-		-		-		-
Asbestos Identification		U	2192		N/A	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected
Moisture		N	2030	%	0.020	14	9.8	19	19	20	12	15
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones	Stones	Stones	Stones and Roots	Stones	Stones	Stones
Soil Texture		N	2030		N/A	Sand	Clay	Loam	Clay	Clay	Clay	Loam
pH (2.5:1) at 20C		N	2010		4.0		8.4		8.3		8.5	
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40		< 0.40		< 0.40		< 0.40
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010		< 0.010		< 0.010	
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		< 0.010		< 0.010		< 0.010	
Total Sulphur		U	2175	%	0.010		0.030		0.020		0.030	
Sulphur (Elemental)		M	2180	mg/kg	1.0	1.9		< 1.0		< 1.0		< 1.0
Chloride (Water Soluble)		M	2220	g/l	0.010		< 0.010		< 0.010		< 0.010	
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010		< 0.010		< 0.010	
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50		< 0.50		< 0.50		< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.9		3.1		3.4		2.0
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01		< 0.01		< 0.01	
Sulphate (Total)		U	2430	%	0.010	0.015		0.011		0.014		0.024
Sulphate (Acid Soluble)		U	2430	%	0.010		< 0.010		0.011		< 0.010	
Arsenic		M	2455	mg/kg	0.5	3.0		2.9		2.9		4.8
Barium		M	2455	mg/kg	0.5	16		8.6		13		20
Cadmium		M	2455	mg/kg	0.10	0.35		0.83		0.67		0.71
Chromium		M	2455	mg/kg	0.5	4.8		5.2		6.8		5.4
Molybdenum		M	2455	mg/kg	0.5	< 0.5		< 0.5		0.5		0.6
Antimony		N	2455	mg/kg	2.0	< 2.0		< 2.0		< 2.0		< 2.0
Copper		M	2455	mg/kg	0.50	4.6		5.4		8.9		6.2
Mercury		M	2455	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Nickel		M	2455	mg/kg	0.50	12		16		18		16
Lead		M	2455	mg/kg	0.50	4.1		5.0		5.3		7.3
Selenium		M	2455	mg/kg	0.25	0.39		0.50		0.50		0.53
Zinc		M	2455	mg/kg	0.50	27		32		38		36
Chromium (Trivalent)		N	2490	mg/kg	1.0	4.8		5.2		6.8		5.4
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50		< 0.50		< 0.50		< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05

Results - Soil

Project: 25882 Gas to Edenberry GNI

Client: IGSL				**Chemtest Job No.:**		25-20057	25-20057	25-20057	25-20057	25-20057	25-20057	25-20057
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1987719	1987720	1987721	1987722	1987723	1987724	1987725
Order No.:				*Client Sample Ref.:*		*BH16A*	*BH16A*	*BH17*	*BH17*	*BH18*	*BH18*	*BH19*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*0.50*	*1.00*	*1.00*	*2.00*	*0.50*
				Date Sampled:		*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*
				Asbestos Lab:		DURHAM		DURHAM		DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25		< 0.25		< 0.25		< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	4.2		3.9		< 2.0		< 2.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0		1.2		< 1.0		< 1.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	2.9		2.2		< 2.0		< 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	15		14		16		13
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	14		10		12		11
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	23		21		19		15
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25		< 0.25		< 0.25		< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		< 1.0		< 1.0		< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		< 1.0		< 1.0		< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	3.6		4.5		6.3		6.0
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	16		19		9.1		17
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	13		12		9.8		8.9
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	20		24		15		23
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50		< 0.50		< 0.50		< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	43		44		34		38
Mineral Oil EPH		N	2670	mg/kg	10	37		31		31		26
Benzene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Naphthalene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10

Results - Soil

Project: 25882 Gas to Edenberry GNI

Client: IGSL						25-20057	25-20057	25-20057	25-20057	25-20057	25-20057	25-20057
Quotation No.: Q24-34387						1987719	1987720	1987721	1987722	1987723	1987724	1987725
Order No.:						*BH16A*	*BH16A*	*BH17*	*BH17*	*BH18*	*BH18*	*BH19*
						SOIL	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
						1.00	*2.00*	*0.50*	*1.00*	*1.00*	*2.00*	*0.50*
						16-Jun-2025	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*
						DURHAM		DURHAM		DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Coronene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
PCB 28		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 52		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 101		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 118		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 153		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 138		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 180		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Total Phenols		M	2920	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10

Results - Soil

Project: 25882 Gas to Edenberry GNI

Client: IGSL				**Chemtest Job No.:**		25-20057	25-20057	25-20057	25-20057	25-20057	25-20057	25-20057
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1987726	1987727	1987728	1987729	1987730	1987731	1987732
Order No.:				*Client Sample Ref.:*		*BH19*	*BH24*	*BH24*	*BH25*	*BH25*	*BH51A*	*BH51A*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*2.00*	*0.50*	*1.00*	*1.00*	*2.00*
				Date Sampled:		*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*
				Asbestos Lab:			DURHAM		DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		N	2192		N/A		-		-		-	
Asbestos Identification		U	2192		N/A		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected	
Moisture		N	2030	%	0.020	17	11	7.4	20	16	17	11
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones	Stones	Stones	Stones	None	Stones	Stones
Soil Texture		N	2030		N/A	Clay	Loam	Clay	Clay	Sand	Loam	Clay
pH (2.5:1) at 20C		N	2010		4.0	8.2		8.4		8.4		8.3
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40		< 0.40		< 0.40		< 0.40	
Magnesium (Water Soluble)		N	2120	g/l	0.010	< 0.010		< 0.010		< 0.010		< 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	< 0.010		< 0.010		< 0.010		< 0.010
Total Sulphur		U	2175	%	0.010	0.030		0.030		0.030		0.040
Sulphur (Elemental)		M	2180	mg/kg	1.0		< 1.0		< 1.0		< 1.0	
Chloride (Water Soluble)		M	2220	g/l	0.010	< 0.010		< 0.010		< 0.010		< 0.010
Nitrate (Water Soluble)		N	2220	g/l	0.010	< 0.010		< 0.010		< 0.010		< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50		< 0.50		< 0.50		< 0.50	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50		3.6		4.8		2.3	
Ammonium (Water Soluble)		M	2220	g/l	0.01	< 0.01		< 0.01		< 0.01		< 0.01
Sulphate (Total)		U	2430	%	0.010		0.033		0.16		0.025	
Sulphate (Acid Soluble)		U	2430	%	0.010	0.019		< 0.010		< 0.010		< 0.010
Arsenic		M	2455	mg/kg	0.5		2.6		1.8		5.8	
Barium		M	2455	mg/kg	0.5		25		21		21	
Cadmium		M	2455	mg/kg	0.10		0.41		0.37		0.77	
Chromium		M	2455	mg/kg	0.5		6.7		3.7		6.1	
Molybdenum		M	2455	mg/kg	0.5		< 0.5		< 0.5		0.6	
Antimony		N	2455	mg/kg	2.0		< 2.0		< 2.0		< 2.0	
Copper		M	2455	mg/kg	0.50		5.1		5.7		7.1	
Mercury		M	2455	mg/kg	0.05		< 0.05		< 0.05		< 0.05	
Nickel		M	2455	mg/kg	0.50		13		13		19	
Lead		M	2455	mg/kg	0.50		4.0		4.2		8.4	
Selenium		M	2455	mg/kg	0.25		0.46		0.41		0.57	
Zinc		M	2455	mg/kg	0.50		28		25		41	
Chromium (Trivalent)		N	2490	mg/kg	1.0		6.7		3.7		6.1	
Chromium (Hexavalent)		N	2490	mg/kg	0.50		< 0.50		< 0.50		< 0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05		U/S		< 0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05		U/S		< 0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05		U/S		< 0.05	
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05		U/S		< 0.05	

Results - Soil

Project: 25882 Gas to Edenberry GNI

Client: IGSL				**Chemtest Job No.:**		25-20057	25-20057	25-20057	25-20057	25-20057	25-20057	25-20057
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1987726	1987727	1987728	1987729	1987730	1987731	1987732
Order No.:				*Client Sample Ref.:*		*BH19*	*BH24*	*BH24*	*BH25*	*BH25*	*BH51A*	*BH51A*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*2.00*	*0.50*	*1.00*	*1.00*	*2.00*
				Date Sampled:		*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*
				Asbestos Lab:			DURHAM		DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25		< 0.25		U/S		< 0.25	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00		< 2.0		< 2.0		< 2.0	
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00		< 1.0		< 1.0		< 1.0	
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00		< 2.0		3.0		2.7	
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00		8.4		16		16	
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00		10		11		11	
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00		9.6		19		20	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05		< 0.05		U/S		< 0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05		< 0.05		U/S		< 0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05		< 0.05		U/S		< 0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25		< 0.25		U/S		< 0.25	
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00		< 1.0		< 1.0		< 1.0	
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00		< 1.0		< 1.0		< 1.0	
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00		5.4		7.3		8.8	
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00		5.4		9.6		23	
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00		8.7		9.8		12	
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00		11		17		32	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50		< 0.50		U/S		< 0.50	
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00		20		35		52	
Mineral Oil EPH		N	2670	mg/kg	10		20		30		31	
Benzene		M	2760	µg/kg	1.0		< 1.0		< 1.0		< 1.0	
Toluene		M	2760	µg/kg	1.0		< 1.0		< 1.0		< 1.0	
Ethylbenzene		M	2760	µg/kg	1.0		< 1.0		< 1.0		< 1.0	
m & p-Xylene		M	2760	µg/kg	1.0		< 1.0		< 1.0		< 1.0	
o-Xylene		M	2760	µg/kg	1.0		< 1.0		< 1.0		< 1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0		< 1.0		< 1.0		< 1.0	
Naphthalene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Acenaphthylene		N	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Acenaphthene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Fluorene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Phenanthrene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Anthracene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Fluoranthene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Pyrene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Benzo[a]anthracene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Chrysene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Benzo[a]pyrene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	

Results - Soil

Project: 25882 Gas to Edenberry GNI

Client: IGSL				**Chemtest Job No.:**		25-20057	25-20057	25-20057	25-20057	25-20057	25-20057	25-20057
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1987726	1987727	1987728	1987729	1987730	1987731	1987732
Order No.:				*Client Sample Ref.:*		*BH19*	*BH24*	*BH24*	*BH25*	*BH25*	*BH51A*	*BH51A*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*2.00*	*0.50*	*1.00*	*1.00*	*2.00*
				Date Sampled:		*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*
				Asbestos Lab:			DURHAM		DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Coronene		N	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
PCB 28		U	2815	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
PCB 52		U	2815	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
PCB 101		U	2815	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
PCB 118		U	2815	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
PCB 153		U	2815	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
PCB 138		U	2815	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
PCB 180		U	2815	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05		< 0.05		< 0.05		< 0.05	
Total Phenols		M	2920	mg/kg	0.10		< 0.10		< 0.10		< 0.10	

Results - Single Stage WAC

Project: 25882 Gas to Edenberry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-20057							
Chemtest Sample ID:	1987719							
Sample Ref:	*BH16A*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*16-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.33	3	5	6
Loss On Ignition	2610		M	%	1.5	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.8	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.056	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0012	0.012	0.5	2	25
Barium	1455		U	0.007	0.069	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0008	0.0080	0.5	10	70
Copper	1455		U	0.0018	0.018	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0014	0.014	0.5	10	30
Nickel	1455		U	0.0007	0.0072	0.4	10	40
Lead	1455		U	0.0009	0.0089	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.008	0.083	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.23	2.3	10	150	500
Sulphate	1220		U	1.1	11	1000	20000	50000
Total Dissolved Solids	1020		N	64	640	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.8	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	3.3
WAC Sample Weight	1133

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenberry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-20057							
Chemtest Sample ID:	1987721							
Sample Ref:	*BH17*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*16-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.60	3	5	6
Loss On Ignition	2610		M	%	3.0	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.5	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.010	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0012	0.012	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	0.00015	0.0015	0.04	1	5
Chromium	1455		U	0.0016	0.016	0.5	10	70
Copper	1455		U	0.0030	0.030	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0007	0.0072	0.5	10	30
Nickel	1455		U	0.0018	0.018	0.4	10	40
Lead	1455		U	0.0015	0.015	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.015	0.15	4	50	200
Chloride	1220		U	1.1	11	800	15000	25000
Fluoride	1220		U	0.34	3.4	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	58	580	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.9	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	3.6
WAC Sample Weight	762.4

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenberry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-20057							
Chemtest Sample ID:	1987723							
Sample Ref:	*BH18*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*16-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.25	3	5	6
Loss On Ignition	2610		M	%	1.9	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.5	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.015	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0005	0.0048	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0019	0.019	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0025	0.025	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	< 0.003	< 0.025	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.22	2.2	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	53	530	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.0	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	6.4
WAC Sample Weight	1054

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenberry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-20057							
Chemtest Sample ID:	1987725							
Sample Ref:	*BH19*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*16-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.89	3	5	6
Loss On Ignition	2610		M	%	3.8	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0060	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0011	0.011	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0009	0.0089	0.5	10	70
Copper	1455		U	0.0024	0.024	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0009	0.0087	0.5	10	30
Nickel	1455		U	0.0009	0.0095	0.4	10	40
Lead	1455		U	0.0009	0.0095	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.009	0.087	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.32	3.2	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	57	570	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.2	52	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.8
WAC Sample Weight	732.0

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenberry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-20057							
Chemtest Sample ID:	1987727							
Sample Ref:	*BH24*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*16-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.55	3	5	6
Loss On Ignition	2610		M	%	1.2	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.7	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.10	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0014	0.014	0.5	2	25
Barium	1455		U	0.017	0.17	20	100	300
Cadmium	1455		U	0.00017	0.0017	0.04	1	5
Chromium	1455		U	0.0008	0.0082	0.5	10	70
Copper	1455		U	0.0035	0.035	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0016	0.016	0.5	10	30
Nickel	1455		U	0.0012	0.012	0.4	10	40
Lead	1455		U	0.0013	0.013	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0005	0.0051	0.1	0.5	7
Zinc	1455		U	0.012	0.12	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.17	1.7	10	150	500
Sulphate	1220		U	1.4	14	1000	20000	50000
Total Dissolved Solids	1020		N	44	440	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.9	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.6
WAC Sample Weight	123.0

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenberry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-20057							
Chemtest Sample ID:	1987729							
Sample Ref:	*BH25*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*16-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.21	3	5	6
Loss On Ignition	2610		M	%	1.2	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.019	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0007	0.0073	0.5	2	25
Barium	1455		U	0.11	1.1	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0011	0.011	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0004	0.0036	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	0.0034	0.034	0.06	0.7	5
Selenium	1455		U	0.0018	0.018	0.1	0.5	7
Zinc	1455		U	0.007	0.070	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.13	1.3	10	150	500
Sulphate	1220		U	4.5	45	1000	20000	50000
Total Dissolved Solids	1020		N	72	720	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	< 2.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.9
WAC Sample Weight	1049

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenberry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-20057							
Chemtest Sample ID:	1987731							
Sample Ref:	*BH51A*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*16-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.98	3	5	6
Loss On Ignition	2610		M	%	3.2	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.3	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0050	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0023	0.023	0.5	2	25
Barium	1455		U	0.009	0.091	20	100	300
Cadmium	1455		U	0.00015	0.0015	0.04	1	5
Chromium	1455		U	0.0028	0.028	0.5	10	70
Copper	1455		U	0.0030	0.030	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0009	0.0089	0.5	10	30
Nickel	1455		U	0.0031	0.031	0.4	10	40
Lead	1455		U	0.0018	0.018	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0007	0.0068	0.1	0.5	7
Zinc	1455		U	0.018	0.18	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.33	3.3	10	150	500
Sulphate	1220		U	1.0	10	1000	20000	50000
Total Dissolved Solids	1020		N	58	580	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.7	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	10
WAC Sample Weight	741.2

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
1987719	*BH16A*			*16-Jun-2025*	E,H	Amber Glass 250ml
1987719	*BH16A*			*16-Jun-2025*	E,H	Plastic Tub 500g
1987720	*BH16A*			*16-Jun-2025*	H	Amber Glass 250ml
1987720	*BH16A*			*16-Jun-2025*	H	Plastic Tub 500g
1987721	*BH17*			*16-Jun-2025*	E,H	Amber Glass 250ml
1987721	*BH17*			*16-Jun-2025*	E,H	Plastic Tub 500g
1987722	*BH17*			*16-Jun-2025*	H	Amber Glass 250ml
1987722	*BH17*			*16-Jun-2025*	H	Plastic Tub 500g
1987723	*BH18*			*16-Jun-2025*	E,H	Amber Glass 250ml
1987723	*BH18*			*16-Jun-2025*	E,H	Plastic Tub 500g
1987724	*BH18*			*16-Jun-2025*	H	Amber Glass 250ml
1987724	*BH18*			*16-Jun-2025*	H	Plastic Tub 500g
1987725	*BH19*			*16-Jun-2025*	E,H	Amber Glass 250ml
1987725	*BH19*			*16-Jun-2025*	E,H	Plastic Tub 500g
1987726	*BH19*			*16-Jun-2025*	H	Amber Glass 250ml
1987726	*BH19*			*16-Jun-2025*	H	Plastic Tub 500g
1987727	*BH24*			*16-Jun-2025*	E,H	Amber Glass 250ml
1987727	*BH24*			*16-Jun-2025*	E,H	Plastic Tub 500g
1987728	*BH24*			*16-Jun-2025*	H	Amber Glass 250ml
1987728	*BH24*			*16-Jun-2025*	H	Plastic Tub 500g
1987729	*BH25*			*16-Jun-2025*	E,H	Amber Glass 250ml
1987729	*BH25*			*16-Jun-2025*	E,H	Plastic Tub 500g
1987730	*BH25*			*16-Jun-2025*	H	Amber Glass 250ml
1987730	*BH25*			*16-Jun-2025*	H	Plastic Tub 500g
1987731	*BH51A*			*16-Jun-2025*	E,H	Amber Glass 250ml
1987731	*BH51A*			*16-Jun-2025*	E,H	Plastic Tub 500g
1987732	*BH51A*			*16-Jun-2025*	H	Amber Glass 250ml
1987732	*BH51A*			*16-Jun-2025*	H	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Appendix 6

Geotechnical Laboratory Results (Rock)

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Gas to Bord na Mona
HCC1
Contract no. 25882

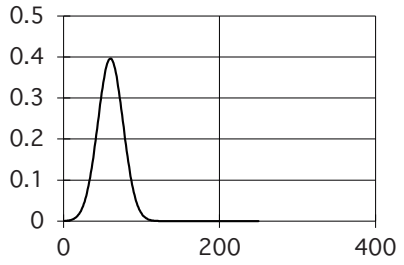
Sample Type: Core
Date of test: 08/08/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC16A	14.9	78	12.7	1.222	2.08	2.54	56	d	//
	16.6	78	16.9	1.222	2.77	3.38	74	d	//
	18.5	78	4.9	1.222	0.81	0.99	22	d	//
	18.7	78	8.1	1.222	1.33	1.62	36	d	//
	20.1	78	11.5	1.222	1.88	2.30	51	d	//
RC17	16.3	78	10.3	1.222	1.70	2.07	46	d	//
	17.8	78	12.1	1.222	1.99	2.43	54	d	//
	19.4	78	16.3	1.222	2.68	3.28	72	d	//
RC18	16.7	78	12.9	1.222	2.11	2.58	57	d	//
	18.7	78	16.6	1.222	2.72	3.33	73	d	//
	19.9	78	18.5	1.222	3.05	3.72	82	d	//
RC50	15.2	78	16.3	1.222	2.69	3.28	72	d	//
	16.4	78	13.7	1.222	2.26	2.76	61	d	//
	18.1	78	15.7	1.222	2.58	3.15	69	d	//
	19.3	78	14.5	1.222	2.39	2.92	64	d	//
	20.6	78	16.8	1.222	2.76	3.38	74	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	16	16
Minimum	0.99	22
Average	2.73	60
Maximum	3.72	82
Standard Dev.	0.73	16
Upper 95% Confidence Limit	4.17	91.70
Lower 95% Confidence Limit	1.30	28.57

Comments:
*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

Appendix 7

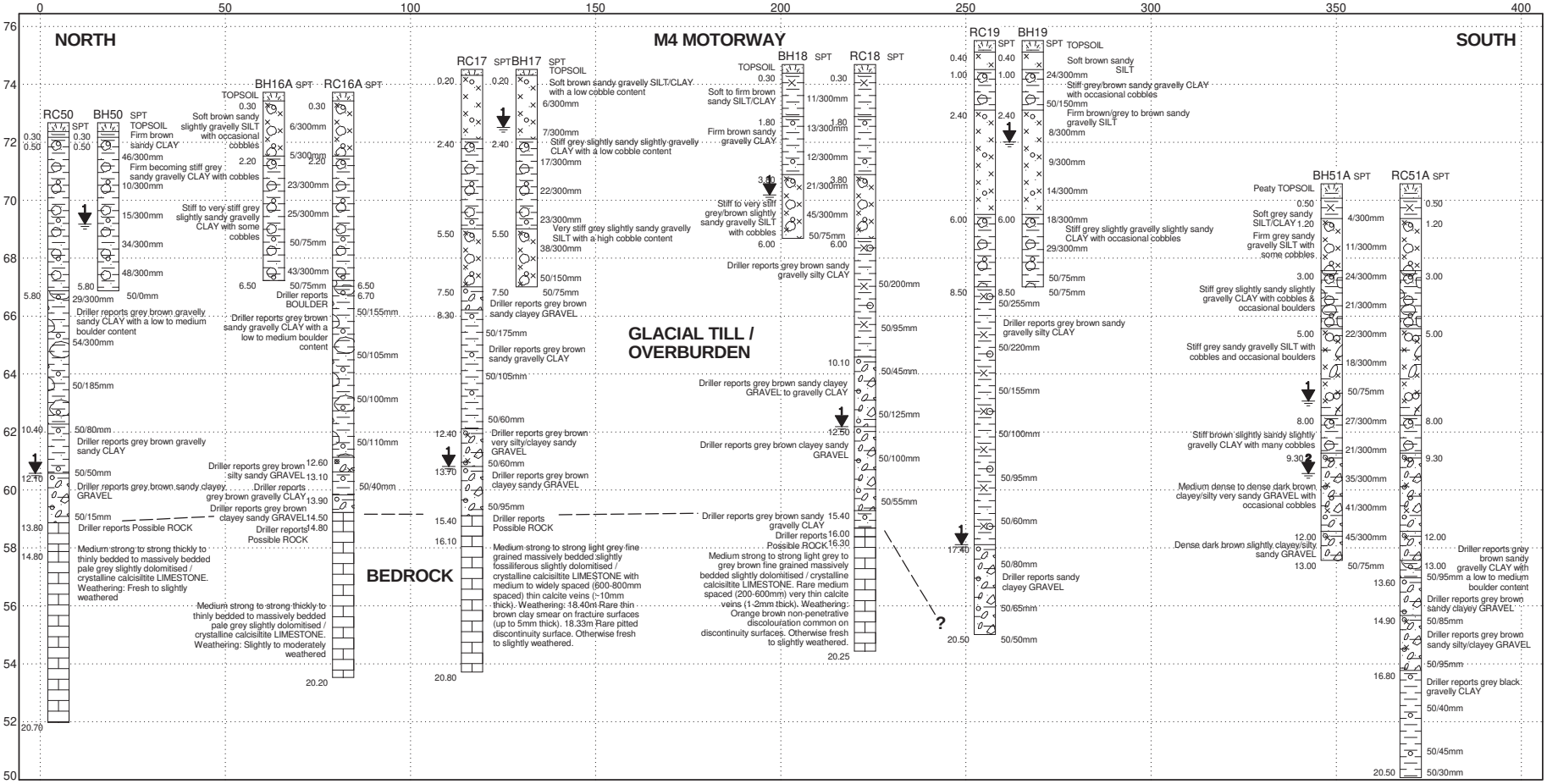
Exploratory Hole Location Plan


25882 - Gas to Bord na Mona, Edenderry, Phase 1 GI
Exploratory Hole Location Plan - HCC1
Legend
Cable Percussion Borehole
Rotary Drillhole
BH/RC50
BH16
BH/RC16A
BH/RC17
BH/RC18
BH/RC19
BH51
BH/RC51A
Google Earth
Image © 2025 Airbus
N
100 m

Appendix 8

Geological Cross Section

N-S HCC1





LITHOLOGY GRAPHICS

- TOPSOIL
- Sandy gravelly cobbly SILT
- Sandy gravelly cobbly CLAY
- Sandy gravelly SILT
- Sandy silty CLAY
- Sandy gravelly CLAY
- Sandy SILT
- Sandy CLAY
- COBBLES and BOULDERS
- Sandy gravelly cobbly bouldery CLAY
- Sandy gravelly clayey SILT with cobbles and boulders
- Clayey silty sandy cobbly GRAVEL
- Clayey silty sandy GRAVEL
- BOULDERS
- Sandy gravelly bouldery CLAY

IGSL

SUBSURFACE SECTION N-S HCC1 M4 Motorway

Client: Murphy International Limited

Project: Gas to Bord na Mona, Edenderry, Phase 1 GI

Number: 25882

FENCE A3 CARRIGTWOHILL 25882.GPJ IGSL.GDT 11/8/25

Appendix 14

HCC2 Report

(issued 19-09-25)

IGSL Ltd

Gas to Bord na Mona, Edenderry
Phase 1 GI – HCC2

Geotechnical Interpretative Report

Project No. 25882

September 2025

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Naas
Co. Kildare
Ireland

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- **2.5** Surveying of Exploratory Hole Locations

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FOREWORD
The following conditions and notes on the geotechnical site investigation procedures should be read in conjunction with this report.

Standards
The ground investigation works for this project (**Gas to Bord na Mona, Edenderry, Phase 1 GI**) have been carried out by IGSL in accordance with Eurocode 7 - Part 2: Ground Investigation & Testing (EN 1997-2:2007). This has been used together with complementary documents such as Engineers Ireland Specification for Ground Investigation (2nd Ed, 2016), BS 5930 (2015+A1:2020) and BS 1377 (Parts 1 to 9) and the following European Norms:

- EN 1997-2 Eurocode 7: 2007 – Geotechnical Design – Part 2: Ground Investigation & Testing
- EN ISO 22475-1:2006 Geotechnical Investigation and Sampling – Sampling Methods & Groundwater Measurements
- EN ISO 14688-1:2017 Geotechnical Investigation and Testing – Identification and Classification of Soil, Part 1: Identification and Description
- EN ISO 14688-2:2017 Geotechnical Investigation and Testing – Identification and Classification of Soil, Part 2: Principles for a classification
- EN ISO 14689-1:2017 Geotechnical Investigation and Testing – Identification, description & classification of rock

The Eurocode 7, Part 2 – Ground Investigation and Testing GI specification shall be read in conjunction with the Specification and Related Documents for Ground Investigation in Ireland, 2nd Edition, published by Engineers Ireland in 2016.

Reporting
No responsibility can be held by IGSL Ltd for ground conditions between exploratory hole locations. The engineering logs provide ground profiles and configuration of strata relevant to the investigation depths achieved and caution should be taken when extrapolating between exploratory points. No liability is accepted for ground conditions extraneous to the investigation points. Unless specifically stated, no account has been taken of possible subsidence due to mineral extraction, mining works or karstification below or close to the site.

This report has been prepared for Murphy International Limited and Fingleton White and the information should not be used without their prior written permission. IGSL Ltd accepts no responsibility or liability for this document being used other than for the purposes for which it was intended.

Boring Procedures
Where required, 'shell and auger' or cable percussive boring technique is employed as defined by Section 6.3 of IS EN ISO 22475-1:2006. The boring operations, sampling and in-situ testing meet with the recommendations set out in IS EN 1997-2:2007 and BS 1377:1990 and EN ISO 22476-3:2005. The shell and auger boring technique allows for continuous sampling in clay and silt above the water table and sand and gravel below the water table (Table 2 of IS EN ISO 22475-1:2006).

It is highlighted that some disturbance and variation is unavoidable in particular ground (e.g. blowing sands, gravel / cobble dominant glacial deposits etc). Attention is drawn to this condition, whenever it is suspected. Where cobbles and boulders are recorded, no conclusion should be drawn concerning the size, presence, lithological nature, or numbers per unit volume of ground.

In-Situ Testing
Where required, Standard Penetration Tests (SPT's) are conducted strictly in accordance with Section 4.6 of IS EN 1997-2:2007. The SPT equipment (hammer energy test) has been calibrated

in accordance with EN ISO 22476-3:2005 and the Energy Ratio (E_r). A calibration certificate is available upon request. The E_r is defined as the ratio of the actual energy E_{meas} (measured energy during calibration) delivered to the drive weight assembly into the drive rod below the anvil, to the theoretical energy (E_{theor}) as calculated from the drive weight assembly. The measured number of blows (N) reported on the engineering logs are uncorrected. In sands, the energy losses due to rod length and the effect of the overburden pressure should be taken into account (see IS EN ISO 22476-3:2005).

Soil Sampling

Three categories of sampling methods are outlined in EN ISO 22475-1:2006. The categories are referenced A, B and C for any given ground conditions and are shown in Tables 1 and 2 of EN ISO 22475-1:2006. Reference should be made to EN 1997-2:2002 for guidelines on sample class and quality for strength and compressibility testing. Samples of quality classes 1 or 2 can only be obtained by using Category A sampling methods.

Class 1 thin wall undisturbed tube samples (UT100) are obtainable in fine grained soils. They strictly meet the requirements of EN 1997-2:2002 and EN ISO 22475-1:2006. Soil samples for laboratory tests are divided into five classes with respect to the soil properties that are assumed to remain unchanged during sampling, handling transport and storage. The minimum sample quality required for testing purposes to Eurocode 7 compatibility (EN 1997-2:2002) is shown in Table A.

Table A – Details of Sample Quality Requirements

EN 1997 Clause	Test	Minimum Sample Quality Class
5.5.3	Water Content	3
5.5.4	Bulk Density	2
5.5.5	Particle Density	N/S
5.5.6	Particle Size Analysis	N/S
5.5.7	Consistency Limits	4
5.5.8	Density Index	N/S
5.5.9	Soil Dispersivity	N/S
5.5.10	Frost Susceptibility	N/S
5.6.2	Organic Content	4
5.6.3	Carbonate Content	3
5.6.4	Sulphate Content	3
5.6.5	pH	3
5.6.6	Chloride Content	3
5.7	Strength Index	1
5.8	Strength Tests	1
5.9	Compressibility Tests	1
5.10	Compaction Tests	N/S
5.11	Permeability	2

N/S – not stated. Presume a representative sample of appropriate size.

Samples recovered from trial pits or trenches meet the requirements of IS EN ISO 22475-1. It is highlighted that unforeseen circumstances such as variations in geological strata may lead to lower quality sample classes being obtained.

Groundwater

The depth of entry of any influx of groundwater is recorded during the course of boring operations. However, the normal rate of boring does not usually permit the recording of an equilibrium level for any one water strike. Where possible, drilling is suspended for a period of twenty minutes to monitor the subsequent rise in water level. Groundwater conditions observed in the borings or pits are those appertaining to the period of investigation. It should be noted however, that groundwater levels are

subject to diurnal, seasonal and climatic variations and can also be affected by drainage conditions, tidal variations etc.

Engineering Logging

Soil and rock identification has been based on the examination of the samples recovered and conforms with IS EN ISO 14688-1:2017 and IS EN ISO 14688-2:2017. Rock weathering classification conforms to IS EN ISO 14689-1:2017 along with discontinuities (bedding planes, joints, cleavages, faults etc) as classified in Section 6.4 of IS EN ISO 14689-1:2017 and Annex C of same. Rock mechanical indices (TCR, SCR, RQD) are defined in accordance with IS EN ISO 22475-1:2006.

Where peat has been encountered, samples have been logged in accordance with the Von Post Classification (ref. Von Post, L. 1992. Sveriges Gologiska Undersoknings torvinventering och nogra av dess hittils vunna resultat (SGU peat inventory and some preliminary results) Svenska Mosskulturforeningens Tidskrift, Jonkoping, Swedden, 36, 1-37 and Hobbs N. B. Mire morphology and the properties of some British and foreign peats. QJEG, Vol. 19, 1986.

Retention of Samples

After satisfactory completion of all the scheduled laboratory tests on any sample, the remaining material will be discarded. Unless a period of retention of samples is agreed, it is our normal practice to discard all soil samples one month after submission of our final report.

1. INTRODUCTION

IGSL Limited has undertaken a programme of geotechnical site investigation works for a new gas pipeline (GNI143 Ballykilleen Pipeline), hot tap and AGI required to connect the existing Bord na Mona (BnaM) power station in Ballykilleen, Edenderry, Co. Offaly, to the gas transmission network 23 kilometres north in the townland of Kilwarden, County Meath. The works were undertaken for Murphy International Limited on behalf of their client Gas Networks Ireland. This Phase 1 investigation focused on both the "Offtake" installation at Kilwarden and the AGI at Edenderry as well as a number of crossing points where the gas pipeline infrastructure encounters public roads, the M4 motorway, the Grand Canal and river courses, namely the Kilwarden River and the Yellow River.

Figure 1 – Site Location Plan (pipeline plotted)

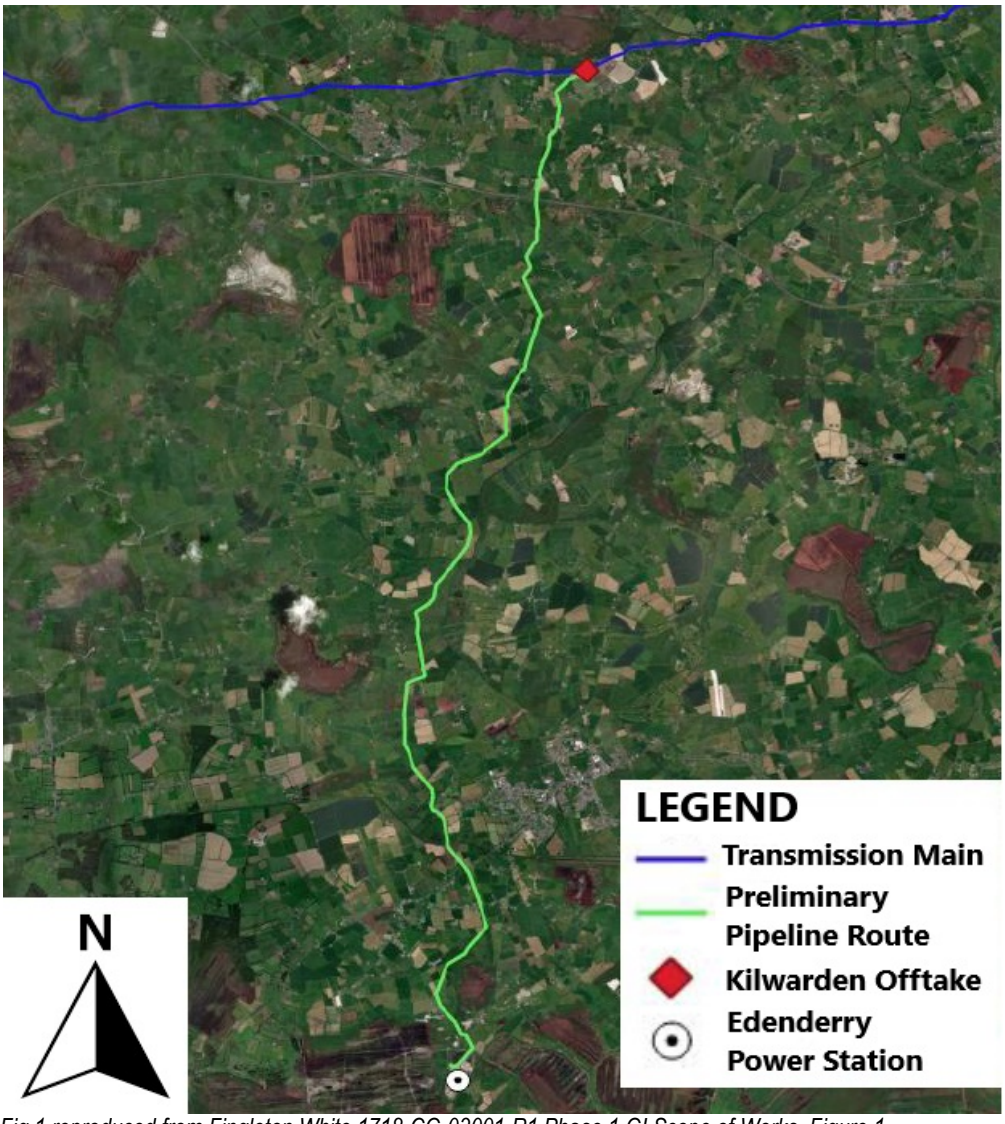


Fig 1 reproduced from Fingleton White 1718-CG-03001-R1 Phase 1 GI Scope of Works, Figure 1

The investigation comprised rotary drilling, cable percussion boring, trial pitting and soakaway tests to BRE365. The investigations were executed in accordance with BS 5930, Code of Practice for Site Investigations (BS 5930:2015 +A1:2020) and EN 1997-2 Eurocode 7 Part 2 Ground Investigation & Testing and supervised by an IGSL geotechnical engineer.

Geotechnical, chemical and environmental laboratory testing was scheduled on a range of soil and rock core samples. The geotechnical soil testing included moisture contents, Atterberg Limits and particle size distribution [PSD] testing. Suites of both chemical testing and environmental testing were undertaken on soils. Where recovered, rock strength testing was completed on recovered cores. This comprised point load strength index testing [PLSI] testing.

This report presents an evaluation of the ground and groundwater conditions and an assessment of the key geotechnical issues pertaining to the high consequence crossing (HCC) 02. This refers to an area in the townland of Clongall, Castlejordan, County Meath and Clonmore, County Offaly, townlands separated by the E-W course of the Yellow River, a tributary of the River Boyne. Holes 22, 23 & 24 are located approximately 15 to 25m from the river bank, both north and south. Holes 53, 54 and 55 are set back 150m (BH/RC55) to 370m (BH53) from the proposed river crossing. The exploratory hole locations which are referenced in this preliminary report are listed in Table 1.

Table 1 – Yellow River (RVX 2) exploratory hole locations

High Consequence Crossing 2 (HCC 2)	Cable Percussion Borehole	Rotary Drillhole
Yellow River (North of)	BH22	RC22
	BH23 / BH23A	RC23A
	BH53	RC53
	BH54	RC54
Yellow River (South of)	BH24	RC24
	BH25	RC25
	BH55	RC55

2. FIELDWORKS

2.1 General

The geotechnical investigations at the HCC2 crossing were carried out in two phases. In May and June 2025, all cable percussion boreholes were constructed with rotary holes on the southern bank of the Yellow River also completed. A rotary drill rig returned in September 2025 with follow-on drilling at each of the four holes north of the river. The site works comprised the following:

- Cable Percussion Boring (8 No.*)
- Rotary Drillholes (7 No.)
- Groundwater Monitoring / Data Loggers
- Surveying of Exploratory Hole Locations

**Cable Percussion re-setup was undertaken at location BH23A following shallow refusal at BH23*

2.2 Cable Percussion Boreholes

Cable percussion boring (200mm diameter) methods were deployed initially at each of seven locations [BH_] using a Dando 2000 rig. Following shallow obstruction in BH23, a re-setup was required in order to achieve greater depth. Apart from BH53, similar setup locations were used when following on with rotary drilling. Taking into account the re-setup at BH23A, the boreholes extended to depths of between 1.0m and 14.0m, the deepest hole located to the south (BH55). At all locations, boring commenced through hand-dug service inspection pits. Disturbed bulk samples were recovered at 1m intervals or change of strata during boring and these are denoted 'B' on the engineering logs.

Standard Penetration Tests (SPT's) were performed in the boreholes and given the nature of the soils, a solid cone was used. It is noted that the SPT N-Values reported are the number of blows for 300mm increment penetration (e.g. BH22 at 2.0m where N=12). These exclude the seating blow values, which represent the initial 150mm depth of penetration. Where partial penetration was achieved during testing, the number of blows is shown for the actual penetration depth achieved (e.g. BH23A at 13.0m where N=50/150mm). In accordance with Eurocode 7, the SPT hammer has been calibrated. It is highlighted that the SPT N-Values reported on the engineering logs are uncorrected for energy ratio.

Descriptions of the soils encountered, in-situ tests undertaken and samples recovered are presented on the borehole records in Appendix 1. Details of groundwater strikes and hard strata boring (i.e. chiselling) are also presented on the aforementioned records.

2.3 Rotary Drillholes

Rotary drilling was carried out (holes denoted RC_) at each of the seven holes positioned either side of the Yellow River. Drilling works were completed using a Beretta T44 and a Comacchio Geo-405. Symmetrex drilling was utilised within the overlying superficial deposits with coring techniques used in the underlying bedrock if or when encountered. The drillholes were each taken to required depths of approximately 20m. In situ SPT testing was carried out in overburden soils, below the end depth of cable percussion bores, shy of eventual bedrock or to a termination depth of 20m.

Where rockhead was met, the rotary drilling in bedrock (at RC54 and RC53) produced 78mm diameter cores. Bedrock was described as fresh to locally slightly weathered, strong to very strong, thickly to thinly bedded, dark grey/black, fine-grained, LIMESTONE (predominantly calci-siltite (sandy) limestone with subordinate argillaceous (muddy) limestone layers. The limestone was locally fossiliferous.

The cores were placed in 3m capacity timber boxes and logged by an IGSL engineering geologist. This included photography of the cores with a digital camera. Where rock core was recovered, a graphic fracture log is also presented alongside the mechanical indices. This illustrates the fracture

state of the rock cores and allows easy identification of highly fractured / non-intact zones and discontinuity spacings. It should be noted that no correction for dip of the joints has been made and that the spacings shown are successive joint / core intersections within the core.

A groundwater monitoring standpipe was installed in drillhole RC24 on the southern side of the Yellow River. The standpipe consisted of 50mm diameter HDPE pipework with proprietary 1mm slots and incorporated a pea gravel filter pack and cement / bentonite grout seal. A headwork cover was fixed in place.

The core log records are presented in Appendix 2 and this includes engineering geological descriptions, details of the bedding / discontinuities and mechanical indices (TCR, SCR and RQD's) for each core run. Core photographs are also presented in the aforementioned Appendix 2 and these illustrate the structure and fracture state of the bedrock.

2.4 Groundwater Monitoring / Data Loggers

Groundwater monitoring was undertaken following rotary drilling works. Groundwater levels were measured using an electric dipmeter. The levels recorded are shown in Appendix 3A.

A data logger was installed in well RC24. One barologger was also positioned on site to record fluctuations in barometric pressure over the long term. The downloaded logger information was issued to Murphy International Limited separately as raw data (in excel format). Graphs are presented in Appendix 3B which document the variation in water levels recorded over the course of the monitoring period (loggers installed August 2025 and downloaded monthly for a year).

2.5 Surveying of Exploratory Hole Locations

Following completion of the exploratory works, surveying was carried out using GPS techniques. Co-ordinates (x, y) were measured to Irish Transverse Mercator and ground levels (z) established to Malin Head. The co-ordinates and ground levels are shown on the exploratory hole logs with locations shown on the exploratory hole plan in Appendix 7.

3. LABORATORY TESTING

Geotechnical laboratory testing was performed at IGSL's INAB-accredited laboratory in accordance with the methods set out in BS1377; British Standard Methods of Test for Soils for Civil Engineering Purposes; British Standards Institute:1990. The laboratory applies best practice management systems as per International Standard IS EN ISO/IEC 17025. The geotechnical testing included moisture contents, Atterberg Limits and particle size distribution [PSD] testing. The results from geotechnical testing on selected cable percussion borehole samples are presented in Appendix 4.

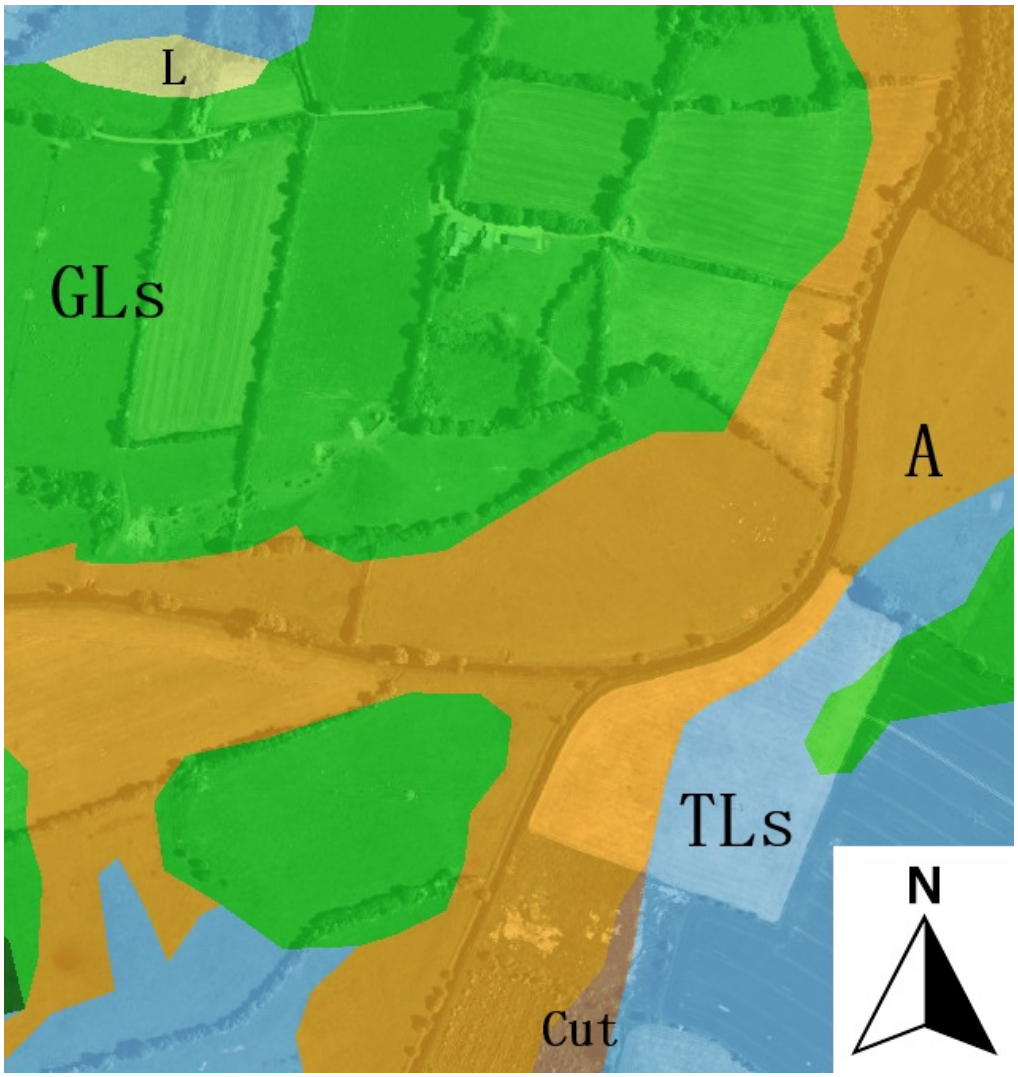
Chemical analysis incorporating BRE SD1 Suite D (Brownfield Site – Pyrite Present) were scheduled on recovered soils and undertaken by Chemtest Laboratories. The chemical results are presented in Appendix 5 (Reports 25-20057, 25-25882 & 25-21684). Soil samples were selected from borehole excavations for specialist WAC assessment using the *Rilta* Suite of environmental testing. These results are also presented in the aforementioned Chemtest reports.

Finally, geotechnical laboratory testing was scheduled on selected rock cores. Point load strength index (PLSI) tests were undertaken on the cores from both RC53 and RC54. These results are presented in Appendix 6.

4. DESK STUDY

The Quaternary soils plot for the area (Figure 2 - retrieved from GSI website) reveals widespread alluvium blanketing the river crossing point. The alluvium appears to track the course of the Yellow River and Boyne River covering deeper seated till and gravel. There are also instances of "cut over raised PEAT" to the southeast of the quaternary map as well as lacustrine sediments to the northwest of the crossing point. The presence of a mixed stratigraphy overall, often with intervals of sand and gravel was proven largely throughout the investigation at the river. Soft consistency soils were also noted where marls were proven, albeit as thin layers at depths of 6.0m / 63.20m OD (BH55) and 11.50m / 59.38m OD (BH53).

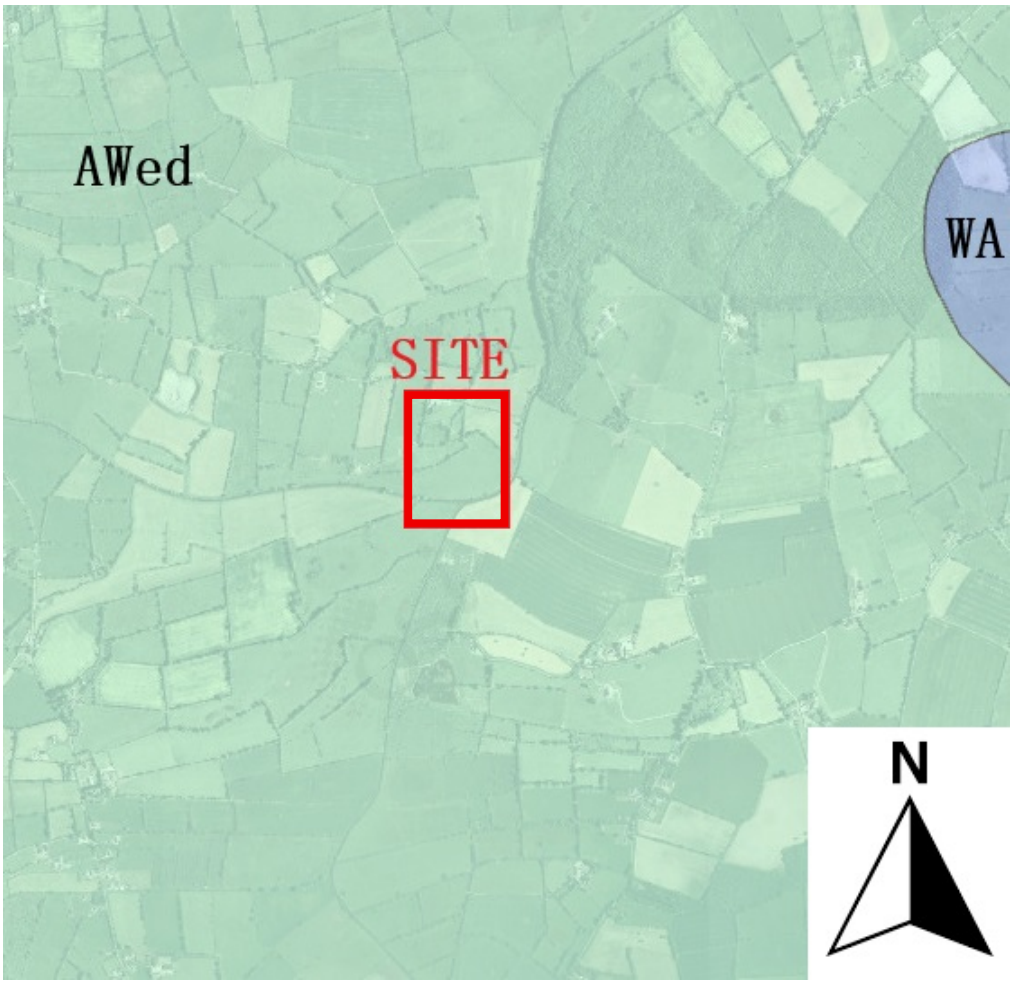
Figure 2 – Quaternary Soils Plot for the Yellow River Site at the Meath / Offaly County bounds



Map Key	**Cut**	- Cut over raised PEAT
	L	- Lacustrine
	A	- Alluvium
	TLs	- Till derived from Limestones
	GLs	- Gravel derived from Limestones

Reference to the GSI map for the area (Figure 3, 1:100,000 Solid Geology Series) shows that the site is underlain by the Lower Carboniferous, Edenderry Oolite Member of the Allenwood Formation. The Edenderry Oolite Member is described in McConnell, Philcox & Geraghty (1994) as a "partly skeletal calcarenite (bio-oosparite)". A bio-oosparite is a bioclastic limestone that contains both biological fragments (bioclasts) and ooids, with a sparry calcite cement.

Figure 3 - Bedrock Geological Map for the Yellow River site



Key: **AWed** = Edenderry Oolite Member
WA = Waulsortian Limestones

5. GROUND CONDITIONS & GROUNDWATER

5.1 Ground Profile – Superficial Deposits

The following is a summary of the ground conditions encountered across the site as identified by the exploratory locations. A geological cross section has been drafted to assist in illustrating the stratigraphic makeup at HCC2 (refer to Appendix 8).

TOPSOIL

- Topsoil was generally found to be between 0.20m and 0.30m thick in the boreholes. At location 23A, TOPSOIL was logged to a depth of 0.50m.

MADE GROUND

- What was termed CONCRETE fill was intercepted from 0.50m to 1.0m in BH23. This resulted in a re-setup bore being constructed (BH23A).

SUPERFICIAL DEPOSITS

- Within metres of the river bank both north and south, four holes were drilled, each to 20m. Initially, the holes were opened by cable percussion means. The bores achieved depths of between 10m and 13m prior to termination on obstruction / dense ground. As mentioned, Made Ground was unearthed at BH23 with possible buried concrete from 0.50m to 1.0m bgl.

- The deposits beyond an initial cover of soft to firm sandy gravelly SILT were typically coarse grained, reporting a high sand and/or gravel component. Immediately north of the river, a medium dense very gravelly SAND passing to a very sandy GRAVEL was revealed in BH22 to 5.50m below ground level (bgl). Interspersed layers of SILT and SAND combined to make up the uppermost 6m in BH23A. A layer of very gravelly SAND was then intercepted from 6.0m to 8.0m bgl / 57.88m OD.

- South of the river, in BH24, a firm to stiff sandy gravelly SILT was logged to 2.30m / 63.85m OD. A stiff CLAY was then recorded from 2.30m to 3.0m. Once again, as with the north side of the river, a thick stratum of slightly clayey/silty sandy GRAVEL was logged from 3.0m to 6.0m.

- Variability in soil stratigraphy can be inferred by inspecting BH25. A firm to stiff slightly sandy slightly gravelly SILT/CLAY was found in BH25 from 1.50m to 6.0m. This passed to a clayey/silty slightly gravelly SAND (from 6.0m) and to a slightly gravelly SILT from 7.50m.

- Basal sandy GRAVEL layers were found in both BH24 (from 10.80m / 55.35m OD) and in BH25 (from 10.50m / 55.54m OD). Basal GRAVEL was also encountered in each of BH23A (from 11.70m), BH53 (from 7.0m) and BH55 (from 12.80m).

- Located furthest south from the river, BH55 comprised initially stiff grey sandy gravelly SILT from 1.80m to 4.40m / 64.80m OD. No water strike was met. However, the likely erroneously low SPT values obtained at each of 5.0m, 6.0m and 7.50m would suggest fines-dominant SILT/MARL soils are present and somewhat disturbed prior to testing. A medium dense grey silty slightly gravely SAND was described from 9.0m to the basal GRAVEL at 12.80m / 56.40m OD.

- Moving northwards from the river, BH54 reported fine-dominant soils comprising soft to firm and firm sandy SILT and, from 7.80m / 54.73m OD, deeper-seated very stiff slightly sandy gravelly CLAY.

- BH53, positioned approximately 475m north of the river saw low SPT blowcounts to 7.0m. This once again likely implies some disturbance of SILT-dominant soils ahead of in situ testing. "Soft" SILT and "loose" silty SAND were logged to 7.0m. From 7.0m, a predominantly medium dense very sandy GRAVEL took the borehole to completion at 12.50m / 58.38m OD.

- Rotary drilling was used at each of the holes to achieve an end depth of 20m bgl. Symmetrix open hole drilling system took five of the seven holes to 20m without encountering bedrock (RC22, 23A, 24, 25 & 55).

- Overburden drilling in the 20m deep "open holes" found mixed sandy GRAVEL and gravelly CLAY deposits to 20m in each of RC22, RC23A and RC24 beyond the cable percussion termination depths. SPT tests were taken in the drilled superficial soils proving dense / very stiff consistencies with test refusals commonplace, ie., requiring >50 blows of the 63.5kg trip hammer to complete a 300mm test drive.

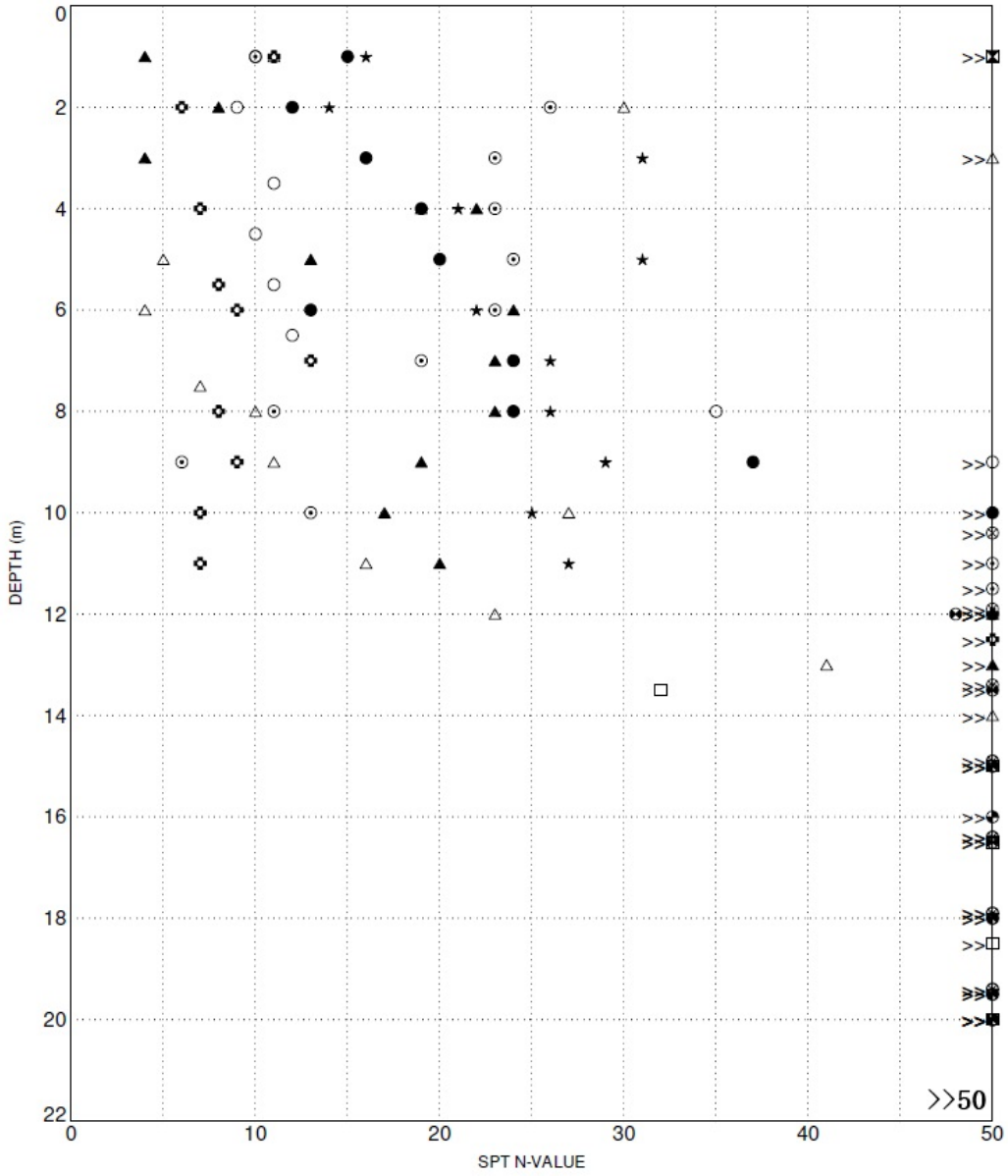
- Openhole drilling in RC25 proved very dense clayey sandy GRAVEL from cable percussion borehole end depth (11.50m) to 20m bgl / 46.04m OD). Similarly, in RC55, very dense sandy cobbly GRAVEL was logged from 14.0m (BH55 end depth) to 20m.

- Rotary coring methods were used in two of the drillholes where rock was intercepted shy of 20m. Limestone rock was encountered at consistent depths in each of RC53 and RC54, at 12.70m / 54.09m OD (RC53) and 15.80m / 49.88m OD (RC54). Rockhead appears to rise somewhat moving north away from the river crossing. The geological cross section (Appendix 8) illustrates this rise in rockhead topography from south to north.

- Based on SPT test drives alone, there appears to be some softening at depth in the boreholes. This generally applies to silt-dominant soils and in silty sand. It may be the case that soils are disturbed by boring / drilling methods and that the resulting dilatancy in the silt promotes softening which delivers lower than expected SPT results. SPT tests were conducted from ground level in RC53, given the "follow-on" location was positioned approximately 45m from the original cable percussion borehole, BH53. The resulting SPT's corroborate the low values obtained during cable percussion boring for the same interval in BH53. A "soft grey brown sandy SILT" was logged by the driller from 2.20m to 8.40m. Blowing sands were recorded from 8.40m to 9.60m coincident with a water strike at 8.40m.

The standard penetration test [SPT] allows for an appraisal of the ground stiffness. An SPT data plot showing N-Values against depth is presented in Figure 4. The array is quite scattered most especially for results in the uppermost strata during cable percussion boring. Here SPT tests were conducted in compositionally variable, evidently low strength soils. 'Low strength' deposits are those where N values of <10 blows are present. It is possible the "soft" or "loose" consistency (based on an assessment of SPT blowcounts) is due to silt disturbance or water ingress caused during boring / testing.

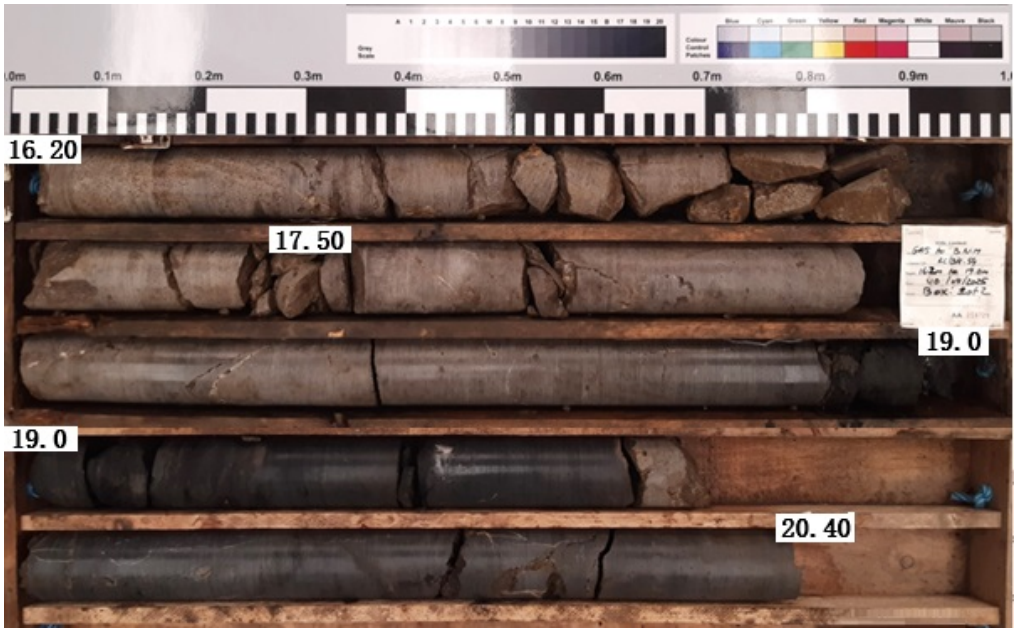
Figure 4 – SPT Plot versus Depth for Cable Percussion Boreholes / Rotary Drillholes



5.2 Bedrock

As referenced earlier in Section 4, the GSI rock map for the area (Figure 3, 1:100,000 Solid Geology series) shows that the Edenderry Oolite member of the Allenwood Formation underlies the site. The Edenderry Oolite member is described as a bio-oosparite.

Figure 5 – Bedrock cores in RC54 from 16.20m to 20.40m bgl



Rotary coring was conducted at two locations at HCC2. These were RC53 and RC54, both to the north of the site. Coring successfully proved bedrock at depths ranging 13.30m and 16.20m bgl. These depths corresponded to elevations of 53.49m OD and 49.48m OD. Figure 5 shows the core recovery in RC54 on the north side of the river. Cores were described as fresh to locally slightly weathered, strong to very strong, thickly to thinly bedded, dark grey/black, fine-grained, LIMESTONE (predominantly calci-siltite (sandy) limestone with subordinate argillaceous (muddy) limestone layers. The limestone was locally fossiliferous.

Discontinuity spacings in the rotary cores generally ranged from closely (60 to 200mm) to widely spaced (600 to 2000mm). The discontinuity surfaces were typically smooth and locally very rough, planar to curviplanar. Apertures were tight to open, locally exhibiting clay smearing with some calcite veinfill (up to 8mm). Dips were generally sub-horizontal, locally 30-40°, occasionally irregular, 70°.

The point load strength index (PLSI) test data produced $I_s(50)$ values ranging from 1.61 to 6.22 MPa with a mean value of 4.42 MPa. The PLSI strengths are suggestive of the presence of medium strong to very strong rock.

Using a correlation factor (K) of 22 to assess compressive strength, this suggests a characteristic strength envelope in the order of 35 to 137 MPa and categorizes the bedrock as medium strong (25 to 50MPa) to very strong (100 to 250MPa).

5.3 Groundwater

Water ingress was recorded in both the cable percussion boreholes and rotary drillholes. The cable percussion boreholes intercepted groundwater between 3.80m bgl (BH22) and 10.50m (BH25) with often two water strikes reported in one borehole. The deeper strikes were generally considered 'rapid' in intensity with significant rises in water level observed upon interception. This trait is suggestive a deeper, unconnected or confined water body at depth with its own particular piezometric pressure.

Rotary 'open-hole' drilling also encountered both shallow and deep groundwater strikes. The shallowest strike was found in RC25 at 2.70m bgl while the deepest strike was noted in a GRAVEL deposit in RC24 at 18.70m bgl. Groundwater levels measured during the construction of follow-on rotary drillholes can often be skewed higher than expected given water is introduced during coring through an air / mist flush. RC54, which required rock coring from 16.20m, met a strike at 15.80m, presumably coincident with rockhead. Later monitoring taken at the end of the corehole (20.40m) saw water rest at 3.0m bgl.

Water monitoring at the installation in RC24 found water sitting at 3.19m (05-June), 3.20m (02-July) and 3.23 bgl (10-Sept). A data logger was installed in the well in mid-August and downloaded in early September. No appreciable rise or fall was recorded over the period.

Table 2 outlines where water was met in each of the exploratory holes. The potential does exist for there to be seasonal changes in groundwater level. The works were carried out at various times throughout May to September 2025. The standpipe at RC24 allows for ongoing monitoring / logging.

Table 2 – Water measurements in on-site exploratory holes

Exploratory Hole No.		Water Struck **m bgl**	Stratum Description	Rate of Flow	Remarks / Stratum of water ingress (m OD)
Cable Percussion Boreholes ***(Constructed May - June 2025)***	BH22	**3.80 (61.52)**	Medium dense grey clayey very sandy GRAVEL with cobbles	Moderate – water rose to **3.0m** in 20min	*Borehole constructed May / June 2025*
		8.70 (56.62)	Interface between stiff brown sl gravelly CLAY and underlying GRAVEL	Rapid – water rose to **4.0m** in 20min	
	BH23A	**4.50 (61.38)**	Firm grey sandy gravelly SILT	Moderate – water rose to **3.0m** in 20min	Water dipped at **8.0m** upon completion. Hole depth 13.0m. (05-06-25)
		8.0 (57.88)	Interface between clayey very gravelly SAND and underlying sl sandy sl gravelly CLAY	Moderate – water rose to **5.0m** in 20min	

Cont.

Exploratory Hole No.		Water Struck **m bgl**	Stratum Description	Rate of Flow	Remarks / Stratum of water ingress (m OD)
Cable Percussion Boreholes ***(Constructed May - June 2025)***	BH24	**4.0 (62.15)**	Medium dense grey sl clayey/silty very sandy GRAVEL with cobbles	Moderate – water rose to **3.0m** in 20min	**1.0m** Water end of shift 07-05-25 - hole at 5.0m. **1.0m** Water start of shift 08-05-25 - hole at 5.0m.
		4.50 (61.65)		Rapid – water rose to **1.0m** in 20min	
	BH25	**4.50 (61.54)**	Firm to stiff sl sandy sl gravelly SILT/CLAY	Slow– water rose to **4.0m** in 20min	**4.0m** Water end of shift 09-05-25 - hole at 6.0m. **3.0m** Water start of shift 12-05-25 - hole at 6.0m.
		10.50 (55.54)	Interface between Firm grey sl sandy sl gravelly SILT and underlying GRAVEL	Rapid – water rose to **3.0m** in 20min	
	BH53	**7.50 (59.37)**	Interface between clayey very gravelly SAND and underlying GRAVEL	Moderate– water rose to **1.50m** in 20min	**1.50m** Water end of shift 10-06-25 - hole at 7.50m. **1.50m** Water start of shift 11-06-25 - hole at 7.50m.
		10.0 (56.87)	Clayey/silty very sandy GRAVEL	Rapid – water rose to **6.0m** in 20min	
	BH54	**9.50 (56.18)**	Base of hole – Very stiff sl sandy gravelly CLAY	Rapid – water rose to **3.0m** in 20min	-
	BH55	**-**	-	-	**3.0m** Water start of shift 07-05-25 - hole at 5.0m.
Rotary Drilling	RC22	**10.30 (54.94)**	Grey brown sandy GRAVEL	-	**7.80m** Water end of shift 08-09-25 - hole at 14.90m. Water dipped at **8.10m** upon completion. Hole depth 20.0m. Hole cased to 20m (09-09-25).
		11.60 (53.72)	Grey brown slightly silty sandy GRAVEL	-	

Cont.

Exploratory Hole No.		Water Struck **m bgl**	Stratum Description	Rate of Flow	Remarks / Stratum of water ingress (m OD)
Rotary Drilling	RC23A	**18.50 (47.38)**	Interface between very stiff grey brown gravelly sandy silty CLAY and underlying GRAVEL	-	**DRY** at end of shift 03-09-25 - hole at 17.90m. Water dipped at **18.20m** upon completion. Hole depth 20.0m. Hole cased to 20m (04-09-25).
	RC24	**4.20 (61.95)**	Slightly clayey/silty sandy GRAVEL	-	Water dipped at **3.30m** upon completion. Hole depth 20.0m. Hole cased to 20.0m (12-05-25). Standpipe dipped 10-09-25 at **3.23m** (62.92m OD)
		18.70 (47.45)	Clayey sandy GRAVEL	-	
	RC25	**2.70 (63.34)**	Slightly sandy slightly gravelly SILT/CLAY	-	Water dipped at **2.50m** upon completion. Hole depth 20.0m. Hole cased to 20.0m (13-05-25).
		11.20 (54.84)	Slightly clayey/silty sl. sandy GRAVEL	-	
	RC53	**8.40 (58.389)**	Interface between grey brown sandy SILT and underlying silty gravelly SAND (**blowing SAND**)	-	Blowing SANDS at **8.40m** **3.80m** Water end of shift 16-09-25 - hole at 13.30m.
	RC54	**15.80 (49.88)**	Rockhead	-	**DRY** at end of shift 09-09-25 - hole at 9.50m. **6.80m** Water start of shift 10-09-25 - hole at 9.50m. **4.60m** Water end of shift 10-09-25 - hole at 19.0m. **2.20m** Water start of shift 15-09-25 - hole at 19.0m. Water dipped at **3.0m** upon completion. Hole depth 20.40m. Hole cased to 20.40m (15-09-25).
	RC55	**6.40 (62.80)**	Grey sandy SILT	-	Water dipped at **5.10m** upon completion. Hole depth 20.0m. Hole cased to 20.0m (08-05-25).

6. GROUND ASSESSMENT & ENGINEERING RECOMMENDATIONS

6.1 General

In light of the ground investigation findings, the following geotechnical issues are developed and discussed:

- Pipeline Yellow River (RVX 2) Crossing
- Groundwater
- Slopes / Batters
- Buried Concrete
- Waste Acceptance Criteria [WAC] & Environmental Testing - *Soils destined for Landfill*

6.2 Pipeline Yellow River (RVX 2) Crossing

(See Cross Section 'N-S' – Appendix 8)

Boreholes were constructed in fields both immediately to the north and south of the Yellow River. These each encountered upper sequences of CLAY/SILT (generally soft to firm and firm) with underlying deeper-seated, often water-bearing GRAVEL, SILT and silty SAND. The scatter observed in the SPT plot (Figure 4) underscores what appears to be a mixture of soil types throughout the investigation area. Soft and soft to firm sandy SILT and loose SAND was identified (based on SPT N-Values) at BH23A (2.0-3.80m), BH25 (8.0-9.0m), BH53 (2.50-7.0m), BH54 (0.30-7.80m) and BH55 (4.40-9.0m). The potential for layers of soft or low strength deposits at numerous locations warrants further investigation.

A grid of dynamic probes (DPH) should permit an assessment of the variability of the in-situ strength properties / density of the surficial soils. It is thought that the "soft" consistency (based on an assessment of SPT blowcounts) is very likely due to SILT disturbance at depth caused during boring. This coupled with the destabilising effect of the ingress of ground water are likely to reduce the strength properties of the sediments resulting in lower than expected SPT results.

In order to confirm the intrusive findings from the north and south banks of the canal, as well as to allow further examination of the strength of the soils, an onland and overwater geophysical surveys recommended. A combination of techniques (ERT, seismic & MASW) could be deployed. Electrical Resistivity Tomography (ERT) soundings image the resistivity of the materials in the subsurface along a profile to produce a pseudo-section showing the variation in resistivity to 15-20m bgl, depending on the length of the profile. Each pseudo-section can be interpreted to determine the material type along the profile at increasing depth, based on the typical resistivities returned for Irish ground materials. The intrusive findings allow for calibration of the geophysical soundings.

Seismic Refraction profiling measures the velocity of refracted seismic waves (*p*-wave) through the overburden and rock material and allow for an assessment of the thickness and quality of the materials present. Stiffer and stronger materials usually have higher seismic velocities while soft, loose or fractured materials have lower velocities. Readings are taken using geophones connected via multi-core cable to a seismograph. This method should allow profiling of the depth to the top of the bedrock, along profiles across the site.

The MASW method is used to determine surface wave velocities in the ground which can indicate the presence of potential soft or low strength zones. Overburden material with velocities of <150 m/s are generally classified as low strength or loose. The depth of investigation for this method will depend on the source type and geophone spacing. This method may also be used to indicate bedrock depth.

Rotary coring was conducted at five of the seven borehole locations and proved the absence of bedrock to 20m bgl corresponding to depth levels between 45.24m OD and 49.20m. The overburden soils were largely found to be very dense and/or very stiff beyond cable percussion end depths of typically 10 to 12m bgl.

Bedrock was encountered in the two boreholes positioned furthest north of the river. Possible rockhead was met at depths of 12.70m (RC53) and 15.80m (RC54) below ground level with coring commencing at 13.30m (RC53) and 16.20m (RC54). The bedrock recovered was reported as being strong to very strong, predominantly calcisiltite LIMESTONE.

Ahead of the construction of the pipe crossing, advice and consultation is recommended with specialist micro-tunnelling or HDD contractor.

The presence of potentially shallow soft SILT / loose SAND suggests use of ground support techniques (e.g. trench boxes). Elsewhere, surficial soils were generally firm and stiff or medium dense where coarse grained. The dipped water level in RC24 was found to be ca. 3.20m bgl (62.92m OD) – the original strike in BH/RC24 was at approximately 4.0m bgl. The highest recorded water strike level in an exploratory hole was noted in RC25 (2.70m bgl). Instances of groundwater strikes rising rapidly were occasionally observed in deeply buried GRAVEL layers. In BH25, a rise from 10.50m to 3.0m bgl was reported over a 20minute monitoring period.

It is likely dewatering (pumping) will be required if excavations close to or below the groundwater table are proposed. Further monitoring should be undertaken at RC24 to understand the seasonal fluctuations in water table level. Where soft ground conditions locally exist, over-excavation and placement of deep trench fill may be required to form a suitable bedding for pipework. This should be conducted in line with Clause 502 Excavation for Pipes and Chambers as featured in the Specification for Road Works Series 500 - Drainage and Service Ducts (TII, 2015);

> *"soft spots existing below the bottom of an excavation shall be removed and the resulting voids backfilled and compacted with Granular Material Type B complying with Clauses 803 or 804 or pipe bedding material complying with Clause 503, or mix ST1 concrete"*

Where encountered, soft and soft / firm upper soils would provide a safe or allowable bearing pressure of the order of 40-50 kPa. The cross section developed for the Yellow River crossing illustrates the presence of potentially low strength soils (soft) found at significant depths, sometimes extending to ca. 8.0m to 10m. Such soils at shallow depths present further risk for sidewall instability. As noted, trial pitting and/or dynamic probing at the location would further enhance the understanding of the in-situ performance of the SILT rather than relying entirely on SPT test results (Figure 4). The issue with silt-dominant tills is that once saturated and subsequently loaded / disturbed, dilatant behaviour usually occurs. The SPT results may only have served to exacerbate this effect in the silt thereby deriving lower than expected SPT results. Where water-bearing silts are encountered during construction, groundwater draw down should be undertaken to avoid destabilising the silt.

The use of a geotextile separating layer between the backfill material and the underlying natural ground / trench base should also be considered. Where significant thickness of backfill is imported, a geogrid layer could be introduced to strengthen the backfill material. Excavation of open trenches in soft to firm soils will pose issues for stability with generous battering required to offset the risk of sidewall collapse. As an alternative to wide batters, as mentioned earlier, the use of trench boxes could be considered should there be a requirement for deeper excavation.

6.3 Groundwater

As outlined in Section 5.3, groundwater strikes in boreholes and drillholes were restricted to depths from ca.3.0m bgl and deeper (See Table 2) with a groundwater dip measurement (in early September 2025) of 3.23m (62.92m OD) recorded in RC24. Sump pumping may be required where shallow perched water entries are met. Elsewhere, where deep excavation in natural soils is required beyond ca. 2.0 / 2.50m, this will likely necessitate dewatering especially if GRAVEL lenses / layers are encountered. The water level in RC24 should be dipped as part of a longer-term monitoring programme – data logger use is envisaged on the project for a duration of one year. It may be the

case that water re-equilibrates to higher depths than were recorded on site most especially during the wetter months of Winter / Spring.

Should water be encountered during deeper digs / excavations it is likely that de-watering will be required through a combination of strategic sump pumping. As mentioned in Section 5.3, the potential does exist for there to be seasonal changes in groundwater level. The works were carried out during Summer / early Autumn 2025. It may be the case that the various waterbodies at depth are subject to seasonal variations. As noted, readings should be taken at RC24 to assess equilibrated water levels.

6.4 Slopes / Batters

In the absence of trench stabilisation methods, a maximum temporary slope angle of 1V to 1.5H (33º) is anticipated for batters constructed within the upper low to medium strength fine grained soils. A slope angle of 1V to 2H (26°) should be appropriate for long term batters in the same soils. Further investigation (dynamic probing / trial pitting) on the pipeline corridor should pinpoint any soft zones / stability issues in near surface SILT.

Where deep excavation works are required in the superficial deposits, the use of trench box support is advised. In addition, the uppermost fine subsoils will be susceptible to softening and degradation and surface water or groundwater ingress can lead to a significant reduction in shear strength. Perched water can exist locally and this should be considered in risk assessments for excavations.

Site operatives or personnel should not enter unsupported excavations and should be informed of potential risks. Where site operatives or engineering staff work in close proximity to temporary slopes or batters, these should be inspected and approved by a suitably experienced civil engineer, preferably with geotechnical experience. Where there is a risk of spalling of battered slopes, the use of a geogrid is recommended. The geogrid should be anchored at the top and bottom of the ridge face to contain particles such as gravel, cobbles and / or boulders that may become dislodged.

6.5 Buried Concrete

The chemical analysis tests on selected samples show pH values range from 7.5 to 8.6 with a sulphate aqueous extract (SO_4) value typically of <10mg/l. However, higher levels were detected in two samples, both of which were taken from BH23A at 1.0m. A sample in Chemtest report 25-21003 reported a water solble sulphate content of 700mg/l with a second sample in Chemtest report 25-21684 sitting at 380mg/l/. Taking these more elevated figures into account, this would categorise the upper natural soil as BRE Class DS-2. Table C1 ACEC for greenfield sites in BRE SD 1 (2005) could be used in the selection and design of concrete. With mobile groundwater conditions and given the pH values obtained, then ACEC class AC-2 would be expected to be appropriate for buried concrete in natural soils.

In line with I.S. EN 206-1:2013 concrete could be manufactured to Class XA1 where founded or positioned in the upper soils (Class XA1 being ≥ 2000 and ≤ 3000 SO_4^{2-} mg/kg). However, based on the chemical results, there does not appear to be any issue with "chemical attack".

6.6 Waste Acceptance Criteria [WAC] & Environmental Testing – *Soils destined for Landfill*

Eight shallow soil samples selected from boreholes were analysed for their compliance to the criteria set out in the 2002 European Landfill Directive (2003/33/EC). Five of the eight samples tested proved compliant with Waste Acceptance Criteria and therefore would be accepted by an inert landfill.

The three exceptions were soil specimens from BH22 (0.50m) – tested twice – and BH23A (0.50m). Each of the three were noted to exceed inert waste limits for Total Organic Carbon [TOC]. Indeed, the samples exceeded hazardous limits for TOC. The samples would therefore not be accepted by an inert landfill due to their TOC content and should instead be dealt with by a suitably licensed waste facilitator. Table 3 below shows the concentration of Total Organic Carbon found in the

aforementioned soil samples compared with the published inert, non-hazardous and hazardous landfill limits.

Table 3 – Elevated values (WAC Testing)

Parameter	Landfill Limits Inert / non-Haz / Haz	BH22 0.50m	BH22 0.50m	BH23A 0.50m
	Chemtest Report	***25-21003***	***25-21684***	***25-21003***
Total Organic Carbon	3% - 5% - 6%	*8.40%*	*8.20%*	*7.60%*
Dissolved Organic Carbon	500 – 800 – 1000 mg/kg	85	<50	58
Loss on Ignition (LOI)	10% (Hazardous)	*17%*	*20%*	*15%*

Where only the inert value for TOC is exceeded, the EU Landfill Directive offers the following dispensation:

"In the case of soils, a higher limit value may be admitted by the competent authority, provided the DOC value of 500 mg/kg is achieved at L/S = 10 l/kg, either at the soil's own pH or at a pH value between 7.5 and 8.0."

Notably the DOC [Dissolved Organic Carbon] content did not exceed 500mg/kg for the any samples. In certain inert landfills, an additional criterion is set whereby samples with elevated TOC levels must also exhibit Loss on Ignition (LOI) levels that are less than 5% by weight. This test returned values of >10% for each borehole sample. In any event, the TOC value did not only exceed inert limits but surpassed hazardous limits. To reinforce this exceedance, the two samples tested from BH22 at 0.50m reported similar elevated values for TOC.

The results obtained from the testing of the five inert samples were compared with published limits set out in the EPA Guidance on waste acceptance criteria at authorized soil recovery facilities (EPA, 2020). With regard to each of the criteria set for Total Organic Carbon and for the organic compounds BTEX, Mineral Oil, PAH and PCB's, the EPA limits were met.

Furthermore, in relation to total metal concentrations, the EPA Guidance document employs a set of specific metal trigger limits to each of seven geochemical domains across the country. Depending on the domain in which the accepting recovery site falls, there are specific limits prescribed for certain metals. In order to further analyse the soils suitability for acceptance at an EPA recovery facility, the domain of the receiving facility would have to be known. For the purposes of this report, the maximum concentrations and / or trigger levels in soil and stone for soil recovery facilities for Geochemical Domain 2 (Carboniferous limestone and related rocks) are applied. In relation to the remaining five samples, each exhibit metal concentrations within those published for Geochemical

Domain 2 and would therefore, based on metal and TOC / organic compound contents be accepted at an authorized soil recovery facility.

Furthermore, written into the EPA (2002) document, only "soil and stone containing up to 2% non-natural materials by weight is acceptable, ie., anthropogenic or man-made substances such as rubble, concrete, bricks, metal and bitumen that are non-natural to the environment from which the material was extracted". This 2% content level for man-made materials would have to be complied with should the soils be exported to an EPA-licenced Soil Recovery Facility. The existence of what was termed "concrete" at 0.50m in BH23, coupled with exceedances in TOC locally, may warrant further intrusive investigation / geophysical conductivity survey to ascertain the potential for buried anthropogenic material.

In relation to sending the analysed samples to an EPA-licenced Soil Recovery Facility, the limits for acceptance at the nominated facility should be checked against the results listed in the test record sheet - final report.

Note that, depending on the extent and depth of envisaged excavations and quantities for soil removal (if required), a landfill or Soil Recovery Facility may require additional testing to achieve the frequency of analysis (i.e. number of samples per unit volume of excavation) that meets their licence requirements.

No asbestos was detected in screens ran on the eight soil samples.

It would be prudent, given the varying degree of compliance with WAC limits, that a waste characterisation assessment of the results would be carried out in accordance with the Environmental Protection Agency (EPA) Guidelines on the Classification of Waste (2015). We would recommend that a specialist environmental consultant (such as ORS Group) be engaged to undertake this assessment.

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Appendix 1

Cable Percussion Borehole Logs

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH22**
		SHEET	Sheet 1 of 1
CO-ORDINATES	660,997.36 E 737,285.65 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	65.32	**BOREHOLE DEPTH (m)**	10.00
		DATE COMMENCED	29/05/2025
		DATE COMPLETED	03/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		65.02	0.30						
	Soft brown sandy peaty SILT		64.32	1.00	AA22514	B	0.50			
1	Medium dense grey slightly clayey very gravelly SAND. Gravel is fine.		63.32	2.00	AA22515	B	1.00		N = 15 (2, 3, 4, 4, 3, 4)	
2	Medium dense grey clayey very sandy GRAVEL with many cobbles				AA22536	B	2.00		N = 12 (2, 3, 3, 3, 3, 3)	
3					AA22537	B	3.00		N = 16 (6, 5, 5, 6, 2, 3)	
4					AA22538	B	4.00		N = 19 (2, 4, 6, 5, 4, 4)	
5			59.82	5.50	AA22539	B	5.00		N = 20 (2, 3, 3, 6, 5, 6)	
	Medium dense grey very silty SAND		58.82	6.50	AA22540	B	6.00		N = 13 (2, 2, 2, 3, 3, 5)	
6	Stiff brown slightly gravelly CLAY									
7					AA22541	B	7.00		N = 24 (3, 4, 6, 7, 6, 5)	
8			56.62	8.70	AA22542	B	8.00		N = 24 (2, 3, 6, 6, 6, 6)	
	Dense grey slightly clayey GRAVEL with some cobbles				AA22543	B	9.00		N = 37 (6, 10, 7, 8, 11, 11)	
9			55.32	10.00						
10	Obstruction								N = 50/75 mm (25, 50)	

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
8.8	9	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.80	3.80	No	3.00	20	Moderate
8.70	8.70	No	4.00	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 19/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH23**
		SHEET	Sheet 1 of 1
CO-ORDINATES	661,016.11 E 737,270.90 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	65.82	**BOREHOLE DEPTH (m)**	1.00
		DATE COMMENCED	04/06/2025
		DATE COMPLETED	04/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		65.32	0.50	AA22850	B	0.50			
	CONCRETE FILL (MADE GROUND)		64.82	1.00					N = 50/75 mm (25, 50)	
1	Obstruction End of Borehole at 1.00 m									
2										
3										
4										
5										
6										
7										
8										
9										
10										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
0.9	1	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Obstruction encountered. Moved to BH23A and attempted rebore.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH23A**
		SHEET	Sheet 1 of 2
CO-ORDINATES	661,016.65 E 737,269.96 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	65.88	**BOREHOLE DEPTH (m)**	13.00
		DATE COMMENCED	04/06/2025
		DATE COMPLETED	05/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
		BORED BY	P.Allan
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		65.38	0.50						
	Soft grey/brown sandy SILT/CLAY		64.88	1.00	AA22824	B	0.50			
1	Soft grey sandy gravelly SILT		63.88	2.00	AA22825	B	1.00		N = 4 (1, 1, 0, 1, 1, 2)	
2	Loose grey slightly silty SAND (Possibly very sandy Silt)				AA22826	B	2.00		N = 8 (1, 1, 2, 2, 2, 2)	
3			62.08	3.80	AA22827	B	3.00		N = 4 (1, 0, 1, 1, 0, 2)	
4	Firm grey sandy gravelly SILT				AA22828	B	4.00		N = 22 (2, 3, 6, 8, 4, 4)	
5			60.68	5.20	AA22829	B	5.00		N = 13 (3, 3, 4, 3, 3, 3)	
	Medium dense grey gravelly SAND		59.88	6.00						
6	Medium dense clayey very gravelly SAND. Gravel is fine.				AA22830	B	6.00		N = 24 (2, 3, 4, 6, 7, 7)	
7					AA22831	B	7.00		N = 23 (3, 4, 5, 6, 6, 6)	
			57.88	8.00						
8	Stiff brown slightly sandy slightly gravelly CLAY				AA22832	B	8.00		N = 23 (4, 5, 5, 5, 6, 7)	
9					AA22833	B	9.00		N = 19 (3, 4, 5, 4, 5, 5)	
10					AA22834	B	10.00		N = 17 (2, 2, 3, 4, 5, 5)	

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
11.8	12	1	
12.7	13	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.50	4.50	No	3.00	20	Moderate
8.00	8.00	No	5.00	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH23A**
		SHEET	Sheet 2 of 2
CO-ORDINATES	661,016.65 E 737,269.96 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	65.88	**BOREHOLE DEPTH (m)**	13.00
		DATE COMMENCED	04/06/2025
		DATE COMPLETED	05/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
11	Stiff brown slightly sandy slightly gravelly CLAY *(continued)*				AA22835	B	11.00		N = 20 (2, 3, 5, 6, 6, 3)	
			54.18	11.70						
12	Dense grey clayey sandy GRAVEL with many cobbles and rare boulders				AA22836	B	12.00		N = 52 (10, 10, 15, 14, 11, 12)	
			52.88	13.00						
13	Obstruction End of Borehole at 13.00 m								N = 50/150 mm (25, 40, 10)	
14										
15										
16										
17										
18										
19										
20										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
11.8	12	1	
12.7	13	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
04-06-25	13.00	13.00	5.00	Start of 1st day
05-06-25	13.00	13.00	8.00	Start of 2nd day

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 19/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH24**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,957.67 E 737,231.14 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	66.15	**BOREHOLE DEPTH (m)**	12.00
		DATE COMMENCED	07/05/2025
		DATE COMPLETED	08/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		65.95	0.20						
	Soft brown sandy SILT/CLAY		65.65	0.50						
	Firm grey sandy gravelly SILT				AA213975	B	0.50			
1					AA213976	B	1.00		N = 16 (6, 8, 4, 4, 4, 4)	
2			63.85	2.30	AA213977	B	2.00		N = 14 (4, 3, 4, 2, 4, 4)	
	Stiff brown sandy gravelly CLAY with cobbles		63.15	3.00						
3	Medium dense to dense brown slightly clayey/silty sandy GRAVEL with occasional cobbles				AA213978	B	3.00		N = 31 (3, 9, 9, 9, 6, 7)	
4					AA213979	B	4.00		N = 21 (10, 10, 8, 6, 4, 3)	
5					AA213980	B	5.00		N = 31 (8, 10, 20, 4, 4, 3)	
			60.15	6.00						
6	Stiff brown and grey slightly sandy slightly gravelly SILT/CLAY				AA213981	B	6.00		N = 22 (3, 4, 4, 4, 6, 8)	
7					AA213982	B	7.00		N = 26 (3, 4, 4, 6, 8, 8)	
8					AA213983	B	8.00		N = 26 (4, 4, 4, 6, 8, 8)	
9					AA213984	B	9.00		N = 29 (4, 4, 5, 8, 8, 8)	
10					AA213985	B	10.00		N = 25 (3, 3, 4, 6, 8, 7)	

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
5.1	5.3	1	
11.7	12	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.00	4.00	No	3.00	20	Moderate
4.50	4.50	No	1.00	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
07-05-25	5.00	5.00	1.00	End of 1st day
08-05-25	5.00	5.00	1.00	Start of 2nd day

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 19/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH24**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,957.67 E 737,231.14 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	66.15	**BOREHOLE DEPTH (m)**	12.00
		DATE COMMENCED	07/05/2025
		DATE COMPLETED	08/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
	Stiff brown and grey slightly sandy slightly gravelly SILT/CLAY *(continued)*		55.35	10.80						
11	Medium dense to dense grey sandy GRAVEL with occasional cobbles				AA213986	B	11.00		N = 27 (5, 6, 7, 8, 6, 6)	
			54.15	12.00						
12	End of Borehole at 12.00 m								N = 50/150 mm (17, 8, 40, 10)	
13										
14										
15										
16										
17										
18										
19										
20										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
5.1	5.3	1	
11.7	12	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 19/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH25**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,988.17 E 737,220.98 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	66.04	**BOREHOLE DEPTH (m)**	11.50
		DATE COMMENCED	09/05/2025
		DATE COMPLETED	13/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
		BORED BY	P.Allan
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		65.84	0.20						
	Soft brown sandy gravelly CLAY with occasional cobbles				AA222792	B	0.50			
1					AA222793	B	1.00		N = 10 (2, 2, 2, 2, 3, 3)	
			64.54	1.50						
	Firm to stiff slightly sandy slightly gravelly SILT/CLAY									
2					AA222794	B	2.00		N = 26 (2, 3, 4, 7, 8, 7)	
3					AA222795	B	3.00		N = 23 (1, 3, 4, 6, 6, 7)	
4					AA222796	B	4.00		N = 23 (3, 3, 4, 5, 7, 7)	
5					AA222797	B	5.00		N = 24 (4, 5, 6, 5, 6, 7)	
			60.04	6.00						
6	Grey slightly clayey/silty slightly gravelly SAND				AA222798	B	6.00		N = 23 (4, 5, 5, 5, 6, 7)	
7					AA222799	B	7.00		N = 19 (2, 3, 3, 4, 6, 6)	
			58.54	7.50						
	Firm grey slightly sandy slightly gravelly SILT									
8					AA222800	B	8.00		N = 11 (2, 2, 2, 3, 2, 4)	
9					AA222801	B	9.00		N = 6 (1, 2, 2, 1, 2, 1)	
10					AA222802	B	10.00		N = 13 (2, 2, 2, 3, 4, 4)	

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
10.7	11	1	
11.3	11.5	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.50	4.50	No	4.00	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
09-05-25	6.00	6.00	4.00	End of 1st day
12-05-25	6.00	6.00	3.00	Start of 2nd day

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 19/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH25**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,988.17 E 737,220.98 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	66.04	**BOREHOLE DEPTH (m)**	11.50
		DATE COMMENCED	09/05/2025
		DATE COMPLETED	13/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
	Firm grey slightly sandy slightly gravelly SILT *(continued)*		55.54	10.50						
11	Dense grey slightly clayey/silty slightly sandy GRAVEL with many cobbles & boulders		54.54	11.50	AA222803	B	11.00		N = 53 (6, 8, 10, 15, 15, 13) N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 11.50 m									
12										
13										
14										
15										
16										
17										
18										
19										
20										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
10.7	11	1	
11.3	11.5	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
10.50	10.50	No	3.00	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
13-05-25	11.50	Nil	dry	End of BH

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 19/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH53**
		SHEET	Sheet 1 of 2
CO-ORDINATES	661,203.19 E 737,577.30 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	66.87	**BOREHOLE DEPTH (m)**	12.50
		DATE COMMENCED	10/06/2025
		DATE COMPLETED	11/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		66.57	0.30						
	Firm grey/brown sandy gravelly SILT				AA213988	B	0.50			
1					AA213989	B	1.00		N = 11 (2, 2, 3, 2, 3, 3)	
			65.37	1.50						
	Soft grey very sandy slightly gravelly SILT/CLAY		64.87	2.00						
2	Loose grey very sandy GRAVEL (Possibly gravelly Sand)		64.37	2.50	AA213990	B	2.00		N = 6 (1, 1, 2, 1, 2, 1)	
	Soft grey sandy gravelly SILT									
3						U	3.00	80%rec		
			62.87	4.00						
4	Loose grey slightly clayey very gravelly SAND				AA213991	B	4.00		N = 7 (1, 1, 2, 3, 1, 1)	
5					Failed	U	5.00			
					AA213992	B	5.50		N = 8 (1, 1, 2, 2, 1, 3)	
6					AA213993	B	6.00		N = 9 (1, 2, 3, 2, 1, 3)	
			59.87	7.00						
7	Loose to medium dense grey slightly clayey/silty very sandy GRAVEL				AA213994	B	7.00		N = 13 (4, 3, 3, 3, 3, 4)	
8					AA213995	B	8.00		N = 8 (2, 2, 2, 2, 2, 2)	
9					AA213996	B	9.00		N = 9 (1, 2, 2, 3, 2, 2)	
10					AA213997	B	10.00		N = 7 (1, 2, 1, 2, 2, 2)	

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
11.8	12	1	
12.4	12.5	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
7.50	7.50	No	1.50	20	Moderate
10.00	10.00	No	6.00	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
10-06-25	7.50	7.50	1.50	End of 1st day
11-06-25	7.50	7.50	1.50	Start of 2nd Day

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Blow back noted in gravels 10.0-7.0m.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 19/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH53**
		SHEET	Sheet 2 of 2
CO-ORDINATES	661,203.19 E 737,577.30 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	66.87	**BOREHOLE DEPTH (m)**	12.50
		DATE COMMENCED	10/06/2025
		DATE COMPLETED	11/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
11	Loose to medium dense grey slightly clayey/silty very sandy GRAVEL *(continued)*				AA213998	B	11.00		N = 7 (2, 3, 3, 2, 1, 1)	
			55.37	11.50						
	Grey SILT (Possible Marl)				AA213999	B	11.50			
			55.07	11.80						
12	Dense brown clayey sandy GRAVEL with many cobbles and some pockets of stiff grey gravelly clay				AA214000	B	12.00		N = 50/150 mm (6, 10, 30, 20)	
			54.37	12.50					N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 12.50 m									
13										
14										
15										
16										
17										
18										
19										
20										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
11.8	12	1	
12.4	12.5	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Blow back noted in gravels 10.0-7.0m.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 19/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH54**
		SHEET	Sheet 1 of 1
CO-ORDINATES	661,106.01 E 737,454.98 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	65.68	**BOREHOLE DEPTH (m)**	9.50
		DATE COMMENCED	06/06/2025
		DATE COMPLETED	09/06/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		65.38	0.30						
	Soft grey sandy gravelly SILT				AA22837	B	0.50			
1					AA22838	B	1.00		N = 10 (2, 3, 3, 3, 2, 2)	
2					AA22839	B	2.00		N = 9 (3, 3, 2, 3, 2, 2)	
			62.68	3.00						
3	Firm grey sandy SILT					U	3.00	80%rec		
					AA222841	B	3.50		N = 11 (1, 2, 2, 3, 3, 3)	
4					AA222842	B	4.00		N = 10 (1, 1, 2, 2, 3, 3)	
5						U	5.00	70%rec		
					AA22843	B	5.50		N = 11 (1, 2, 3, 3, 2, 3)	
6					AA22844	B	6.00		N = 12 (2, 1, 2, 2, 3, 5)	
7						U	7.00	60%rec		
			57.88	7.80						
8	Very stiff grey slightly sandy gravelly CLAY with occasional cobbles				AA22845	B	8.00		N = 35 (6, 8, 10, 7, 9, 9)	
9					AA22846	B	9.00		N = 50/75 mm (20, 50)	
			56.18	9.50						
	Obstruction End of Borehole at 9.50 m									
10										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
7.8	8	1	
9.3	9.5	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
9.50	9.50	No	3.00	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 19/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH55**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,896.88 E 737,102.23 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	69.20	**BOREHOLE DEPTH (m)**	14.00
		DATE COMMENCED	02/05/2025
		DATE COMPLETED	07/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
		BORED BY	P.Allan
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		69.00	0.20						
	Firm brown sandy gravelly SILT/CLAY				AA213961	B	0.50			
1					AA213962	B	1.00		N = 11 (2, 4, 4, 2, 2, 3)	
			67.40	1.80						
2	Stiff grey sandy gravelly SILT with cobbles				AA213963	B	2.00		N = 30 (2, 6, 8, 5, 6, 11)	
3					AA213964	B	3.00		N = 51 (6, 8, 10, 15, 16, 10)	
4					AA213965	B	4.00		N = 19 (2, 3, 3, 4, 6, 6)	
			64.80	4.40						
	Soft grey/grey brown sandy SILT/CLAY									
5					AA213966	B	5.00		N = 5 (2, 1, 1, 2, 1, 1)	
			63.20	6.00						
6	Soft grey sandy SILT (Marl)				AA213967	B	6.00		N = 4 (2, 1, 1, 1, 1, 1)	
7					AA213968	U	7.00			
			61.70	7.50						
	Firm grey slightly sandy SILT/CLAY				AA213969	B	7.50		N = 7 (1, 2, 1, 2, 2, 2)	
8					AA213970	B	8.00		N = 10 (1, 2, 2, 2, 3, 3)	
			60.20	9.00						
9	Medium dense grey silty slightly gravelly SAND to sandy slightly gravelly silt				AA213971	B	9.00		N = 11 (2, 3, 4, 2, 3, 2)	
10					AA213972	B	10.00		N = 27 (4, 4, 5, 6, 8, 8)	

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.3	3.5	1	
13.7	14	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
06-05-25	5.00	5.00	3.00	Start of 2nd day

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 19/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH55**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,896.88 E 737,102.23 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	69.20	**BOREHOLE DEPTH (m)**	14.00
		DATE COMMENCED	02/05/2025
		DATE COMPLETED	07/05/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
		BORED BY	P.Allan
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
11	Medium dense grey silty slightly gravelly SAND to sandy slightly gravelly silt *(continued)*				AA213973	B	11.00		N = 16 (2, 3, 4, 4, 4, 4)	
12					AA213974	B	12.00		N = 23 (4, 3, 6, 5, 6, 6)	
			56.40	12.80						
13	Dense grey clayey/silty very sandy GRAVEL with some cobbles				AA213975	B	13.00		N = 41 (2, 3, 6, 10, 10, 15)	
			55.20	14.00						
14	Obstruction End of Borehole at 14.00 m								N = 50/75 mm (25, 50)	
15										
16										
17										
18										
19										
20										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.3	3.5	1	
13.7	14	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 19/9/25

Appendix 2

Rotary Drillhole Records & Photographs

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC22**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,986.83 E 737,290.15 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	65.24	**FLUSH**	Air Hammer
		DATE DRILLED	05/09/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**DRILLED BY**	IGSL - DH
		CORE DIAMETER (mm)	**LOGGED BY** JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	64.94		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy peaty SILT	1.00	64.24		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly clayey very gravelly SAND. Gravel is fine.	2.00	63.24		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey clayey very sandy GRAVEL with many cobbles				
3												
4												
5									5.50	59.74		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey very silty SAND	6.50	58.74		
6								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown slightly gravelly CLAY				
7												
8									8.70	56.54		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly clayey GRAVEL with some cobbles				
9												
10									10.00	55.24		

REMARKS

Hole cased from 0.0-20.0m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
10.30 11.60	10.30 11.60	11.00			

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

IGSL RC FI 10M 25882.GPJ IGSL.GDT 19/9/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC22**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,986.83 E 737,290.15 N		
GROUND LEVEL (mOD)	65.24	**RIG TYPE**	Beretta T44
		FLUSH	Air Hammer
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	
		DATE DRILLED	05/09/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of BOULDER *(continued)*	10.30	54.94		N = 50/215 mm (8, 14, 16, 17, 17)
11								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy GRAVEL	11.00	54.24		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy gravelly silty CLAY	11.60	53.64		
12								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown slightly silty sandy GRAVEL				N = 50/105 mm (12, 13, 24, 26)
13												N = 50/95 mm (10, 15, 30, 20)
14									14.90	50.34		
15								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown gravelly CLAY				N = 50/45 mm (25, 50)
16												
17												N = 50/35 mm (25, 50)
18								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy GRAVEL	18.00	47.24		N = 50/30 mm (25, 50)
19												
20									20.00	45.24		N = 50/30 mm (25, 50)
								End of Borehole at 20.00 m				N = 50/35 mm (25, 50)

REMARKS

Hole cased from 0.0-20.0m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
10.30 11.60	10.30 11.60	11.00			

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
05-09-25	14.90	14.90	7.80	End of Shift
09-09-25	20.00	20.00	8.10	Water levels recorded 5min after end of drilling

IGSL RC FI 10M 25882.GPJ IGSL.GDT 19/9/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC23A**
		SHEET	Sheet 1 of 2
CO-ORDINATES	661,016.65 E 737,269.96 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	65.88	**FLUSH**	Air Hammer
		DATE DRILLED	03/09/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**DRILLED BY**	IGSL - DH
		CORE DIAMETER (mm)	
		LOGGED BY	JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.50	65.38		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy SILT/CLAY	1.00	64.88		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT	2.00	63.88		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly silty SAND (Possibly very sandy Silt)	3.80	62.08		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT	5.20	60.68		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey gravelly SAND	6.00	59.88		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of clayey very gravelly SAND. Gravel is fine.	8.00	57.88		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown slightly sandy slightly gravelly CLAY				

REMARKS

Hole cased from 0.0-20.0m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
18.50	18.50				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC23A**
		SHEET	Sheet 2 of 2
CO-ORDINATES	661,016.65 E 737,269.96 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	65.88	**FLUSH**	Air Hammer
		DATE DRILLED	03/09/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**DRILLED BY**	IGSL - DH
		CORE DIAMETER (mm)	**LOGGED BY** JL

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
11								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown slightly sandy slightly gravelly CLAY *(continued)*	11.70	54.18		
12								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey clayey sandy GRAVEL with many cobbles and rare boulders	13.00	52.88		
13								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey and dark brown sandy gravelly silty CLAY				
14												
15												N = 50 (14, 16, 11, 12, 13, 14)
16									16.50	49.38		
17								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown gravelly sandy silty CLAY				N = 50/180 mm (10, 18, 17, 20, 13)
18									18.50	47.38		N = 50/80 mm (17, 19, 40, 10)
19								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy GRAVEL				N = 50/40 mm (25, 50)
20									20.00	45.88		
								End of Borehole at 20.00 m				N = 50/25 mm (25, 50)

REMARKS

Hole cased from 0.0-20.0m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
18.50	18.50				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
03-09-25	17.90	17.90	Dry	End of Shift
04-09-25	20.00	20.00	18.20	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC24**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,957.67 E 737,231.14 N	**RIG TYPE**	GEO-405
GROUND LEVEL (mOD)	66.15	**FLUSH**	Air/Mist
		DATE DRILLED	12/05/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL - AK
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	65.95		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy SILT/CLAY	0.50	65.65		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT				
2									2.30	63.85		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly CLAY with cobbles	3.00	63.15		
3								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown slightly clayey/silty sandy GRAVEL with occasional cobbles				
4												
5												
6									6.00	60.15		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown and grey slightly sandy slightly gravelly SILT/CLAY				
7												
8												
9												
10		0	0	0								

REMARKS

Hole cased from 0.00-20.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.20 18.70	4.20 18.70				

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
12-05-25	20.00	2.00	20.00	50mm SP

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT Gas to Bord na Mona, Edenderry, Phase 1 GI

DRILLHOLE NO RC24
SHEET Sheet 2 of 2

CO-ORDINATES 660,957.67 E
737,231.14 N
GROUND LEVEL (mOD) 66.15

RIG TYPE GEO-405
FLUSH Air/Mist
INCLINATION (deg) -90
CORE DIAMETER (mm) 78

DATE DRILLED 12/05/2025

CLIENT Murphy International Limited
ENGINEER Fingleton White

DRILLED BY IGSL - AK
LOGGED BY D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
									10.80	55.35		
11								SYMMETRIX DRILLING: No recovery, observed by driller as returns of sandy GRAVEL with occasional cobbles	12.00	54.15		
12								SYMMETRIX DRILLING: No recovery, observed by driller as returns of sandy gravelly CLAY	13.00	53.15		
13								SYMMETRIX DRILLING: No recovery, observed by driller as returns of clayey sandy GRAVEL				N = 32 (3, 7, 5, 7, 9, 11)
14												
15												N = 54 (12, 17, 14, 19, 12, 9)
16												
17												N = 77 (6, 21, 18, 17, 19, 23)
18												
19												N = 81 (11, 17, 21, 19, 22, 19)
20	20.00							End of Borehole at 20.00 m	20.00	46.15		N = 76 (11, 24, 18, 22, 17, 19)

REMARKS

Hole cased from 0.00-20.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.20 18.70	4.20 18.70				

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
12-05-25	20.00	2.00	20.00	50mm SP

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
12-05-25	20.00	20.00	3.30	Water levels recorded 5min after end of drilling

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC25**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,988.17 E 737,220.98 N		
GROUND LEVEL (mOD)	66.04	**RIG TYPE**	GEO-405
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	13/05/2025
		DRILLED BY	IGSL - AK
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	65.84		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly CLAY with occasional cobbles	1.50	64.54		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of slightly sandy slightly gravelly SILT/CLAY				
3												
4												
5												
6									6.00	60.04		
7								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly clayey/silty slightly gravelly SAND	7.50	58.54		
8								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy slightly gravelly SILT				
9												
10		0	0	0								

REMARKS

Hole cased from 0.00-20.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.70 11.20	2.70 11.20				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

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GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC25**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,988.17 E 737,220.98 N		
GROUND LEVEL (mOD)	66.04	**RIG TYPE**	GEO-405
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	13/05/2025
		DRILLED BY	IGSL - AK
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
									10.50	55.54		
11								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly clayey/silty slightly sandy GRAVEL with many cobbles & boulders	11.50	54.54		
12								SYMMETRIX DRILLING: No recovery, observed by driller as returns of clayey sandy GRAVEL				N = 48 (9, 7, 11, 14, 12, 11)
13												
14												N = 87 (11, 19, 21, 24, 22, 20)
15												N = 65 (7, 11, 15, 14, 16, 20)
16												
17												N = 58 (5, 7, 12, 15, 14, 17)
18												N = 62 (8, 11, 14, 17, 15, 16)
19												
20	20.00							End of Borehole at 20.00 m	20.00	46.04		N = 69 (9, 14, 17, 15, 18, 19) N = 59 (17, 15, 12, 14, 16, 17)

REMARKS

Hole cased from 0.00-20.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.70 11.20	2.70 11.20				

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
13-05-25	20.00	20.00	2.50	Water levels recorded 5min after end of drilling

IGSL RC FI 10M 25882.GPJ IGSL.GDT 19/9/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC53**
		SHEET	Sheet 1 of 2
CO-ORDINATES	661,193.57 E 737,534.88 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	66.79	**FLUSH**	Air/Mist
		DATE DRILLED	16/09/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.40	66.39		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy gravelly CLAY	1.00	65.79		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown silty SAND				N = 16 (2, 2, 3, 4, 4, 5)
2									2.20	64.59		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy SILT				N = 7 (1, 0, 1, 1, 2, 3)
3												
4												N = 6 (0, 0, 1, 2, 1, 2)
5												
6												N = 13 (1, 3, 3, 4, 3, 3)
7												
8												N = 14 (1, 1, 2, 3, 5, 4)
									8.40	58.39		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown silty gravelly SAND				
9												N = 59 (3, 7, 10, 16, 16, 17)
									9.60	57.19		
10								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy GRAVEL				

REMARKS

Hole cased from 0.00-13.30m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
8.40	8.40	N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC53**
		SHEET	Sheet 2 of 2
CO-ORDINATES	661,193.57 E 737,534.88 N		
GROUND LEVEL (mOD)	66.79	**DATE DRILLED**	16/09/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
11								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy GRAVEL *(continued)*				N = 50/105 mm (9, 11, 23, 27)
12												N = 10/5 mm (40, 10)
									12.70	54.09		
13	13.30							SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	13.30	53.49		
	14.00	100	50	14				Strong to very strong, thickly to thinly bedded, grey, fine-grained, LIMESTONE (calci-siltite (sandy) limestone, locally fossiliferous), fresh to locally slightly weathered. Discontinuities are widely to closely spaced, smooth to very locally rough, fractures are planar to curviplanar. Apertures are tight to locally moderately open, locally clay smeared, locally calcite veined (1-8mm thick). Dips are subhorizontal, 30-40° and 70°.				
14		100	93	68		650						
15	15.50											
16		100	84	76		709.999999999999						
17	17.10											
18		100	98	95		520						
	18.65											
19		100	70	39								
20	20.25								20.25	46.54		
								End of Borehole at 20.25 m				

REMARKS

Hole cased from 0.00-13.30m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
8.40	8.40	N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
16-09-25	13.30	13.30	3.80	End of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

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GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC54**
		SHEET	Sheet 1 of 2
CO-ORDINATES	661,106.01 E 737,454.98 N		
GROUND LEVEL (mOD)	65.68	**DATE DRILLED**	09/09/2025
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	65.38		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT				
2												
3								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy SILT	3.00	62.68		
4												
5												
6												
7									7.80	57.88		
8								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy gravelly CLAY with occasional cobbles				
9												
10												

REMARKS

Hole cased from 0.00-16.20m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
15.80	15.80	N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC54**
		SHEET	Sheet 2 of 2
CO-ORDINATES	661,106.01 E 737,454.98 N		
GROUND LEVEL (mOD)	65.68	**DATE DRILLED**	09/09/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
11								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy gravelly CLAY with occasional cobbles *(continued)*				N = 50/195 mm (6, 8, 12, 17, 21)
12												N = 50/95 mm (11, 16, 32, 18)
13												
14												N = 22/20 mm (28, 22)
15									15.00	50.68		N = 50/65 mm (50, 50)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey brown sandy GRAVEL	15.80	49.88		
16	16.20							SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	16.20	49.48		
17		100	58	40				Strong to very strong, thickly to thinly bedded, dark grey/black, fine-grained, LIMESTONE (predominantly calci-siltite (sandy) limestone with subordinate argillaceous (muddy) limestone layer (at 18.90-19.20m), locally fossiliferous), fresh to locally slightly weathered.				
	17.50							Discontinuities are widely to closely spaced, smooth to very locally rough, fractures are planar to curviplanar. Apertures are tight to locally moderately open, locally clay smeared, locally calcite veined (1-8mm thick). Dips are subhorizontal to locally 30-40° and 70°.				
18		100	86	82								
	19.00											
19		100	100	87								
20	20.40								20.40	45.28		

REMARKS

Hole cased from 0.00-16.20m

End of Borehole at 20.40 m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
15.80	15.80	N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
15-09-25	20.40	16.20	3.00	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC55**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,896.88 E 737,102.23 N		
GROUND LEVEL (mOD)	69.20	**DATE DRILLED**	08/05/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - AK
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	GEO-405		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	69.00		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly SILT/CLAY	1.80	67.40		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT with cobbles	4.40	64.80		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/grey brown sandy SILT/CLAY	6.00	63.20		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy SILT (Marl)	7.50	61.70		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy SILT/CLAY	9.00	60.20		
10		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey silty slightly gravelly SAND to sandy slightly gravelly silt				

REMARKS

Hole cased from 0.00-20.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.40	6.40				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC55**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,896.88 E 737,102.23 N		
GROUND LEVEL (mOD)	69.20	**DATE DRILLED**	08/05/2025
CLIENT	Murphy International Limited	**RIG TYPE**	GEO-405
ENGINEER	Fingleton White	**FLUSH**	Air/Mist
		INCLINATION (deg)	-90
		CORE DIAMETER (mm)	78
		DRILLED BY	IGSL - AK
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
11								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey silty slightly gravelly SAND to sandy slightly gravelly silt *(continued)*				
12									12.80	56.40		
13								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey clayey/silty very sandy GRAVEL with some cobbles	14.00	55.20		
14								SYMMETRIX DRILLING: No recovery, observed by driller as returns of sandy cobbly GRAVEL				
15												N = 58 (21, 17, 1, 20, 18, 19)
16												N = 91 (7, 18, 19, 21, 24, 27)
17									18.00	51.20		
18								SYMMETRIX DRILLING: No recovery, observed by driller as returns of clayey cobbly GRAVEL				N = 25/10 mm (25, 25)
19												
20	20.00							End of Borehole at 20.00 m	20.00	49.20		N = 82 (12, 19, 17, 23, 20, 22) N = 84 (8, 12, 15, 23, 27, 19)

REMARKS

Hole cased from 0.00-20.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.40	6.40				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
08-05-25	20.00	20.00	5.10	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

RC53 – Box 1 of 3 – 13.30-15.90m



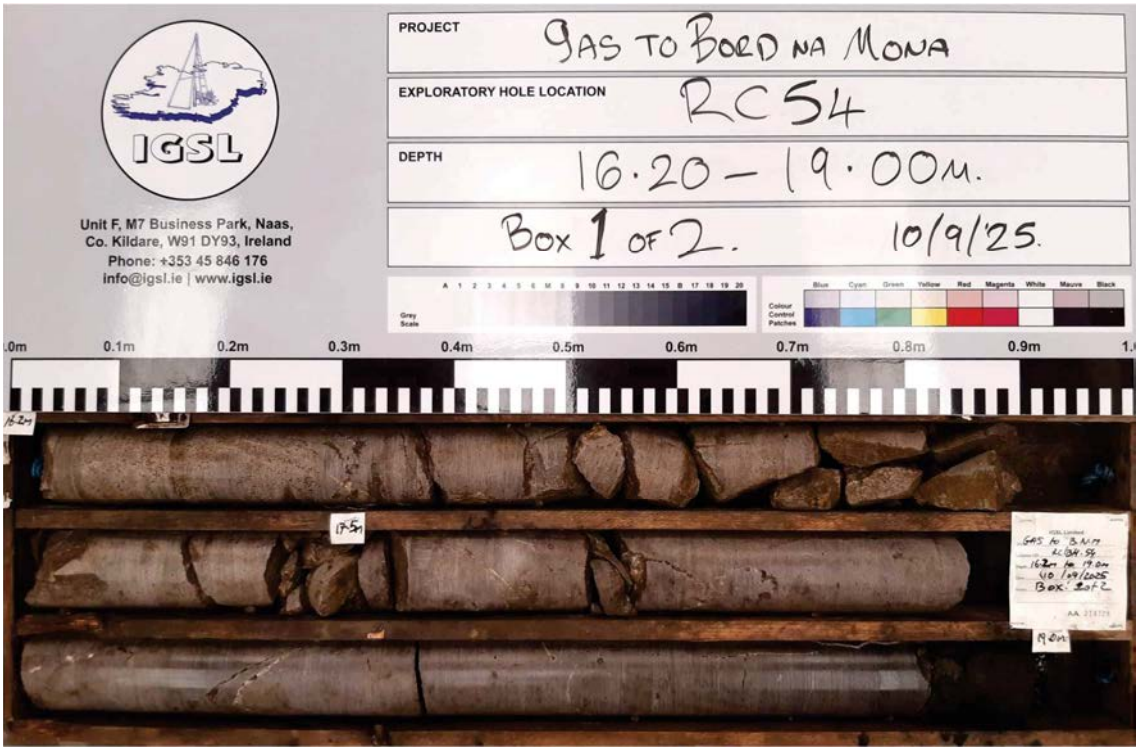
RC53 – Box 2 of 3 – 15.90-18.35m



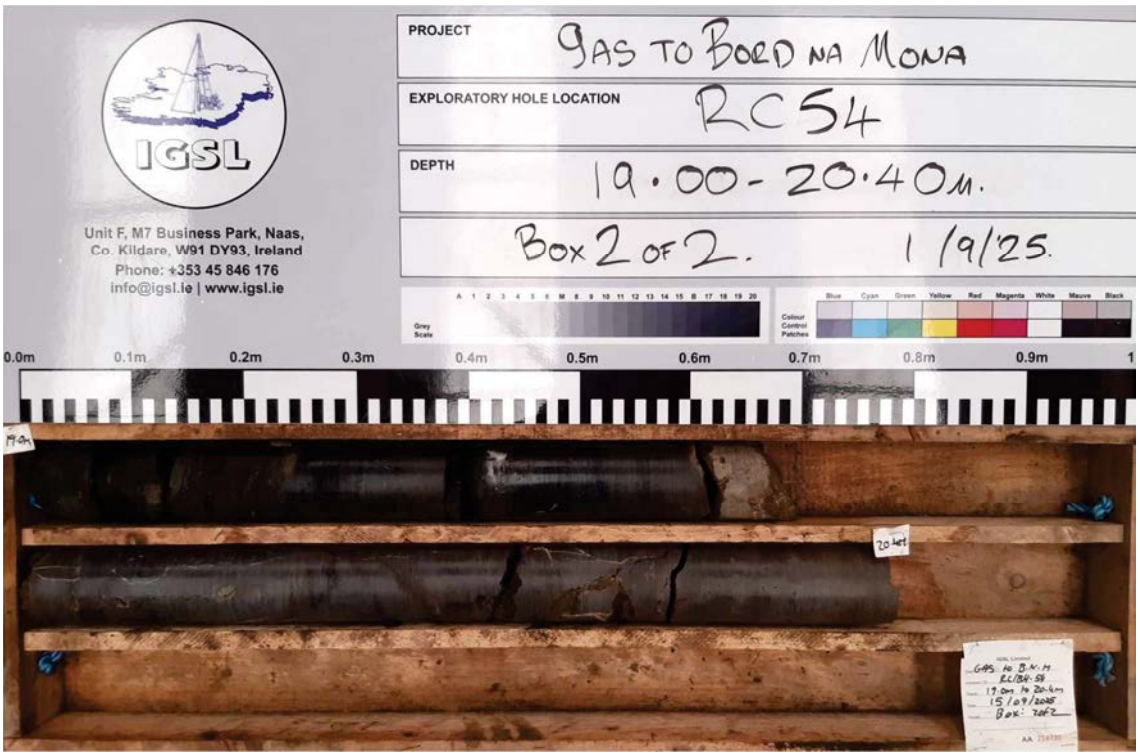
RC53 – Box 3 of 3 – 18.35-20.25m



RC54 – Box 1 of 2 – 16.20-19.00m



RC54 – Box 2 of 2 – 19.00-20.40m



Appendix 3A

Groundwater Monitoring Records

GROUNDWATER MONITORING SHEET

Project: Gas to Bord na Mona, Edenderry, Phase 1 GI – HCC2
IGSL Reference: 25882

Exploratory Hole No.	Ground Level m OD	Response Zone Top (m bgl)	Response Zone Base (m bgl)	Groundwater level (m bgl) 05/06/2025	(m OD)	Groundwater level (m bgl) 02/07/2025	(m OD)	Groundwater level (m bgl) 10/09/2025	(m OD)
RC24	66.15	2.00	20.00	3.19	62.96	3.20	62.95	3.23	62.92

Remarks: Data logger installed in well RC24 on 15-August 2025. Monitoring period = 12 months

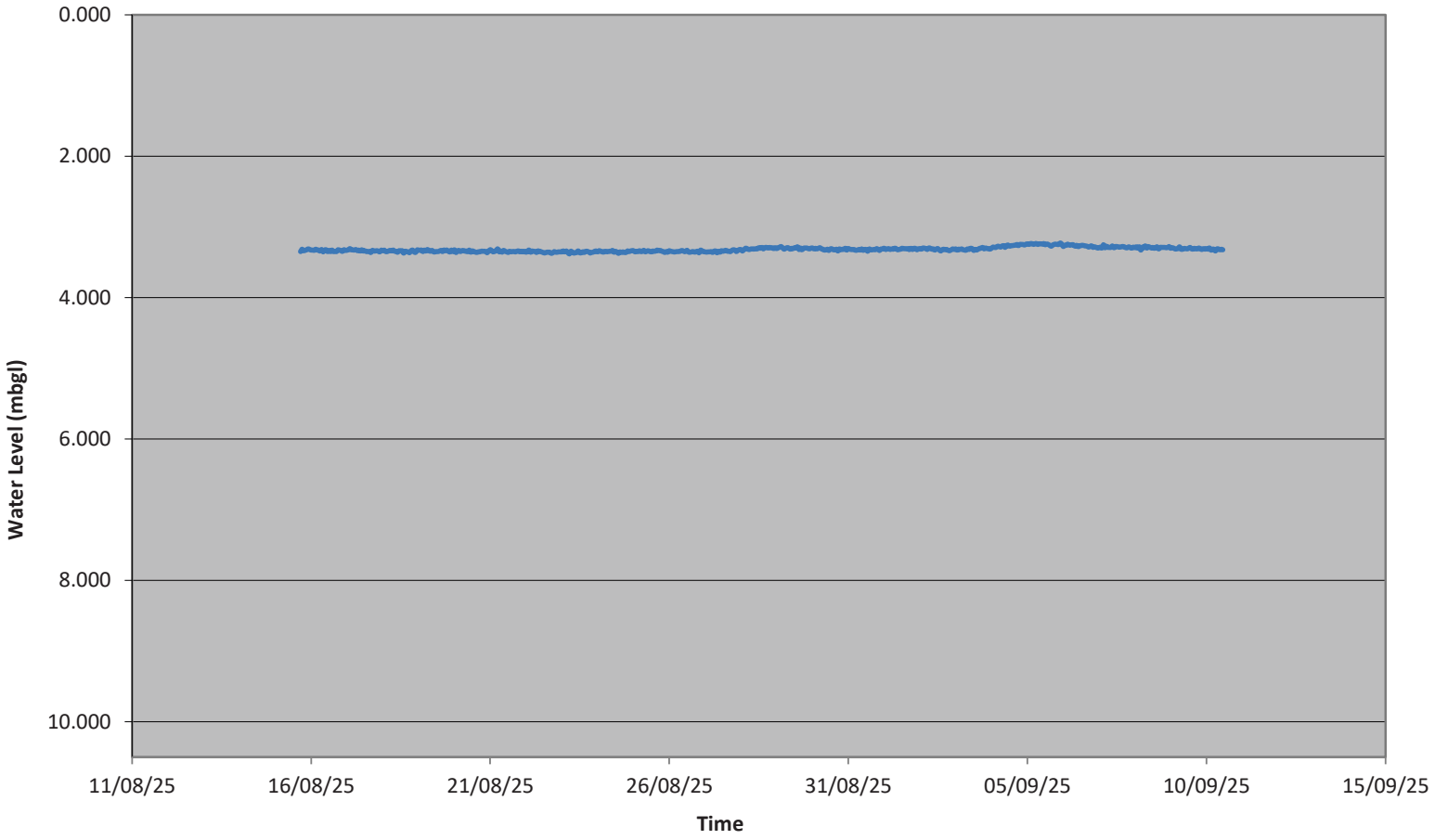
Appendix 3B

Data Logger Records

RC24

15-Aug-25 to 10-Sept-25

25882 - RC 24 Gas to Bord na Mona Edenderry



Appendix 4

Geotechnical Laboratory Results (Soil)

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**

Report No. **R169108** Contract No. 25882 Contract Name: Gas to Edenderry GNI

Customer MIL

Samples Received: 22/05/25 Date Tested: Various

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH26	AA245049	2.0	A25/1896	B	11.2	26	14	12	59	WS	4.4	C L	Brown sandy gravelly CLAY
BH27	AA213951	1.0	A25/1898	B	8.9	24	13	11	64	WS	4.4	C L	Brown sandy gravelly CLAY
BH27A	AA213956	5.0	A25/1900	B	6.6	20	NP	NP	50	WS	4.4		Grey silty, very sandy, GRAVEL with occasional cobbles
BH28	AA222765	1.5	A25/1901	B	10.6	22	NP	NP	66	WS	4.4		Brown sandy gravelly SILT
BH28A	AA222767	3.0	A25/1902	B	5.5	20	NP	NP	51	WS	4.4		Brown silty, sandy, GRAVEL with some cobbles
BH28A	AA222773	9.0	A25/1905	B	3.7	24	NP	NP	9	WS	4.4		Brown slightly silty, slightly sandy, GRAVEL with many cobbles
BH29	AA223246	1.0	A25/1906	B	15.3	24	NP	NP	55	WS	4.4		Brown sandy gravelly SILT
BH33	AA222758	2.5	A25/1909	B	12.3	26	14	12	61	WS	4.4	C L	Brown sandy, slightly gravelly, CLAY
BH33	AA222761	5.5	A25/1910	B	10.6	23	NP	NP	54	WS	4.4		Brown sandy gravelly SILT
BH33	AA222763	7.5	A25/1911	B	12.7	24	13	11	61	WS	4.4	C L	Brown slightly sandy, slightly gravelly, CLAY
BH55	AA213963	2.0	A25/1912	B	16.6	25	NP	NP	81	WS	4.4		Brown sandy gravelly SILT
BH55	AA213968	7.0	A25/1913	B	21.3	25	NP	NP	99	WS	4.4		Grey sandy SILT

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method
4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.
NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12.
Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.
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IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by | Date: 29/07/25 | Page: 1 of 1

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

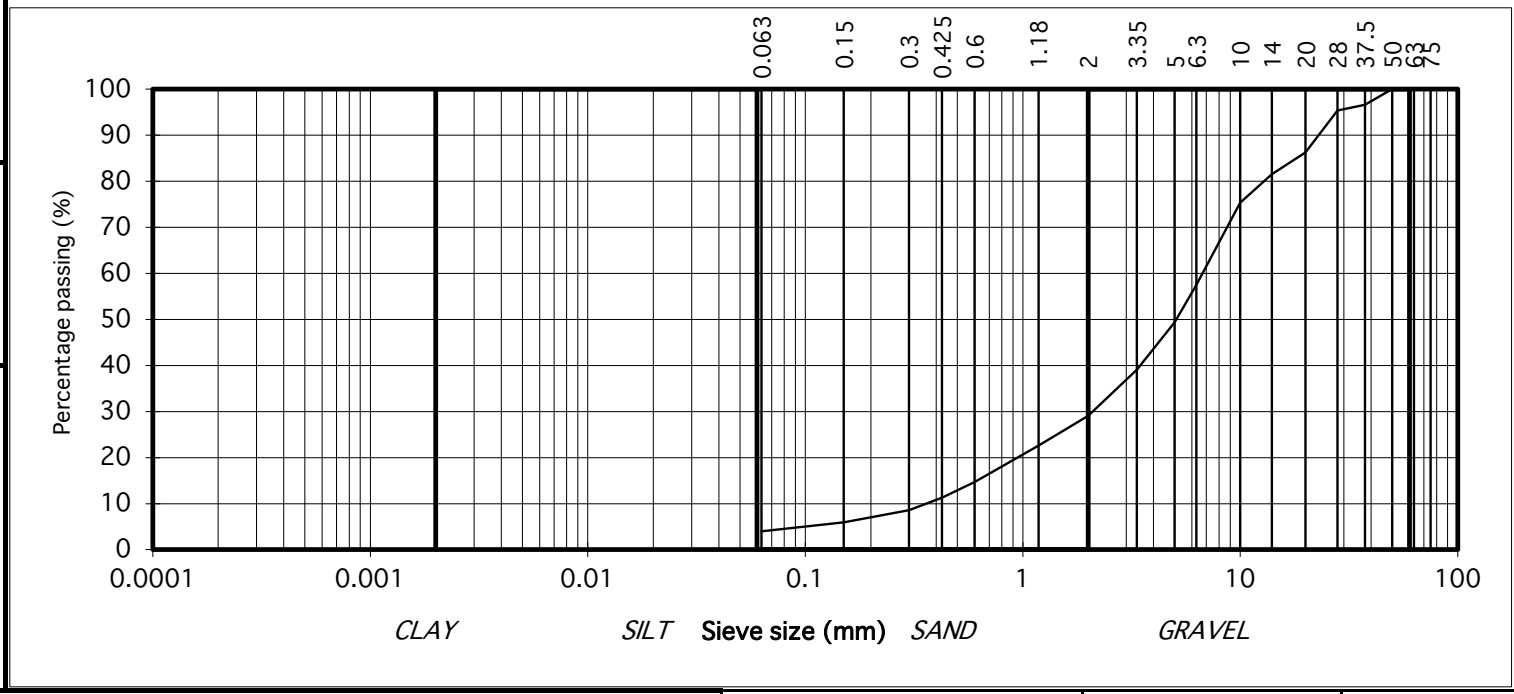
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	97	
28	95	
20	86	
14	82	
10	75	
6.3	57	
5	49	
3.35	39	
2	29	
1.18	23	SAND
0.6	15	
0.425	11	
0.3	9	
0.15	6	
0.063	4	SILT/CLAY

Contract No.	25882	Report No.	R171139	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH26			
Sample No.*	AA245051	Lab. Sample No.		A25/1897
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	08/05/2025	Date Testing started		25/06/2025
Description:	Grey slightly clayey/silty, very sandy, GRAVEL			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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H Byrne	29/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

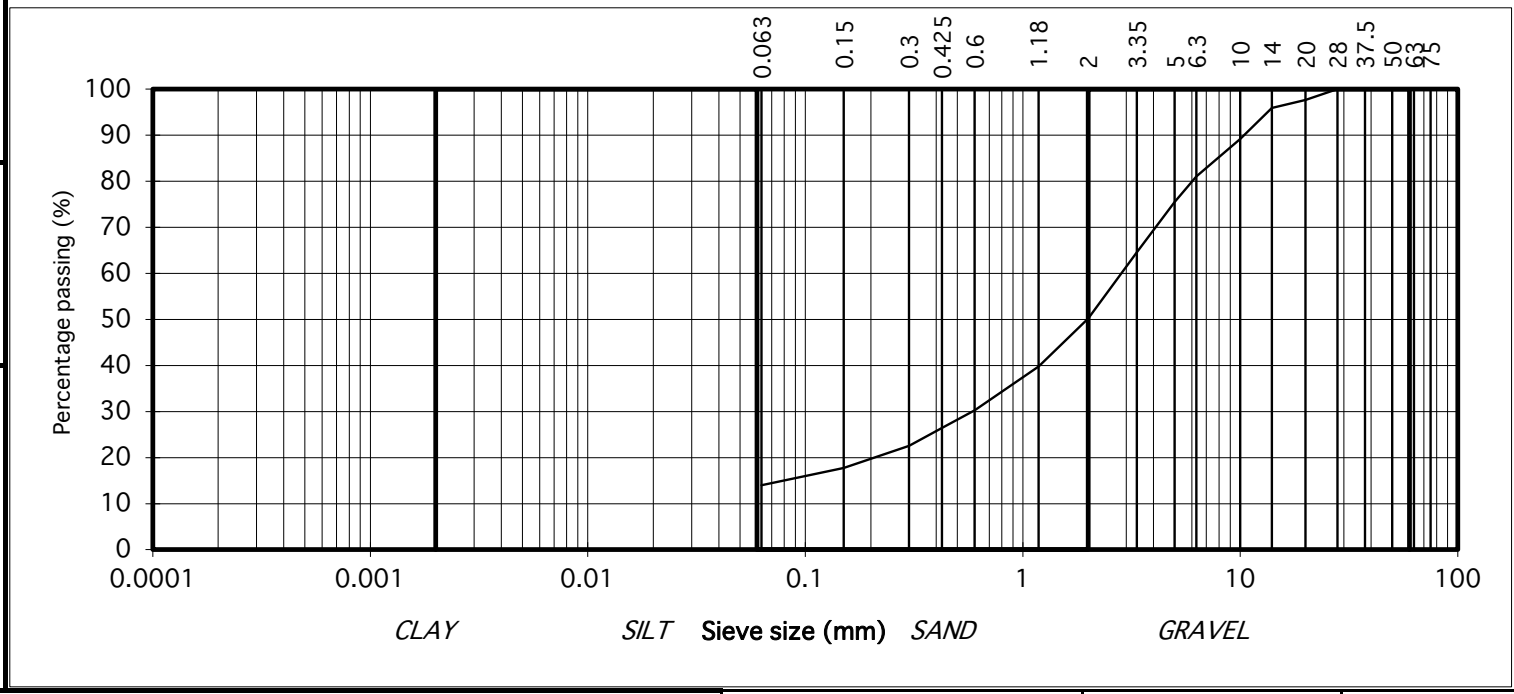
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	98	
14	96	
10	89	
6.3	81	
5	75	
3.35	65	
2	50	
1.18	40	SAND
0.6	30	
0.425	26	
0.3	23	
0.15	18	
0.063	14	SILT/CLAY

Contract No.	25882	Report No.	R171140
Contract Name :	Gas to Edenderry		
BH/TP No.	BH27		
Sample No.*	AA213953	Lab. Sample No.	A25/1899
Sample Type:	B		
Depth* (m)	3.00	Customer:	MIL
Date Received	08/05/2025	Date Testing started	25/06/2025
Description:	Brown clayey/silty, very sandy, GRAVEL		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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H Byrne	29/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

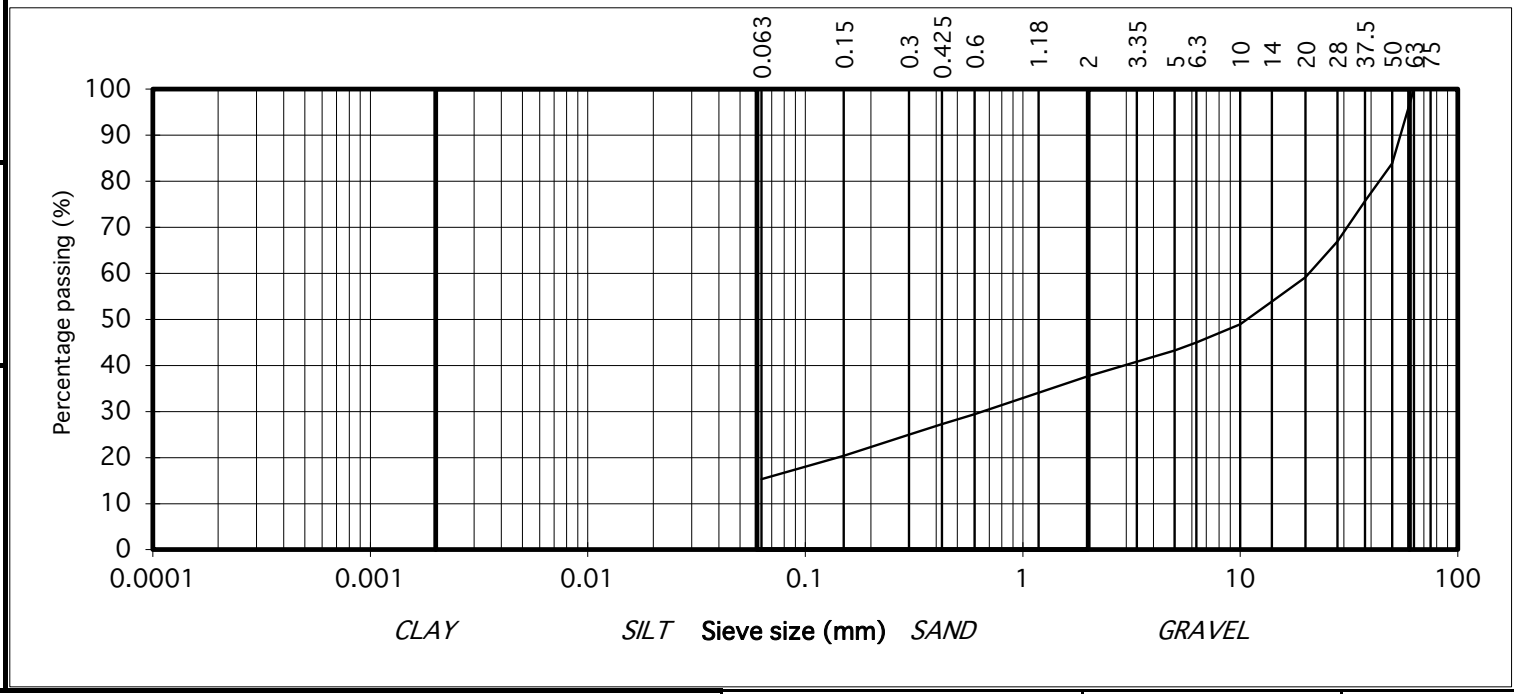
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	84	GRAVEL
37.5	76	
28	67	
20	59	
14	54	
10	49	
6.3	45	
5	43	
3.35	41	
2	38	
1.18	34	SAND
0.6	29	
0.425	27	
0.3	25	
0.15	20	
0.063	15	SILT/CLAY

Contract No.	25882	Report No.	R169076	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH27A			
Sample No.*	AA213956	Lab. Sample No.		A25/1900
Sample Type:	B			
Depth* (m)	5.00	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		22/05/2025
Description:	Grey silty, very sandy, GRAVEL with occasional cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

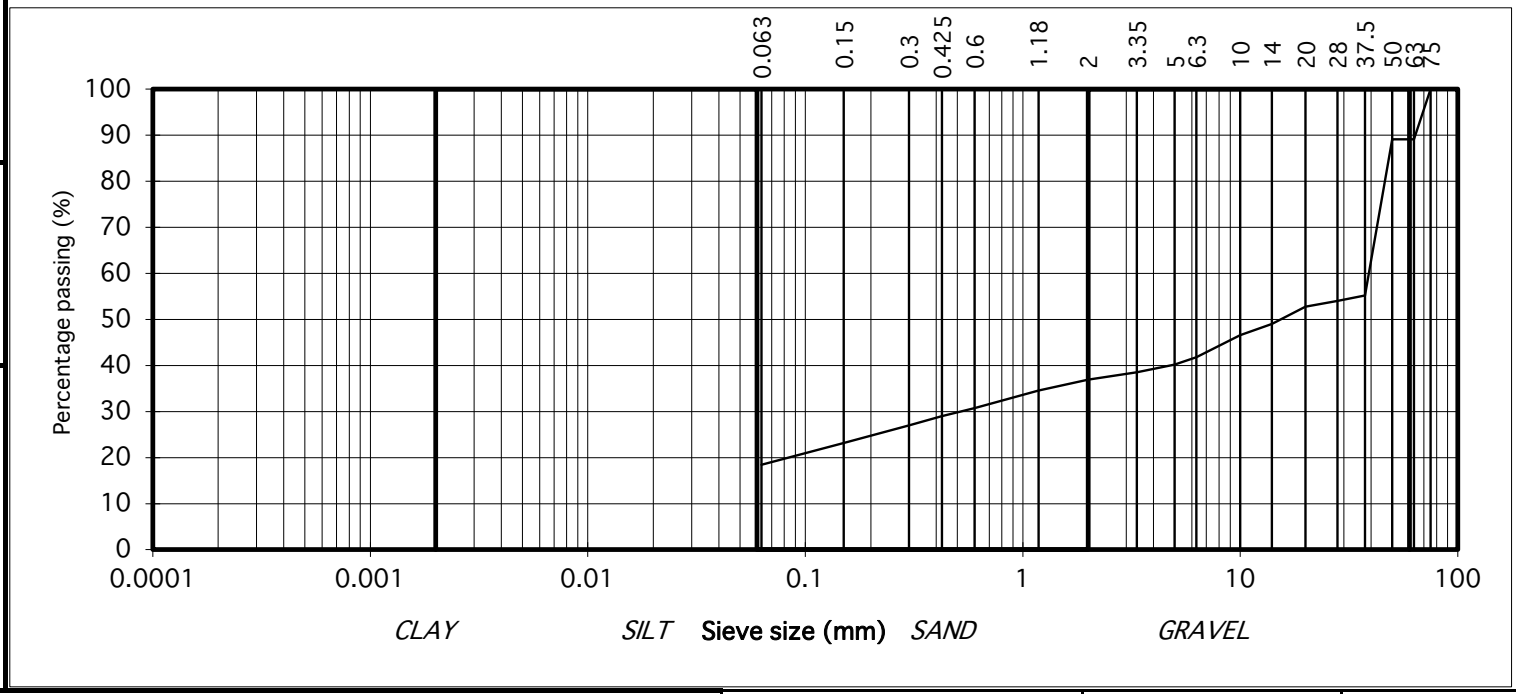
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	89	
50	89	GRAVEL
37.5	55	
28	54	
20	53	
14	49	
10	47	
6.3	42	
5	40	
3.35	39	
2	37	
1.18	35	SAND
0.6	31	
0.425	29	
0.3	27	
0.15	23	
0.063	18	SILT/CLAY

Contract No.	25882	Report No.	R169077	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH28A			
Sample No.*	AA222767	Lab. Sample No.		A25/1902
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		22/05/2025
Description:	Brown silty, sandy, GRAVEL with some cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



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H Byrne	05/06/25	1 of 1

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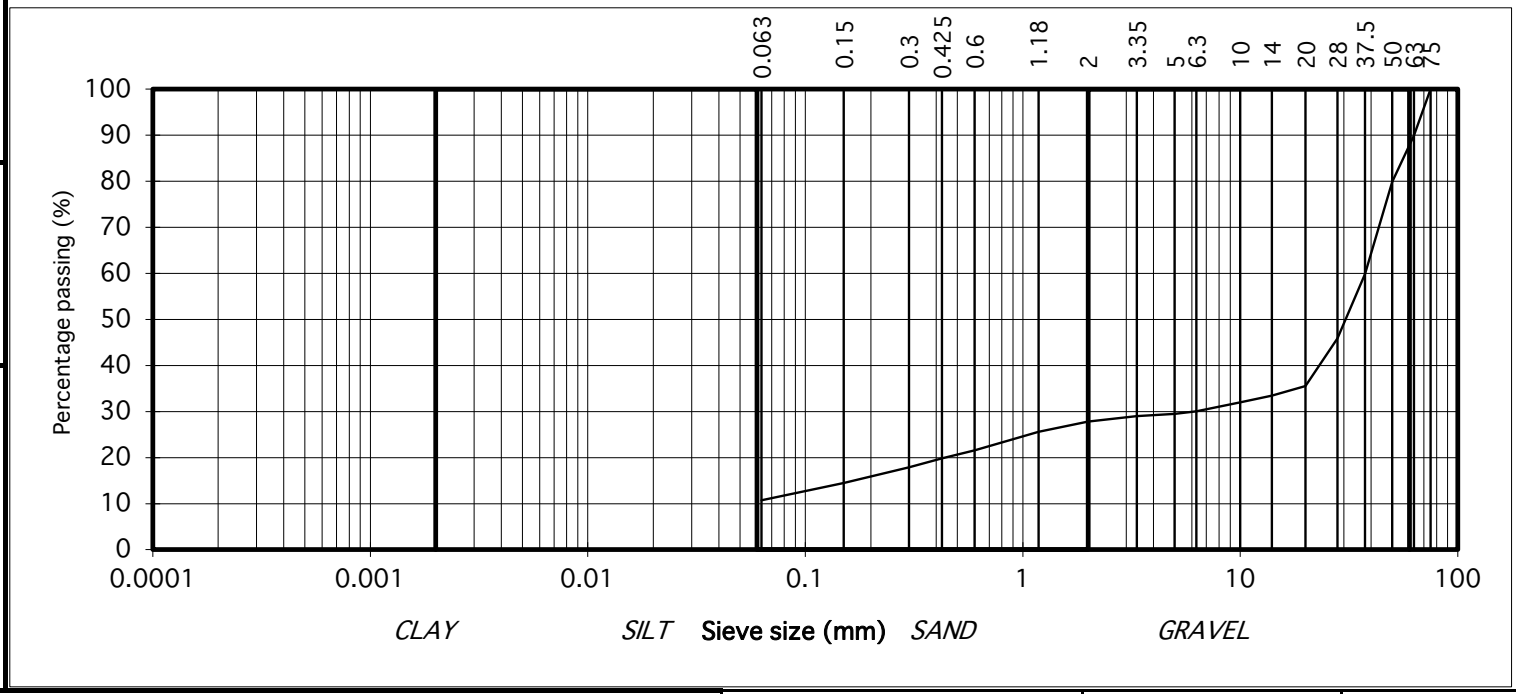
TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	90	
50	80	GRAVEL
37.5	60	
28	46	
20	36	
14	33	
10	32	
6.3	30	
5	30	
3.35	29	
2	28	
1.18	26	SAND
0.6	22	
0.425	20	
0.3	18	
0.15	14	
0.063	11	SILT/CLAY

Contract No.	25882	Report No.	R169078	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH28A			
Sample No.*	AA222769	Lab. Sample No.		A25/1903
Sample Type:	B			
Depth* (m)	5.00	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		22/05/2025
Description:	Brown clayey/silty, sandy, GRAVEL with some cobbles			
Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

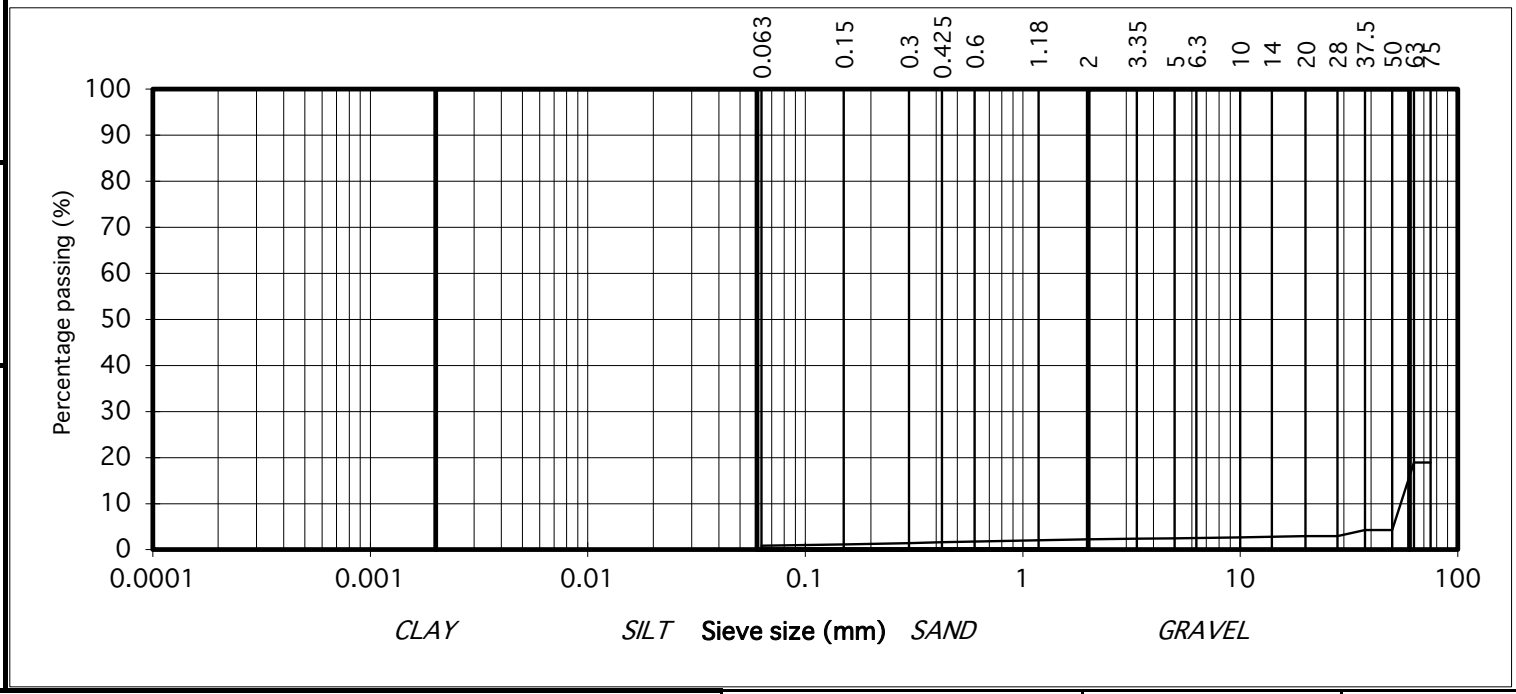
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	19	COBBLES
63	19	
50	4	GRAVEL
37.5	4	
28	3	
20	3	
14	3	
10	3	
6.3	3	
5	2	
3.35	2	
2	2	
1.18	2	SAND
0.6	2	
0.425	2	
0.3	1	
0.15	1	
0.063	1	SILT/CLAY

Contract No.	25882	Report No.	R169161	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH28A			
Sample No.*	AA222771	Lab. Sample No.		A25/1904
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		22/05/2025
Description:	COBBLES with brown slightly clayey/silty, slightly sandy, gravel			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

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H Byrne	06/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

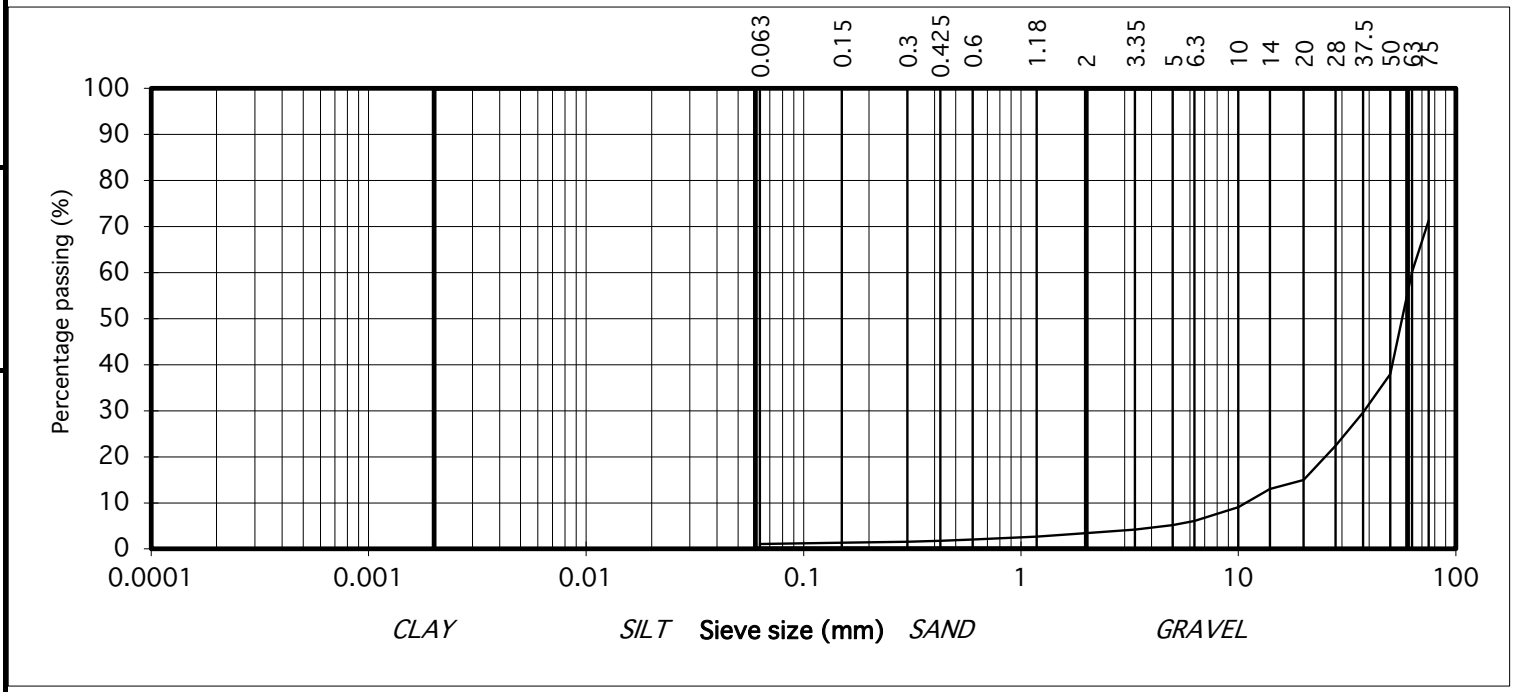
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	71	COBBLES
63	60	
50	38	GRAVEL
37.5	30	
28	22	
20	15	
14	13	
10	9	
6.3	6	
5	5	
3.35	4	
2	3	
1.18	3	SAND
0.6	2	
0.425	2	
0.3	2	
0.15	1	
0.063	1	SILT/CLAY

Contract No. 25882 Report No. R169079
Contract Name : Gas to Edenderry GNI
BH/TP No. BH28A
Sample No.* AA222773 Lab. Sample No. A25/1905
Sample Type: B
Depth* (m) 9.00 Customer: MIL
Date Received 22/05/2025 Date Testing started 22/05/2025
Description: Brown slightly silty, slightly sandy, GRAVEL with many cobbles

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377

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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

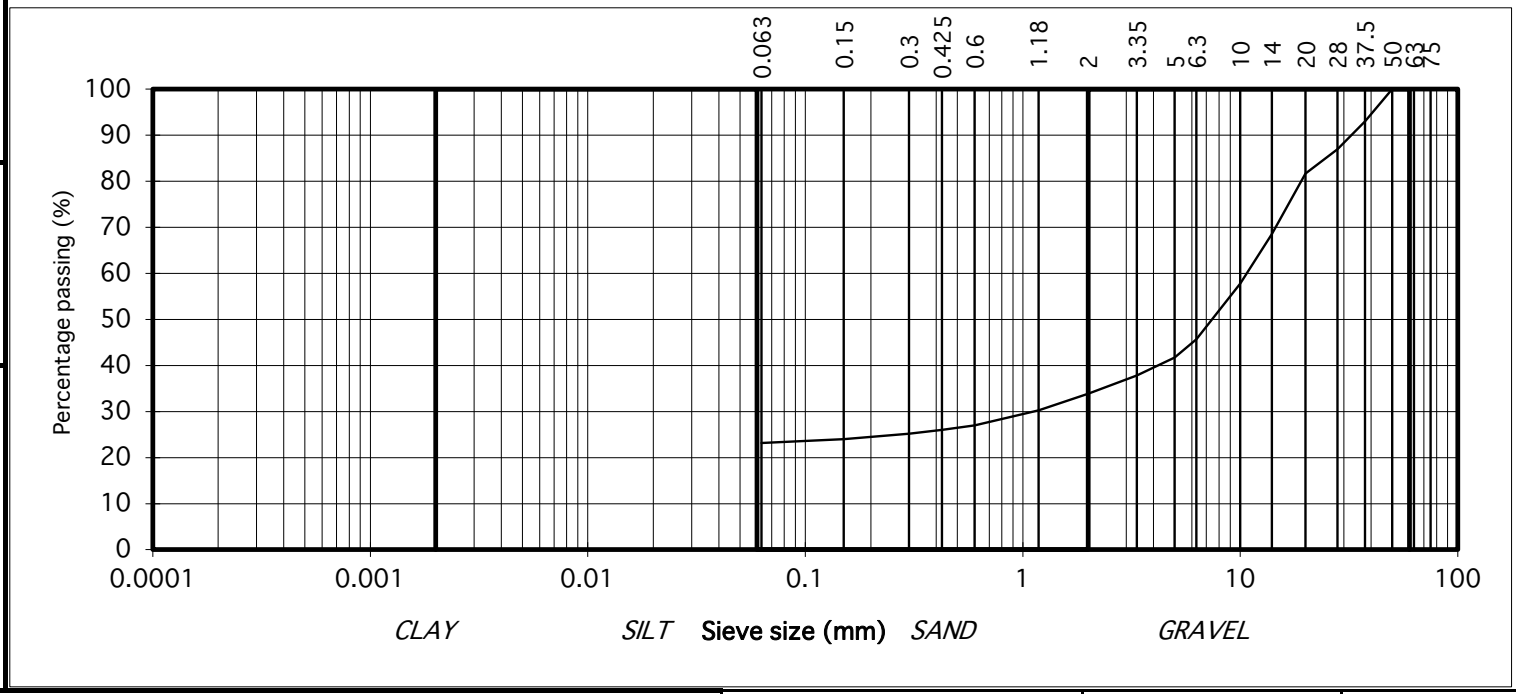
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	93	
28	87	
20	82	
14	69	
10	58	
6.3	46	
5	42	
3.35	38	
2	34	
1.18	30	SAND
0.6	27	
0.425	26	
0.3	25	
0.15	24	
0.063	23	SILT/CLAY

Contract No.	25882	Report No.	R169080	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH29			
Sample No.*	AA223249	Lab. Sample No.		A25/1907
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		22/05/2025
Description:	Brown slightly sandy, very gravelly, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

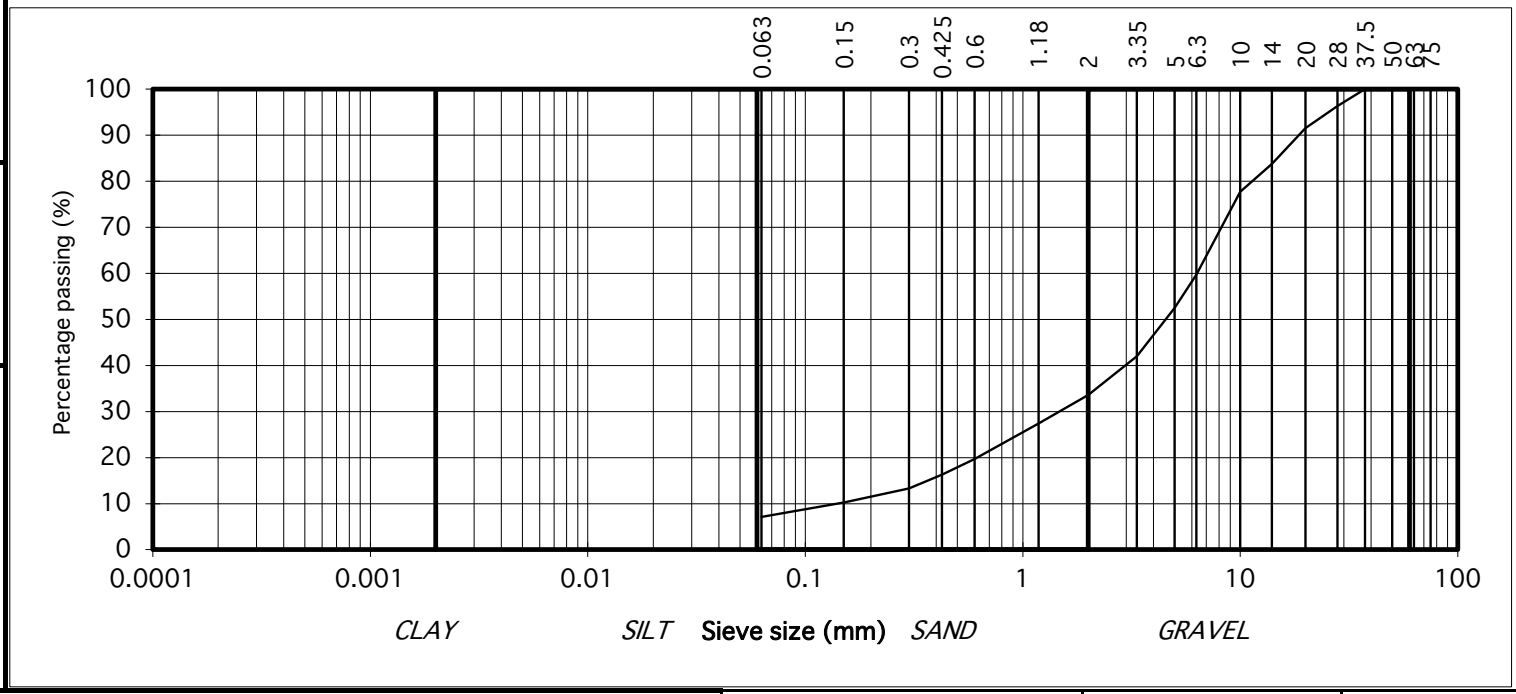
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	96	
20	92	
14	84	
10	78	
6.3	60	
5	52	
3.35	42	
2	34	
1.18	27	SAND
0.6	20	
0.425	16	
0.3	13	
0.15	10	
0.063	7	SILT/CLAY

Contract No. 25882 Report No. R171141
Contract Name : Gas to Edenderry
BH/TP No. BH29
Sample No.* AA223251 Lab. Sample No. A25/1908
Sample Type: B
Depth* (m) 6.00 Customer: MIL
Date Received 08/05/2025 Date Testing started 25/06/2025
Description: Grey clayey/silty, very sandy, GRAVEL

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	29/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

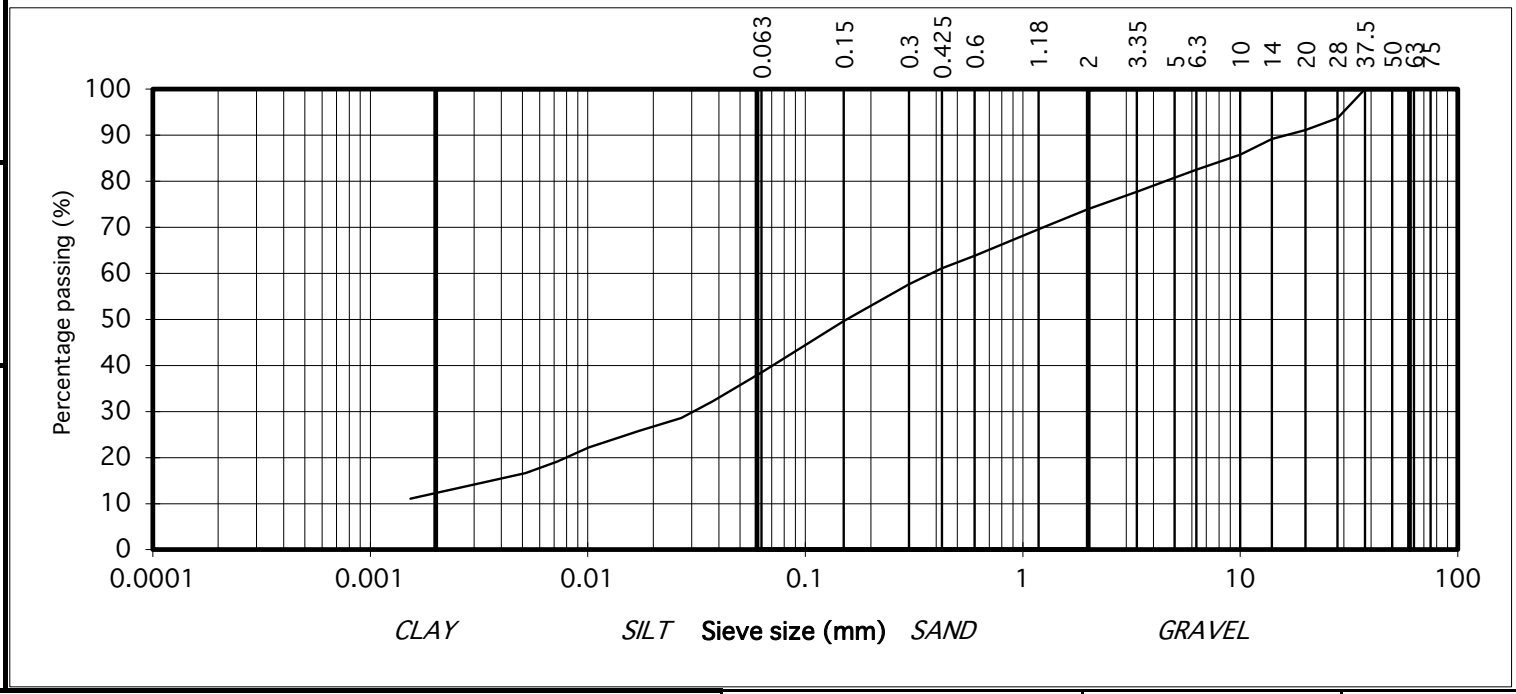
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	94	
20	91	
14	89	
10	86	
6.3	83	
5	81	
3.35	78	
2	74	
1.18	70	SAND
0.6	64	
0.425	61	
0.3	58	
0.15	50	
0.063	39	SILT/CLAY
0.037	32	
0.027	29	
0.017	26	
0.010	22	
0.007	19	
0.005	17	
0.002	11	

Contract No.	25882	Report No.	R169711	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH33			
Sample No.*	AA222758	Lab. Sample No.		A25/1909
Sample Type:	B			
Depth* (m)	2.50	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		31/05/2025
Description:	Brown sandy, slightly gravelly, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



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Approved by:	Date:	Page no:
H Byrne	23/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

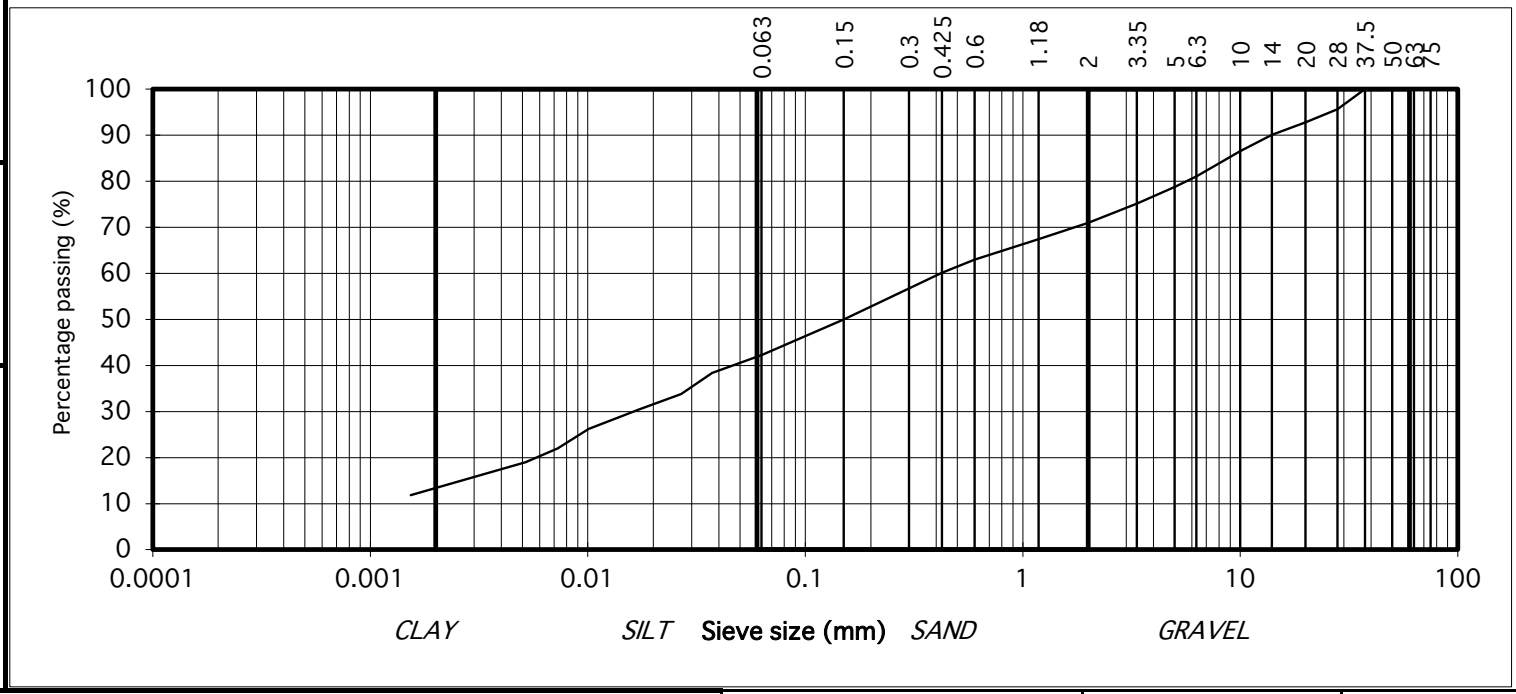
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	96	
20	93	
14	90	
10	87	
6.3	81	
5	79	
3.35	75	
2	71	
1.18	67	SAND
0.6	63	
0.425	60	
0.3	57	
0.15	50	
0.063	42	SILT/CLAY
0.037	38	
0.027	34	
0.017	31	
0.010	26	
0.007	22	
0.005	19	
0.002	12	

Contract No. 25882 Report No. R171142
Contract Name : Gas to Edenderry
BH/TP No. BH33
Sample No.* AA222763 Lab. Sample No. A25/1911
Sample Type: B
Depth* (m) 7.50 Customer: MIL
Date Received 08/05/2025 Date Testing started 25/06/2025
Description: Brown slightly sandy, slightly gravelly, CLAY

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
H Byrne	29/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

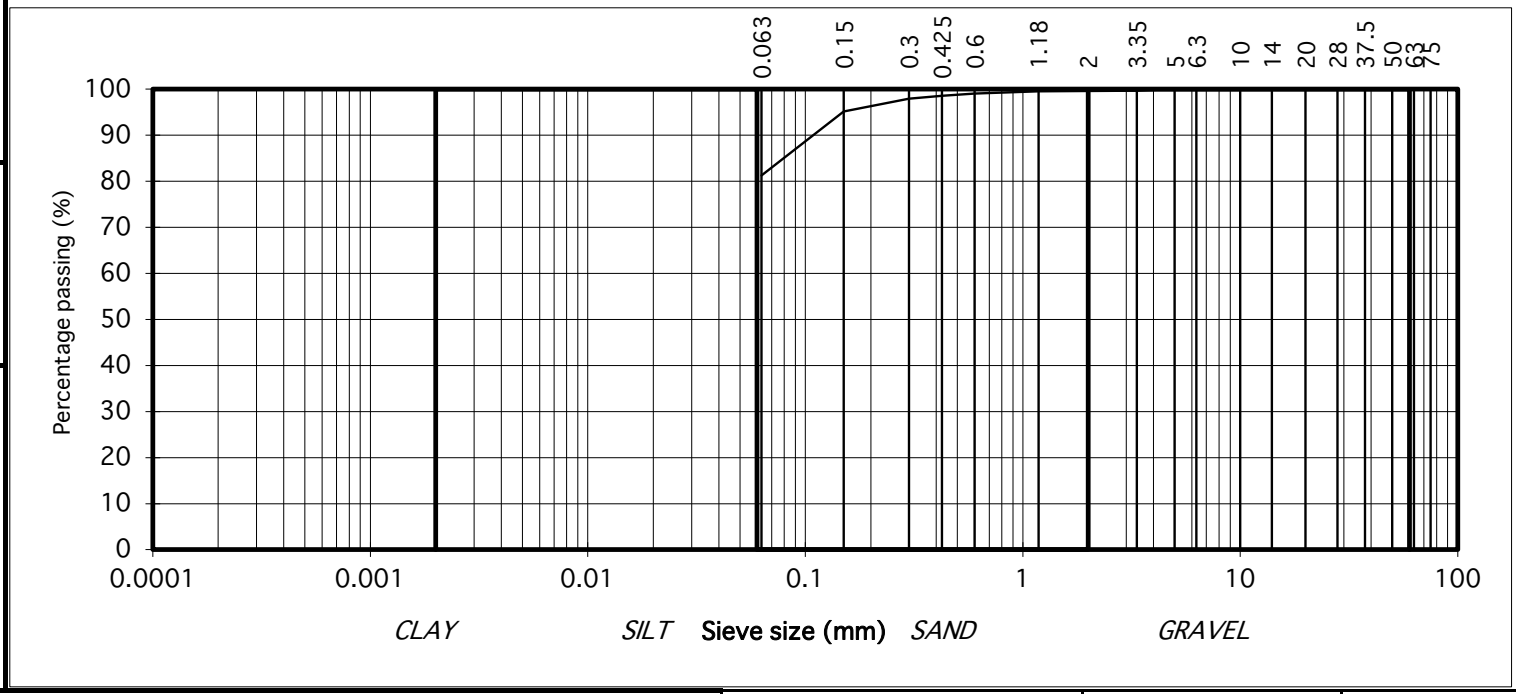
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	99	
0.425	99	
0.3	98	
0.15	95	
0.063	81	SILT/CLAY

Contract No.	25882	Report No.	R169095	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH55			
Sample No.*	AA213971	Lab. Sample No.		A25/1914
Sample Type:	B			
Depth* (m)	9.00	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		22/05/2025
Description:	Grey slightly sandy, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

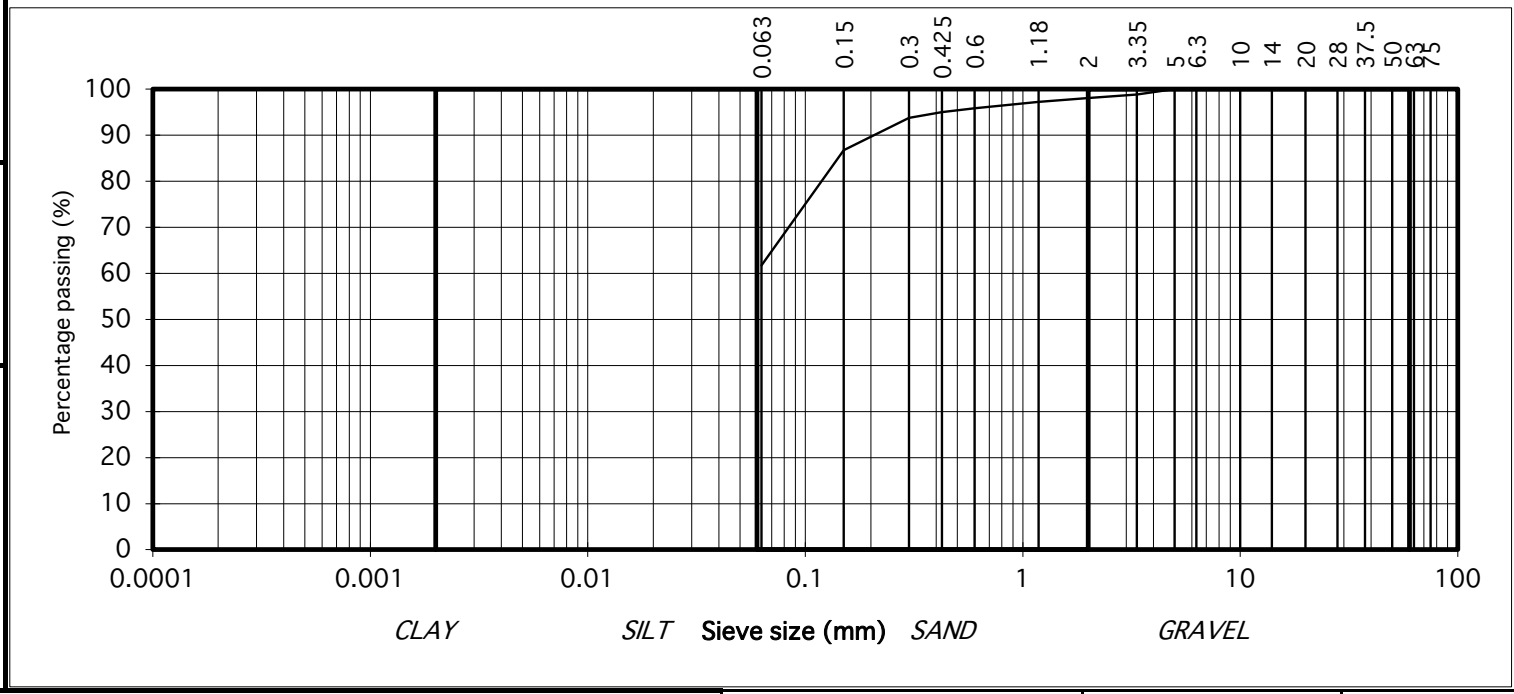
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	99	
2	98	
1.18	97	SAND
0.6	96	
0.425	95	
0.3	94	
0.15	87	
0.063	62	SILT/CLAY

Contract No.	25882	Report No.	R169097	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH55			
Sample No.*	AA213973	Lab. Sample No.		A25/1915
Sample Type:	B			
Depth* (m)	11.00	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		22/05/2025
Description:	Grey sandy, slightly gravelly, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

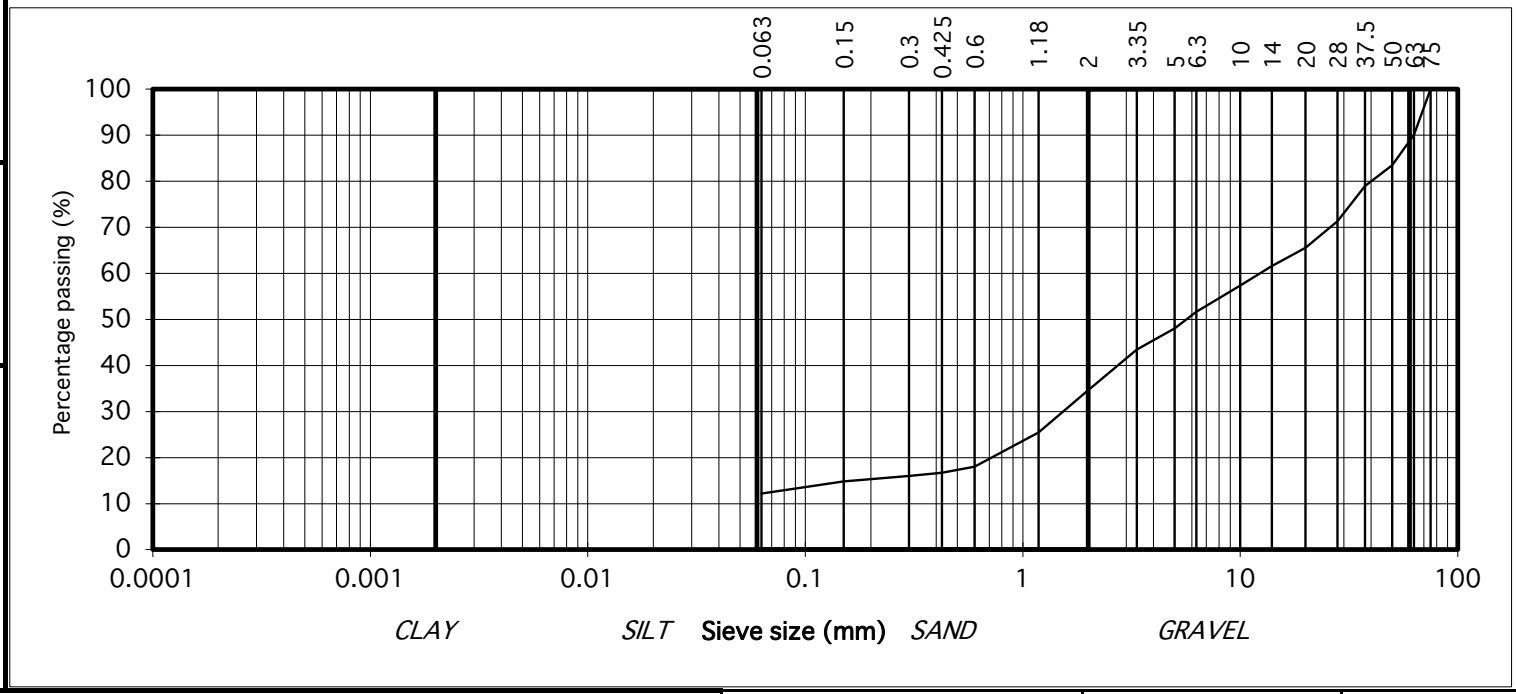
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	90	
50	84	GRAVEL
37.5	79	
28	71	
20	66	
14	62	
10	57	
6.3	52	
5	48	
3.35	43	
2	35	
1.18	25	SAND
0.6	18	
0.425	17	
0.3	16	
0.15	15	
0.063	12	SILT/CLAY

Contract No. 25882 Report No. R169098
Contract Name : Gas to Edenderry GNI
BH/TP No. BH55
Sample No.* AA213975 Lab. Sample No. A25/1916
Sample Type: B
Depth* (m) 13.00 Customer: MIL
Date Received 22/05/2025 Date Testing started 22/05/2025
Description: Grey clayey/silty, very sandy, GRAVEL with some cobbles

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**

Report No. **R171146** Contract No. 25882 Contract Name: Gas to Edenderry

Customer MIL

Samples Received: 07/07/25 Date Tested: 07/07/25

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH16A	AA212803	2.0	A25/2519	B	9.5	22	NP	NP	46	WS	4.4		Brown sandy gravelly SILT
BH16A	AA212805	4.0	A25/2520	B	13	23	13	10	61	WS	4.4	C L	Grey slightly sandy, gravelly, CLAY
BH16A	AA212807	6.0	A25/2521	B	10	25	13	12	65	WS	4.4	C L	Grey slightly sandy, gravelly, CLAY with some cobbles
BH17	AA212808	1.0	A25/2522	B	25	30	NP	NP	79	WS	4.4		Brown sandy gravelly SILT
BH17	AA212810	3.0	A25/2523	B	13	22	11	11	55	WS	4.4	C L	Grey slightly sandy, slightly gravelly, CLAY
BH17	AA212812	5.0	A25/2524	B	11	24	13	11	55	WS	4.4	C L	Grey sandy gravelly CLAY
BH17	AA212814	7.0	A25/2525	B	8.8	22	NP	NP	57	WS	4.4		Grey slightly sandy, gravelly, SILT with some cobbles
BH18	AA212819	2.0	A25/2526	B	12	25	13	12	66	WS	4.4	C L	Brown sandy gravelly CLAY
BH18	AA212821	4.0	A25/2527	B	6.4	20	NP	NP	75	WS	4.4		Brown slightly sandy, gravelly, SILT with many cobbles
BH19	AA212826	3.0	A25/2528	B	12	23	NP	NP	45	WS	4.4		Brown sandy gravelly SILT
BH19	AA212828	5.0	A25/2529	B	9.9	21	NP	NP	57	WS	4.4		Grey sandy gravelly SILT
BH19	AA212830	7.0	A25/2530	B	13	25	13	12	58	WS	4.4	C L	Grey slightly sandy, slightly gravelly, CLAY
BH24	AA213977	2.0	A25/2531	B	6.0	23	NP	NP	28	WS	4.4		Brown sandy gravelly SILT
BH25	AA222793	1.0	A25/2536	B	21	32	18	14	82	WS	4.4	C L	Grey/brown sandy gravelly CLAY
BH25	AA222801	9.0	A25/2540	B	22	25	NP	NP	99	WS	4.4		Grey slightly sandy, slightly gravelly, SILT

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method
4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.
NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12.
Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.
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IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by: H Byrne

Date: 05/08/25

Page: 1 of 1

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.1331

Report No. **R171147** Contract No. 25882 Contract Name: Gas to Edenderry

Customer MIL

Samples Received: 07/07/25 Date Tested: 07/07/25

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH51A	AA22803	2.0	A25/2542	B	7.4	20	NP	NP	52	WS	4.4		Brown sandy gravelly SILT
BH51A	AA22805	4.0	A25/2543	B	13	27	14	13	59	WS	4.4	C L	Brown slightly sandy, slightly gravelly, CLAY
BH51A	AA22807	6.0	A25/2544	B	15	23	NP	NP	66	WS	4.4		Brown sandy gravelly SILT
BH51A	AA22809	8.0	A25/2545	B	10	26	14	12	57	WS	4.4	C L	Brown slightly sandy, slightly gravelly, CLAY with many cobbles

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method
4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.
NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12.
Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.
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IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by: H Byrne

Date: 05/08/25

Page: 1 of 1

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

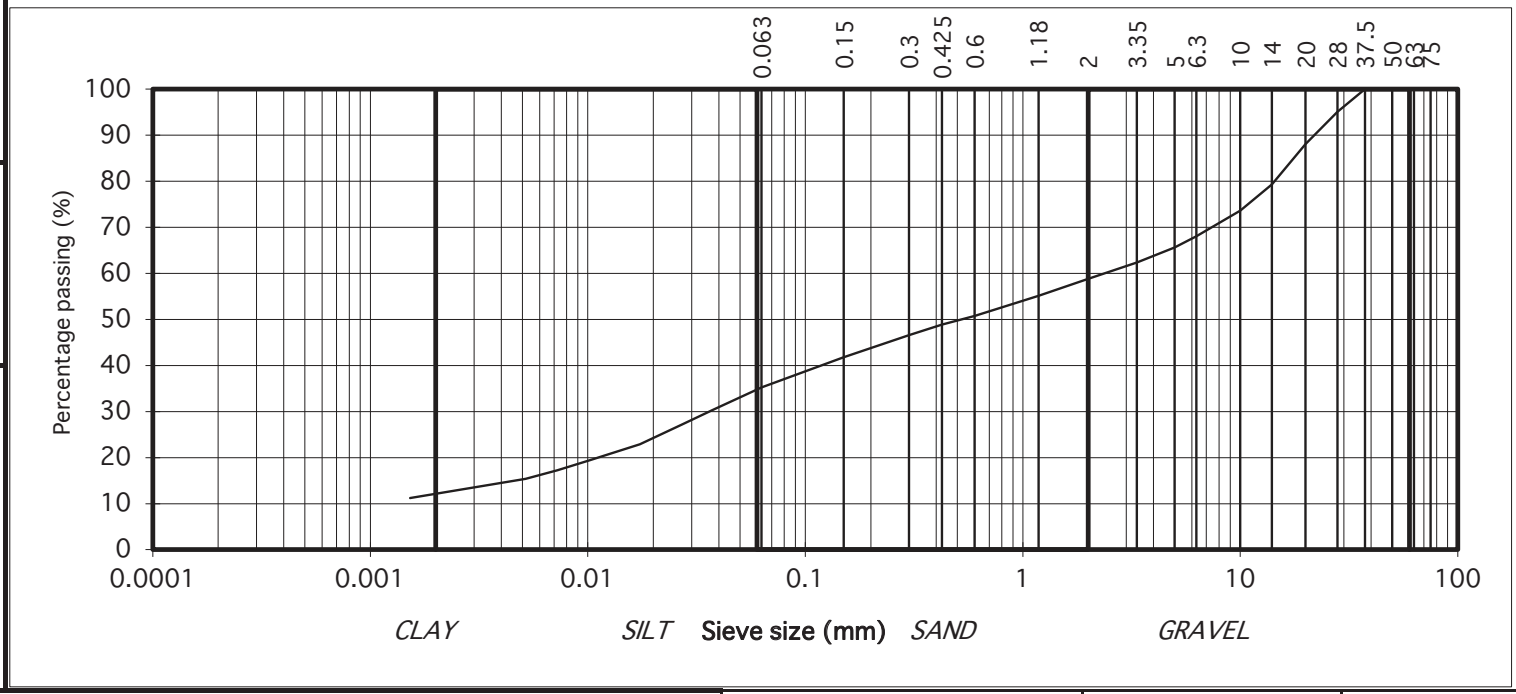
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	95	
20	88	
14	79	
10	74	
6.3	68	
5	66	
3.35	62	
2	59	
1.18	55	SAND
0.6	51	
0.425	49	
0.3	47	
0.15	42	
0.063	35	SILT/CLAY
0.037	30	
0.027	27	
0.017	23	
0.010	19	
0.007	17	
0.005	15	
0.002	11	

Contract No.	25882	Report No.	R171127	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH16A			
Sample No.*	AA212805	Lab. Sample No.		A25/2520
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		08/07/2025
Description:	Grey slightly sandy, gravelly, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	89	COBBLES
63	89	
50	89	GRAVEL
37.5	83	
28	81	
20	76	
14	72	
10	67	
6.3	60	
5	56	
3.35	52	
2	47	
1.18	43	SAND
0.6	39	
0.425	37	
0.3	36	
0.15	32	
0.063	28	SILT/CLAY
0.037	26	
0.027	23	
0.017	21	
0.010	18	
0.007	16	
0.005	14	
0.002	11	

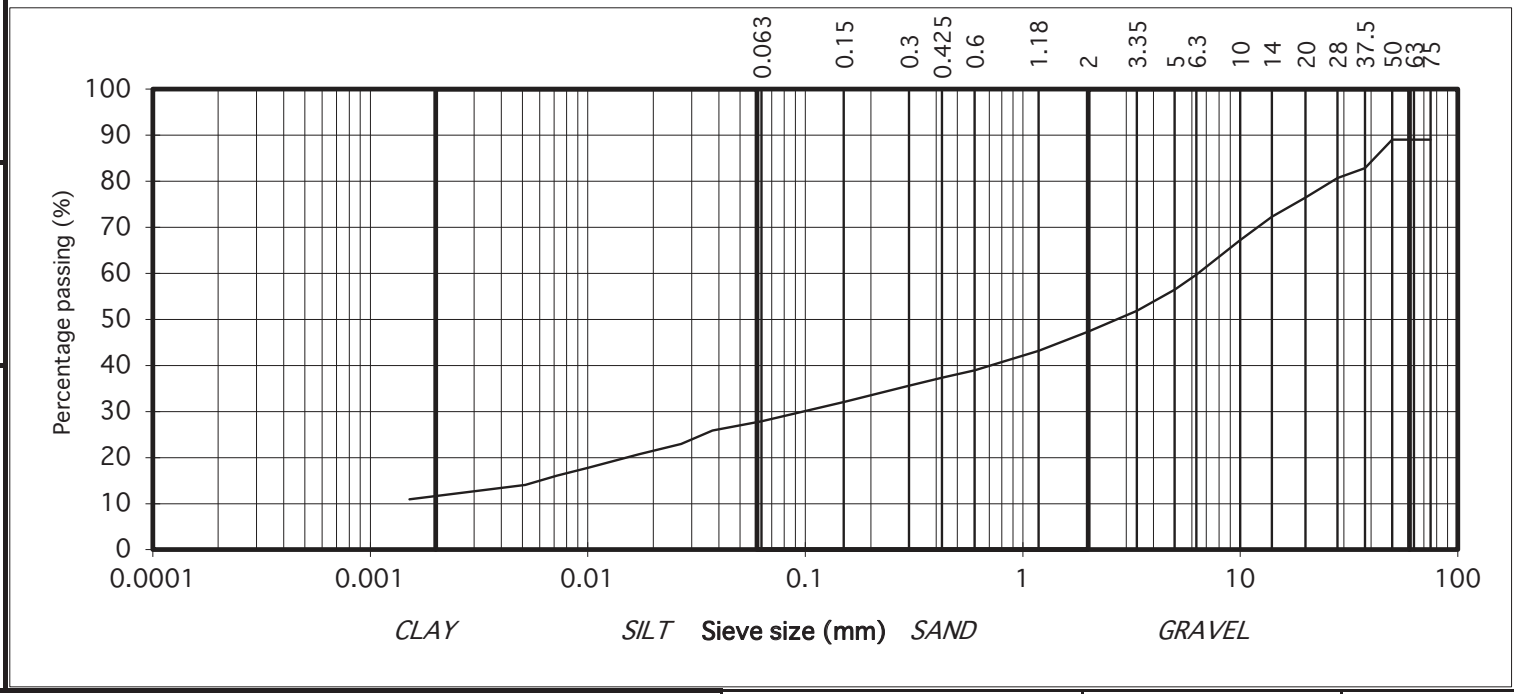
Contract No.	25882	Report No.	R171613	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH16A			
Sample No.*	AA212807	Lab. Sample No.		A25/2521
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		08/07/2025
Description:	Grey slightly sandy, gravelly, CLAY with some cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks

Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Smple size ddi not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

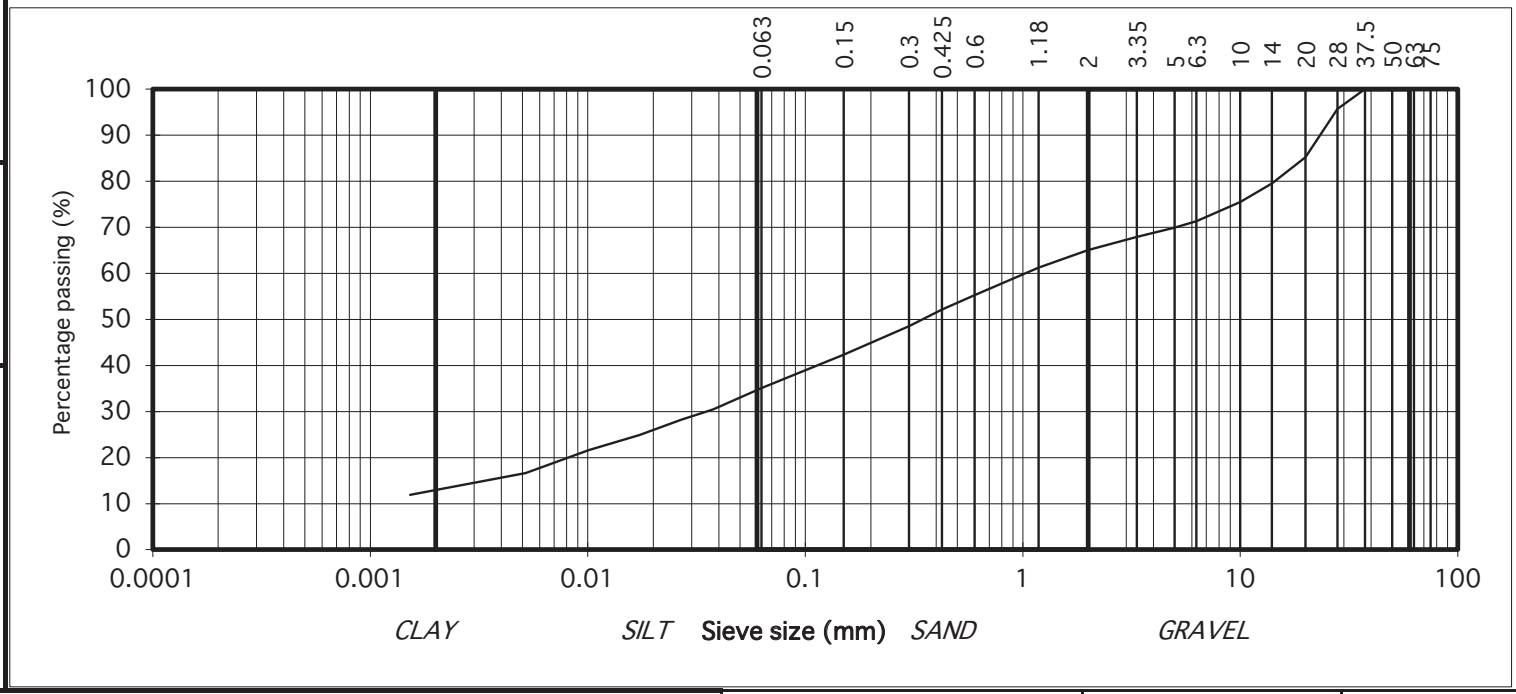
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	96	
20	85	
14	80	
10	76	
6.3	71	
5	70	
3.35	68	
2	65	
1.18	61	SAND
0.6	55	
0.425	52	
0.3	49	
0.15	42	
0.063	35	SILT/CLAY
0.038	30	
0.027	28	
0.017	25	
0.010	22	
0.007	19	
0.005	17	
0.002	12	

Contract No.	25882	Report No.	R171125	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH17			
Sample No.*	AA212810	Lab. Sample No.		A25/2523
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		08/07/2025
Description:	Grey slightly sandy, slightly gravelly, CLAY			

Remarks — Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	86	COBBLES
63	86	
50	79	GRAVEL
37.5	77	
28	75	
20	71	
14	64	
10	59	
6.3	55	
5	53	
3.35	50	
2	46	
1.18	42	SAND
0.6	38	
0.425	35	
0.3	33	
0.15	27	
0.063	21	SILT/CLAY
0.037	18	
0.027	17	
0.017	15	
0.010	13	
0.007	11	
0.005	9	
0.002	6	

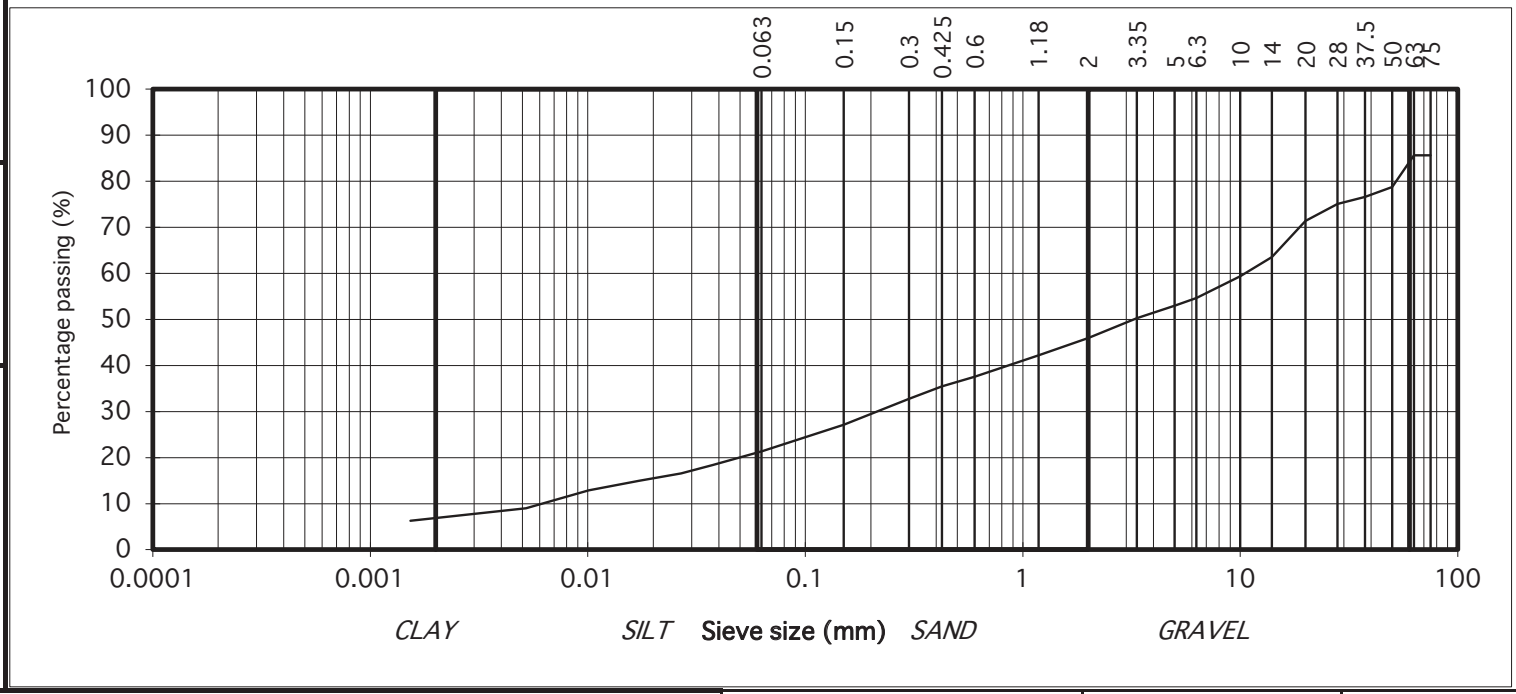
Contract No.	25882	Report No.	
Contract Name :	Gas to Edenderry		
BH/TP No.	BH17		
Sample No.*	AA212814	Lab. Sample No.	A25/2925
Sample Type:	B		
Depth* (m)	7.00	Customer: MIL	
Date Received	07/07/2025	Date Testing started	07/07/2025
Description:	Grey slightly sandy, gravelly, SILT with some cobbles		

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks

Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

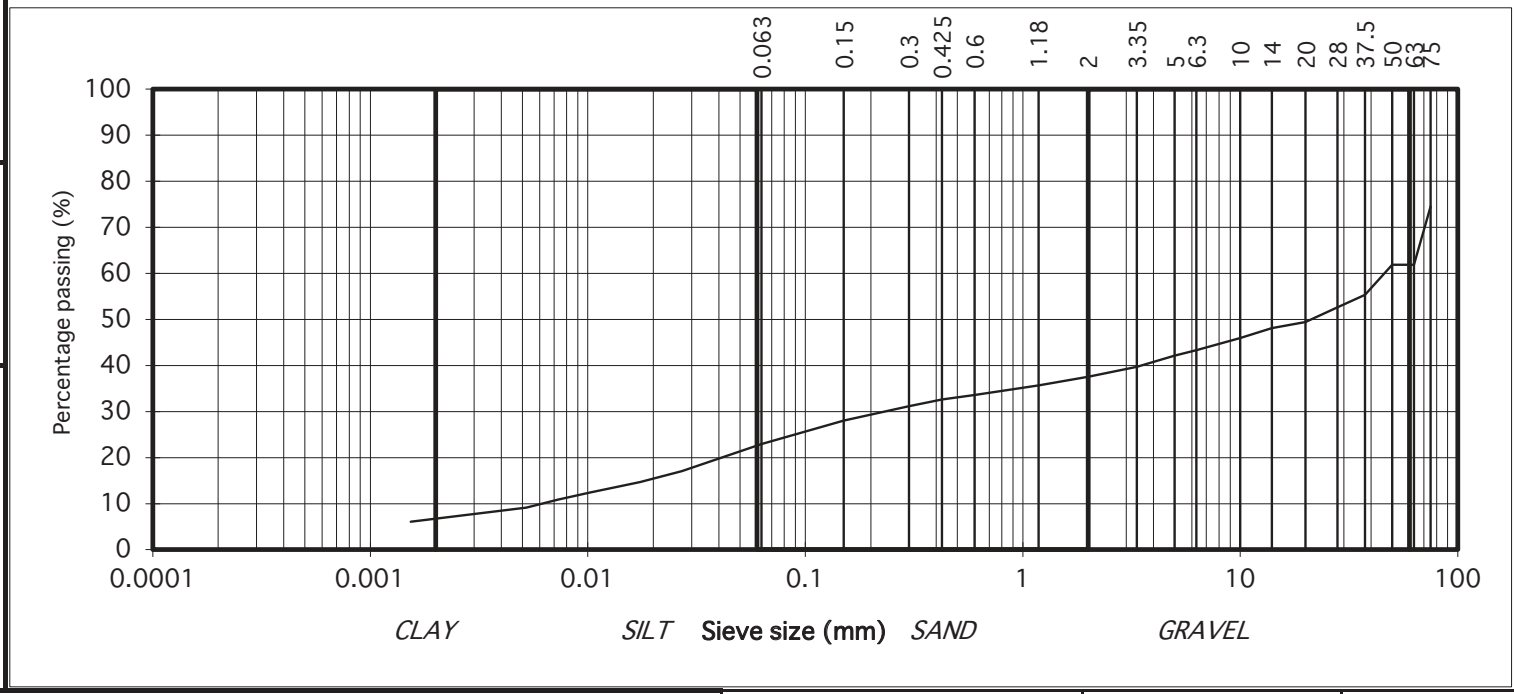
particle size	% passing	
75	75	COBBLES
63	62	
50	62	GRAVEL
37.5	55	
28	53	
20	49	
14	48	
10	46	
6.3	43	
5	42	
3.35	40	
2	38	
1.18	36	SAND
0.6	34	
0.425	33	
0.3	31	
0.15	28	
0.063	23	SILT/CLAY
0.038	19	
0.027	17	
0.017	15	
0.010	12	
0.007	11	
0.005	9	
0.002	6	

Contract No.	25882	Report No.	R171126	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH18			
Sample No.*	AA212821	Lab. Sample No.		A25/2527
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		07/07/2025
Description:	Brown slightly sandy, gravelly, SILT with many cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

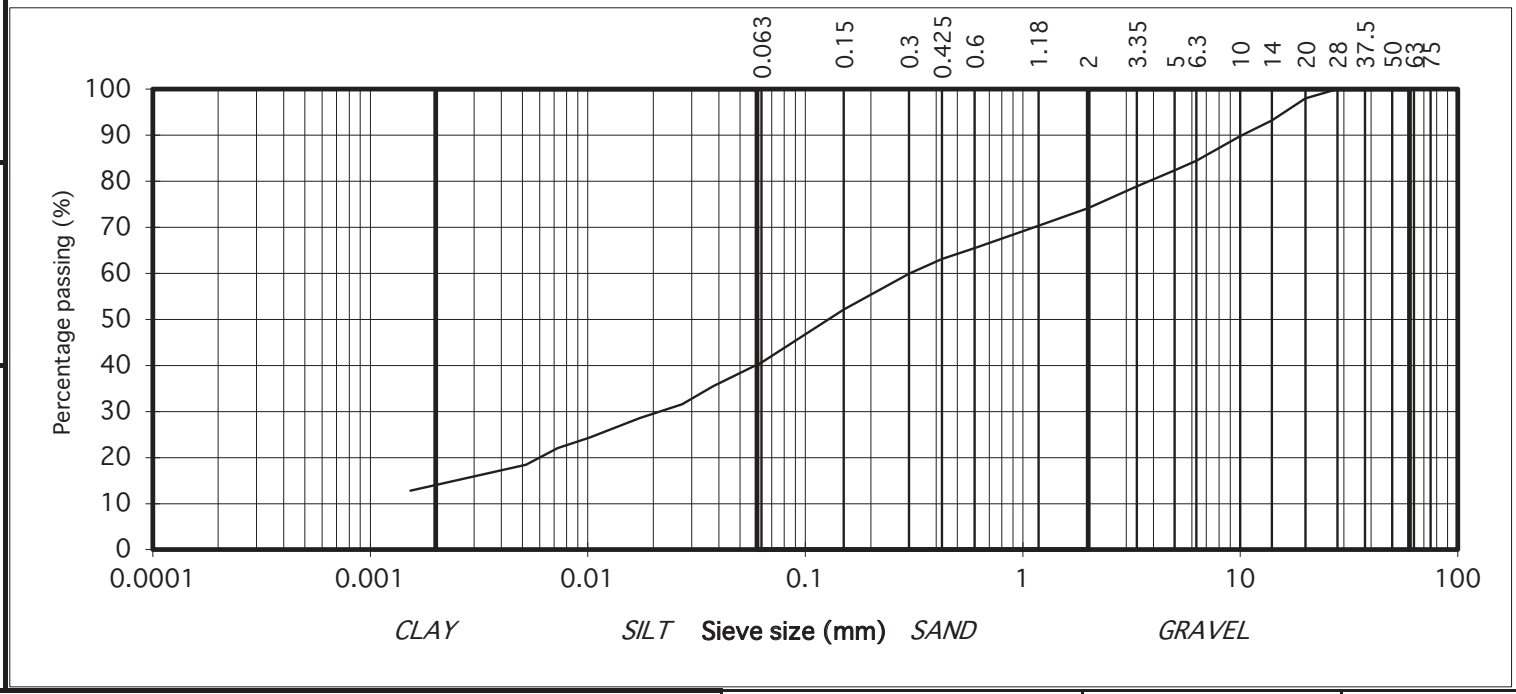
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	98	
14	93	
10	90	
6.3	84	
5	82	
3.35	79	
2	74	
1.18	70	SAND
0.6	65	
0.425	63	
0.3	60	
0.15	52	
0.063	41	SILT/CLAY
0.038	36	
0.027	32	
0.017	29	
0.010	24	
0.007	22	
0.005	18	
0.002	13	

Contract No.	25882	Report No.	R171128	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH19			
Sample No.*	AA212830	Lab. Sample No.		A25/2530
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		08/07/2025
Description:	Grey slightly sandy, slightly gravelly, CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

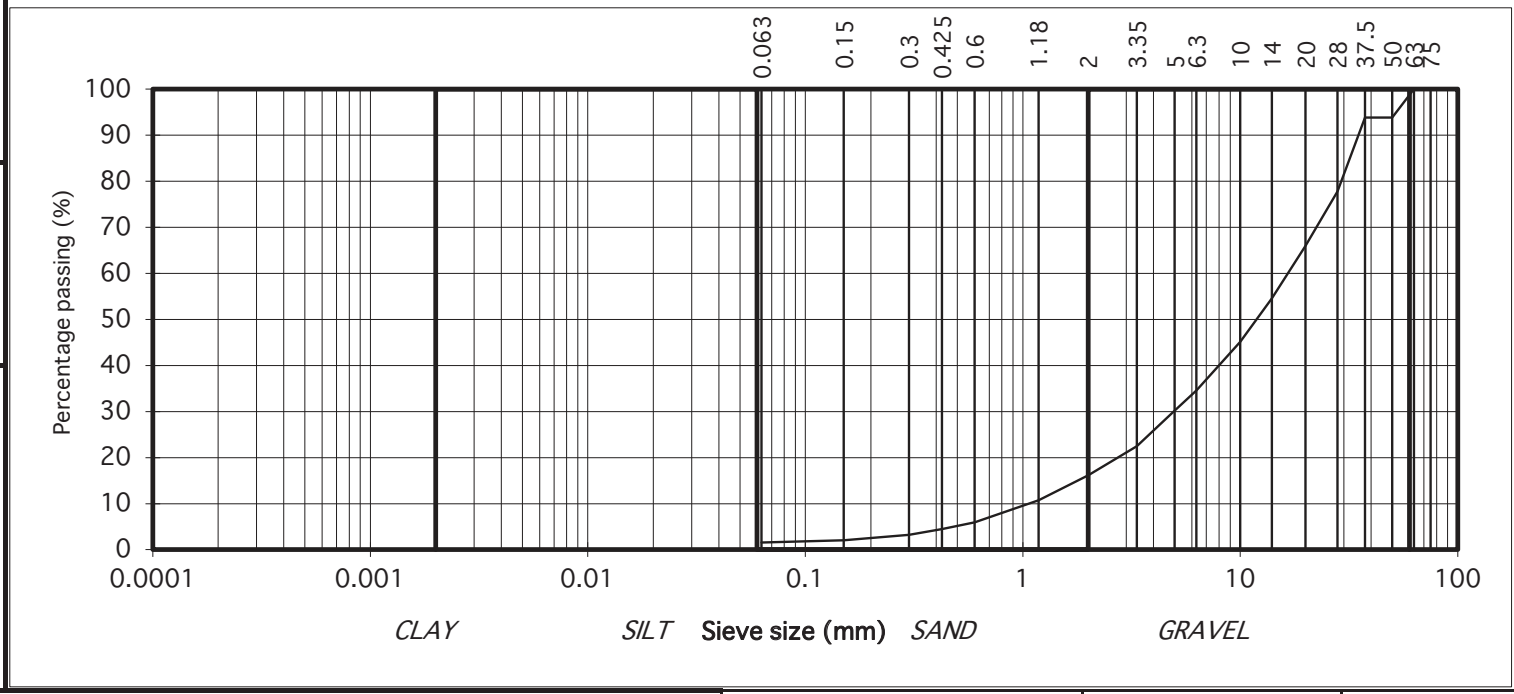
particle size	% passing	
75	100	COBBLES
63	100	
50	94	GRAVEL
37.5	94	
28	78	
20	66	
14	55	
10	45	
6.3	35	
5	30	
3.35	22	
2	16	
1.18	11	SAND
0.6	6	
0.425	4	
0.3	3	
0.15	2	
0.063	2	SILT/CLAY

Contract No.	25882	Report No.	R171117	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH24			
Sample No.*	AA213979	Lab. Sample No.		A25/2532
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		08/07/2025
Description:	Brown slightly clayey/silty, sandy, GRAVEL			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing
75	100
63	100
50	100
37.5	100
28	91
20	86
14	85
10	84
6.3	83
5	83
3.35	83
2	82
1.18	82
0.6	82
0.425	82
0.3	82
0.15	81
0.063	76

COBBLES

GRAVEL

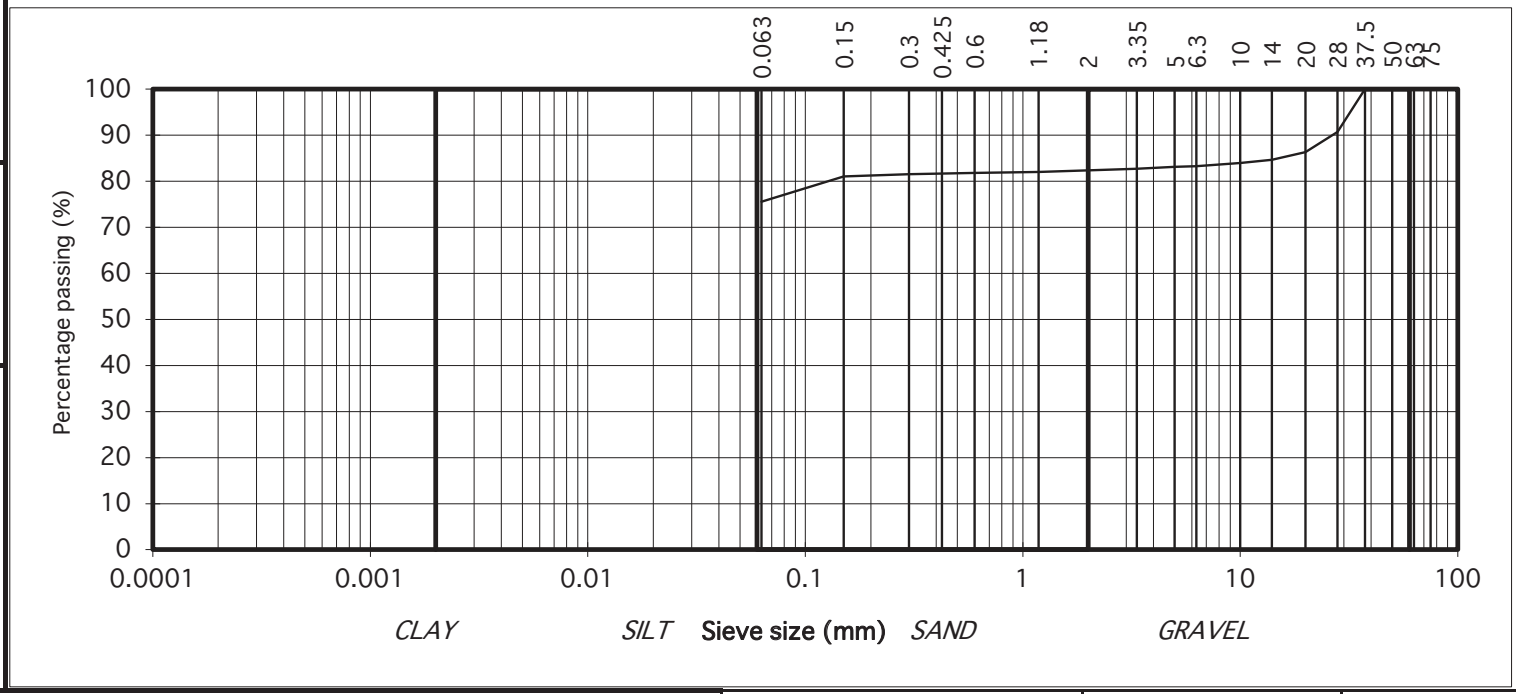
SAND

SILT/CLAY

Contract No. 25882 Report No. R171115
Contract Name : Gas to Edenderry
BH/TP No. BH24
Sample No.* AA213981 Lab. Sample No. A25/2533
Sample Type: B
Depth* (m) 6.00 Customer: MIL
Date Received 07/07/2025 Date Testing started 08/07/2025
Description: Brown slightly sandy, slightly gravelly, SILT/CLAY

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

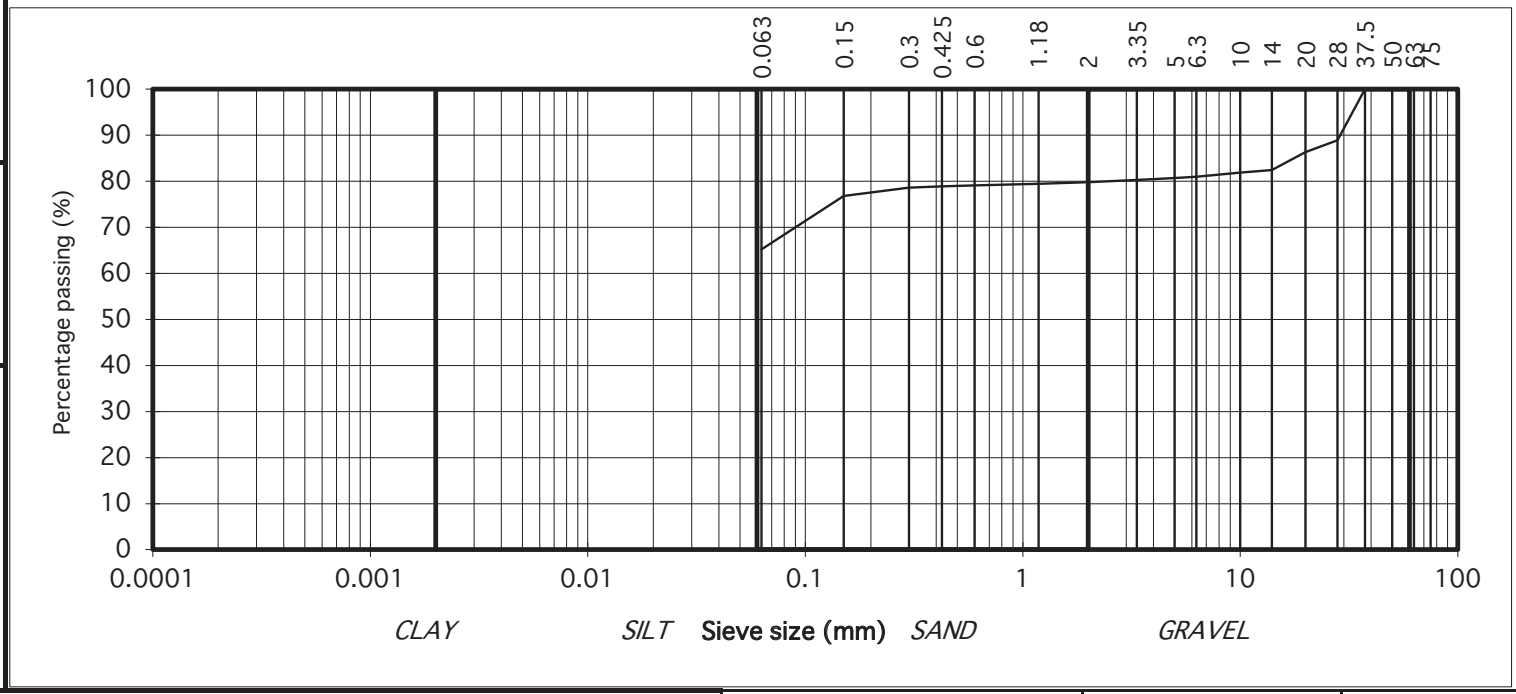
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	89	
20	86	
14	82	
10	82	
6.3	81	
5	81	
3.35	80	
2	80	
1.18	79	SAND
0.6	79	
0.425	79	
0.3	79	
0.15	77	
0.063	65	SILT/CLAY

Contract No. 25882 Report No. R171116
Contract Name : Gas to Edenderry
BH/TP No. BH24
Sample No.* AA213983 Lab. Sample No. A25/2534
Sample Type: B
Depth* (m) 8.00 Customer: MIL
Date Received 07/07/2025 Date Testing started 08/07/2025
Description: Grey slightly sandy, slightly gravelly, SILT/CLAY

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

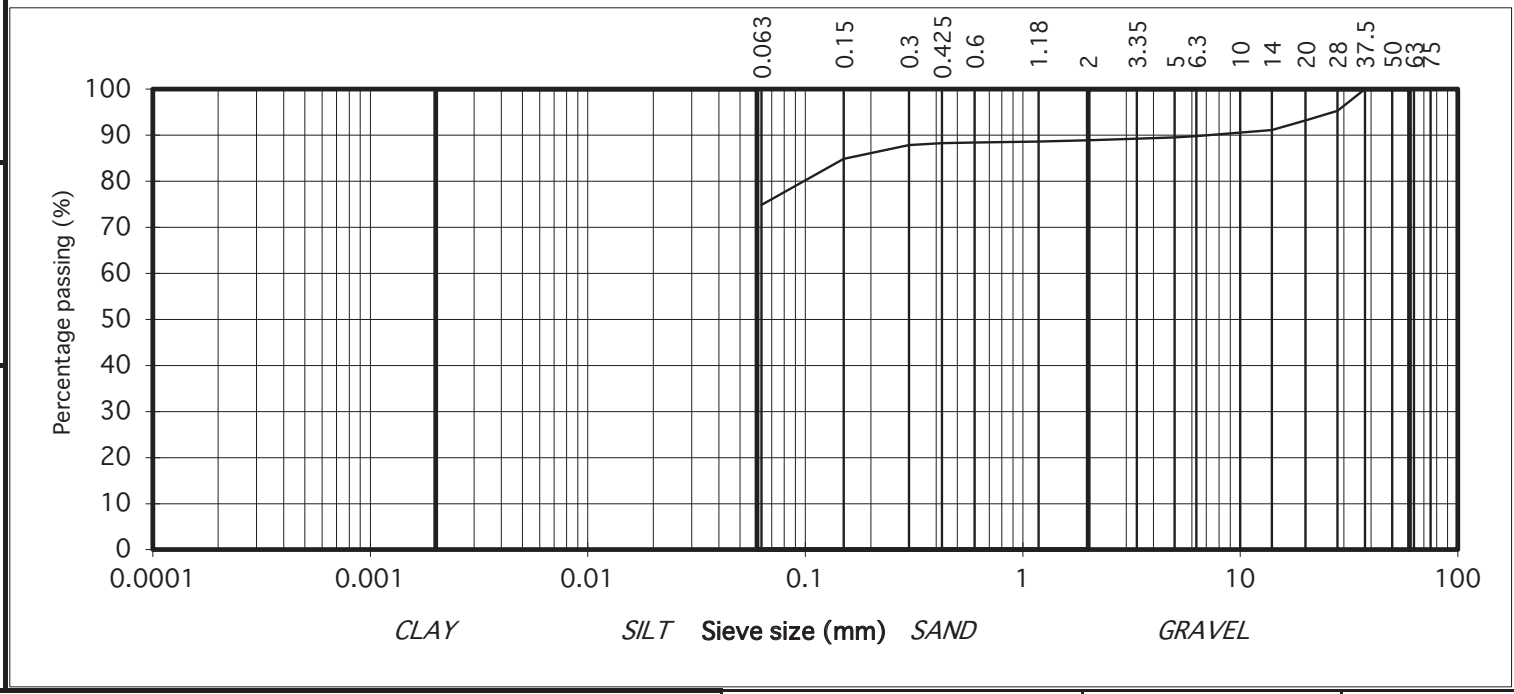
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	95	
20	93	
14	91	
10	91	
6.3	90	
5	90	
3.35	89	
2	89	
1.18	89	SAND
0.6	88	
0.425	88	
0.3	88	
0.15	85	
0.063	75	SILT/CLAY

Contract No.	25882	Report No.	R171114
Contract Name :	Gas to Edenderry		
BH/TP No.	BH24		
Sample No.*	AA213985	Lab. Sample No.	A25/2535
Sample Type:	B		
Depth* (m)	10.00	Customer:	MIL
Date Received	07/07/2025	Date Testing started	07/07/2025
Description:	Brown slightly sandy, slightly gravelly, SILT/CLAY		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

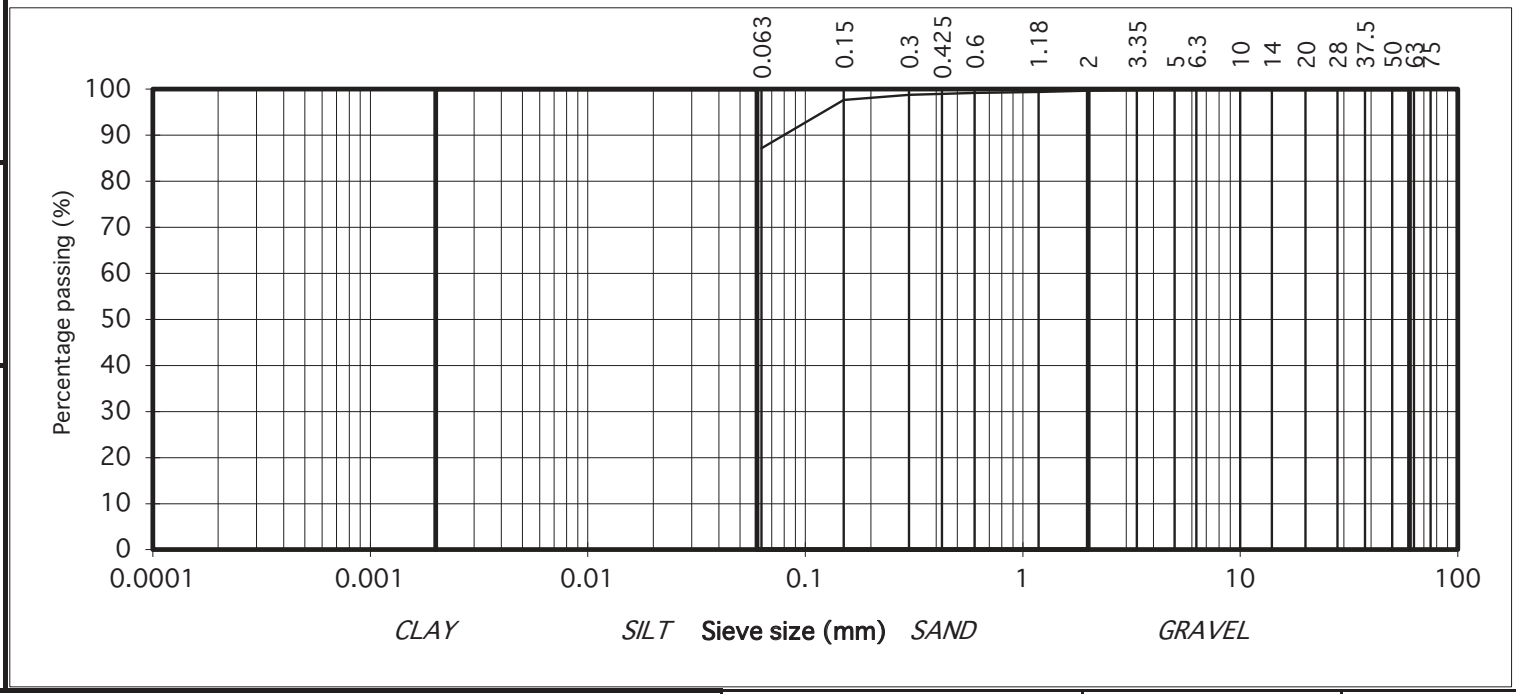
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	99	SAND
0.6	99	
0.425	99	
0.3	99	
0.15	98	
0.063	87	SILT/CLAY

Contract No.	25882	Report No.	R171119	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH25			
Sample No.*	AA222794	Lab. Sample No.		A25/2537
Sample Type:	B			
Depth* (m)	2.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		07/07/2025
Description:	Brown slightly sandy, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

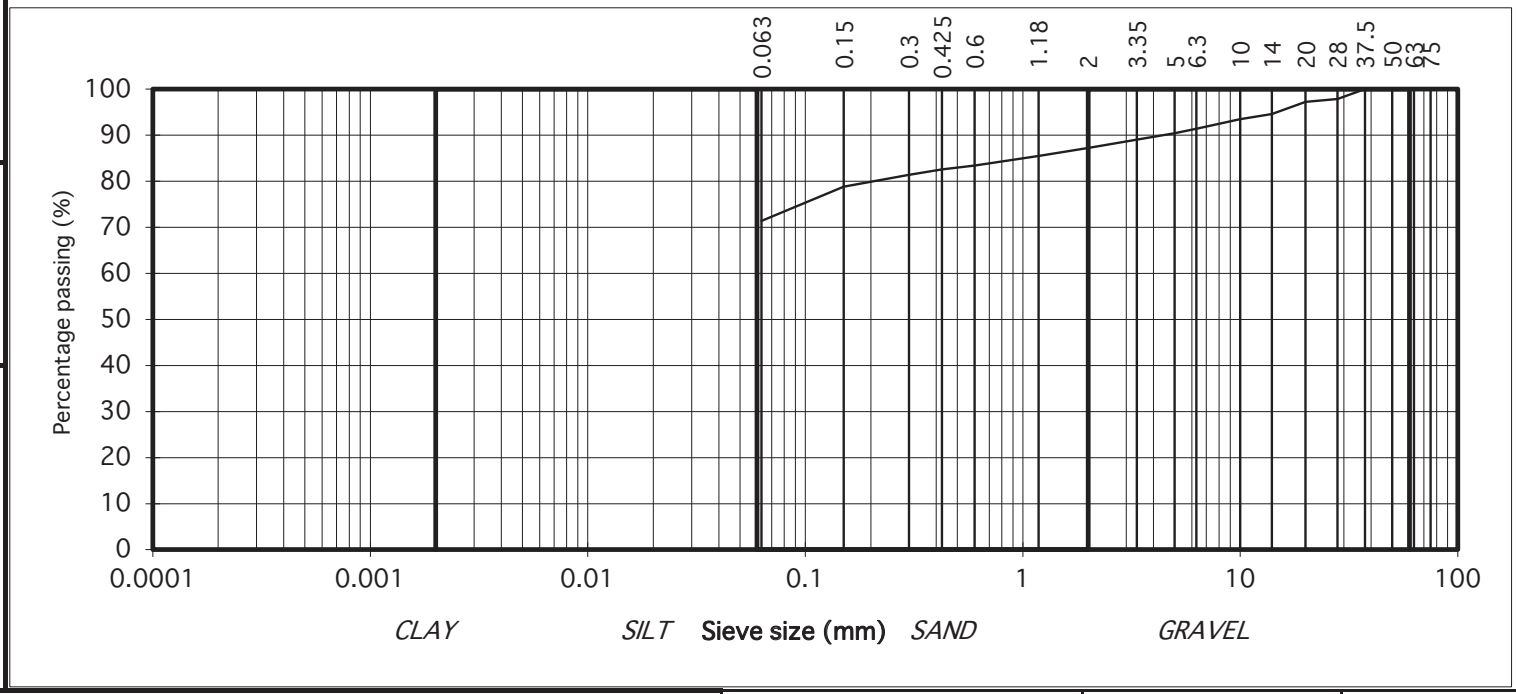
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	98	
20	97	
14	95	
10	94	
6.3	91	
5	90	
3.35	89	
2	87	
1.18	86	SAND
0.6	83	
0.425	83	
0.3	81	
0.15	79	
0.063	71	SILT/CLAY

Contract No. 25882 Report No. R171120
Contract Name : Gas to Edenderry
BH/TP No. BH25
Sample No.* AA222796 Lab. Sample No. A25/2538
Sample Type: B
Depth* (m) 4.00 Customer: MIL
Date Received 07/07/2025 Date Testing started 07/07/2025
Description: Brown slightly sandy, slightly gravelly, SILT/CLAY

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

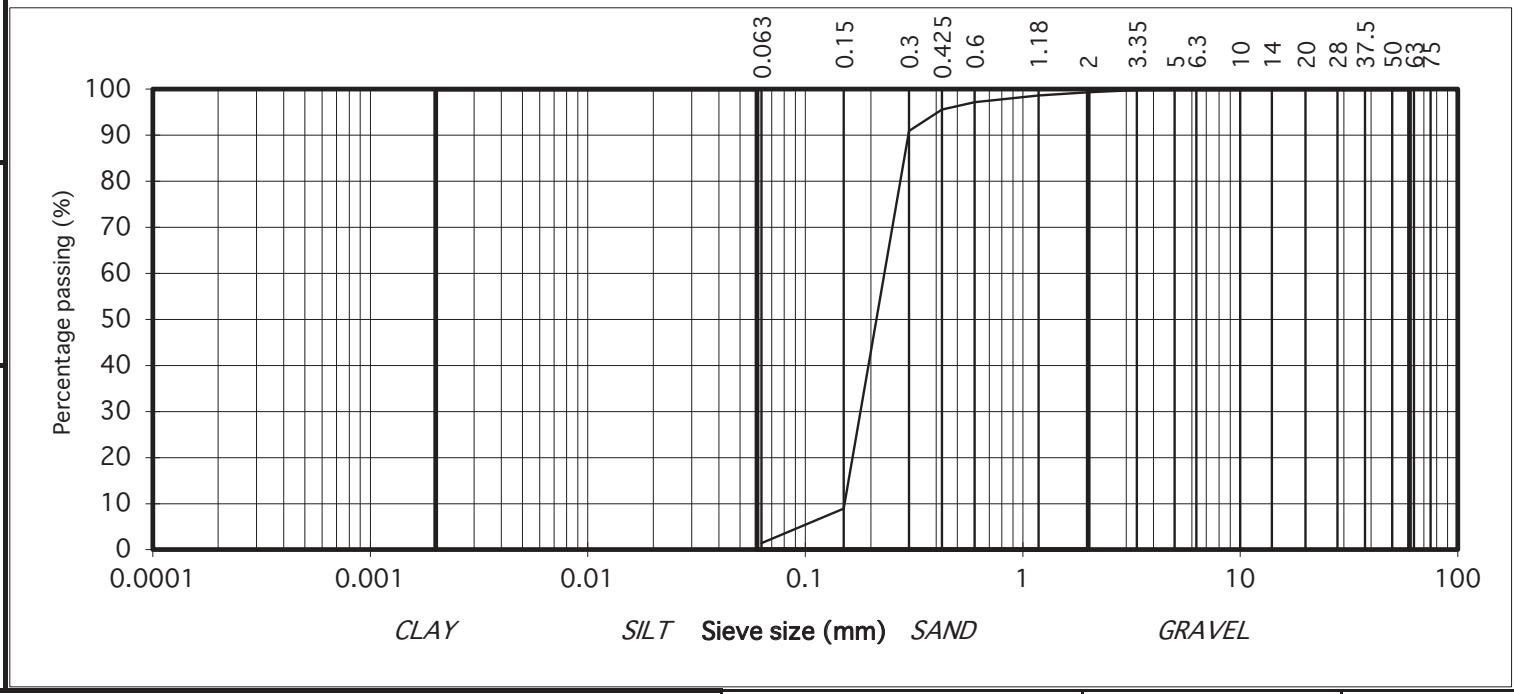
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	99	
1.18	99	SAND
0.6	97	
0.425	96	
0.3	91	
0.15	9	
0.063	1	SILT/CLAY

Contract No.	25882	Report No.	R171614	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH25			
Sample No.*	AA222798	Lab. Sample No.		A25/2539
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		07/07/2025
Description:	Grey slightly clayey/silty, slightly gravelly, SAND			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

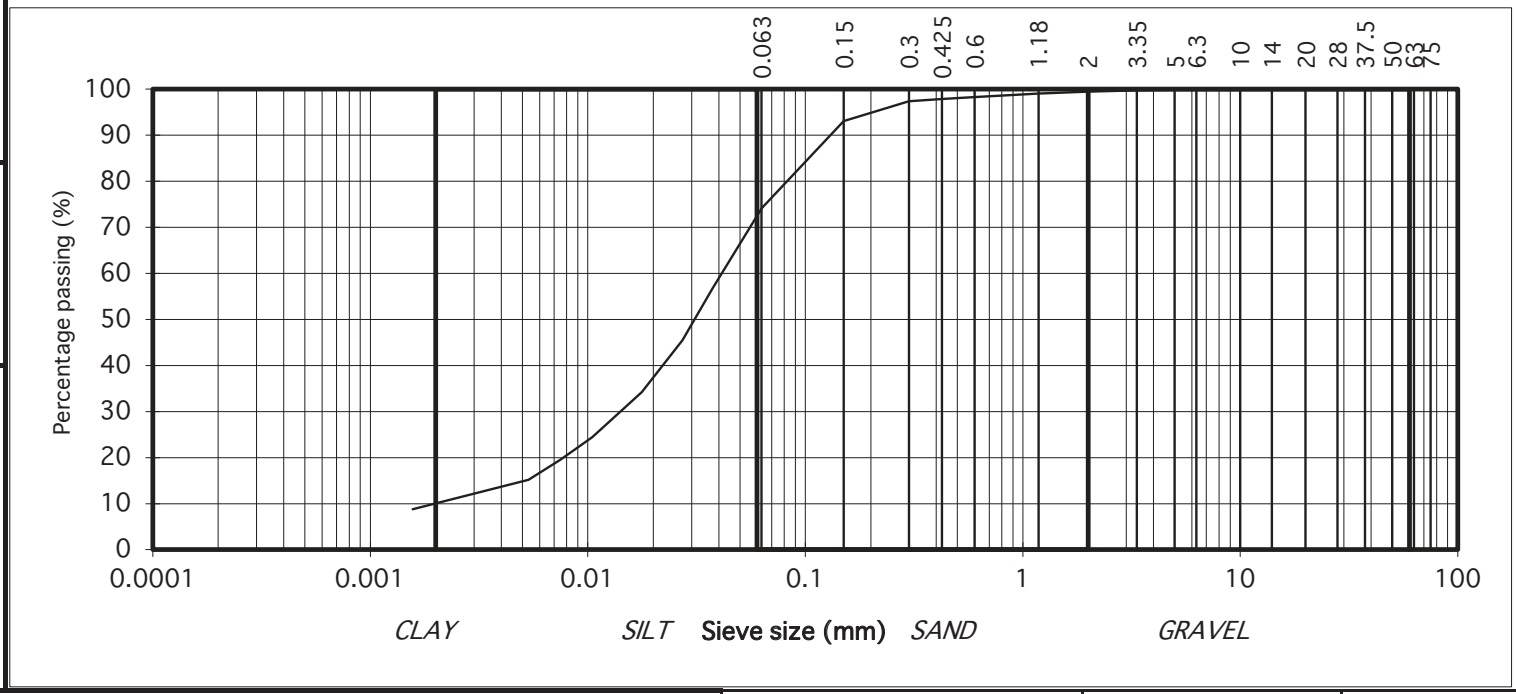
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	99	
1.18	99	SAND
0.6	98	
0.425	98	
0.3	97	
0.15	93	
0.063	74	SILT/CLAY
0.037	57	
0.027	45	
0.018	34	
0.010	24	
0.007	20	
0.005	15	
0.002	9	

Contract No.	25882	Report No.	R171118	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH25			
Sample No.*	AA222801	Lab. Sample No.		A25/2540
Sample Type:	B			
Depth* (m)	9.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		08/07/2025
Description:	Grey slightly sandy, slightly gravelly, SILT			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

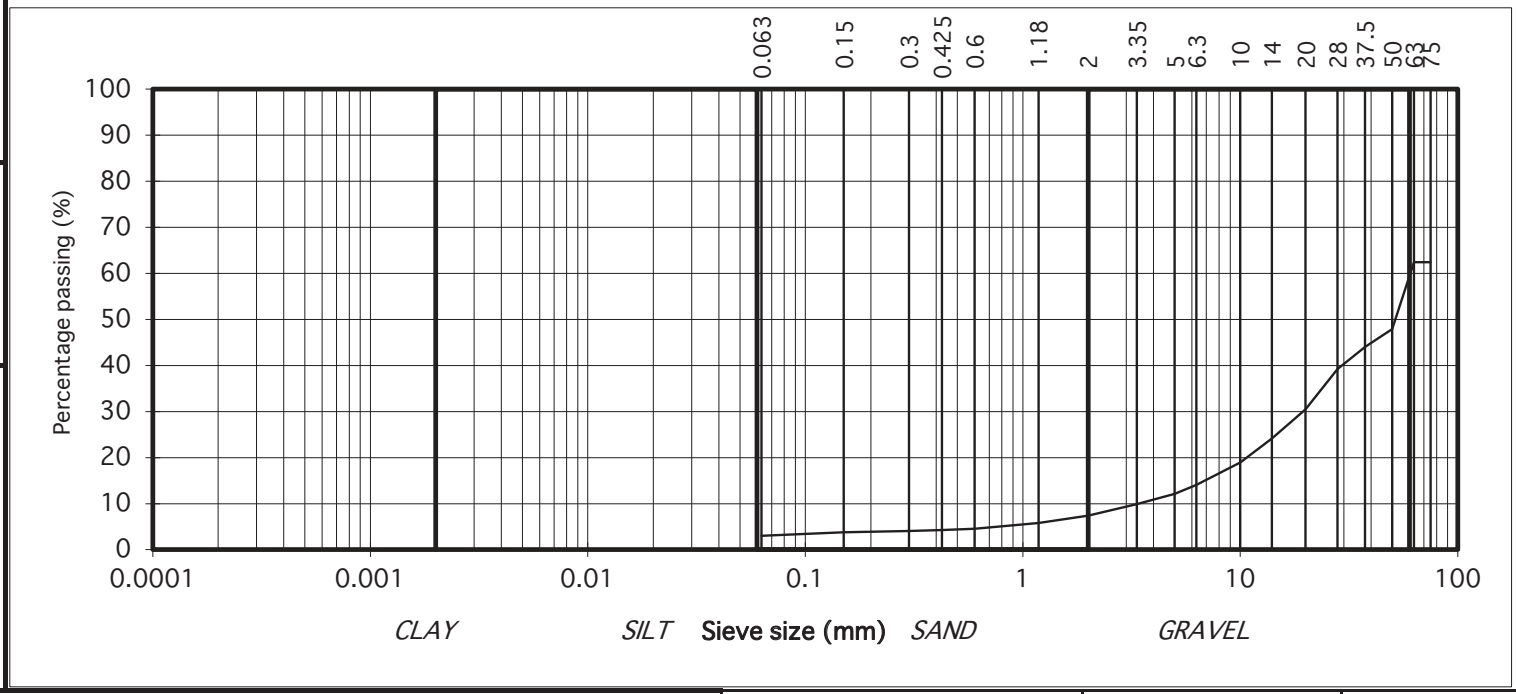
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	62	COBBLES
63	62	
50	48	GRAVEL
37.5	44	
28	39	
20	30	
14	24	
10	19	
6.3	14	
5	12	
3.35	10	
2	7	
1.18	6	SAND
0.6	5	
0.425	4	
0.3	4	
0.15	4	
0.063	3	SILT/CLAY

Contract No. 25882 Report No. R171113
Contract Name : Gas to Edenderry
BH/TP No. BH25
Sample No.* AA222803 Lab. Sample No. A25/2541
Sample Type: B
Depth* (m) 11.00 Customer: MIL
Date Received 07/07/2025 Date Testing started 07/07/2025
Description: Brown slightly clayey/silty, slightly sandy, GRAVEL with many cobbles

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

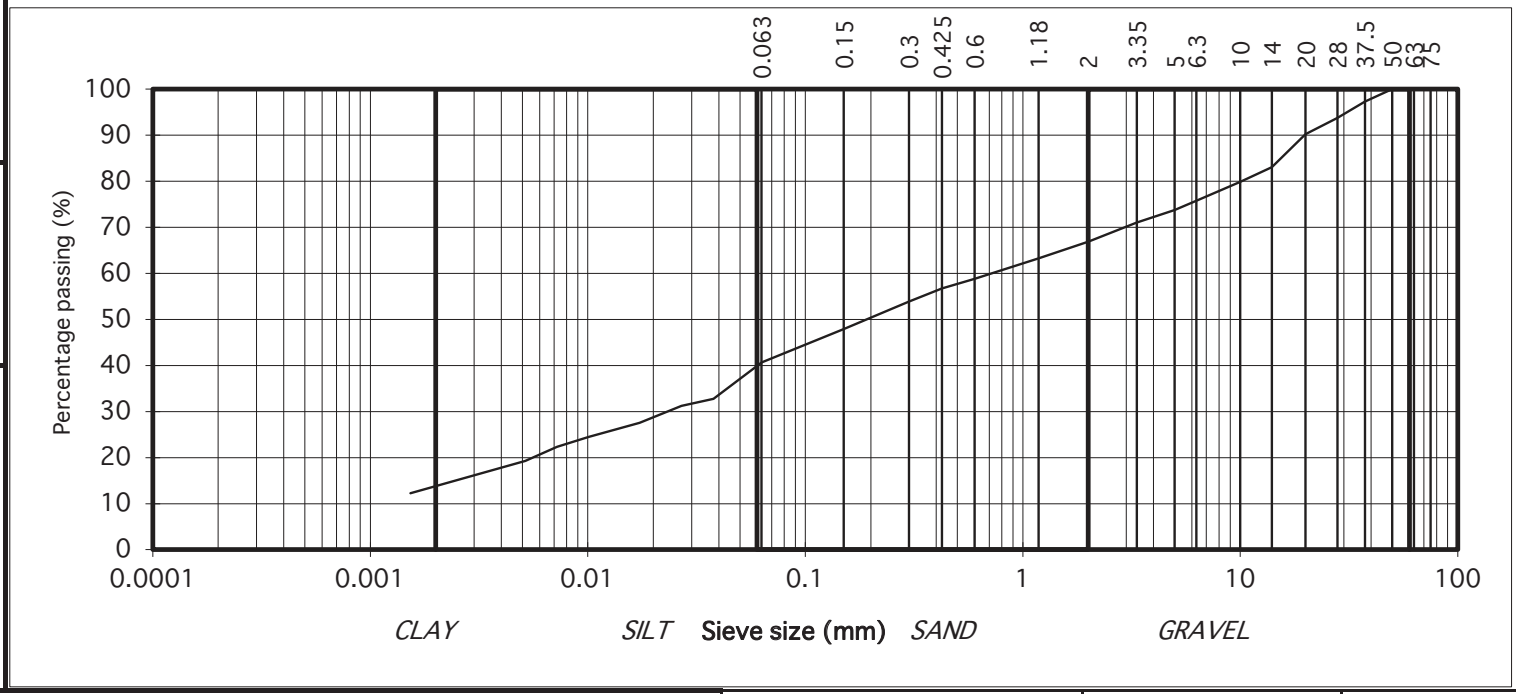
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	97	
28	94	
20	90	
14	83	
10	80	
6.3	76	
5	74	
3.35	71	
2	67	
1.18	63	SAND
0.6	59	
0.425	57	
0.3	54	
0.15	48	
0.063	41	SILT/CLAY
0.038	33	
0.027	31	
0.017	28	
0.010	24	
0.007	22	
0.005	19	
0.002	12	

Contract No.	25882	Report No.	R171124	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH51A			
Sample No.*	AA22805	Lab. Sample No.		A25/2543
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		07/07/2025
Description:	Brown slightly sandy, slightly gravelly, CLAY			

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

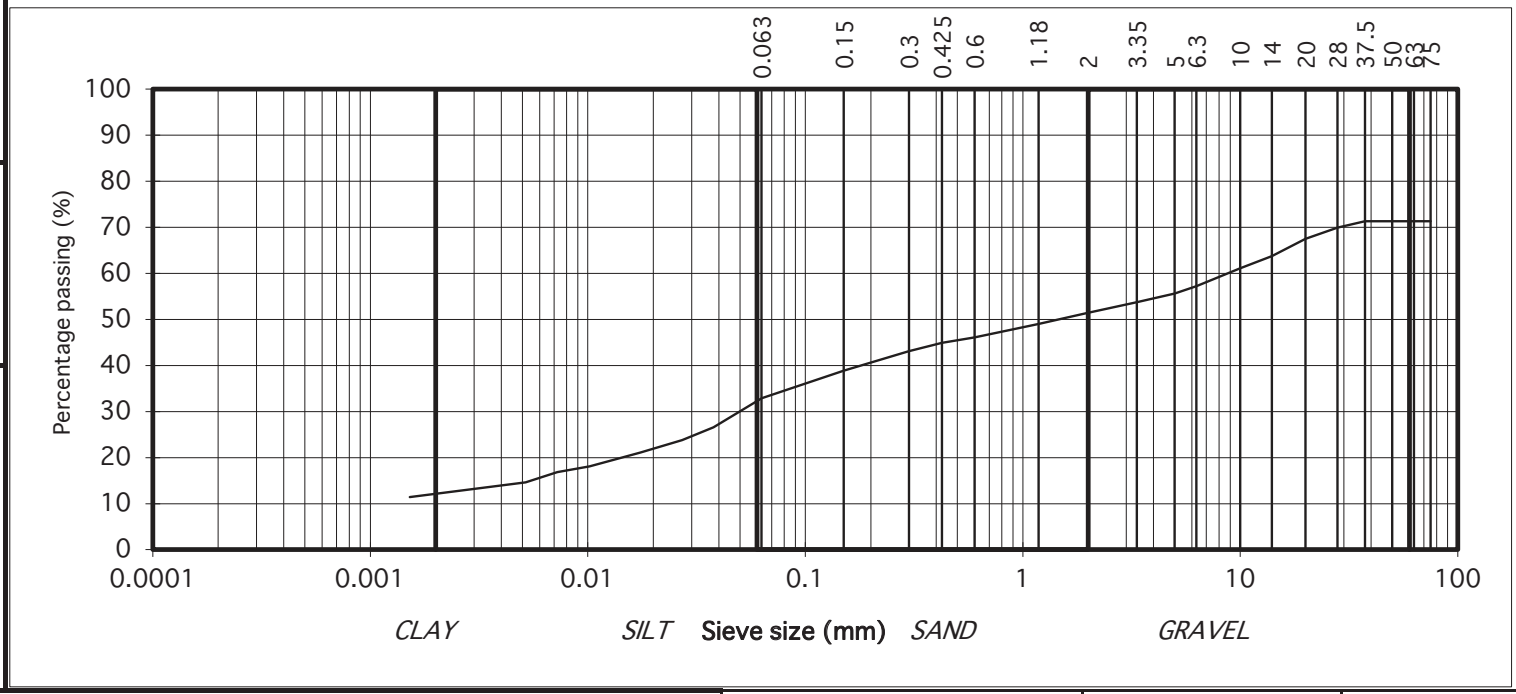
particle size	% passing	
75	71	COBBLES
63	71	
50	71	GRAVEL
37.5	71	
28	70	
20	67	
14	64	
10	61	
6.3	57	
5	56	
3.35	54	
2	51	
1.18	49	SAND
0.6	46	
0.425	45	
0.3	43	
0.15	39	
0.063	33	SILT/CLAY
0.038	27	
0.027	24	
0.017	21	
0.010	18	
0.007	17	
0.005	15	
0.002	11	

Contract No.	25882	Report No.	R171123	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH51A			
Sample No.*	AA22809	Lab. Sample No.		A25/2545
Sample Type:	B			
Depth* (m)	8.00	Customer:	MIL	
Date Received	07/07/2025	Date Testing started		07/07/2025
Description:	Brown slightly sandy, slightly gravelly, CLAY with many cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

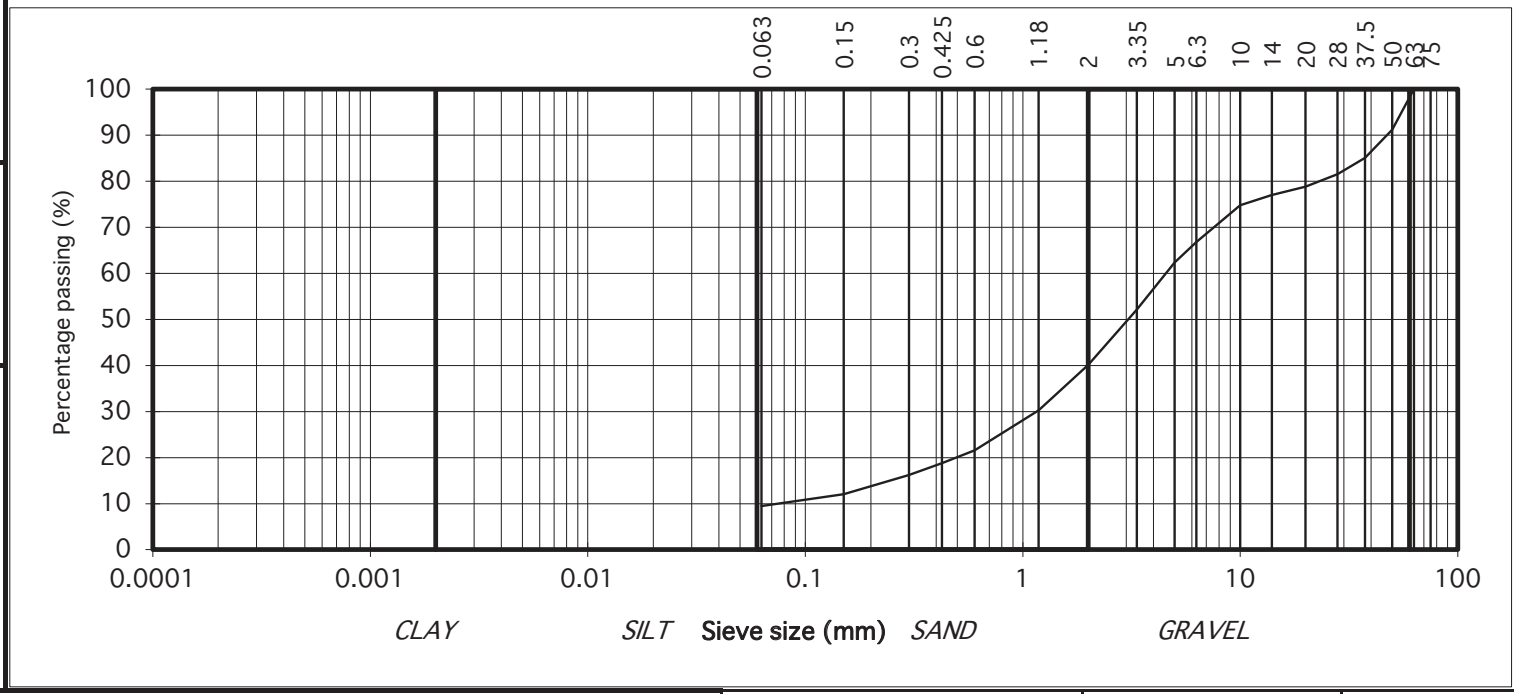
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	91	GRAVEL
37.5	85	
28	82	
20	79	
14	77	
10	75	
6.3	67	
5	62	
3.35	52	
2	40	
1.18	30	SAND
0.6	22	
0.425	19	
0.3	16	
0.15	12	
0.063	9	SILT/CLAY

Contract No.	25882	Report No.	R171122
Contract Name :	Gas to Edenderry		
BH/TP No.	BH51A		
Sample No.*	AA22811	Lab. Sample No.	A25/2546
Sample Type:	B		
Depth* (m)	10.00	Customer:	MIL
Date Received	07/07/2025	Date Testing started	07/07/2025
Description:	Brown clayey/silty, very sandy, GRAVEL		

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

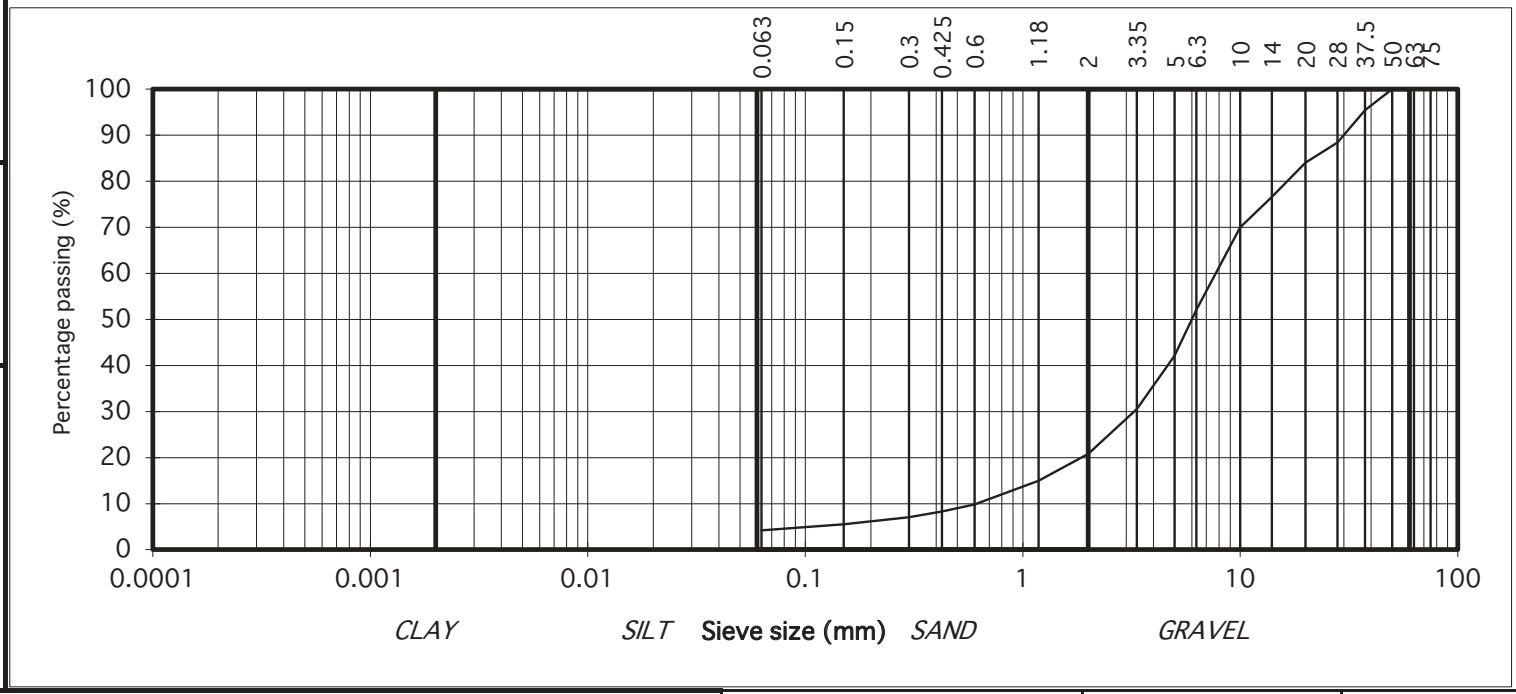
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	95	
28	88	
20	84	
14	77	
10	70	
6.3	52	
5	42	
3.35	31	
2	21	
1.18	15	SAND
0.6	10	
0.425	8	
0.3	7	
0.15	6	
0.063	4	SILT/CLAY

Contract No.	25882	Report No.	R171121
Contract Name :	Gas to Edenderry		
BH/TP No.	BH51A		
Sample No.*	AA22813	Lab. Sample No.	A25/2547
Sample Type:	B		
Depth* (m)	12.00	Customer:	MIL
Date Received	07/07/2025	Date Testing started	08/07/2025
Description:	Brown slightly clayey/silty, sandy, GRAVEL		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.1331

Report No. **R172042** Contract No. 25882 Contract Name: Gas to Edenderry

Customer MIL

Samples Received: 17/06/25 Date Tested: 07/07/25

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH15	0	1.0	A25/2703	U	12	24	NP	NP	58	WS	4.4		Brown sandy gravelly SILT
BH15	AA22353	3.0	A25/2704	B	9.5	25	12	13	50	WS	4.4	C L	Brown slightly sandy, gravelly, CLAY with some cobbles
BH15	AA22354	4.5	A25/2705	B	11	26	14	12	60	WS	4.4	C L	Brown sandy gravelly CLAY
BH15	AA22356	6.0	A25/2706	B	9.9	24	13	11	55	WS	4.4	C L	Brown slightly sandy, slightly gravelly, CLAY
BH23A	AA22825	1.0	A25/2712	B	29	54	NP	NP	82	WS	4.4		Brown sandy gravelly SILT
BH23A	AA22828	4.0	A25/2713	B	26	79	NP	NP	78	WS	4.4		Brown sandy gravelly SILT
BH53	AA213989	1.0	A25/2718	B	23	32	NP	NP	72	WS	4.4		Grey brown sandy gravelly SILT
BH53	0	3.0	A25/2719	U	15	20	NP	NP	81	WS	4.4		Brown sandy gravelly SILT
BH53	AA214000	12.0	A25/2724	B	4.7	26	13	13	37	WS	4.4	C L	Brown clayey, sandy, GRAVEL with many cobbles
BH54	AA22838	1.0	A25/2725	B	20	23	NP	NP	87	WS	4.4		Grey sandy gravelly SILT
BH54	0	3.0	A25/2726	U	20	26	NP	NP	100	WS	4.4		Brown sandy SILT
BH54	0	5.0	A25/2727	U	19	27	NP	NP	99	WS	4.4		Brown sandy SILT
BH54	0	7.0	A25/2728	U	24	29	NP	NP	100	WS	4.4		Brown sandy SILT
BH54	AA22846	9.0	A25/2729	B	8.5	26	14	12	50	WS	4.4	C L	Grey slightly sandy, gravelly, CLAY

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method
4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.
NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12.
Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.
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IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by: H Byrne

Date: 07/08/25

Page: 1 of 1

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

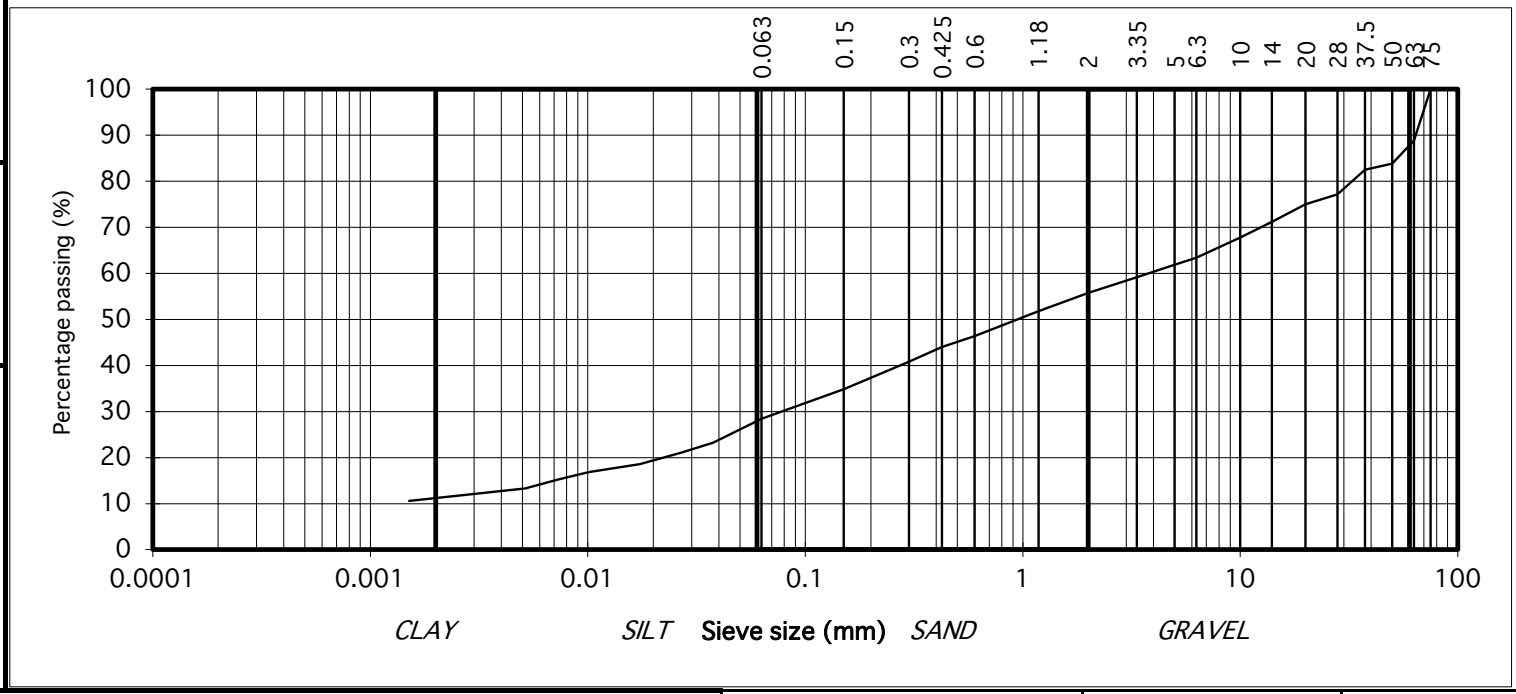
particle size	% passing	
75	100	COBBLES
63	89	
50	84	GRAVEL
37.5	82	
28	77	
20	75	
14	71	
10	68	
6.3	63	
5	62	
3.35	59	
2	56	
1.18	52	SAND
0.6	46	
0.425	44	
0.3	41	
0.15	35	
0.063	28	SILT/CLAY
0.038	23	
0.027	21	
0.017	19	
0.010	17	
0.007	15	
0.005	13	
0.002	11	

Contract No.	25882	Report No.	R172271	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH15			
Sample No.*	AA22353	Lab. Sample No.		A25/2704
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	17/06/2025	Date Testing started		16/08/2025
Description:	Brown slightly sandy, gravelly, CLAY with some cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

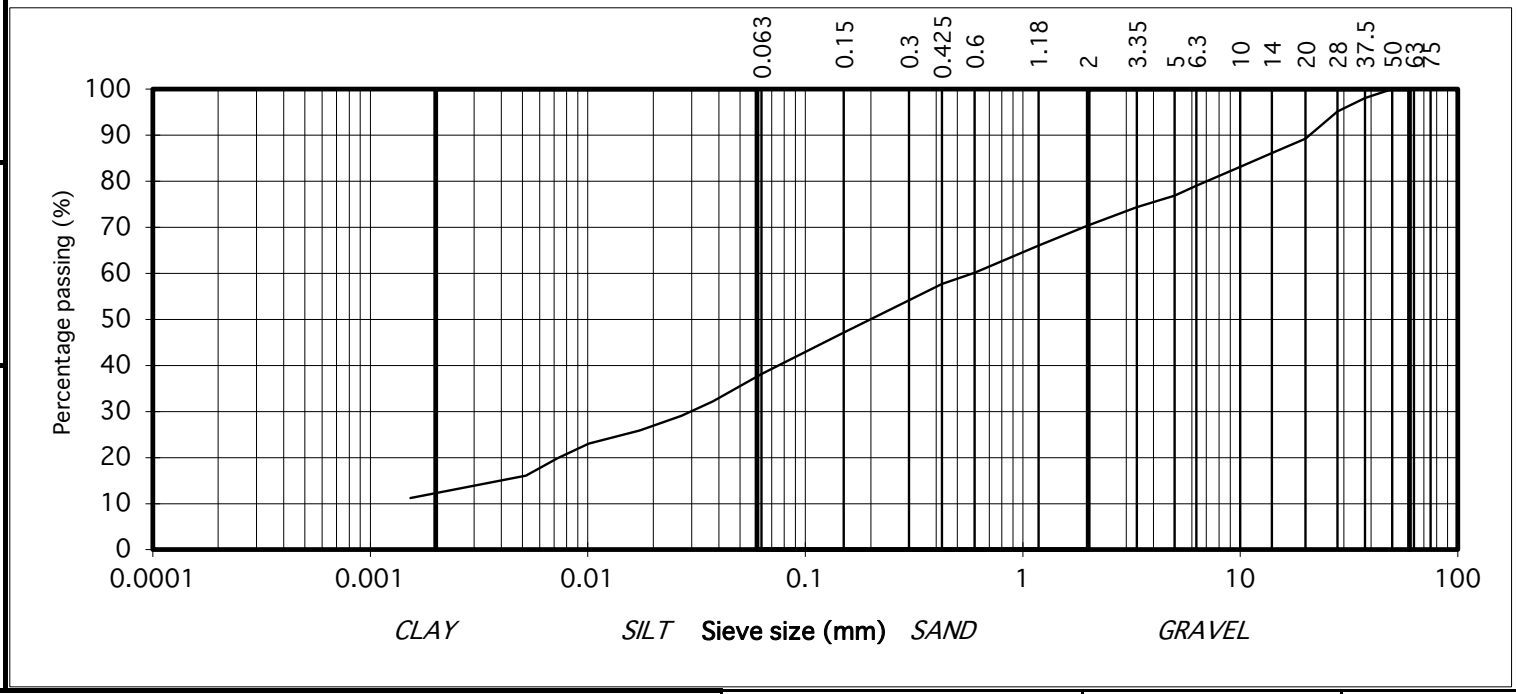
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	98	
28	95	
20	89	
14	86	
10	83	
6.3	79	
5	77	
3.35	74	
2	70	
1.18	66	SAND
0.6	60	
0.425	58	
0.3	54	
0.15	47	
0.063	38	SILT/CLAY
0.038	32	
0.027	29	
0.017	26	
0.010	23	
0.007	20	
0.005	16	
0.002	11	

Contract No.	25882	Report No.	R172221	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH15			
Sample No.*	AA22356	Lab. Sample No.		A25/2706
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	17/06/2025	Date Testing started		01/08/2025
Description:	Brown slightly sandy, slightly gravelly, CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

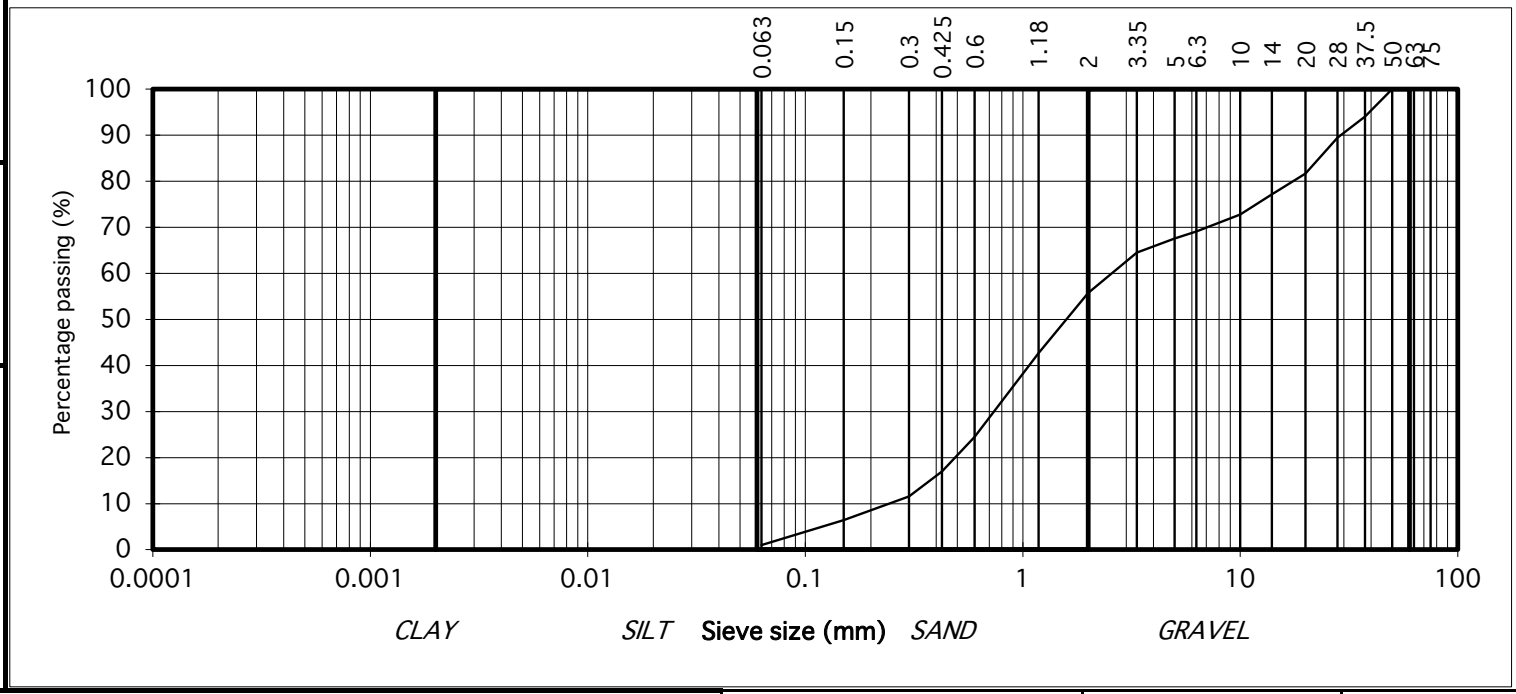
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	94	
28	89	
20	82	
14	77	
10	73	
6.3	69	
5	68	
3.35	64	
2	56	
1.18	43	SAND
0.6	25	
0.425	17	
0.3	12	
0.15	6	
0.063	1	SILT/CLAY

Contract No.	25882	Report No.	R172258
Contract Name :	Gas to Edenderry		
BH/TP No.	BH22		
Sample No.*	AA22515	Lab. Sample No.	A25/2707
Sample Type:	B		
Depth* (m)	1.00	Customer:	MIL
Date Received	17/06/2025	Date Testing started	16/08/2025
Description:	Grey slightly clayey, very gravelly, SAND		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

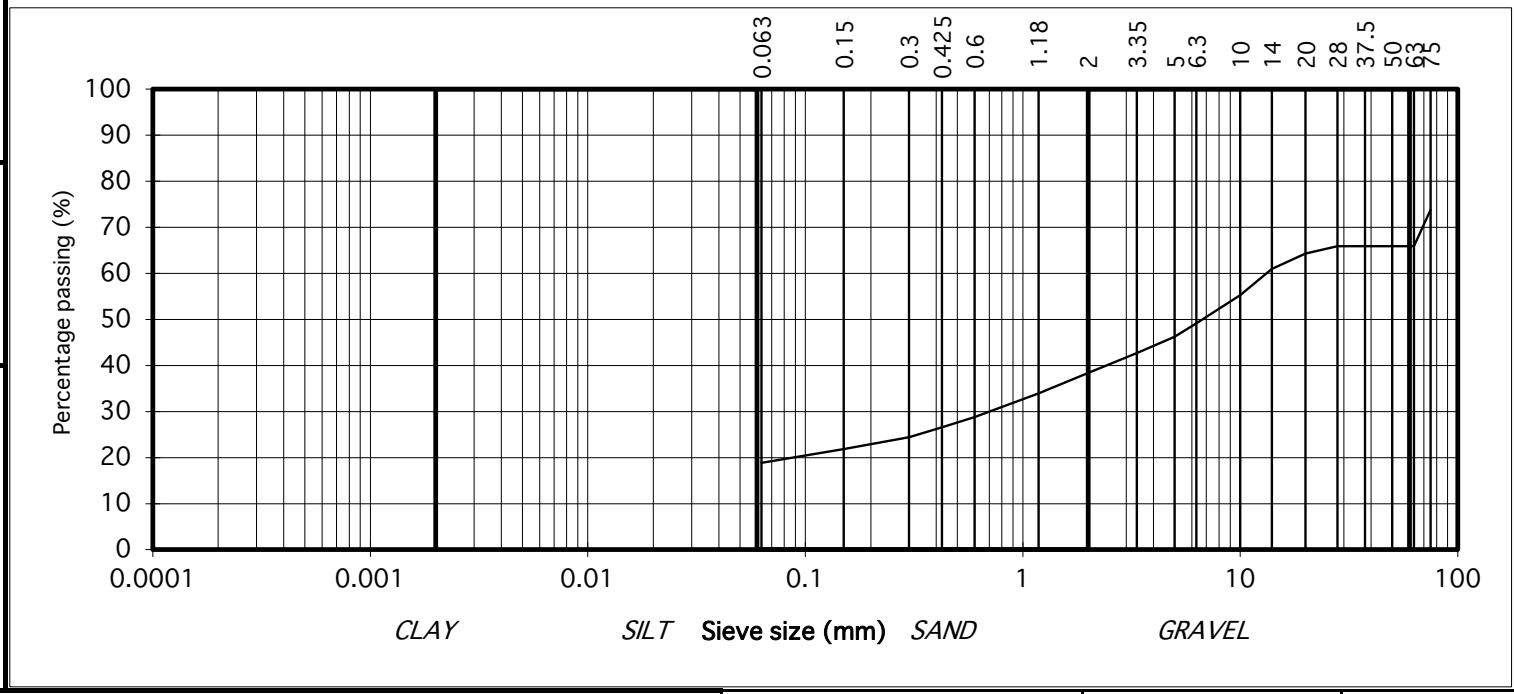
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	74	COBBLES
63	66	
50	66	GRAVEL
37.5	66	
28	66	
20	64	
14	61	
10	55	
6.3	49	
5	46	
3.35	43	
2	38	
1.18	34	SAND
0.6	29	
0.425	27	
0.3	24	
0.15	22	
0.063	19	SILT/CLAY

Contract No.	25882	Report No.	R1712045
Contract Name :	Gas to Edenderry		
BH/TP No.	BH22		
Sample No.*	AA22537	Lab. Sample No.	A25/2708
Sample Type:	B		
Depth* (m)	3.00	Customer:	MIL
Date Received	17/06/2025	Date Testing started	02/08/2025
Description:	Brown clayey, sandy, GRAVEL with many cobbles		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

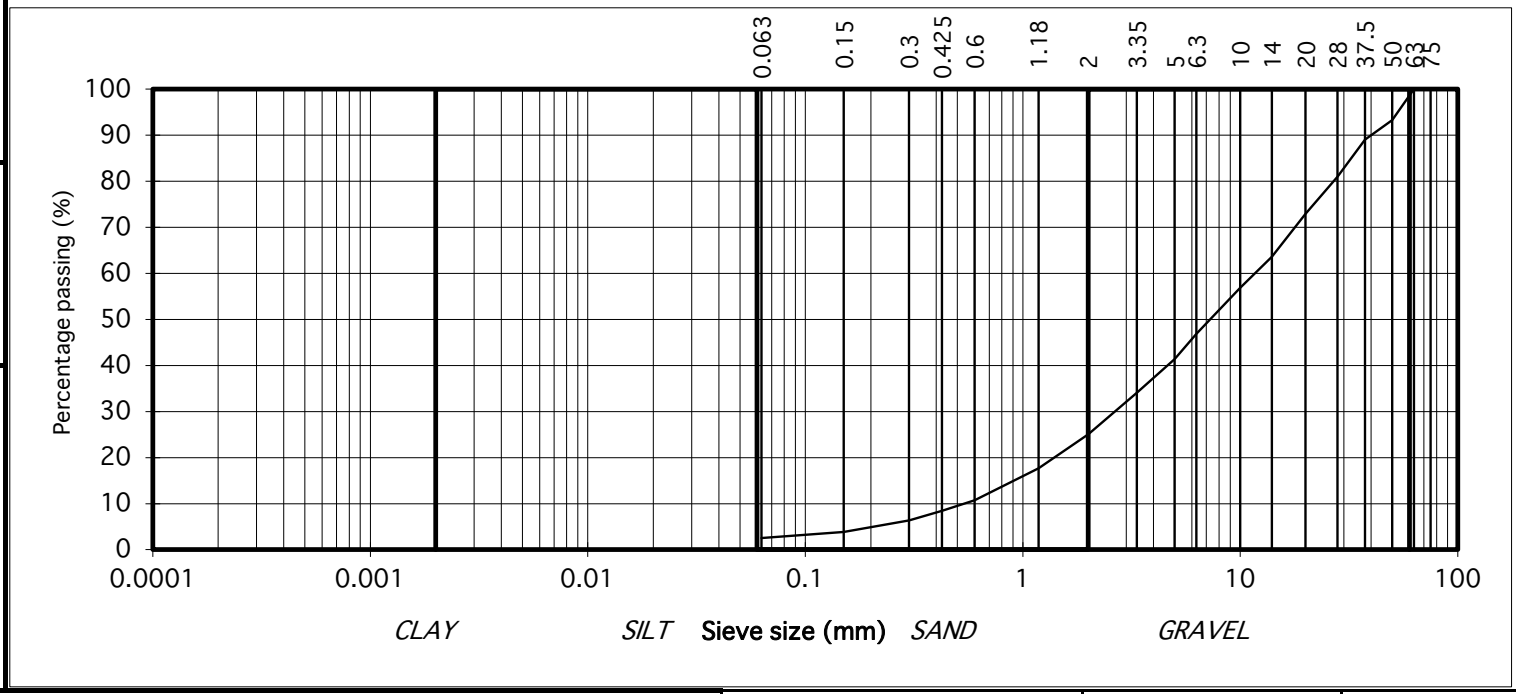
particle size	% passing	
75	100	COBBLES
63	100	
50	93	GRAVEL
37.5	89	
28	81	
20	73	
14	64	
10	57	
6.3	47	
5	41	
3.35	34	
2	25	
1.18	18	SAND
0.6	11	
0.425	8	
0.3	6	
0.15	4	
0.063	2	SILT/CLAY

Contract No.	25882	Report No.	R172272	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH22			
Sample No.*	AA22539	Lab. Sample No.		A25/2709
Sample Type:	B			
Depth* (m)	5.00	Customer:	MIL	
Date Received	17/06/2025	Date Testing started		16/08/2025
Description:	Grey slightly clayey/silty, very sandy, GRAVEL			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

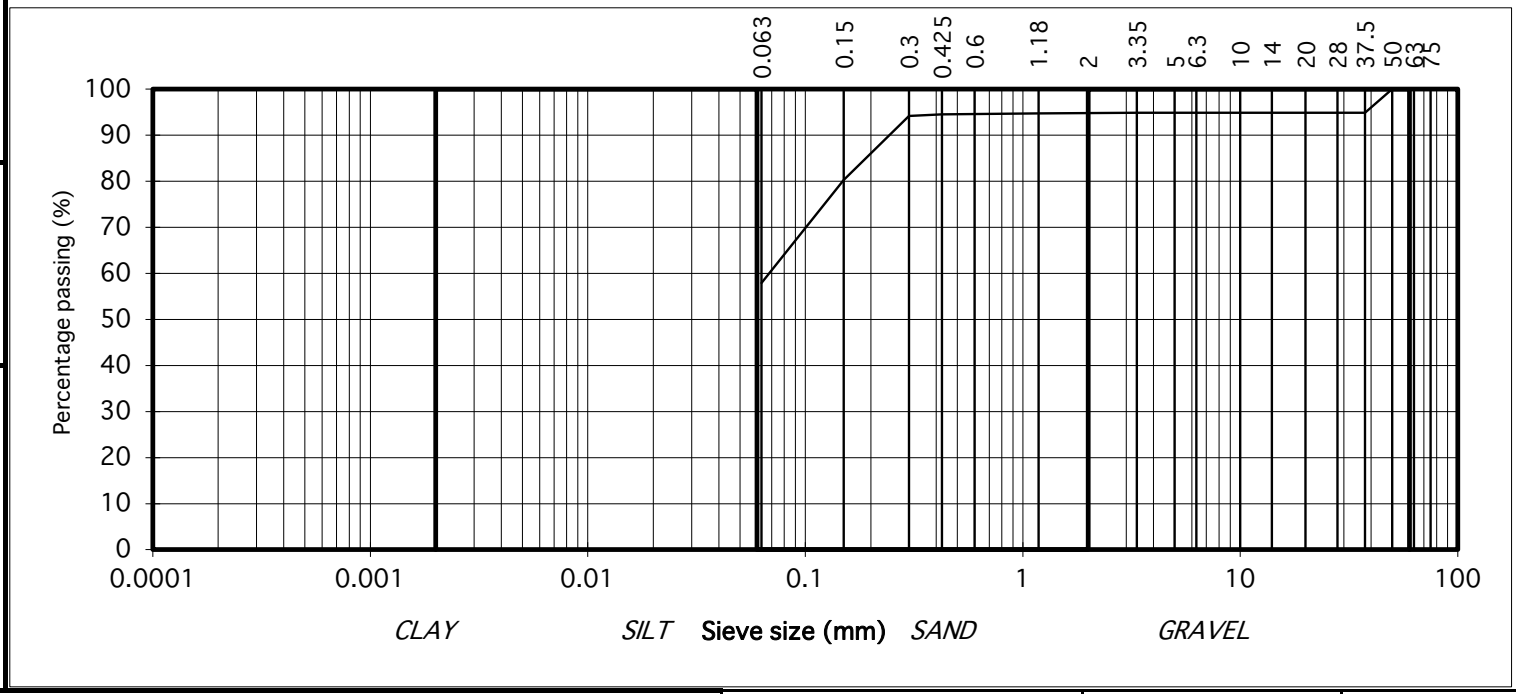
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	95	
28	95	
20	95	
14	95	
10	95	
6.3	95	
5	95	
3.35	95	
2	95	
1.18	95	SAND
0.6	95	
0.425	95	
0.3	94	
0.15	80	
0.063	58	SILT/CLAY

Contract No.	25882	Report No.	R172222	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH22			
Sample No.*	AA22541	Lab. Sample No.		A25/2710
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	17/06/2025	Date Testing started		02/08/2025
Description:	Brown sandy, slightly gravelly, CLAY			

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	21/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

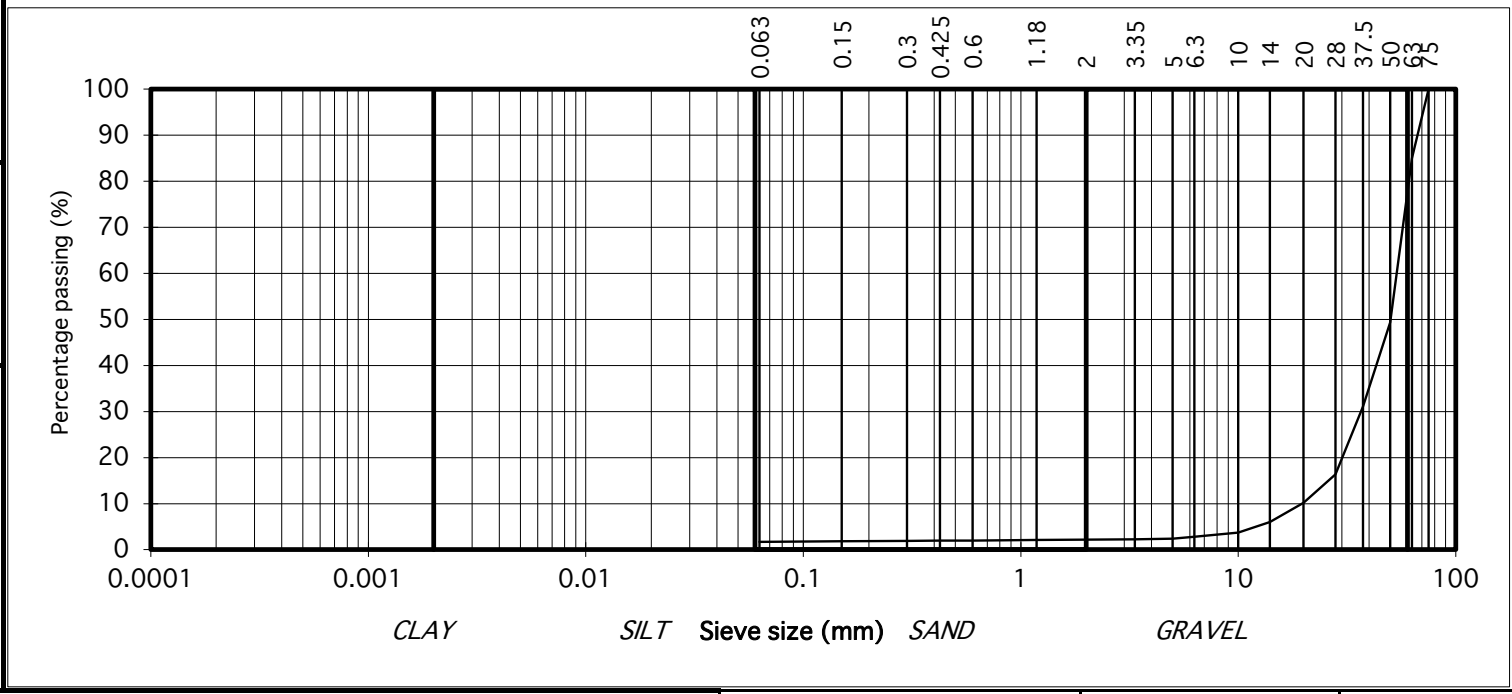
particle size	% passing	
75	100	COBBLES
63	85	
50	49	GRAVEL
37.5	31	
28	16	
20	10	
14	6	
10	4	
6.3	3	
5	2	
3.35	2	
2	2	
1.18	2	SAND
0.6	2	
0.425	2	
0.3	2	
0.15	2	
0.063	2	SILT/CLAY

Contract No.	25882	Report No.	R1712047	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH22			
Sample No.*	AA22543	Lab. Sample No.		A25/2711
Sample Type:	B			
Depth* (m)	9.00	Customer:	MIL	
Date Received	17/06/2025	Date Testing started		02/08/2025
Description:	Brown slightly clayey, GRAVEL with some cobbles			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	19/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

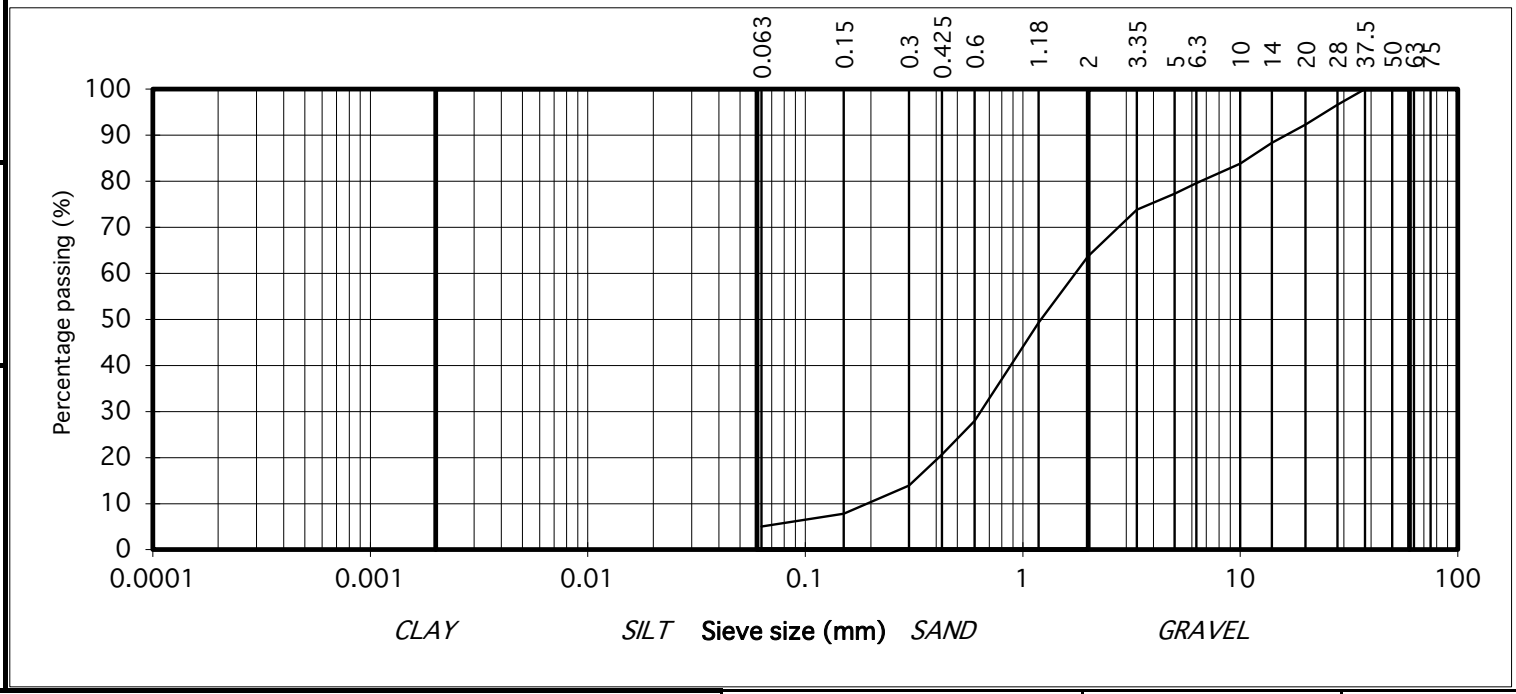
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	97	
20	92	
14	88	
10	84	
6.3	80	
5	77	
3.35	74	
2	64	
1.18	49	SAND
0.6	28	
0.425	21	
0.3	14	
0.15	8	
0.063	5	SILT/CLAY

Contract No.	25882	Report No.	R172259
Contract Name :	Gas to Edenderry		
BH/TP No.	BH23A		
Sample No.*	AA22830	Lab. Sample No.	A25/2714
Sample Type:	B		
Depth* (m)	6.00	Customer:	MIL
Date Received	17/06/2025	Date Testing started	16/08/2025
Description:	Grey clayey, very gravelly, SAND		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
H Byrne	25/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

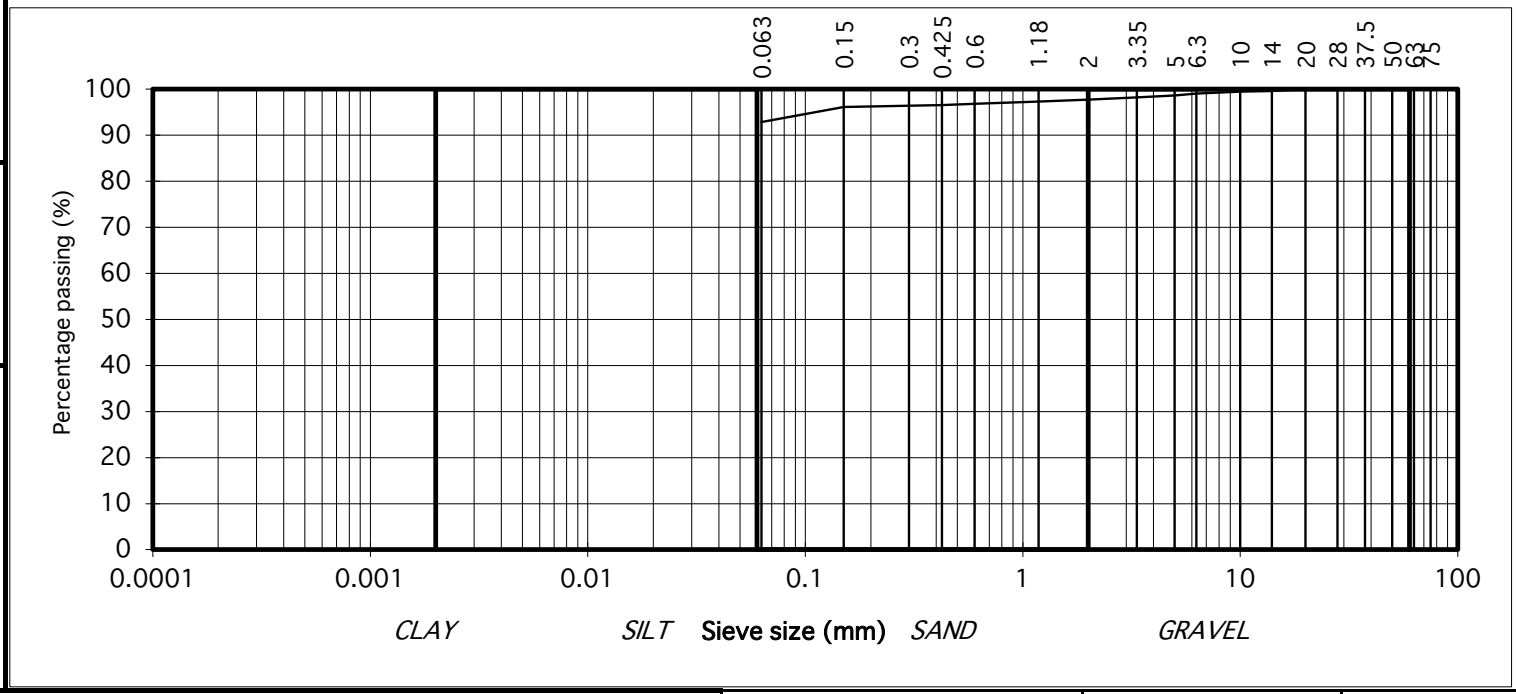
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	99	
6.3	99	
5	99	
3.35	98	
2	98	
1.18	97	SAND
0.6	97	
0.425	97	
0.3	96	
0.15	96	
0.063	93	SILT/CLAY

Contract No.	25882	Report No.	R1712048	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH23A			
Sample No.*	AA22832	Lab. Sample No.		A25/2715
Sample Type:	B			
Depth* (m)	8.00	Customer:	MIL	
Date Received	17/06/2025	Date Testing started		02/08/2025
Description:	Brown slightly sandy, slightly gravelly, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	19/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

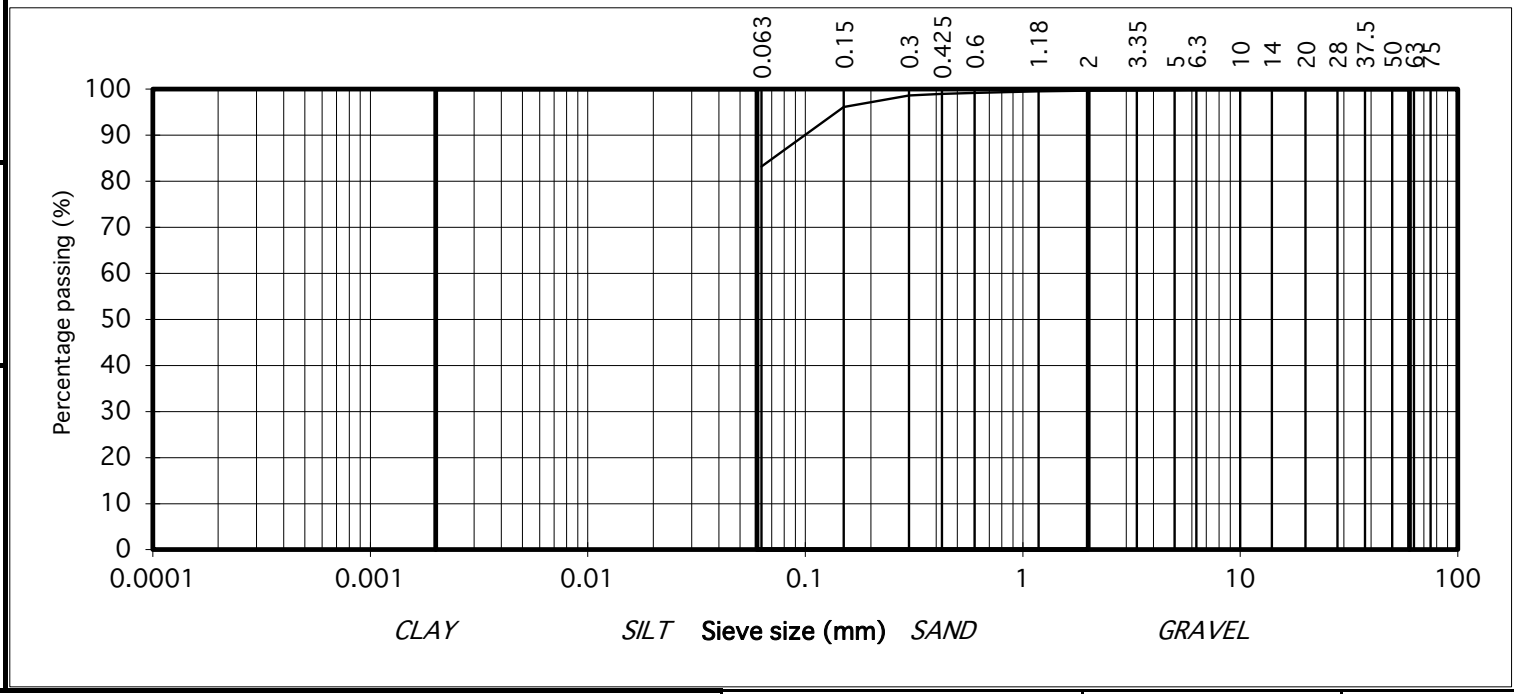
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	99	
0.425	99	
0.3	99	
0.15	96	
0.063	83	SILT/CLAY

Contract No.	25882	Report No.	R1712049	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH23A			
Sample No.*	AA22834	Lab. Sample No.		A25/2716
Sample Type:	B			
Depth* (m)	10.00	Customer:	MIL	
Date Received	17/06/2025	Date Testing started		02/08/2025
Description:	Grey/brown slightly sandy, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	19/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

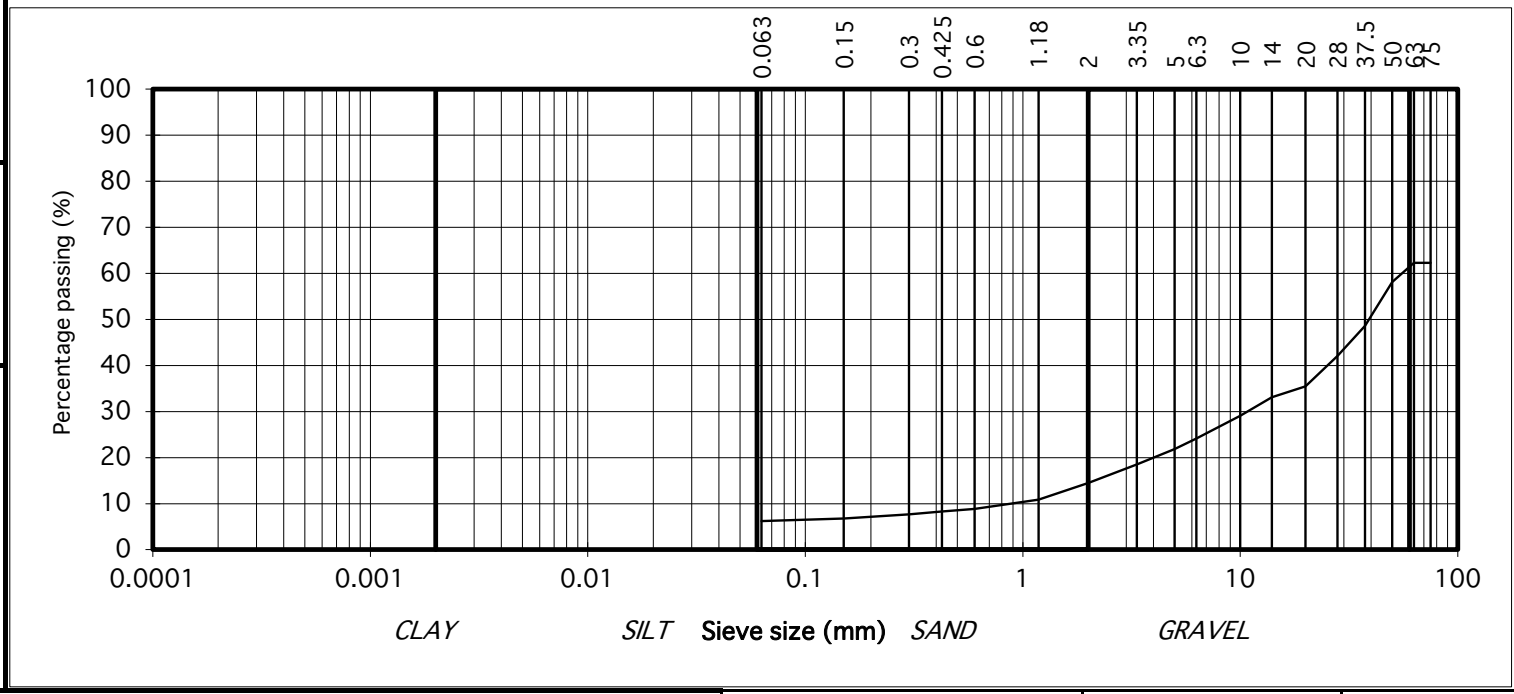
particle size	% passing	
75	62	COBBLES
63	62	
50	58	GRAVEL
37.5	49	
28	42	
20	35	
14	33	
10	29	
6.3	24	
5	22	
3.35	19	
2	15	
1.18	11	SAND
0.6	9	
0.425	8	
0.3	8	
0.15	7	
0.063	6	SILT/CLAY

Contract No.	25882	Report No.	R172260
Contract Name :	Gas to Edenderry		
BH/TP No.	BH23A		
Sample No.*	AA22836	Lab. Sample No.	A25/2717
Sample Type:	B		
Depth* (m)	12.00	Customer:	MIL
Date Received	17/06/2025	Date Testing started	01/08/2025
Description:	Brown clayey, sandy, GRAVEL with many cobbles		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

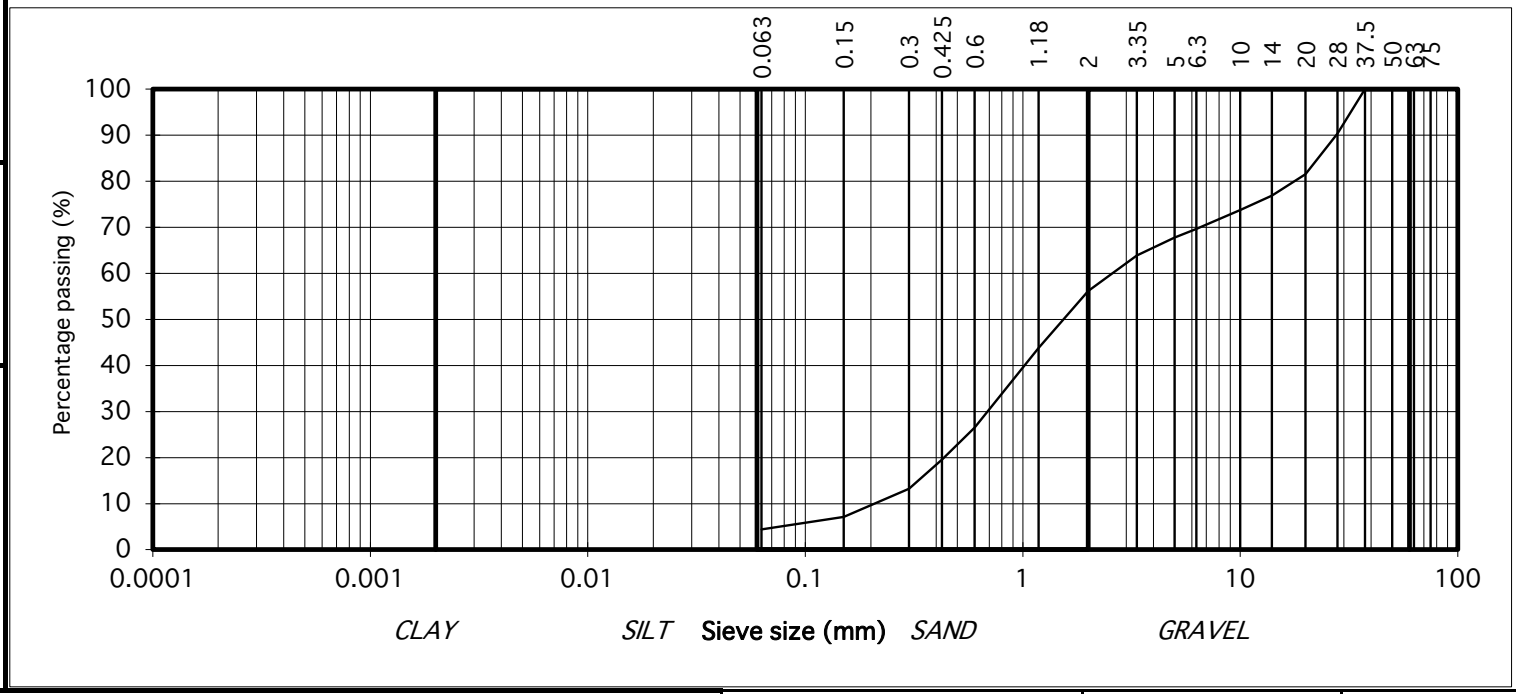
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	90	
20	82	
14	77	
10	74	
6.3	70	
5	68	
3.35	64	
2	56	
1.18	44	SAND
0.6	26	
0.425	20	
0.3	13	
0.15	7	
0.063	4	SILT/CLAY

Contract No.	25882	Report No.	R172261
Contract Name :	Gas to Edenderry		
BH/TP No.	BH53		
Sample No.*	AA213992	Lab. Sample No.	A25/2720
Sample Type:	B		
Depth* (m)	5.50	Customer:	MIL
Date Received	17/06/2025	Date Testing started	16/08/2025
Description:	Grey slightly clayey, very gravelly, SAND		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

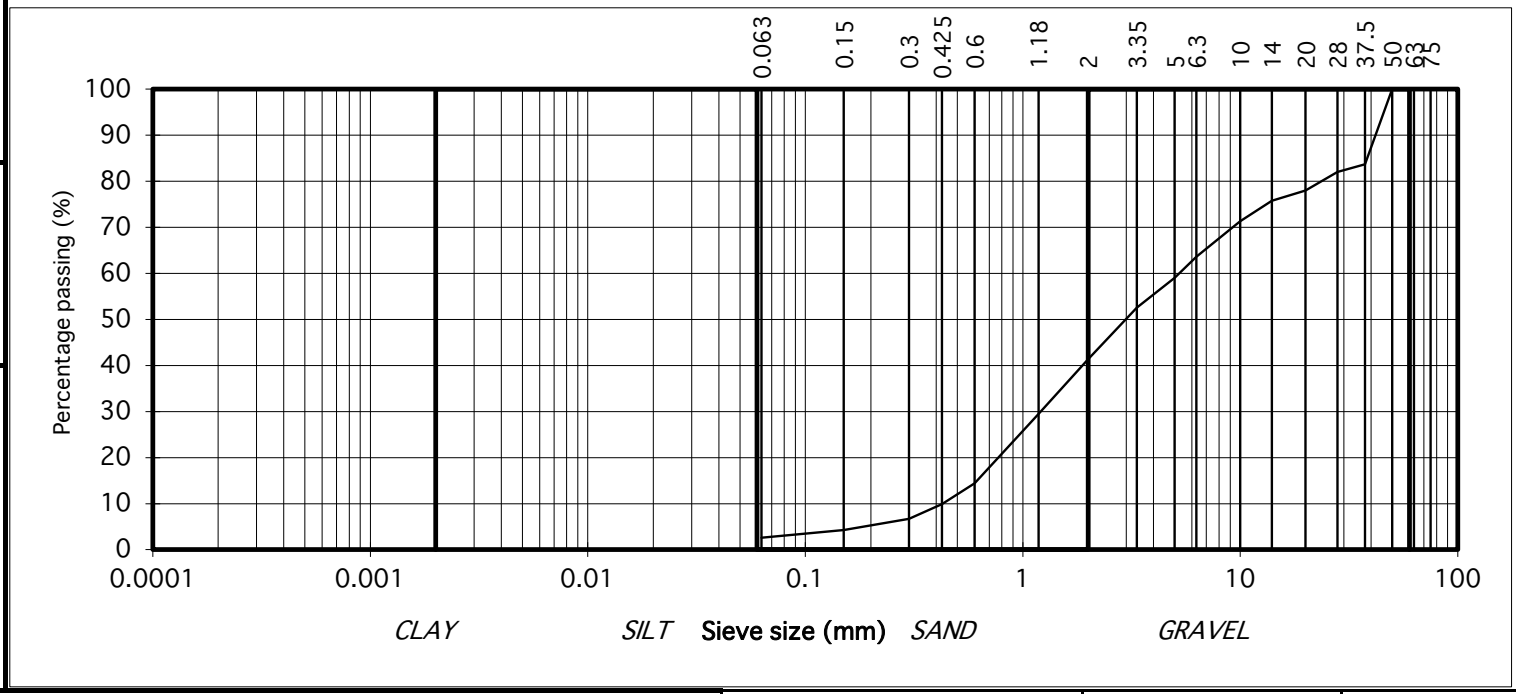
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	84	
28	82	
20	78	
14	76	
10	71	
6.3	64	
5	59	
3.35	53	
2	41	
1.18	30	SAND
0.6	14	
0.425	10	
0.3	7	
0.15	4	
0.063	3	SILT/CLAY

Contract No.	25882	Report No.	R172262
Contract Name :	Gas to Edenderry		
BH/TP No.	BH53		
Sample No.*	AA213994	Lab. Sample No.	A25/2721
Sample Type:	B		
Depth* (m)	7.00	Customer:	MIL
Date Received	17/06/2025	Date Testing started	16/08/2025
Description:	Grey slightly clayey, very sandy, GRAVEL		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
H Byrne	25/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

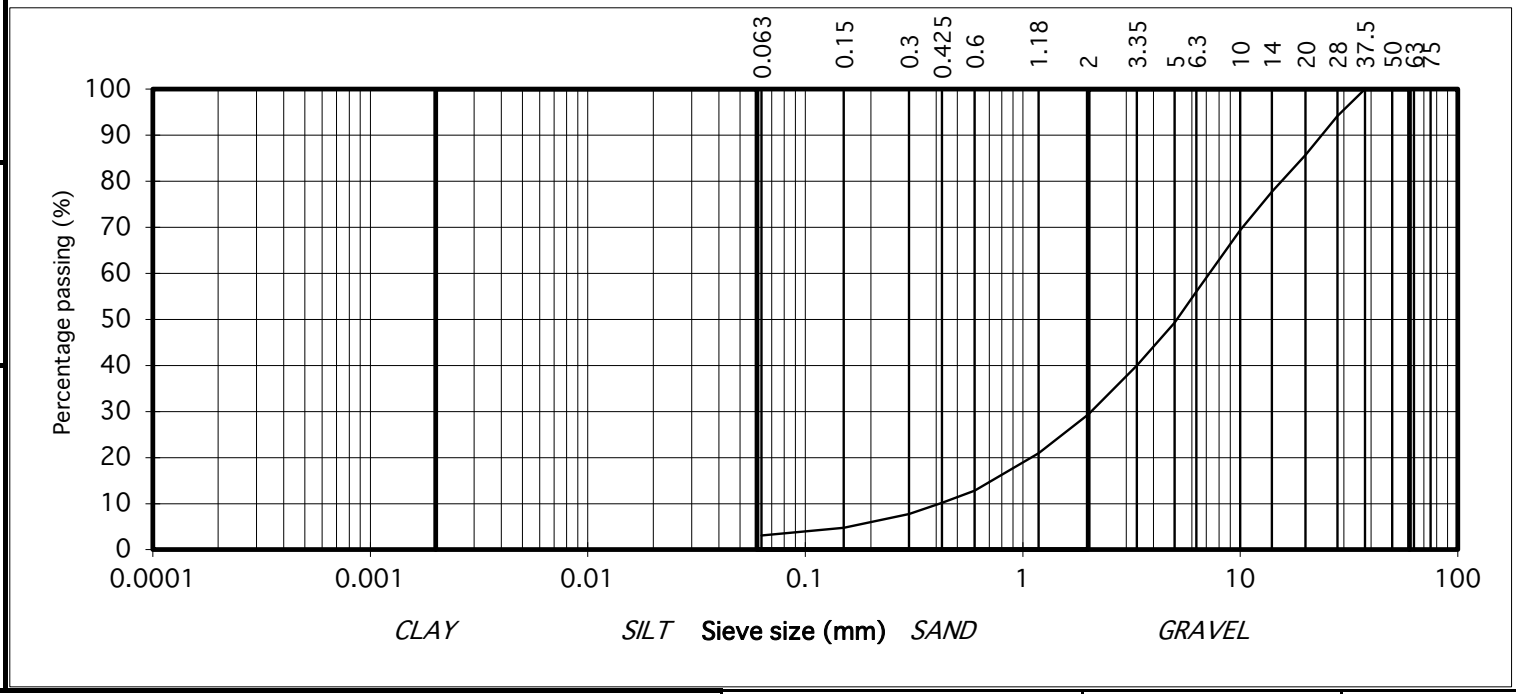
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	94	
20	86	
14	78	
10	69	
6.3	56	
5	49	
3.35	40	
2	29	
1.18	21	SAND
0.6	13	
0.425	10	
0.3	8	
0.15	5	
0.063	3	SILT/CLAY

Contract No.	25882	Report No.	R172268	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH53			
Sample No.*	AA213996	Lab. Sample No.		A25/2722
Sample Type:	B			
Depth* (m)	9.00	Customer:	MIL	
Date Received	17/06/2025	Date Testing started		16/08/2025
Description:	Grey slightly clayey/silty, very sandy, GRAVEL			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

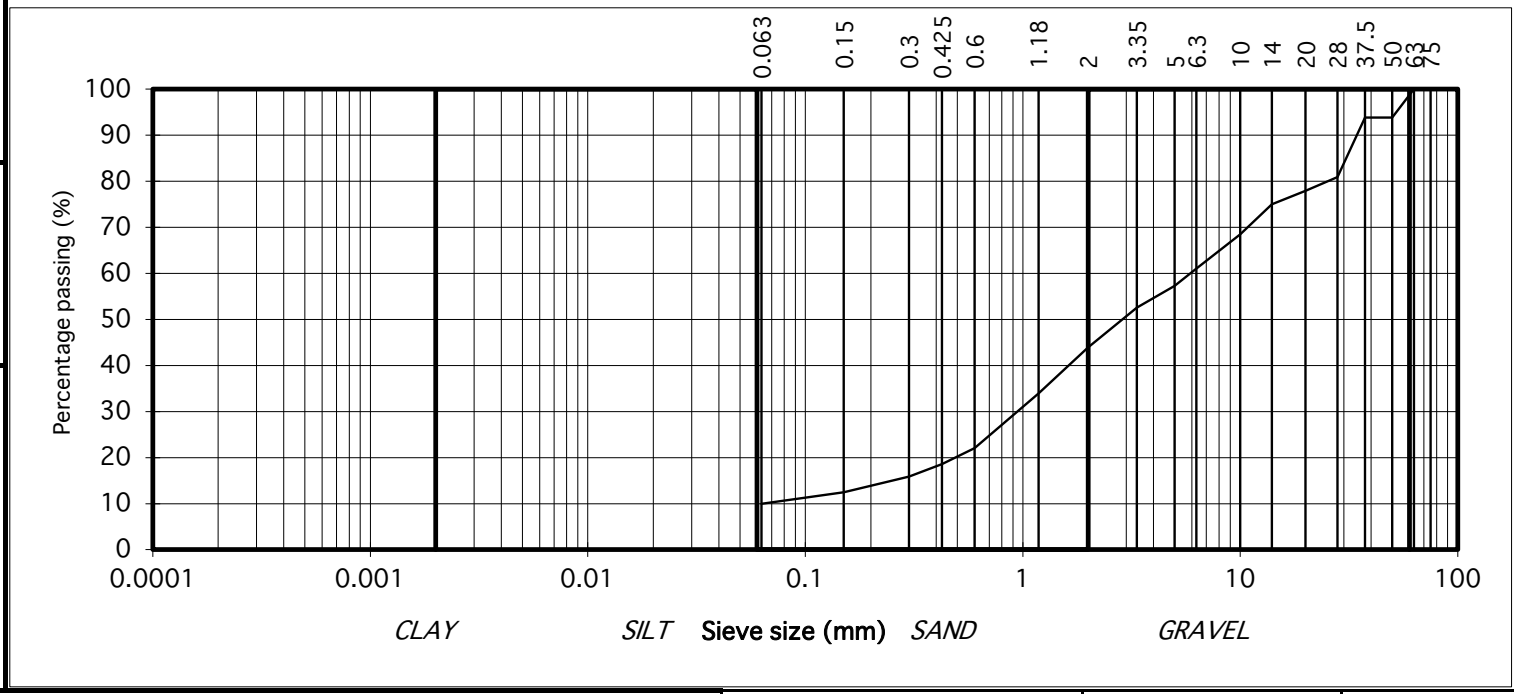
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	94	GRAVEL
37.5	94	
28	81	
20	78	
14	75	
10	68	
6.3	61	
5	57	
3.35	53	
2	44	
1.18	34	SAND
0.6	22	
0.425	19	
0.3	16	
0.15	12	
0.063	10	SILT/CLAY

Contract No.	25882	Report No.	R172269	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH53			
Sample No.*	AA213998	Lab. Sample No.		A25/2723
Sample Type:	B			
Depth* (m)	11.00	Customer:	MIL	
Date Received	17/06/2025	Date Testing started		16/08/2025
Description:	Grey clayey/silty, very sandy, GRAVEL			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

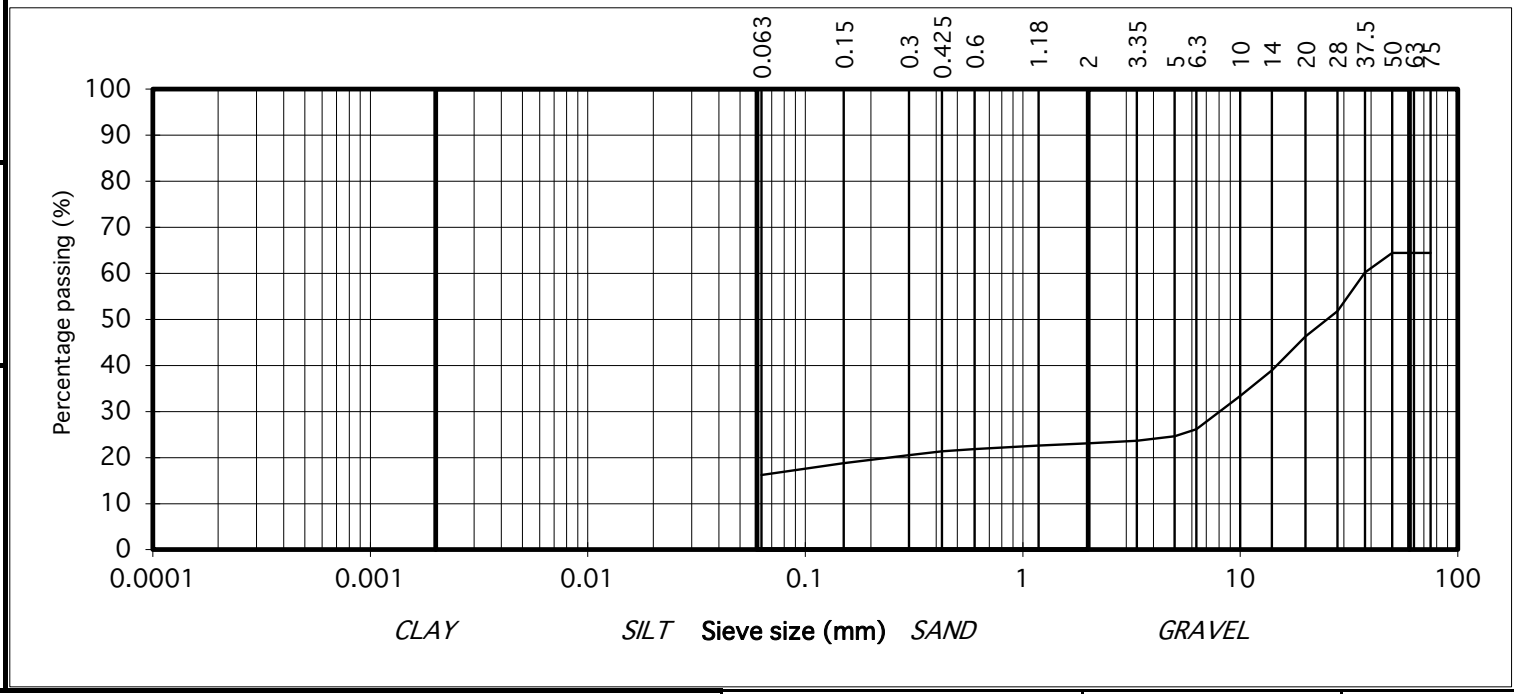
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	64	COBBLES
63	64	
50	64	GRAVEL
37.5	60	
28	52	
20	46	
14	39	
10	33	
6.3	26	
5	25	
3.35	24	
2	23	
1.18	23	SAND
0.6	22	
0.425	21	
0.3	21	
0.15	19	
0.063	16	SILT/CLAY

Contract No.	25882	Report No.	R1712050	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH53			
Sample No.*	AA214000	Lab. Sample No.		A25/2727
Sample Type:	B			
Depth* (m)	12.00	Customer:	MIL	
Date Received	17/06/2025	Date Testing started		02/08/2025
Description:	Brown clayey, sandy, GRAVEL with many cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

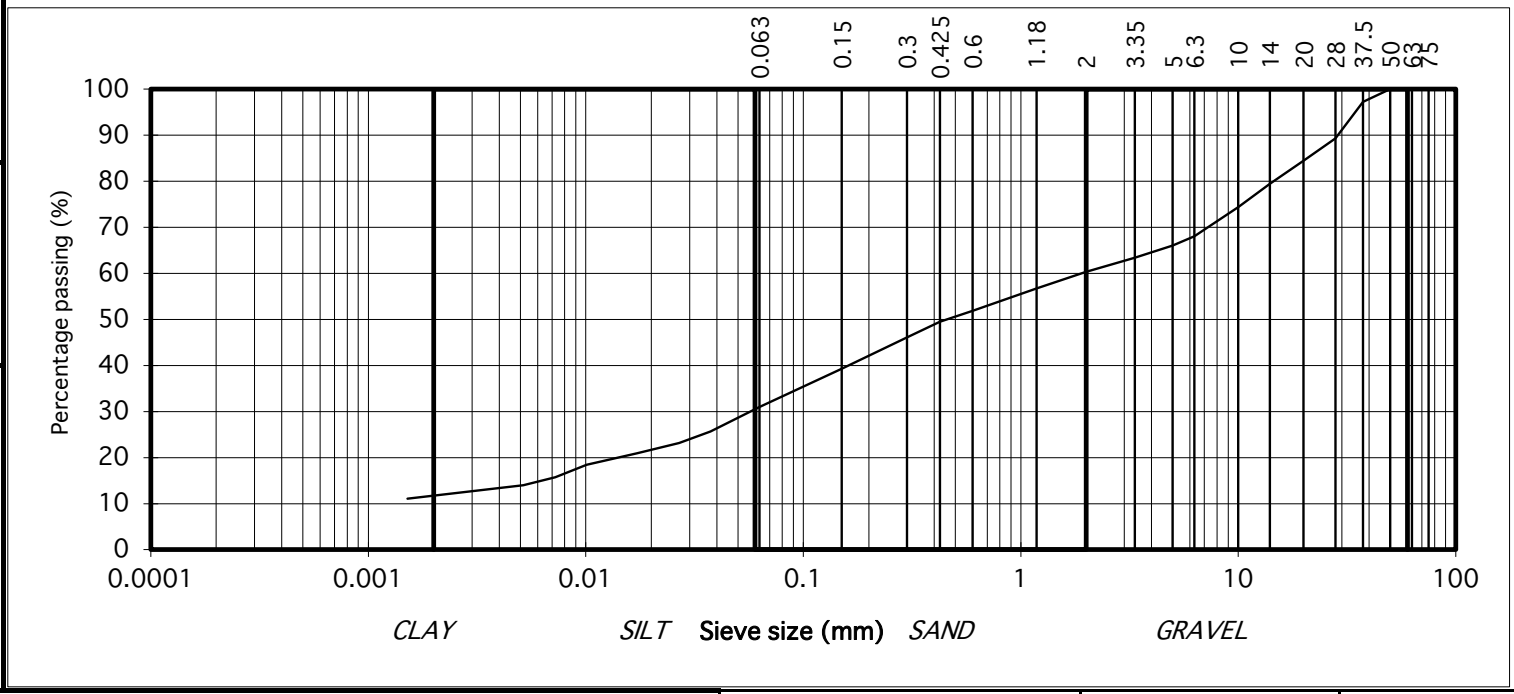
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	97	
28	89	
20	84	
14	79	
10	74	
6.3	68	
5	66	
3.35	63	
2	60	
1.18	57	SAND
0.6	52	
0.425	49	
0.3	46	
0.15	39	
0.063	31	SILT/CLAY
0.037	26	
0.027	23	
0.017	21	
0.010	18	
0.007	16	
0.005	14	
0.002	11	

Contract No.	25882	Report No.	R172270	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH54			
Sample No.*	AA22846	Lab. Sample No.		A25/2729
Sample Type:	B			
Depth* (m)	9.00	Customer:	MIL	
Date Received	17/06/2025	Date Testing started		16/08/2025
Description:	Grey slightly sandy, gravelly, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

Appendix 5

Chemical / Environmental Laboratory Results (Soil)

25-20057
25-21003
25-21684

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.: 25-20057-1

Initial Date of Issue: 30-Jun-2025

Re-Issue Details:

Client *IGSL*

Client Address: *M7 Business Park*
Naas
County Kildare
Ireland

Contact(s): *Darren Keogh*

Project *25882 Gas to Edenberry GNI*

Quotation No.: *Q24-34387* **Date Received:** 17-Jun-2025

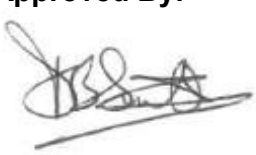
Order No.: **Date Instructed:** 17-Jun-2025

No. of Samples: *14*

Turnaround (Wkdays): 7 **Results Due:** 25-Jun-2025

Date Approved: 30-Jun-2025

Approved By:



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: 25882 Gas to Edenberry GNI

Client: IGSL				**Chemtest Job No.:**		25-20057	25-20057	25-20057	25-20057	25-20057	25-20057	25-20057
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1987719	1987721	1987723	1987725	1987727	1987729	1987731
Order No.:				*Client Sample Ref.:*		*BH16A*	*BH17*	*BH18*	*BH19*	*BH24*	*BH25*	*BH51A*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*0.50*	*1.00*	*0.50*	*1.00*	*0.50*	*1.00*
				Date Sampled:		*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**							
Ammonium	U	1220	10:1	mg/l	0.050	0.35	0.35	0.41	0.38	0.31	0.48	0.37
Ammonium	N	1220	10:1	mg/kg	0.10	4.4	4.0	4.4	4.0	4.1	5.3	4.0

Results - Soil

Project: 25882 Gas to Edenberry GNI

Client: IGSL				**Chemtest Job No.:**		25-20057	25-20057	25-20057	25-20057	25-20057	25-20057	25-20057
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1987719	1987720	1987721	1987722	1987723	1987724	1987725
Order No.:				*Client Sample Ref.:*		*BH16A*	*BH16A*	*BH17*	*BH17*	*BH18*	*BH18*	*BH19*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*0.50*	*1.00*	*1.00*	*2.00*	*0.50*
				Date Sampled:		*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*
				Asbestos Lab:		DURHAM		DURHAM		DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		N	2192		N/A	-		-		-		-
Asbestos Identification		U	2192		N/A	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected
Moisture		N	2030	%	0.020	14	9.8	19	19	20	12	15
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones	Stones	Stones	Stones and Roots	Stones	Stones	Stones
Soil Texture		N	2030		N/A	Sand	Clay	Loam	Clay	Clay	Clay	Loam
pH (2.5:1) at 20C		N	2010		4.0		8.4		8.3		8.5	
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40		< 0.40		< 0.40		< 0.40
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010		< 0.010		< 0.010	
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		< 0.010		< 0.010		< 0.010	
Total Sulphur		U	2175	%	0.010		0.030		0.020		0.030	
Sulphur (Elemental)		M	2180	mg/kg	1.0	1.9		< 1.0		< 1.0		< 1.0
Chloride (Water Soluble)		M	2220	g/l	0.010		< 0.010		< 0.010		< 0.010	
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010		< 0.010		< 0.010	
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50		< 0.50		< 0.50		< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.9		3.1		3.4		2.0
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01		< 0.01		< 0.01	
Sulphate (Total)		U	2430	%	0.010	0.015		0.011		0.014		0.024
Sulphate (Acid Soluble)		U	2430	%	0.010		< 0.010		0.011		< 0.010	
Arsenic		M	2455	mg/kg	0.5	3.0		2.9		2.9		4.8
Barium		M	2455	mg/kg	0.5	16		8.6		13		20
Cadmium		M	2455	mg/kg	0.10	0.35		0.83		0.67		0.71
Chromium		M	2455	mg/kg	0.5	4.8		5.2		6.8		5.4
Molybdenum		M	2455	mg/kg	0.5	< 0.5		< 0.5		0.5		0.6
Antimony		N	2455	mg/kg	2.0	< 2.0		< 2.0		< 2.0		< 2.0
Copper		M	2455	mg/kg	0.50	4.6		5.4		8.9		6.2
Mercury		M	2455	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Nickel		M	2455	mg/kg	0.50	12		16		18		16
Lead		M	2455	mg/kg	0.50	4.1		5.0		5.3		7.3
Selenium		M	2455	mg/kg	0.25	0.39		0.50		0.50		0.53
Zinc		M	2455	mg/kg	0.50	27		32		38		36
Chromium (Trivalent)		N	2490	mg/kg	1.0	4.8		5.2		6.8		5.4
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50		< 0.50		< 0.50		< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05

Results - Soil

Project: 25882 Gas to Edenberry GNI

Client: IGSL				**Chemtest Job No.:**		25-20057	25-20057	25-20057	25-20057	25-20057	25-20057	25-20057
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1987719	1987720	1987721	1987722	1987723	1987724	1987725
Order No.:				*Client Sample Ref.:*		*BH16A*	*BH16A*	*BH17*	*BH17*	*BH18*	*BH18*	*BH19*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*0.50*	*1.00*	*1.00*	*2.00*	*0.50*
				Date Sampled:		*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*
				Asbestos Lab:		DURHAM		DURHAM		DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25		< 0.25		< 0.25		< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	4.2		3.9		< 2.0		< 2.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0		1.2		< 1.0		< 1.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	2.9		2.2		< 2.0		< 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	15		14		16		13
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	14		10		12		11
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	23		21		19		15
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25		< 0.25		< 0.25		< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		< 1.0		< 1.0		< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		< 1.0		< 1.0		< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	3.6		4.5		6.3		6.0
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	16		19		9.1		17
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	13		12		9.8		8.9
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	20		24		15		23
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50		< 0.50		< 0.50		< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	43		44		34		38
Mineral Oil EPH		N	2670	mg/kg	10	37		31		31		26
Benzene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Naphthalene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10

Results - Soil

Project: 25882 Gas to Edenberry GNI

Client: IGSL				**Chemtest Job No.:**		25-20057	25-20057	25-20057	25-20057	25-20057	25-20057	25-20057
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1987719	1987720	1987721	1987722	1987723	1987724	1987725
Order No.:				*Client Sample Ref.:*		*BH16A*	*BH16A*	*BH17*	*BH17*	*BH18*	*BH18*	*BH19*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*0.50*	*1.00*	*1.00*	*2.00*	*0.50*
				Date Sampled:		*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*
				Asbestos Lab:		DURHAM		DURHAM		DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Coronene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
PCB 28		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 52		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 101		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 118		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 153		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 138		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 180		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Total Phenols		M	2920	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10

Results - Soil

Project: 25882 Gas to Edenberry GNI

Client: IGSL				**Chemtest Job No.:**		25-20057	25-20057	25-20057	25-20057	25-20057	25-20057	25-20057
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1987726	1987727	1987728	1987729	1987730	1987731	1987732
Order No.:				*Client Sample Ref.:*		*BH19*	*BH24*	*BH24*	*BH25*	*BH25*	*BH51A*	*BH51A*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*2.00*	*0.50*	*1.00*	*1.00*	*2.00*
				Date Sampled:		*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*
				Asbestos Lab:			DURHAM		DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		N	2192		N/A		-		-		-	
Asbestos Identification		U	2192		N/A		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected	
Moisture		N	2030	%	0.020	17	11	7.4	20	16	17	11
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones	Stones	Stones	Stones	None	Stones	Stones
Soil Texture		N	2030		N/A	Clay	Loam	Clay	Clay	Sand	Loam	Clay
pH (2.5:1) at 20C		N	2010		4.0	8.2		8.4		8.4		8.3
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40		< 0.40		< 0.40		< 0.40	
Magnesium (Water Soluble)		N	2120	g/l	0.010	< 0.010		< 0.010		< 0.010		< 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	< 0.010		< 0.010		< 0.010		< 0.010
Total Sulphur		U	2175	%	0.010	0.030		0.030		0.030		0.040
Sulphur (Elemental)		M	2180	mg/kg	1.0		< 1.0		< 1.0		< 1.0	
Chloride (Water Soluble)		M	2220	g/l	0.010	< 0.010		< 0.010		< 0.010		< 0.010
Nitrate (Water Soluble)		N	2220	g/l	0.010	< 0.010		< 0.010		< 0.010		< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50		< 0.50		< 0.50		< 0.50	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50		3.6		4.8		2.3	
Ammonium (Water Soluble)		M	2220	g/l	0.01	< 0.01		< 0.01		< 0.01		< 0.01
Sulphate (Total)		U	2430	%	0.010		0.033		0.16		0.025	
Sulphate (Acid Soluble)		U	2430	%	0.010	0.019		< 0.010		< 0.010		< 0.010
Arsenic		M	2455	mg/kg	0.5		2.6		1.8		5.8	
Barium		M	2455	mg/kg	0.5		25		21		21	
Cadmium		M	2455	mg/kg	0.10		0.41		0.37		0.77	
Chromium		M	2455	mg/kg	0.5		6.7		3.7		6.1	
Molybdenum		M	2455	mg/kg	0.5		< 0.5		< 0.5		0.6	
Antimony		N	2455	mg/kg	2.0		< 2.0		< 2.0		< 2.0	
Copper		M	2455	mg/kg	0.50		5.1		5.7		7.1	
Mercury		M	2455	mg/kg	0.05		< 0.05		< 0.05		< 0.05	
Nickel		M	2455	mg/kg	0.50		13		13		19	
Lead		M	2455	mg/kg	0.50		4.0		4.2		8.4	
Selenium		M	2455	mg/kg	0.25		0.46		0.41		0.57	
Zinc		M	2455	mg/kg	0.50		28		25		41	
Chromium (Trivalent)		N	2490	mg/kg	1.0		6.7		3.7		6.1	
Chromium (Hexavalent)		N	2490	mg/kg	0.50		< 0.50		< 0.50		< 0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05		U/S		< 0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05		U/S		< 0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05		U/S		< 0.05	
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05		U/S		< 0.05	

Results - Soil

Project: 25882 Gas to Edenberry GNI

Client: IGSL				**Chemtest Job No.:**		25-20057	25-20057	25-20057	25-20057	25-20057	25-20057	25-20057
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1987726	1987727	1987728	1987729	1987730	1987731	1987732
Order No.:				*Client Sample Ref.:*		*BH19*	*BH24*	*BH24*	*BH25*	*BH25*	*BH51A*	*BH51A*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*2.00*	*0.50*	*1.00*	*1.00*	*2.00*
				Date Sampled:		*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*
				Asbestos Lab:			DURHAM		DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25		< 0.25		U/S		< 0.25	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00		< 2.0		< 2.0		< 2.0	
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00		< 1.0		< 1.0		< 1.0	
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00		< 2.0		3.0		2.7	
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00		8.4		16		16	
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00		10		11		11	
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00		9.6		19		20	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05		< 0.05		U/S		< 0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05		< 0.05		U/S		< 0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05		< 0.05		U/S		< 0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25		< 0.25		U/S		< 0.25	
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00		< 1.0		< 1.0		< 1.0	
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00		< 1.0		< 1.0		< 1.0	
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00		5.4		7.3		8.8	
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00		5.4		9.6		23	
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00		8.7		9.8		12	
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00		11		17		32	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50		< 0.50		U/S		< 0.50	
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00		20		35		52	
Mineral Oil EPH		N	2670	mg/kg	10		20		30		31	
Benzene		M	2760	µg/kg	1.0		< 1.0		< 1.0		< 1.0	
Toluene		M	2760	µg/kg	1.0		< 1.0		< 1.0		< 1.0	
Ethylbenzene		M	2760	µg/kg	1.0		< 1.0		< 1.0		< 1.0	
m & p-Xylene		M	2760	µg/kg	1.0		< 1.0		< 1.0		< 1.0	
o-Xylene		M	2760	µg/kg	1.0		< 1.0		< 1.0		< 1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0		< 1.0		< 1.0		< 1.0	
Naphthalene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Acenaphthylene		N	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Acenaphthene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Fluorene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Phenanthrene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Anthracene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Fluoranthene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Pyrene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Benzo[a]anthracene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Chrysene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Benzo[a]pyrene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	

Results - Soil

Project: 25882 Gas to Edenberry GNI

Client: IGSL				**Chemtest Job No.:**		25-20057	25-20057	25-20057	25-20057	25-20057	25-20057	25-20057
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1987726	1987727	1987728	1987729	1987730	1987731	1987732
Order No.:				*Client Sample Ref.:*		*BH19*	*BH24*	*BH24*	*BH25*	*BH25*	*BH51A*	*BH51A*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*2.00*	*0.50*	*1.00*	*1.00*	*2.00*
				Date Sampled:		*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*	*16-Jun-2025*
				Asbestos Lab:			DURHAM		DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
Coronene		N	2800	mg/kg	0.10		< 0.10		< 0.10		< 0.10	
PCB 28		U	2815	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
PCB 52		U	2815	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
PCB 101		U	2815	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
PCB 118		U	2815	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
PCB 153		U	2815	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
PCB 138		U	2815	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
PCB 180		U	2815	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05		< 0.05		< 0.05		< 0.05	
Total Phenols		M	2920	mg/kg	0.10		< 0.10		< 0.10		< 0.10	

Results - Single Stage WAC

Project: 25882 Gas to Edenberry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-20057							
Chemtest Sample ID:	1987719							
Sample Ref:	*BH16A*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*16-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.33	3	5	6
Loss On Ignition	2610		M	%	1.5	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.8	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.056	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0012	0.012	0.5	2	25
Barium	1455		U	0.007	0.069	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0008	0.0080	0.5	10	70
Copper	1455		U	0.0018	0.018	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0014	0.014	0.5	10	30
Nickel	1455		U	0.0007	0.0072	0.4	10	40
Lead	1455		U	0.0009	0.0089	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.008	0.083	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.23	2.3	10	150	500
Sulphate	1220		U	1.1	11	1000	20000	50000
Total Dissolved Solids	1020		N	64	640	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.8	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	3.3
WAC Sample Weight	1133

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenberry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-20057							
Chemtest Sample ID:	1987721							
Sample Ref:	*BH17*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*16-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.60	3	5	6
Loss On Ignition	2610		M	%	3.0	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.5	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.010	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0012	0.012	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	0.00015	0.0015	0.04	1	5
Chromium	1455		U	0.0016	0.016	0.5	10	70
Copper	1455		U	0.0030	0.030	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0007	0.0072	0.5	10	30
Nickel	1455		U	0.0018	0.018	0.4	10	40
Lead	1455		U	0.0015	0.015	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.015	0.15	4	50	200
Chloride	1220		U	1.1	11	800	15000	25000
Fluoride	1220		U	0.34	3.4	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	58	580	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.9	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	3.6
WAC Sample Weight	762.4

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenberry GNI

Chemtest Job No:	25-20057					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	1987723							
Sample Ref:	*BH18*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*16-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.25	3	5	6
Loss On Ignition	2610		M	%	1.9	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.5	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.015	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0005	0.0048	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0019	0.019	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0025	0.025	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	< 0.003	< 0.025	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.22	2.2	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	53	530	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.0	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	6.4
WAC Sample Weight	1054

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenberry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-20057							
Chemtest Sample ID:	1987725							
Sample Ref:	*BH19*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*16-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.89	3	5	6
Loss On Ignition	2610		M	%	3.8	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0060	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0011	0.011	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0009	0.0089	0.5	10	70
Copper	1455		U	0.0024	0.024	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0009	0.0087	0.5	10	30
Nickel	1455		U	0.0009	0.0095	0.4	10	40
Lead	1455		U	0.0009	0.0095	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.009	0.087	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.32	3.2	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	57	570	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.2	52	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.8
WAC Sample Weight	732.0

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenberry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-20057							
Chemtest Sample ID:	1987727							
Sample Ref:	*BH24*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*16-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.55	3	5	6
Loss On Ignition	2610		M	%	1.2	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.7	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.10	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0014	0.014	0.5	2	25
Barium	1455		U	0.017	0.17	20	100	300
Cadmium	1455		U	0.00017	0.0017	0.04	1	5
Chromium	1455		U	0.0008	0.0082	0.5	10	70
Copper	1455		U	0.0035	0.035	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0016	0.016	0.5	10	30
Nickel	1455		U	0.0012	0.012	0.4	10	40
Lead	1455		U	0.0013	0.013	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0005	0.0051	0.1	0.5	7
Zinc	1455		U	0.012	0.12	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.17	1.7	10	150	500
Sulphate	1220		U	1.4	14	1000	20000	50000
Total Dissolved Solids	1020		N	44	440	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.9	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.6
WAC Sample Weight	123.0

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenberry GNI

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-20057							
Chemtest Sample ID:	1987729							
Sample Ref:	*BH25*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*16-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.21	3	5	6
Loss On Ignition	2610		M	%	1.2	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.019	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0007	0.0073	0.5	2	25
Barium	1455		U	0.11	1.1	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0011	0.011	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0004	0.0036	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	0.0034	0.034	0.06	0.7	5
Selenium	1455		U	0.0018	0.018	0.1	0.5	7
Zinc	1455		U	0.007	0.070	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.13	1.3	10	150	500
Sulphate	1220		U	4.5	45	1000	20000	50000
Total Dissolved Solids	1020		N	72	720	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	< 2.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.9
WAC Sample Weight	1049

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenberry GNI

Chemtest Job No:	25-20057					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	1987731							
Sample Ref:	*BH51A*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*16-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.98	3	5	6
Loss On Ignition	2610		M	%	3.2	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.3	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0050	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0023	0.023	0.5	2	25
Barium	1455		U	0.009	0.091	20	100	300
Cadmium	1455		U	0.00015	0.0015	0.04	1	5
Chromium	1455		U	0.0028	0.028	0.5	10	70
Copper	1455		U	0.0030	0.030	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0009	0.0089	0.5	10	30
Nickel	1455		U	0.0031	0.031	0.4	10	40
Lead	1455		U	0.0018	0.018	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0007	0.0068	0.1	0.5	7
Zinc	1455		U	0.018	0.18	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.33	3.3	10	150	500
Sulphate	1220		U	1.0	10	1000	20000	50000
Total Dissolved Solids	1020		N	58	580	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.7	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	10
WAC Sample Weight	741.2

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
1987719	*BH16A*			*16-Jun-2025*	E,H	Amber Glass 250ml
1987719	*BH16A*			*16-Jun-2025*	E,H	Plastic Tub 500g
1987720	*BH16A*			*16-Jun-2025*	H	Amber Glass 250ml
1987720	*BH16A*			*16-Jun-2025*	H	Plastic Tub 500g
1987721	*BH17*			*16-Jun-2025*	E,H	Amber Glass 250ml
1987721	*BH17*			*16-Jun-2025*	E,H	Plastic Tub 500g
1987722	*BH17*			*16-Jun-2025*	H	Amber Glass 250ml
1987722	*BH17*			*16-Jun-2025*	H	Plastic Tub 500g
1987723	*BH18*			*16-Jun-2025*	E,H	Amber Glass 250ml
1987723	*BH18*			*16-Jun-2025*	E,H	Plastic Tub 500g
1987724	*BH18*			*16-Jun-2025*	H	Amber Glass 250ml
1987724	*BH18*			*16-Jun-2025*	H	Plastic Tub 500g
1987725	*BH19*			*16-Jun-2025*	E,H	Amber Glass 250ml
1987725	*BH19*			*16-Jun-2025*	E,H	Plastic Tub 500g
1987726	*BH19*			*16-Jun-2025*	H	Amber Glass 250ml
1987726	*BH19*			*16-Jun-2025*	H	Plastic Tub 500g
1987727	*BH24*			*16-Jun-2025*	E,H	Amber Glass 250ml
1987727	*BH24*			*16-Jun-2025*	E,H	Plastic Tub 500g
1987728	*BH24*			*16-Jun-2025*	H	Amber Glass 250ml
1987728	*BH24*			*16-Jun-2025*	H	Plastic Tub 500g
1987729	*BH25*			*16-Jun-2025*	E,H	Amber Glass 250ml
1987729	*BH25*			*16-Jun-2025*	E,H	Plastic Tub 500g
1987730	*BH25*			*16-Jun-2025*	H	Amber Glass 250ml
1987730	*BH25*			*16-Jun-2025*	H	Plastic Tub 500g
1987731	*BH51A*			*16-Jun-2025*	E,H	Amber Glass 250ml
1987731	*BH51A*			*16-Jun-2025*	E,H	Plastic Tub 500g
1987732	*BH51A*			*16-Jun-2025*	H	Amber Glass 250ml
1987732	*BH51A*			*16-Jun-2025*	H	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	25-21003-1
Initial Date of Issue:	03-Jul-2025
Re-Issue Details:	
Client	*IGSL*
Client Address:	*M7 Business Park* *Naas* *County Kildare* *Ireland*
Contact(s):	*Darren Keogh*
Project	*25882 Gas to Edenderry GNI (MIL)*
Quotation No.:	*Q24-34387*
Order No.:	
No. of Samples:	*9*
Turnaround (Wkdays):	7
Date Approved:	03-Jul-2025
Approved By:	
Details:	David Smith, Technical Director

Date Received:	25-Jun-2025
Date Instructed:	25-Jun-2025
Results Due:	03-Jul-2025

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21003	25-21003	25-21003	25-21003	25-21003
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1991317	1991319	1991320	1991322	1991324
Order No.:				*Client Sample Ref.:*		*BH15*	*BH22*	*BH23A*	*BH53*	*BH54*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*0.50*	*0.50*	*0.50*	*0.50*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**					
Ammonium	U	1220	10:1	mg/l	0.050	0.33	0.39	0.42	0.29	0.40
Ammonium	N	1220	10:1	mg/kg	0.10	3.3	4.0	4.3	3.3	4.2

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21003	25-21003	25-21003	25-21003	25-21003	25-21003	25-21003
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1991317	1991318	1991319	1991320	1991321	1991322	1991323
Order No.:				*Client Sample Ref.:*		*BH15*	*BH15*	*BH22*	*BH23A*	*BH23A*	*BH53*	*BH53*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*3.00*	*0.50*	*0.50*	*1.00*	*0.50*	*1.00*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*
				Asbestos Lab:		DURHAM		DURHAM	DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		N	2192		N/A	-		-	-		-	
Asbestos Identification		U	2192		N/A	No Asbestos Detected		No Asbestos Detected	No Asbestos Detected		No Asbestos Detected	
Moisture		N	2030	%	0.020	41	37	43	30	32	11	16
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones and Roots	Stones and Roots	Roots	Stones and Roots	Stones and Roots	Stones	Stones and Roots
Soil Texture		N	2030		N/A	Loam	Loam	Loam	Loam	Loam	Sand	Clay
pH (2.5:1) at 20C		N	2010		4.0		7.4			7.5		8.6
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	1.2		0.66	0.94		< 0.40	
Magnesium (Water Soluble)		N	2120	g/l	0.010		0.010			< 0.010		< 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		0.67			0.70		< 0.010
Total Sulphur		U	2175	%	0.010		0.28			0.23		< 0.010
Sulphur (Elemental)		M	2180	mg/kg	1.0	7.0		7.2	7.8		1.4	
Chloride (Water Soluble)		M	2220	g/l	0.010		0.015			< 0.010		< 0.010
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010			< 0.010		< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50		0.90	< 0.50		< 0.50	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.3		1.8	2.1		2.4	
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01			< 0.01		< 0.01
Sulphate (Total)		U	2430	%	0.010	0.29		0.15	0.22		0.039	
Sulphate (Acid Soluble)		U	2430	%	0.010		0.085			0.078		< 0.010
Arsenic		M	2455	mg/kg	0.5	3.3		9.6	5.4		5.9	
Barium		M	2455	mg/kg	0.5	22		100	43		20	
Cadmium		M	2455	mg/kg	0.10	0.24		1.1	0.39		1.4	
Chromium		M	2455	mg/kg	0.5	2.6		6.7	4.7		8.9	
Molybdenum		M	2455	mg/kg	0.5	< 0.5		< 0.5	< 0.5		< 0.5	
Antimony		N	2455	mg/kg	2.0	< 2.0		< 2.0	< 2.0		< 2.0	
Copper		M	2455	mg/kg	0.50	2.5		6.3	4.2		15	
Mercury		M	2455	mg/kg	0.05	< 0.05		0.05	< 0.05		0.05	
Nickel		M	2455	mg/kg	0.50	5.5		11	8.9		24	
Lead		M	2455	mg/kg	0.50	1.9		6.3	3.5		8.4	
Selenium		M	2455	mg/kg	0.25	0.58		1.8	0.95		0.32	
Zinc		M	2455	mg/kg	0.50	18		46	25		53	
Chromium (Trivalent)		N	2490	mg/kg	1.0	2.6		6.7	4.7		8.9	
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50		< 0.50	< 0.50		< 0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21003	25-21003	25-21003	25-21003	25-21003	25-21003	25-21003
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1991317	1991318	1991319	1991320	1991321	1991322	1991323
Order No.:				*Client Sample Ref.:*		*BH15*	*BH15*	*BH22*	*BH23A*	*BH23A*	*BH53*	*BH53*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*3.00*	*0.50*	*0.50*	*1.00*	*0.50*	*1.00*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*
				Asbestos Lab:		DURHAM		DURHAM	DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25		< 0.25	< 0.25		< 0.25	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	4.7		4.3	4.1		5.1	
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0		< 1.0	2.5		2.2	
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	9.9		8.9	9.5		3.3	
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	90		86	70		5.4	
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10		11	12		< 10	
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	100		99	86		16	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25		< 0.25	< 0.25		< 0.25	
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		< 1.0	< 1.0		4.4	
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		1.7	< 1.0		7.8	
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	16		28	16		13	
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	85		66	62		17	
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	36		17	26		3.2	
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	100		97	78		42	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50		< 0.50	< 0.50		< 0.50	
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	210		200	160		58	
Mineral Oil EPH		N	2670	mg/kg	10	100		110	98		16	
Benzene		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	
Toluene		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	
o-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	
Naphthalene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Acenaphthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Fluorene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Phenanthrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Chrysene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21003	25-21003	25-21003	25-21003	25-21003	25-21003	25-21003
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1991317	1991318	1991319	1991320	1991321	1991322	1991323
Order No.:				*Client Sample Ref.:*		*BH15*	*BH15*	*BH22*	*BH23A*	*BH23A*	*BH53*	*BH53*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*3.00*	*0.50*	*0.50*	*1.00*	*0.50*	*1.00*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*
				Asbestos Lab:		DURHAM		DURHAM	DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
Coronene		N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	
PCB 28		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	
PCB 52		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	
PCB 101		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	
PCB 118		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	
PCB 153		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	
PCB 138		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	
PCB 180		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	
Total Phenols		M	2920	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21003	25-21003
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1991324	1991325
Order No.:				*Client Sample Ref.:*		*BH54*	*BH54*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*1.00*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*
				Asbestos Lab:		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type		N	2192		N/A	-	
Asbestos Identification		U	2192		N/A	No Asbestos Detected	
Moisture		N	2030	%	0.020	13	11
Soil Colour		N	2030		N/A	Brown	Brown
Other Material		N	2030		N/A	Stones and Roots	Stones and Roots
Soil Texture		N	2030		N/A	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0		8.3
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40	
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		< 0.010
Total Sulphur		U	2175	%	0.010		0.040
Sulphur (Elemental)		M	2180	mg/kg	1.0	1.7	
Chloride (Water Soluble)		M	2220	g/l	0.010		< 0.010
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.0	
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01
Sulphate (Total)		U	2430	%	0.010	0.028	
Sulphate (Acid Soluble)		U	2430	%	0.010		< 0.010
Arsenic		M	2455	mg/kg	0.5	4.4	
Barium		M	2455	mg/kg	0.5	39	
Cadmium		M	2455	mg/kg	0.10	0.48	
Chromium		M	2455	mg/kg	0.5	8.5	
Molybdenum		M	2455	mg/kg	0.5	< 0.5	
Antimony		N	2455	mg/kg	2.0	< 2.0	
Copper		M	2455	mg/kg	0.50	6.3	
Mercury		M	2455	mg/kg	0.05	< 0.05	
Nickel		M	2455	mg/kg	0.50	17	
Lead		M	2455	mg/kg	0.50	5.4	
Selenium		M	2455	mg/kg	0.25	0.42	
Zinc		M	2455	mg/kg	0.50	30	
Chromium (Trivalent)		N	2490	mg/kg	1.0	8.5	
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21003	25-21003
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1991324	1991325
Order No.:				*Client Sample Ref.:*		*BH54*	*BH54*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*1.00*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*
				Asbestos Lab:		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	1.6	
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	2.6	
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	8.7	
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	15	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	3.1	
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	8.1	
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	6.8	
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	29	
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	4.8	
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	47	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	61	
Mineral Oil EPH		N	2670	mg/kg	10	15	
Benzene		M	2760	µg/kg	1.0	< 1.0	
Toluene		M	2760	µg/kg	1.0	< 1.0	
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	
o-Xylene		M	2760	µg/kg	1.0	< 1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	
Naphthalene		M	2800	mg/kg	0.10	< 0.10	
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	
Fluorene		M	2800	mg/kg	0.10	< 0.10	
Phenanthrene		M	2800	mg/kg	0.10	< 0.10	
Anthracene		M	2800	mg/kg	0.10	< 0.10	
Fluoranthene		M	2800	mg/kg	0.10	< 0.10	
Pyrene		M	2800	mg/kg	0.10	< 0.10	
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10	
Chrysene		M	2800	mg/kg	0.10	< 0.10	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10	
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21003	25-21003
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1991324	1991325
Order No.:				*Client Sample Ref.:*		*BH54*	*BH54*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*1.00*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*
				Asbestos Lab:		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10	
Coronene		N	2800	mg/kg	0.10	< 0.10	
PCB 28		U	2815	mg/kg	0.010	< 0.010	
PCB 52		U	2815	mg/kg	0.010	< 0.010	
PCB 101		U	2815	mg/kg	0.010	< 0.010	
PCB 118		U	2815	mg/kg	0.010	< 0.010	
PCB 153		U	2815	mg/kg	0.010	< 0.010	
PCB 138		U	2815	mg/kg	0.010	< 0.010	
PCB 180		U	2815	mg/kg	0.010	< 0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05	
Total Phenols		M	2920	mg/kg	0.10	< 0.10	

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-21003							
Chemtest Sample ID:	1991317							
Sample Ref:	*BH15*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*23-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	16	3	5	6
Loss On Ignition	2610		M	%	18	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		7.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0020	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0007	0.0067	0.5	2	25
Barium	1455		U	0.022	0.22	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0009	0.0095	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0046	0.046	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0013	0.013	0.1	0.5	7
Zinc	1455		U	0.006	0.056	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.15	1.5	10	150	500
Sulphate	1220		U	56	560	1000	20000	50000
Total Dissolved Solids	1020		N	150	1500	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.3	53	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	15
WAC Sample Weight	568.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-21003							
Chemtest Sample ID:	1991319							
Sample Ref:	*BH22*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*23-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	8.4	3	5	6
Loss On Ignition	2610		M	%	17	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		7.2	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0007	0.0068	0.5	2	25
Barium	1455		U	0.028	0.28	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0012	0.012	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0004	0.0042	0.5	10	30
Nickel	1455		U	0.0016	0.016	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0068	0.068	0.1	0.5	7
Zinc	1455		U	0.019	0.19	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.12	1.2	10	150	500
Sulphate	1220		U	92	920	1000	20000	50000
Total Dissolved Solids	1020		N	160	1600	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	8.5	85	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	13
WAC Sample Weight	492.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-21003							
Chemtest Sample ID:	1991320							
Sample Ref:	*BH23A*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*23-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	7.6	3	5	6
Loss On Ignition	2610		M	%	15	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		7.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.011	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0007	0.0074	0.5	2	25
Barium	1455		U	0.020	0.20	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0015	0.015	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0019	0.019	0.5	10	30
Nickel	1455		U	0.0015	0.015	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0011	0.011	0.1	0.5	7
Zinc	1455		U	0.003	0.027	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.16	1.6	10	150	500
Sulphate	1220		U	19	190	1000	20000	50000
Total Dissolved Solids	1020		N	100	1000	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.8	58	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.9
WAC Sample Weight	547.4

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

Chemtest Job No:	25-21003					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	1991322							
Sample Ref:	*BH53*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*23-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.84	3	5	6
Loss On Ignition	2610		M	%	0.98	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.5	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.033	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0033	0.033	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0014	0.014	0.5	10	70
Copper	1455		U	0.0054	0.054	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0013	0.013	0.5	10	30
Nickel	1455		U	0.0046	0.046	0.4	10	40
Lead	1455		U	0.0019	0.019	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0006	0.0055	0.1	0.5	7
Zinc	1455		U	0.015	0.15	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.15	1.5	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	42	420	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.1	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	11
WAC Sample Weight	1004

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-21003							
Chemtest Sample ID:	1991324							
Sample Ref:	*BH54*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*23-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.68	3	5	6
Loss On Ignition	2610		M	%	10	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.1	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.026	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0020	0.020	0.5	2	25
Barium	1455		U	0.054	0.54	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0008	0.0082	0.5	10	70
Copper	1455		U	0.0073	0.073	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0017	0.017	0.5	10	30
Nickel	1455		U	0.0023	0.023	0.4	10	40
Lead	1455		U	0.0013	0.013	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0015	0.016	0.1	0.5	7
Zinc	1455		U	0.004	0.042	4	50	200
Chloride	1220		U	5.4	54	800	15000	25000
Fluoride	1220		U	0.15	1.5	10	150	500
Sulphate	1220		U	6.0	60	1000	20000	50000
Total Dissolved Solids	1020		N	120	1200	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	6.7	67	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	11
WAC Sample Weight	1784

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
1991317	*BH15*			*23-Jun-2025*	E,H	Amber Glass 250ml
1991317	*BH15*			*23-Jun-2025*	E,H	Plastic Tub 500g
1991318	*BH15*			*23-Jun-2025*	H	Amber Glass 250ml
1991318	*BH15*			*23-Jun-2025*	H	Plastic Tub 500g
1991319	*BH22*			*23-Jun-2025*	E,H	Amber Glass 250ml
1991319	*BH22*			*23-Jun-2025*	E,H	Plastic Tub 500g
1991320	*BH23A*			*23-Jun-2025*	E,H	Amber Glass 250ml
1991320	*BH23A*			*23-Jun-2025*	E,H	Plastic Tub 500g
1991321	*BH23A*			*23-Jun-2025*	H	Amber Glass 250ml
1991321	*BH23A*			*23-Jun-2025*	H	Plastic Tub 500g
1991322	*BH53*			*23-Jun-2025*	C,E,H	Plastic Tub 500g
1991323	*BH53*			*23-Jun-2025*	H	Amber Glass 250ml
1991323	*BH53*			*23-Jun-2025*	H	Plastic Tub 500g
1991324	*BH54*			*23-Jun-2025*	E,H	Amber Glass 250ml
1991325	*BH54*			*23-Jun-2025*	H	Amber Glass 250ml
1991325	*BH54*			*23-Jun-2025*	H	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

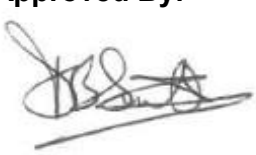
Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: cs@etuki.eurofins.com

Final Report

Report No.:	25-21684-1
Initial Date of Issue:	23-Jul-2025
Re-Issue Details:	
Client	*IGSL*
Client Address:	*M7 Business Park* *Naas* *County Kildare* *Ireland*
Contact(s):	*Darren Keogh*
Project	*25882 Gas to Edenderry GNI (MIL)*
Quotation No.:	*Q24-34387*
Order No.:	
No. of Samples:	*5*
Turnaround (Wkdays):	7
Date Approved:	23-Jul-2025
Approved By:	



Details:	David Smith, Technical Director

Date Received:	01-Jul-2025		
Date Instructed:	01-Jul-2025		
Results Due:	09-Jul-2025		

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21684	25-21684
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1993511	1993514
Order No.:				*Client Sample Ref.:*		*BH22*	*BH54*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*0.50*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
Ammonium	U	1220	10:1	mg/l	0.050	0.30	0.26
Ammonium	N	1220	10:1	mg/kg	0.10	3.1	3.2

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21684	25-21684	25-21684	25-21684	25-21684
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1993511	1993512	1993513	1993514	1993515
Order No.:				*Client Sample Ref.:*		*BH22*	*BH23A*	*BH53*	*BH54*	*BH54*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*1.00*	*1.00*	*0.50*	*1.00*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*
				Asbestos Lab:		DURHAM			DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
ACM Type		N	2192		N/A	-			-	
Asbestos Identification		U	2192		N/A	No Asbestos Detected			No Asbestos Detected	
Moisture		N	2030	%	0.020	42	34	15	19	14
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Roots	Stones and Roots	Stones and Roots	Roots and Stones	Stones and Roots
Soil Texture		N	2030		N/A	Loam	Loam	Clay	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0		7.5	8.2		8.1
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	0.80			< 0.40	
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010	< 0.010		< 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		0.38	< 0.010		< 0.010
Total Sulphur		U	2175	%	0.010		0.44	0.030		0.050
Sulphur (Elemental)		M	2180	mg/kg	1.0	< 1.0			< 1.0	
Chloride (Water Soluble)		M	2220	g/l	0.010		0.011	< 0.010		< 0.010
Nitrate (Water Soluble)		N	2220	g/l	0.010		0.019	< 0.010		< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50			< 0.50	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.1			4.7	
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01	< 0.01		< 0.01
Sulphate (Total)		U	2430	%	0.010	< 0.010			0.10	
Sulphate (Acid Soluble)		U	2430	%	0.010		0.031	0.040		0.040
Arsenic		M	2455	mg/kg	0.5	0.7			8.2	
Barium		M	2455	mg/kg	0.5	11			110	
Cadmium		M	2455	mg/kg	0.10	< 0.10			0.75	
Chromium		M	2455	mg/kg	0.5	0.9			8.2	
Molybdenum		M	2455	mg/kg	0.5	< 0.5			< 0.5	
Antimony		N	2455	mg/kg	2.0	< 2.0			< 2.0	
Copper		M	2455	mg/kg	0.50	0.71			7.6	
Mercury		M	2455	mg/kg	0.05	< 0.05			< 0.05	
Nickel		M	2455	mg/kg	0.50	1.1			11	
Lead		M	2455	mg/kg	0.50	0.68			6.8	
Selenium		M	2455	mg/kg	0.25	< 0.25			1.5	
Zinc		M	2455	mg/kg	0.50	4.4			34	
Chromium (Trivalent)		N	2490	mg/kg	1.0	< 1.0			8.2	
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50			< 0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05			< 0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05			< 0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05			< 0.05	
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05			< 0.05	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21684	25-21684	25-21684	25-21684	25-21684
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1993511	1993512	1993513	1993514	1993515
Order No.:				*Client Sample Ref.:*		*BH22*	*BH23A*	*BH53*	*BH54*	*BH54*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*1.00*	*1.00*	*0.50*	*1.00*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*
				Asbestos Lab:		DURHAM			DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25			< 0.25	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0			< 2.0	
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	1.3			< 1.0	
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	3.8			2.0	
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	11			12	
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10			< 10	
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	16			15	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05			< 0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05			< 0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05			< 0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25			< 0.25	
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0			< 1.0	
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0			2.4	
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	6.9			5.3	
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	19			18	
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	< 1.0			< 1.0	
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	26			26	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50			< 0.50	
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	42			41	
Mineral Oil EPH		N	2670	mg/kg	10	16			15	
Benzene		M	2760	µg/kg	1.0	< 1.0			< 1.0	
Toluene		M	2760	µg/kg	1.0	< 1.0			< 1.0	
Ethylbenzene		M	2760	µg/kg	1.0	1.9			< 1.0	
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0			< 1.0	
o-Xylene		M	2760	µg/kg	1.0	12			< 1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0			< 1.0	
Naphthalene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10			< 0.10	
Acenaphthene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Fluorene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Phenanthrene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Anthracene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Fluoranthene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Pyrene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Chrysene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10			< 0.10	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-21684	25-21684	25-21684	25-21684	25-21684
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1993511	1993512	1993513	1993514	1993515
Order No.:				*Client Sample Ref.:*		*BH22*	*BH23A*	*BH53*	*BH54*	*BH54*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*1.00*	*1.00*	*0.50*	*1.00*
				Date Sampled:		*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*	*23-Jun-2025*
				Asbestos Lab:		DURHAM			DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10			< 0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10			< 0.10	
Coronene		N	2800	mg/kg	0.10	< 0.10			< 0.10	
PCB 28		U	2815	mg/kg	0.010	< 0.010			< 0.010	
PCB 52		U	2815	mg/kg	0.010	< 0.010			< 0.010	
PCB 101		U	2815	mg/kg	0.010	< 0.010			< 0.010	
PCB 118		U	2815	mg/kg	0.010	< 0.010			< 0.010	
PCB 153		U	2815	mg/kg	0.010	< 0.010			< 0.010	
PCB 138		U	2815	mg/kg	0.010	< 0.010			< 0.010	
PCB 180		U	2815	mg/kg	0.010	< 0.010			< 0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05			< 0.05	
Total Phenols		M	2920	mg/kg	0.10	< 0.10			< 0.10	

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-21684							
Chemtest Sample ID:	1993511							
Sample Ref:	*BH22*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*23-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	8.2	3	5	6
Loss On Ignition	2610		M	%	20	--	--	10
Total BTEX	2760		M	mg/kg	0.014	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	I/S	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		7.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0030	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0003	0.0029	0.5	2	25
Barium	1455		U	0.007	0.074	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0008	0.0081	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	< 0.0002	< 0.0020	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0009	0.0094	0.1	0.5	7
Zinc	1455		U	0.003	0.034	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.12	1.2	10	150	500
Sulphate	1220		U	14	140	1000	20000	50000
Total Dissolved Solids	1020		N	44	440	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.2	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	14
WAC Sample Weight	233.6

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-21684					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Chemtest Sample ID:	1993514							
Sample Ref:	*BH54*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*23-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	1.2	3	5	6
Loss On Ignition	2610		M	%	4.7	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		I/S	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0080	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0007	0.0068	0.5	2	25
Barium	1455		U	0.015	0.15	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0015	0.015	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0004	0.0036	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0007	0.0070	0.1	0.5	7
Zinc	1455		U	0.004	0.044	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.12	1.2	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	65	650	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.1	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	17
WAC Sample Weight	608.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
1993511	*BH22*			*23-Jun-2025*	E,H	Amber Glass 250ml
1993512	*BH23A*			*23-Jun-2025*	H	Amber Glass 250ml
1993513	*BH53*			*23-Jun-2025*	H	Amber Glass 250ml
1993514	*BH54*			*23-Jun-2025*	C,E,H	Plastic Tub 500g
1993515	*BH54*			*23-Jun-2025*	H	Amber Glass 250ml
1993515	*BH54*			*23-Jun-2025*	H	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Appendix 6

Geotechnical Laboratory Results (Rock)

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Gas to Bord Na Mona

Contract no. 25882

Sample Type: Core

Date of test: 18/09/2025

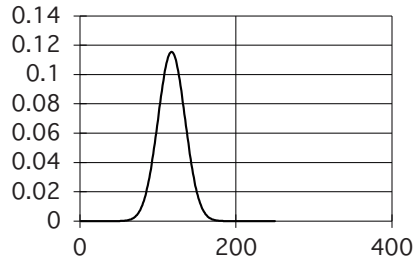
RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orientation
RC53	14.1	78	31.0	1.222	5.10	6.22	137	d	//
	15.8	78	28.0	1.222	4.60	5.62	124	d	//
	17.2	78	22.0	1.222	3.62	4.42	97	d	//
	18.1	78	29.0	1.222	4.77	5.82	128	d	//
	18.5	78	23.0	1.222	3.78	4.62	102	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	5	5
Minimum	4.42	97
Average	5.34	117
Maximum	6.22	137
Standard Dev.	0.79	17
Upper 95% Confidence Limit	6.88	151.36
Lower 95% Confidence Limit	3.80	83.63

Comments:

*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Gas to Bord Na Mona
Contract no. 25882

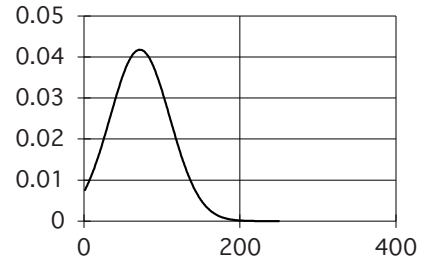
Sample Type: Core
Date of test: 18/09/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orientation
RC54	16.3	78	8.0	1.222	1.31	1.61	35	d	//
	17.6	78	10.0	1.222	1.64	2.01	44	d	//
	19.4	78	26.0	1.222	4.27	5.22	115	d	//
	20.3	78	21.0	1.222	3.45	4.22	93	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	4	4
Minimum	1.61	35
Average	3.26	72
Maximum	5.22	115
Standard Dev.	1.74	38
Upper 95% Confidence Limit	6.67	146.71
Lower 95% Confidence Limit	-0.14	-3.16

Comments:
*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

Appendix 7

Exploratory Hole Location Plans

KEY PLAN

DWG01

DWG02

25882 - Gas to Bord na Mona, Edenderry, Phase 1 GI

Exploratory Hole Location Plan - HCC2 - KEY PLAN



25882 - Gas to Bord na Mona, Edenderry, Phase 1 GI

Exploratory Hole Location Plan - HCC2 - DWG1

Legend

- Cable Percussion Borehole
- Cable Percussion Borehole / Rotary Drillhole
- Rotary Drillhole



25882 - Gas to Bord na Mona, Edenderry, Phase 1 GI

Exploratory Hole Location Plan - HCC2 - DWG02

Legend

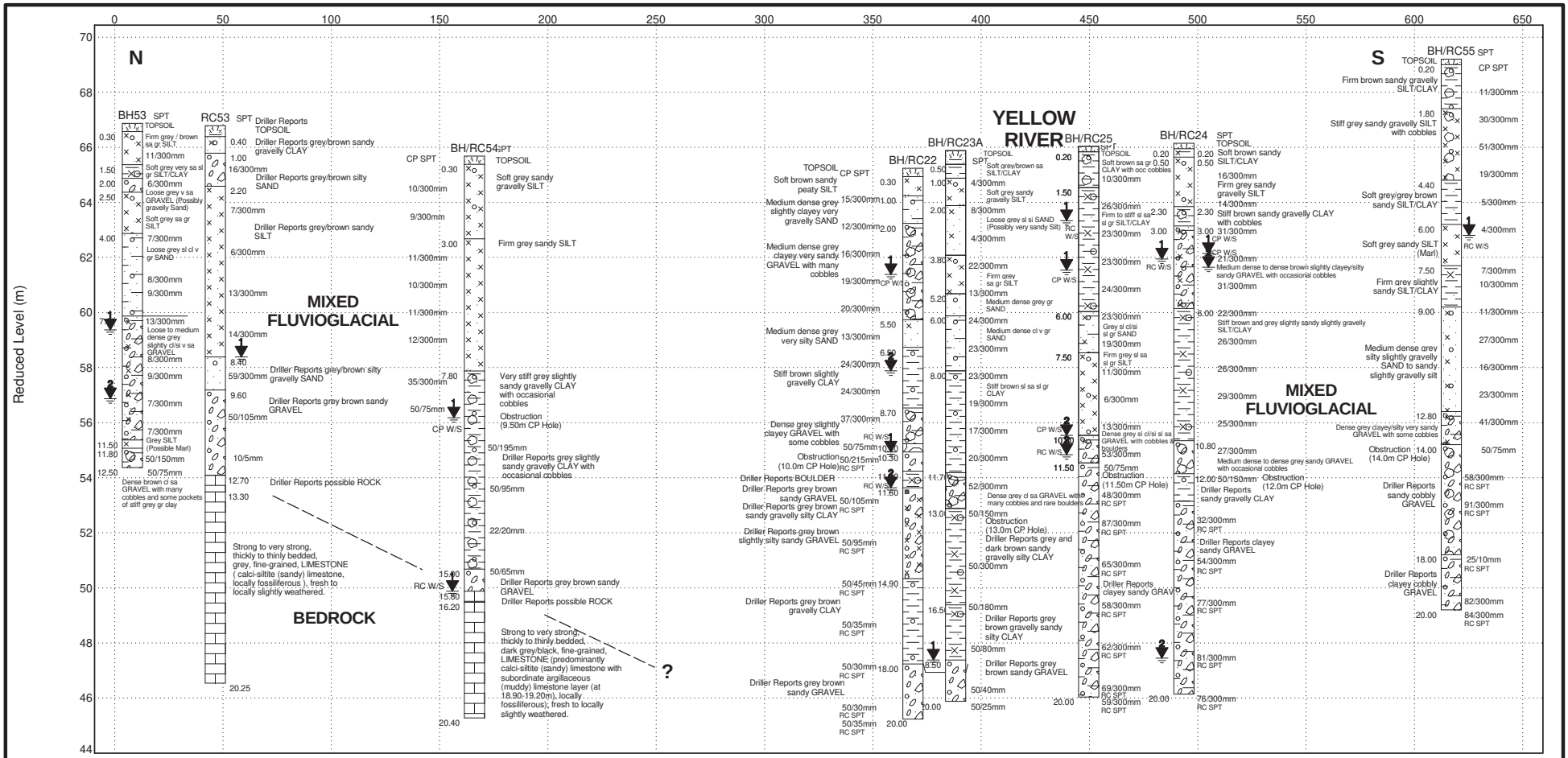
- Cable Percussion Borehole
- Cable Percussion Borehole / Rotary Drillhole
- Rotary Drillhole

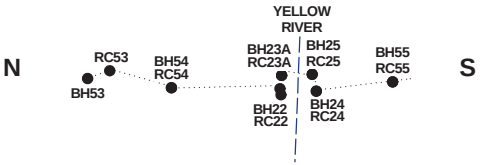


Appendix 8

Geological Cross Section

N-S HCC2





LITHOLOGY GRAPHICS

TOPSOIL | Sandy organic SILT | Clayey gravelly SAND | Clayey sandy cobbly GRAVEL | Silty SAND

Gravelly CLAY | Clayey cobbly GRAVEL | Silty sandy CLAY | Sandy gravelly SILT | Gravelly SAND

Sandy gravelly CLAY | Clayey sandy cobbly bouldery GRAVEL | Silty CLAY | Sandy gravelly cobbly CLAY | Clayey silty sandy cobbly GRAVEL

SUBSURFACE SECTION N-S HCC2

Client: Murphy International Limited

Project: Gas to Bord na Mona, Edenderry, Phase 1 GI

Number: 25882

FENCE A3 CARRIGTWOHILL 25882.GPJ IGSL.GDT 19/9/25

Appendix 15

HCC3 Report

(issued 29-09-25 Rev.2)

IGSL Ltd

Gas to Bord na Mona, Edenderry
Phase 1 GI – HCC3

Geotechnical Interpretative Report

Project No. 25882

September 2025

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5. Ground Conditions & Groundwater
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FOREWORD
The following conditions and notes on the geotechnical site investigation procedures should be read in conjunction with this report.

Standards
The ground investigation works for this project (**Gas to Bord na Mona, Edenderry, Phase 1 GI**) have been carried out by IGSL in accordance with Eurocode 7 - Part 2: Ground Investigation & Testing (EN 1997-2:2007). This has been used together with complementary documents such as Engineers Ireland Specification for Ground Investigation (2nd Ed, 2016), BS 5930 (2015+A1:2020) and BS 1377 (Parts 1 to 9) and the following European Norms:

- EN 1997-2 Eurocode 7: 2007 – Geotechnical Design – Part 2: Ground Investigation & Testing
- EN ISO 22475-1:2006 Geotechnical Investigation and Sampling – Sampling Methods & Groundwater Measurements
- EN ISO 14688-1:2017 Geotechnical Investigation and Testing – Identification and Classification of Soil, Part 1: Identification and Description
- EN ISO 14688-2:2017 Geotechnical Investigation and Testing – Identification and Classification of Soil, Part 2: Principles for a classification
- EN ISO 14689-1:2017 Geotechnical Investigation and Testing – Identification, description & classification of rock

The Eurocode 7, Part 2 – Ground Investigation and Testing GI specification shall be read in conjunction with the Specification and Related Documents for Ground Investigation in Ireland, 2nd Edition, published by Engineers Ireland in 2016.

Reporting
No responsibility can be held by IGSL Ltd for ground conditions between exploratory hole locations. The engineering logs provide ground profiles and configuration of strata relevant to the investigation depths achieved and caution should be taken when extrapolating between exploratory points. No liability is accepted for ground conditions extraneous to the investigation points. Unless specifically stated, no account has been taken of possible subsidence due to mineral extraction, mining works or karstification below or close to the site.

This report has been prepared for Murphy International Limited and Fingleton White and the information should not be used without their prior written permission. IGSL Ltd accepts no responsibility or liability for this document being used other than for the purposes for which it was intended.

Boring Procedures
Where required, 'shell and auger' or cable percussive boring technique is employed as defined by Section 6.3 of IS EN ISO 22475-1:2006. The boring operations, sampling and in-situ testing meet with the recommendations set out in IS EN 1997-2:2007 and BS 1377:1990 and EN ISO 22476-3:2005. The shell and auger boring technique allows for continuous sampling in clay and silt above the water table and sand and gravel below the water table (Table 2 of IS EN ISO 22475-1:2006).

It is highlighted that some disturbance and variation is unavoidable in particular ground (e.g. blowing sands, gravel / cobble dominant glacial deposits etc). Attention is drawn to this condition, whenever it is suspected. Where cobbles and boulders are recorded, no conclusion should be drawn concerning the size, presence, lithological nature, or numbers per unit volume of ground.

In-Situ Testing
Where required, Standard Penetration Tests (SPT's) are conducted strictly in accordance with Section 4.6 of IS EN 1997-2:2007. The SPT equipment (hammer energy test) has been calibrated

in accordance with EN ISO 22476-3:2005 and the Energy Ratio (E_r). A calibration certificate is available upon request. The E_r is defined as the ratio of the actual energy E_{meas} (measured energy during calibration) delivered to the drive weight assembly into the drive rod below the anvil, to the theoretical energy (E_{theor}) as calculated from the drive weight assembly. The measured number of blows (N) reported on the engineering logs are uncorrected. In sands, the energy losses due to rod length and the effect of the overburden pressure should be taken into account (see IS EN ISO 22476-3:2005).

Soil Sampling

Three categories of sampling methods are outlined in EN ISO 22475-1:2006. The categories are referenced A, B and C for any given ground conditions and are shown in Tables 1 and 2 of EN ISO 22475-1:2006. Reference should be made to EN 1997-2:2002 for guidelines on sample class and quality for strength and compressibility testing. Samples of quality classes 1 or 2 can only be obtained by using Category A sampling methods.

Class 1 thin wall undisturbed tube samples (UT100) are obtainable in fine grained soils. They strictly meet the requirements of EN 1997-2:2002 and EN ISO 22475-1:2006. Soil samples for laboratory tests are divided into five classes with respect to the soil properties that are assumed to remain unchanged during sampling, handling transport and storage. The minimum sample quality required for testing purposes to Eurocode 7 compatibility (EN 1997-2:2002) is shown in Table A.

Table A – Details of Sample Quality Requirements

EN 1997 Clause	Test	Minimum Sample Quality Class
5.5.3	Water Content	3
5.5.4	Bulk Density	2
5.5.5	Particle Density	N/S
5.5.6	Particle Size Analysis	N/S
5.5.7	Consistency Limits	4
5.5.8	Density Index	N/S
5.5.9	Soil Dispersivity	N/S
5.5.10	Frost Susceptibility	N/S
5.6.2	Organic Content	4
5.6.3	Carbonate Content	3
5.6.4	Sulphate Content	3
5.6.5	pH	3
5.6.6	Chloride Content	3
5.7	Strength Index	1
5.8	Strength Tests	1
5.9	Compressibility Tests	1
5.10	Compaction Tests	N/S
5.11	Permeability	2

N/S – not stated. Presume a representative sample of appropriate size.

Samples recovered from trial pits or trenches meet the requirements of IS EN ISO 22475-1. It is highlighted that unforeseen circumstances such as variations in geological strata may lead to lower quality sample classes being obtained.

Groundwater

The depth of entry of any influx of groundwater is recorded during the course of boring operations. However, the normal rate of boring does not usually permit the recording of an equilibrium level for any one water strike. Where possible, drilling is suspended for a period of twenty minutes to monitor the subsequent rise in water level. Groundwater conditions observed in the borings or pits are those appertaining to the period of investigation. It should be noted however, that groundwater levels are

subject to diurnal, seasonal and climatic variations and can also be affected by drainage conditions, tidal variations etc.

Engineering Logging

Soil and rock identification has been based on the examination of the samples recovered and conforms with IS EN ISO 14688-1:2017 and IS EN ISO 14688-2:2017. Rock weathering classification conforms to IS EN ISO 14689-1:2017 along with discontinuities (bedding planes, joints, cleavages, faults etc) as classified in Section 6.4 of IS EN ISO 14689-1:2017 and Annex C of same. Rock mechanical indices (TCR, SCR, RQD) are defined in accordance with IS EN ISO 22475-1:2006.

Where peat has been encountered, samples have been logged in accordance with the Von Post Classification (ref. Von Post, L. 1992. Sveriges Gologiska Undersoknings torvinventering och nogra av dess hittils vunna resultat (SGU peat inventory and some preliminary results) Svenska Mosskulturforeningens Tidskrift, Jonkoping, Swedden, 36, 1-37 and Hobbs N. B. Mire morphology and the properties of some British and foreign peats. QJEG, Vol. 19, 1986.

Retention of Samples

After satisfactory completion of all the scheduled laboratory tests on any sample, the remaining material will be discarded. Unless a period of retention of samples is agreed, it is our normal practice to discard all soil samples one month after submission of our final report.

1. INTRODUCTION

IGSL Limited has undertaken a programme of geotechnical site investigation works for a new gas pipeline (GNI143 Ballykilleen Pipeline), hot tap and AGI required to connect the existing Bord na Mona (BnaM) power station in Ballykilleen, Edenderry, Co. Offaly, to the gas transmission network 23 kilometres north in the townland of Kilwarden, County Meath. The works were undertaken for Murphy International Limited on behalf of their client Gas Networks Ireland. This Phase 1 investigation focused on both the "Offtake" installation at Kilwarden and the AGI at Edenderry as well as a number of crossing points where the gas pipeline infrastructure encounters public roads, the M4 motorway, the Grand Canal and river courses, namely the Kilwarden River and the Yellow River.

Figure 1 – Site Location Plan (pipeline plotted)

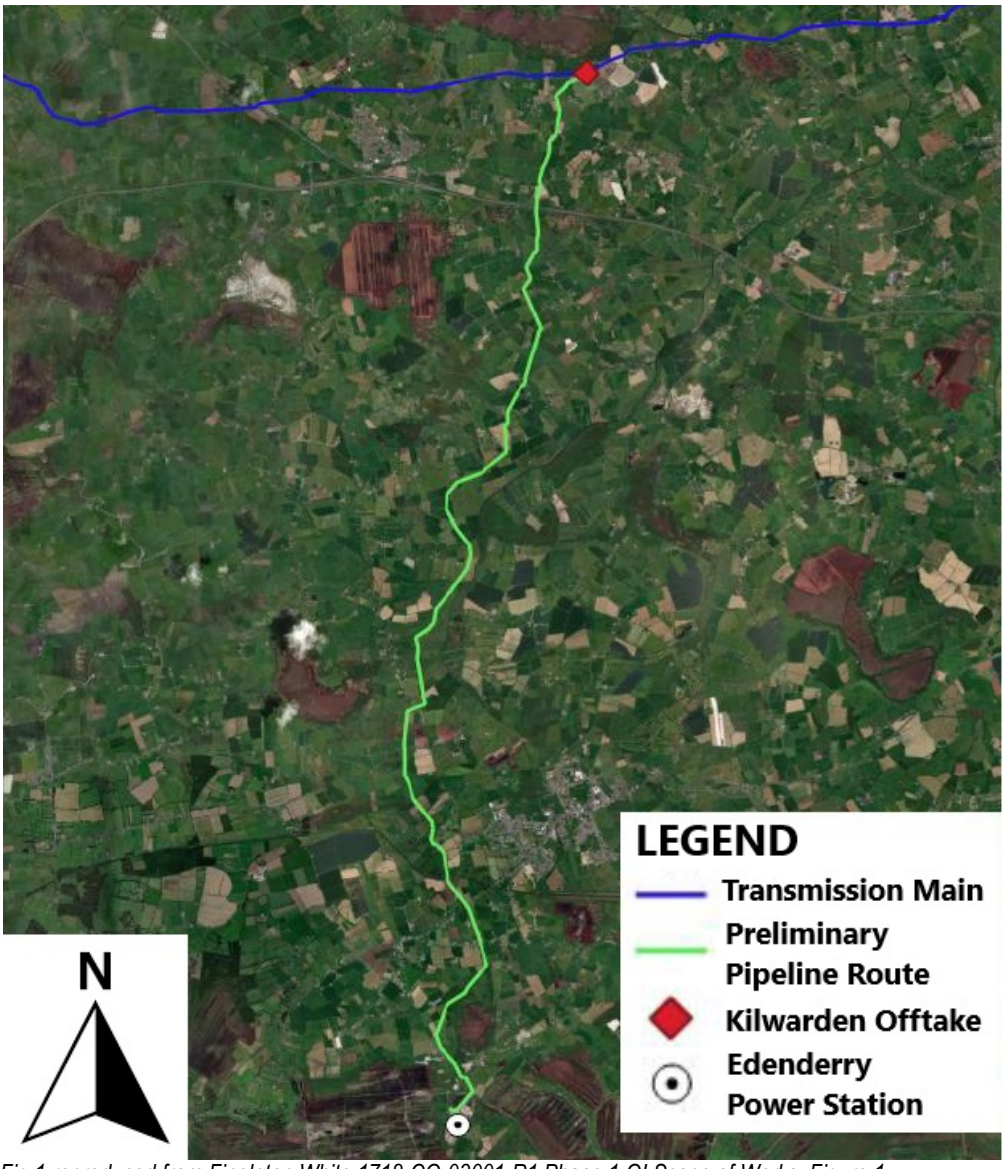


Fig 1 reproduced from Fingleton White 1718-CG-03001-R1 Phase 1 GI Scope of Works, Figure 1

The investigation comprised rotary drilling, cable percussion boring, trial pitting and soakaway tests to BRE365. The investigations were executed in accordance with BS 5930, Code of Practice for Site

Investigations (BS 5930:2015 +A1:2020) and EN 1997-2 Eurocode 7 Part 2 Ground Investigation & Testing and supervised by an IGSL geotechnical engineer.

Geotechnical, chemical and environmental laboratory testing was scheduled on a range of soil and rock samples. The geotechnical soil testing included moisture contents, Atterberg Limits and particle size distribution [PSD] testing. Suites of both chemical testing and environmental testing were undertaken on soils. Where recovered, rock strength testing was completed on recovered cores. This comprised point load strength index testing [PLSI] testing.

This report presents an evaluation of the ground and groundwater conditions and an assessment of the key geotechnical issues pertaining to the high consequence crossing (HCC) 03. This refers to an area in the bordering townlands of Kilwarden and Aghnagillagh, Kinnegad, Co. Meath through which the Kilwarden River meanders in an east-west trend. The holes extend approximately 200m from the river in both north and south directions, perpendicular to the course of the river. The exploratory hole locations which are referenced in this preliminary report are listed in Table 1.

Table 1 – Kilwarden River (RVX 1) exploratory hole locations

High Consequence Crossing 3 (HCC3)	Cable Percussion Borehole	Rotary Drillhole
Kilwarden River (North of)	BH07	RC07
	BH08	RC08
	BH09	RC09
	BH46	RC46
Kilwarden River (South of)	BH10	RC10
	BH11	RC11
	BH12	RC12
	BH48	RC48
	BH49 / BH49A	RC49

2. FIELDWORKS

2.1 General

The geotechnical investigations at the HCC3 crossing were carried out in two phases. Cable percussion boreholes were constructed in July 2025 with rotary drilling following in July and August into early September 2025. The site works comprised the following:

- Cable Percussion Boring (10 No.*)
- Rotary Drillholes (9 No.)
- Groundwater Monitoring / Data Loggers
- Surveying of Exploratory Hole Locations

**Cable Percussion re-setup undertaken at location BH49A following shallow refusal*

2.2 Cable Percussion Boreholes

Cable percussion boring (200mm diameter) methods were deployed initially at each of nine locations [BH_] using a Dando 2000 rig. Following a shallow obstruction, a re-setup was required in order to achieve greater depth at BH49. Similar setup locations were used when following on with rotary drilling at seven of the nine locations. When considering re-setups, the boreholes extended to depths of between 1.0m and 10.50m, the deepest hole located to the north (BH08). At all locations, boring commenced through hand-dug service inspection pits. Disturbed bulk samples were recovered at 1m intervals or change of strata during boring and these are denoted 'B' on the engineering logs.

Standard Penetration Tests (SPT's) were performed in the boreholes and given the nature of the soils, a solid cone was used. It is noted that the SPT N-Values reported are the number of blows for 300mm increment penetration (e.g. BH07 at 2.0m where N=15). These exclude the seating blow values, which represent the initial 150mm depth of penetration. Where partial penetration was achieved during testing, the number of blows is shown for the actual penetration depth achieved (e.g. BH07 at 8.0m where N=50/75mm). In accordance with Eurocode 7, the SPT hammer has been calibrated. It is highlighted that the SPT N-Values reported on the engineering logs are uncorrected for energy ratio.

Descriptions of the soils encountered, in-situ tests undertaken and samples recovered are presented on the borehole records in Appendix 1. Details of groundwater strikes and hard strata boring (i.e. chiselling) are also presented on the aforementioned records.

2.3 Rotary Drillholes

Rotary drilling was carried out (holes denoted RC_) at nine hole locations positioned either side of the Kilwarden River. Drilling works were completed using both a Beretta T44 and Casagrande C6 hydraulic crawler drill rig. Symmetrex drilling was utilised within the overlying superficial deposits with coring techniques used in the underlying bedrock when encountered. The drillholes were each taken to required depths of approximately 20m. In situ SPT testing was carried out in overburden soils, below the end depth of cable percussion bores, shy of eventual bedrock.

Where rockhead was met, the rotary drilling in bedrock produced 78mm diameter cores. Bedrock was described as fresh to slightly weathered, weak to strong, generally medium strong to strong, light to dark blue/black fine-grained massively bedded, predominantly calcisiltite LIMESTONE.

The cores were placed in 3m capacity timber boxes and logged by an IGSL engineering geologist. This included photography of the cores with a digital camera. Where rock core was recovered, a graphic fracture log is also presented alongside the mechanical indices. This illustrates the fracture state of the rock cores and allows easy identification of highly fractured / non-intact zones and discontinuity spacings. It should be noted that no correction for dip of the joints has been made and that the spacings shown are successive joint / core intersections within the core.

A groundwater monitoring standpipe was installed in drillhole RC07 on the northern side of the Kilwarden River. The standpipe consists of 50mm diameter HDPE pipework with proprietary 1mm slots and incorporated a pea gravel filter pack and cement / bentonite grout seal. A headwork cover was fixed in place together with a stock proof timber fence.

The core log records are presented in Appendix 2 and this includes engineering geological descriptions, details of the bedding / discontinuities and mechanical indices (TCR, SCR and RQD's) for each core run. Core photographs are also presented in the aforementioned Appendix 2 and these illustrate the structure and fracture state of the bedrock.

2.4 Groundwater Monitoring / Data Loggers

Groundwater monitoring was undertaken following rotary drilling works. Groundwater levels were measured using an electric dipmeter. The levels recorded are shown in Appendix 3.

A data logger was installed in well RC07 on 10th September 2025. It is intended that the logger will document the variation in well water level over the course of a year-long monitoring period. One barologger was also positioned on site to record fluctuations in barometric pressure over the long term. The downloaded logger information will be issued to Murphy International Limited separately as raw data (in excel format).

2.5 Surveying of Exploratory Hole Locations

Following completion of the exploratory works, surveying was carried out using GPS techniques. Co-ordinates (x, y) were measured to Irish Transverse Mercator and ground levels (z) established to Malin Head. The co-ordinates and ground levels are shown on the exploratory hole logs with locations shown on the exploratory hole plan in Appendix 7.

3. LABORATORY TESTING

Geotechnical laboratory testing was performed at IGSL's INAB-accredited laboratory in accordance with the methods set out in BS1377; British Standard Methods of Test for Soils for Civil Engineering Purposes; British Standards Institute:1990. The laboratory applies best practice management systems as per International Standard IS EN ISO/IEC 17025. The geotechnical testing included moisture contents, Atterberg Limits and particle size distribution [PSD] testing. The results from geotechnical testing on selected cable percussion borehole samples are presented in Appendix 4.

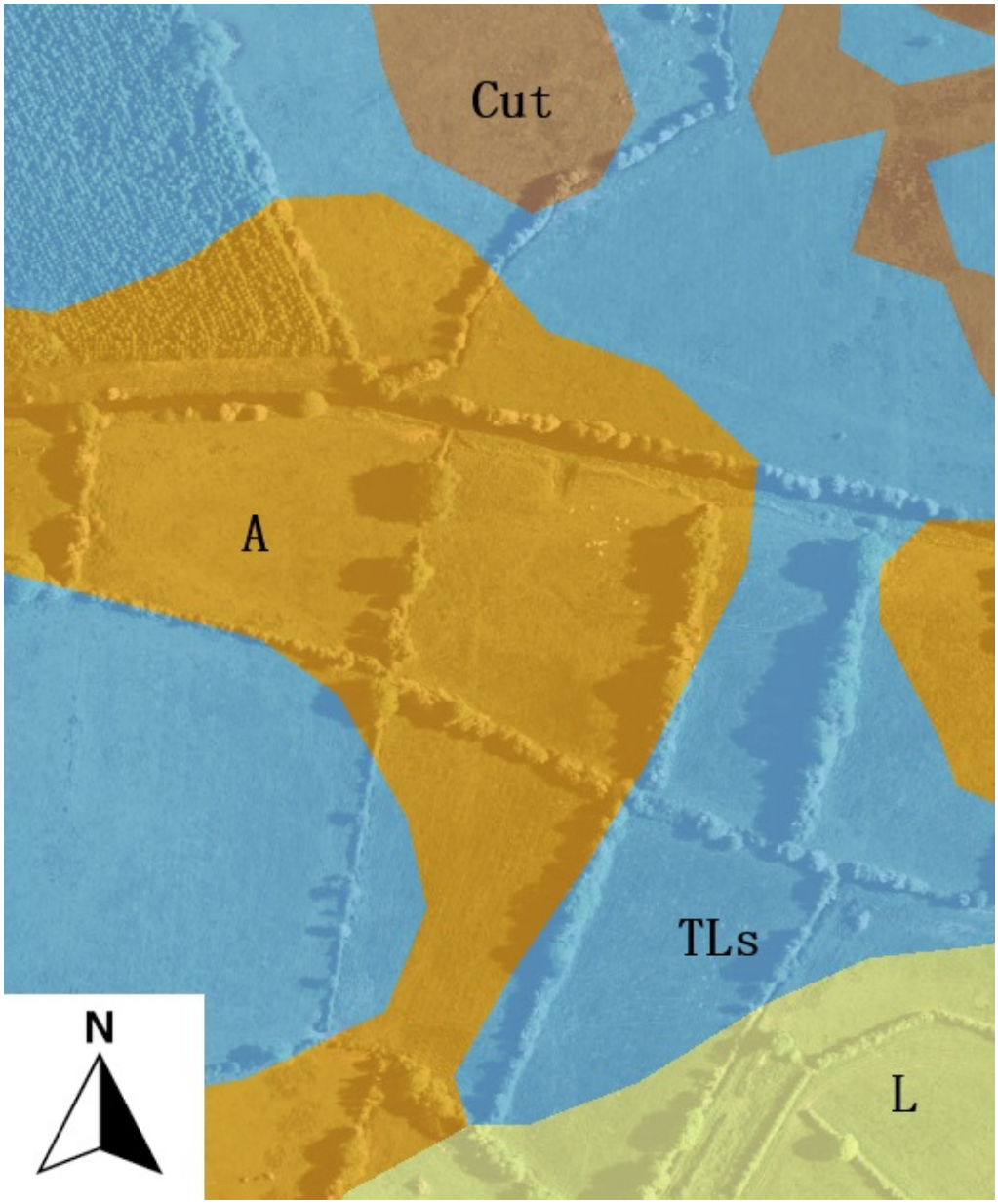
Chemical analysis incorporating BRE SD1 Suite D (Brownfield Site – Pyrite Present) were scheduled on recovered soils and undertaken by Chemtest Laboratories. The chemical results are presented in Appendix 5. Soil samples were selected from borehole excavations for specialist WAC assessment using the *Rilta* Suite of environmental testing. These results are also presented in the Chemtest reports featured in Appendix 5.

Finally, geotechnical laboratory testing was scheduled on selected rock cores. Point load strength index (PLSI) tests were undertaken on the cores. These results are presented in Appendix 6.

4. DESK STUDY

The Quaternary soils plot for the area (Figure 2 - retrieved from GSI website) reveals a varied picture of subsurface alluvium and lacustrine sediments with more widespread till. Alluvium deposition tends to follow the course of the river. There are also instances of "cut over raised PEAT" to the north of the river. The presence of an over-consolidated clay and gravel till was proven largely at depth during the investigation. Soft consistency soils were also noted in the boreholes to appreciable depths. The softening may be attributable to deep-seated water ingress combined with the presence of silt-dominant soils. Such soils are susceptible to water-softening when disturbed.

Figure 2 – Quaternary Soils Plot for the Kilwarden Site



Map Key	**Cut**	- Cut over raised PEAT
	TLs	- Till derived from Limestones
	A	- Alluvium
	L	- Lacustrine Sediments

Reference to the GSI map for the area (Figure 3, 1:100,000 Solid Geology Series: Sheet 13) shows that the site is underlain by Lower Carboniferous, Waulsortian Limestone and Edenderry Oolite Member of the Allenwood Formation. The Waulsortian Limestone (WA) largely consists of calcareous mudstones, wackestones and packstones many of them containing original cavities (including stromatactis) filled with internal sediments and fibrous and blocky sparry cements (Sevastopulo 1982). The very fine-grained carbonate lithology typical of the Waulsortian Limestones is also relatively pure and, in the right circumstances, amenable to dissolution and karst development. Blake *et al* (2015) suggest the Waulsortian limestone deposits within the Dublin Basin are massive and unbedded and are typically less prone to karstification. Waulsortian Limestone is also susceptible to Magnesium replacement and dolomitisation, which can further enhance permeability. McConnell & Philcox (1994) note the texture of the Waulsortian Limestone when dolomitized can make it almost indistinguishable from dolomitised Allenwood Formation limestones.

The Edenderry Oolite Member is described in McConnell, Philcox & Geraghty (1994) as a "partly skeletal calcarenite (bio-oosparite)". A bio-oosparite is a bioclastic limestone that contains both biological fragments (bioclasts) and ooids, with a sparry calcite cement.

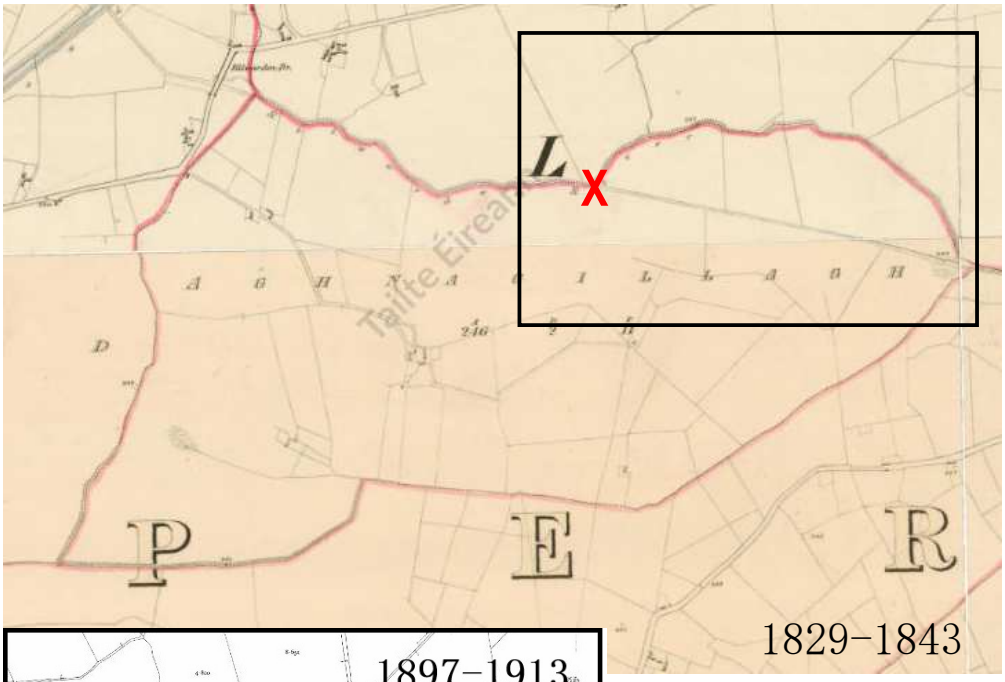
Figure 3 - Bedrock Geological Map for the Kilwarden River Site - GSI Sheet 13



Key:	**AWed**	=	Edenderry Oolite Member
	TC	=	Tober Colleen Formation
	WA	=	Waulsortian Limestones

Examination of Ordnance Survey drawings covering the Kilwarden River highlight the appearance of a possible river diversion or bifurcation between the townlands of Kilwarden to the north and Aghnagillagh to the south. Figure 4A depicts the course of the river in 6" OSI drawings (1829-41). The northern extent of the townland of Aghnagillagh appears delineated by the meandering course of the Kilwarden River. However, in the later 25" OSI maps (1897-1913), the defined river course appears to run straight in an almost W-E trend. This newer river channel was also adopted as the townland boundary between Kilwarden and Aghnagillagh.

Figure 4A-4C - Kilwarden River course in nineteenth and twentieth centuries. A red "X" marks the approximate GNI proposed crossing point.



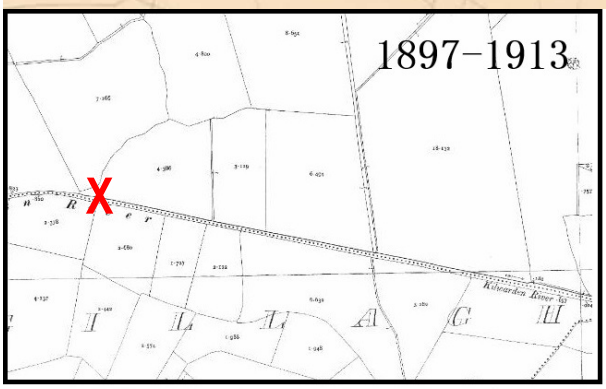


Figure 4B

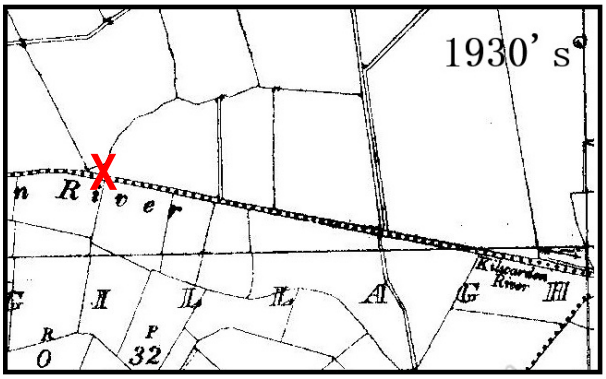


Figure 4C

5. GROUND CONDITIONS & GROUNDWATER

5.1 Ground Profile – Superficial Deposits

The following is a summary of the ground conditions encountered across the site as identified in the exploratory locations. Note that a geological cross section has been drafted to assist in illustrating the stratigraphic makeup at HCC3 (Appendix 8).

TOPSOIL

- Topsoil was generally found to be between 0.20m and 0.30m thick in the boreholes. At borehole location BH08, topsoil was measured to a depth of 0.10m. A soft brown sandy SILT was found immediately beneath the topsoil to a depth of 0.30m bgl.

SUPERFICIAL DEPOSITS – North River

- Borehole BH46, located approx. 130m north of the northern riverbank revealed a mixed uppermost stratigraphy. Initially, a soft grey brown sandy SILT/CLAY was logged, found to become firmer with depth. At 2.20m bgl, a thin layer of fine sandy coarse GRAVEL persisted to 3.0m. Once more a firm grey sandy gravelly SILT re-entered the stratigraphy before a loose to medium dense slightly silty very sandy GRAVEL continued to 6.80m. The cable percussion borehole was terminated at 8.30m (59.25m OD) in a very stiff grey SILT/CLAY with cobbles and boulders. Rotary drilling pushed on through the grey sandy gravelly CLAY from 8.30m to eventual rockhead at 10.50m (57.05m OD). Blowing sands were reported at both 7.0m and 9.20m bgl indicative of the piezometric pressures at depth.

- The remaining three boreholes north of the Kilwarden River were located between 30m and 12m from the riverbank. As with BH46, there were stiff to very stiff CLAY and dense GRAVEL deposits unearthed at depth. These were found from 3.30m / 64.55m OD in BH07, from 7.0m / 61.15m OD in BH08 and from 7.10m / 60.98m OD in BH09. Blowing sands were again a feature in the openhole drill record, being noted at 9.0m in RC09. These were reported shy of a dense dark grey sandy GRAVEL from 9.20m. Rockhead was proven in RC09 at a depth of 12.0m / 56.08m OD.

- Water strikes were recorded in BH08 at 4.70m, in BH09 bgl at 6.50m and in BH07 at 7.20m. These are depicted on the cross section in Appendix 8.

- The stratigraphy in BH07 exhibited an incrementally stiffer consistency with depth. This finding was based on in situ SPT testing. The soils were reported as firm from 1.30m, becoming stiff from 3.30m and very stiff from 6.40m bgl. The borehole was ended in dense grey GRAVEL at 8.10m / 58.75m OD. A water strike was intercepted at a depth of 7.20m / 60.65m OD. This suggests that a water body lies confined in the buried GRAVEL layer at 7.20m. The strike was recorded as 'moderate' in intensity, rising to 6.50m after 20 minutes. Later rotary drilling proved the GRAVEL layer to continue from 8.10m to 10.50m bgl where rockhead was intercepted, proven from 11.50m bgl to a hole end depth of 20m bgl (47.85m OD).

- Both BH08 and BH09 logs reported soft soils at depth. BH09 appears to have soft soils along its length from 2.0m to 7.10m where SPT N-values varied between 5 and 7. At 7.10m, a stiff to very stiff grey sandy gravelly CLAY was intercepted, the hole ending in this material at 9.20m / 58.88m OD.

- In BH08, beneath initially firm soils, from 5.0m bgl a soft sandy SILT/CLAY soil was logged. It may be the case that the deposit is silt-dominant and therefore non-plastic. Coincident with its appearance in the stratigraphy, a water strike was reported at 4.70m. The resultant SPT tests carried out both at 5m and 6m saw SPT N-values of 4 and 8

registered. Given the overlying soils are firm and stiff in consistency, it is very likely that the soils from 5m are liquefying somewhat due to soil disturbance / water entry. Stiff CLAY soils were encountered from 7.0m / 61.15m OD, and continue to eventual cable percussion borehole termination at 10.50m bgl / 57.65m OD. Rotary drilling at RC07 proved a further 1.50m of GRAVEL shy of eventual rockhead from 12.0m / 56.15m OD.

SUPERFICIAL DEPOSITS – South River

- Corresponding to the stratigraphy in BH07, directly across the river on the south bank, borehole BH12 met only firm and stiff soils to an eventual end depth of 9.0m / 59.21m OD. In fact, from 3.20m, a stiff and very stiff very gravelly cobbly CLAY was logged. Later coring proved LIMESTONE rock at the base of the cable percussion borehole at 9.0m.

- BH10, and to a lesser extent BH11, encountered soft or low strength soils. The prevalence of silt-dominant soils in the bores, combined with water ingress, may suggest soil disturbance being the main factor in producing lower than anticipated SPT N-Values at depth - a similar trait to that witnessed in both boreholes 08 and 09 on the north bank. In any case, soft soils persisted to 5.80m in BH10, and a layer of soft soil was logged from 4.0m to 5.70m in BH11. A water strike was intercepted at 3.50m which remained unsealed. This may have resulted in the low SPT values of 3 and 8 at 4.0m and 5.0m depth in BH11.

- Based on SPT testing, BH48 is devoid of soft soils with N-Values noted to increase markedly along the length of the borehole, inferring firm and stiff and very stiff / dense soils to an eventual end depth of 9.0m / 60.13m OD. Rock was later proven at 9.40m bgl.

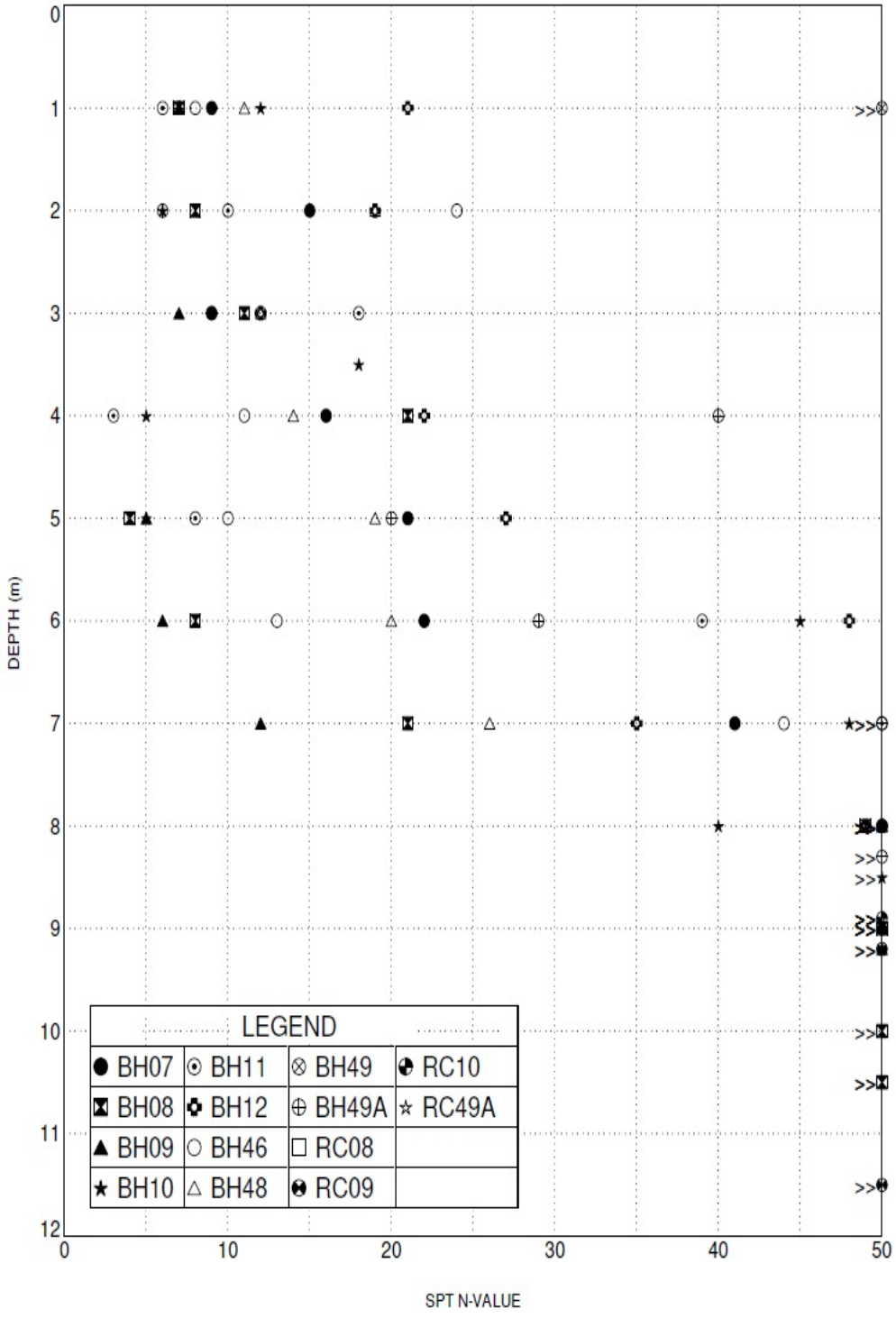
- Approximately 215m south of the river bank, BH49A met initially soft soils to 3.40m with stiff and very stiff sandy gravelly CLAY till soils from 3.40m. At 7.0m, PSD analysis notes a transition to a silty sandy GRAVEL to a borehole end depth of 8.30m / 61.20m OD. Rock was proven at 8.80m, cored from 9.20m.

- Overall, the boreholes on the southern side of the river reveal stiff and very stiff CLAY or basal dense GRAVEL shy of rockhead. Rock was cored in each of the five holes from depths ranging 8.60m to 10.20m bgl. This consistency in depth can be seen clearly in the cross section (Appendix 8).

- SPT N-Values recorded in boreholes suggest an often soft mantle of indigenous CLAY/SILT extending to depths of up to 6.0m depth in some cases. It may be the case that disturbance caused by boring coupled with water ingress diminished the in situ strength of the upper SILT soils which thereby delivered lower than expected or unrepresentative SPT results. The incidence of groundwater between 3.30 and 8m could have artificially softened the uppermost SILT soils.

The standard penetration test [SPT] allows for an appraisal of the ground stiffness. An SPT data plot showing N-Vales against depth is shown in Figure 5. It highlights the initially soft and soft to firm nature of soils in test drives in shallow clay/silt overburden. ‘Low strength’ deposits are those where N values of <10 blows are present.

Figure 5 – SPT Plot versus Depth for Cable Percussion Boreholes / Rotary Drillholes



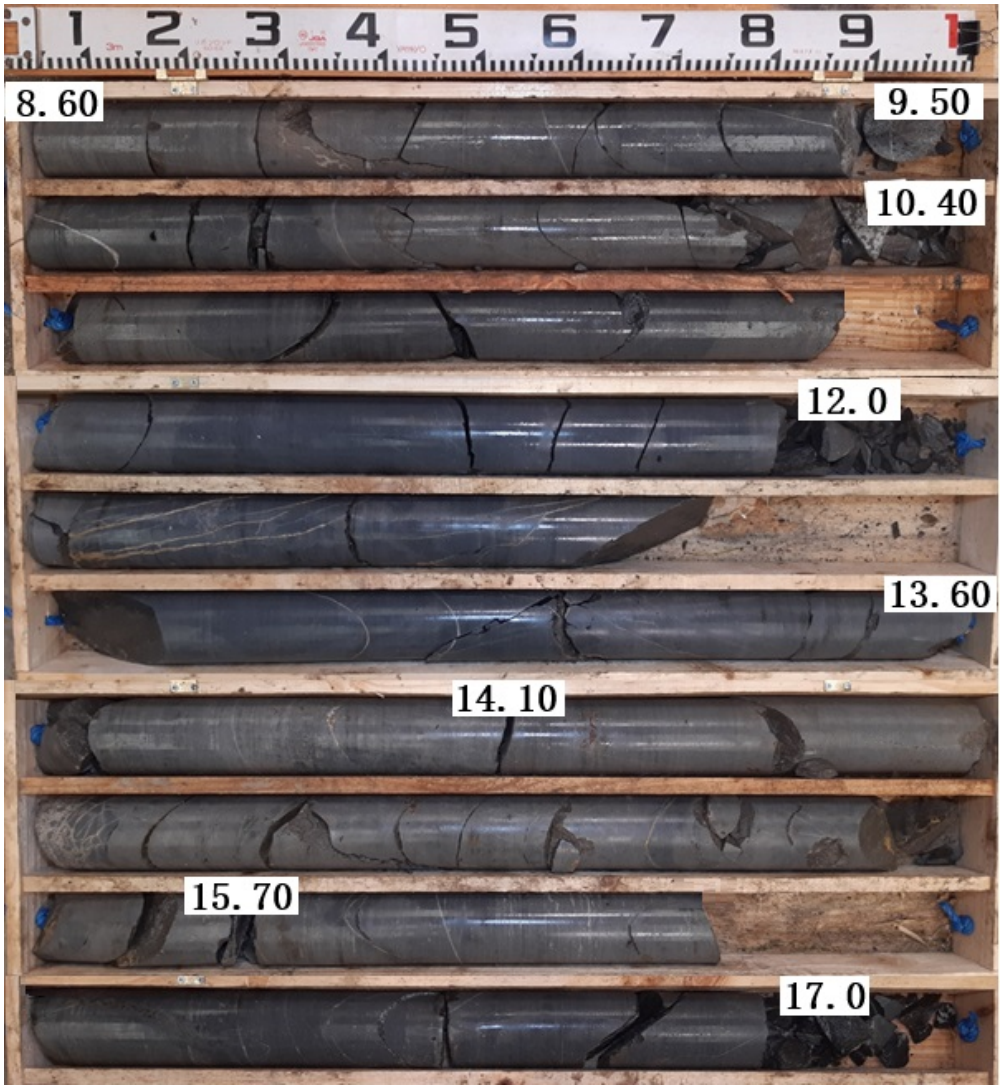
5.2 Bedrock

As referenced earlier in Section 4, the GSI rock map for the area (Figure 3, 1:100,000 Solid Geology series) shows that Waulsortian Limestones along with the Edenderry Oolite member of the Allenwood Formation underlie the site. The Waulsortian Limestone is comprised of very fine-grained carbonate limestones more specifically pale grey biomicrite (a limestone consisting of skeletal debris and carbonate mud). The Edenderry Oolite member is described as a bio-oosparite.

Rotary drilling was conducted at nine locations at HCC3, positioned both north and south of the Kilwarden River. In the case of RC46, north of the river, there were reported a number of CLAY layers within the rock mass from 16.70m bgl / 50.85m OD. Open holing was required to clear the hole from 17.50m to 18.50m such was the fragmented nature of the bedrock. A loss of flush was reported in the attempted core run from 18.50m to 20.60m.

Drilling successfully proved rock at each of the nine locations, at depths ranging 8m to 13m bgl. These depths corresponded to elevations of 59.78m OD and 55.08m OD. Figure 6 shows the core recovery in RC11 on the south side of the river.

Figure 6 – Bedrock cores in RC11 from 8.60m to 17.0m bgl



Drilling showed that cable percussion pre-bores terminated just shy of rockhead in most cases, ending on rock at both locations 11 and 12. The mantle of glacial till soils comprised a mixture of soft, frequently silt-dominant soils together with deeper seated stiff and very stiff sandy gravelly CLAY till and dense / very dense GRAVEL deposits.

The recovered cores consist of fresh to slightly weathered, weak to strong, generally medium strong to strong, light to dark blue/black fine-grained massively bedded LIMESTONE. The bedrock is further classified as consisting of predominantly calci-siltite layers with subordinate argillaceous limestone, being locally fossiliferous.

Discontinuity spacings in the rotary cores generally ranged from closely (60 to 200mm) to widely spaced (600 to 2000mm). The discontinuity surfaces were typically smooth and locally rough, planar to irregular. Apertures were tight to open, locally exhibiting clay smearing with some calcite veinfill. Dips were generally sub-horizontal, locally 30-45° and irregular.

The point load strength index (PLSI) test data produced $I_s(50)$ values ranging from 0.50 to 6 MPa with a mean value of 2.79 MPa. The PLSI strengths are suggestive of the presence of weak, predominantly medium strong and strong rock.

Using a correlation factor (K) of 22 to assess compressive strength, this suggests a characteristic strength envelope in the order of 11 to 132 MPa and categorizes the bedrock as weak (5 to 25MPa) to very strong (100 to 250MPa).

5.3 Groundwater

Water ingress was recorded in both cable percussion boreholes and rotary drillholes. Often two separate water strikes were observed in cable percussion boreholes, the second deeper strike occurring in both stiff and very stiff CLAY strata as well as in the dense confined gravels (BH10 and BH11). The cable percussion boreholes intercepted groundwater at its shallowest at 3.30m bgl (BH10) and at its deepest at 8.0m (BH08, BH09, BH12 & BH49A) (See Table 2). Follow-on rotary drilling at two drillhole locations proved groundwater lying at rockhead level (RC48 & RC49A). During their construction, the rotary drillholes were often remarked as dry.

Table 2 outlines where water was met in each of the exploratory holes. The potential does exist for there to be seasonal changes in groundwater level. The works were carried out during July, August and September 2025. A standpipe was installed in RC07 to allow for ongoing monitoring (continuous data logging).

Table 2 – Water measurements in on-site exploratory holes (from North to South)

	Exploratory Hole No.	Water Struck **m bgl**	Stratum Description	Rate of Flow	Remarks / Stratum of water ingress (m OD)
Cable Percussion Boreholes	BH46	**-**	-	-	Water was noted at **4.50m** bgl in the borehole at the end of shift dated 15-07-25 - hole at 4.80m. Water dipped at **1.30m** upon completion (8.30m) (16-07-25)
	BH07	**7.20 (60.65)**	Dense grey fine sandy coarse GRAVEL	Moderate – water rose to **6.50m** in 20min	Water was noted at **6.90m** bgl in the borehole at the end of shift dated 17-07-25 - hole at 7.20m. Water dipped at **2.0m** upon completion. (8.10m) (18-07-25)
	BH08	**4.70 (63.45)**	Firm grey sandy gravelly CLAY with occasional cobbles	Moderate – water rose to **3.0m** in 20min	-
		8.0 (60.15)	Stiff grey sandy CLAY with cobbles & boulders	Moderate – water rose to **6.0m** in 20min	-
	BH09	**6.50 (61.58)**	Soft grey gravelly SILT/CLAY	Slow - water rose to **6.0m** in 20min	-
		8.0 (60.08)	Stiff to very stiff grey sandy gravelly CLAY with cobbles & boulders	Moderate – water rose to **6.0m** in 20min	-

Cont.

Exploratory Hole No.		Water Struck **m bgl**	Stratum Description	Rate of Flow	Remarks / Stratum of water ingress (m OD)
Cable Percussion Boreholes	BH10	**3.30 (64.70)**	Firm grey gravelly SILT	Moderate - water rose to **2.0m** in 20min	-
		6.0 (62.0)	Dense grey fine to coarse sandy GRAVEL with some cobbles	Rapid – water rose to **4.50m** in 20min	-
	BH11	**3.50 (64.28)**	Firm grey sandy gravelly SILT/CLAY with occasional cobbles	Slow - water rose to **3.0m** in 20min	-
		6.50 (61.28)	Dense grey fine sandy coarse sandy GRAVEL with cobbles	Moderate – water rose to **3.0m** in 20min	-
	BH12	**8.0 (60.21)**	Stiff to very stiff very gravelly CLAY with some cobbles	Moderate – water rose to **5.0m** in 20min	-
	BH48	**6.50 (62.63)**	Stiff to very stiff grey sandy gravelly CLAY with cobbles	Rapid - water rose to **3.50m** in 20min	-
		7.50 (61.63)		Rapid – water rose to **2.50m** in 20min	-
	BH49A	**6.50 (63.0)**	Stiff to very stiff grey sandy gravelly CLAY with occasional cobbles	Rapid - water rose to **3.50m** in 20min	-
		8.0 (61.50)		Rapid – water rose to **3.0m** in 20min	-

Cont.

Exploratory Hole No.		Water Struck **m bgl**	Stratum Description	Rate of Flow	Remarks / Stratum of water ingress (m OD)
Rotary Drillholes	RC07	**9.0 (58.85)**	Grey clayey sandy GRAVEL with cobbles	-	**1.65m** Water end of shift 29-08-25 - hole at 13.20m. **2.10m** Water start of shift 01-09-25 - hole at 13.20m. **2.54m** Water end of shift 01-09-25 - hole at 15.90m. **2.07m** Water start of shift 02-09-25 - hole at 15.90m. Water dipped at **2.22m** upon completion. Hole depth 20.0m. Hole cased to 11.50m (02-09-25). Standpipe dipped 10-09-25 at **1.98m** 65(87.m OD)
	RC08	**11.0 (57.15)**	Grey sandy GRAVEL	-	**8.34m** Water end of shift 30-07-25 - hole at 12.0m. **9.18m** Water start of shift 31-07-25 - hole at 12.0m. **2.87m** Water end of shift 31-07-25 - hole at 16.20m. **2.13m** Water start of shift 01-08-25 - hole at 16.20m.
		12.50 (55.65)	Strong grey LIMESTONE (bedrock) - fragmented recovery	-	
	RC09	**6.0 (62.08)**	Grey slightly gravelly SILT/CLAY	-	*Blowing SAND* reported at 9.20m in dark grey sandy GRAVEL
	RC10	**-**	-	-	**DRY** at end of shift 01-08-25 - hole at 8.90m. **DRY** at start of shift 06-08-25 - hole at 8.90m. **10.10m** Water end of shift 06-08-25 - hole at 16.40m. **2.0m** Water start of shift 07-08-25 - hole at 16.40m. Water dipped at **7.80m** upon completion. Hole depth 19.50m. Hole cased to 10.20m (07-08-25).

Cont.

Exploratory Hole No.		Water Struck **m bgl**	Stratum Description	Rate of Flow	Remarks / Stratum of water ingress (m OD)
Rotary Drillholes	RC11	**-**	-	-	**DRY** at end of shift 07-08-25 - hole at 5.90m. **DRY** at start of shift 08-08-25 - hole at 5.90m. **8.60m** Water end of shift 08-08-25 - hole at 13.60m. **2.80m** Water start of shift 09-08-25 - hole at 13.60m. Water dipped at **6.20m** upon completion. Hole depth 17.0m. Hole cased to 8.60m (09-08-25).
	RC12	**-**	-	-	**9.20m** at end of shift 30-07-25 - hole at 11.60m. **6.20m** at start of shift 31-07-25 - hole at 11.60m. **9.40m** Water end of shift 31-07-25 - hole at 14.0m. **6.80m** Water start of shift 01-08-25 - hole at 14.0m. Water dipped at **10.20m** upon completion. Hole depth 15.10m. Hole cased to 10.0m (01-08-25). Cont.
	RC46	**10.0 (57.55)**	Grey sandy gravelly CLAY shy of ROCKHEAD (10.50m)	-	**2.19m** Water start of shift 03-09-25 - hole at 8.30m. **2.23m** Water end of shift 03-09-25 - hole at 14.80m. **1.70m** Water start of shift 04-09-25 - hole at 14.80m. **2.20m** Water end of shift 04-09-25 - hole at 17.50m. **1.19m** Water start of shift 05-09-25 - hole at 17.50m.

Exploratory Hole No.		Water Struck **m bgl**	Stratum Description	Rate of Flow	Remarks / Stratum of water ingress (m OD)
Rotary Drillholes	RC48	**9.0 (60.13)**	Black gravelly CLAY shy of ROCKHEAD (9.40m)	-	**DRY** at end of shift 09-08-25 - hole at 4.50m. **DRY** at start of shift 11-08-25 - hole at 4.50m. **10.80m** Water end of shift 11-08-25 - hole at 13.30m. **6.40m** Water start of shift 12-08-25 - hole at 13.30m. Water dipped at **3.80m** upon completion. Hole depth 17.40m. Hole cased to 10.10m (12-08-25).
	RC49A	**8.30 (61.20)**	Grey/brown sandy gravelly CLAY shy of ROCKHEAD (8.80m)	-	**9.0m** Water end of shift 13-08-25 - hole at 11.60m. **3.80m** Water start of shift 14-08-25 - hole at 11.60m. Water dipped at **7.20m** upon completion. Hole depth 17.20m. Hole cased to 9.20m (14-08-25).

6. GROUND ASSESSMENT & ENGINEERING RECOMMENDATIONS

6.1 General

In light of the ground investigation findings, the following geotechnical issues are developed and discussed:

- Pipeline Kilwarden River (RVX 1) Crossing
- Groundwater
- Slopes / Batters
- Buried Concrete
- Waste Acceptance Criteria [WAC] & Environmental Testing - *Soils destined for Landfill*

6.2 Pipeline Kilwarden River (RVX 1) Crossing

(See Cross Section 'N-S' – Appendix 8)

Boreholes were constructed in fields both immediately to the north and south of the Kilwarden River. They each encountered thick upper sequences of CLAY/SILT (stiffening with depth) with occasionally underlying deeper-seated, apparently water-bearing GRAVEL (BH07, RC08, BH10 & BH11). Rotary coring proved LIMESTONE bedrock from ca. 8.0 (RC11) to 13.0m bgl (RC08). There may be a gravel channel cut into the bedrock at RC09 where the bedrock apparently falls to its lowest level (13.0 / 55.08m OD). There is some variation in the uppermost cover of superficial deposits whereby a soft CLAY/SILT was remarked initially in a number of holes to ca. 5.0 & 6.0m bgl (See SPT plot – Figure 5). The possible presence of soft ground would warrant further investigation. Additionally, the potential for a buried river channel to exist along the former Kilwarden / Aghnagillagh townland boundary (Figure 4A) most especially at its western extent near the proposed crossing, will also warrant closer examination.

In this regard, the construction of a grid of probes should permit an assessment of the in situ strength properties / density of the surficial soils. It is thought that the "soft" consistency (based on an assessment of SPT blowcounts) is largely due to soil disturbance at depth caused during boring.

In addition, to tie the intrusive findings from the north and south banks, as well as to allow further examination of the strength of the soils, an onland and overwater geophysical survey could be conducted. A combination of techniques (ERT, seismic & MASW) could be deployed.

Electrical Resistivity Tomography (ERT) soundings image the resistivity of the materials in the subsurface along a profile to produce a pseudo-section showing the variation in resistivity to 15-20m bgl, depending on the length of the profile. Each pseudo-section can be interpreted to determine the material type along the profile at increasing depth, based on the typical resistivities returned for Irish ground materials. The intrusive findings allow for calibration of the geophysical soundings.

Seismic Refraction Profiling measure the velocity of refracted seismic waves (*p*-wave) through the overburden and rock material and allow for an assessment of the thickness and quality of the materials present. Stiffer and stronger materials usually have higher seismic velocities while soft, loose or fractured materials have lower velocities. Readings are taken using geophones connected via multi-core cable to a seismograph. This method should allow profiling of the depth to the top of the bedrock, along profiles across the site.

The MASW method is used to estimate shear-wave (S-wave) velocities in the ground material to indicate possible soft zones. Overburden material with an S-wave velocity of <175 m/s is generally classified as soft/loose. The depth of investigation for this method will depend on the source type and geophone spacing. This method may also be used to indicate bedrock depth.

Ahead of the construction of the pipe crossing, advice and consultation is recommended with specialist micro-tunnelling or HDD contractor.

The presence of potentially shallow variably soft CLAY/SILT suggests use of ground support techniques (e.g. trench boxes). The shallowest water strike in the area was recorded in BH10 at 3.30m (moderate strike) which rose to 2.0m during the twenty-minute monitoring period. Where deep rotary drillholes were sunk, despite there being largely deep-seated water strikes (6 – 12.50m bgl), water re-equilibration during construction regularly saw levels return to approximately 2m bgl. Based on this, it is likely dewatering (pumping) would be required if deep excavations are envisaged. Monitoring should be undertaken at RC07 to understand the seasonal fluctuations in water table level. Where soft ground conditions exist locally, over-excavation and placement of deep trench fill may be required to form a suitable bedding for pipework. This should be conducted in line with Clause 502 Excavation for Pipes and Chambers as featured in the Specification for Road Works Series 500 - Drainage and Service Ducts (TII, 2015);

> *"soft spots existing below the bottom of an excavation shall be removed and the resulting voids backfilled and compacted with Granular Material Type B complying with Clauses 803 or 804 or pipe bedding material complying with Clause 503, or mix ST1 concrete"*

Where encountered, soft and soft / firm upper soils would provide a safe or allowable bearing pressure of the order of 40-50 kPa. The cross section developed for the Kilwarden River crossing illustrates the presence of potential low strength soils (soft and soft to firm) extending to depths of up to 5.0m / 6.0m. Such soils present further risk for sidewall instability. Trial pitting and dynamic probing at the crossing point should further enhance our understanding of the in situ performance of the CLAY/SILT rather than relying entirely on SPT test results (See Figure 5). The issue with silt-dominant tills is that once saturated and subsequently loaded / disturbed, dilatant behaviour usually occurs. The SPT results may only have served to exacerbate this effect in the silt thereby deriving lower than expected SPT results. Where water-bearing silts are encountered during construction, groundwater draw down should be undertaken to avoid destabilising the silt.

The use of a geotextile separating layer between the backfill material and the underlying natural ground / trench base should also be considered. Where significant thickness of backfill is imported, a geogrid layer could be introduced to strengthen the backfill material. Excavation of open trenches in soft and soft to firm soils will pose issues for stability with generous battering required to offset the risk of sidewall collapse. As an alternative to wide batters, as mentioned earlier, the use of trench boxes could be considered should there be a requirement for deeper excavation.

6.3 Groundwater

As outlined in Section 5.3, groundwater strikes in boreholes and drillholes were restricted to depths beyond 2.0m bgl. Sump pumping may be required where shallow perched water entries are met. Elsewhere, where deep excavation in natural soils is required beyond 2.0 / 2.50m, this will likely necessitate dewatering. The water level in RC07 monitoring well should be dipped as part of a longer-term monitoring programme. It may be the case that water re-equilibrates to higher depths than were recorded on site most especially during the wetter months of Winter / Spring.

Should water be encountered during deeper digs / excavations it is likely that de-watering will be required through a combination of strategic sump pumping. As mentioned in Section 5.3, the potential does exist for there to be seasonal changes in groundwater level. The works were carried out during Summer 2025. It may be the case that the various waterbodies at depth are subject to seasonal variations. As noted, readings should be taken at RC07 to assess equilibrated water levels.

6.4 Slopes / Batters

In the absence of trench stabilisation methods, a maximum temporary slope angle of 1V to 1.5H (33º) is anticipated for batters constructed within the upper low to medium and medium strength fine grained soils. A slope angle of 1V to 2H (26°) should be appropriate for long term batters in the same

soils. Further investigation (dynamic probing / trial pitting) on the pipeline corridor should pinpoint any soft zones / stability issues in near surface SILT.

Where deep excavation works are required in the superficial deposits, the use of trench box support is advised. In addition, the uppermost fine subsoils will be susceptible to softening and degradation and surface water or groundwater ingress can lead to a significant reduction in shear strength. Perched water can exist locally and this should be considered in risk assessments for excavations.

Site operatives or personnel should not enter unsupported excavations and should be informed of potential risks. Where site operatives or engineering staff work in close proximity to temporary slopes or batters, these should be inspected and approved by a suitably experienced civil engineer, preferably with geotechnical experience. Where there is a risk of spalling of battered slopes, the use of a geogrid is recommended. The geogrid should be anchored at the top and bottom of the ridge face to contain particles such as gravel, cobbles and / or boulders that may become dislodged.

6.5 Buried Concrete

The chemical analysis tests show pH values of between 8.2 and 8.7 with sulphate aqueous extract (SO_4) values ranigng from <10mg/l to 140mg/l. This would categorise the upper natural soils as BRE Class DS-1. Table C1 ACEC for greenfield sites in BRE SD 1 (2005) could be used in the selection and design of concrete. With mobile groundwater conditions and given the pH values obtained, then ACEC class AC-1^q would be expected to be appropriate for buried concrete in natural soils.

In line with I.S. EN 206-1:2013 concrete could be manufactured to Class XA1 where founded or positioned in the upper soils (Class XA1 being ≥ 2000 and ≤ 3000 SO_4^{2-} mg/kg). However, based on the chemical results, there does not appear to be any issue with "chemical attack".

6.6 Waste Acceptance Criteria [WAC] & Environmental Testing – *Soils destined for Landfill*

Nine shallow soil samples were selected from the boreholes at the Kilwarden River. They were each analysed for compliance to the criteria set out in the 2002 European Landfill Directive (2003/33/EC). From the resultant testing, all samples can be classified as inert as per the 2002 European Landfill Directive (2003/33/EC).

Table 3 – Samples subject to Waste Acceptance Criteria [WAC] testing

Exploratory Hole Number	Sample Depth	Chemtest Report	Soil Description
BH08	0.50	25-24474	Firm grey/brown sandy slightly gravelly SILT/CLAY
BH09	0.50		Firm grey/brown sandy gravelly SILT/CLAY
BH11	1.0		Soft grey/brown sandy slightly gravelly SILT/CLAY
BH12	0.50		Stiff grey/brown sandy gravelly CLAY with occasional cobbles
BH07	1.0	25-24940	Soft grey sandy slightly gravelly SILT/CLAY
BH46	1.0		Soft grey/brown mottled sandy slightly gravelly SILT/CLAY
BH10	1.0	25-25515	Firm brown sandy gravelly SILT/CLAY
BH48	0.5		Firm brown sandy slightly gravelly SILT/CLAY
BH49A	0.5		Brown sandy SILT/CLAY

The results obtained from the testing of the nine inert borehole samples were also compared with published limits set out in the EPA Guidance on waste acceptance criteria at authorized soil recovery facilities (EPA, 2020). With regard to each of the criteria set for Total Organic Carbon and for the organic compounds BTEX, Mineral Oil, PAH and PCB's, eight of the nine samples were found to satisfy the criteria stipulated by the EPA. One of the nine samples was found to have an exceedance in relation to Total Of 17 PAH content (BH07 – 1.0m). Table 4 features the named exceedance as reported in the environmental test report 25-24940. The sample from the named location would therefore not be accepted at an EPA Soil Recovery Facility.

Table 4 – Exceedances reported for maximum concentrations as per EPA Guidance Document on Soil Recovery Facilities (Exceedances in red font)

Parameter	EPA Guidance Document Limit	BH07 1.0m
Total Of 17 PAHs Lower	**1mg/kg**	1.1

Table 5 – Elevated metal contents (EPA Guidance Document on Soil Recovery Facilities) for soil samples BH11 (1.0m) & BH49A (0.50m) applying Geochemical Domain 2 values (Exceedance in red font)

Metal Parameter	EPA Guidance Document Limit (mg/kg) (Geochemical Domain 2)	BH11 1.0m	BH49A 0.50m
Arsenic (As)	**24.9**	*34*	22
Nickel (Ni)	**61.9**	11	*77*

Furthermore, in relation to total metal concentrations, the EPA Guidance document employs a set of specific metal trigger limits to each of seven geochemical domains across the country. Depending on the domain in which the accepting recovery site falls, there are specific limits prescribed for certain metals. In order to further analyse the soils suitability for acceptance at an EPA recovery facility, the domain of the receiving facility would have to be known. For the purposes of this report, the maximum concentrations and / or trigger levels in soil and stone for soil recovery facilities for Geochemical Domain 2 (Carboniferous limestone and related rocks) are applied. In relation to the remaining eight samples, six exhibit metal concentrations within those published for Geochemical Domain 2 and would therefore, based on their metal and TOC / organic compound contents be accepted at an authorized soil recovery facility. However, the two samples listed in Table 5 exhibit various metal concentrations which exceed that which is published for Geochemical Domain 2. Such concentrations would preclude the two samples from being accepted at a Geochemical Domain 2 facility where the more onerous trigger limits exist.

Furthermore, written into the EPA (2002) document, only "soil and stone containing up to 2% non-natural materials by weight is acceptable, ie., anthropogenic or man-made substances such as rubble, concrete, bricks, metal and bitumen that are non-natural to the environment from which the material was extracted". This 2% content level for man-made materials would have to be complied with should the soils be exported to an EPA-licenced Soil Recovery Facility.
In relation to sending the analysed samples to an EPA-licenced Soil Recovery Facility, the limits for acceptance at the nominated facility should be checked against the results listed in the test record sheet - final report.

Note that, depending on the extent and depth of envisaged excavations and quantities for soil removal (if required), a landfill or Soil Recovery Facility may require additional testing to achieve the frequency of analysis (i.e. number of samples per unit volume of excavation) that meets their licence requirements.

No asbestos was detected in screens ran on the nine soil samples.

It would be prudent, given the varying degree of compliance with WAC limits, that a waste characterisation assessment of the results would be carried out in accordance with the Environmental Protection Agency (EPA) Guidelines on the Classification of Waste (2015). We would recommend that a specialist environmental consultant (such as O'Callaghan Moran Consultants) be engaged to undertake this assessment.

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Appendix 1

Cable Percussion Borehole Logs

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH07**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,902.19 E 745,937.07 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	67.85	**BOREHOLE DEPTH (m)**	8.10
		DATE COMMENCED	17/07/2025
		DATE COMPLETED	18/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	D.Tolster
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		67.55	0.30						
	Soft grey sandy slightly gravelly SILT/CLAY									
1			66.55	1.30	AA238659	B	1.00-1.45		N = 9 (1, 1, 2, 1, 2, 4)	
	Firm light grey mottled sandy gravelly SILT with occasional cobbles									
2					AA238660	B	2.00-2.45		N = 15 (1, 1, 2, 3, 5, 5)	
3			64.55	3.30	AA238661	B	3.00-3.45		N = 9 (1, 1, 1, 2, 2, 4)	
	Stiff grey slightly sandy slightly gravelly SILT with occasional cobbles & boulders									
4					AA238662	B	4.00-4.45		N = 16 (2, 3, 3, 2, 5, 6)	
5					AA238663	B	5.00-5.45		N = 21 (1, 1, 4, 4, 6, 7)	
6			61.45	6.40	AA238664	B	6.00-6.45		N = 22 (1, 1, 2, 2, 8, 10)	
	Very stiff grey/brown sandy gravelly CLAY with occasional cobbles & boulders									
7			60.65	7.20	AA238665	B	7.00-7.45		N = 41 (3, 7, 10, 11, 10, 10)	
	Dense grey silty fine sandy coarse GRAVEL									
8			59.75	8.10	AA238666	B	8.00-8.10		N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 8.10 m									
9										
10										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
8	8.1	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
7.20	7.20	No	6.50	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
17-07-25	7.20	7.20	6.90	End of 1st day
18-07-25	8.10	8.10	2.00	End of BH

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 22/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH08**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,944.10 E 745,939.24 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	68.15	**BOREHOLE DEPTH (m)**	10.50
		DATE COMMENCED	11/07/2025
		DATE COMPLETED	14/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		68.05	0.10						
	Soft brown sandy SILT		67.65	0.50						
	Firm grey/brown sandy gravelly SILT				AA258617	B	0.50-1.00			
1					AA258618	B	1.00-1.50		N = 7 (1, 2, 2, 2, 1, 2)	
			66.15	2.00						
2	Firm grey sandy gravelly SILT				AA258619	B	2.00-2.50		N = 8 (1, 2, 3, 2, 1, 2)	
3					AA258620	B	3.00-3.50		N = 11 (3, 4, 2, 2, 3, 4)	
			64.75	3.40						
	Firm grey sandy gravelly CLAY with occasional cobbles									
4					AA258621	B	4.00-4.50		N = 21 (2, 3, 6, 8, 3, 4)	
			63.15	5.00						
5	Soft grey sandy gravelly CLAY				AA258622	B	5.00-5.50		N = 4 (1, 1, 1, 1, 1, 1)	
6					AA258623	B	6.00-6.50		N = 8 (1, 2, 1, 2, 3, 2)	
			61.15	7.00						
7	Stiff grey sandy gravelly SILT with cobbles & boulders				AA258624	B	7.00-7.50		N = 21 (2, 3, 3, 4, 6, 8)	
8					AA258625	B	8.00-8.50		N = 49 (10, 15, 10, 10, 12, 17)	
9					AA258626	B	9.00-9.50		N = 50/75 mm (25, 50)	
10					AA258627	B	10.00-10.50		N = 50/150 mm (20, 5, 40, 10)	

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
9	9.3	1	
10.2	10.5	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.70	4.70	No	3.00	20	Moderate
8.00	8.00	No	6.00	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH08**
		SHEET	Sheet 2 of 2
CO-ORDINATES	662,944.10 E 745,939.24 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	68.15	**BOREHOLE DEPTH (m)**	10.50
		DATE COMMENCED	11/07/2025
		DATE COMPLETED	14/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
		BORED BY	P.Allan
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
	Stiff grey sandy gravelly SILT with cobbles & boulders *(continued)*		57.65	10.50					N = 50/75 mm (25, 50)	
11	Obstruction End of Borehole at 10.50 m									
12										
13										
14										
15										
16										
17										
18										
19										
20										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
9	9.3	1	
10.2	10.5	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH09**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,972.66 E 745,911.12 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	68.08	**BOREHOLE DEPTH (m)**	9.20
		DATE COMMENCED	14/07/2025
		DATE COMPLETED	15/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
		BORED BY	P.Allan
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		67.88	0.20						
	Soft brown sandy CLAY		67.58	0.50						
	Firm grey/brown sandy gravelly SILT/CLAY				AA258627	B	0.50-1.00			
1					AA258628	B	1.00-1.50		N = 7 (1, 1, 2, 1, 2, 2)	
			66.08	2.00						
2	Soft grey sandy slightly gravelly CLAY					U	2.00-2.50	60%rec		
3					AA258629	B	3.00-3.50		N = 7 (1, 2, 1, 2, 2, 2)	
4						U	4.00-4.50	100%rec		
			63.08	5.00						
5	Soft grey sandy gravelly CLAY				AA258630	B	5.00-5.50		N = 5 (1, 0, 1, 1, 1, 2)	
6					AA258631	B	6.00-6.50		N = 6 (1, 2, 1, 1, 2, 2)	
			60.98	7.10	AA258632	B	7.00-7.50		N = 12 (1, 2, 2, 3, 3, 4)	
7	Stiff to very stiff grey sandy gravelly CLAY with cobbles & boulders									
8					AA258633	B	8.00-8.50		N = 50 (12, 12, 10, 15, 15, 10)	
9			58.88	9.20					N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 9.20 m								N = 50/75 mm (25, 50)	
10										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
7.6	7.9	1	
9	9.2	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.50	6.50	No	6.00	20	Slow
8.00	8.00	No	6.00	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH10**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,960.27 E 745,883.38 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	68.00	**BOREHOLE DEPTH (m)**	8.50
		DATE COMMENCED	18/07/2025
		DATE COMPLETED	19/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		67.80	0.20						
	Firm brown sandy gravelly SILT/CLAY				AA254609	B	0.50			
1					AA254610	B	1.00		N = 12 (2, 2, 2, 3, 3, 4)	
			66.50	1.50						
	Soft grey sandy gravelly CLAY									
2					AA254611	B	2.00		N = 6 (1, 2, 1, 2, 1, 2)	
	Soft to firm grey SILT									
3			64.90	3.10	Fail	U	3.00			
	Firm grey gravelly SILT									
					AA254612	B	3.50		N = 18 (5, 6, 5, 6, 3, 4)	
			64.00	4.00						
4	Soft grey sandy gravelly CLAY with some cobbles				AA254613	B	4.00		N = 5 (1, 0, 1, 1, 1, 2)	
5					AA254614	B	5.00		N = 5 (1, 0, 1, 1, 2, 1)	
			62.20	5.80						
6	COBBLES with brown slightly clayey/silty slightly sandy Gravel				AA254615	B	6.00		N = 45 (6, 6, 8, 10, 15, 12)	
7					AA254616	B	7.00		N = 48 (4, 6, 8, 10, 17, 13)	
			60.50	7.50						
	Dense grey fine to coarse sandy GRAVEL with some cobbles									
8									N = 40 (10, 15, 10, 9, 10, 11)	
			59.50	8.50					N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 8.50 m									
9										
10										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
6.2	6.5	1	
8.3	8.5	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.30	3.30	No	2.00	20	Moderate
6.00	6.00	No	4.50	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH11**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,927.00 E 745,873.78 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	67.78	**BOREHOLE DEPTH (m)**	8.00
		DATE COMMENCED	17/07/2025
		DATE COMPLETED	18/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		67.48	0.30						
	Soft grey/brown sandy slightly gravelly SILT/CLAY				AA254601	B	0.50-1.00			
1					AA254602	B	1.00-1.50		N = 6 (1, 0, 1, 1, 2, 2)	
			66.28	1.50						
	Firm grey sandy gravelly SILT with occasional cobbles									
2					AA254603	B	2.00-2.50		N = 10 (3, 4, 2, 4, 2, 2)	
3					AA254604	B	3.00-3.50		N = 18 (4, 3, 2, 6, 5, 5)	
			63.78	4.00						
4	Soft grey sandy gravelly CLAY				AA254605	B	4.00-4.50		N = 3 (1, 0, 1, 0, 1, 1)	
5					AA254606	B	5.00-5.50		N = 8 (1, 1, 1, 2, 3, 2)	
			62.08	5.70						
6	Very stiff grey sandy CLAY with cobbles & boulders				AA254607	B	6.00-6.50		N = 39 (7, 10, 10, 10, 9, 10)	
			61.28	6.50						
7	Dense grey slightly clayey/silty fine sandy coarse GRAVEL with cobbles				AA254608	B	7.00-7.50		N = 50/150 mm (20, 5, 40, 10)	
			59.78	8.00						
8	Obstruction End of Borehole at 8.00 m								N = 50/75 mm (25, 50)	
9										
10										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
6.6	6.9	1	
7.7	8	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.50	3.50	No	3.00	20	Slow
6.50	6.50	No	3.00	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 22/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH12**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,894.94 E 745,902.21 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	68.21	**BOREHOLE DEPTH (m)**	9.00
		DATE COMMENCED	15/07/2025
		DATE COMPLETED	16/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		68.01	0.20						
	Stiff grey/brown sandy gravelly CLAY with occasional cobbles				AA258634	B	0.50-1.00			
1					AA258635	B	1.00-1.50		N = 21 (2, 3, 3, 6, 6, 6)	
2					AA258636	B	2.00-2.50		N = 19 (2, 3, 4, 4, 5, 6)	
	Firm grey sandy gravelly SILT/CLAY		65.91	2.30						
3			65.01	3.20	AA258637	B	3.00-3.50		N = 12 (3, 6, 4, 2, 2, 4)	
	Stiff to very stiff slightly sandy slightly gravelly CLAY with some cobbles									
4					AA258638	B	4.00-4.50		N = 22 (4, 3, 6, 5, 4, 7)	
5					AA258639	B	5.00-5.50		N = 27 (1, 2, 3, 2, 10, 12)	
6					AA258640	B	6.00-6.50		N = 48 (14, 11, 10, 10, 12, 16)	
7					AA258641	B	7.00-7.50		N = 35 (4, 6, 8, 9, 9, 9)	
8					AA258642	B	8.00-8.50		N = 49 (6, 8, 14, 14, 11, 10)	
			59.21	9.00						
9	Obstruction End of Borehole at 9.00 m								N = 50/75 mm (25, 50)	
10										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
6.1	6.5	1	
8.7	9	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
8.00	8.00	No	5.00	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 22/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH46**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,974.18 E 746,029.73 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	67.55	**BOREHOLE DEPTH (m)**	8.30
		DATE COMMENCED	15/07/2025
		DATE COMPLETED	16/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	D.Tolster
		PROCESSED BY	A.M

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		67.25	0.30						
	Soft light grey sandy SILT/CLAY		66.55	1.00						
1	Soft grey/brown mottled sandy slightly gravelly SILT/CLAY		66.05	1.50	AA238651	B	1.00-1.45		N = 8 (0, 1, 1, 2, 2, 3)	
2	Firm light grey mottled sandy gravelly SILT with occasional cobbles & boulders		65.35	2.20	AA238652	B	2.00-2.45		N = 24 (2, 5, 5, 6, 7, 6)	
	Medium dense grey fine sandy coarse GRAVEL		64.55	3.00						
3	Firm grey sandy gravelly SILT		63.55	4.00	AA238653	B	3.00-3.45		N = 12 (1, 1, 2, 2, 3, 5)	
4	Firm brown slightly sandy gravelly SILT/CLAY with some cobbles		62.55	5.00	AA238654	B	4.00-4.45		N = 11 (1, 2, 2, 2, 2, 5)	
5	Loose to medium dense grey slightly silty very sandy GRAVEL				AA238655	B	5.00-5.45		N = 10 (0, 2, 1, 2, 3, 4)	
6					AA238656	B	6.00-6.45		N = 13 (1, 1, 3, 3, 2, 5)	
			60.75	6.80						
7	Very stiff grey slightly sandy slightly gravelly CLAY with occasional cobbles & boulders				AA238657	B	7.00-7.45		N = 44 (5, 8, 10, 11, 12, 11)	
8			59.25	8.30	AA238658	B	8.00-8.30		N = 50/150 mm (14, 11, 23, 27)	
	Obstruction End of Borehole at 8.30 m									
9										
10										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
8.1	8.3	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
15-07-25	4.80	4.80	4.50	End of 1st day
16-07-25	8.30	8.30	1.30	End of BH

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 22/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH48**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,904.25 E 745,787.26 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	69.13	**BOREHOLE DEPTH (m)**	9.00
		DATE COMMENCED	19/07/2025
		DATE COMPLETED	20/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		68.83	0.30						
	Firm brown sandy gravelly SILT				AA254617	B	0.50			
1					AA254618	B	1.00		N = 11 (1, 2, 2, 2, 3, 4)	
			67.13	2.00						
2	Firm grey/brown sandy gravelly SILT/CLAY		66.63	2.50	AA254619	B	2.00		N = 19 (3, 3, 3, 5, 5, 6)	
	Firm grey slightly sandy slightly gravelly CLAY with occasional cobbles									
3					AA254620	B	3.00		N = 12 (2, 2, 3, 2, 3, 4)	
4					AA254621	B	4.00		N = 14 (2, 3, 3, 4, 3, 4)	
			64.13	5.00						
5	Firm grey sandy gravelly SILT with occasional cobbles				AA254622	B	5.00		N = 19 (3, 3, 5, 7, 3, 4)	
6			63.03	6.10	AA254623	B	6.00		N = 20 (7, 8, 6, 5, 5, 4)	
	Stiff to very stiff grey sandy gravelly CLAY with cobbles		62.13	7.00						
7	Dense grey slightly silty slightly sandy GRAVEL with many cobbles				AA254624	B	7.00		N = 26 (3, 4, 6, 6, 6, 8)	
			61.13	8.00						
8	Stiff to very stiff grey sandy gravelly CLAY with cobbles				AA254625	B	8.00		N = 51 (6, 8, 15, 10, 15, 11)	
			60.13	9.00						
9	End of Borehole at 9.00 m								N = 50/75 mm (25, 50)	
10										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
7.8	8	1	
8.8	9	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.50	6.50	No	3.50	20	Rapid
7.50	7.50	No	2.50	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 22/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH49**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,887.72 E 745,694.32 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	69.47	**BOREHOLE DEPTH (m)**	1.00
		DATE COMMENCED	20/07/2025
		DATE COMPLETED	20/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		69.27	0.20						
	Brown sandy gravelly SILT/CLAY with occasional cobbles				AA243626	B	0.50			
			68.47	1.00					N = 50/75 mm (25, 50)	
1	Obstruction End of Borehole at 1.00 m									
2										
3										
4										
5										
6										
7										
8										
9										
10										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
0.9	1	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Obstruction encountered . Moved 3m to BH49A and attempted rebore.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 22/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH49A**
		SHEET	Sheet 1 of 1
CO-ORDINATES	662,887.42 E 745,694.00 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	69.50	**BOREHOLE DEPTH (m)**	8.30
		DATE COMMENCED	20/07/2025
		DATE COMPLETED	21/07/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		69.30	0.20						
	Brown sandy SILT/CLAY				AA243627	B	0.50			
			68.50	1.00						
1	Soft brown sandy gravelly SILT				AA243628	B	1.00		N = 7 (1, 1, 2, 2, 1, 2)	
2					AA243629	B	2.00		N = 6 (1, 0, 1, 1, 2, 2)	
3					AA243630	B	3.00		N = 9 (1, 2, 2, 3, 2, 2)	
			66.10	3.40						
	Stiff to very stiff grey slightly sandy gravelly CLAY with occasional cobbles									
4					AA243631	B	4.00		N = 40 (7, 9, 7, 10, 15, 8)	
5					AA243632	B	5.00		N = 20 (2, 3, 3, 6, 7, 4)	
6					AA243633	B	6.00		N = 29 (6, 7, 8, 8, 6, 7)	
			62.50	7.00						
7	Brown silty sandy GRAVEL with some cobbles				AA243634	B	7.00		N = 56 (6, 8, 15, 15, 12, 14)	
8					AA243635	B	8.00		N = 50/75 mm (5, 20, 50) N = 50/75 mm (25, 50)	
			61.20	8.30						
	Obstruction End of Borehole at 8.30 m									
9										
10										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4.2	4.5	1	
8.1	8.3	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.50	6.50	No	3.50	20	Rapid
8.00	8.00	No	3.00	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Standing 2hrs on dumper to move rig .

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 22/9/25

Appendix 2

Rotary Drillhole Records & Photographs

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC07**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,902.19 E 745,937.07 N	**RIG TYPE**	Casagrande C8
GROUND LEVEL (mOD)	67.85	**FLUSH**	Air/Mist
		DATE DRILLED	29/08/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	67.55		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy slightly gravelly SILT/CLAY	1.30	66.55		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of light grey mottled sandy gravelly SILT with occasional cobbles				
3									3.30	64.55		
4								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy slightly gravelly SILT with occasional cobbles & boulders				
5												
6									6.40	61.45		
7								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy gravelly CLAY with occasional cobbles & boulders	7.20	60.65		
8								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey silty fine sandy coarse GRAVEL	8.10	59.75		
9								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey clayey sandy GRAVEL with cobbles				

REMARKS

Hole cased from 0.00-11.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
9.00	9.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
02-09-25	20.00	1.50	20.00	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC07**
		SHEET	Sheet 2 of 2
CO-ORDINATES	662,902.19 E 745,937.07 N		
GROUND LEVEL (mOD)	67.85	**RIG TYPE**	Casagrande C8
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	29/08/2025
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey clayey sandy GRAVEL with cobbles *(continued)*	10.50	57.35		
11								SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	11.50	56.35		
	11.50											
12		100	48	22				Strong to very strong, thickly to thinly bedded, dark grey/black, fine-grained, LIMESTONE (predominantly calci-siltite (sandy) limestone with subordinate argillaceous (muddy) limestone layers, locally fossiliferous), fresh to locally slightly weathered. Discontinuities are widely to closely spaced, smooth to very locally rough, fractures are planar to curviplanar. Apertures are tight to locally moderately open, locally clay smeared, locally calcite veined (1-15mm thick). Dips are subhorizontal to locally 30-40° and 70°.				
13	13.20											
		100	78	40								
14	14.50											
		100	66	18								
15	15.90											
16		100	95	76		649.999999999999						
	17.00											
17		100	54	34								
	18.00											
18		100	86	53								
19	19.20											
		100	91	91		800.000000000001						
	20.00								20.00	47.85		

REMARKS

Hole cased from 0.00-11.50m

End of Borehole at 20.00 m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
9.00	9.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
29-08-25	13.20	11.50	1.65	End of Shift
01-09-25	15.90	11.50	2.54	End of Shift
02-09-25	20.00	11.50	2.22	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
02-09-25	20.00	1.50	20.00	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC08**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,944.10 E 745,939.24 N	**RIG TYPE**	Casagrande C8
GROUND LEVEL (mOD)	68.15	**FLUSH**	Air/Mist
		DATE DRILLED	30/07/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.10	68.05		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy SILT	0.50	67.65		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy gravelly SILT	2.00	66.15		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT	3.40	64.75		
3												
4								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY with occasional cobbles	5.00	63.15		
5								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY	7.00	61.15		
6												
7		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT with cobbles & boulders				
8												
9												

REMARKS

Hole cased from 0.00-15.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
11.00 12.50	11.00 12.50				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC08**
		SHEET	Sheet 2 of 2
CO-ORDINATES	662,944.10 E 745,939.24 N		
GROUND LEVEL (mOD)	68.15	**RIG TYPE**	Casagrande C8
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	30/07/2025
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10						10.50	57.65		N = 50/85 mm (16, 9, 30, 20)
11					SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy GRAVEL				
12						12.00	56.15		
13					SYMMETRIX DRILLING: No recovery, observed by driller as returns of Possible ROCK				
14									
15	15.00	100	22	12	Strong, thickly to thinly bedded, light blue/grey fine-grained massively bedded LIMESTONE (slightly dolomitised with crystalline calcisiltite layers). Weathering: Orange brown non-penetrative discolouration common on discontinuity surfaces. Otherwise fresh to slightly weathered. Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, local calcite veined (1-15mm thick), frequent incipient fractures, slight iron oxide staining. Dips are subhroizontal to locally 30°, 45° and irregular.	15.00	53.15		
16	16.20	100	54	50					
17	17.60	100	77	67					
18	18.80	100	13	8					
19									
20	20.00					20.00	48.15		

Fracture Spacing Log (mm): 0, 250, 500

Non-intact Zone: 659.9999999999997

REMARKS

Hole cased from 0.00-15.00m

End of Borehole at 20.00 m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
11.00 12.50	11.00 12.50				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
30-07-25	12.00	12.00	8.34	End of Shift
31-07-25	16.20	15.00	2.87	End of Shift
01-08-25	16.20	15.00	2.13	Start of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 22/9/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC09**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,972.66 E 745,911.12 N	**RIG TYPE**	Casagrande C8
GROUND LEVEL (mOD)	68.08	**FLUSH**	Air/Mist
		DATE DRILLED	05/08/2025
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	67.88		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy CLAY	0.50	67.58		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy gravelly SILT/CLAY	2.00	66.08		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy slightly gravelly CLAY				
3												
4												
5								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY	5.00	63.08		
6												
7		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY with cobbles & boulders	7.10	60.98		
8												
9								9.0m Blowing Sands	9.20	58.88		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of dark grey sandy GRAVEL				N = 50/285 mm (3, 6, 6, 10, 16, 18)

REMARKS

Hole cased from 0.00-14.50m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.00	6.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 22/9/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC09**
		SHEET	Sheet 2 of 2
CO-ORDINATES	662,972.66 E 745,911.12 N	**RIG TYPE**	Casagrande C8
GROUND LEVEL (mOD)	68.08	**FLUSH**	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	05/08/2025
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								SYMMETRIX DRILLING: No recovery, observed by driller as returns of dark grey sandy GRAVEL *(continued)*				
11												
12									12.00	56.08		N = 50/180 mm (3, 6, 9, 26, 15)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of Possible Rock				
13												
14	14.50								14.50	53.58		
15		100	15	8				Strong, thickly to thinly bedded, light to dark blue/grey fine-grained massively bedded LIMESTONE (slightly dolomitised with crystalline calcisiltite layers). Weathering: Orange brown non-penetrative discolouration common on discontinuity surfaces. Otherwise fresh to slightly weathered. Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, local calcite veined (1-15mm thick), frequent incipient fractures, slight iron oxide staining. Dips are subhroizontal to locally 30°, 45° and irregular.				
	15.80											
16		100	37	27								
17	17.40											
18		100	78	78								
	18.50											
19		100	64	52								
	20.00								20.00	48.08		

REMARKS

Hole cased from 0.00-14.50m

End of Borehole at 20.00 m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.00	6.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC10**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,960.27 E 745,883.38 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	68.00	**FLUSH**	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	01/08/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	67.80		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly SILT/CLAY	1.50	66.50		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY	2.20	65.80		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey SILT	3.10	64.90		
3								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey gravelly SILT	4.00	64.00		
4								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY with some cobbles				
5		0	0	0					5.80	62.20		
6								SYMMETRIX DRILLING: No recovery, observed by driller as returns of COBBLES with brown slightly clayey/silty slightly sandy Gravel				
7									7.50	60.50		
8								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey fine to coarse sandy GRAVEL with some cobbles	8.00	60.00		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy clayey GRAVEL with occasional boulders	8.90	59.10		
9								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy clayey GRAVEL	9.90	58.10		N = 50/120 mm (6, 12, 20, 30)

REMARKS

Hole cased from 0.00-10.20m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
01-08-25	8.90	8.90	Dry	End of Shift

IGSL RC FI 10M 25882.GPJ IGSL.GDT 22/9/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC10**
		SHEET	Sheet 2 of 2
CO-ORDINATES	662,960.27 E 745,883.38 N		
GROUND LEVEL (mOD)	68.00	**DATE DRILLED**	01/08/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.20				SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK *(continued)*	10.20	57.80		
		100	63	59	Moderately weak to strong, thickly to thinly bedded, light grey to grey brown fine-grained massively bedded LIMESTONE (slightly dolomitised with crystalline calcisiltite layers). Weathering: Orange brown non-penetrative discolouration common on discontinuity surfaces, local karst/solution weathering. Otherwise fresh to slightly weathered.				
11	11.70								
		100	94	94	Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally calcite veined (1-10mm thick), local calcite infill from weathering, locally clay smeared. Dips are subhorizontal to locally 30 and irregular.				
12	12.60								
		100	81	71					
13	13.30								
		100	89	89					
14	14.90								
15	15.15	100	84	84					
		100	97	80					
16	16.40								
		100	94	94					
17	17.30								
18									
19					549.999999999997	19.50	48.50		
					End of Borehole at 19.50 m				

Fracture Spacing Log (mm): 0 250 500

Non-intact Zone

Legend

REMARKS

Hole cased from 0.00-10.20m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
06-08-25	16.40	10.20	10.10	End of Shift
07-08-25	19.50	10.20	7.80	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC11**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,927.00 E 745,873.78 N		
GROUND LEVEL (mOD)	67.78	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	07/08/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Description	Depth (m)	Elevation
				SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	67.48
				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy slightly gravelly SILT/CLAY	1.50	66.28
				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT with occasional cobbles	4.00	63.78
	0	0	0	SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY	5.70	62.08
				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy CLAY with cobbles & boulders	6.50	61.28
				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly clayey/silty fine sandy coarse GRAVEL with cobbles	8.00	59.78
8.60				SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	8.60	59.18
9.50	100	68	61			

Fracture Spacing Log (mm): 0 / 250 / 500

Non-intact Zone

Standpipe Details

SPT (N Value)

REMARKS

Hole cased from 0.00-8.60m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
07-08-25	5.90	5.90	Dry	End of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 22/9/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC11**
		SHEET	Sheet 2 of 2
CO-ORDINATES	662,927.00 E 745,873.78 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	67.78	**FLUSH**	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	07/08/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.40	100	61	53				Medium strong to strong, light to dark blue/black fine-grained massively bedded LIMESTONE (predominantly calci-siltite layers with subordinate argillaceous layers, locally fossiliferous). Weathering: Fresh to slightly weathered Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally calcite veined (1-10mm thick), locally clay smeared. Dips are subhorizontal to locally 30 and irregular. *(continued)*				
11	11.20	100	83	75								
	12.00	100	86	67								
12		100	76	64								
13	13.60											
14	14.40	100	52	52								
15		100	89	79								
16	16.20	100	76	69								
	17.00							End of Borehole at 17.00 m	17.00	50.78		
17												
18												
19												

REMARKS

Hole cased from 0.00-8.60m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
08-08-25	13.60	8.60	8.60	End of Shift
09-08-25	17.00	8.60	6.20	Water levels recorded 5min after end of drilling

IGSL RC FI 10M 25882.GPJ IGSL.GDT 22/9/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC12**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,894.94 E 745,902.21 N		
GROUND LEVEL (mOD)	68.21	**DATE DRILLED**	30/07/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	68.01		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy CLAY	0.50	67.71		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy slightly gravelly SILT/CLAY	2.00	66.21		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey SILT/CLAY				
3												
4												
5		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly gravelly SILT/CLAY	5.00	63.21		
6												
7								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY with cobbles & boulders	7.10	61.11		
8												
9								SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible weathered ROCK	9.00	59.21		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	9.50	58.71		
	10.00								10.00	58.21		

REMARKS

Hole cased from 0.00-10.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT Gas to Bord na Mona, Edenderry, Phase 1 GI

DRILLHOLE NO RC12
SHEET Sheet 2 of 2

CO-ORDINATES 662,894.94 E
745,902.21 N
GROUND LEVEL (mOD) 68.21

RIG TYPE Beretta T44
FLUSH Air/Mist
INCLINATION (deg) -90
CORE DIAMETER (mm) 78

DATE DRILLED 30/07/2025

CLIENT Murphy International Limited
ENGINEER Fingleton White

DRILLED BY IGSL - DH
LOGGED BY D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								Strong to very strong, thickly to thinly bedded, light to dark blue/black fine-grained massively bedded LIMESTONE (predominantly calci-siltite layers with subordinate argillaceous layers, locally fossiliferous). Weathering: Local orange brown non-penetrative discolouration common on discontinuity surfaces. Otherwise fresh to slightly weathered				
11	11.60	100	74	74				Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally calcite veined (1-20mm thick), locally clay smeared, frequent incipient fractures. Dips are subhorizontal to locally 30° and irregular.				
12	12.40	100	87	95								
13	13.20	100	88	84		619.999999999999						
14	14.00	100	95	85		609.999999999999						
15	15.10	100	87	59					15.10	53.11		
16								End of Borehole at 15.10 m				
17												
18												
19												

REMARKS

Hole cased from 0.00-10.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
30-07-25	11.60	10.00	9.20	End of Shift
31-07-25	14.00	10.00	9.40	End of Shift
01-08-25	15.10	10.00	10.20	Water levels recorded 5min after end of drilling

IGSL RC FI 10M 25882.GPJ IGSL.GDT 22/9/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC46**
		SHEET	Sheet 1 of 3
CO-ORDINATES	662,974.18 E 746,029.73 N		
GROUND LEVEL (mOD)	67.55	**DATE DRILLED**	02/09/2025
RIG TYPE	Casagrande C8		
FLUSH	Air/Mist		
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - LDG
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	67.25		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of light grey sandy SILT/CLAY	1.00	66.55		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown mottled sandy slightly gravelly SILT/CLAY	1.50	66.05		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of light grey mottled sandy gravelly SILT with occasional cobbles & boulders	2.20	65.35		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey fine sandy coarse GRAVEL	3.00	64.55		
3								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT	4.00	63.55		
4								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown slightly sandy gravelly SILT/CLAY with some cobbles	5.00	62.55		
5								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly silty very sandy GRAVEL	6.80	60.75		
6												
7								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy slightly gravelly CLAY with occasional cobbles & boulders 7.0m Blowing Sands	8.30	59.25		
8								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY with cobbles				N = 50/250 mm (10, 10, 10, 16, 18, 6)
9								9.20m Blowing Sands				

REMARKS

Hole cased from 0.00-11.50m. Coring difficult due to CLAY bands from 16.70m. Down-the-hole hammer used from 17.50-18.50m to clear hole. Loss of flush reported 18.50-20.60m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
10.00	10.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 22/9/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC46**
		SHEET	Sheet 2 of 3
CO-ORDINATES	662,974.18 E 746,029.73 N	**RIG TYPE**	Casagrande C8
GROUND LEVEL (mOD)	67.55	**FLUSH**	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	02/09/2025
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10					SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY with cobbles *(continued)*	10.50	57.05		
					SYMMETRIX DRILLING: No recovery, observed by driller as returns of Possible ROCK				
11	11.50					11.50	56.05		
		86	30	16	Strong (where competent), medium to thinly bedded (to locally structureless), bluish grey, fine-grained, LIMESTONE (calci-siltite (sandy) limestone, localised chert layers), slightly to locally moderately weathered (to a clayey gravel at 14.49-14.56m) From 16.70m Driller notes Rock with clay bands. 17.50-18.50m - DTH Hammer (fragmented rock) Discontinuities are medium to closely spaced, smooth to rough, fractures are planar to irregular. Apertures are tight to open, commonly clay smeared, locally calcite veined (1-5mm thick), commonly iron-oxide stained. Dips are subhorizontal, subvertical & irregular.				
12	12.20	100	62	23					
	12.80	100	32	0					
13	13.30	100	55	25					
14	14.60	100	0	0					
	14.90	83	28	0					
15	15.50	100	45	0					
	15.70	100	16	0					
16	16.70	100	13	0					
	17.00	100	0	0					
17	17.50	0	0	0					
18	18.50	24	6	0					
19									

Fracture Spacing Log (mm): 0 – 250 – 500

REMARKS

Hole cased from 0.00-11.50m. Coring difficult due to CLAY bands from 16.70m. Down-the-hole hammer used from 17.50-18.50m to clear hole. Loss of flush reported 18.50-20.60m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
10.00	10.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
03-09-25	14.80	11.50	2.23	End of Shift
04-09-25	17.50	11.50	2.20	End of Shift
05-09-25	17.50	11.50	1.19	Start of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC46**
		SHEET	Sheet 3 of 3
CO-ORDINATES	662,974.18 E 746,029.73 N	**RIG TYPE**	Casagrande C8
GROUND LEVEL (mOD)	67.55	**FLUSH**	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	02/09/2025
		DRILLED BY	IGSL - LDG
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20	20.60							End of Borehole at 20.60 m	20.60	46.95		
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased from 0.00-11.50m. Coring difficult due to CLAY bands from 16.70m. Down-the-hole hammer used from 17.50-18.50m to clear hole. Loss of flush reported 18.50-20.60m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
10.00	10.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC48**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,904.25 E 745,787.26 N		
GROUND LEVEL (mOD)	69.13	**DATE DRILLED**	09/08/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	68.83		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly SILT	2.00	67.13		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy gravelly SILT/CLAY	2.50	66.63		
3								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy slightly gravelly CLAY with occasional cobbles	5.00	64.13		
4												
5		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly SILT with occasional cobbles	6.10	63.03		
6								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY with cobbles	7.00	62.13		
7								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly silty slightly sandy GRAVEL with many cobbles	8.00	61.13		
8								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey sandy gravelly CLAY with cobbles	9.00	60.13		
9								SYMMETRIX DRILLING: No recovery, observed by driller as returns of black gravelly CLAY	9.40	59.73		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of Possible ROCK				

REMARKS

Hole cased from 0.00-10.10m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
9.00	9.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
09-08-25	4.50	4.50	Dry	End of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC48**
		SHEET	Sheet 2 of 2
CO-ORDINATES	662,904.25 E 745,787.26 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	69.13	**FLUSH**	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	09/08/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Description	Depth (m)	Elevation
10	10.10					10.10	59.03
		100	75	67	Medium strong to strong, thickly to thinly bedded, light to dark blue/black fine-grained massively bedded LIMESTONE (predominantly calci-siltite layers with subordinate argillaceous layers, locally fossiliferous). Weathering: Fresh to slightly weathered Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, locally calcite veined (1-15mm thick), local incipient fractures. Dips are subhoriztonal to 30° and irregular.		
11	11.70						
		100	50	35			
12	12.70						
		100	82	82			
13	13.30						
		100	62	56			
14	14.90						
		100	61	57			
15	16.40						
		100	70	51			
16	17.40					17.40	51.73
					End of Borehole at 17.40 m		
17							
18							
19							

Fracture Spacing Log (mm): 0 – 250 – 500

Non-intact Zone | Legend | Standpipe Details | SPT (N Value)

REMARKS

Hole cased from 0.00-10.10m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
9.00	9.00				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
11-08-25	13.30	10.10	10.80	End of Shift
12-08-25	17.40	10.10	3.80	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 22/9/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC49A**
		SHEET	Sheet 1 of 2
CO-ORDINATES	662,887.42 E 745,694.00 N		
GROUND LEVEL (mOD)	69.50	**DATE DRILLED**	13/08/2025
CLIENT	Murphy International Limited	**RIG TYPE**	Beretta T44
ENGINEER	Fingleton White	**FLUSH**	Air/Mist
		INCLINATION (deg)	-90
		CORE DIAMETER (mm)	78
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	69.30		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy SILT/CLAY	1.00	68.50		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly SILT				
2												
3									3.40	66.10		
4								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey slightly sandy gravelly CLAY with occasional cobbles				
		0	0	0								
5												
6												
7									7.00	62.50		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of Brown silty sandy GRAVEL with some cobbles				
8									8.30	61.20		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy gravelly CLAY	8.80	60.70		
9	9.20							SYMMETRIX DRILLING: No recovery, observed by driller as returns of Possible ROCK	9.20	60.30		N = 50/20 mm (5, 50)
		100	51	27								

REMARKS

Hole cased from 0.00-9.20m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
8.30	8.30				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC49A**
		SHEET	Sheet 2 of 2
CO-ORDINATES	662,887.42 E 745,694.00 N		
GROUND LEVEL (mOD)	69.50	**DATE DRILLED**	13/08/2025
CLIENT	Murphy International Limited	**RIG TYPE**	Beretta T44
ENGINEER	Fingleton White	**FLUSH**	Air/Mist
		INCLINATION (deg)	-90
		CORE DIAMETER (mm)	78
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.10							Moderately weak to strong, light to dark blue/black fine-grained massively bedded LIMESTONE (predominantly calci-siltite layers with subordinate argillaceous layers, locally fossiliferous). Weathering: Fresh to slightly weathered Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally calcite veined (1-20mm thick), locally clay smeared, frequent incipient fractures. Dips are subhorizontal to locally 30° and irregular. *(continued)*				
11	11.60	100	81	59								
12	12.90	100	98	98								
13	14.20	100	82	65								
14	14.50	100	97	83								
	15.00	100	76	74								
15	16.50	100	77	73								
16	17.20	100	81	77								
17									17.20	52.30		
								End of Borehole at 17.20 m				
18												
19												

REMARKS

Hole cased from 0.00-9.20m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
8.30	8.30				

GROUNDWATER DETAILS

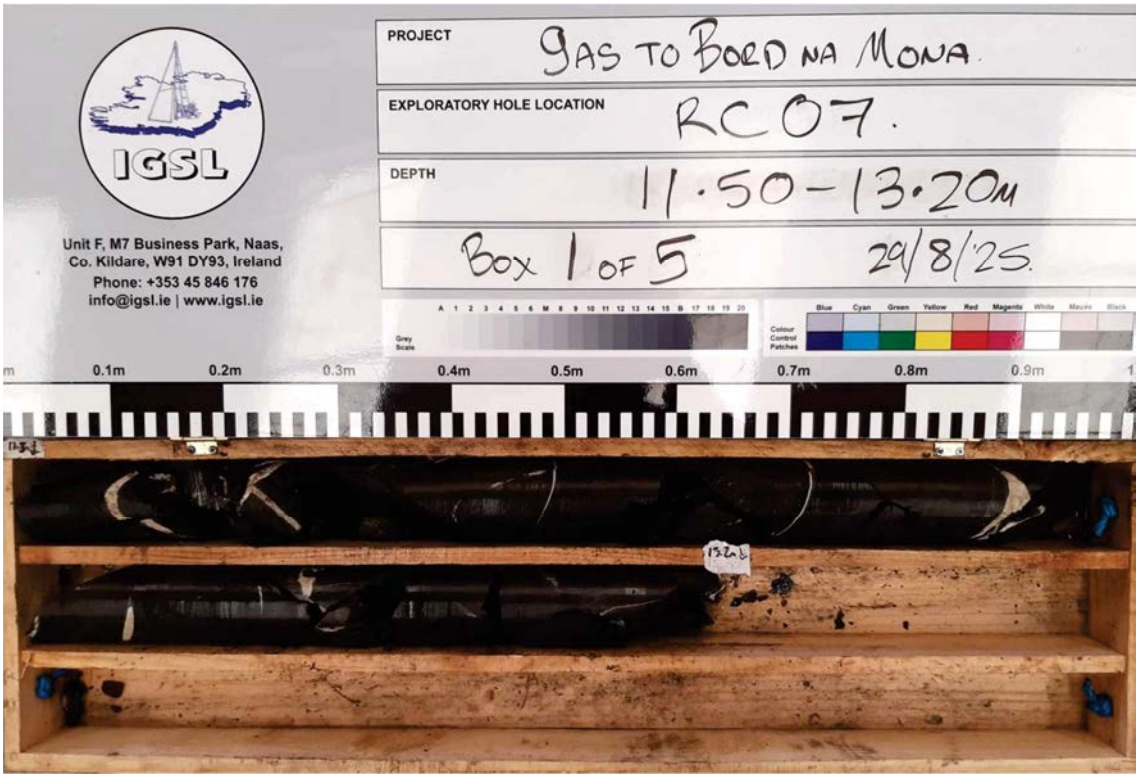
Date	Hole Depth	Casing Depth	Depth to Water	Comments
13-08-25	11.60	9.20	9.00	End of Shift
14-08-25	17.20	9.20	7.20	Water levels recorded 5min after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 22/9/25

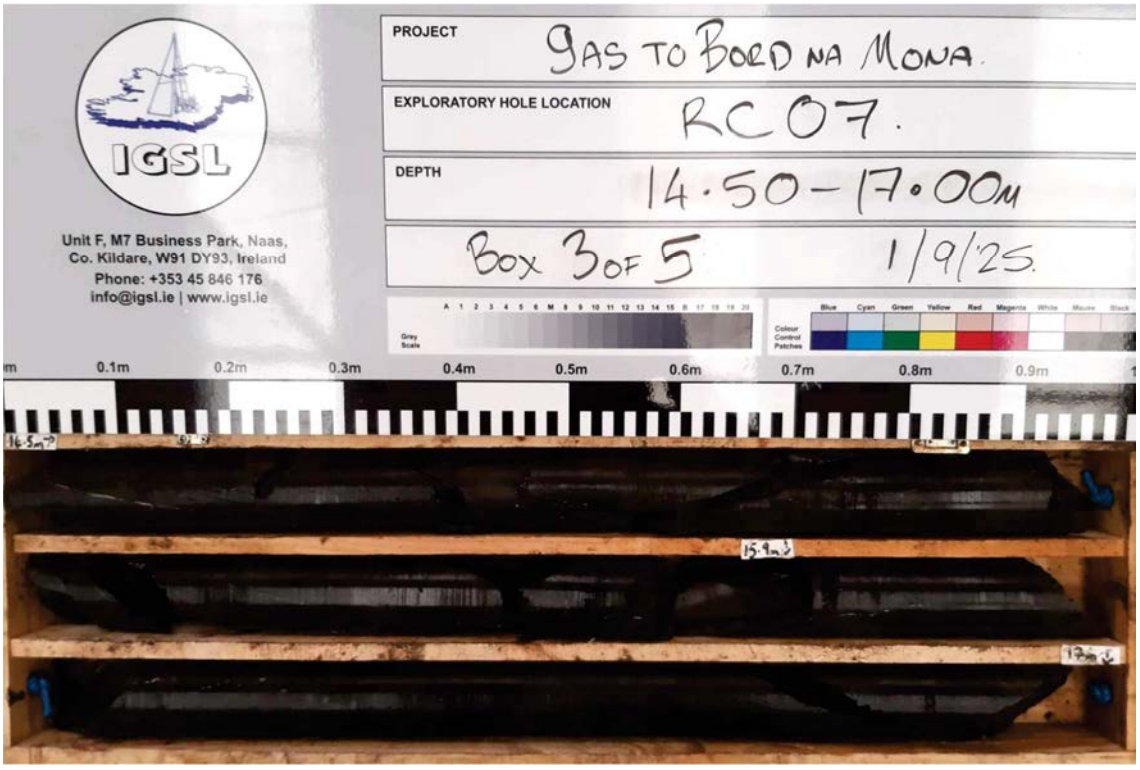
RC07 - Box 1 of 5 – 11.50-13.20m



RC07 - Box 2 of 5 – 13.20-14.50m



RC07 - Box 3 of 5 – 14.50-17.00m



RC07 - Box 4 of 5 – 17.00-19.20m



RC07 - Box 5 of 5 – 17.00-19.20m



RC08 Box 1 of 2 15.0-17.60m



RC08 Box 1 of 2 17.60-20.0m



RC09 Box 1 of 2 14.50-17.40m



RC09 Box 2 of 2 17.40-20.0m



RC10 Box 1 of 4 10.20-12.60m



RC10 Box 2 of 4 12.60-15.15m



RC10 Box 3 of 4 15.15-17.30m



RC10 Box 4 of 4 17.30-19.50m



RC11 Box 1 of 4 8.60-11.20m



RC11 Box 2 of 4 11.20-13.60m



RC11 Box 3 of 4 13.60-16.20m



RC11 Box 4 of 4 16.20-17.00m



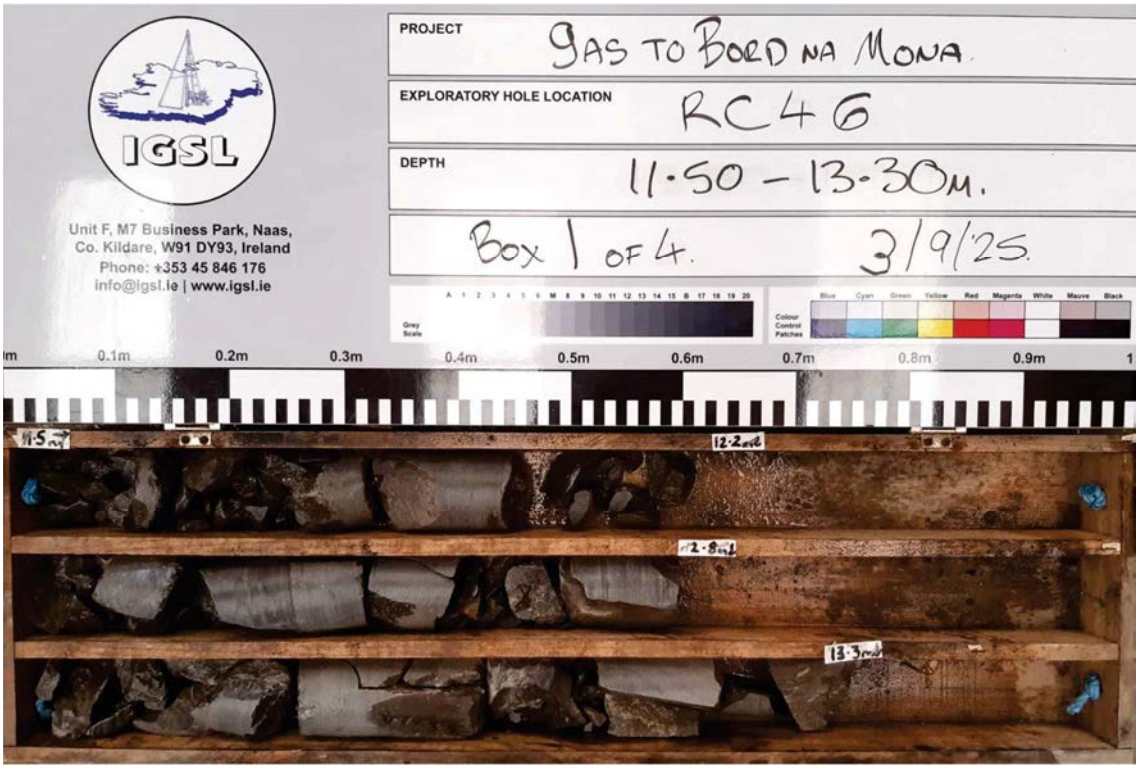
RC12 Box 1 of 2 10.00-12.40m



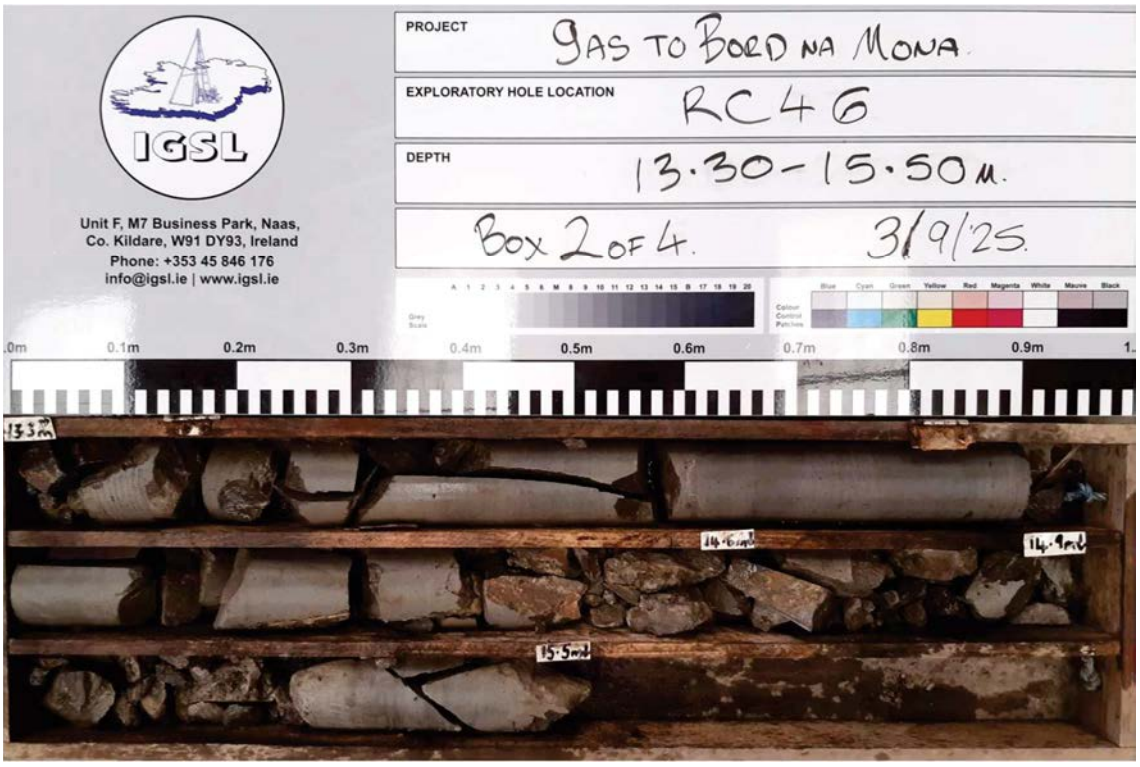
RC12 Box 2 of 2 12.40-15.10m



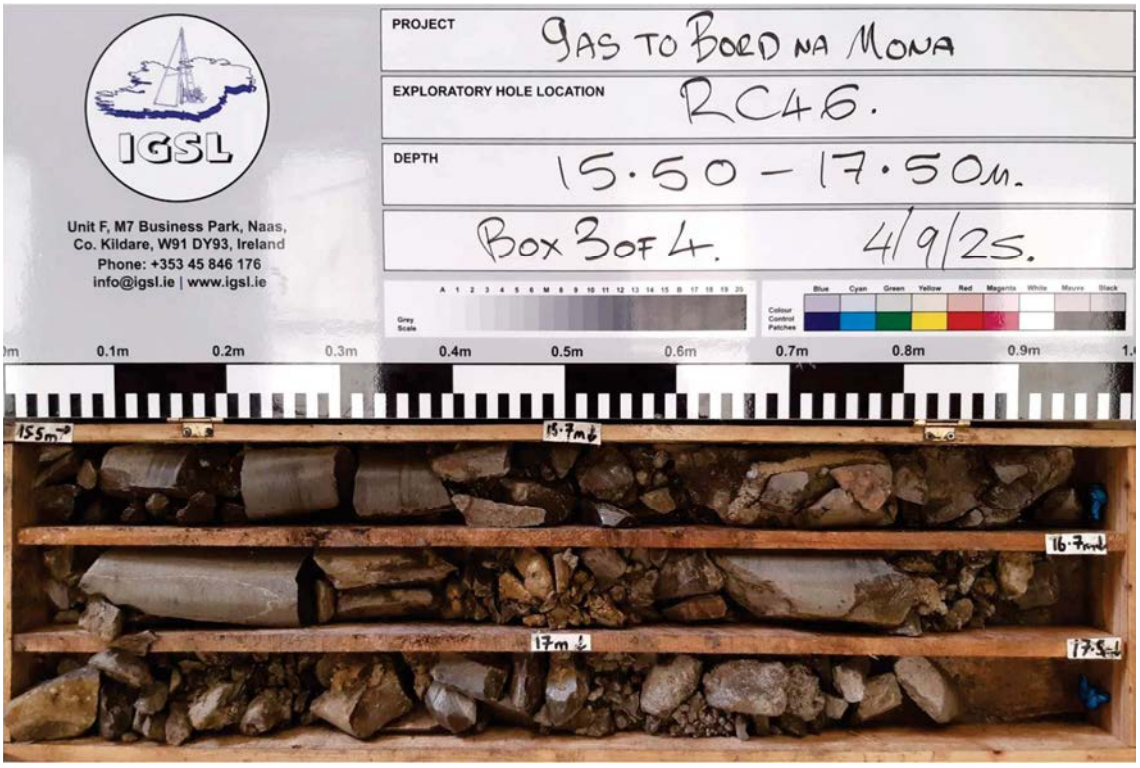
RC46 – Box 1 of 4 – 11.50-13.30m



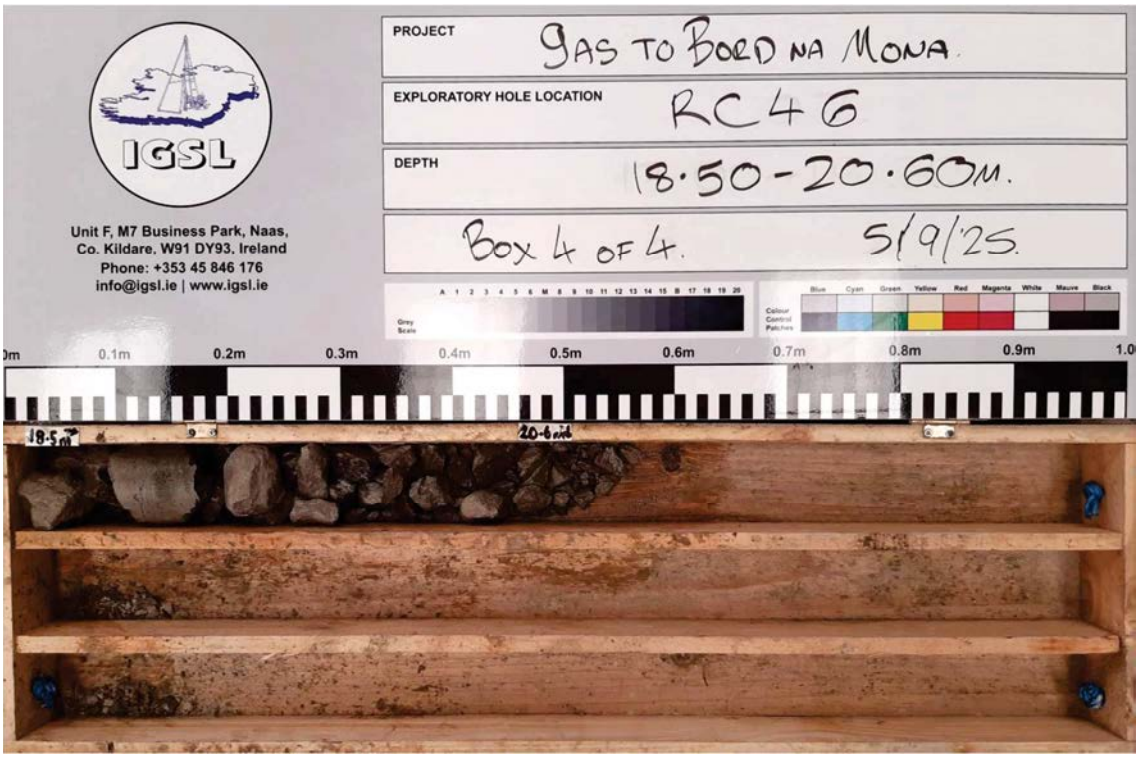
RC46 – Box 2 of 4 – 13.30-15.50m



RC46 – Box 3 of 4 – 15.50-17.50m



RC46 – Box 4 of 4 – 18.50-20.60m



RC48 – Box 1 of 3 – 10.10-12.70m



RC48 – Box 2 of 3 – 12.70-14.90m



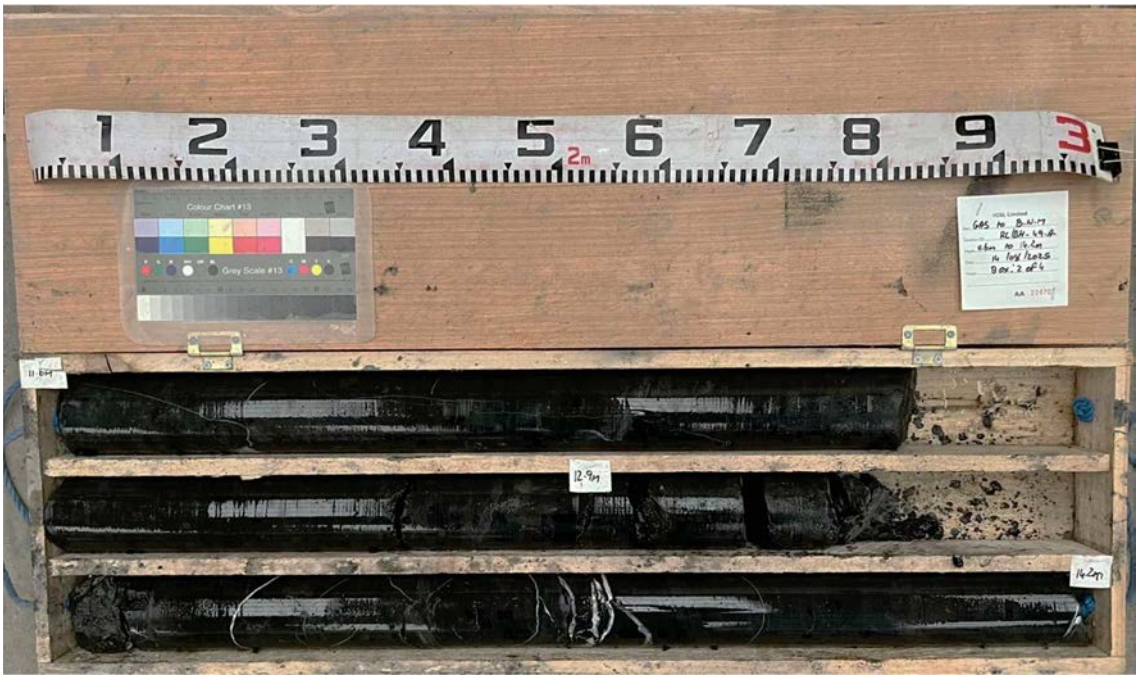
RC48 – Box 3 of 3 – 14.90-17.60m



RC49A - Box 1 of 4 – 9.20-11.60m



RC49A – Box 2 of 4 – 11.60-14.20m



RC49A – Box 3 of 4 – 14.20-16.50m



RC49A – Box 4 of 4 – 16.50-17.20m



Appendix 3

Groundwater Monitoring Records

GROUNDWATER MONITORING SHEET

Project: Gas to Bord na Mona, Edenderry, Phase 1 GI – HCC3
IGSL Reference: 25882

Exploratory Hole No.	Ground Level m OD	Response Zone Top (m bgl)	Response Zone Base (m bgl)	Groundwater level (m bgl) **10/09/2025**	(m OD)	Groundwater level (m bgl)	(m OD)	Groundwater level (m bgl)	(m OD)
RC07	67.85	1.50	20.00	1.98	65.87				

Remarks: Data logger installed in well RC07 on 10-September 2025. Monitoring period = 12 months

Appendix 4

Geotechnical Laboratory Results (Soil)

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.1331

Report No. **R171431** Contract No. 25882 Contract Name: Gas to Edenderry

Customer MIL

Samples Received: 18/07/25 Date Tested: Various

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH05	AA223936	2.0	A25/3110	B	17.2	24	12	12	83	WS	4.4	C L	Grey sandy slightly gravelly CLAY
BH05	AA223939	4.0	A25/3111	B	11.6	29	14	15	69	WS	4.4	C L	Brown slightly sandy, slightly gravelly, CLAY
BH06	AA223945	3.0	A25/3113	B	9.2	22	12	10	53	WS	4.4	C L	Brown slightly sandy, gravelly, CLAY
BH06	AA223948	6.0	A25/3114	B	4.7	18	NP	NP	18	WS	4.4		Grey sandy GRAVEL
BH07	AA238660	2.0	A25/3116	B	10.2	20	NP	NP	47	WS	4.4		Brown sandy gravelly SILT
BH07	AA238663	5.0	A25/3117	B	12.6	22	NP	NP	49	WS	4.4		Brown slightly sandy, slightly gravelly, SILT with many cobbles
BH07	AA238666	8.0	A25/3118	B	8.9	22	NP	NP	10	WS	4.4		Grey sandy gravelly SILT
BH08	AA258619	2.0	A25/3119	B	20.6	29	NP	NP	79	WS	4.4		Grey sandy gravelly SILT
BH08	AA258623	6.0	A25/3120	B	9.6	25	13	12	54	WS	4.4	C L	Grey sandy gravelly CLAY
BH08	AA258626	9.0	A25/3121	B	8.9	23	NP	NP	56	WS	4.4		Grey sandy gravelly SILT with cobbles
BH09	0	2.0	A25/3122	B	21.3	37	18	19	93	WS	4.4	C I	Grey sandy slightly gravelly CLAY
BH09	0	4.0	A25/3123	B	13.1	29	15	14	86	WS	4.4	C L	Grey sandy slightly gravelly CLAY
BH09	AA258632	7.0	A25/3124	B	13.2	28	19	9	62	WS	4.4	C L	Grey sandy gravelly CLAY
BH11	AA254603	2.0	A25/3125	B	12.4	22	NP	NP	56	WS	4.4		Grey sandy gravelly SILT
BH11	AA254606	5.0	A25/3126	B	10.0	23	11	12	54	WS	4.4	C L	Grey sandy gravelly CLAY

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method
4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.
NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12.
Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.
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IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by | Date: 19/08/25 | Page: 1 of 1

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**

Report No. **R172763** Contract No. 25882 Contract Name: Gas to Edenderry

Customer MIL

Samples Received: 18/07/25 Date Tested: Various

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH12	AA258636	2.0	A25/3128	B	11.1	25	14	11	63	WS	4.4	C L	Brown sandy gravelly CLAY
BH12	AA258640	6.0	A25/3129	B	12.7	25	12	13	64	WS	4.4	C L	Grey slightly sandy, slightly gravelly, CLAY
BH44	AA223929	2.0	A25/3130	B	10.4	28	13	15	56	WS	4.4	C L	Brown sandy gravelly SILT
BH44	AA223932	5.0	A25/3132	B	9.2	20	NP	NP	42	WS	4.4		Brown sandy very gravelly SILT
BH46	AA238652	2.0	A25/3134	B	11.0	24	NP	NP	23	WS	4.4		Brown sandy gravelly SILT
BH46	AA238654	4.0	A25/3135	B	8.2	20	NP	NP	44	WS	4.4		Brown sandy gravelly SILT
BH46	AA238658	8.0	A25/3138	B	12.2	23	11	21	48	WS	4.4	C L	Brown sandy gravelly CLAY

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method
4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.
NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12.
Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.
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IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by | Date: 19/08/25 | Page: 1 of 1

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

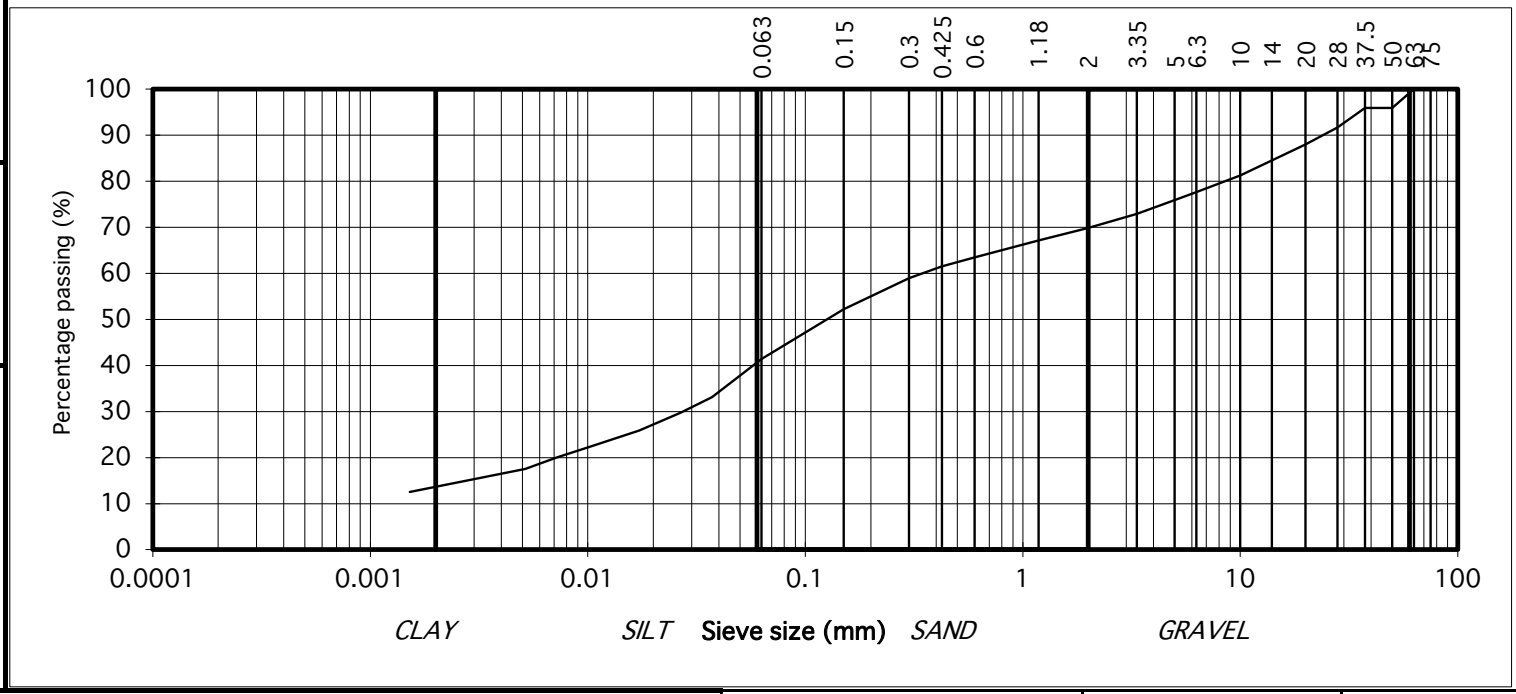
particle size	% passing	
75	100	COBBLES
63	100	
50	96	GRAVEL
37.5	96	
28	92	
20	88	
14	85	
10	81	
6.3	78	
5	76	
3.35	73	
2	70	
1.18	67	SAND
0.6	63	
0.425	62	
0.3	59	
0.15	52	
0.063	41	SILT/CLAY
0.037	33	
0.027	30	
0.017	26	
0.010	22	
0.007	20	
0.005	18	
0.002	13	

Contract No.	25882	Report No.	R171432	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH05			
Sample No.*	AA223939	Lab. Sample No.		A25/3111
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	18/07/2025	Date Testing started		26/07/2025
Description:	Brown slightly sandy, slightly gravelly, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

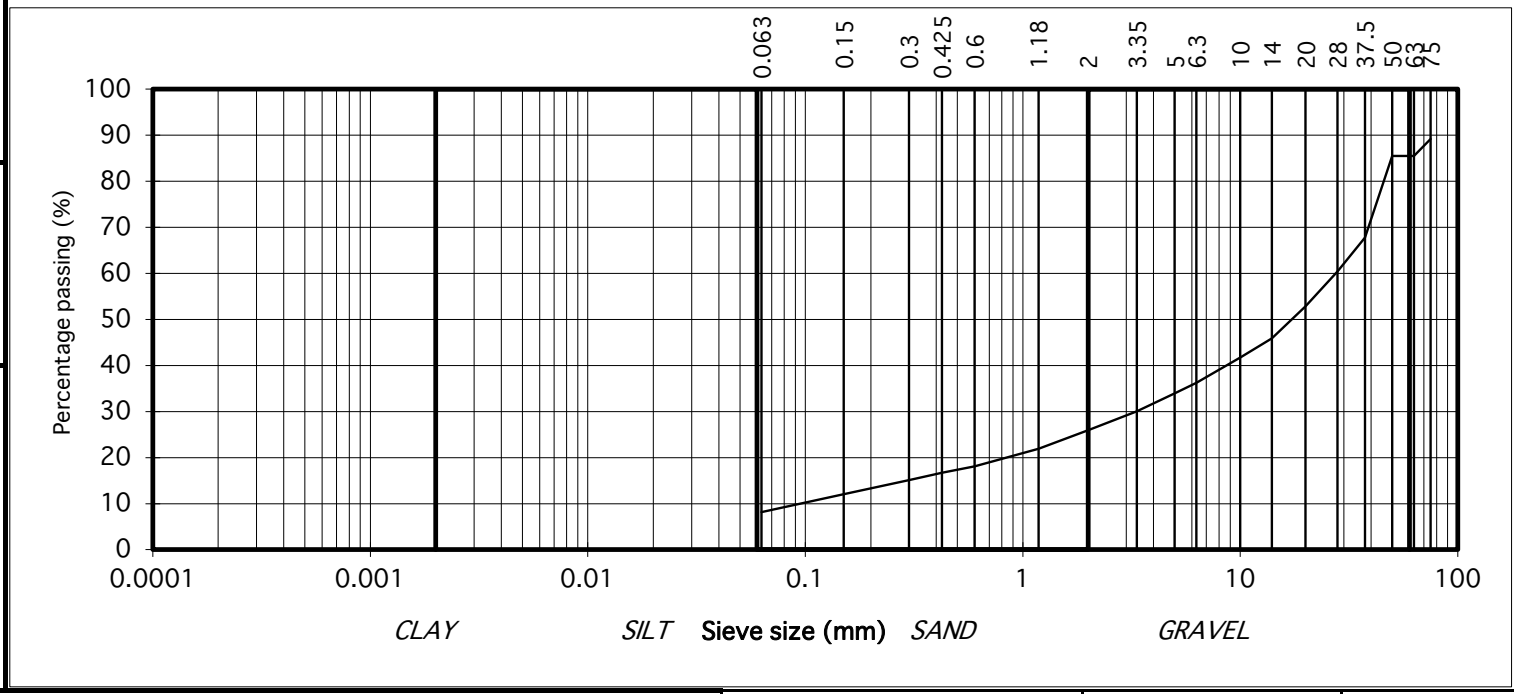
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	89	COBBLES
63	85	
50	85	GRAVEL
37.5	68	
28	60	
20	53	
14	46	
10	42	
6.3	36	
5	34	
3.35	30	
2	26	
1.18	22	SAND
0.6	18	
0.425	17	
0.3	15	
0.15	12	
0.063	8	SILT/CLAY

Contract No.	25882	Report No.	R171433	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH05			
Sample No.*	AA223941	Lab. Sample No.		A25/3112
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	18/07/2025	Date Testing started		29/07/2025
Description:	Grey clayey/silty, sandy, GRAVEL with some cobbles			

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IGSL Ltd Materials Laboratory

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing
75	100
63	100
50	95
37.5	74
28	69
20	67
14	65
10	63
6.3	59
5	57
3.35	55
2	51
1.18	48
0.6	45
0.425	43
0.3	40
0.15	36
0.063	32

COBBLES

GRAVEL

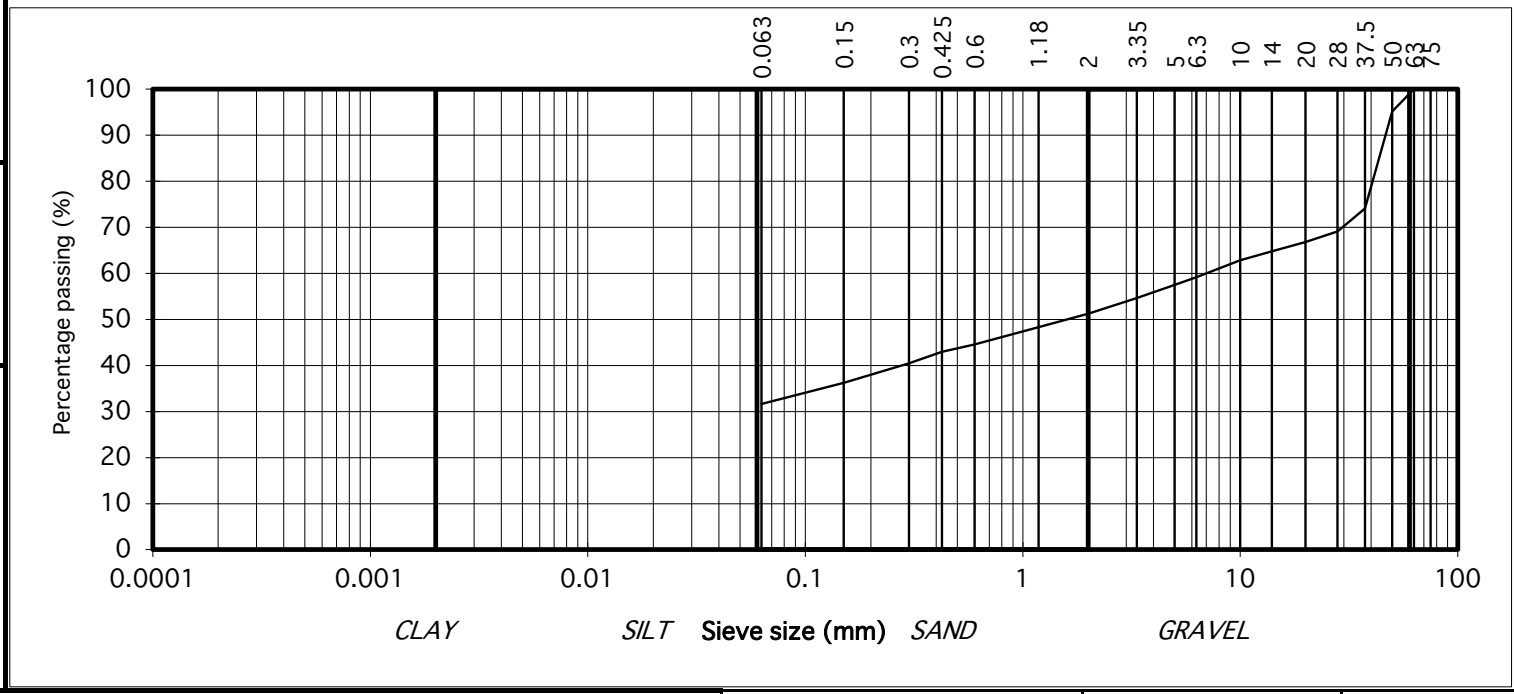
SAND

SILT/CLAY

Contract No.	25882	Report No.	R172761
Contract Name :	Gas to Edenderry		
BH/TP No.	BH06		
Sample No.*	AA223945	Lab. Sample No.	A25/3113
Sample Type:	B		
Depth* (m)	3.00	Customer:	MIL
Date Received	18/07/2025	Date Testing started	13/08/2025
Description:	Brown slightly sandy, gravelly, CLAY		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

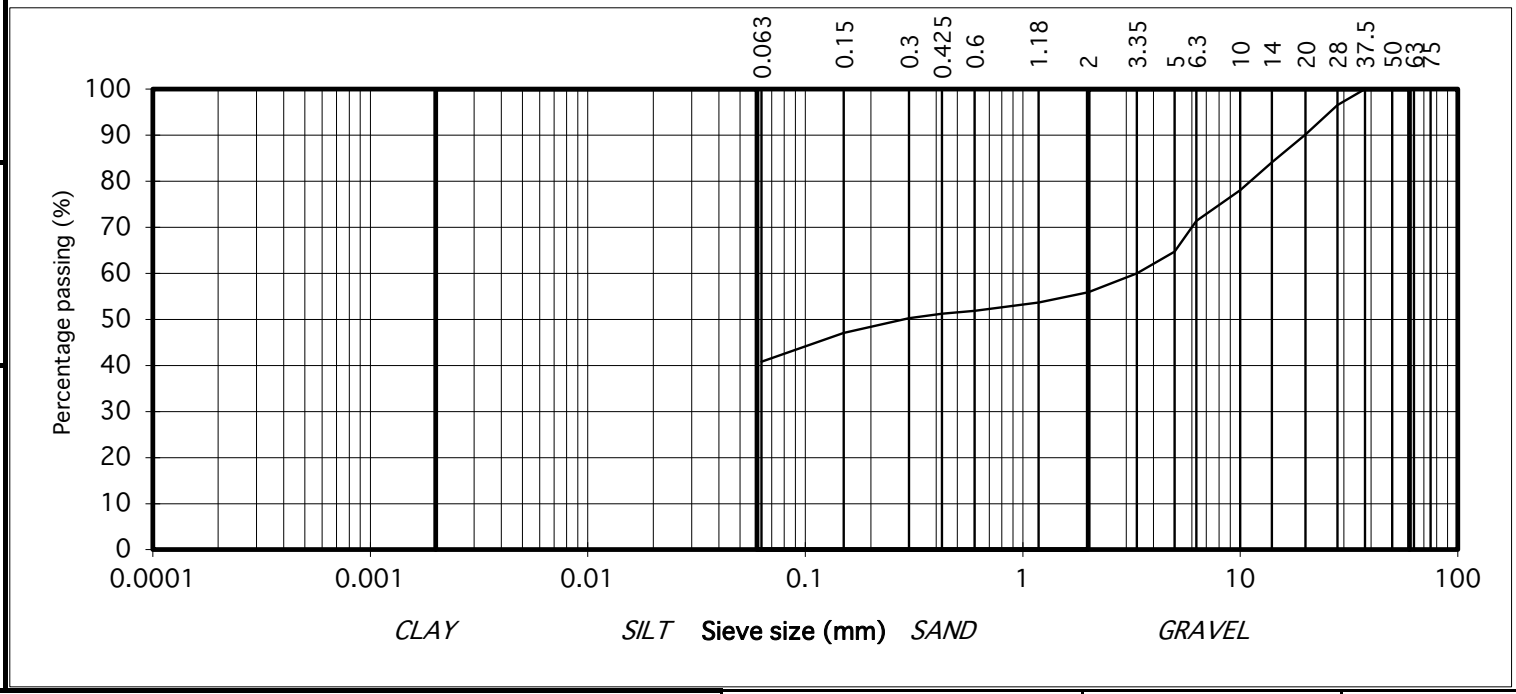
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	97	
20	90	
14	84	
10	78	
6.3	71	
5	65	
3.35	60	
2	56	
1.18	54	SAND
0.6	52	
0.425	51	
0.3	50	
0.15	47	
0.063	41	SILT/CLAY

Contract No.	25882	Report No.	R171434	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH06			
Sample No.*	AA223950	Lab. Sample No.		A25/3115
Sample Type:	B			
Depth* (m)	7.60	Customer:	MIL	
Date Received	18/07/2025	Date Testing started		29/07/2025
Description:	Brown slightly sandy, gravelly, SILT/CLAY			

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

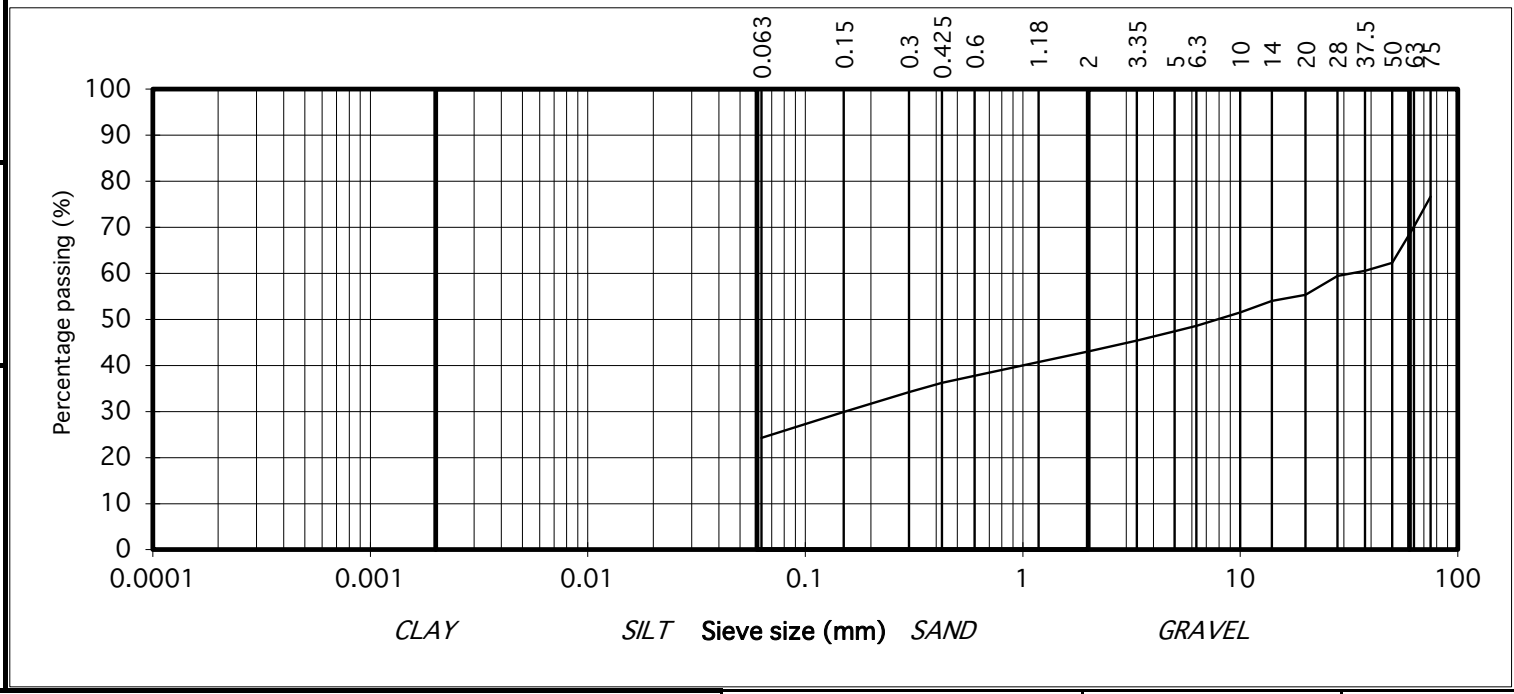
particle size	% passing	
75	77	COBBLES
63	70	
50	62	GRAVEL
37.5	61	
28	59	
20	55	
14	54	
10	52	
6.3	49	
5	47	
3.35	45	
2	43	
1.18	41	SAND
0.6	38	
0.425	36	
0.3	34	
0.15	30	
0.063	24	SILT/CLAY

Contract No.	25882	Report No.	R172762	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH07			
Sample No.*	AA238663	Lab. Sample No.		A25/3117
Sample Type:	B			
Depth* (m)	5.00	Customer:	MIL	
Date Received	18/07/2025	Date Testing started		13/08/2025
Description:	Brown slightly sandy, slightly gravelly, SILT with many cobbles			

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IGSL Ltd Materials Laboratory

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

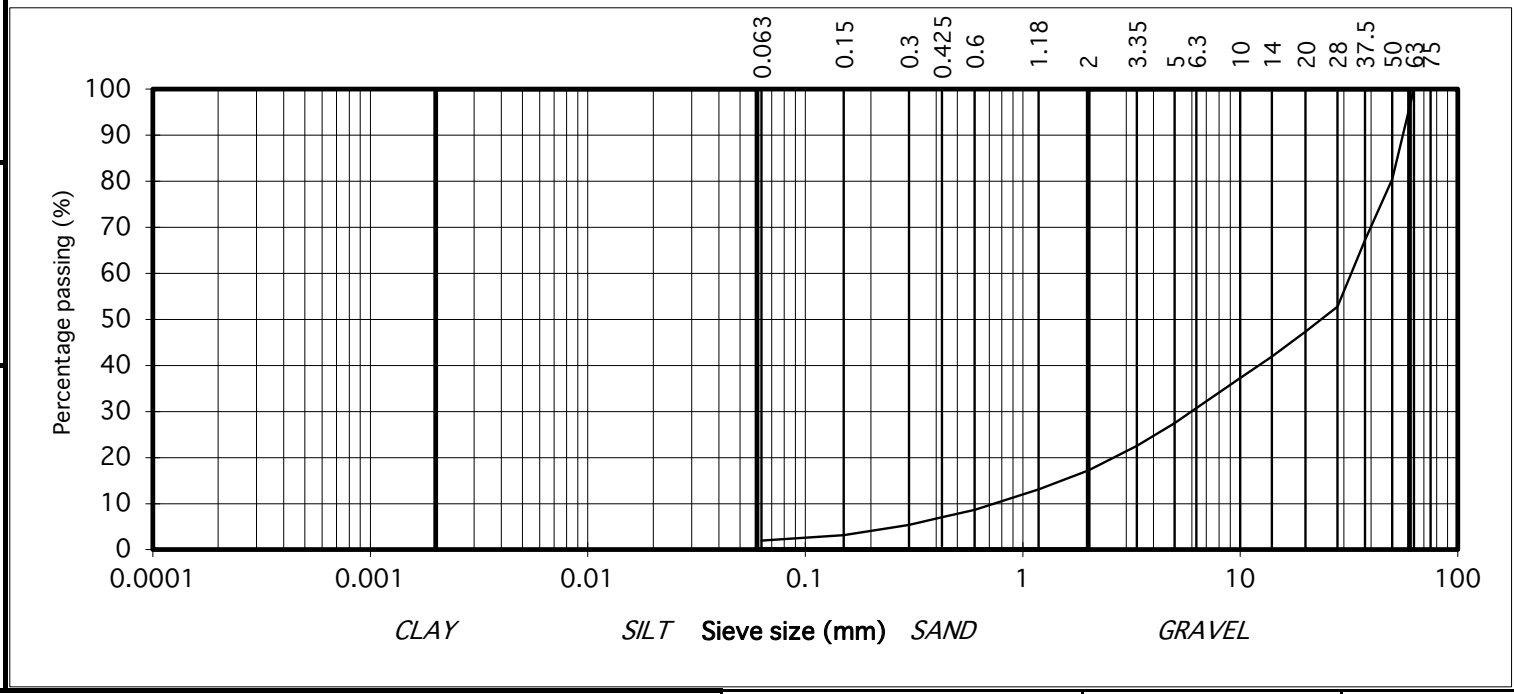
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	80	GRAVEL
37.5	67	
28	53	
20	47	
14	42	
10	37	
6.3	31	
5	27	
3.35	23	
2	17	
1.18	13	SAND
0.6	9	
0.425	7	
0.3	5	
0.15	3	
0.063	2	SILT/CLAY

Contract No.	25882	Report No.	R172760	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH11			
Sample No.*	AA254608	Lab. Sample No.		A25/3127
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	18/07/2025	Date Testing started		13/08/2025
Description:	Grey slightly clayey/silty, sandy, GRAVEL			

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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

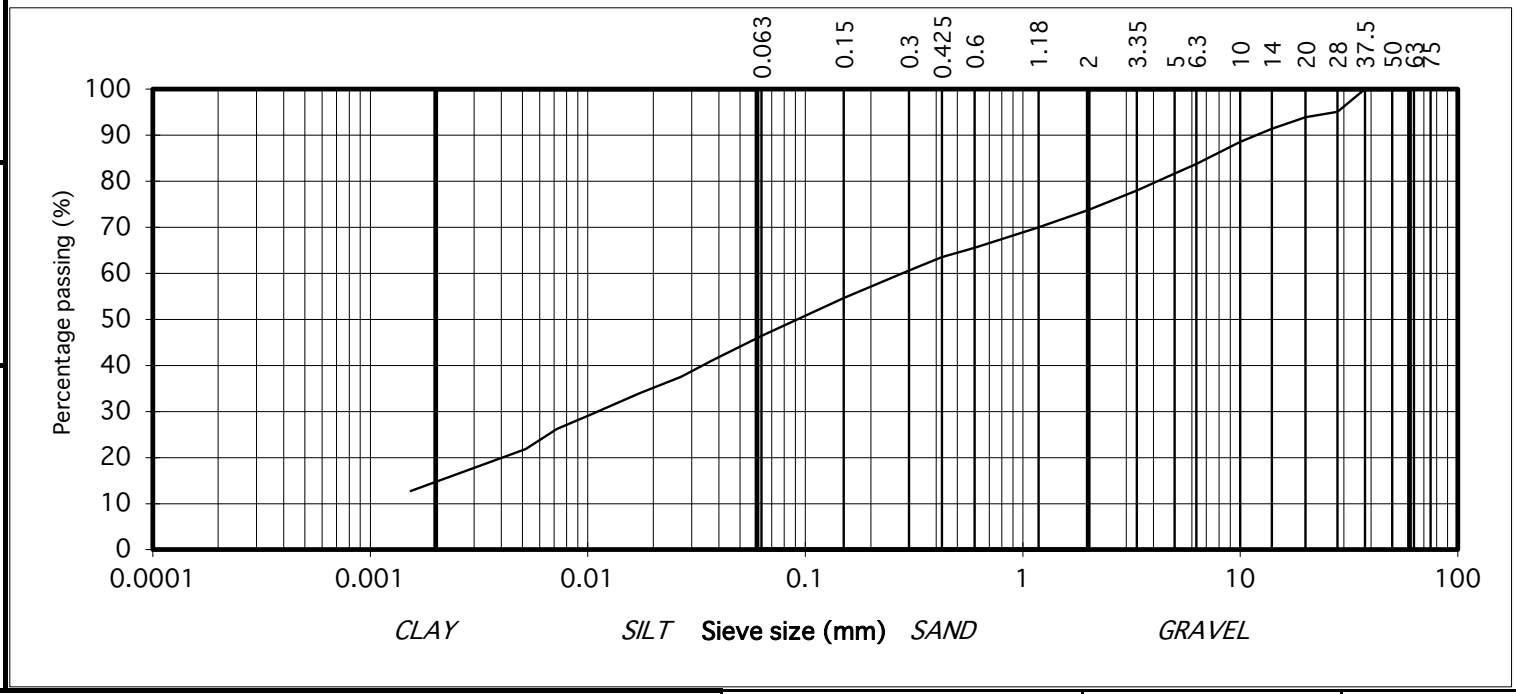
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	95	
20	94	
14	91	
10	89	
6.3	84	
5	82	
3.35	78	
2	74	
1.18	70	SAND
0.6	66	
0.425	64	
0.3	61	
0.15	55	
0.063	46	SILT/CLAY
0.038	41	
0.027	38	
0.017	34	
0.010	29	
0.007	26	
0.005	22	
0.002	13	

Contract No.	25882	Report No.	R171435	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH12			
Sample No.*	AA258640	Lab. Sample No.		A25/3129
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	18/07/2025	Date Testing started		29/07/2025
Description:	Grey slightly sandy, slightly gravelly, CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

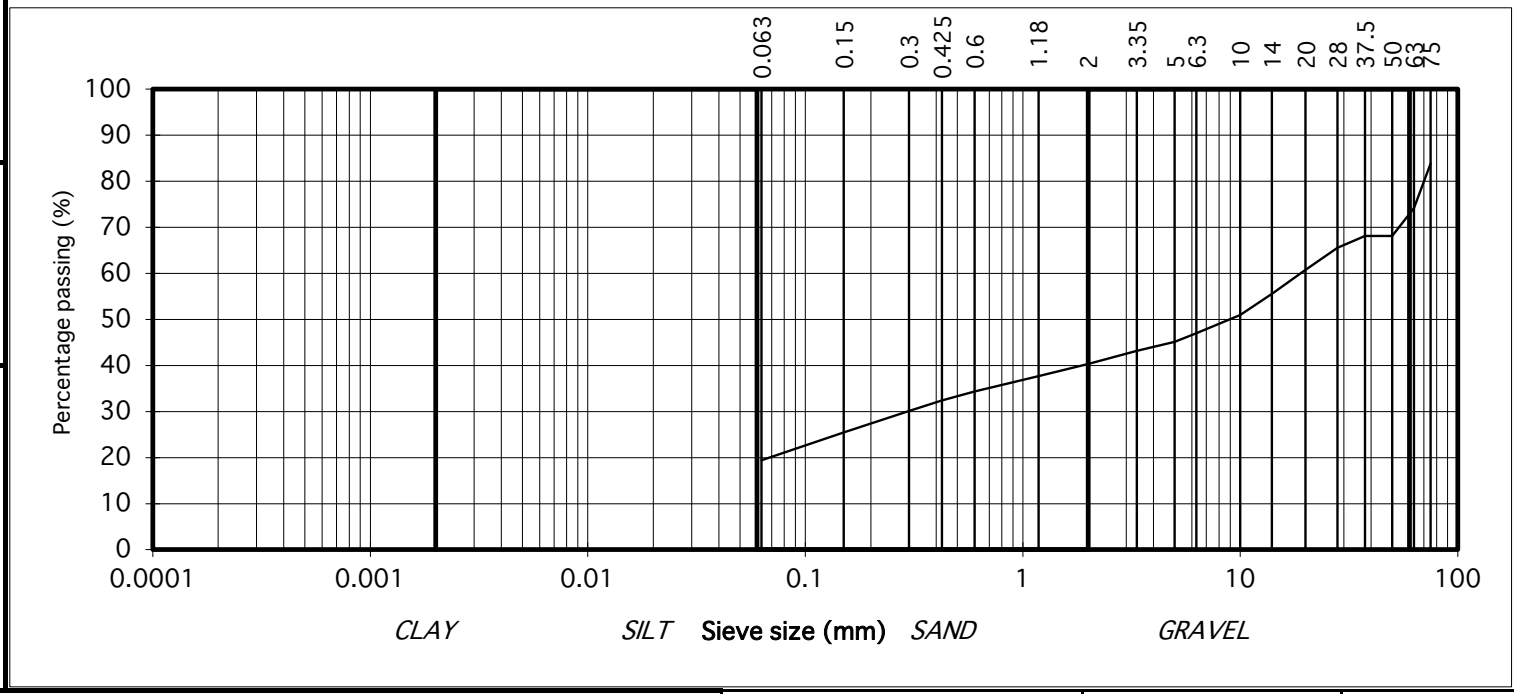
particle size	% passing	
75	84	COBBLES
63	74	
50	68	GRAVEL
37.5	68	
28	66	
20	61	
14	56	
10	51	
6.3	47	
5	45	
3.35	43	
2	40	
1.18	38	SAND
0.6	34	
0.425	32	
0.3	30	
0.15	25	
0.063	19	SILT/CLAY

Contract No.	25882	Report No.	R172758	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH44			
Sample No.*	AA223931	Lab. Sample No.		A25/3136
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	18/07/2025	Date Testing started		01/08/2025
Description:	Brown clayey/silty, very sandy, GRAVEL with many cobbles			

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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing
75	53
63	38
50	34
37.5	28
28	25
20	24
14	23
10	22
6.3	21
5	21
3.35	20
2	18
1.18	15
0.6	10
0.425	8
0.3	6
0.15	4
0.063	2

COBBLES

GRAVEL

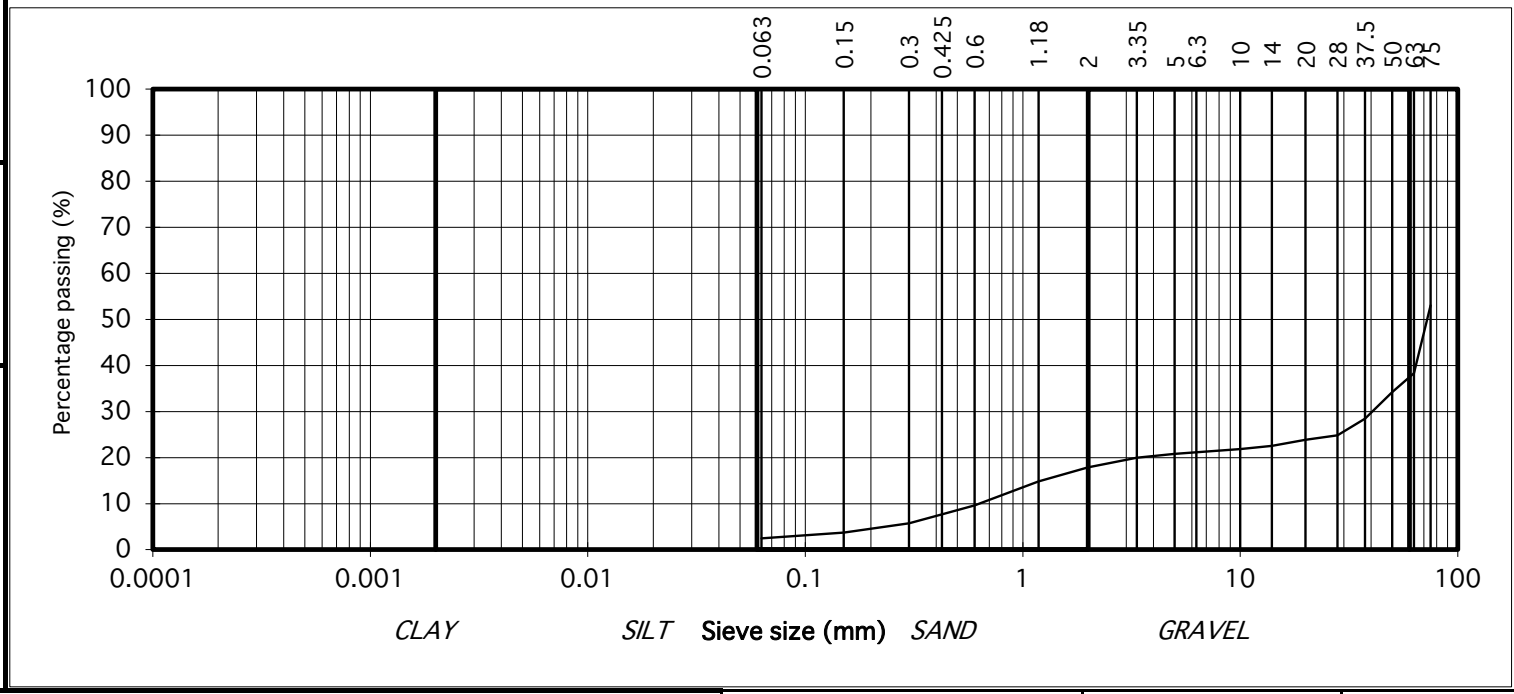
SAND

SILT/CLAY

Contract No. 25882 Report No. R172759
Contract Name : Gas to Edenderry
BH/TP No. BH44
Sample No.* AA223933 Lab. Sample No. A25/3133
Sample Type: B
Depth* (m) 6.00 Customer: MIL
Date Received 18/07/2025 Date Testing started 02/08/2025
Description: COBBLES with brown slightly clayey/silty, sandy, gravel

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377

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TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

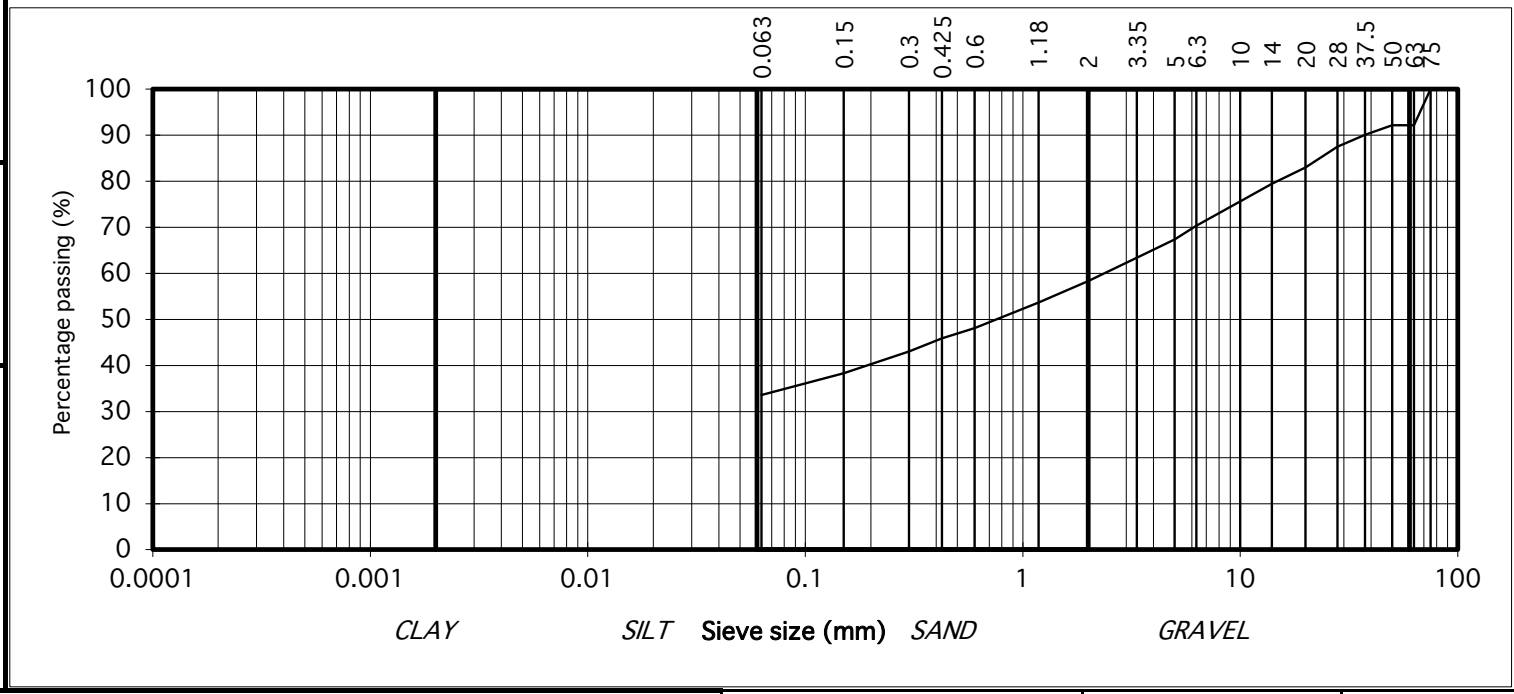
particle size	% passing	
75	100	COBBLES
63	92	
50	92	GRAVEL
37.5	90	
28	88	
20	83	
14	79	
10	76	
6.3	70	
5	67	
3.35	63	
2	58	
1.18	54	SAND
0.6	48	
0.425	46	
0.3	43	
0.15	38	
0.063	34	SILT/CLAY

Contract No.	25882	Report No.	R172056	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH46			
Sample No.*	AA238655	Lab. Sample No.		A25/3136
Sample Type:	B			
Depth* (m)	5.00	Customer:	MIL	
Date Received	18/07/2025	Date Testing started		01/08/2025
Description:	Brown slightly sandy, gravelly, SILT/CLAY with some cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

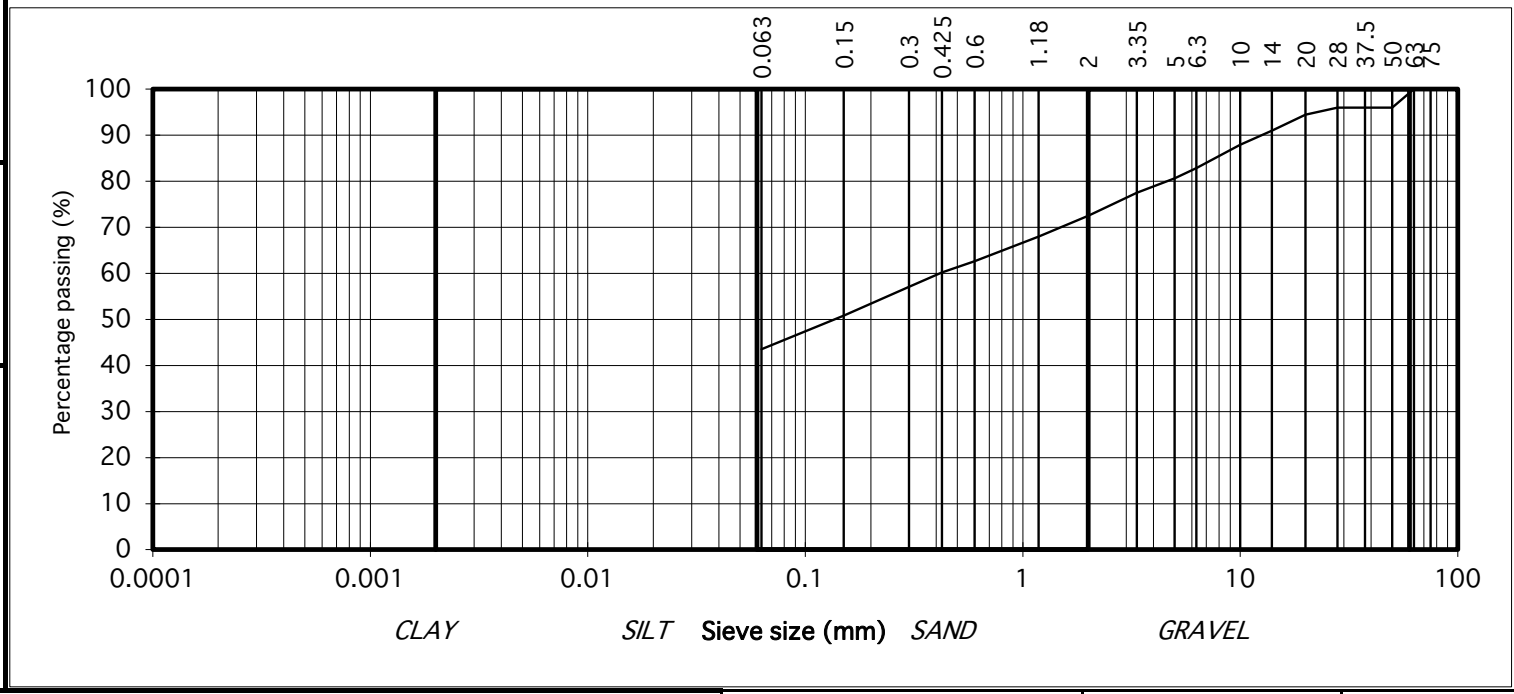
particle size	% passing	
75	100	COBBLES
63	100	
50	96	GRAVEL
37.5	96	
28	96	
20	94	
14	91	
10	88	
6.3	83	
5	81	
3.35	77	
2	72	
1.18	68	SAND
0.6	63	
0.425	60	
0.3	57	
0.15	51	
0.063	44	SILT/CLAY

Contract No.	25882	Report No.	R172057
Contract Name :	Gas to Edenderry		
BH/TP No.	BH46		
Sample No.*	AA238657	Lab. Sample No.	A25/3137
Sample Type:	B		
Depth* (m)	7.00	Customer:	MIL
Date Received	18/07/2025	Date Testing started	01/08/2025
Description:	Brown slightly sandy, slightly gravelly, SILT/CLAY		

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Water Content, Liquid & Plastic Limits

Tested in accordance with BS1377-2-2022/EN17892-1 and EN17892-12

Report No. **R172058** Contract No. 25882 Contract Name: Gas to Edenderry

Customer MIL

Samples Received: 29/07/25 Date Tested: Various

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH10	AA254611	2.0	A25/3245	B	19.8	31	16	15	80	WS	5.3	C L	Brown sandy gravelly CLAY
BH10	AA254614	5.0	A25/3246	B	8.7	26	14	12	57	WS	5.3	C L	Brown sandy gravelly CLAY
BH13A	AA234947	1.0	A25/3249	B	15.7	20	NP	NP	70	WS	5.3		Brown sandy gravelly SILT
BH13A	AA234949	3.0	A25/3250	B	11.7	26	13	13	68	WS	5.3	C L	Brown slightly sandy, slightly gravelly, CLAY
BH13A	AA234952	6.0	A25/3251	B	9.6	28	13	15	72	WS	5.3	C L	Brown slightly sandy, slightly gravelly, CLAY
BH48	AA254618	1.0	A25/3256	B	22.8	27	NP	NP	82	WS	5.3		Brown sandy gravelly SILT
BH48	AA254620	3.0	A25/3257	B	13.4	26	13	13	77	WS	5.3	C L	Grey slightly sandy, slightly gravelly, CLAY
BH48	AA254622	5.0	A25/3258	B	9.6	20	NP	NP	57	WS	5.3		Brown sandy gravelly SILT
BH48	AA254624	7.0	A25/3259	B	1.8	42	NP	NP	8	WS	5.3		Grey slightly silty, slightly sandy, GRAVEL with many cobbles
BH49A	AA243629	2.0	A25/3260	B	11.8	24	NP	NP	51	WS	5.3		Brown sandy gravelly SILT
BH49A	AA243631	4.0	A25/3261	B	10.1	26	12	14	50	WS	5.3	C L	Grey slightly sandy, gravelly, CLAY
BH49A	AA243634	7.0	A25/3262	B	6.1	22	NP	NP	17	WS	5.3		Brown silty, sandy, GRAVEL with some cobbles
BH56	AA212754	3.0	A25/3263	B	25.8	28	NP	NP	99	WS	5.3		Grey sandy SILT

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 5.2 Cone Penetrometer definitive method
5.3 Cone Penetrometer single point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.

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IGSL Ltd Materials Laboratory

Persons authorized to approve reports

H Byrne (Laboratory Manager)

Approved by: H Byrne

Date: 19/08/25

Page: 1 of 1

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

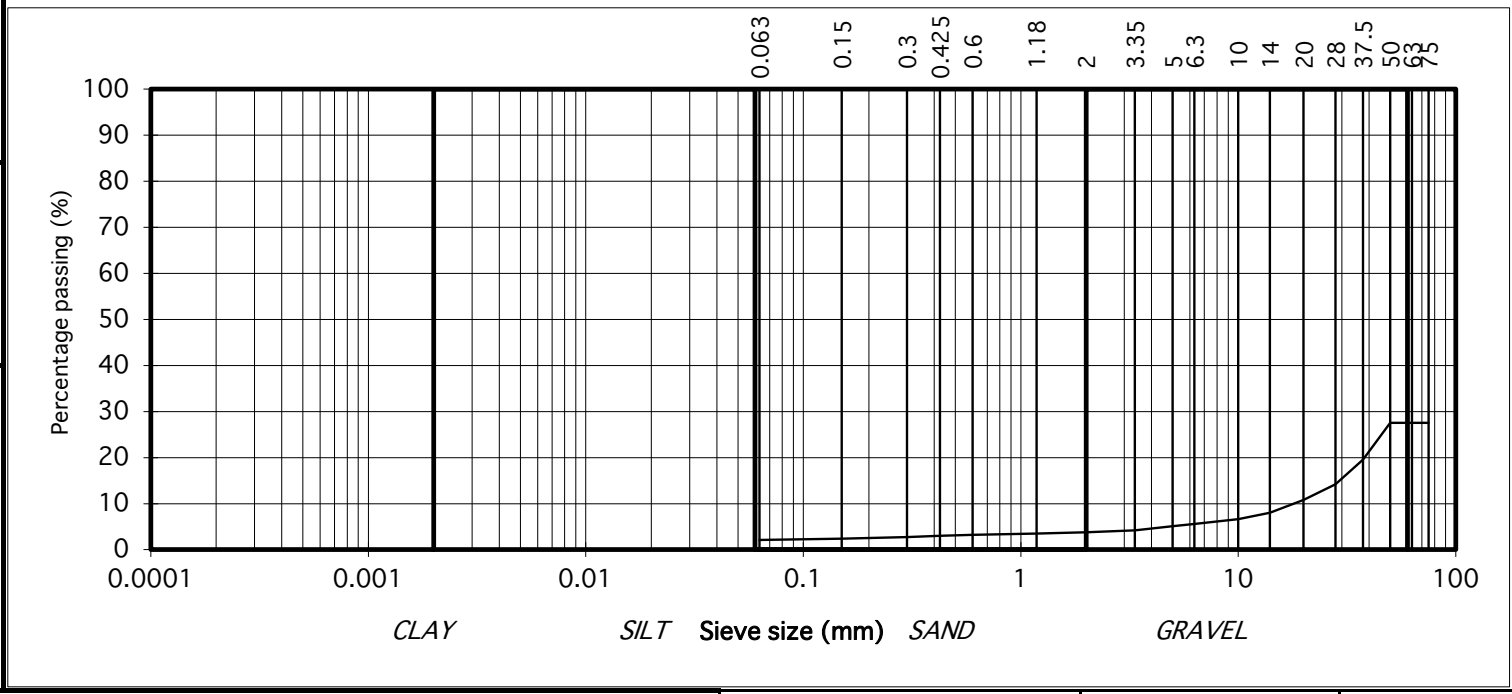
particle size	% passing	
75	28	COBBLES
63	28	
50	28	GRAVEL
37.5	20	
28	14	
20	11	
14	8	
10	7	
6.3	6	
5	5	
3.35	4	
2	4	
1.18	4	SAND
0.6	3	
0.425	3	
0.3	3	
0.15	2	
0.063	2	SILT/CLAY

Contract No.	25882	Report No.	R172220	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH10			
Sample No.*	AA254616	Lab. Sample No.		A25/3247
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		02/08/2025
Description:	COBBLES with brown slightly clayey/silty, slightly sandy, gravel			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	21/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

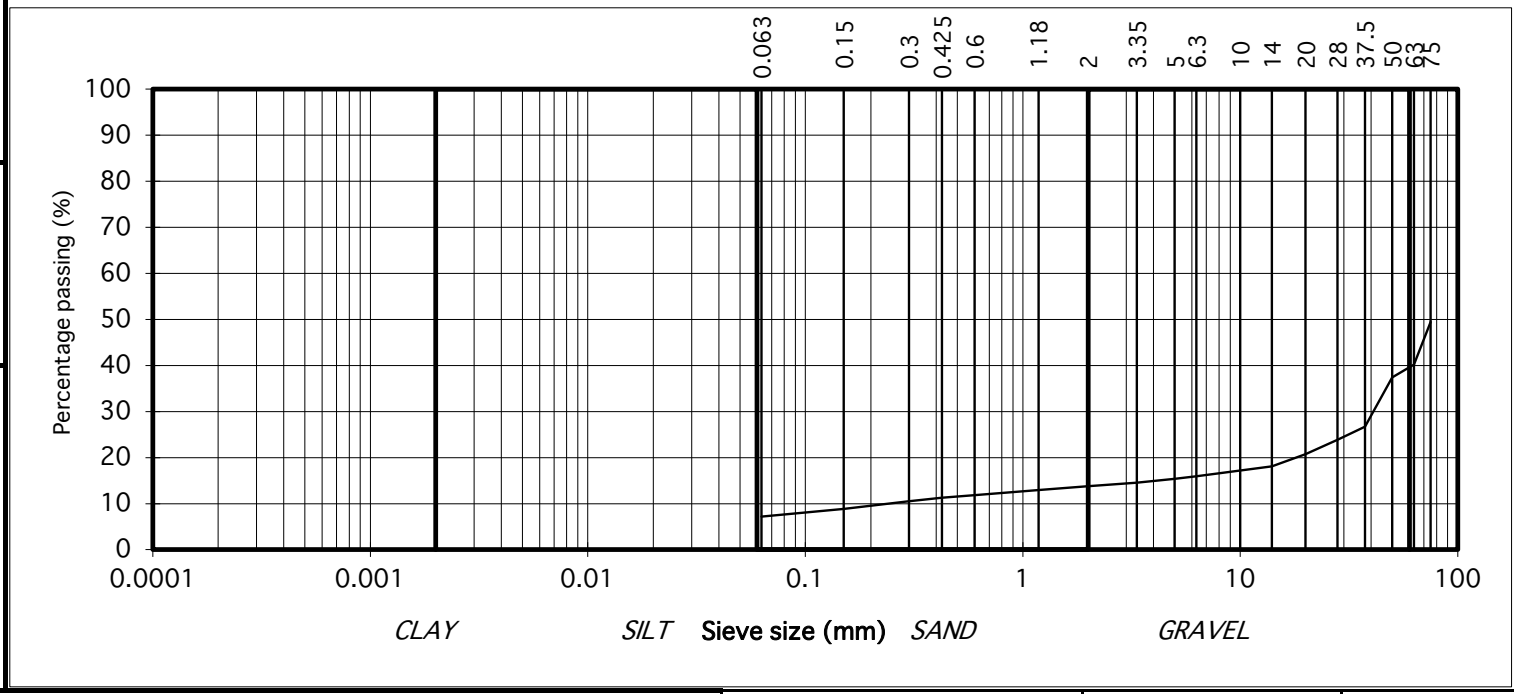
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	49	COBBLES
63	40	
50	37	GRAVEL
37.5	27	
28	24	
20	21	
14	18	
10	17	
6.3	16	
5	15	
3.35	15	
2	14	
1.18	13	SAND
0.6	12	
0.425	11	
0.3	11	
0.15	9	
0.063	7	SILT/CLAY

Contract No.	25882	Report No.	R1712059	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH10			
Sample No.*	AA254616	Lab. Sample No.		A25/3248
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		02/08/2025
Description:	COBBLES with brown clayey/silty, sandy, gravel			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

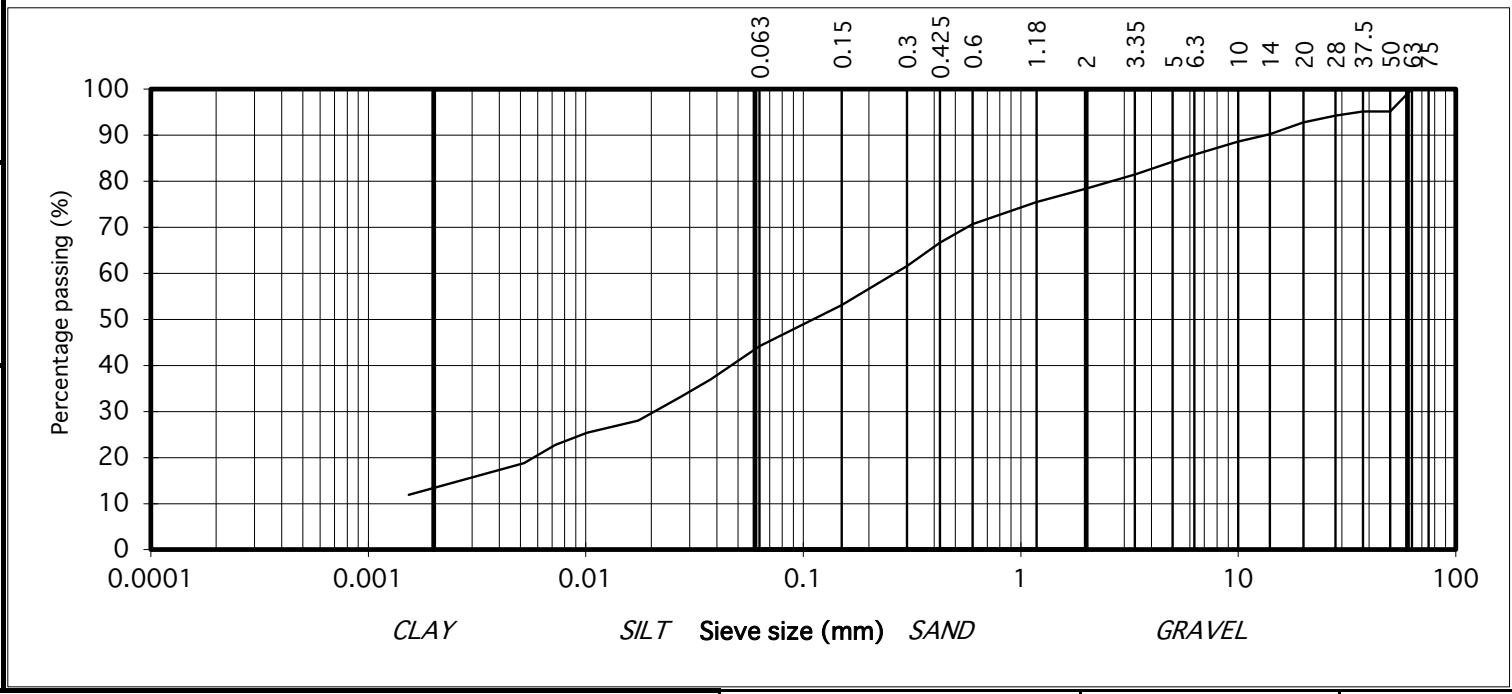
particle size	% passing	
75	100	COBBLES
63	100	
50	95	GRAVEL
37.5	95	
28	94	
20	93	
14	90	
10	89	
6.3	86	
5	84	
3.35	82	
2	78	
1.18	76	SAND
0.6	71	
0.425	67	
0.3	62	
0.15	53	
0.063	44	SILT/CLAY
0.038	37	
0.027	33	
0.017	28	
0.010	25	
0.007	23	
0.005	19	
0.002	12	

Contract No.	25882	Report No.	R1712060	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH13A			
Sample No.*	AA234949	Lab. Sample No.		A25/3250
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		01/08/2025
Description:	Brown slightly sandy, slightly gravelly, CLAY			

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

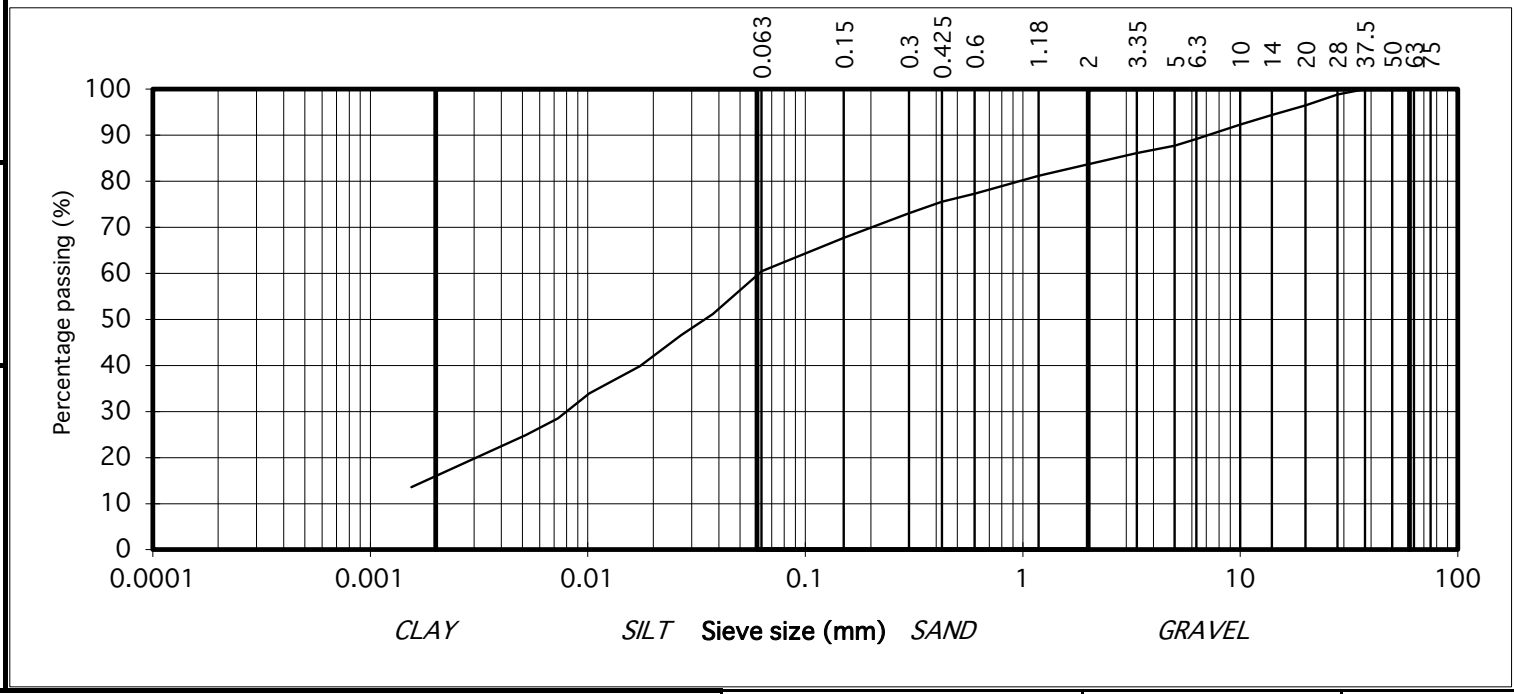
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	99	
20	96	
14	94	
10	92	
6.3	89	
5	88	
3.35	86	
2	84	
1.18	81	SAND
0.6	77	
0.425	76	
0.3	73	
0.15	68	
0.063	60	SILT/CLAY
0.038	51	
0.027	47	
0.017	40	
0.010	34	
0.007	29	
0.005	25	
0.002	14	

Contract No.	25882	Report No.	R172750	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH13A			
Sample No.*	AA234952	Lab. Sample No.		A25/3251
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		01/08/2025
Description:	Brown slightly sandy, slightly gravelly, SILT/CLAY			
Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4			

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

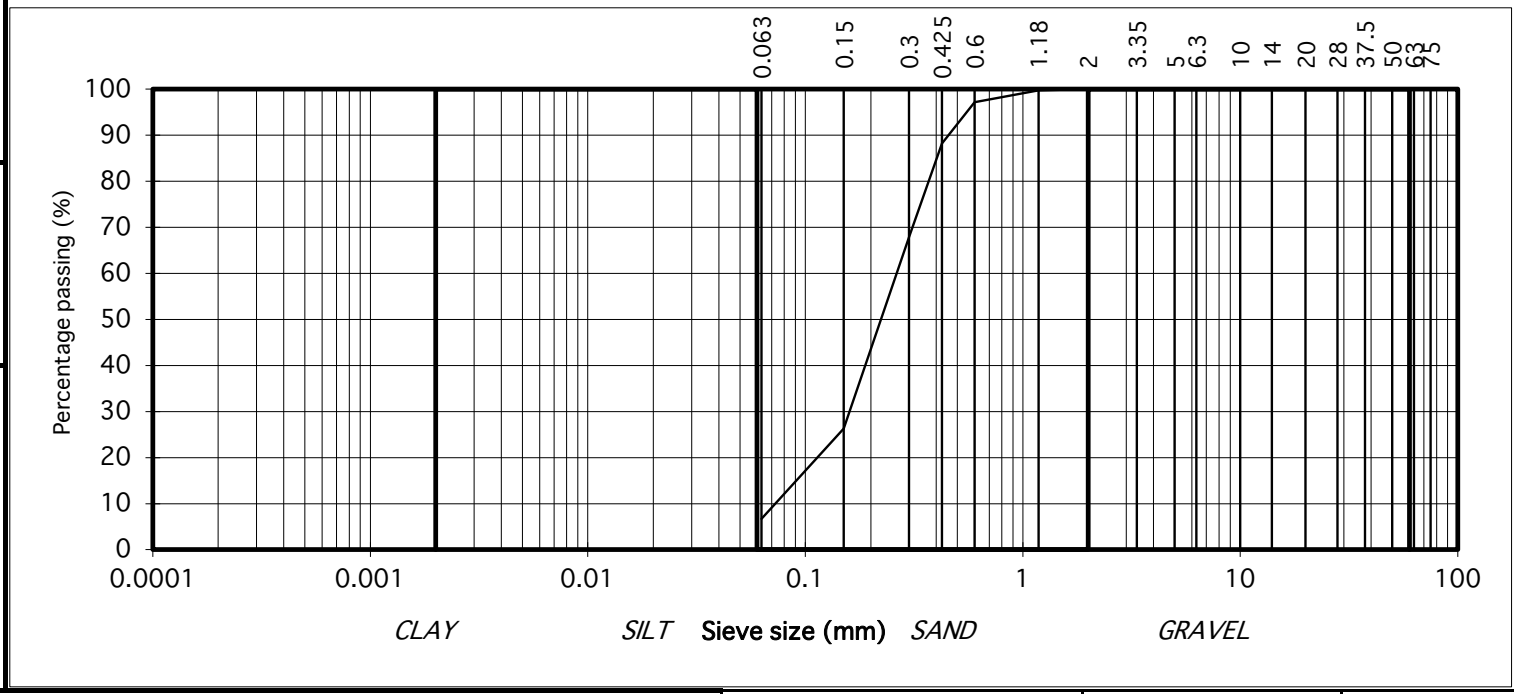
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	97	
0.425	88	
0.3	68	
0.15	26	
0.063	7	SILT/CLAY

Contract No.	25882	Report No.	R172263	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH34			
Sample No.*	AA212760	Lab. Sample No.		A25/3252
Sample Type:	B			
Depth* (m)	2.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		16/08/2025
Description:	Grey clayey/silty, SAND			

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

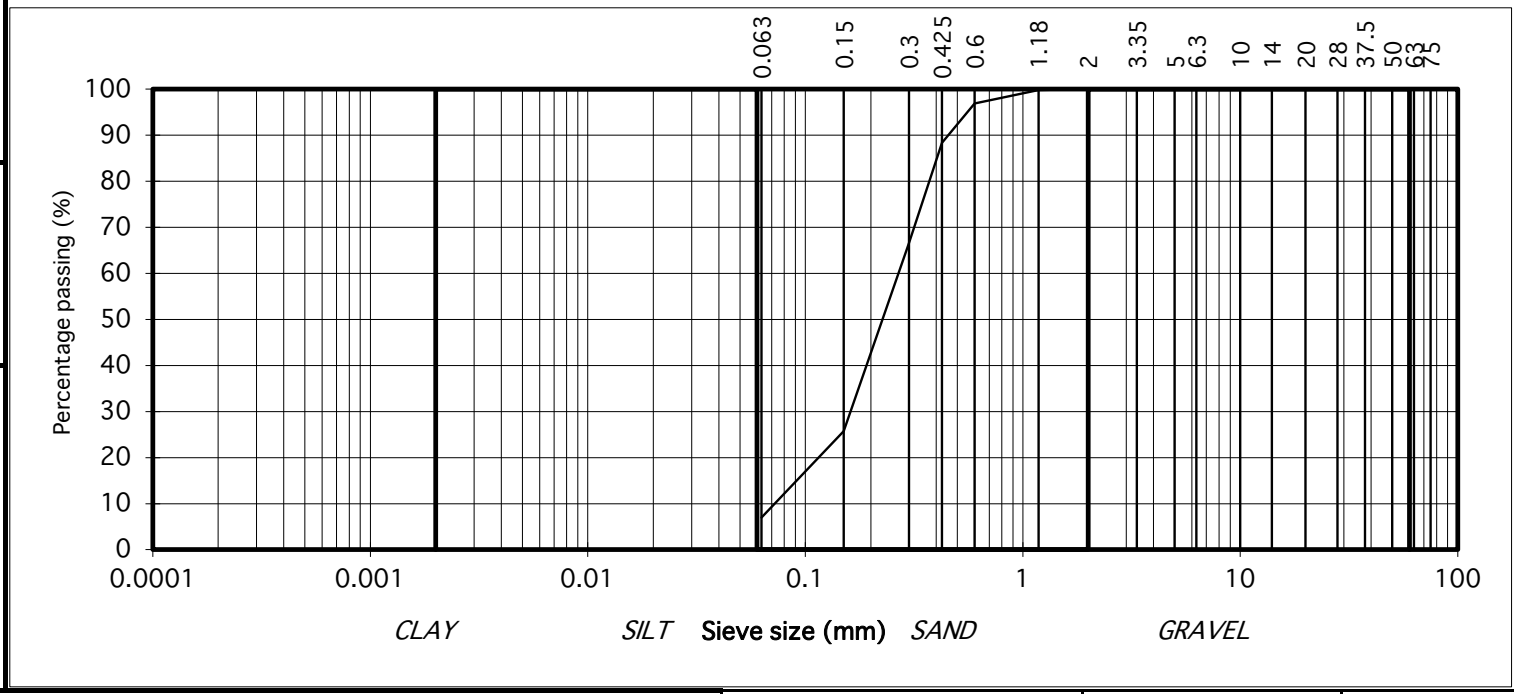
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	97	
0.425	88	
0.3	67	
0.15	26	
0.063	7	SILT/CLAY

Contract No.	25882	Report No.	R172264	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH34			
Sample No.*	AA212762	Lab. Sample No.		A25/3253
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		16/08/2025
Description:	Grey clayey/silty, SAND			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

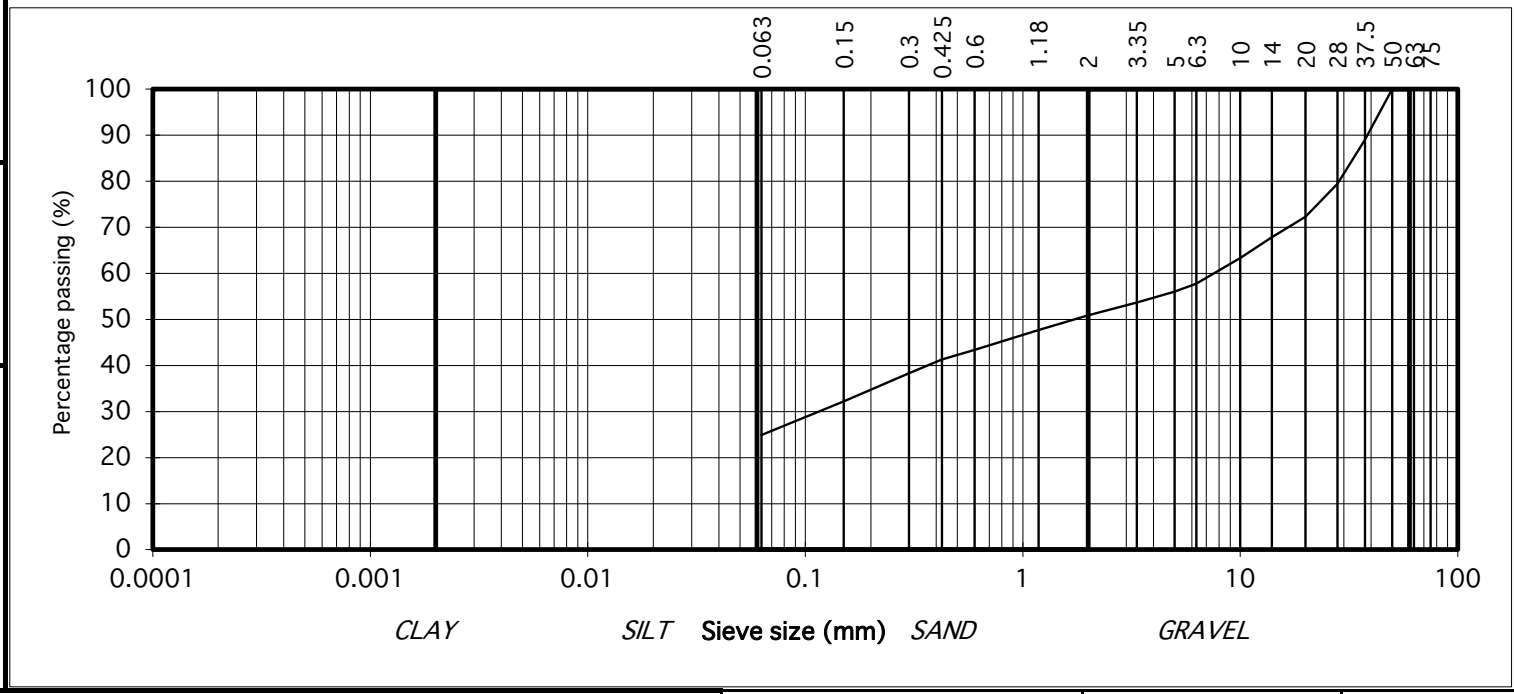
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	89	
28	79	
20	72	
14	68	
10	63	
6.3	58	
5	56	
3.35	54	
2	51	
1.18	48	SAND
0.6	43	
0.425	41	
0.3	38	
0.15	32	
0.063	25	SILT/CLAY

Contract No.	25882	Report No.	R172748
Contract Name :	Gas to Edenderry		
BH/TP No.	BH34		
Sample No.*	AA212763	Lab. Sample No.	A25/3254
Sample Type:	B		
Depth* (m)	5.00	Customer:	MIL
Date Received	29/07/2025	Date Testing started	16/08/2025
Description:	Grey slightly sandy, gravelly, SILT/CLAY		

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

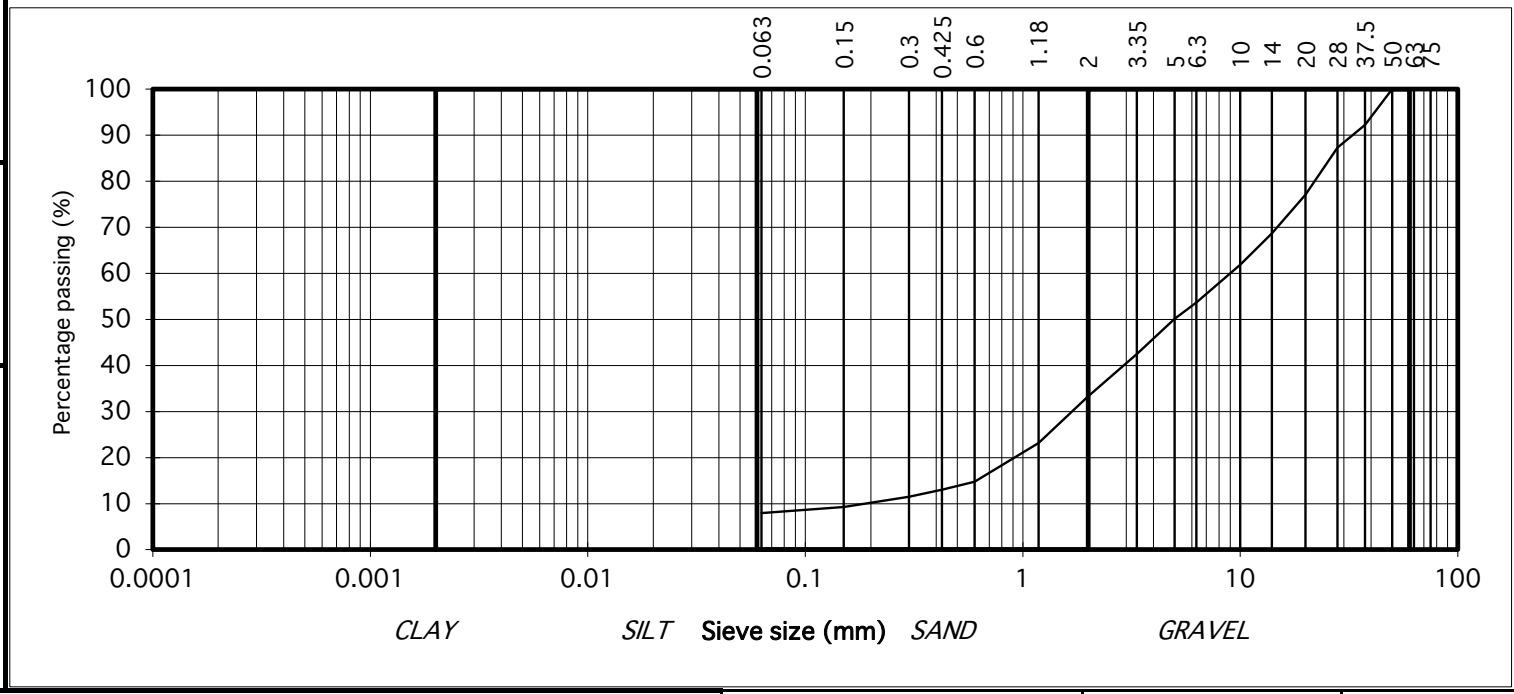
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	92	
28	87	
20	77	
14	69	
10	62	
6.3	54	
5	50	
3.35	43	
2	33	
1.18	23	SAND
0.6	15	
0.425	13	
0.3	12	
0.15	9	
0.063	8	SILT/CLAY

Contract No.	25882	Report No.	R172749	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH34			
Sample No.*	AA212765	Lab. Sample No.		A25/3255
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		13/08/2025
Description:	Grey clayey/silty, very sandy, GRAVEL			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

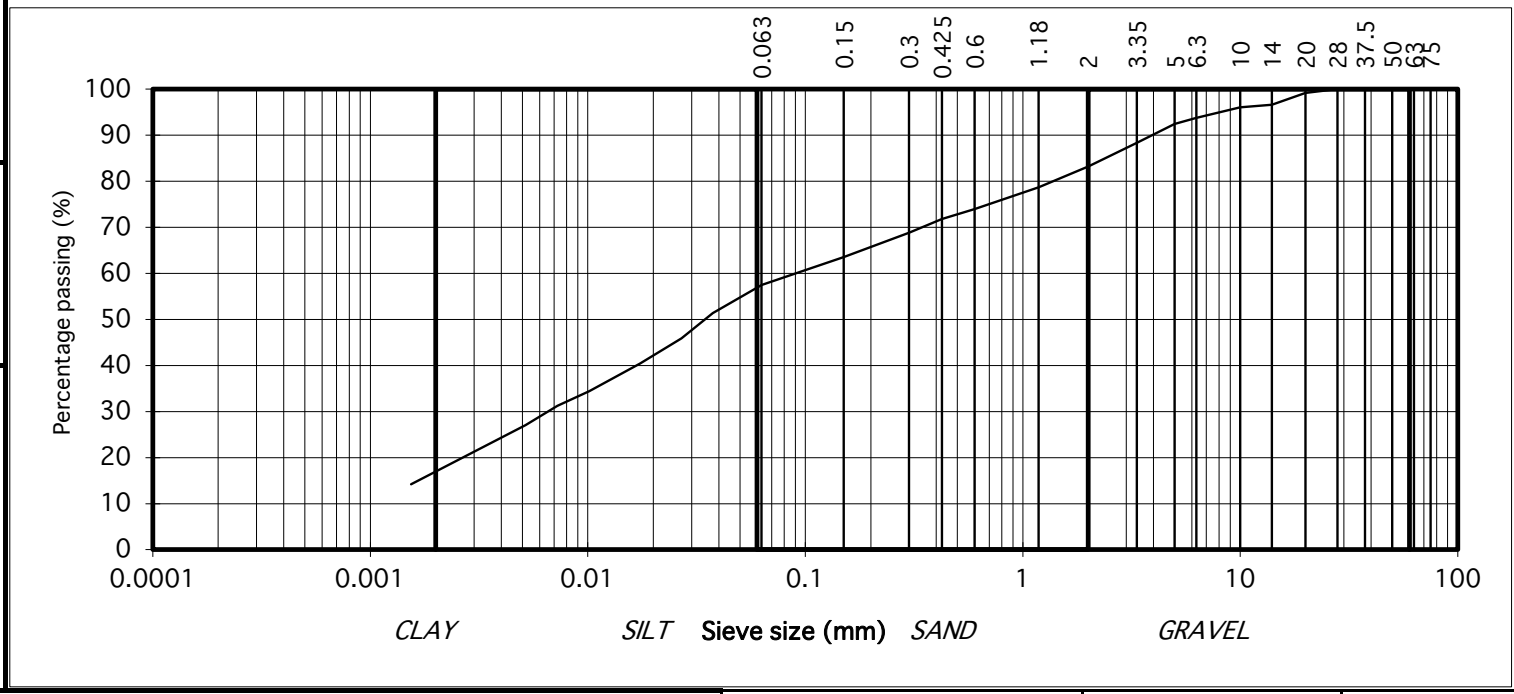
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	99	
14	97	
10	96	
6.3	94	
5	92	
3.35	88	
2	83	
1.18	79	SAND
0.6	74	
0.425	72	
0.3	69	
0.15	64	
0.063	58	SILT/CLAY
0.038	51	
0.027	46	
0.017	40	
0.010	34	
0.007	31	
0.005	27	
0.002	14	

Contract No.	25882	Report No.	R172751	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH48			
Sample No.*	AA254620	Lab. Sample No.		A25/3257
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		14/08/2025
Description:	Grey slightly sandy, slightly gravelly, CLAY			

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing
75	86
63	55
50	39
37.5	34
28	25
20	21
14	17
10	14
6.3	11
5	9
3.35	6
2	4
1.18	3
0.6	2
0.425	2
0.3	2
0.15	2
0.063	2

COBBLES

GRAVEL

SAND

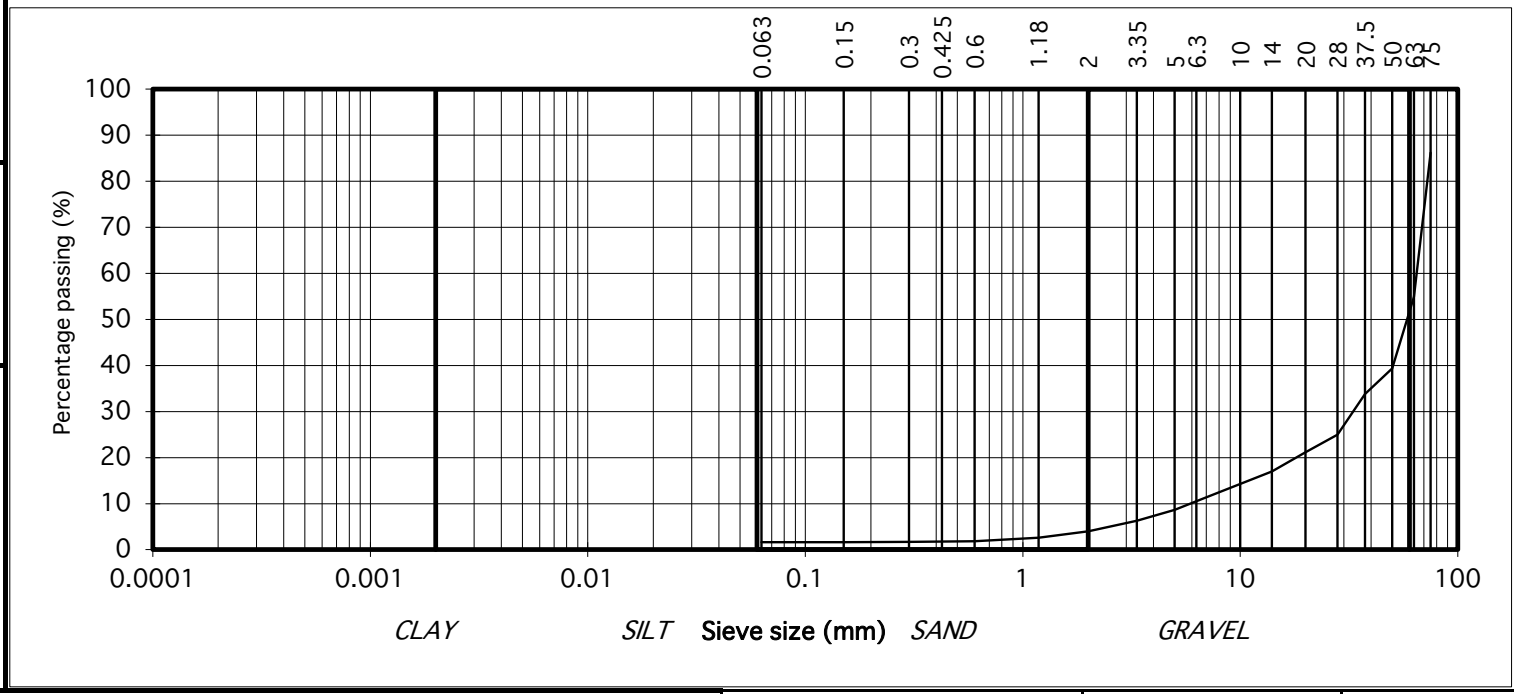
SILT/CLAY

Contract No.	25882	Report No.	R1712061	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH48			
Sample No.*	AA254624	Lab. Sample No.		A25/3259
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		01/08/2025
Description:	Grey slightly silty, slightly sandy, GRAVEL with many cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

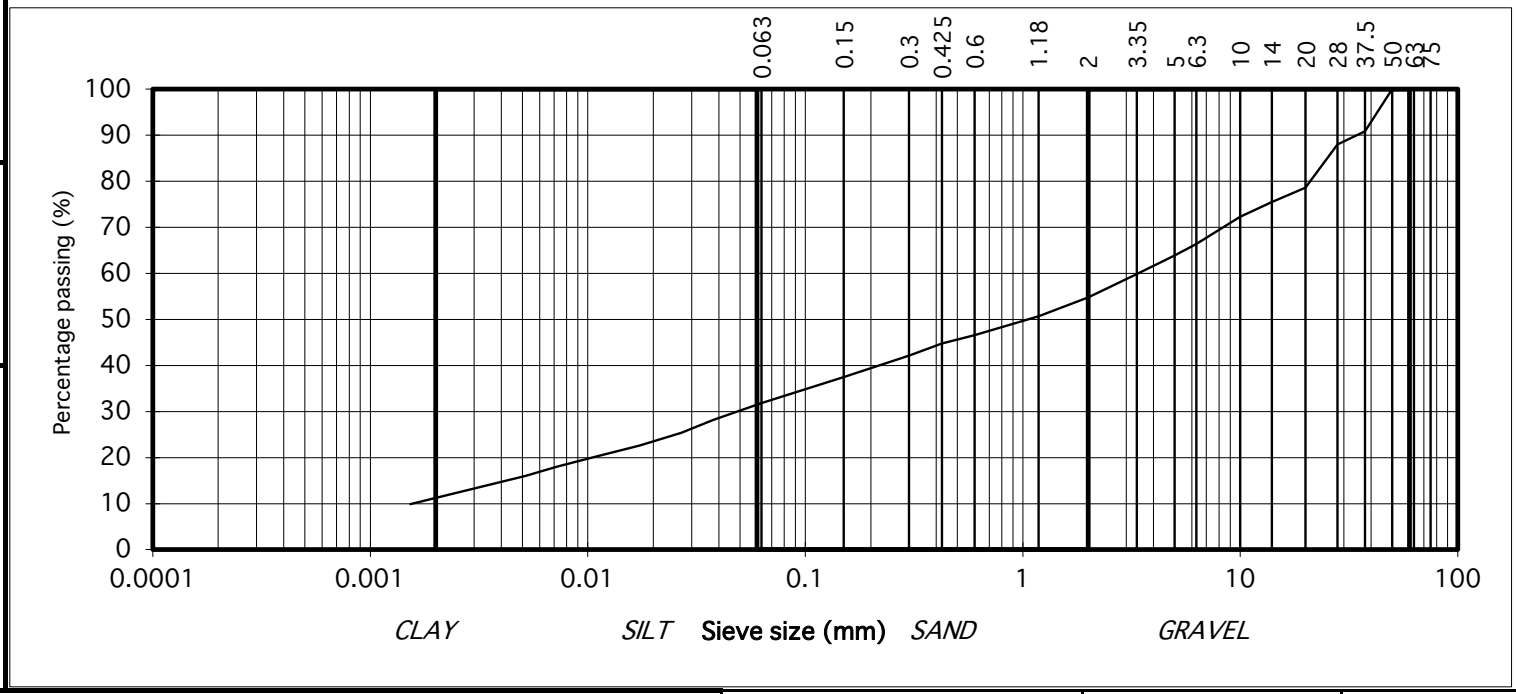
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	91	
28	88	
20	79	
14	75	
10	72	
6.3	66	
5	64	
3.35	60	
2	55	
1.18	51	SAND
0.6	47	
0.425	45	
0.3	42	
0.15	37	
0.063	32	SILT/CLAY
0.038	28	
0.027	25	
0.017	23	
0.010	20	
0.007	18	
0.005	16	
0.002	10	

Contract No.	25882	Report No.	R172752	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH49A			
Sample No.*	AA243631	Lab. Sample No.		A25/3261
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		14/08/2025
Description:	Grey slightly sandy, gravelly, CLAY			

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

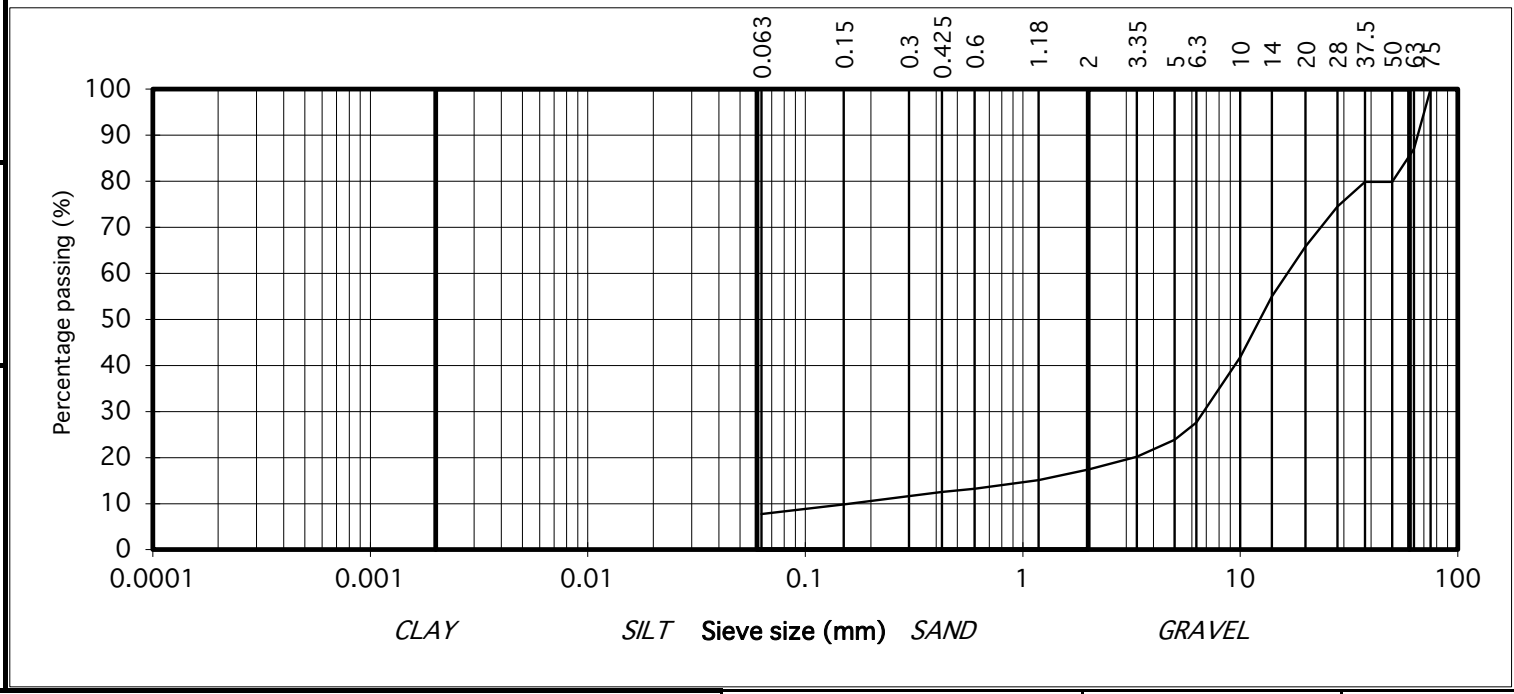
particle size	% passing	
75	100	COBBLES
63	87	
50	80	GRAVEL
37.5	80	
28	75	
20	66	
14	55	
10	42	
6.3	28	
5	24	
3.35	20	
2	17	
1.18	15	SAND
0.6	13	
0.425	13	
0.3	12	
0.15	10	
0.063	8	SILT/CLAY

Contract No.	25882	Report No.	R172753
Contract Name :	Gas to Edenderry		
BH/TP No.	BH49A		
Sample No.*	AA243634	Lab. Sample No.	A25/3262
Sample Type:	B		
Depth* (m)	7.00	Customer:	MIL
Date Received	29/07/2025	Date Testing started	14/08/2025
Description:	Brown silty, sandy, GRAVEL with some cobbles		

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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IGSL Ltd Materials Laboratory

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

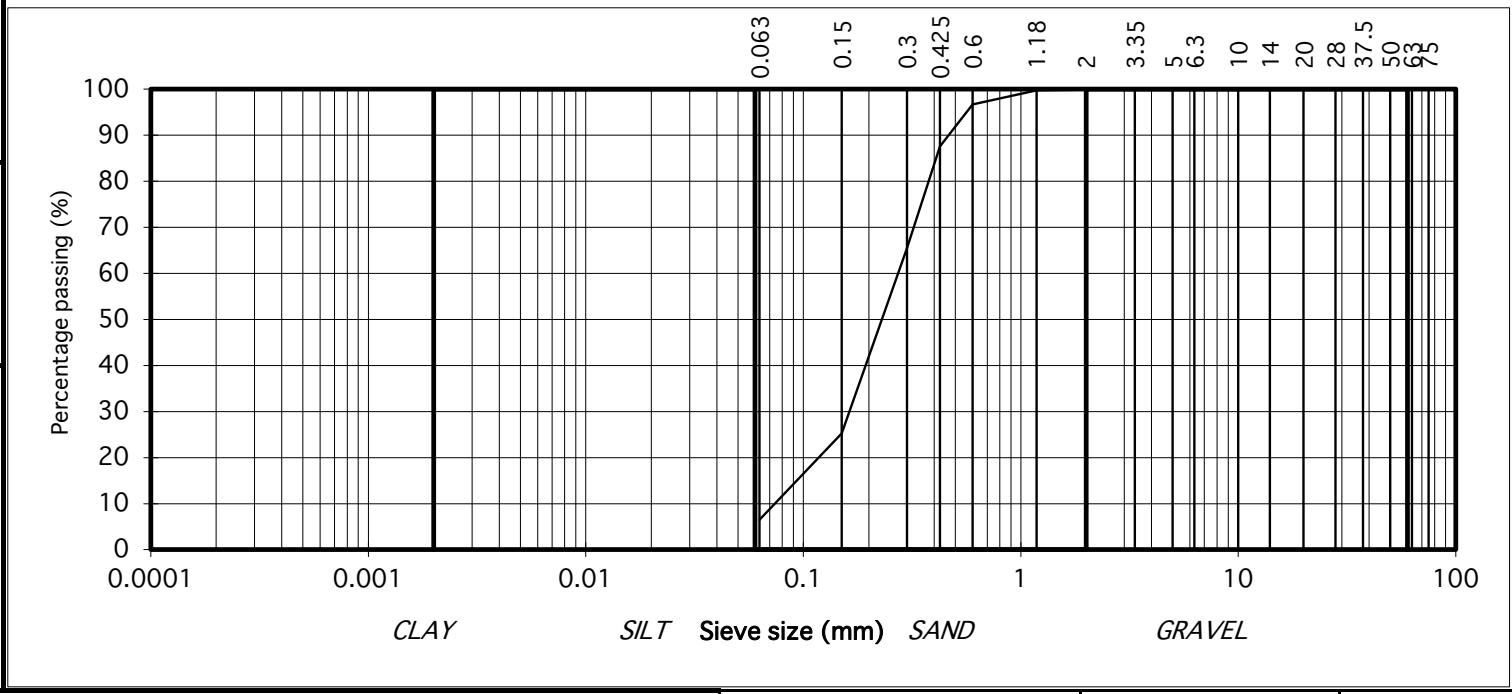
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	97	
0.425	88	
0.3	66	
0.15	25	
0.063	7	SILT/CLAY

Contract No.	25882	Report No.	R172265	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH56			
Sample No.*	AA212755	Lab. Sample No.		A25/3256
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		16/08/2025
Description:	Grey clayey/silty, SAND			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

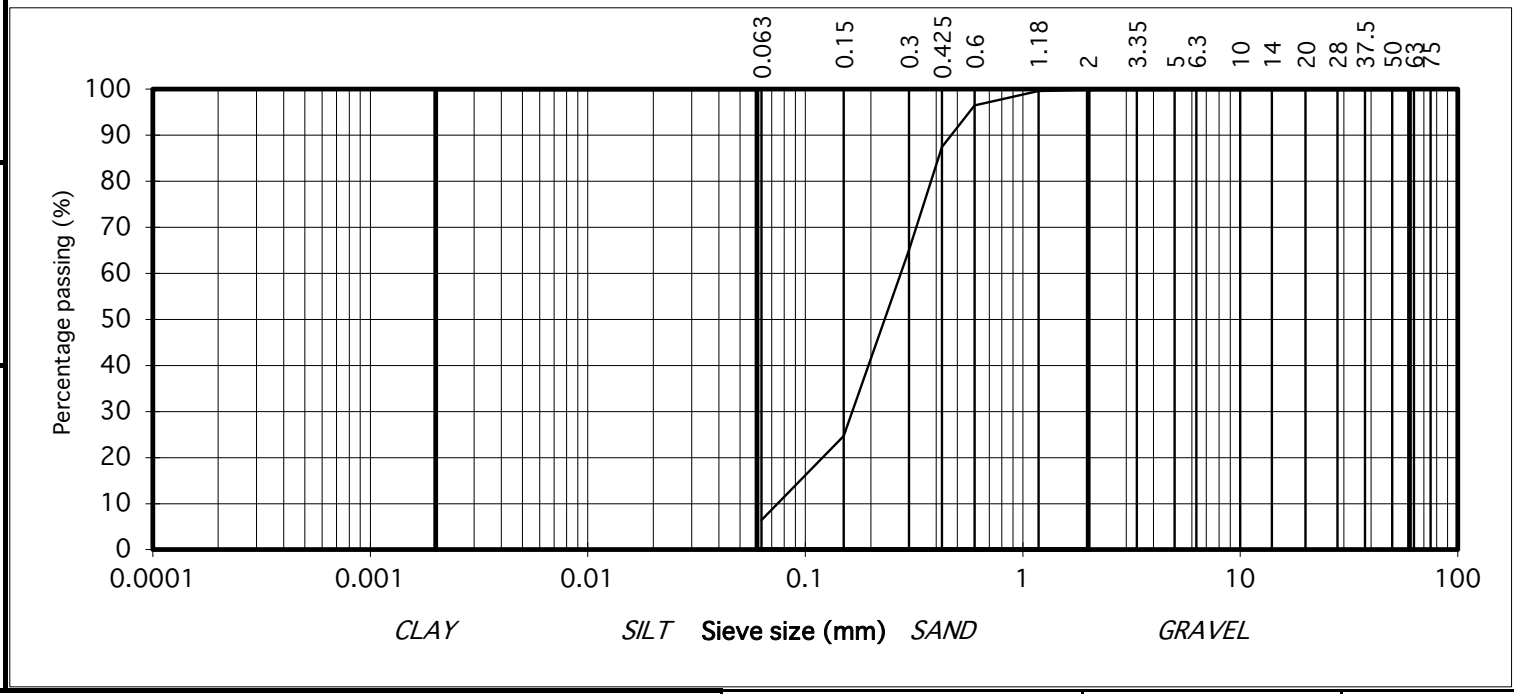
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	97	
0.425	87	
0.3	65	
0.15	25	
0.063	6	SILT/CLAY

Contract No.	25882	Report No.	R172266
Contract Name :	Gas to Edenderry		
BH/TP No.	BH56		
Sample No.*	AA212757	Lab. Sample No.	A25/3265
Sample Type:	B		
Depth* (m)	6.00	Customer:	MIL
Date Received	29/07/2025	Date Testing started	16/08/2025
Description:	Grey clayey/silty, SAND		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

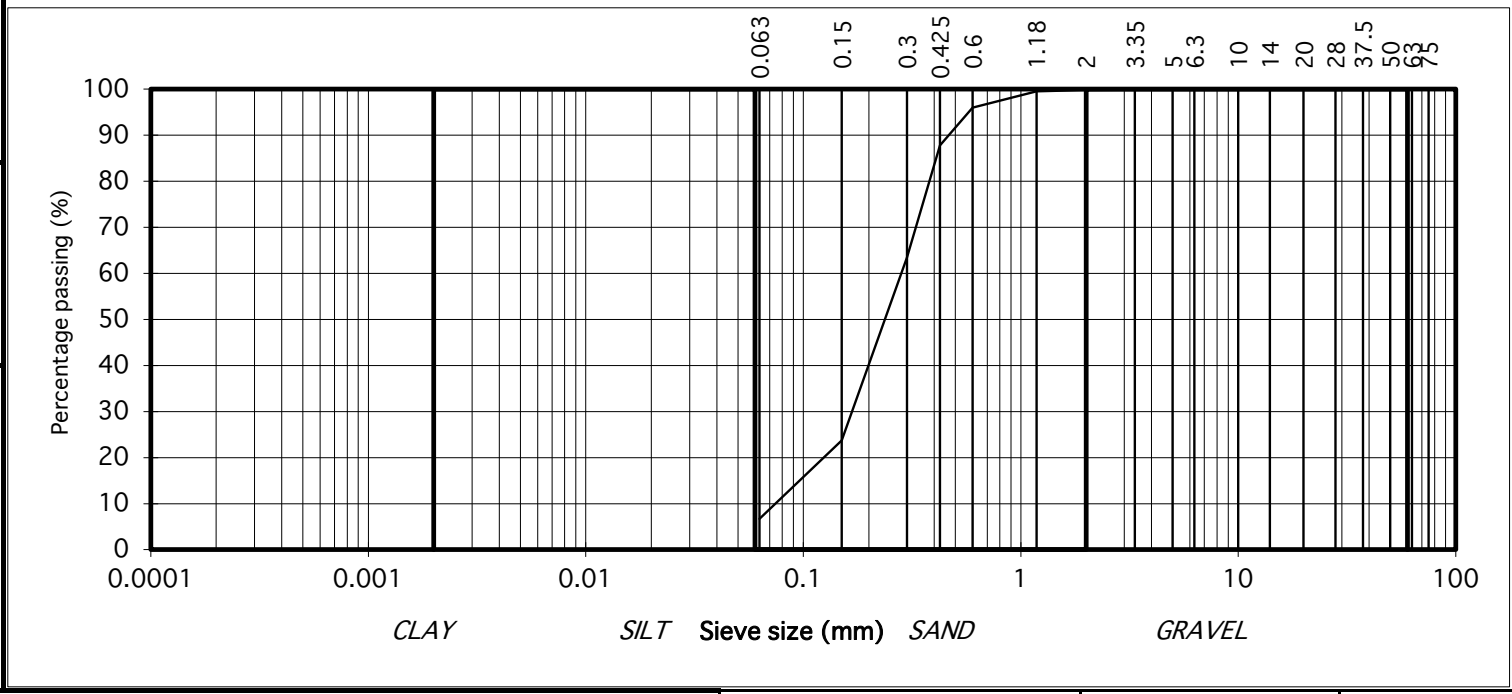
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	96	
0.425	88	
0.3	63	
0.15	24	
0.063	7	SILT/CLAY

Contract No.	25882	Report No.	R172267	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH56			
Sample No.*	AA212758	Lab. Sample No.		A25/3266
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	29/07/2025	Date Testing started		16/08/2025
Description:	Grey clayey/silty, SAND			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	25/08/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

Appendix 5

Chemical / Environmental Laboratory Results (Soil)

25-24474

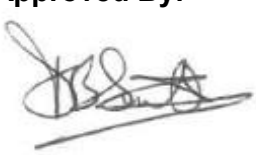
25-24940

25-25515

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: cs@etuki.eurofins.com

Final Report

Report No.:	25-24474-1
Initial Date of Issue:	07-Aug-2025
Re-Issue Details:	
Client	*IGSL*
Client Address:	*M7 Business Park* *Naas* *County Kildare* *Ireland*
Contact(s):	*Darren Keogh*
Project	*25882 Gas to Edenderry GNI (MIL)*
Quotation No.:	*Q24-34387*
Order No.:	
No. of Samples:	*9*
Turnaround (Wkdays):	7
Date Approved:	07-Aug-2025
Approved By:	



Details:	David Smith, Technical Director

Date Received:	24-Jul-2025		
Date Instructed:	24-Jul-2025		
Results Due:	01-Aug-2025		

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-24474	25-24474	25-24474	25-24474	25-24474	25-24474
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2005601	2005602	2005606	2005608	2005609	2005610
Order No.:				*Client Sample Ref.:*		*BH05*	*BH06*	*BH08*	*BH09*	*BH11*	*BH12*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*0.50*	*0.50*	*1.00*	*0.50*
				Date Sampled:		*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**						
Ammonium	U	1220	10:1	mg/l	0.050	0.059	0.055	0.051	0.056	0.053	0.075
Ammonium	N	1220	10:1	mg/kg	0.10	0.64	0.69	0.68	0.65	0.61	0.92

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-24474	25-24474	25-24474	25-24474	25-24474	25-24474	25-24474
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2005601	2005602	2005603	2005606	2005607	2005608	2005609
Order No.:				*Client Sample Ref.:*		*BH05*	*BH06*	*BH06*	*BH08*	*BH08*	*BH09*	*BH11*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*2.00*	*0.50*	*1.00*	*0.50*	*1.00*
				Date Sampled:		*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*
				Asbestos Lab:		NEW-ASB	NEW-ASB		NEW-ASB		NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		N	2192		N/A	-	-		-		-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	19	16	12	10	11	16	16
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones and Roots	Stones and Roots	Stones	Stones	Stones	Stones and Roots	Stones and Roots
Soil Texture		N	2030		N/A	Clay	Clay	Clay	Clay	Clay	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0			8.4		8.5		
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40	< 0.40		< 0.40		< 0.40	< 0.40
Magnesium (Water Soluble)		N	2120	g/l	0.010			< 0.010		< 0.010		
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010			< 0.010		< 0.010		
Total Sulphur		U	2175	%	0.010			0.020		0.040		
Sulphur (Elemental)		M	2180	mg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0	< 1.0
Chloride (Water Soluble)		M	2220	g/l	0.010			< 0.010		< 0.010		
Nitrate (Water Soluble)		N	2220	g/l	0.010			< 0.010		< 0.010		
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50		< 0.50		< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.9	3.5		3.2		2.5	1.6
Ammonium (Water Soluble)		M	2220	g/l	0.01			< 0.01		< 0.01		
Sulphate (Total)		U	2430	%	0.010	0.079	0.052		0.079		0.055	0.062
Sulphate (Acid Soluble)		U	2430	%	0.010			0.014		0.020		
Arsenic		M	2455	mg/kg	0.5	7.0	10		9.3		19	34
Barium		M	2455	mg/kg	0.5	40	62		140		500	380
Cadmium		M	2455	mg/kg	0.10	1.1	2.0		2.4		1.3	1.8
Chromium		M	2455	mg/kg	0.5	10	17		18		8.7	9.0
Molybdenum		M	2455	mg/kg	0.5	0.8	1.1		1.6		2.6	3.9
Antimony		N	2455	mg/kg	2.0	< 2.0	< 2.0		< 2.0		< 2.0	< 2.0
Copper		M	2455	mg/kg	0.50	10	23		23		8.5	7.3
Mercury		M	2455	mg/kg	0.05	0.09	0.09		0.08		0.06	0.07
Nickel		M	2455	mg/kg	0.50	21	56		54		24	22
Lead		M	2455	mg/kg	0.50	13	18		16		11	7.8
Selenium		M	2455	mg/kg	0.25	0.42	0.67		1.0		0.74	1.2
Zinc		M	2455	mg/kg	0.50	47	100		92		72	76
Chromium (Trivalent)		N	2490	mg/kg	1.0	10	17		18		8.7	9.0
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50		< 0.50		< 0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05	< 0.05
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05	< 0.05

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-24474	25-24474	25-24474	25-24474	25-24474	25-24474	25-24474
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2005601	2005602	2005603	2005606	2005607	2005608	2005609
Order No.:				*Client Sample Ref.:*		*BH05*	*BH06*	*BH06*	*BH08*	*BH08*	*BH09*	*BH11*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*2.00*	*0.50*	*1.00*	*0.50*	*1.00*
				Date Sampled:		*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*
				Asbestos Lab:		NEW-ASB	NEW-ASB		NEW-ASB		NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25		< 0.25		< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	< 2.0		< 2.0		< 2.0	< 2.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0	< 1.0		< 1.0		< 1.0	1.3
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	< 2.0		< 2.0		< 2.0	< 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	< 3.0	< 3.0		< 3.0		< 3.0	< 3.0
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	< 10		< 10		< 10	< 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	< 5.0	< 5.0		< 5.0		< 5.0	5.5
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25		< 0.25		< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0		< 1.0		< 1.0	< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0		< 1.0		< 1.0	< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	3.6	2.3		2.9		3.2	3.1
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	6.0	2.6		< 2.0		3.8	5.7
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	< 1.0	< 1.0		< 1.0		< 1.0	< 1.0
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	9.7	< 5.0		< 5.0		7.0	8.8
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50		< 0.50		< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	12	< 10		< 10		< 10	14
Mineral Oil EPH		N	2670	mg/kg	10	< 10	< 10		< 10		< 10	< 10
Benzene		M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0		< 1.0		< 1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-24474	25-24474	25-24474	25-24474	25-24474	25-24474	25-24474
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2005601	2005602	2005603	2005606	2005607	2005608	2005609
Order No.:				*Client Sample Ref.:*		*BH05*	*BH06*	*BH06*	*BH08*	*BH08*	*BH09*	*BH11*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*2.00*	*0.50*	*1.00*	*0.50*	*1.00*
				Date Sampled:		*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*	*23-Jul-2025*
				Asbestos Lab:		NEW-ASB	NEW-ASB		NEW-ASB		NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Coronene		N	2800	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
PCB 28		U	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010		< 0.010	< 0.010
PCB 52		U	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010		< 0.010	< 0.010
PCB 101		U	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010		< 0.010	< 0.010
PCB 118		U	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010		< 0.010	< 0.010
PCB 153		U	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010		< 0.010	< 0.010
PCB 138		U	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010		< 0.010	< 0.010
PCB 180		U	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010		< 0.010	< 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05	< 0.05		< 0.05		< 0.05	< 0.05
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-24474	25-24474
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2005610	2005611
Order No.:				*Client Sample Ref.:*		*BH12*	*BH12*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*2.00*
				Date Sampled:		*23-Jul-2025*	*23-Jul-2025*
				Asbestos Lab:		NEW-ASB	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type		N	2192		N/A	-	
Asbestos Identification		U	2192		N/A	No Asbestos Detected	
Moisture		N	2030	%	0.020	10	9.8
Soil Colour		N	2030		N/A	Brown	Brown
Other Material		N	2030		N/A	Stones	Stones
Soil Texture		N	2030		N/A	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0		8.4
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40	
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		0.021
Total Sulphur		U	2175	%	0.010		0.11
Sulphur (Elemental)		M	2180	mg/kg	1.0	< 1.0	
Chloride (Water Soluble)		M	2220	g/l	0.010		< 0.010
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	10	
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01
Sulphate (Total)		U	2430	%	0.010	0.21	
Sulphate (Acid Soluble)		U	2430	%	0.010		0.024
Arsenic		M	2455	mg/kg	0.5	12	
Barium		M	2455	mg/kg	0.5	90	
Cadmium		M	2455	mg/kg	0.10	1.7	
Chromium		M	2455	mg/kg	0.5	14	
Molybdenum		M	2455	mg/kg	0.5	1.6	
Antimony		N	2455	mg/kg	2.0	< 2.0	
Copper		M	2455	mg/kg	0.50	17	
Mercury		M	2455	mg/kg	0.05	0.07	
Nickel		M	2455	mg/kg	0.50	48	
Lead		M	2455	mg/kg	0.50	12	
Selenium		M	2455	mg/kg	0.25	1.1	
Zinc		M	2455	mg/kg	0.50	93	
Chromium (Trivalent)		N	2490	mg/kg	1.0	14	
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-24474	25-24474
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2005610	2005611
Order No.:				*Client Sample Ref.:*		*BH12*	*BH12*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*2.00*
				Date Sampled:		*23-Jul-2025*	*23-Jul-2025*
				Asbestos Lab:		NEW-ASB	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0	
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	< 3.0	
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	< 5.0	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	2.9	
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	2.4	
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	< 1.0	
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	5.3	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	< 10	
Mineral Oil EPH		N	2670	mg/kg	10	< 10	
Benzene		M	2760	µg/kg	1.0	< 1.0	
Toluene		M	2760	µg/kg	1.0	< 1.0	
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	
o-Xylene		M	2760	µg/kg	1.0	< 1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	
Naphthalene		M	2800	mg/kg	0.10	< 0.10	
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	
Fluorene		M	2800	mg/kg	0.10	< 0.10	
Phenanthrene		M	2800	mg/kg	0.10	< 0.10	
Anthracene		M	2800	mg/kg	0.10	< 0.10	
Fluoranthene		M	2800	mg/kg	0.10	< 0.10	
Pyrene		M	2800	mg/kg	0.10	< 0.10	
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10	
Chrysene		M	2800	mg/kg	0.10	< 0.10	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10	
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-24474	25-24474
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2005610	2005611
Order No.:				*Client Sample Ref.:*		*BH12*	*BH12*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*0.50*	*2.00*
				Date Sampled:		*23-Jul-2025*	*23-Jul-2025*
				Asbestos Lab:		NEW-ASB	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10	
Coronene		N	2800	mg/kg	0.10	< 0.10	
PCB 28		U	2815	mg/kg	0.010	< 0.010	
PCB 52		U	2815	mg/kg	0.010	< 0.010	
PCB 101		U	2815	mg/kg	0.010	< 0.010	
PCB 118		U	2815	mg/kg	0.010	< 0.010	
PCB 153		U	2815	mg/kg	0.010	< 0.010	
PCB 138		U	2815	mg/kg	0.010	< 0.010	
PCB 180		U	2815	mg/kg	0.010	< 0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05	
Total Phenols		M	2920	mg/kg	0.10	< 0.10	

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-24474							
Chemtest Sample ID:	2005601							
Sample Ref:	*BH05*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*23-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	1.0	3	5	6
Loss On Ignition	2610		M	%	3.0	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.6	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.024	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0011	0.011	0.5	2	25
Barium	1455		U	0.006	0.061	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0005	0.0053	0.5	10	70
Copper	1455		U	0.0025	0.025	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0011	0.011	0.5	10	30
Nickel	1455		U	0.0012	0.012	0.4	10	40
Lead	1455		U	0.0010	0.010	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0005	0.0050	0.1	0.5	7
Zinc	1455		U	0.012	0.12	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.50	5.0	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	62	620	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.3	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.8
WAC Sample Weight	760.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-24474							
Chemtest Sample ID:	2005602							
Sample Ref:	*BH06*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*23-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.51	3	5	6
Loss On Ignition	2610		M	%	2.1	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		9.3	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.040	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0003	0.0031	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0007	0.0065	0.5	10	70
Copper	1455		U	0.0018	0.018	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0012	0.012	0.5	10	30
Nickel	1455		U	0.0008	0.0076	0.4	10	40
Lead	1455		U	0.0007	0.0070	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.030	0.30	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.33	3.3	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	52	520	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.9	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.3
WAC Sample Weight	831.3

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

Chemtest Job No:	25-24474					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	2005606							
Sample Ref:	*BH08*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*23-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.71	3	5	6
Loss On Ignition	2610		M	%	1.2	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.9	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.043	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0005	0.0049	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0009	0.0091	0.5	10	70
Copper	1455		U	0.0016	0.016	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0026	0.026	0.5	10	30
Nickel	1455		U	0.0010	0.0095	0.4	10	40
Lead	1455		U	0.0008	0.0079	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0007	0.0070	0.1	0.5	7
Zinc	1455		U	0.006	0.060	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.19	1.9	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	46	460	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	11
WAC Sample Weight	867.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-24474							
Chemtest Sample ID:	2005608							
Sample Ref:	*BH09*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*23-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.89	3	5	6
Loss On Ignition	2610		M	%	2.4	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.6	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.027	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	< 0.0002	< 0.0020	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	0.0079	0.079	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0061	0.061	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0009	0.0087	0.5	10	30
Nickel	1455		U	0.0019	0.020	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.066	0.66	4	50	200
Chloride	1220		U	1.2	12	800	15000	25000
Fluoride	1220		U	0.30	3.0	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	70	700	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.3	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.4
WAC Sample Weight	753.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

Chemtest Job No:	25-24474					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	2005609							
Sample Ref:	*BH11*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*23-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	1.1	3	5	6
Loss On Ignition	2610		M	%	1.8	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.031	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0009	0.0088	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	0.00021	0.0021	0.04	1	5
Chromium	1455		U	0.0006	0.0065	0.5	10	70
Copper	1455		U	0.0015	0.015	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0010	0.010	0.5	10	30
Nickel	1455		U	0.0008	0.0077	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0005	0.0055	0.1	0.5	7
Zinc	1455		U	0.011	0.11	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.21	2.1	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	56	560	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.6	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	11
WAC Sample Weight	811.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-24474							
Chemtest Sample ID:	2005610							
Sample Ref:	*BH12*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*23-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.93	3	5	6
Loss On Ignition	2610		M	%	1.1	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.8	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.032	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	< 0.0002	< 0.0020	0.5	2	25
Barium	1455		U	0.007	0.065	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0018	0.018	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0033	0.033	0.5	10	30
Nickel	1455		U	0.0006	0.0059	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0006	0.0056	0.1	0.5	7
Zinc	1455		U	0.008	0.081	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.26	2.6	10	150	500
Sulphate	1220		U	2.2	22	1000	20000	50000
Total Dissolved Solids	1020		N	51	510	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.7	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	9.2
WAC Sample Weight	1091

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
2005601	*BH05*			*23-Jul-2025*	E	Amber Glass 250ml
2005601	*BH05*			*23-Jul-2025*	E	Plastic Tub 500g
2005602	*BH06*			*23-Jul-2025*	E	Amber Glass 250ml
2005602	*BH06*			*23-Jul-2025*	E	Plastic Tub 500g
2005606	*BH08*			*23-Jul-2025*	E	Amber Glass 250ml
2005606	*BH08*			*23-Jul-2025*	E	Plastic Tub 500g
2005608	*BH09*			*23-Jul-2025*	E	Amber Glass 250ml
2005608	*BH09*			*23-Jul-2025*	E	Plastic Tub 500g
2005609	*BH11*			*23-Jul-2025*	E	Amber Glass 250ml
2005609	*BH11*			*23-Jul-2025*	E	Plastic Tub 500g
2005610	*BH12*			*23-Jul-2025*	E	Amber Glass 250ml
2005610	*BH12*			*23-Jul-2025*	E	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: cs@etuki.eurofins.com

Final Report

Report No.:	25-24940-1
Initial Date of Issue:	14-Aug-2025
Re-Issue Details:	
Client	*IGSL*
Client Address:	*M7 Business Park* *Naas* *County Kildare* *Ireland*
Contact(s):	*Darren Keogh*
Project	*25882 Gas to Edenderry GN1 (M1L)*
Quotation No.:	*Q25-38495*
Order No.:	
No. of Samples:	*4*
Turnaround (Wkdays):	10
Date Approved:	14-Aug-2025
Approved By:	
Details:	David Smith, Technical Director

Date Received:	29-Jul-2025
Date Instructed:	29-Jul-2025
Results Due:	11-Aug-2025

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: 25882 Gas to Edenderry GN1 (M1L)

Client: IGSL				**Chemtest Job No.:**		25-24940	25-24940
Quotation No.: Q25-38495				**Chemtest Sample ID.:**		2007560	2007562
Order No.:				*Client Sample Ref.:*		*BH07*	*BH46*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*
				Date Sampled:		*25-Jul-2025*	*25-Jul-2025*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
Ammonium	U	1220	10:1	mg/l	0.050	0.18	0.18
Ammonium	N	1220	10:1	mg/kg	0.10	2.1	2.3

Results - Soil

Project: 25882 Gas to Edenderry GN1 (M1L)

Client: IGSL				**Chemtest Job No.:**		25-24940	25-24940	25-24940	25-24940
Quotation No.: Q25-38495				**Chemtest Sample ID.:**		2007560	2007561	2007562	2007563
Order No.:				*Client Sample Ref.:*		*BH07*	*BH07*	*BH46*	*BH46*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*3.00*	*1.00*	*2.00*
				Date Sampled:		*25-Jul-2025*	*25-Jul-2025*	*25-Jul-2025*	*25-Jul-2025*
				Asbestos Lab:		DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**				
ACM Type		N	2192		N/A	-		-	
Asbestos Identification		U	2192		N/A	No Asbestos Detected		No Asbestos Detected	
Moisture		N	2030	%	0.020	11	9.1	13	18
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones and Roots	Stones	Stones	Stones and Roots
Soil Texture		N	2030		N/A	Clay	Clay	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0		8.2		8.3
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40		< 0.40	
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010		< 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		0.12		0.14
Total Sulphur		U	2175	%	0.010		0.35		0.15
Sulphur (Elemental)		M	2180	mg/kg	1.0	< 1.0		< 1.0	
Chloride (Water Soluble)		M	2220	g/l	0.010		0.012		< 0.010
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010		< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50		< 0.50	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	3.1		6.1	
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01		< 0.01
Sulphate (Total)		U	2430	%	0.010	0.038		0.082	
Sulphate (Acid Soluble)		U	2430	%	0.010		0.047		0.031
Arsenic		M	2455	mg/kg	0.5	4.0		8.6	
Barium		M	2455	mg/kg	0.5	58		110	
Cadmium		M	2455	mg/kg	0.10	< 0.10		0.44	
Chromium		M	2455	mg/kg	0.5	6.0		9.7	
Molybdenum		M	2455	mg/kg	0.5	< 0.5		< 0.5	
Antimony		N	2455	mg/kg	2.0	< 2.0		< 2.0	
Copper		M	2455	mg/kg	0.50	6.9		11	
Mercury		M	2455	mg/kg	0.05	< 0.05		< 0.05	
Nickel		M	2455	mg/kg	0.50	20		32	
Lead		M	2455	mg/kg	0.50	5.7		8.8	
Selenium		M	2455	mg/kg	0.25	< 0.25		0.39	
Zinc		M	2455	mg/kg	0.50	35		58	
Chromium (Trivalent)		N	2490	mg/kg	1.0	6.0		9.7	
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50		< 0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05	

Results - Soil

Project: 25882 Gas to Edenderry GN1 (M1L)

Client: IGSL				**Chemtest Job No.:**		25-24940	25-24940	25-24940	25-24940
Quotation No.: Q25-38495				**Chemtest Sample ID.:**		2007560	2007561	2007562	2007563
Order No.:				*Client Sample Ref.:*		*BH07*	*BH07*	*BH46*	*BH46*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*3.00*	*1.00*	*2.00*
				Date Sampled:		*25-Jul-2025*	*25-Jul-2025*	*25-Jul-2025*	*25-Jul-2025*
				Asbestos Lab:		DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**				
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25		< 0.25	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0		3.1	
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0		3.5	
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0		< 2.0	
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	< 3.0		< 3.0	
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10		< 10	
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	< 5.0		9.5	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25		< 0.25	
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		34	
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		34	
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	7.2		14	
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	5.8		5.2	
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	< 1.0		< 1.0	
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	13		87	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50		< 0.50	
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	16		96	
Mineral Oil EPH		N	2670	mg/kg	10	< 10		< 10	
Benzene		M	2760	µg/kg	1.0	< 1.0		< 1.0	
Toluene		M	2760	µg/kg	1.0	< 1.0		< 1.0	
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0		< 1.0	
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0	
o-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0		< 1.0	
Naphthalene		M	2800	mg/kg	0.10	0.32		< 0.10	
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10		< 0.10	
Acenaphthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	
Fluorene		M	2800	mg/kg	0.10	< 0.10		< 0.10	
Phenanthrene		M	2800	mg/kg	0.10	0.47		< 0.10	
Anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10	
Fluoranthene		M	2800	mg/kg	0.10	0.13		< 0.10	
Pyrene		M	2800	mg/kg	0.10	0.15		< 0.10	
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10	
Chrysene		M	2800	mg/kg	0.10	< 0.10		< 0.10	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	

Results - Soil

Project: 25882 Gas to Edenderry GN1 (M1L)

Client: IGSL				**Chemtest Job No.:**		25-24940	25-24940	25-24940	25-24940
Quotation No.: Q25-38495				**Chemtest Sample ID.:**		2007560	2007561	2007562	2007563
Order No.:				*Client Sample Ref.:*		*BH07*	*BH07*	*BH46*	*BH46*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*3.00*	*1.00*	*2.00*
				Date Sampled:		*25-Jul-2025*	*25-Jul-2025*	*25-Jul-2025*	*25-Jul-2025*
				Asbestos Lab:		DURHAM		DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**				
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10		< 0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10		< 0.10	
Coronene		N	2800	mg/kg	0.10	< 0.10		< 0.10	
PCB 28		U	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 52		U	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 101		U	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 118		U	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 153		U	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 138		U	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 180		U	2815	mg/kg	0.010	< 0.010		< 0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05		< 0.05	
Total Phenols		M	2920	mg/kg	0.10	< 0.10		< 0.10	

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GN1 (M1L)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-24940							
Chemtest Sample ID:	2007560							
Sample Ref:	*BH07*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*25-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.61	3	5	6
Loss On Ignition	2610		M	%	1.8	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	1.1	100	--	--
pH at 20C	2010		M		8.0	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.011	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0012	0.012	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0008	0.0080	0.5	10	70
Copper	1455		U	0.0016	0.016	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0035	0.035	0.5	10	30
Nickel	1455		U	0.0012	0.012	0.4	10	40
Lead	1455		U	0.0008	0.0082	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.006	0.057	4	50	200
Chloride	1220		U	1.2	12	800	15000	25000
Fluoride	1220		U	0.32	3.2	10	150	500
Sulphate	1220		U	1.7	17	1000	20000	50000
Total Dissolved Solids	1020		N	50	500	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.7	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	20
WAC Sample Weight	782.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GN1 (M1L)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-24940							
Chemtest Sample ID:	2007562							
Sample Ref:	*BH46*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*25-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.46	3	5	6
Loss On Ignition	2610		M	%	1.5	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.3	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.024	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0011	0.011	0.5	2	25
Barium	1455		U	0.005	0.054	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0015	0.015	0.5	10	70
Copper	1455		U	0.0030	0.030	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0029	0.030	0.5	10	30
Nickel	1455		U	0.0027	0.027	0.4	10	40
Lead	1455		U	0.0015	0.015	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.009	0.088	4	50	200
Chloride	1220		U	1.1	11	800	15000	25000
Fluoride	1220		U	0.85	8.5	10	150	500
Sulphate	1220		U	5.7	57	1000	20000	50000
Total Dissolved Solids	1020		N	54	540	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	11
WAC Sample Weight	721.3

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
2007560	*BH07*			*25-Jul-2025*	E	Amber Glass 250ml
2007560	*BH07*			*25-Jul-2025*	E	Plastic Tub 500g
2007562	*BH46*			*25-Jul-2025*	E	Amber Glass 250ml
2007562	*BH46*			*25-Jul-2025*	E	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	PL GW
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

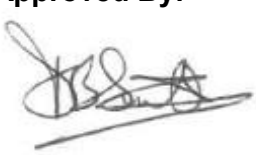
Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: cs@etuki.eurofins.com

Final Report

Report No.:	25-25515-1
Initial Date of Issue:	19-Aug-2025
Re-Issue Details:	
Client	*IGSL*
Client Address:	*M7 Business Park* *Naas* *County Kildare* *Ireland*
Contact(s):	*Darren Keogh*
Project	*25882 Gas to Edenderry GNI (MIL)*
Quotation No.:	*Q24-34387*
Order No.:	
No. of Samples:	*8*
Turnaround (Wkdays):	10
Date Approved:	19-Aug-2025
Approved By:	



Details:	David Smith, Technical Director

Date Received:	02-Aug-2025		
Date Instructed:	02-Aug-2025		
Results Due:	14-Aug-2025		

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-25515	25-25515	25-25515	25-25515
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2009583	2009585	2009587	2009589
Order No.:				*Client Sample Ref.:*		*BH10*	*BH13A*	*BH48*	*BH49A*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*0.5*	*0.5*	*0.5*
				Date Sampled:		*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**				
Ammonium	U	1220	10:1	mg/l	0.050	< 0.050	< 0.050	< 0.050	< 0.050
Ammonium	N	1220	10:1	mg/kg	0.10	0.27	0.15	0.18	0.30

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-25515	25-25515	25-25515	25-25515	25-25515	25-25515	25-25515
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2009583	2009584	2009585	2009586	2009587	2009588	2009589
Order No.:				*Client Sample Ref.:*		*BH10*	*BH10*	*BH13A*	*BH13A*	*BH48*	*BH48*	*BH49A*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*0.5*	*1.00*	*0.5*	*1.00*	*0.5*
				Date Sampled:		*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*
				Asbestos Lab:		DURHAM		DURHAM		DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		N	2192		N/A	-		-		-		-
Asbestos Identification		U	2192		N/A	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected
Moisture		N	2030	%	0.020	13	20	15	12	14	18	18
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones	None	Roots and Stones	Stones	Stones	Stones	None
Soil Texture		N	2030		N/A	Clay	Clay	Clay	Clay	Sand	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0		8.3		8.6		8.7	
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40		< 0.40		< 0.40		< 0.40
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010		< 0.010		< 0.010	
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		0.021		< 0.010		< 0.010	
Total Sulphur		U	2175	%	0.010		0.076		0.018		0.022	
Sulphur (Elemental)		M	2180	mg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Chloride (Water Soluble)		M	2220	g/l	0.010		< 0.010		< 0.010		< 0.010	
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010		< 0.010		< 0.010	
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50		< 0.50		< 0.50		< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.5		2.5		2.1		2.3
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01		< 0.01		< 0.01	
Sulphate (Total)		U	2430	%	0.010	0.069		0.058		0.027		0.030
Sulphate (Acid Soluble)		U	2430	%	0.010		< 0.010		0.013		0.019	
Arsenic		M	2455	mg/kg	0.5	10		6.4		3.1		11
Barium		M	2455	mg/kg	0.5	130		44		23		67
Cadmium		M	2455	mg/kg	0.10	0.82		0.87		< 0.10		2.1
Chromium		M	2455	mg/kg	0.5	14		19		11		22
Molybdenum		M	2455	mg/kg	0.5	< 0.5		< 0.5		< 0.5		< 0.5
Antimony		N	2455	mg/kg	2.0	< 2.0		< 2.0		< 2.0		< 2.0
Copper		M	2455	mg/kg	0.50	14		20		10		27
Mercury		M	2455	mg/kg	0.05	0.05		0.05		< 0.05		0.09
Nickel		M	2455	mg/kg	0.50	34		50		20		77
Lead		M	2455	mg/kg	0.50	16		17		8.3		21
Selenium		M	2455	mg/kg	0.25	0.81		0.42		< 0.25		0.66
Zinc		M	2455	mg/kg	0.50	72		97		56		130
Chromium (Trivalent)		N	2490	mg/kg	1.0	14		19		11		22
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50		< 0.50		< 0.50		< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-25515	25-25515	25-25515	25-25515	25-25515	25-25515	25-25515
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2009583	2009584	2009585	2009586	2009587	2009588	2009589
Order No.:				*Client Sample Ref.:*		*BH10*	*BH10*	*BH13A*	*BH13A*	*BH48*	*BH48*	*BH49A*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*0.5*	*1.00*	*0.5*	*1.00*	*0.5*
				Date Sampled:		*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*
				Asbestos Lab:		DURHAM		DURHAM		DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25		< 0.25		< 0.25		< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	2.2		2.3		2.6		2.5
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0		< 1.0		< 1.0		< 1.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0		< 2.0		< 2.0		< 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	< 3.0		< 3.0		< 3.0		< 3.0
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10		< 10		< 10		< 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	< 5.0		5.4		< 5.0		< 5.0
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25		< 0.25		< 0.25		< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		< 1.0		< 1.0		< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		< 1.0		< 1.0		< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	< 2.0		< 2.0		< 2.0		< 2.0
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	6.7		7.1		< 2.0		6.0
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	6.3		< 1.0		< 1.0		< 1.0
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	7.2		7.1		< 5.0		6.9
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50		< 0.50		< 0.50		< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	11		12		< 10		10
Mineral Oil EPH		N	2670	mg/kg	10	< 10		< 10		< 10		< 10
Benzene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0		< 1.0		< 1.0		< 1.0
Naphthalene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-25515	25-25515	25-25515	25-25515	25-25515	25-25515	25-25515
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2009583	2009584	2009585	2009586	2009587	2009588	2009589
Order No.:				*Client Sample Ref.:*		*BH10*	*BH10*	*BH13A*	*BH13A*	*BH48*	*BH48*	*BH49A*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*0.5*	*1.00*	*0.5*	*1.00*	*0.5*
				Date Sampled:		*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*	*30-Jul-2025*
				Asbestos Lab:		DURHAM		DURHAM		DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Coronene		N	2800	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
PCB 28		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 52		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 101		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 118		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 153		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 138		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
PCB 180		U	2815	mg/kg	0.010	< 0.010		< 0.010		< 0.010		< 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05		< 0.05		< 0.05		< 0.05
Total Phenols		M	2920	mg/kg	0.10	1.1		0.25		< 0.10		< 0.10

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-25515
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2009590
Order No.:				*Client Sample Ref.:*		*BH49A*
				Sample Type:		*SOIL*
				Top Depth (m):		*1.00*
				Date Sampled:		*30-Jul-2025*
				Asbestos Lab:		
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**	
ACM Type		N	2192		N/A	
Asbestos Identification		U	2192		N/A	
Moisture		N	2030	%	0.020	13
Soil Colour		N	2030		N/A	Brown
Other Material		N	2030		N/A	Stones
Soil Texture		N	2030		N/A	Clay
pH (2.5:1) at 20C		N	2010		4.0	8.6
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	
Magnesium (Water Soluble)		N	2120	g/l	0.010	< 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.011
Total Sulphur		U	2175	%	0.010	0.018
Sulphur (Elemental)		M	2180	mg/kg	1.0	
Chloride (Water Soluble)		M	2220	g/l	0.010	< 0.010
Nitrate (Water Soluble)		N	2220	g/l	0.010	< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	
Ammonium (Water Soluble)		M	2220	g/l	0.01	< 0.01
Sulphate (Total)		U	2430	%	0.010	
Sulphate (Acid Soluble)		U	2430	%	0.010	< 0.010
Arsenic		M	2455	mg/kg	0.5	
Barium		M	2455	mg/kg	0.5	
Cadmium		M	2455	mg/kg	0.10	
Chromium		M	2455	mg/kg	0.5	
Molybdenum		M	2455	mg/kg	0.5	
Antimony		N	2455	mg/kg	2.0	
Copper		M	2455	mg/kg	0.50	
Mercury		M	2455	mg/kg	0.05	
Nickel		M	2455	mg/kg	0.50	
Lead		M	2455	mg/kg	0.50	
Selenium		M	2455	mg/kg	0.25	
Zinc		M	2455	mg/kg	0.50	
Chromium (Trivalent)		N	2490	mg/kg	1.0	
Chromium (Hexavalent)		N	2490	mg/kg	0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-25515
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2009590
Order No.:				*Client Sample Ref.:*		*BH49A*
				Sample Type:		*SOIL*
				Top Depth (m):		*1.00*
				Date Sampled:		*30-Jul-2025*
				Asbestos Lab:		
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**	
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	
Mineral Oil EPH		N	2670	mg/kg	10	
Benzene		M	2760	µg/kg	1.0	
Toluene		M	2760	µg/kg	1.0	
Ethylbenzene		M	2760	µg/kg	1.0	
m & p-Xylene		M	2760	µg/kg	1.0	
o-Xylene		M	2760	µg/kg	1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	
Naphthalene		M	2800	mg/kg	0.10	
Acenaphthylene		N	2800	mg/kg	0.10	
Acenaphthene		M	2800	mg/kg	0.10	
Fluorene		M	2800	mg/kg	0.10	
Phenanthrene		M	2800	mg/kg	0.10	
Anthracene		M	2800	mg/kg	0.10	
Fluoranthene		M	2800	mg/kg	0.10	
Pyrene		M	2800	mg/kg	0.10	
Benzo[a]anthracene		M	2800	mg/kg	0.10	
Chrysene		M	2800	mg/kg	0.10	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	
Benzo[a]pyrene		M	2800	mg/kg	0.10	

Results - Soil

Project: 25882 Gas to Edenderry GNI (MIL)

Client: IGSL				**Chemtest Job No.:**		25-25515
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		2009590
Order No.:				*Client Sample Ref.:*		*BH49A*
				Sample Type:		*SOIL*
				Top Depth (m):		*1.00*
				Date Sampled:		*30-Jul-2025*
				Asbestos Lab:		
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**	
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	
Coronene		N	2800	mg/kg	0.10	
PCB 28		U	2815	mg/kg	0.010	
PCB 52		U	2815	mg/kg	0.010	
PCB 101		U	2815	mg/kg	0.010	
PCB 118		U	2815	mg/kg	0.010	
PCB 153		U	2815	mg/kg	0.010	
PCB 138		U	2815	mg/kg	0.010	
PCB 180		U	2815	mg/kg	0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	
Total Phenols		M	2920	mg/kg	0.10	

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-25515							
Chemtest Sample ID:	2009583							
Sample Ref:	*BH10*							
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*30-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	1.1	3	5	6
Loss On Ignition	2610		M	%	1.2	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.8	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.027	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0004	0.0042	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0016	0.016	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0016	0.016	0.5	10	30
Nickel	1455		U	0.0011	0.011	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.005	0.048	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.15	1.5	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	63	630	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	< 2.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	12
WAC Sample Weight	1110

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

Chemtest Job No:	25-25515					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	2009585							
Sample Ref:	*BH13A*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*0.5*							
Bottom Depth(m):								
Sampling Date:	*30-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.61	3	5	6
Loss On Ignition	2610		M	%	2.6	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.6	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.025	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0014	0.014	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0011	0.011	0.5	10	70
Copper	1455		U	0.0048	0.048	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0012	0.012	0.5	10	30
Nickel	1455		U	0.0067	0.067	0.4	10	40
Lead	1455		U	0.0016	0.016	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.018	0.18	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.13	1.3	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	56	550	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	15
WAC Sample Weight	989.6

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-25515							
Chemtest Sample ID:	2009587							
Sample Ref:	*BH48*							
Sample ID:								
Client Reference:								
Top Depth(m):	*0.5*							
Bottom Depth(m):								
Sampling Date:	*30-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.31	3	5	6
Loss On Ignition	2610		M	%	1.7	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.6	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.023	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0010	0.010	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0016	0.016	0.5	10	70
Copper	1455		U	0.0050	0.050	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0008	0.0081	0.5	10	30
Nickel	1455		U	0.0035	0.035	0.4	10	40
Lead	1455		U	0.0014	0.014	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.020	0.20	4	50	200
Chloride	1220		U	1.5	15	800	15000	25000
Fluoride	1220		U	0.22	2.2	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	58	580	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.9	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	15
WAC Sample Weight	808.9

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Gas to Edenderry GNI (MIL)

Chemtest Job No:	25-25515					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	2009589							
Sample Ref:	*BH49A*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*0.5*							
Bottom Depth(m):								
Sampling Date:	*30-Jul-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.25	3	5	6
Loss On Ignition	2610		M	%	2.5	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	2780	EH_2D_AL_#1	U	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.3	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.021	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0003	0.0035	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0016	0.016	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0030	0.030	0.5	10	30
Nickel	1455		U	0.0026	0.026	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.004	0.039	4	50	200
Chloride	1220		U	2.2	22	800	15000	25000
Fluoride	1220		U	0.22	2.2	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	76	760	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.8	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	21
WAC Sample Weight	1012

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
2009583	*BH10*			*30-Jul-2025*	E	Amber Glass 250ml
2009583	*BH10*			*30-Jul-2025*	E	Plastic Tub 500g
2009585	*BH13A*			*30-Jul-2025*	E	Amber Glass 250ml
2009585	*BH13A*			*30-Jul-2025*	E	Plastic Tub 500g
2009587	*BH48*			*30-Jul-2025*	E	Amber Glass 250ml
2009587	*BH48*			*30-Jul-2025*	E	Plastic Tub 500g
2009589	*BH49A*			*30-Jul-2025*	E	Amber Glass 250ml
2009589	*BH49A*			*30-Jul-2025*	E	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	PL GW
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Appendix 6

Geotechnical Laboratory Results (Rock)

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Gas to Bord Na Mona
Contract no. 25882

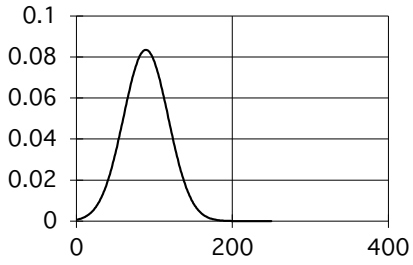
Sample Type: Core
Date of test: 18/09/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC07	12.7	78	11.0	1.222	1.81	2.21	49	d	//
	14.0	78	26.0	1.222	4.27	5.22	115	d	//
	16.0	78	28.0	1.222	4.60	5.62	124	d	//
	18.8	78	22.0	1.222	3.62	4.42	97	d	//
	18.9	78	15.0	1.222	2.47	3.01	66	d	//
	19.7	78	19.0	1.222	3.12	3.81	84	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	6	6
Minimum	2.21	49
Average	4.05	89
Maximum	5.62	124
Standard Dev.	1.30	29
Upper 95% Confidence Limit	6.60	145.30
Lower 95% Confidence Limit	1.49	32.86

Comments:
*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Gas to Bord Na Mona Edenderry
Contract no. 25882

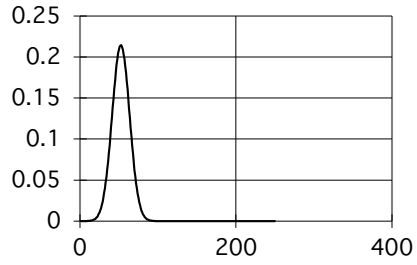
Sample Type: Core
Date of test: 19/08/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC08	15.0	78	12.8	1.222	2.10	2.57	57	d	//
	16.9	78	10.2	1.222	1.68	2.05	45	d	//
	17.0	78	8.6	1.222	1.41	1.73	38	d	//
	17.8	78	15.3	1.222	2.51	3.07	68	d	//
	18.4	78	13.9	1.222	2.28	2.78	61	d	//
	18.8	78	10.5	1.222	1.73	2.11	46	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	6	6
Minimum	1.73	38
Average	2.38	52
Maximum	3.07	68
Standard Dev.	0.51	11
Upper 95% Confidence Limit	3.38	74.35
Lower 95% Confidence Limit	1.39	30.58

Comments:
*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Gas to Bord Na Mona Edenderry
Contract no. 25882

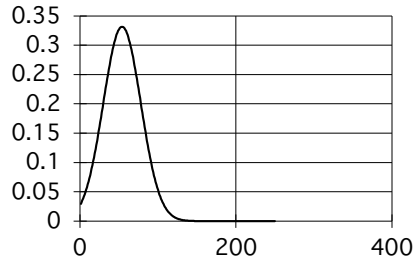
Sample Type: Core
Date of test: 19/08/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC09	15.1	78	5.6	1.222	0.92	1.12	25	d	//
	16.5	78	2.5	1.222	0.41	0.50	11	d	//
	17.3	78	13.1	1.222	2.15	2.62	58	d	//
	17.5	78	15.4	1.222	2.53	3.09	68	d	//
	19.0	78	17.7	1.222	2.91	3.55	78	d	//
	19.6	78	15.8	1.222	2.60	3.17	70	d	//
RC10	10.5	78	3.8	1.222	0.63	0.76	17	d	//
	12.5	78	10.4	1.222	1.70	2.08	46	d	//
	13.3	78	12.8	1.222	2.11	2.57	57	d	//
	14.0	78	5.6	1.222	0.92	1.12	25	d	//
	14.8	78	3.3	1.222	0.54	0.66	15	d	//
	17.8	78	10.5	1.222	1.72	2.10	46	d	//
	18.5	78	16.6	1.222	2.73	3.33	73	d	//
	19.4	78	16.4	1.222	2.70	3.29	72	d	//
RC11	11.0	78	19.9	1.222	3.27	4.00	88	d	//
	11.6	78	18.6	1.222	3.05	3.73	82	d	//
	13.3	78	12.3	1.222	2.01	2.46	54	d	//
	13.6	78	14.2	1.222	2.34	2.86	63	d	//
	15.4	78	12.3	1.222	2.02	2.46	54	d	//
	16.8	78	17.8	1.222	2.93	3.57	79	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	20	20
Minimum	0.50	11
Average	2.45	54
Maximum	4.00	88
Standard Dev.	1.09	24
Upper 95% Confidence Limit	4.60	101.17
Lower 95% Confidence Limit	0.31	6.79

Comments:
*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Gas to Bord Na Mona Edenderry
Contract no. 25882

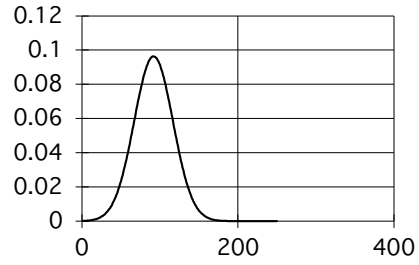
Sample Type: Core
Date of test: 19/08/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC12	10.0	78	29.9	1.222	4.91	6.00	132	d	//
	11.3	78	25.6	1.222	4.20	5.13	113	d	//
	12.2	78	18.7	1.222	3.07	3.75	82	d	//
	12.8	78	15.8	1.222	2.60	3.17	70	d	//
	14.0	78	17.6	1.222	2.90	3.54	78	d	//
	14.9	78	17.2	1.222	2.82	3.45	76	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	6	6
Minimum	3.17	70
Average	4.17	92
Maximum	6.00	132
Standard Dev.	1.13	25
Upper 95% Confidence Limit	6.39	140.55
Lower 95% Confidence Limit	1.96	43.11

Comments:
*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Gas to Bord Na Mona
Contract no. 25882

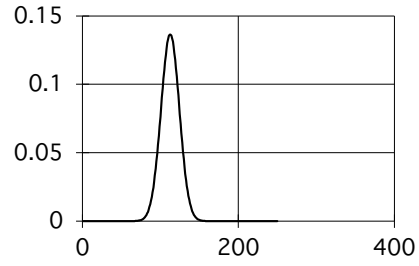
Sample Type: Core
Date of test: 18/09/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC46	12.0	78	28.0	1.222	4.60	5.62	124	d	//
	12.4	78	27.0	1.222	4.44	5.42	119	d	//
	15.3	78	22.0	1.222	3.62	4.42	97	d	//
	16.6	78	25.0	1.222	4.11	5.02	110	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	4	4
Minimum	4.42	97
Average	5.12	113
Maximum	5.62	124
Standard Dev.	0.53	12
Upper 95% Confidence Limit	6.16	135.54
Lower 95% Confidence Limit	4.08	89.73

Comments:
*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

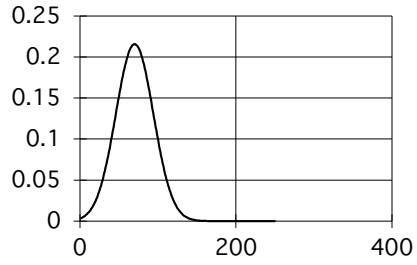
Contract: Gas to Bord Na Mona Edenderry
Contract no. 25882
Sample Type: Core
Date of test: 02/09/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC49A	10.0	78	4.6	1.222	0.75	0.91	20	d	//
	11.5	78	15.0	1.222	2.47	3.01	66	d	//
	12.4	78	11.2	1.222	1.84	2.25	49	d	//
	14.0	78	20.6	1.222	3.39	4.14	91	d	//
	14.8	78	18.2	1.222	2.99	3.65	80	d	//
	16.4	78	23.1	1.222	3.80	4.64	102	d	//
	17.1	78	8.7	1.222	1.42	1.74	38	d	//
RC48	10.5	78	14.0	1.222	2.30	2.81	62	d	//
	11.7	78	18.0	1.222	2.96	3.61	80	d	//
	12.7	78	17.0	1.222	2.79	3.41	75	d	//
	14.2	78	19.0	1.222	3.12	3.81	84	d	//
	15.0	78	14.0	1.222	2.30	2.81	62	d	//
	16.8	78	23.0	1.222	3.78	4.62	102	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	13	13
Minimum	0.91	20
Average	3.19	70
Maximum	4.64	102
Standard Dev.	1.09	24
Upper 95% Confidence Limit	5.33	117.28
Lower 95% Confidence Limit	1.04	22.93

Comments:
*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



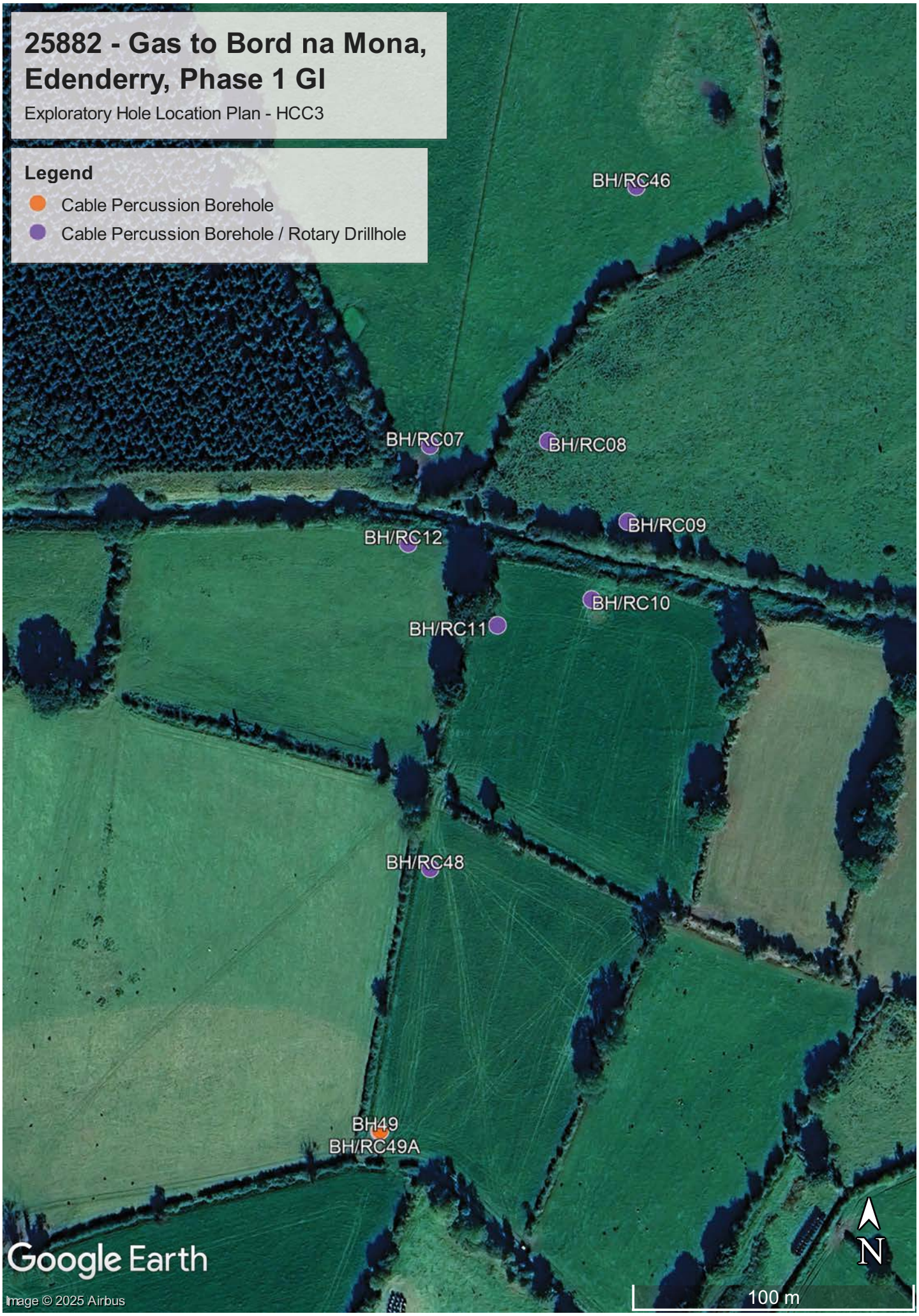
Abbreviations	
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a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

Appendix 7

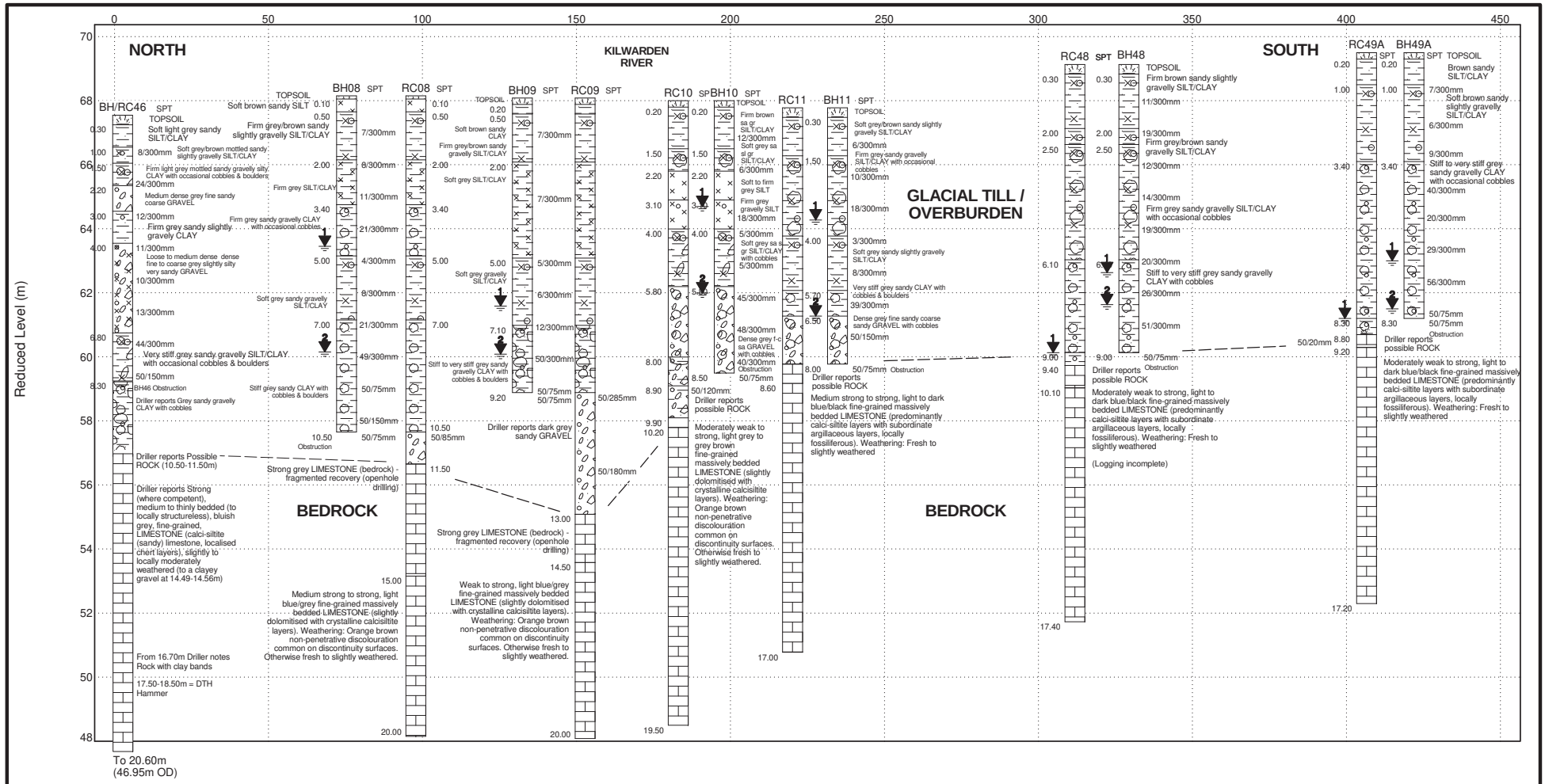
Exploratory Hole Location Plan

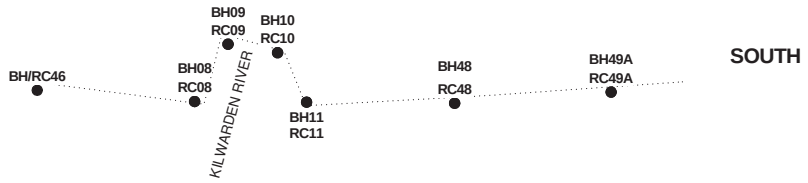

25882 - Gas to Bord na Mona, Edenderry, Phase 1 GI
Exploratory Hole Location Plan - HCC3
Legend
Cable Percussion Borehole
Cable Percussion Borehole / Rotary Drillhole
BH/RC46
BH/RC07
BH/RC08
BH/RC09
BH/RC12
BH/RC10
BH/RC11
BH/RC48
BH49
BH/RC49A
Google Earth
Image © 2025 Airbus
N
100 m

Appendix 8

Geological Cross Section

N-S HCC3





LITHOLOGY GRAPHICS

- TOPSOIL
- Sandy SILT
- Sandy gravelly silty CLAY
- Silty CLAY
- Sandy gravelly cobbly CLAY
- Sandy cobbly CLAY
- Sandy CLAY
- Sandy gravelly cobbly bouldery CLAY
- Sandy gravelly silty CLAY with cobbles
- SILT
- Gravelly SILT
- Sandy gravelly silty clay with cobbles and boulders
- Sandy cobbly GRAVEL
- Silty sandy CLAY
- Silty sandy gravelly CLAY

SUBSURFACE SECTION Kilwarden River N - S

Client: Murphy International Limited

Project: Gas to Bord na Mona, Edenderry, Phase 1 GI

Number: 25882

FENCE A3 CARRIGTWOHILL 25882.GPJ IGSL.GDT 25/8/25

Appendix 16

HCC4 Report

(issued 05-09-25)

IGSL Ltd

Gas to Bord na Mona, Edenderry
Phase 1 GI – HCC4

Geotechnical Interpretative Report

Project No. 25882

September 2025

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3. Laboratory Testing

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5. Ground Conditions & Groundwater
- **5.1** Ground Profile – Superficial Deposits
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FOREWORD
The following conditions and notes on the geotechnical site investigation procedures should be read in conjunction with this report.

Standards
The ground investigation works for this project (**Gas to Bord na Mona, Edenderry, Phase 1 GI**) have been carried out by IGSL in accordance with Eurocode 7 - Part 2: Ground Investigation & Testing (EN 1997-2:2007). This has been used together with complementary documents such as Engineers Ireland Specification for Ground Investigation (2nd Ed, 2016), BS 5930 (2015+A1:2020) and BS 1377 (Parts 1 to 9) and the following European Norms:

- EN 1997-2 Eurocode 7: 2007 – Geotechnical Design – Part 2: Ground Investigation & Testing
- EN ISO 22475-1:2006 Geotechnical Investigation and Sampling – Sampling Methods & Groundwater Measurements
- EN ISO 14688-1:2017 Geotechnical Investigation and Testing – Identification and Classification of Soil, Part 1: Identification and Description
- EN ISO 14688-2:2017 Geotechnical Investigation and Testing – Identification and Classification of Soil, Part 2: Principles for a classification
- EN ISO 14689-1:2017 Geotechnical Investigation and Testing – Identification, description & classification of rock

The Eurocode 7, Part 2 – Ground Investigation and Testing GI specification shall be read in conjunction with the Specification and Related Documents for Ground Investigation in Ireland, 2nd Edition, published by Engineers Ireland in 2016.

Reporting
No responsibility can be held by IGSL Ltd for ground conditions between exploratory hole locations. The engineering logs provide ground profiles and configuration of strata relevant to the investigation depths achieved and caution should be taken when extrapolating between exploratory points. No liability is accepted for ground conditions extraneous to the investigation points. Unless specifically stated, no account has been taken of possible subsidence due to mineral extraction, mining works or karstification below or close to the site.

This report has been prepared for Murphy International Limited and Fingleton White and the information should not be used without their prior written permission. IGSL Ltd accepts no responsibility or liability for this document being used other than for the purposes for which it was intended.

Boring Procedures
Where required, 'shell and auger' or cable percussive boring technique is employed as defined by Section 6.3 of IS EN ISO 22475-1:2006. The boring operations, sampling and in-situ testing meet with the recommendations set out in IS EN 1997-2:2007 and BS 1377:1990 and EN ISO 22476-3:2005. The shell and auger boring technique allows for continuous sampling in clay and silt above the water table and sand and gravel below the water table (Table 2 of IS EN ISO 22475-1:2006).

It is highlighted that some disturbance and variation is unavoidable in particular ground (e.g. blowing sands, gravel / cobble dominant glacial deposits etc). Attention is drawn to this condition, whenever it is suspected. Where cobbles and boulders are recorded, no conclusion should be drawn concerning the size, presence, lithological nature, or numbers per unit volume of ground.

In-Situ Testing
Where required, Standard Penetration Tests (SPT's) are conducted strictly in accordance with Section 4.6 of IS EN 1997-2:2007. The SPT equipment (hammer energy test) has been calibrated

in accordance with EN ISO 22476-3:2005 and the Energy Ratio (E_r). A calibration certificate is available upon request. The E_r is defined as the ratio of the actual energy E_{meas} (measured energy during calibration) delivered to the drive weight assembly into the drive rod below the anvil, to the theoretical energy (E_{theor}) as calculated from the drive weight assembly. The measured number of blows (N) reported on the engineering logs are uncorrected. In sands, the energy losses due to rod length and the effect of the overburden pressure should be taken into account (see IS EN ISO 22476-3:2005).

Soil Sampling

Three categories of sampling methods are outlined in EN ISO 22475-1:2006. The categories are referenced A, B and C for any given ground conditions and are shown in Tables 1 and 2 of EN ISO 22475-1:2006. Reference should be made to EN 1997-2:2002 for guidelines on sample class and quality for strength and compressibility testing. Samples of quality classes 1 or 2 can only be obtained by using Category A sampling methods.

Class 1 thin wall undisturbed tube samples (UT100) are obtainable in fine grained soils. They strictly meet the requirements of EN 1997-2:2002 and EN ISO 22475-1:2006. Soil samples for laboratory tests are divided into five classes with respect to the soil properties that are assumed to remain unchanged during sampling, handling transport and storage. The minimum sample quality required for testing purposes to Eurocode 7 compatibility (EN 1997-2:2002) is shown in Table A.

Table A – Details of Sample Quality Requirements

EN 1997 Clause	Test	Minimum Sample Quality Class
5.5.3	Water Content	3
5.5.4	Bulk Density	2
5.5.5	Particle Density	N/S
5.5.6	Particle Size Analysis	N/S
5.5.7	Consistency Limits	4
5.5.8	Density Index	N/S
5.5.9	Soil Dispersivity	N/S
5.5.10	Frost Susceptibility	N/S
5.6.2	Organic Content	4
5.6.3	Carbonate Content	3
5.6.4	Sulphate Content	3
5.6.5	pH	3
5.6.6	Chloride Content	3
5.7	Strength Index	1
5.8	Strength Tests	1
5.9	Compressibility Tests	1
5.10	Compaction Tests	N/S
5.11	Permeability	2

N/S – not stated. Presume a representative sample of appropriate size.

Samples recovered from trial pits or trenches meet the requirements of IS EN ISO 22475-1. It is highlighted that unforeseen circumstances such as variations in geological strata may lead to lower quality sample classes being obtained.

Groundwater

The depth of entry of any influx of groundwater is recorded during the course of boring operations. However, the normal rate of boring does not usually permit the recording of an equilibrium level for any one water strike. Where possible, drilling is suspended for a period of twenty minutes to monitor the subsequent rise in water level. Groundwater conditions observed in the borings or pits are those appertaining to the period of investigation. It should be noted however, that groundwater levels are

subject to diurnal, seasonal and climatic variations and can also be affected by drainage conditions, tidal variations etc.

Engineering Logging

Soil and rock identification has been based on the examination of the samples recovered and conforms with IS EN ISO 14688-1:2017 and IS EN ISO 14688-2:2017. Rock weathering classification conforms to IS EN ISO 14689-1:2017 along with discontinuities (bedding planes, joints, cleavages, faults etc) as classified in Section 6.4 of IS EN ISO 14689-1:2017 and Annex C of same. Rock mechanical indices (TCR, SCR, RQD) are defined in accordance with IS EN ISO 22475-1:2006.

Where peat has been encountered, samples have been logged in accordance with the Von Post Classification (ref. Von Post, L. 1992. Sveriges Gologiska Undersoknings torvinventering och nogra av dess hittils vunna resultat (SGU peat inventory and some preliminary results) Svenska Mosskulturforeningens Tidskrift, Jonkoping, Swedden, 36, 1-37 and Hobbs N. B. Mire morphology and the properties of some British and foreign peats. QJEG, Vol. 19, 1986.

Retention of Samples

After satisfactory completion of all the scheduled laboratory tests on any sample, the remaining material will be discarded. Unless a period of retention of samples is agreed, it is our normal practice to discard all soil samples one month after submission of our final report.

1. INTRODUCTION

IGSL Limited has undertaken a programme of geotechnical site investigation works for a new gas pipeline (GNI143 Ballykilleen Pipeline), hot tap and AGI required to connect the existing Bord na Mona (BnaM) power station in Ballykilleen, Edenderry, Co. Offaly, to the gas transmission network 23 kilometres north in the townland of Kilwarden, County Meath. The works were undertaken for Murphy International Limited on behalf of their client Gas Networks Ireland. This Phase 1 investigation focused on both the "Offtake" installation at Kilwarden and the AGI at Edenderry as well as a number of crossing points where the gas pipeline infrastructure encounters public roads, the M4 motorway, the Grand Canal and river courses, namely the Kilwarden River and the Yellow River.

Figure 1 – Site Location Plan (pipeline plotted)

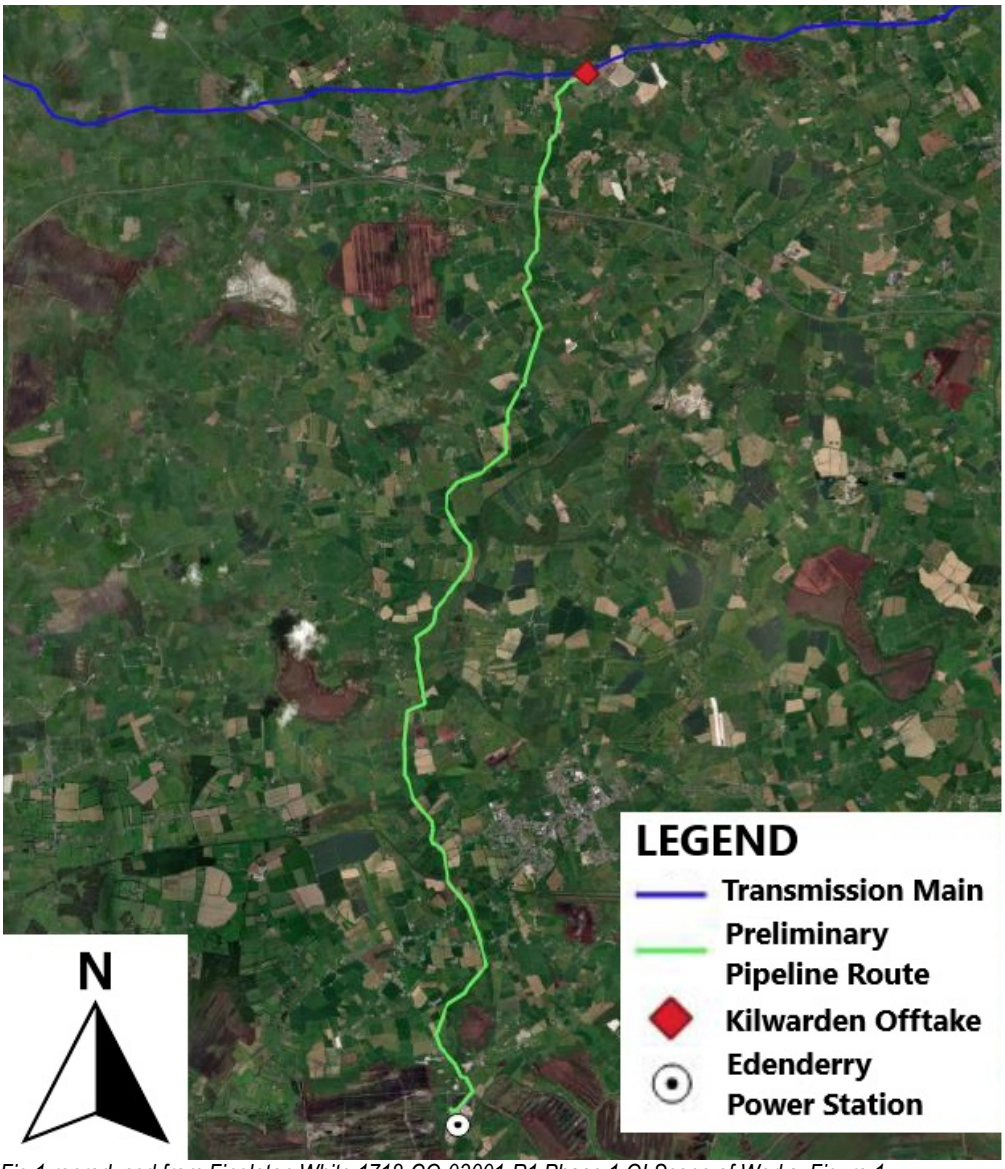


Fig 1 reproduced from Fingleton White 1718-CG-03001-R1 Phase 1 GI Scope of Works, Figure 1

The investigation comprised rotary drilling, cable percussion boring, trial pitting and soakaway tests to BRE365. The investigations were executed in accordance with BS 5930, Code of Practice for Site

Investigations (BS 5930:2015 +A1:2020) and EN 1997-2 Eurocode 7 Part 2 Ground Investigation & Testing and supervised by an IGSL geotechnical engineer.

Geotechnical, chemical and environmental laboratory testing was scheduled on a range of soil and rock core samples. The geotechnical soil testing included moisture contents, Atterberg Limits and particle size distribution [PSD] testing. Suites of both chemical testing and environmental testing were undertaken on soils. Where recovered, rock strength testing was completed on recovered cores. This comprised point load strength index testing [PLSI] testing.

This report presents an evaluation of the ground and groundwater conditions and an assessment of the key geotechnical issues pertaining to the high consequence crossing (HCC) 04. This refers to an area in the townland of Rathmore, Edenderry, County Offaly through which the Grand Canal traverses in an east-west trend. The holes extend approximately 25 to 65m from the canal banks in both north and south directions, perpendicular to the canal. The exploratory hole locations which are referenced in this preliminary report are listed in Table 1.

Table 1 – Grand Canal (RCX 1) exploratory hole locations

High Consequence Crossing 4 (HCC4)	**Cable Percussion Borehole**	**Rotary Drillhole**
Grand Canal (North of)	BH28 / BH28A	RC28A
	BH29	RC29
Grand Canal (South of)	BH30 / BH30A	RC30A
	BH31	RC31A

2. FIELDWORKS

2.1 General

The geotechnical investigations at the HCC4 crossing were carried out in two phases. In April 2025, cable percussion boreholes were constructed. Rotary drilling followed during August and early September 2025. The site works comprised the following:

- Cable Percussion Boring (7 No.*)
- Rotary Drillholes (4 No.)
- Groundwater Monitoring
- Surveying of Exploratory Hole Locations

**Cable Percussion re-setups undertaken at locations BH28A, BH30A and BH31A following shallow refusals*

2.2 Cable Percussion Boreholes

Cable percussion boring (200mm diameter) methods were deployed initially at each of four locations [BH_] using a Dando 2000 rig. Following shallow obstructions, three re-setups were required in order to achieve greater depths at each of BH28, BH30 and BH31. Similar setup locations were used when following on with rotary drilling at each of the four locations. When considering re-setups, the boreholes extended to depths of between 1.0m and 9.50m, the deepest hole located to the north (BH28A). At all locations, boring commenced through hand-dug service inspection pits. Disturbed bulk samples were recovered at 1m intervals or change of strata during boring and these are denoted 'B' on the engineering logs.

Standard Penetration Tests (SPT's) were performed in the boreholes and given the nature of the soils, a solid cone was used. It is noted that the SPT N-Values reported are the number of blows for 300mm increment penetration (e.g. BH28 at 2.0m where N=7). These exclude the seating blow values, which represent the initial 150mm depth of penetration. Where partial penetration was achieved during testing, the number of blows is shown for the actual penetration depth achieved (e.g. BH28 at 3.0m where N=50/150mm). In accordance with Eurocode 7, the SPT hammer has been calibrated. It is highlighted that the SPT N-Values reported on the engineering logs are uncorrected for energy ratio.

Descriptions of the soils encountered, in-situ tests undertaken and samples recovered are presented on the borehole records in Appendix 1. Details of groundwater strikes and hard strata boring (i.e. chiselling) are also presented on the aforementioned records.

2.3 Rotary Drillholes

Rotary drilling was carried out (holes denoted RC_) at each of the four holes positioned either side of the Grand Canal. Drilling works were completed using a Beretta T44. Symmetrex drilling was utilised within the overlying superficial deposits with coring techniques used in the underlying bedrock if or when encountered. The drillholes were each taken to required depths of approximately 20m. In situ SPT testing was carried out in overburden soils, below the end depth of cable percussion bores, shy of eventual bedrock.

Where rockhead was met, the rotary drilling in bedrock produced 78mm diameter cores. Bedrock was described as fresh to slightly weathered strong to very strong, thick to thinly, light blue/grey, fine-grained massively bedded LIMESTONE. The limestone was crystalline and calcisiltite in composition with some dolomitisation noted in the cores, more noticeable in cores taken from north of the canal (RC28A & RC29).

The cores were placed in 3m capacity timber boxes and logged by an IGSL engineering geologist. This included photography of the cores with a digital camera. Where rock core was recovered, a graphic fracture log is also presented alongside the mechanical indices. This illustrates the fracture state of the rock cores and allows easy identification of highly fractured / non-intact zones and

discontinuity spacings. It should be noted that no correction for dip of the joints has been made and that the spacings shown are successive joint / core intersections within the core.
A groundwater monitoring standpipe was installed in drillhole RC30A on the southern side of the Grand Canal. The standpipe consisted of 50mm diameter HDPE pipework with proprietary 1mm slots and incorporated a pea gravel filter pack and cement / bentonite grout seal. A headwork cover was fixed in place.

The core log records are presented in Appendix 2 and this includes engineering geological descriptions, details of the bedding / discontinuities and mechanical indices (TCR, SCR and RQD's) for each core run. Core photographs are also presented in the aforementioned Appendix 2 and these illustrate the structure and fracture state of the bedrock.

2.4 Groundwater Monitoring
Groundwater monitoring was undertaken following rotary drilling works. Groundwater levels were measured using an electric dipmeter. The levels recorded are shown in Appendix 3.

2.5 Surveying of Exploratory Hole Locations
Following completion of the exploratory works, surveying was carried out using GPS techniques. Co-ordinates (x, y) were measured to Irish Transverse Mercator and ground levels (z) established to Malin Head. The co-ordinates and ground levels are shown on the exploratory hole logs with locations shown on the exploratory hole plan in Appendix 7.

3. LABORATORY TESTING

Geotechnical laboratory testing was performed at IGSL's INAB-accredited laboratory in accordance with the methods set out in BS1377; British Standard Methods of Test for Soils for Civil Engineering Purposes; British Standards Institute:1990. The laboratory applies best practice management systems as per International Standard IS EN ISO/IEC 17025. The geotechnical testing included moisture contents, Atterberg Limits and particle size distribution [PSD] testing. The results from geotechnical testing on selected cable percussion borehole samples are presented in Appendix 4.

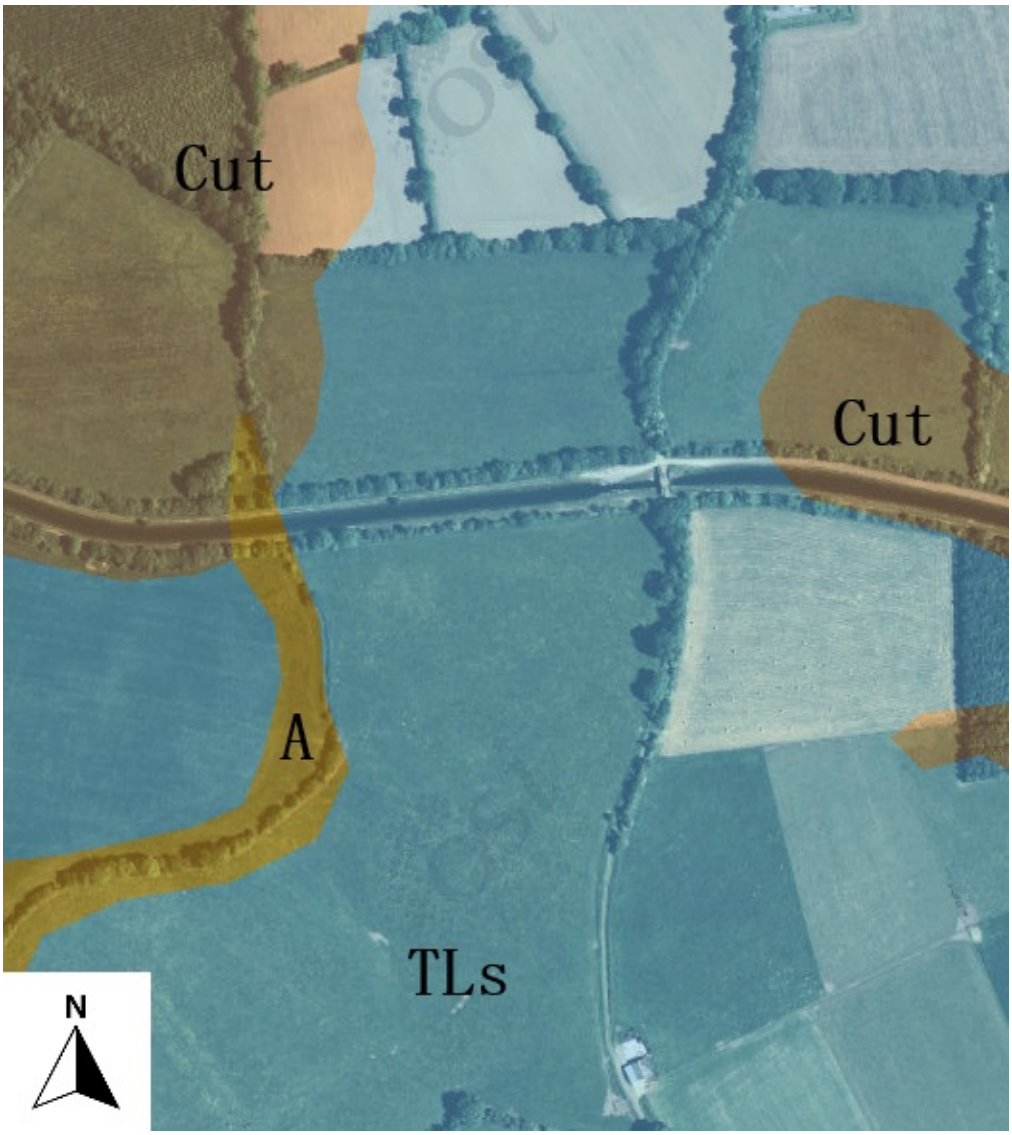
Chemical analysis incorporating BRE SD1 Suite D (Brownfield Site – Pyrite Present) were scheduled on recovered soils and undertaken by Chemtest Laboratories. The chemical results are presented in Appendix 5 (Report 25-17444). Soil samples were selected from borehole excavations for specialist WAC assessment using the *Rilta* Suite of environmental testing. These results are presented in Chemtest reports 25-16703 and 25-17444.

Finally, geotechnical laboratory testing was scheduled on selected rock cores. Point load strength index (PLSI) tests were undertaken on the cores. These results are presented in Appendix 6.

4. DESK STUDY

The Quaternary soils plot for the area (Figure 2 - retrieved from GSI website) reveals widespread limestone-derived till. Alluvium deposition follows a ditch line to the west of the site, which presumably follows a meandering, possibly ephemeral stream course. There are also instances of "cut over raised PEAT" to the northwest and east of the crossing point. The presence of an over-consolidated clay and gravel till was proven largely at depth during the investigation. Soft consistency soils were also noted in BH28 to a depth of 2.40m.

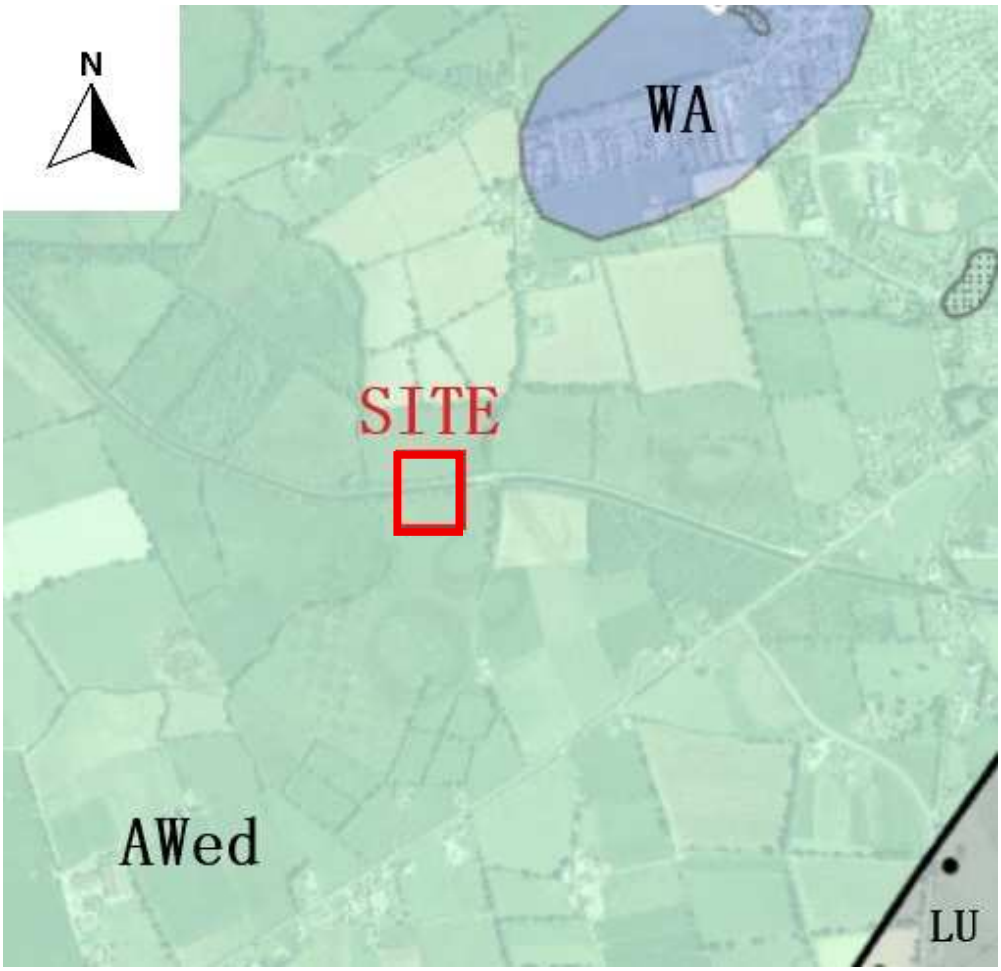
Figure 2 – Quaternary Soils Plot for the Grand Canal site at Rathmore, Edenderry



Map Key	**Cut**	- Cut over raised PEAT
	TLs	- Till derived from Limestones
	A	- Alluvium

Reference to the GSI map for the area (Figure 3, 1:100,000 Solid Geology Series) shows that the site is underlain by Lower Carboniferous, Edenderry Oolite Member of the Allenwood Formation. The Edenderry Oolite Member is described in McConnell, Philcox & Geraghty (1994) as a "partly skeletal calcarenite (bio-oosparite)". A bio-oosparite is a bioclastic limestone that contains both biological fragments (bioclasts) and ooids, with a sparry calcite cement.

Figure 3 - Bedrock Geological Map for the Grand Canal site



Key:	**AWed**	=	Edenderry Oolite Member
	LU	=	Lucan Formation
	WA	=	Waulsortian Limestones

5. GROUND CONDITIONS & GROUNDWATER

5.1 Ground Profile – Superficial Deposits

The following is a summary of the ground conditions encountered across the site as identified in the exploratory locations. Note that a geological cross section has been drafted to assist in illustrating the stratigraphic makeup at HCC4 (Appendix 8).

TOPSOIL

- Topsoil was generally found to be between 0.10m and 0.30m thick in the boreholes. At location 29, a peaty TOPSOIL remarked as "TOPSOIL/PEAT" was logged to a depth of 0.50m. This borehole was also found to be the topographically lowest of all four locations.

SUPERFICIAL DEPOSITS – GLACIAL TILL

- With the exception of location 28, no soft soils were evident at the Grand Canal exploratory hole locations. BH28, based on SPT N-values obtained from tests at both 1.0m and 2.0m below ground level [bgl], reported soft brown sandy gravelly SILT. It extended to 2.40m where a stiff grey gravelly CLAY with boulders was encountered. The existence of boulders in the soil column may be a factor when considering why three of the four holes required re-setups during cable percussion boring.

- Each of the three other boreholes initially reported firm and firm to stiff CLAY passing into more consolidated stiff brown and grey gravelly CLAY till deposits. The two holes positioned south of the canal (30A & 31A) encountered stiff to very stiff sandy gravelly CLAY with cobbles to 5.0m / 73.26m OD and 5.50m / 73.71m OD respectively.

- The holes to the north of the canal found, beneath initial stiff grey and brown CLAY, a sequence of medium dense to dense brown and grey sandy GRAVEL with cobbles. BH29 ended in this material at 6.0m / 70.68m OD. Elsewhere, BH28A extended beyond the base of the GRAVEL deposit revealing a very stiff brown sandy gravelly cobbly CLAY from ca. 9.0m bgl. BH29 ended on obstruction at 9.50m / 67.90m OD.

- Rotary drilling methods were used to extend the bores in each case. Table 2 lists the end depth of each of the cable percussion (CP) boreholes and the depth at which rock was intercepted in each of the four rotary drillholes. There is good agreement with the findings in both.

Table 2 – Grand Canal (RCX 1) exploratory hole CP end depths and RC rockhead depths

CP Hole Number	**CP End Depth (m OD)**	CP Soil Description (Basal Layer)	RC follow-on Hole Number	**RC Rockhead Depth***	Intervening Soil Description / Rockhead description
BH28A	**9.50 (67.90)**	Very stiff brown sandy gravelly CLAY with cobbles	RC28A	**10.80 (66.60)**	Grey brown sandy gravelly CLAY
BH29	**6.0 (70.68)**	Medium dense to dense grey sandy GRAVEL with cobbles	RC29	**6.40 (70.28)**	Stiff grey black gravelly CLAY
BH30A	**6.0 (72.26)**	Brown silty very sandy GRAVEL with some cobbles	RC30A	**6.0 (72.26)**	Rock with CLAY Layers reported from 6.0-8.80m
BH31A	**5.50 (73.71)**	Stiff to very stiff brown gravelly CLAY with cobbles	RC31A	**5.50 (73.71)**	Possible Rock with CLAY layers from 5.90m

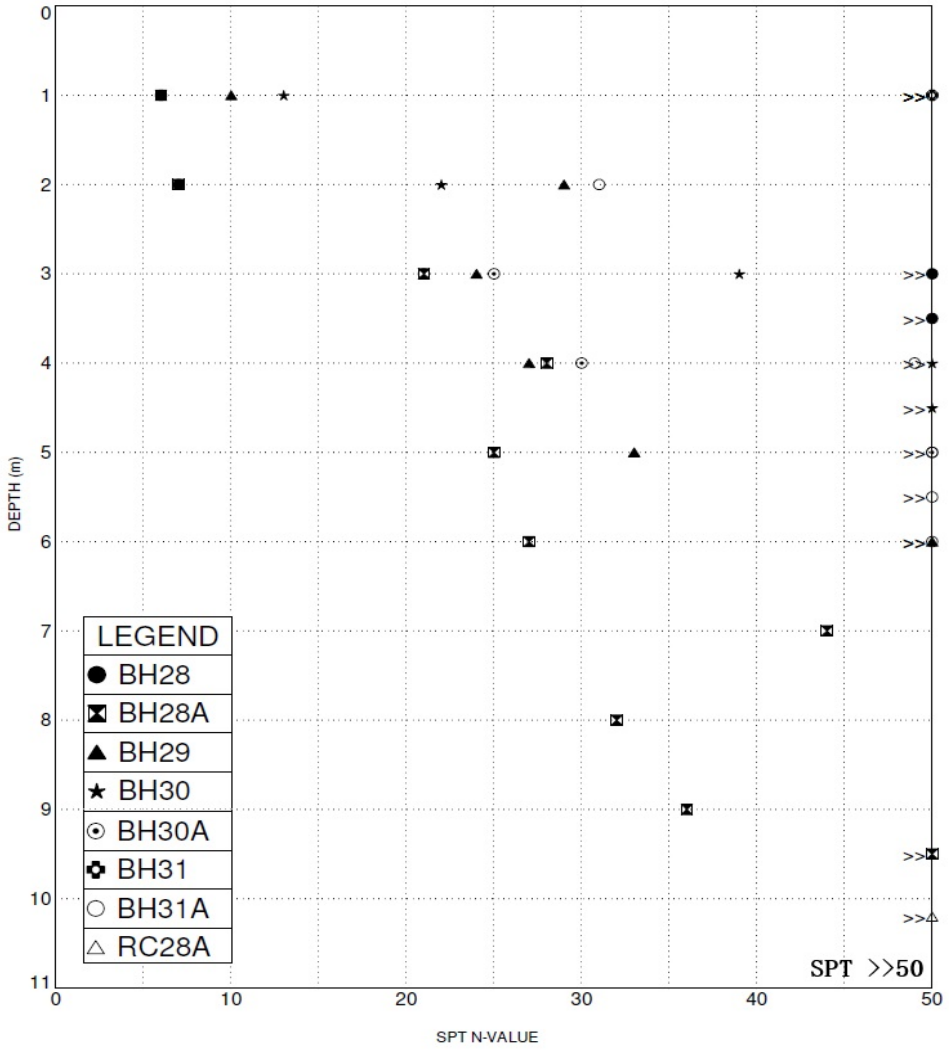
**based on openhole Symmetrix drilling*

- As can be viewed in Table 2, limestone rock was encountered at consistent depths in each of RC29, RC30A and RC31A, between 5.50m and 6.40m bgl. Rockhead appears to fall away somewhat nearing location RC28A to the north of the canal crossing. The geological cross section (Appendix 8) illustrates the fall in rockhead topography from south to north across the canal.

- Based on SPT test drives at 1.0m and 2.0m depth, there exists a soft layer in BH28A. This appears to be the exception with N-values typically suggestive of a firm mantle of indigenous CLAY/SILT becoming stiff generally from 2.0m depth.

The standard penetration test [SPT] allows for an appraisal of the ground stiffness. An SPT data plot showing N-Values against depth is presented in Figure 4. This highlights the initially soft /low strength nature of soils in test drives in BH28A in shallow clay/silt overburden. 'Low strength' deposits are those where N values of <10 blows are present. It is possible the "soft" consistency (based on an assessment of SPT blowcounts) is due to silt disturbance in BH28A caused during boring / testing.

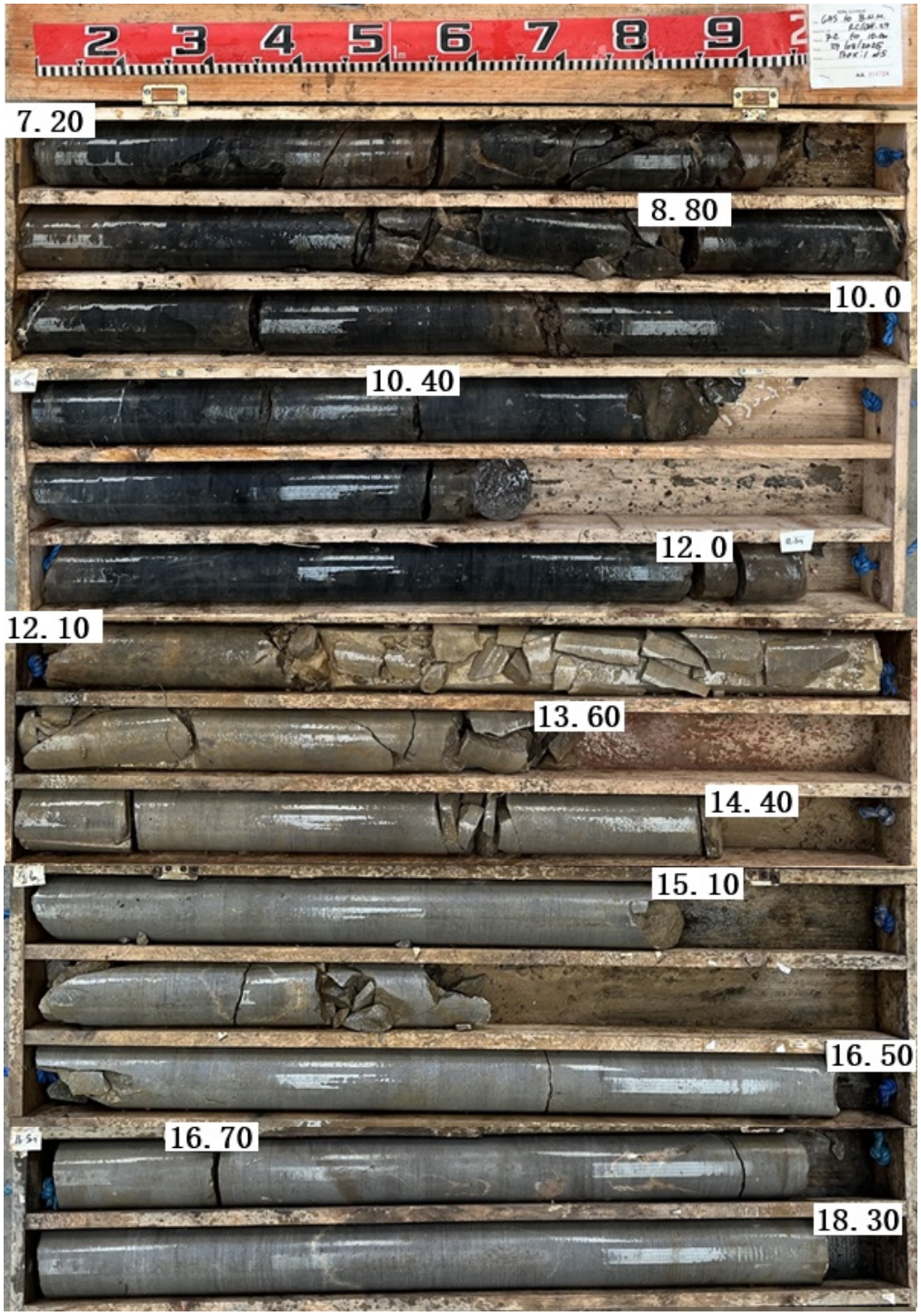
Figure 4 – SPT Plot versus Depth for Cable Percussion Boreholes / Rotary Drillholes



5.2 Bedrock

As referenced earlier in Section 4, the GSI rock map for the area (Figure 3, 1:100,000 Solid Geology series) shows that the Edenderry Oolite member of the Allenwood Formation underlies the site. The Edenderry Oolite member is described as a bio-oosparite.

Figure 5 – Bedrock cores in RC29 from 7.20m to 18.30m bgl



Rotary drilling was conducted at four locations at HCC4, both immediately north and south of the Grand Canal. Coring successfully proved bedrock at each of the four locations with rockhead depths ranging 5.90m to 11.80m bgl. These depths corresponded to elevations of 73.31m OD and 65.60m OD. Figure 5 shows the core recovery in RC29 on the north side of the canal.

Discontinuity spacings in the rotary cores generally ranged from closely (60 to 200mm) to widely spaced (600 to 2000mm). The discontinuity surfaces were typically smooth and locally rough, planar to irregular. Apertures were tight to open, locally exhibiting clay smearing with some calcite veinfill (up to 15mm). Dips were generally sub-horizontal, locally 30-45°, occasionally irregular.

The point load strength index (PLSI) test data produced $I_s(50)$ values ranging from 2.61 to 6.63 MPa with a mean value of 4.27 MPa. The PLSI strengths are suggestive of the presence of strong and very strong rock.

Using a correlation factor (K) of 22 to assess compressive strength, this suggests a characteristic strength envelope in the order of 57 to 146 MPa and categorizes the bedrock as strong (50 to 100MPa) to very strong (100 to 250MPa).

5.3 Groundwater

Water ingress was recorded in both the cable percussion boreholes and rotary drillholes. The cable percussion boreholes intercepted groundwater at its shallowest at 3.0m bgl (BH28) while rotary drilling in bedrock encountered groundwater at its deepest, at 15.50m in RC29 (See Table 3). Two separate strikes were intercepted in RC29 both at rockhead (6.60m) and, as mentioned, deeper in the bedrock at 15.50m. The most intense strike occurred in cable percussion borehole BH29 where water in the buried GRAVEL layer rose rapidly from a strike level at 3.50m to a depth of 0.80m bgl inside 20 minutes.

Water levels were measured during the construction of the follow-on rotary drillholes. These levels can often be skewed higher than expected given water is introduced during coring through an air / mist flush. The highest level recorded was in RC29 where a level of 1.40m bgl was dipped following completion of the hole. Water monitoring at installation RC30A found water sitting at 2.85m bgl.

Table 3 outlines where water was met in each of the exploratory holes. The potential does exist for there to be seasonal changes in groundwater level. The works were carried out during April and August / September 2025. The standpipe at RC30A allows for ongoing monitoring.

Table 3 – Water measurements in on-site exploratory holes

Exploratory Hole No.		Water Struck **m bgl**	Stratum Description	Rate of Flow	Remarks / Stratum of water ingress (m OD)
Cable Percussion Boreholes	BH28	**3.0 (74.40)**	Stiff grey gravelly CLAY with boulders	Slow – water rose to **2.70m** in 20min	*Boreholes constructed April 2025*
	BH29	**3.50 (73.18)**	Medium dense to dense grey sandy fine to coarse GRAVEL with cobbles	Rapid – water rose to **0.80m** in 20min	
	BH30A	**5.0 (73.26)**	Brown silty very sandy GRAVEL with some cobbles	Slow - water rose to **4.80m** in 20min	

Cont.

Exploratory Hole No.		Water Struck **m bgl**	Stratum Description	Rate of Flow	Remarks / Stratum of water ingress (m OD)
Rotary Drillholes ***(Constructed August – September 2025)***	RC28A	**9.80 (67.60)**	Firm grey brown sandy gravelly CLAY – Possible Rock at 10.80m	-	**5.40m** Water end of shift 26-08-25 - hole at 12.50m. **3.80m** Water start of shift 27-08-25 - hole at 12.50m. Water dipped at **2.20m** upon completion. Hole depth 20.0m. Hole cased to 11.80m (27-08-25).
	RC29	**6.60 (70.08)**	Possible Rockhead	-	**2.60m** Water end of shift 29-08-25 - hole at 7.20m. **2.30m** Water start of shift 01-09-25 - hole at 7.20m. Water dipped at **1.40m** upon completion. Hole depth 18.30m. Hole cased to 7.20m (01-09-25).
		15.10 (61.58)	LIMESTONE Rock	-	
	RC30A	**-**	-	-	**7.40m** Water end of shift 21-08-25 - hole at 8.80m. **5.20m** Water start of shift 22-09-25 - hole at 8.80m. Water dipped at **5.50m** upon completion. Hole depth 17.50m. Hole cased to 6.0m (22-08-25). Standpipe dipped 02-09-25 at **2.85m** (75.41m OD)
	RC31A	**-**	-	-	**6.80m** Water end of shift 19-08-25 - hole at 7.90m. **4.0m** Water start of shift 20-09-25 - hole at 7.90m. Water dipped at **8.30m** upon completion. Hole depth 18.20m. Hole cased to 5.90m (20-08-25).

6. GROUND ASSESSMENT & ENGINEERING RECOMMENDATIONS

6.1 General

In light of the ground investigation findings, the following geotechnical issues are developed and discussed:

- Pipeline Grand Canal (RCX 1) Crossing
- Groundwater
- Slopes / Batters
- Buried Concrete
- Waste Acceptance Criteria [WAC] & Environmental Testing - *Soils destined for Landfill*

6.2 Pipeline Grand Canal (WCX 1) Crossing

(See Cross Section 'N-S' – Appendix 8)

Boreholes were constructed in fields both immediately to the north and south of the Grand Canal. They each encountered upper sequences of CLAY/SILT (generally firm becoming stiff with depth) with underlying deeper-seated, water-bearing GRAVEL found in three of the four holes (BH28A, BH29 & BH30A). Based on SPT results (see Figure 4), a soft SILT soil was identified at location 28 to a depth of 2.40m bgl. The presence of possible soft ground at one of the four locations warrants further investigation.

In this regard, the construction of a grid of probes should permit an assessment of the in situ strength properties / density of the surficial soils. It is thought that the "soft" consistency (based on an assessment of SPT blowcounts) is very likely due to SILT disturbance at depth caused during boring.

In order to tie the intrusive findings from the north and south banks of the canal, as well as to allow further examination of the strength of the soils, an onland and overwater geophysical survey could be conducted. A combination of techniques (ERT, seismic & MASW) could be deployed.

Electrical Resistivity Tomography (ERT) soundings image the resistivity of the materials in the subsurface along a profile to produce a pseudo-section showing the variation in resistivity to 15-20m bgl, depending on the length of the profile. Each pseudo-section can be interpreted to determine the material type along the profile at increasing depth, based on the typical resistivities returned for Irish ground materials. The intrusive findings allow for calibration of the geophysical soundings.

Seismic Refraction profiling measures the velocity of refracted seismic waves (*p*-wave) through the overburden and rock material and allow for an assessment of the thickness and quality of the materials present. Stiffer and stronger materials usually have higher seismic velocities while soft, loose or fractured materials have lower velocities. Readings are taken using geophones connected via multi-core cable to a seismograph. This method should allow profiling of the depth to the top of the bedrock, along profiles across the site.

The MASW method is used to determine surface wave velocities in the ground which can indicate possible soft / low strength zones. Overburden material with velocities of <150 to 175 m/s are generally classified as low strength or loose. The depth of investigation for this method will depend on the source type and geophone spacing. This method may also be used to indicate bedrock depth.

Rotary coring at the four borehole locations proved LIMESTONE bedrock from 5.90m to 11.80m bgl corresponding to elevations of 73.31m OD and 65.60m. The deepest bedrock was flagged in RC28A where a thicker than normal overlying sequence of GRAVEL and COBBLES was logged to a depth of 9.25m, with CLAY completing the soil column to possible bedrock at 10.80m bgl. Rock coring commenced at 11.80m bgl at RC28A.

Ahead of the construction of the pipe crossing, advice and consultation is recommended with specialist micro-tunnelling or HDD contractor.

The presence of potentially shallow soft SILT (BH28/28A) suggests use of ground support techniques (e.g. trench boxes). Elsewhere, surficial soils were generally firm and stiff. The dipped water level in RC30A was found to be 2.85m bgl (75.41m OD). This was high when compared with the original water strike measured during the construction of BH30A (5.0m). The highest recorded water level in an exploratory hole was noted in BH29. A groundwater strike recorded in a buried GRAVEL layer rose from 3.50m to 0.80m bgl in 20 minutes. This would be significant should it be intercepted in a deep dig on site.

It is likely dewatering (pumping) would be required if deep excavations are envisaged. Further monitoring should be undertaken at RC30A to understand the seasonal fluctuations in water table level. Where soft ground conditions exist locally, over-excavation and placement of deep trench fill may be required to form a suitable bedding for pipework. This should be conducted in line with Clause 502 Excavation for Pipes and Chambers as featured in the Specification for Road Works Series 500 - Drainage and Service Ducts (TII, 2015);

> *"soft spots existing below the bottom of an excavation shall be removed and the resulting voids backfilled and compacted with Granular Material Type B complying with Clauses 803 or 804 or pipe bedding material complying with Clause 503, or mix ST1 concrete"*

Where encountered, soft and soft / firm upper soils would provide a safe or allowable bearing pressure of the order of 40-50 kPa. The cross section developed for the Grand Canal crossing illustrates the presence of potential low strength soils (soft) extending to depths of up to 2.40m (BH28/28A). Such soils present further risk for sidewall instability. As noted, trial pitting and/or dynamic probing at the location should further enhance our understanding of the in situ performance of the SILT rather than relying entirely on SPT test results (Figure 4). The issue with silt-dominant tills is that once saturated and subsequently loaded / disturbed, dilatant behaviour usually occurs. The SPT results may only have served to exacerbate this effect in the silt thereby deriving lower than expected SPT results. Where water-bearing silts are encountered during construction, groundwater draw down should be undertaken to avoid destabilising the silt.

The use of a geotextile separating layer between the backfill material and the underlying natural ground / trench base should also be considered. Where significant thickness of backfill is imported, a geogrid layer could be introduced to strengthen the backfill material. Excavation of open trenches in soft to firm soils will pose issues for stability with generous battering required to offset the risk of sidewall collapse. As an alternative to wide batters, as mentioned earlier, the use of trench boxes could be considered should there be a requirement for deeper excavation.

6.3 Groundwater

As outlined in Section 5.3, groundwater strikes in boreholes and drillholes were restricted to depths from 3.0m bgl and deeper (See Table 3) with a groundwater dip measurement (in early September 2025) of 2.85m (75.41m OD) recorded in RC30A. Sump pumping may be required where shallow perched water entries are met. Elsewhere, where deep excavation in natural soils is required beyond ca. 2.0 / 2.50m, this will likely necessitate dewatering especially if GRAVEL lenses / layers are encountered. The water level in RC30A should be dipped as part of a longer-term monitoring programme – data logger use is envisaged on the project for a duration of one year. It may be the case that water re-equilibrates to higher depths than were recorded on site most especially during the wetter months of Winter / Spring.

Should water be encountered during deeper digs / excavations it is likely that de-watering will be required through a combination of strategic sump pumping. As mentioned in Section 5.3, the potential does exist for there to be seasonal changes in groundwater level. The works were carried out during Summer / early Autumn 2025. It may be the case that the various waterbodies at depth are subject to

seasonal variations. As noted, readings should be taken at RC30A to assess equilibrated water levels.

6.4 Slopes / Batters

In the absence of trench stabilisation methods, a maximum temporary slope angle of 1V to 1.5H (33º) is anticipated for batters constructed within the upper low to medium and medium strength fine grained soils. A slope angle of 1V to 2H (26°) should be appropriate for long term batters in the same soils. Further investigation (dynamic probing / trial pitting) on the pipeline corridor should pinpoint any soft zones / stability issues in near surface SILT.

Where deep excavation works are required in the superficial deposits, the use of trench box support is advised. In addition, the uppermost fine subsoils will be susceptible to softening and degradation and surface water or groundwater ingress can lead to a significant reduction in shear strength. Perched water can exist locally and this should be considered in risk assessments for excavations.

Site operatives or personnel should not enter unsupported excavations and should be informed of potential risks. Where site operatives or engineering staff work in close proximity to temporary slopes or batters, these should be inspected and approved by a suitably experienced civil engineer, preferably with geotechnical experience. Where there is a risk of spalling of battered slopes, the use of a geogrid is recommended. The geogrid should be anchored at the top and bottom of the ridge face to contain particles such as gravel, cobbles and / or boulders that may become dislodged.

6.5 Buried Concrete

The chemical analysis testing on a sample from BH29 (1.0m) (Chemtest Report 25-17444) shows a pH value of 8.6 with a sulphate aqueous extract (SO_4) value of <10mg/l. This would categorise the upper natural soil as BRE Class DS-1. Table C1 ACEC for greenfield sites in BRE SD 1 (2005) could be used in the selection and design of concrete. With mobile groundwater conditions and given the pH values obtained, then ACEC class AC-1^d would be expected to be appropriate for buried concrete in natural soils.

In line with I.S. EN 206-1:2013 concrete could be manufactured to Class XA1 where founded or positioned in the upper soils (Class XA1 being ≥ 2000 and ≤ 3000 SO_4^{2-} mg/kg). However, based on the chemical results, there does not appear to be any issue with "chemical attack".

6.6 Waste Acceptance Criteria [WAC] & Environmental Testing – *Soils destined for Landfill*

Two shallow soil samples were selected from the boreholes at the Grand Canal (BH28A & BH30). They were each analysed for compliance to the criteria set out in the 2002 European Landfill Directive (2003/33/EC). From the resultant testing, both samples can be classified as inert as per the 2002 European Landfill Directive (2003/33/EC).

The results obtained from the testing of the two inert borehole samples were also compared with published limits set out in the EPA Guidance on waste acceptance criteria at authorized soil recovery facilities (EPA, 2020). With regard to each of the criteria set for Total Organic Carbon and for the organic compounds BTEX, Mineral Oil, PAH and PCB's, both samples were found to satisfy the criteria stipulated by the EPA.

Furthermore, in relation to total metal concentrations, the EPA Guidance document employs a set of specific metal trigger limits to each of seven geochemical domains across the country. Depending on the domain in which the accepting recovery site falls, there are specific limits prescribed for certain metals. In order to further analyse the soils suitability for acceptance at an EPA recovery facility, the domain of the receiving facility would have to be known. For the purposes of this report, the maximum concentrations and / or trigger levels in soil and stone for soil recovery facilities for Geochemical Domain 2 (Carboniferous limestone and related rocks) are applied. In relation to the two samples, both exhibit metal concentrations within those published for Geochemical Domain 2

and would therefore, based on their metal and TOC / organic compound contents be accepted at an authorized soil recovery facility.

Furthermore, written into the EPA (2002) document, only "soil and stone containing up to 2% non-natural materials by weight is acceptable, ie., anthropogenic or man-made substances such as rubble, concrete, bricks, metal and bitumen that are non-natural to the environment from which the material was extracted". This 2% content level for man-made materials would have to be complied with should the soils be exported to an EPA-licenced Soil Recovery Facility.

In relation to sending the analysed samples to an EPA-licenced Soil Recovery Facility, the limits for acceptance at the nominated facility should be checked against the results listed in the test record sheet - final report.

Note that, depending on the extent and depth of envisaged excavations and quantities for soil removal (if required), a landfill or Soil Recovery Facility may require additional testing to achieve the frequency of analysis (i.e. number of samples per unit volume of excavation) that meets their licence requirements.

No asbestos was detected in screens ran on the two soil samples (See Chemtest reports 25-16703 & 25-17444 – Appendix 5).

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Appendix 1

Cable Percussion Borehole Logs

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH28**
		SHEET	Sheet 1 of 1
CO-ORDINATES	660,822.46 E 731,757.88 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	77.04	**BOREHOLE DEPTH (m)**	3.50
		DATE COMMENCED	23/04/2025
		DATE COMPLETED	23/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		76.74	0.30						
	Soft brown sandy gravelly SILT				AA222764	B	0.50			
1									N = 6 (1, 2, 1, 1, 2, 2)	
					AA222765	B	1.50			
2			74.64	2.40					N = 7 (1, 2, 2, 2, 2, 1)	
	Stiff grey gravelly CLAY with boulders				AA222766	B	2.50			
3									N = 50/150 mm (10, 15, 20, 30)	
			73.54	3.50					N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 3.50 m									
4										
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.2	3.5	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.00	3.00	No	2.70	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Obstruction encountered. Moved 3m to BH28A and attempted rebore .

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 5/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH28A**
		SHEET	Sheet 1 of 1
CO-ORDINATES	660,822.56 E 731,757.61 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	77.40	**BOREHOLE DEPTH (m)**	9.50
		DATE COMMENCED	23/04/2025
		DATE COMPLETED	28/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		77.10	0.30						
	Soft brown sandy gravelly SILT		75.10	2.30						
	Stiff grey gravelly CLAY		74.40	3.00						
3	Medium dense to dense brown silty sandy fine to coarse GRAVEL with cobbles				AA222767	B	3.00		N = 21 (6, 8, 5, 5, 5, 6)	
4					AA222768	B	4.00		N = 28 (4, 5, 6, 9, 7, 6)	
5					AA222769	B	5.00		N = 25 (4, 7, 5, 6, 7, 7)	
6					AA222770	B	6.00		N = 27 (4, 5, 7, 8, 6, 6)	
			70.40	7.00						
7	COBBLES with brown slightly clayey/silty slightly sandy Gravel				AA222771	B	7.00		N = 44 (16, 9, 10, 9, 15, 10)	
			69.40	8.00						
8	Dense brown slightly silty slightly sandy GRAVEL with many cobbles				AA222772	B	8.00		N = 32 (3, 4, 6, 9, 11, 6)	
9					AA222773	B	9.00		N = 36 (11, 14, 7, 9, 9, 11)	
			68.15	9.25						
	Very stiff brown sandy gravelly CLAY with cobbles		67.90	9.50					N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 9.50 m									

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.3	3.6	1	
7.2	7.4	0.5	
9.3	9.5	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.00	3.00	No	2.70	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 5/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH29**
		SHEET	Sheet 1 of 1
CO-ORDINATES	660,793.31 E 731,731.78 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	77.05	**BOREHOLE DEPTH (m)**	6.00
		DATE COMMENCED	28/04/2025
		DATE COMPLETED	28/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL/PEAT		76.55	0.50						
1	Firm grey/brown sandy SILT/CLAY				AA223246	B	1.00		N = 10 (1, 1, 2, 2, 2, 4)	
			75.05	2.00						
2	Stiff brown slightly sandy gravelly to very gravelly SILT/CLAY				AA223247	B	2.00		N = 29 (3, 6, 8, 7, 8, 6)	
3					AA223248	B	3.00		N = 24 (6, 12, 4, 8, 6, 6)	
			73.55	3.50						
4	Medium dense to dense grey clayey/silty very sandy GRAVEL with cobbles				AA223249	B	4.00		N = 27 (6, 8, 5, 6, 8, 8)	
5					AA223250	B	5.00		N = 33 (6, 8, 10, 8, 8, 7)	
			71.05	6.00						
6	Obstruction End of Borehole at 6.00 m				AA223251	B	6.00		N = 50/75 mm (25, 50)	
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
5.2	5.4	1	
5.6	6	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.50	3.50		0.80	20	Rapid

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 5/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH30**
		SHEET	Sheet 1 of 1
CO-ORDINATES	660,823.77 E 731,665.35 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	78.62	**BOREHOLE DEPTH (m)**	4.50
		DATE COMMENCED	16/04/2025
		DATE COMPLETED	16/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		78.52	0.10						
	Firm brown sandy slightly gravelly SILT/CLAY				AA212791	B	0.50			
1					AA212792	B	1.00		N = 13 (2, 2, 2, 3, 4, 4)	
			77.02	1.60						
	Stiff to very stiff gravelly CLAY with some cobbles									
2					AA212793	B	2.00		N = 22 (2, 3, 4, 6, 6, 6)	
3					AA212794	B	3.00		N = 39 (6, 8, 9, 10, 10, 10)	
4									N = 50/75 mm (25, 50)	
			74.12	4.50					N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 4.50 m									
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4.2	4.5	2	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 5/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH30A**
		SHEET	Sheet 1 of 1
CO-ORDINATES	660,826.31 E 731,669.50 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	78.26	**BOREHOLE DEPTH (m)**	6.00
		DATE COMMENCED	16/04/2025
		DATE COMPLETED	17/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		78.16	0.10						
	Firm brown sandy slightly gravelly SILT/CLAY		76.66	1.60						
2	Stiff to very stiff brown very gravelly CLAY with cobbles								N = 25 (5, 6, 5, 5, 7, 8)	
4					AA212795	B	4.00		N = 30 (3, 4, 6, 8, 8, 8)	
			73.26	5.00						
5	Brown silty very sandy GRAVEL with some cobbles				AA212796	B	5.00		N = 50 (6, 8, 9, 12, 15, 14)	
			72.26	6.00						
6	Obstruction End of Borehole at 6.00 m								N = 50/75 mm (25, 50)	
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
2.5	2.8	1	
5.7	6	2	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
5.00	5.00	No	4.80	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 5/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH31**
		SHEET	Sheet 1 of 1
CO-ORDINATES	660,793.16 E 731,629.16 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	79.21	**BOREHOLE DEPTH (m)**	1.00
		DATE COMMENCED	17/04/2025
		DATE COMPLETED	17/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		79.01	0.20						
	Firm to stiff brown sandy gravelly SILT/CLAY with occasional cobbles				AA212797	B	0.50			
			78.21	1.00					N = 50/75 mm (25, 50)	
1	Obstruction End of Borehole at 1.00 m									
2										
3										
4										
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig. Moved 3m to BH31A and attempted rebore.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 5/9/25

GEOTECHNICAL BORING RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**BOREHOLE NO.**	**BH31A**
		SHEET	Sheet 1 of 1
CO-ORDINATES	660,793.16 E 731,629.16 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	79.21	**BOREHOLE DEPTH (m)**	5.50
		DATE COMMENCED	17/04/2025
		DATE COMPLETED	18/04/2025
CLIENT	Murphy International Limited	**SPT HAMMER REF. NO.**	
ENGINEER	Fingleton White	**ENERGY RATIO (%)**	
		BORED BY	P.Allan
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	TOPSOIL		79.01	0.20						
	Stiff to very stiff brown sandy gravelly CLAY with cobbles								N = 50/225 mm (5, 6, 10, 30, 10)	
1					AA212798	B	1.50			
									N = 31 (3, 3, 4, 8, 8, 11)	
2					AA212799	B	2.50			
									N = 21 (3, 3, 4, 5, 5, 7)	
3					AA212800	B	3.50			
									N = 49 (15, 10, 16, 9, 11, 13)	
4					AA212801	B	4.50			
									N = 50/75 mm (22, 3, 50)	
5			73.71	5.50					N = 50/75 mm (25, 50)	
	Obstruction End of Borehole at 5.50 m									
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
0.9	1	1	
1.3	1.5	1	
5.3	5.5	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS Location scanned using a cable avoidance tool (CAT). Hand dug inspection pit carried out. Tracked dumper used to move rigs. Flotation tyres fitted to rig.

Sample Legend

D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 25882.GPJ IGSL.GDT 5/9/25

Appendix 2

Rotary Drillhole Records & Photographs

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC28A**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,822.56 E 731,757.61 N		
GROUND LEVEL (mOD)	77.40	**RIG TYPE**	Beretta T44
		FLUSH	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	26/08/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	77.10		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly SILT				
2									2.30	75.10		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey gravelly CLAY	3.00	74.40		
3								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown silty sandy fine to coarse GRAVEL with cobbles				
6		0	0	0					7.00	70.40		
7								SYMMETRIX DRILLING: No recovery, observed by driller as returns of COBBLES with brown slightly clayey/silty slightly sandy Gravel	8.00	69.40		
8								SYMMETRIX DRILLING: No recovery, observed by driller as returns of slightly silty slightly sandy GRAVEL with many cobbles	9.25	68.15		
9								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly CLAY with cobbles	9.50	67.90		

REMARKS

Hole cased from 0.00-11.80m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
9.80	9.80				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC28A**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,822.56 E 731,757.61 N		
GROUND LEVEL (mOD)	77.40	**DATE DRILLED**	26/08/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy gravelly CLAY *(continued)*	10.80	66.60		N = 50/100 mm (8, 14, 27, 23)
11								SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	11.80	65.60		
12	11.80	100	57	57		520		Strong, thickly to thinly bedded, light blue/grey fine-grained massively bedded LIMESTONE (slightly dolomitised with crystalline calcisiltite layers). Weathering: Orange brown non-penetrative discolouration common on discontinuity surfaces. Otherwise fresh to slightly weathered. Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, locally calcite veined (1-10mm thick), local clay/gravel infill (@13.02-13.14m & 13.37-13.40m), frequent incipient fractures, occasional iron oxide staining. Dips are subhoriztonal to locally 30° and irregular.				
13	12.50	100	79	75								
14	14.00	100	71	67								
15	15.20	100	95	93		630.0000000000001						
16	16.30	100	98	98								
17	16.80	100	86	74		680						
18	18.40	100	94	94		670.0000000000002						
19	20.00								20.00	57.40		

REMARKS

Hole cased from 0.00-11.80m

End of Borehole at 20.00 m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
9.80	9.80				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
26-08-25	12.50	11.80	5.40	End of Shift
27-08-25	20.00	11.80	2.20	Water levels recorded 5 mins after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC29**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,793.31 E 731,731.78 N		
GROUND LEVEL (mOD)	77.05	**DATE DRILLED**	29/08/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - LDG
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL/PEAT	0.50	76.55		
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy SILT/CLAY	2.00	75.05		
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown slightly sandy gravelly to very gravelly SILT/CLAY	3.50	73.55		
3		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey clayey/silty very sandy GRAVEL with cobbles	6.00	71.05		
4								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/black gravelly CLAY	6.40	70.65		
5								SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	7.20	69.85		
6												
7	7.20											
8		100	54	50				Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, locally calcite veined (1-5mm thick), local clay lenses, frequent incipient fractures, local iron oxide staining. Dips are subhoriztonal to locally 45° and irregular.				
9	8.80	100	93	93				Strong, thickly to thinly bedded dark blue/grey fine-grained massively bedded LIMESTONE (slightly dolomitised with crystalline calcisiltite layers). Weathering: Orange brown non-penetrative discolouration common on discontinuity surfaces. Otherwise fresh to slightly weathered.				
	10.00											

REMARKS

Hole cased from 0.00-7.20m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.60 15.10	6.60 7.20				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
29-08-25	7.20	7.20	2.60	End of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 5/9/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC29**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,793.31 E 731,731.78 N		
GROUND LEVEL (mOD)	77.05	**DATE DRILLED**	29/08/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - LDG
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.40	100	87	87				Strong, thickly to thinly bedded dark blue/grey fine-grained massively bedded LIMESTONE (slightly dolomitised with crystalline calcisiltite layers). Weathering: Orange brown non-penetrative discolouration common on discontinuity surfaces. Otherwise fresh to slightly weathered. *(continued)*				
11	12.00	38	92	88		680.000000000001 750						
12	12.10	100	80	0								
13	13.60	100	30	29				Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, locally calcite veined (1-15mm thick), frequent incipient fractures, local iron oxide staining. Dips are subhoriztonal to locally 30° and irregular.				
14	14.40	100	67	62								
15	15.10	100	97	97		699.999999999999						
16	16.50	100	71	57								
17	16.70	100	90	90		600.000000000001						
18	18.30	100	97	92		930			18.30	58.75		
19								End of Borehole at 18.30 m				

REMARKS

Hole cased from 0.00-7.20m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.60 15.10	6.60 7.20				

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
01-09-25	18.30	7.20	1.40	End of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC30A**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,826.31 E 731,669.50 N		
GROUND LEVEL (mOD)	78.26	**DATE DRILLED**	20/08/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.10	78.16		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy slightly gravelly SILT/CLAY	1.60	76.66		
		0	0	0				SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown very gravelly CLAY with cobbles	5.00	73.26		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of silty very sandy GRAVEL with some cobbles	6.00	72.26		
	6.00	100	66	48				Strong to very strong, thick to thinly, light blue/grey, fine-grained massively bedded LIMESTONE (crystalline calcisiltite layers). Weathering: fresh to slightly weathered Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, locally calcite veined (1-15mm thick), frequent incipient fractures. Dips are subhoriztonal to locally 45° and irregular.				
	7.60	100	44	37								
	8.60	100	20	0								
	8.80	100	78	71	570							

REMARKS

Hole cased from 0.00-6.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
22-08-25	17.50	1.00	17.50	50mm SP

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
21-08-25	8.80	6.00	7.40	End of Shift

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC30A**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,826.31 E 731,669.50 N		
GROUND LEVEL (mOD)	78.26	**DATE DRILLED**	20/08/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.10							Strong to very strong, thick to thinly, light blue/grey, fine-grained massively bedded LIMESTONE (crystalline calcisiltite layers). Weathering: fresh to slightly weathered Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, locally calcite veined (1-15mm thick), frequent incipient fractures. Dips are subhoriztonal to locally 45° and irregular. *(continued)*				
	10.80	100	97	97								
11												
	11.70	100	69	60								
12												
		100	72	54								
13	13.30											
		100	74	49		699.999999999999						
14	14.90											
						850						
15		100	94	94								
	16.50											
16												
		100	93	93		570						
17	17.50								17.50	60.76		
								End of Borehole at 17.50 m				
18												
19												

REMARKS

Hole cased from 0.00-6.00m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
22-08-25	17.50	1.00	17.50	50mm SP

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
22-08-25	17.50	6.00	5.50	Water levels recorded 5 mins after end of drilling

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC31A**
		SHEET	Sheet 1 of 2
CO-ORDINATES	660,793.16 E 731,629.16 N	**RIG TYPE**	Beretta T44
GROUND LEVEL (mOD)	79.21	**FLUSH**	Air/Mist
CLIENT	Murphy International Limited	**INCLINATION (deg)**	-90
ENGINEER	Fingleton White	**CORE DIAMETER (mm)**	78
		DATE DRILLED	19/08/2025
		DRILLED BY	IGSL - DH
		LOGGED BY	D. O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	79.01		
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly CLAY with cobbles				
1												
2												
3		0	0	0								
4												
5									5.50	73.71		
	5.90							SYMMETRIX DRILLING: No recovery, observed by driller as returns of possible ROCK	5.90	73.31		
6		100	80	75	560			Strong to very strong, thick to thinly, light blue/grey, fine-grained massively bedded LIMESTONE (crystalline calcisiltite layers). Weathering: fresh to slightly weathered				
	7.00							Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, locally calcite veined (1-15mm thick), frequent incipient fractures. Dips are subhoriztonal to locally 45° and irregular.				
7		100	39	34								
	7.90											
8		100	14	78								
	8.70											
	8.90	100	0	0								
9		100	80	73								

REMARKS

Hole cased from 0.00-5.90m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
19-08-25	7.90	5.90	6.80	End of Shift

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 25882.GPJ IGSL.GDT 5/9/25

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 25882

CONTRACT	Gas to Bord na Mona, Edenderry, Phase 1 GI	**DRILLHOLE NO**	**RC31A**
		SHEET	Sheet 2 of 2
CO-ORDINATES	660,793.16 E 731,629.16 N		
GROUND LEVEL (mOD)	79.21	**DATE DRILLED**	19/08/2025
CLIENT	Murphy International Limited	**DRILLED BY**	IGSL - DH
ENGINEER	Fingleton White	**LOGGED BY**	D. O'Shea
RIG TYPE	Beretta T44		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.40					580		Strong to very strong, thick to thinly, light blue/grey, fine-grained massively bedded LIMESTONE (crystalline calcisiltite layers). Weathering: fresh to slightly weathered Discontinuities are wide to closely spaced, smooth to locally rough, fractures are planar to irregular. Apertures are tight to open, locally clay smeared, locally calcite veined (1-15mm thick), frequent incipient fractures. Dips are subhoriztonal to locally 45° and irregular. *(continued)*				
11	11.50	100	11	84								
	11.80	100	67	40								
12		100	71	58		569.9999999999999						
13	13.40											
		100	60	56								
14	14.30	100	93	87								
	15.00											
15		100	91	87		510.0000000000002						
16	16.60											
17		100	91	91		670.0000000000002						
18	18.20								18.20	61.01		
								End of Borehole at 18.20 m				
19												

REMARKS

Hole cased from 0.00-5.90m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
20-08-25	18.20	5.90	8.30	Water levels recorded 5 mins after end of drilling

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

RC28A – Box 1 of 4 – 11.80-14.00m



RC28A – Box 2 of 4 – 14.00-16.30m



RC28A – Box 3 of 4 – 16.30-18.40m



RC28A – Box 4 of 4 – 18.40-20.00m



RC29 – Box 1 of 5 – 7.20-10.00m



RC29 – Box 2 of 5 – 10.00-12.10m



RC29 – Box 3 of 5 – 12.10-14.40m



RC29 – Box 4 of 5 – 14.40-16.50m



RC29 – Box 5 of 5 – 16.50-18.30m



RC30A – Box 1 of 5 – 6.00-8.60m



RC30A – Box 2 of 5 – 8.60-10.80m



RC30A – Box 3 of 5 – 10.80-13.30m



RC30A – Box 4 of 5 – 13.30-14.90m



RC30A – Box 5 of 5 – 14.90-17.50m



RC31A – Box 1 of 5 – 5.90-8.70m



RC31A – Box 2 of 5 – 8.70-11.50m



RC31A - Box 3 of 5 – 11.50-14.30m



RC31A – Box 4 of 5 – 14.30-16.60m



RC31A – Box 5 of 5 – 16.60-18.20m



Appendix 3

Groundwater Monitoring Records

GROUNDWATER MONITORING SHEET

Project: Gas to Bord na Mona, Edenderry, Phase 1 GI – HCC4
IGSL Reference: 25882

Exploratory Hole No.	Ground Level m OD	Response Zone Top (m bgl)	Response Zone Base (m bgl)	Groundwater level (m bgl) 02/09/2025	(m OD)	Groundwater level (m bgl)	(m OD)	Groundwater level (m bgl)	(m OD)
RC30A	78.26	1.00	17.50	2.85	75.41				

Remarks:

Appendix 4

Geotechnical Laboratory Results (Soil)

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.1331

Report No. **R169109** Contract No. 25882 Contract Name: Gas to Edenderry GNI

Customer MIL

Samples Received: 01/05/25 Date Tested: 02/05/25

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH30A	AA212796	5.0	A25/1619	B	7.7	19	NP	NP	50	WS	4.4		Brown silty, very sandy, GRAVEL with some cobbles
BH32	AA212791	2.0	A25/1620	B	25	27	NP	NP	99	WS	4.4		Brown sandy gravelly SILT
BH35	0	2.0	A25/1623	U	24	32	17	15	100	WS	4.4	C L	Grey/brown sandy CLAY
BH36	0	4.0	A25/1626	U	21	31	15	16	99	WS	4.4	C L	Grey/brown sandy CLAY
BH37	AA245002	1.0	A25/1630	B	20	27	NP	NP	82	WS	4.4		Grey sandy gravelly SILT
BH37	0	4.0	A25/1631	U	22	26	NP	NP	99	WS	4.4		Grey/brown sandy SILT
BH37	AA345011	12.0	A25/1634	B	20	21	NP	NP	99	WS	4.4		Grey sandy SILT
BH37	AA345013	14.0	A25/1635	B	14	28	15	13	60	WS	4.4	C L	Grey slightly sandy, gravelly, CLAY
BH38	0	2.0	A25/1636	U	398	277	NP	NP	N/A	WS	4.4		Black/brown fibrous PEAT
BH38	AA245036	10.0	A25/1639	B	20	25	NP	NP	100	WS	4.4		Grey sandy SILT
BH38	AA245039	13.0	A25/1640	B	22	24	NP	NP	100	WS	4.4		Grey sandy SILT
BH39	AA245017	3.0	A25/1642	U	24	24	NP	NP	97	WS	4.4		Grey sandy SILT
BH39	AA245025	11.0	A25/1644	B	7.1	22	NP	NP	58	WS	4.4		Grey sandy gravelly SILT
BH58	AA212767	1.0	A25/1648	B	33	36	NP	NP	99	WS	4.4		Brown peaty SILT
BH58	AA212771	5.0	A25/1650	B	21	23	NP	NP	100	WS	4.4		Brown sandy SILT

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method
4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.
NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12.
Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.
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IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by: H Byrne

Date: 05/06/25

Page: 1 of 1

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.1331

Report No. **R169110** Contract No. 25882 Contract Name: Gas to Edenderry GNI

Customer MIL

Samples Received: 01/05/25 Date Tested: 02/05/25

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH58	AA212773	7.0	A25/1651	B	4.4	19	NP	NP	6	WS	4.4		Brown slightly silty, sandy, GRAVEL
BH59	0	3.0	A25/1652	U	21	30	NP	NP	99	WS	4.4		Grey/brown sandy gravelly SILT
TP1.1	AA245858	1.3	A25/1655	B	19	31	NP	NP	100	WS	4.4		Grey sandy SILT
TP1.1	AA245860	3.2	A25/1656	B	11	24	13	11	64	WS	4.4	C L	Grey slightly sandy, gravelly, CLAY
TP1.2	AA245862	1.0	A25/1657	B	23	27	NP	NP	99	WS	4.4		Brown sandy SILT
TP1.2	AA245864	3.0	A25/1658	B	10	26	14	12	63	WS	4.4	C L	Grey slightly sandy, gravelly, CLAY
TP2.1	AA235890	2.0	A25/1659	B	20	30	NP	NP	99	WS	4.4		Grey sandy SILT
TP2.1	AA235885	3.2	A25/1660	B	22	28	NP	NP	99	WS	4.4		Grey sandy SILT
TP2.2	AA235893	2.0	A25/1661	B	32	30	NP	NP	98	WS	4.4		Grey sandy SILT
TP3.1	AA245853	2.0	A25/1663	B	11	21	NP	NP	59	WS	4.4		Grey sandy gravelly SILT
TP3.2	AA235897	2.0	A25/1664	B	11	23	13	10	70	WS	4.4	C L	Brown slightly sandy, slightly gravelly, CLAY
TP3.3	AA235899	1.0	A25/1665	B	10	24	12	12	67	WS	4.4	C L	Brown sandy gravelly CLAY
TP3.3	AA245855	3.6	A25/1666	B	12	22	NP	NP	55	WS	4.4		Brown sandy gravelly SILT
TP3.4	AA245867	2.2	A25/1667	B	10	25	12	13	63	WS	4.4	C L	Brown slightly sandy, gravelly, CLAY
TP3.5	AA245870	1.2	A25/1668	B	12	25	NP	NP	67	WS	4.4		Grey/brown sandy gravelly SILT

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method
4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.
NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12.
Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.
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IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by: H Byrne

Date: 05/06/25

Page: 1 of 1

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

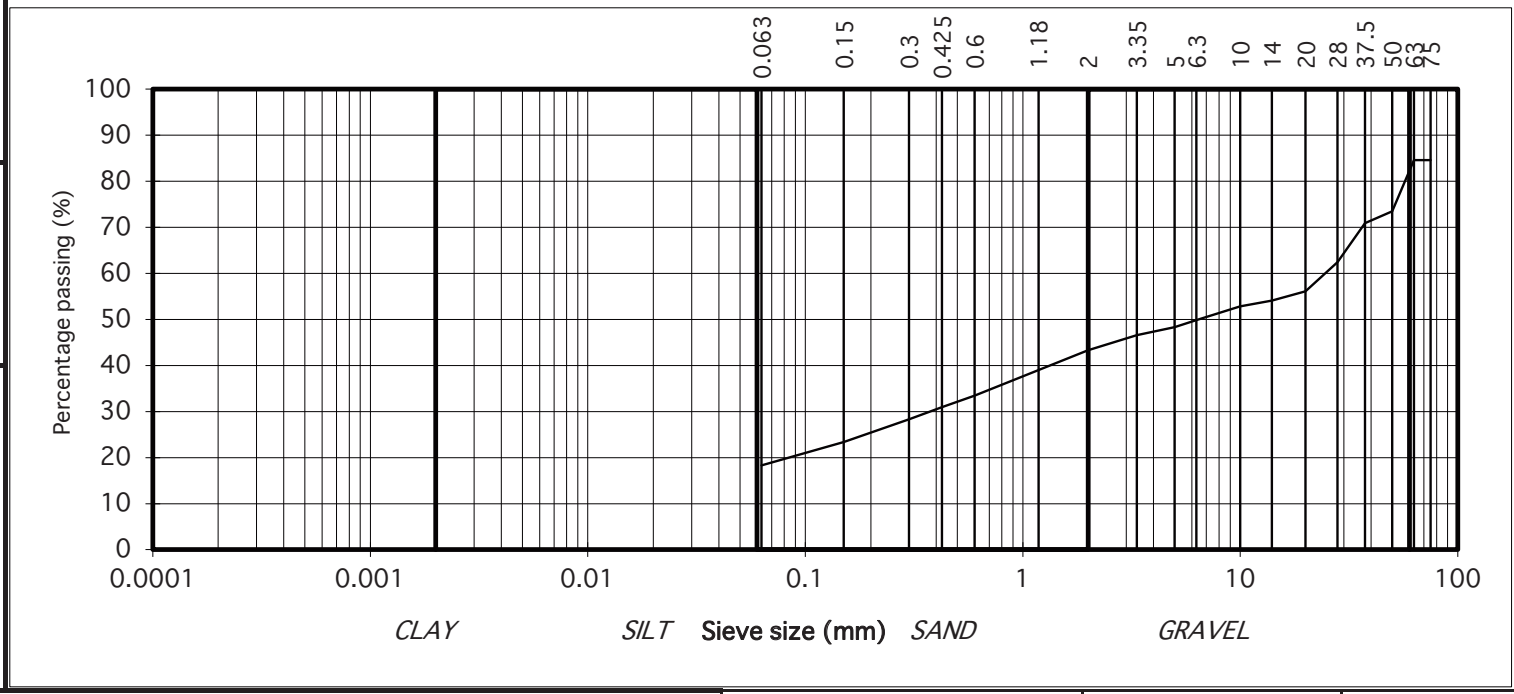
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	85	COBBLES
63	85	
50	74	GRAVEL
37.5	71	
28	62	
20	56	
14	54	
10	53	
6.3	50	
5	48	
3.35	47	
2	43	
1.18	39	SAND
0.6	33	
0.425	31	
0.3	28	
0.15	23	
0.063	18	SILT/CLAY

Contract No. 25882 Report No. R169081
Contract Name : Gas to Edenderry
BH/TP No. BH30A
Sample No.* AA212796 Lab. Sample No. A25/1619
Sample Type: B
Depth* (m) 5.00 Customer: MIL
Date Received 01/05/2025 Date Testing started 10/05/2025
Description: Brown silty, very sandy, GRAVEL with some cobbles

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requiremenst of BS1377

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

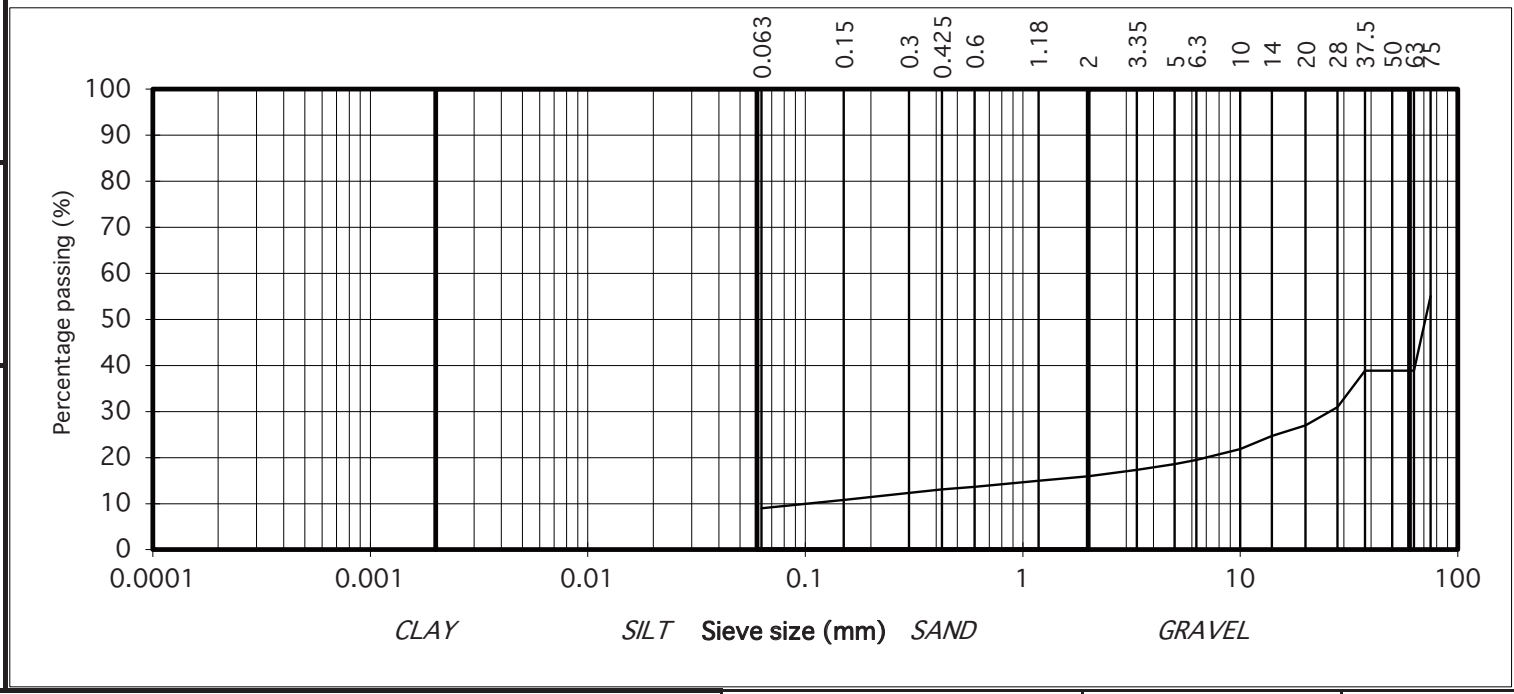
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	55	COBBLES
63	39	
50	39	GRAVEL
37.5	39	
28	31	
20	27	
14	25	
10	22	
6.3	20	
5	19	
3.35	17	
2	16	
1.18	15	SAND
0.6	14	
0.425	13	
0.3	12	
0.15	11	
0.063	9	SILT/CLAY

Contract No.	25882	Report No.	R169082	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH32A			
Sample No.*	AA212792	Lab. Sample No.		A25/1621
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		10/05/2025
Description:	COBBLES with brown clayey/silty, sandy, gravel			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requiremenst of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

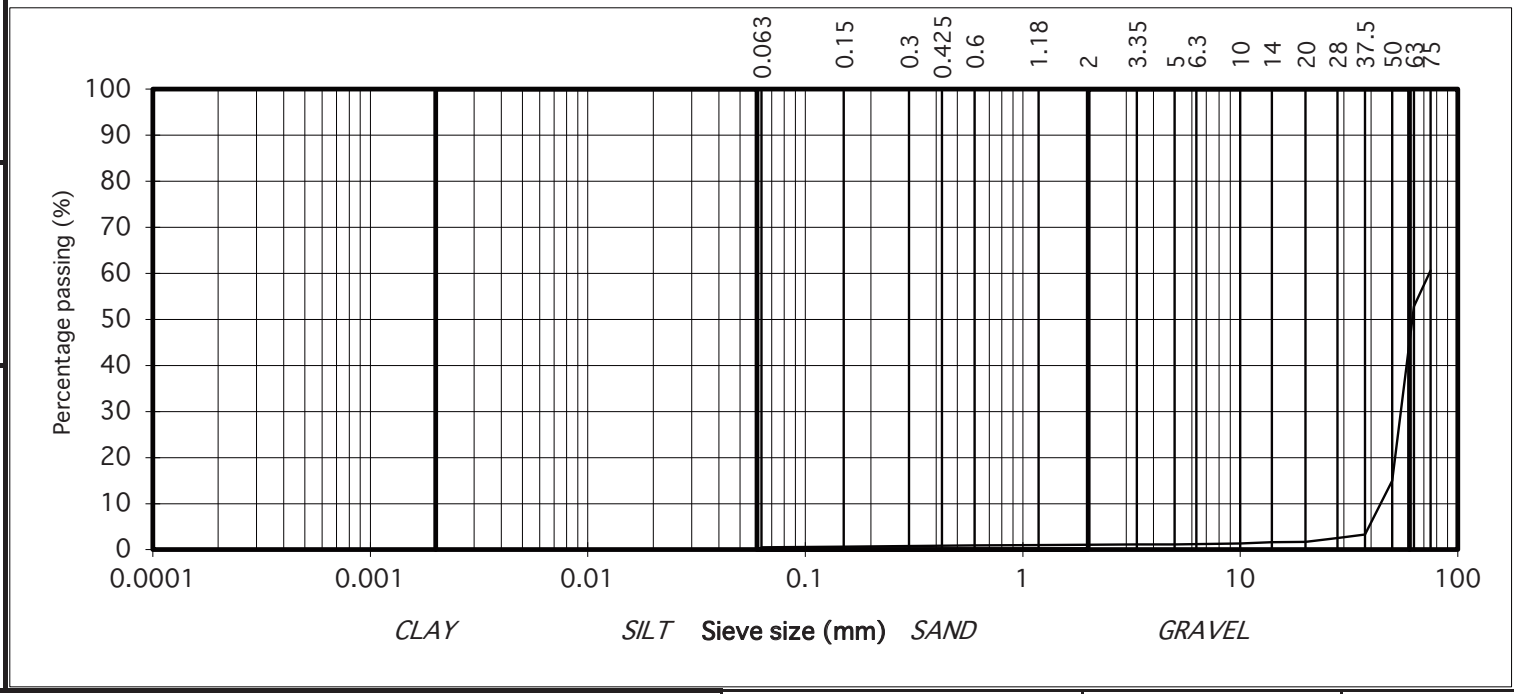
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	61	COBBLES
63	53	
50	15	GRAVEL
37.5	3	
28	3	
20	2	
14	2	
10	1	
6.3	1	
5	1	
3.35	1	
2	1	
1.18	1	SAND
0.6	1	
0.425	1	
0.3	1	
0.15	1	
0.063	1	SILT/CLAY

Contract No.	25882	Report No.	R169083	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH32A			
Sample No.*	AA212794	Lab. Sample No.		A25/1622
Sample Type:	B			
Depth* (m)	5.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		10/05/2025
Description:	Brown slightly clayey/silty, slightly sandy, GRAVEL with many cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requiremenst of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

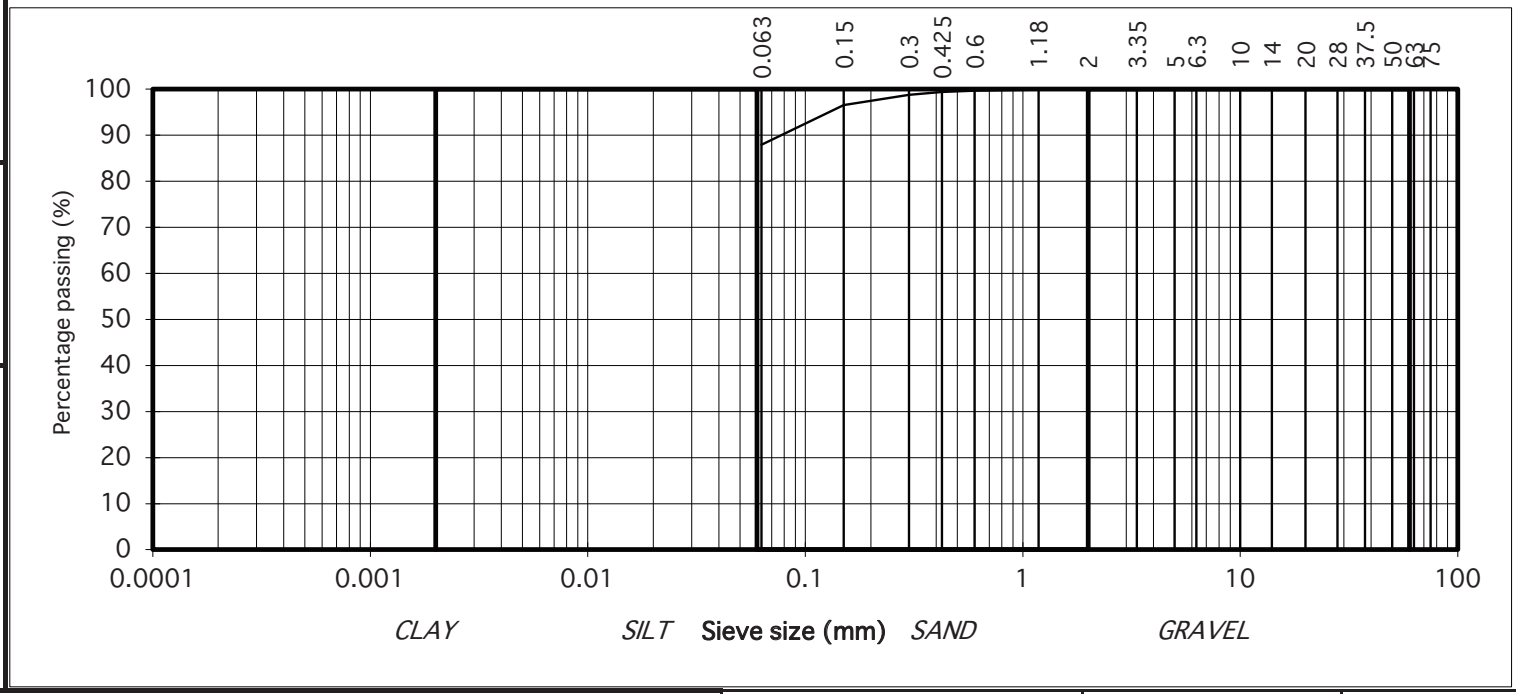
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	100	
0.425	99	
0.3	99	
0.15	97	
0.063	88	SILT/CLAY

Contract No.	25882	Report No.	R169084	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH35			
Sample No.*	AA212777	Lab. Sample No.		A25/1624
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		10/05/2025
Description:	Brown slightly sandy, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing
75	100
63	100
50	100
37.5	100
28	100
20	100
14	100
10	100
6.3	100
5	100
3.35	100
2	100
1.18	100
0.6	100
0.425	100
0.3	100
0.15	98
0.063	65

COBBLES

GRAVEL

SAND

SILT/CLAY

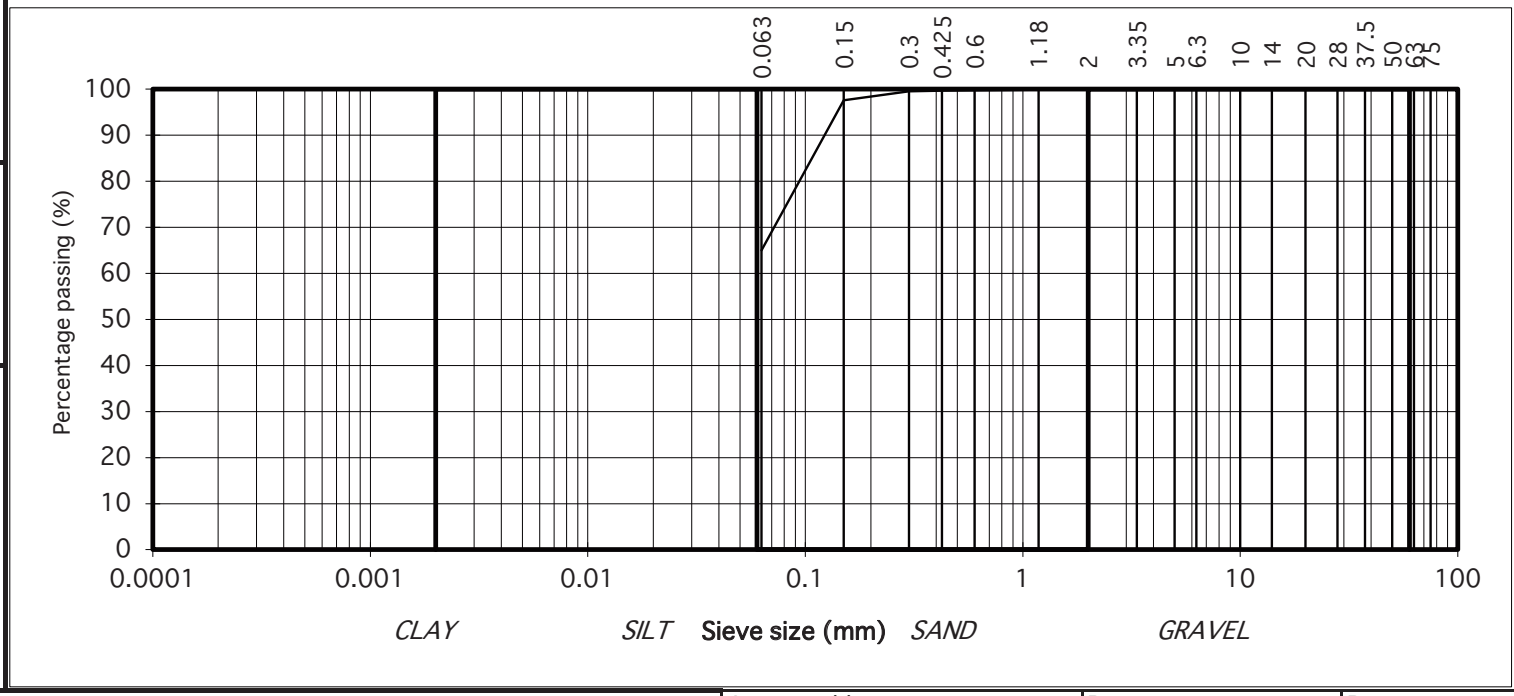
Contract No.	25882	Report No.	R169085	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH35			
Sample No.*	AA212780	Lab. Sample No.		A25/1625
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		10/05/2025
Description:	Brown sandy, SILT/CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks

Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

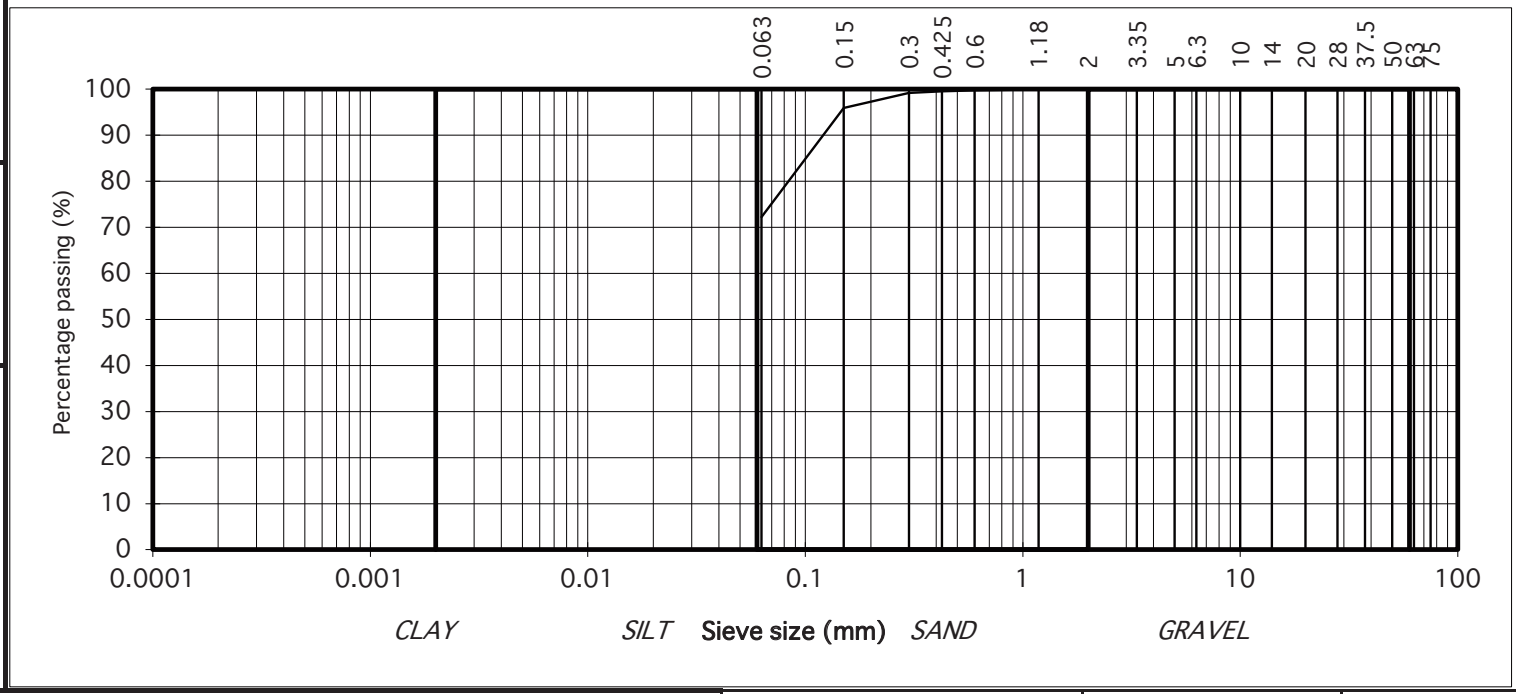
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	100	
0.425	100	
0.3	99	
0.15	96	
0.063	72	SILT/CLAY

Contract No.	25882	Report No.	R169086	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH36			
Sample No.*	AA235040	Lab. Sample No.		A25/1627
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		01/05/2025
Description:	Grey slightly sandy, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

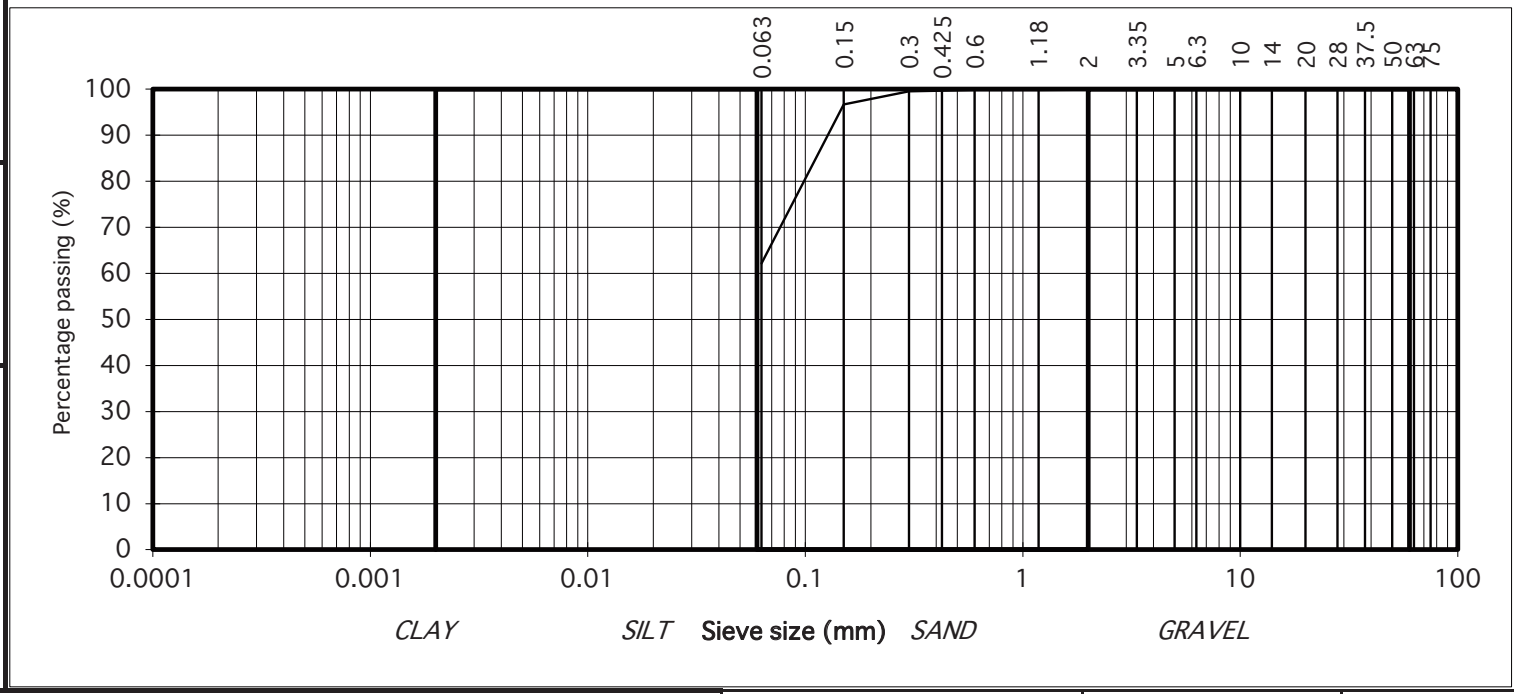
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	100	
0.425	100	
0.3	100	
0.15	97	
0.063	62	SILT/CLAY

Contract No.	25882	Report No.	R169087	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH36			
Sample No.*	AA235043	Lab. Sample No.		A25/1628
Sample Type:	B			
Depth* (m)	9.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		02/05/2025
Description:	Grey sandy, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

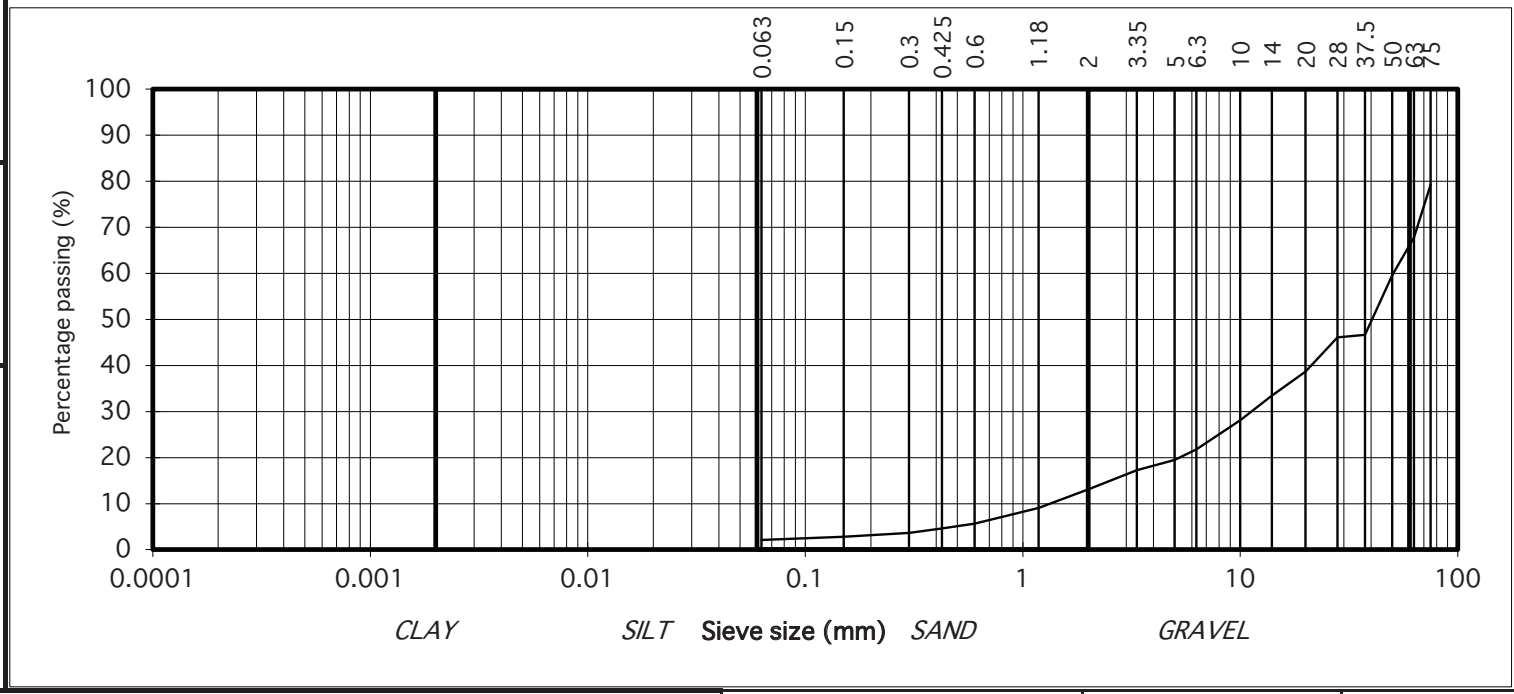
particle size	% passing	
75	79	COBBLES
63	68	
50	60	GRAVEL
37.5	47	
28	46	
20	39	
14	33	
10	28	
6.3	22	
5	19	
3.35	17	
2	13	
1.18	9	SAND
0.6	6	
0.425	5	
0.3	4	
0.15	3	
0.063	2	SILT/CLAY

Contract No.	25882	Report No.	R169088
Contract Name :	Gas to Edenderry		
BH/TP No.	BH36		
Sample No.*	AA235048	Lab. Sample No.	A25/1629
Sample Type:	B		
Depth* (m)	14.00	Customer:	MIL
Date Received	01/05/2025	Date Testing started	01/05/2025
Description:	Grey slightly silty, sandy, GRAVEL with many cobbles		

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requiremenst of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

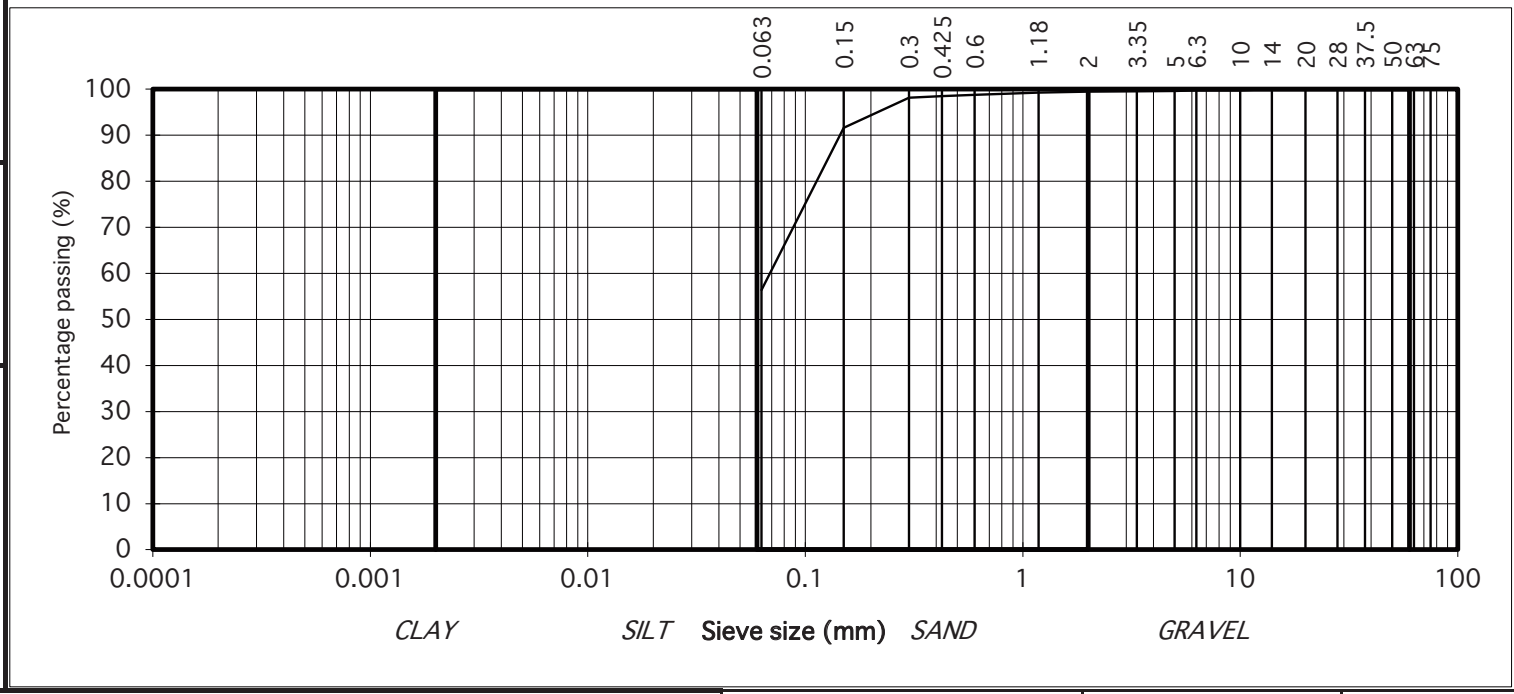
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	99	
1.18	99	SAND
0.6	99	
0.425	99	
0.3	98	
0.15	92	
0.063	56	SILT/CLAY

Contract No.	25882	Report No.	R169089	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH37			
Sample No.*	AA245005	Lab. Sample No.		A25/1632
Sample Type:	B			
Depth* (m)	6.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		02/05/2025
Description:	Grey sandy, slightly gravelly, SILT/CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

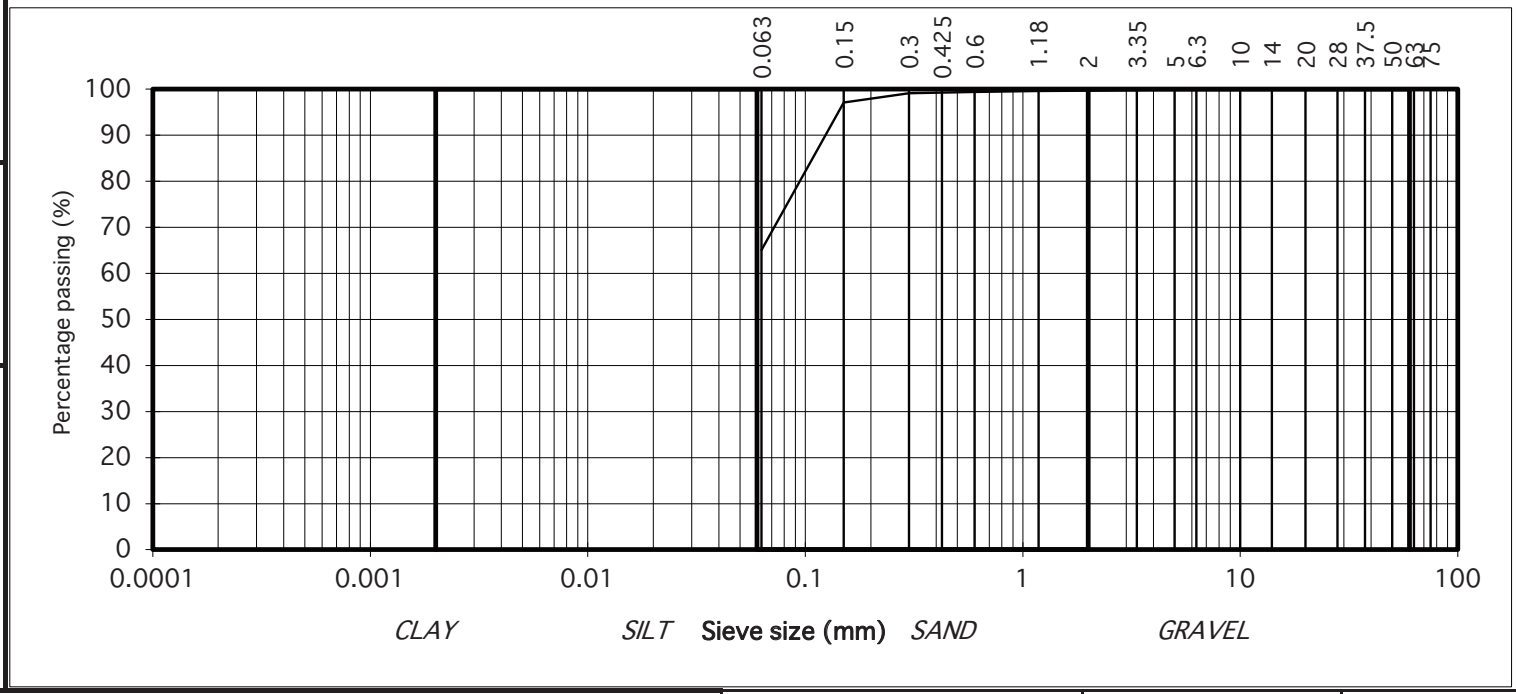
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	99	
0.425	99	
0.3	99	
0.15	97	
0.063	65	SILT/CLAY

Contract No.	25882	Report No.	R169090	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH37			
Sample No.*	AA245008	Lab. Sample No.		A25/1633
Sample Type:	B			
Depth* (m)	9.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		01/05/2025
Description:	Grey slightly sandy, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

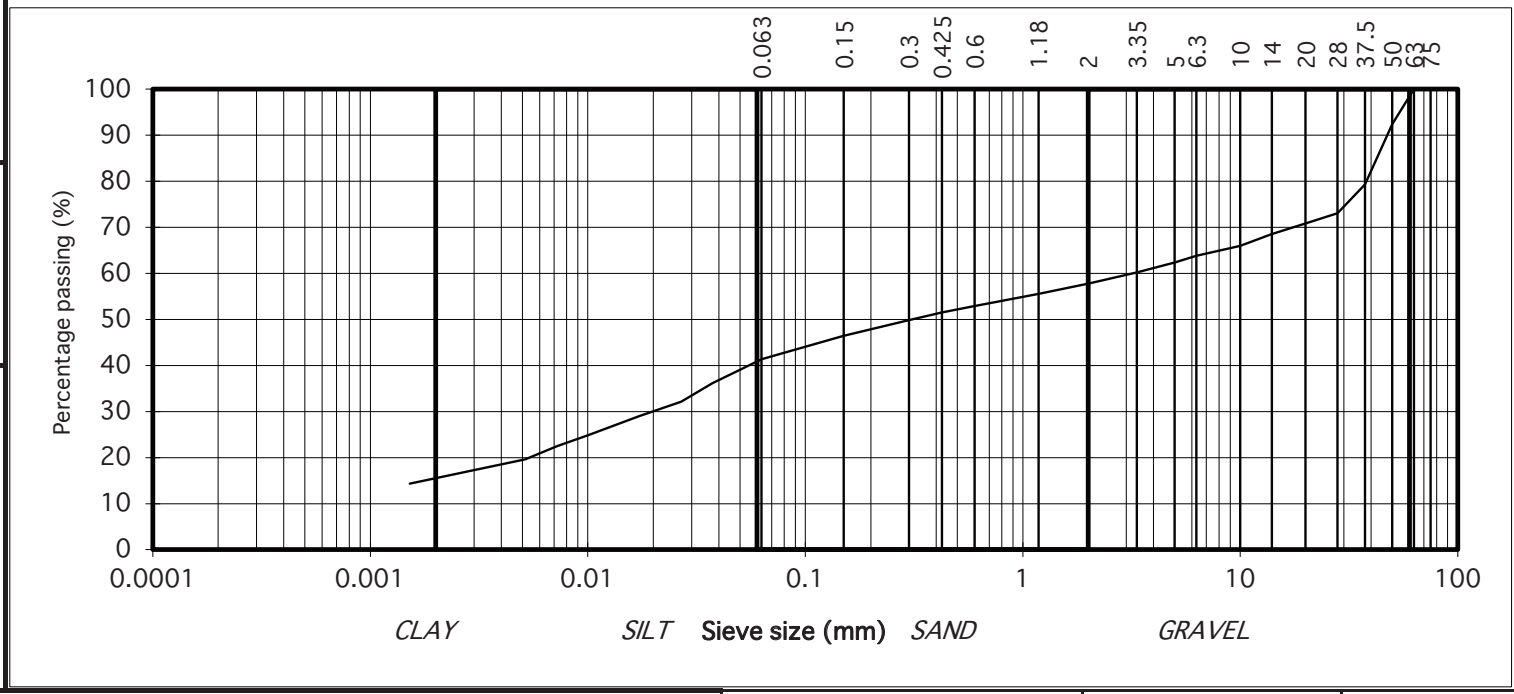
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	92	GRAVEL
37.5	79	
28	73	
20	71	
14	69	
10	66	
6.3	64	
5	62	
3.35	60	
2	58	
1.18	56	SAND
0.6	53	
0.425	51	
0.3	50	
0.15	46	
0.063	41	SILT/CLAY
0.037	36	
0.027	32	
0.017	29	
0.010	25	
0.007	22	
0.005	20	
0.002	14	

Contract No.	25882	Report No.	R169091	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH37			
Sample No.*	AA245013	Lab. Sample No.		A25/1635
Sample Type:	B			
Depth* (m)	14.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		01/05/2025
Description:	Grey slightly sandy, gravelly, CLAY			

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

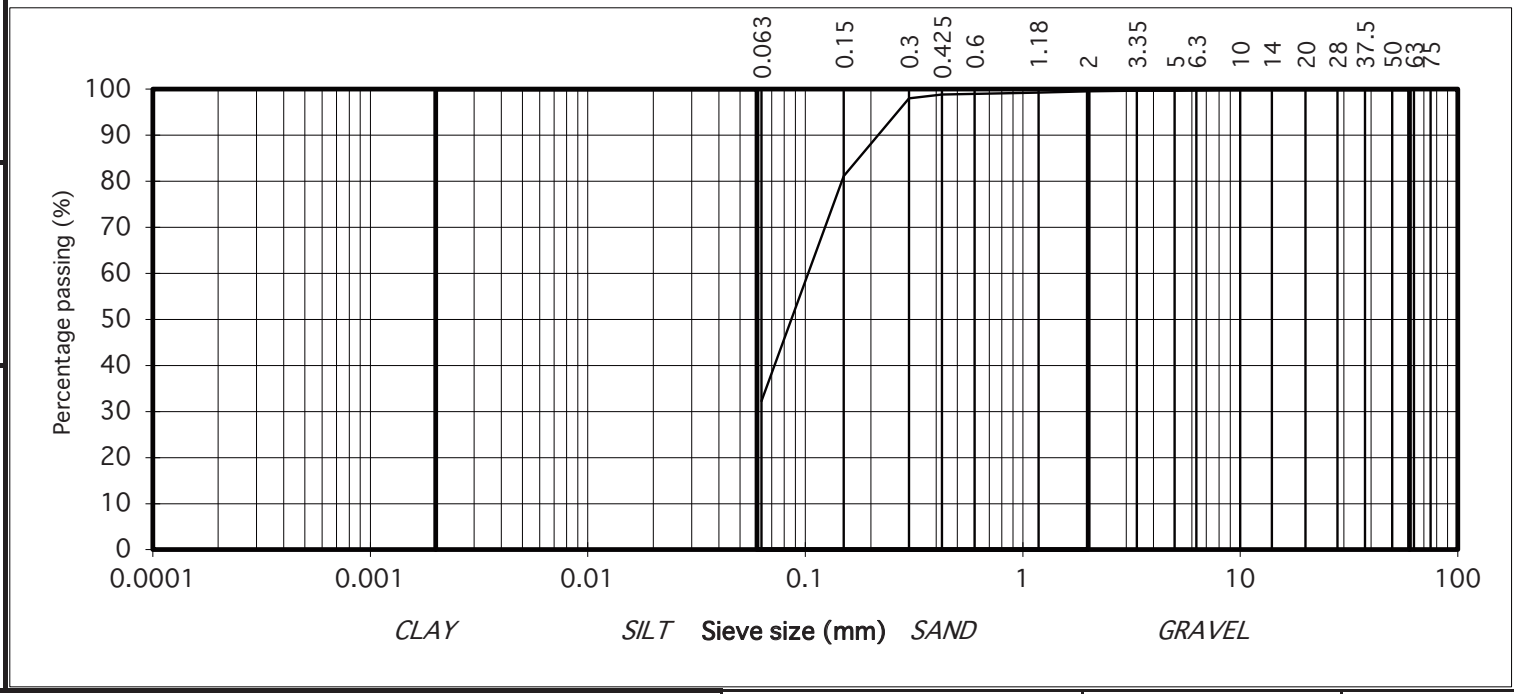
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	99	SAND
0.6	99	
0.425	99	
0.3	98	
0.15	81	
0.063	32	SILT/CLAY

Contract No.	25882	Report No.	R169092
Contract Name :	Gas to Edenderry		
BH/TP No.	BH38		
Sample No.*	AA245031	Lab. Sample No.	A25/1637
Sample Type:	B		
Depth* (m)	5.00	Customer:	MIL
Date Received	01/05/2025	Date Testing started	01/05/2025
Description:	Grey very sandy, SILT/CLAY		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

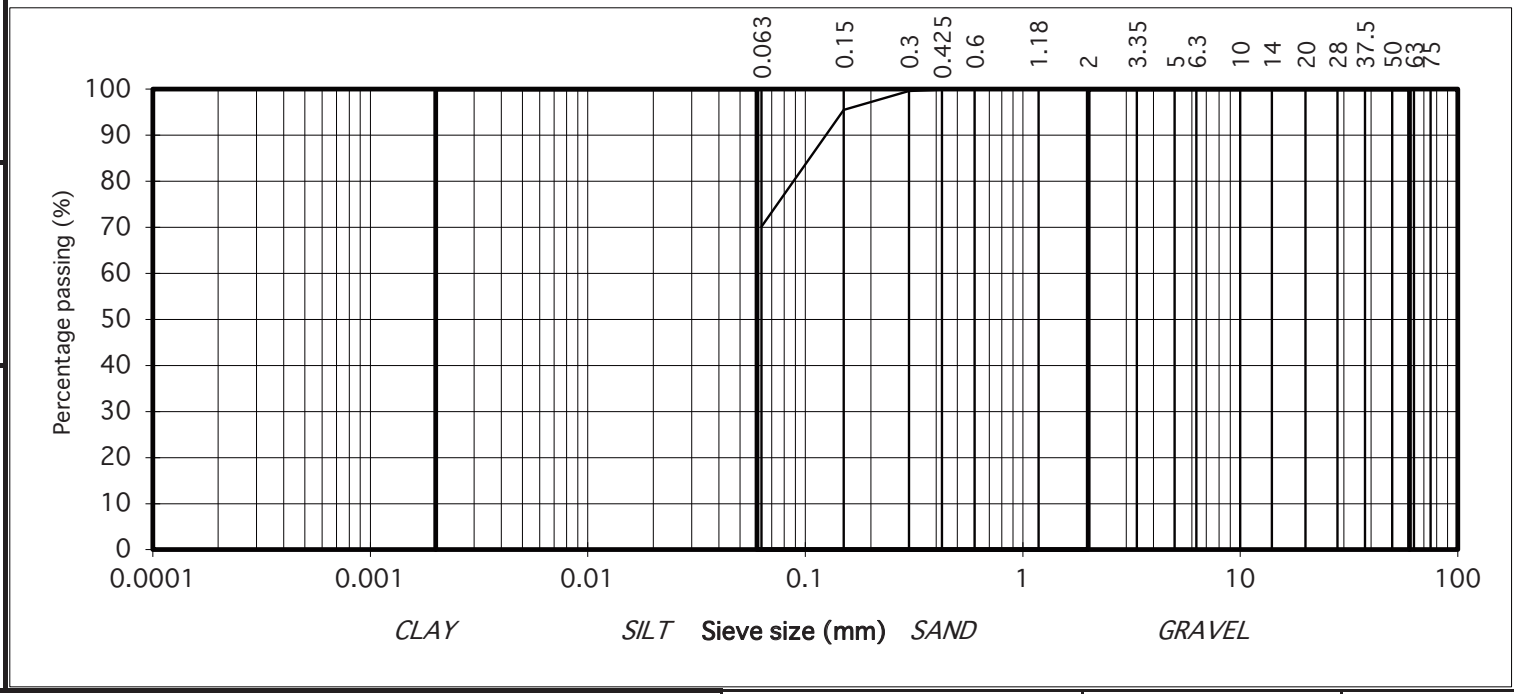
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	100	
0.425	100	
0.3	100	
0.15	96	
0.063	70	SILT/CLAY

Contract No.	25882	Report No.	R169093	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH38			
Sample No.*	AA245034	Lab. Sample No.		A25/1638
Sample Type:	B			
Depth* (m)	8.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		01/05/2025
Description:	Grey slightly sandy, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

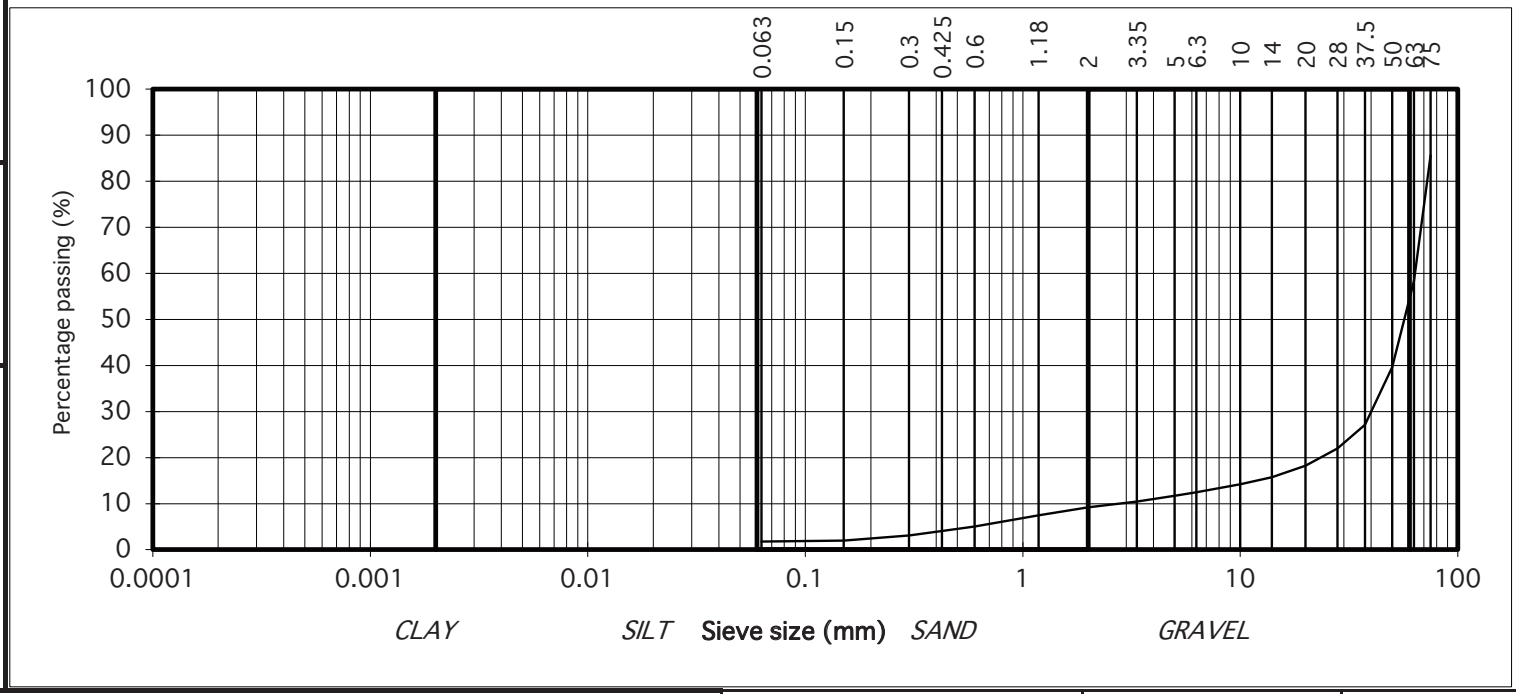
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	86	COBBLES
63	58	
50	40	GRAVEL
37.5	27	
28	22	
20	18	
14	16	
10	14	
6.3	12	
5	12	
3.35	10	
2	9	
1.18	7	SAND
0.6	5	
0.425	4	
0.3	3	
0.15	2	
0.063	2	SILT/CLAY

Contract No. 25882 Report No. R171143
Contract Name : Gas to Edenderry
BH/TP No. BH38
Sample No.* AA245041 Lab. Sample No. A25/1641
Sample Type: B
Depth* (m) 15.00 Customer: MIL
Date Received 25/06/2025 Date Testing started 25/06/2025
Description: Grey slightly clayey/silty, sandy, GRAVEL with many cobbles

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

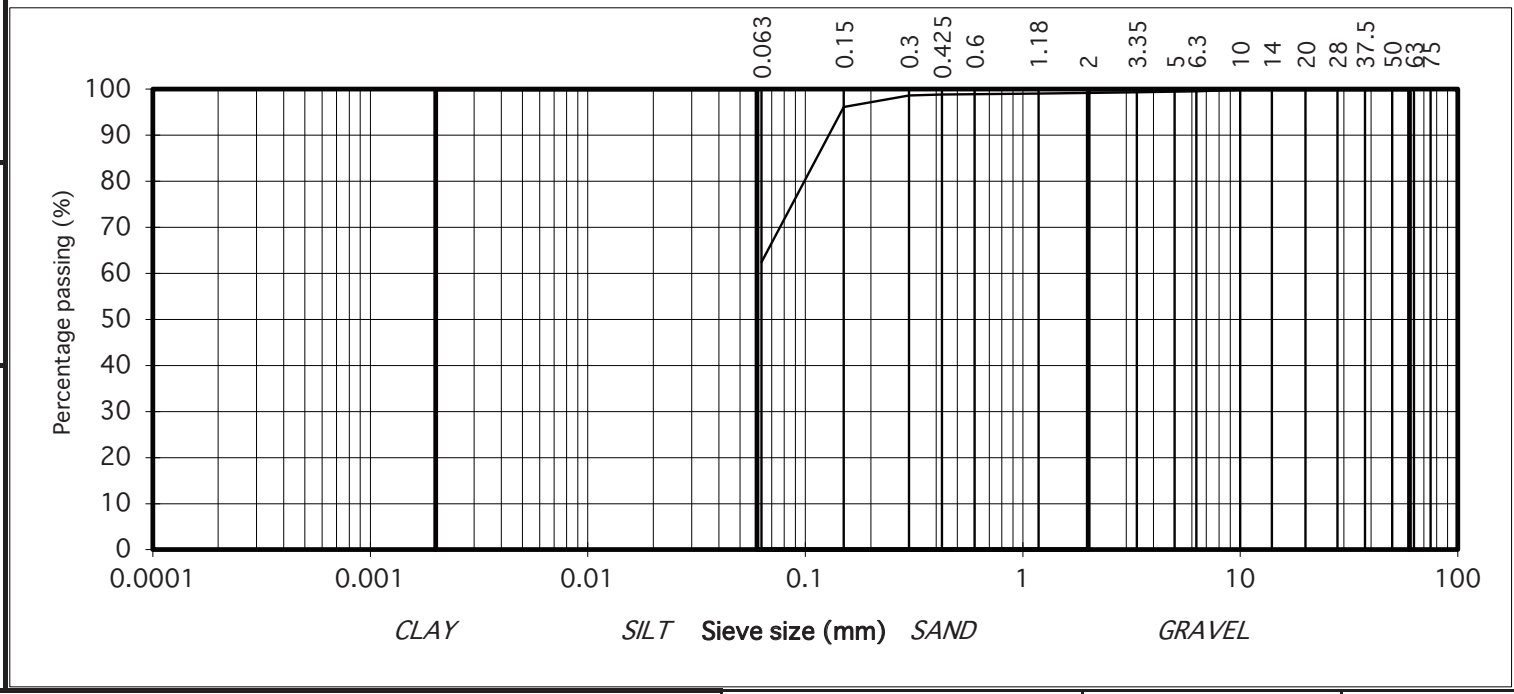
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	99	
3.35	99	
2	99	
1.18	99	SAND
0.6	99	
0.425	99	
0.3	99	
0.15	96	
0.063	62	SILT/CLAY

Contract No.	25882	Report No.	R169096	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH39			
Sample No.*	AA245021	Lab. Sample No.		A25/1643
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		01/05/2025
Description:	Grey sandy, slightly gravelly, SILT/CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

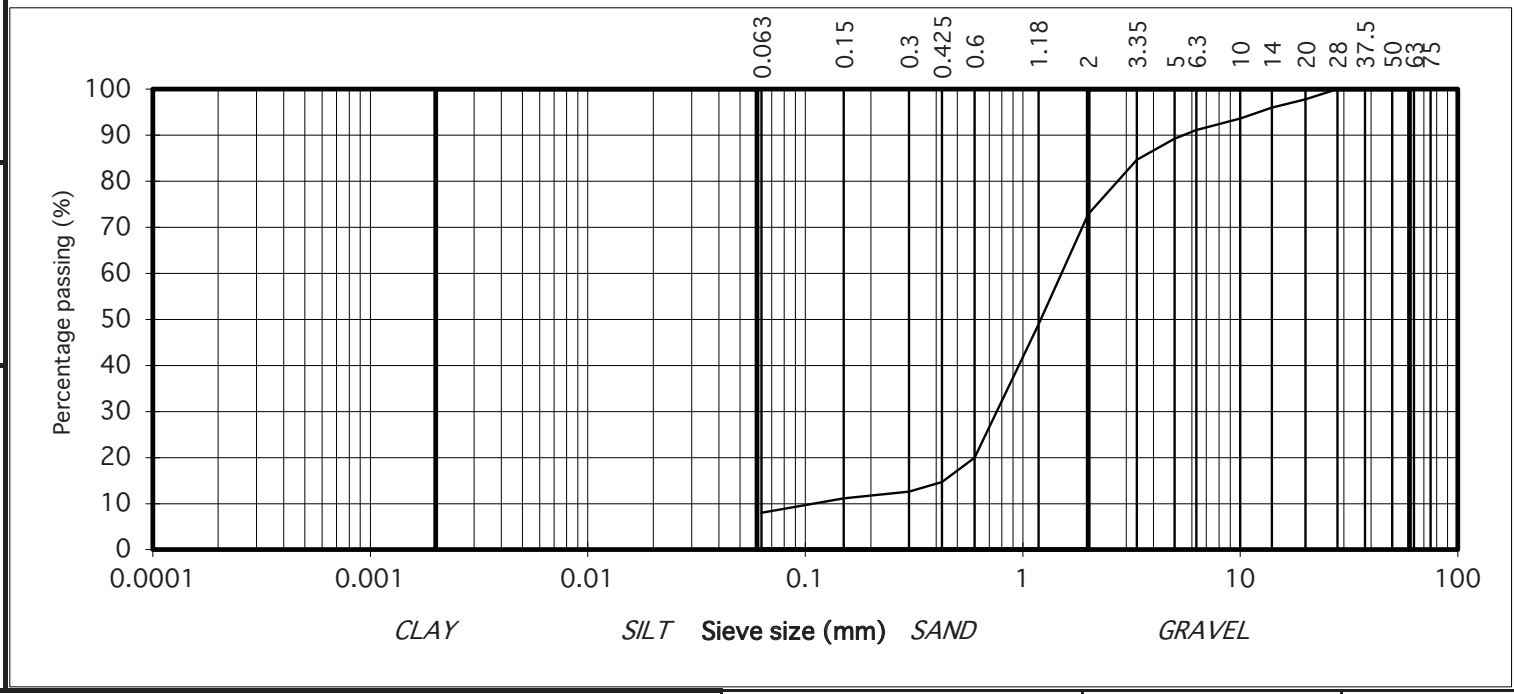
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	98	
14	96	
10	94	
6.3	91	
5	89	
3.35	85	
2	73	
1.18	49	SAND
0.6	20	
0.425	15	
0.3	13	
0.15	11	
0.063	8	SILT/CLAY

Contract No.	25882	Report No.	R169094	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH39			
Sample No.*	AA245027	Lab. Sample No.		A25/1645
Sample Type:	B			
Depth* (m)	13.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		10/05/2025
Description:	Brown clayey/silty, very gravelly, SAND			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

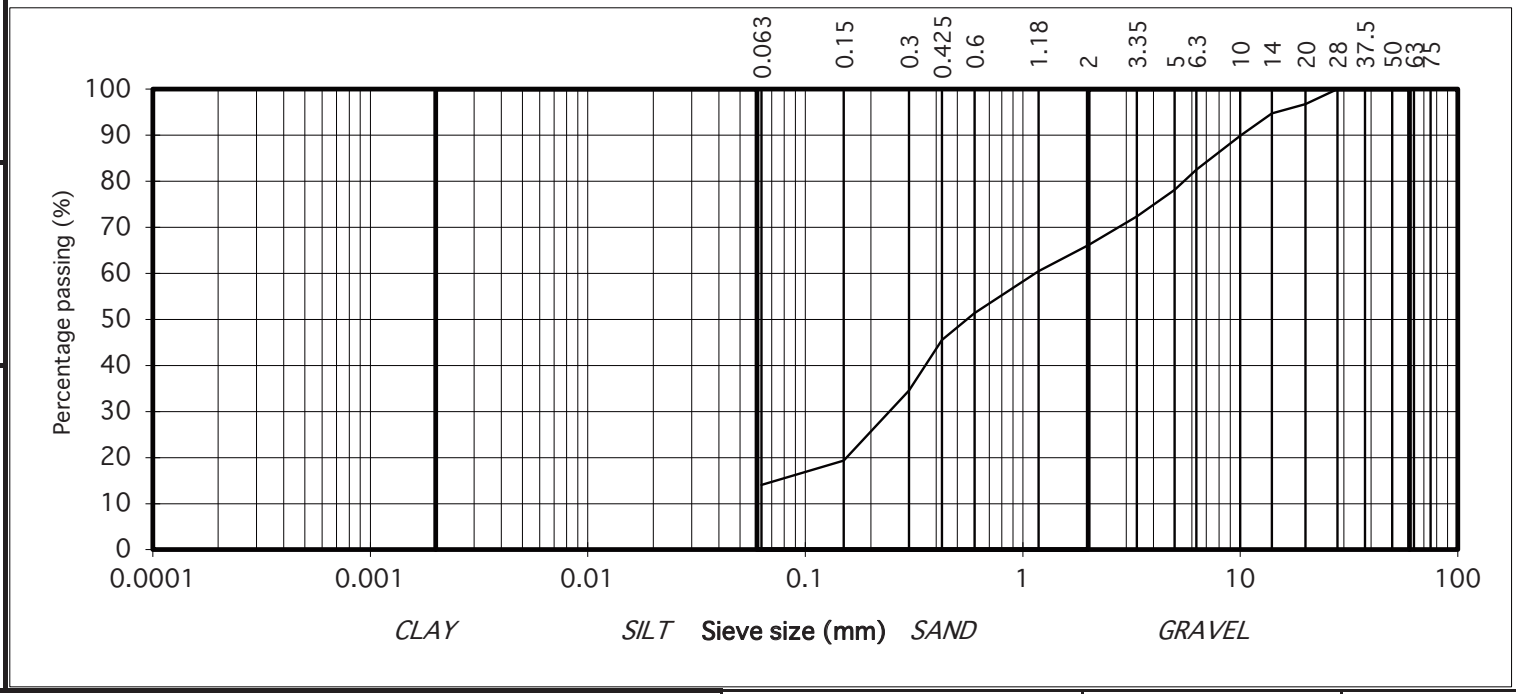
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	97	
14	95	
10	90	
6.3	82	
5	78	
3.35	72	
2	66	
1.18	60	SAND
0.6	51	
0.425	46	
0.3	35	
0.15	19	
0.063	14	SILT/CLAY

Contract No.	25882	Report No.	R171144
Contract Name :	Gas to Edenderry		
BH/TP No.	BH52		
Sample No.*	AA212783	Lab. Sample No.	A25/1646
Sample Type:	B		
Depth* (m)	2.00	Customer:	MIL
Date Received	25/06/2025	Date Testing started	25/06/2025
Description:	Grey clayey/silty, very gravelly, SAND		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Approved by:	Date:	Page no:
H Byrne	29/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

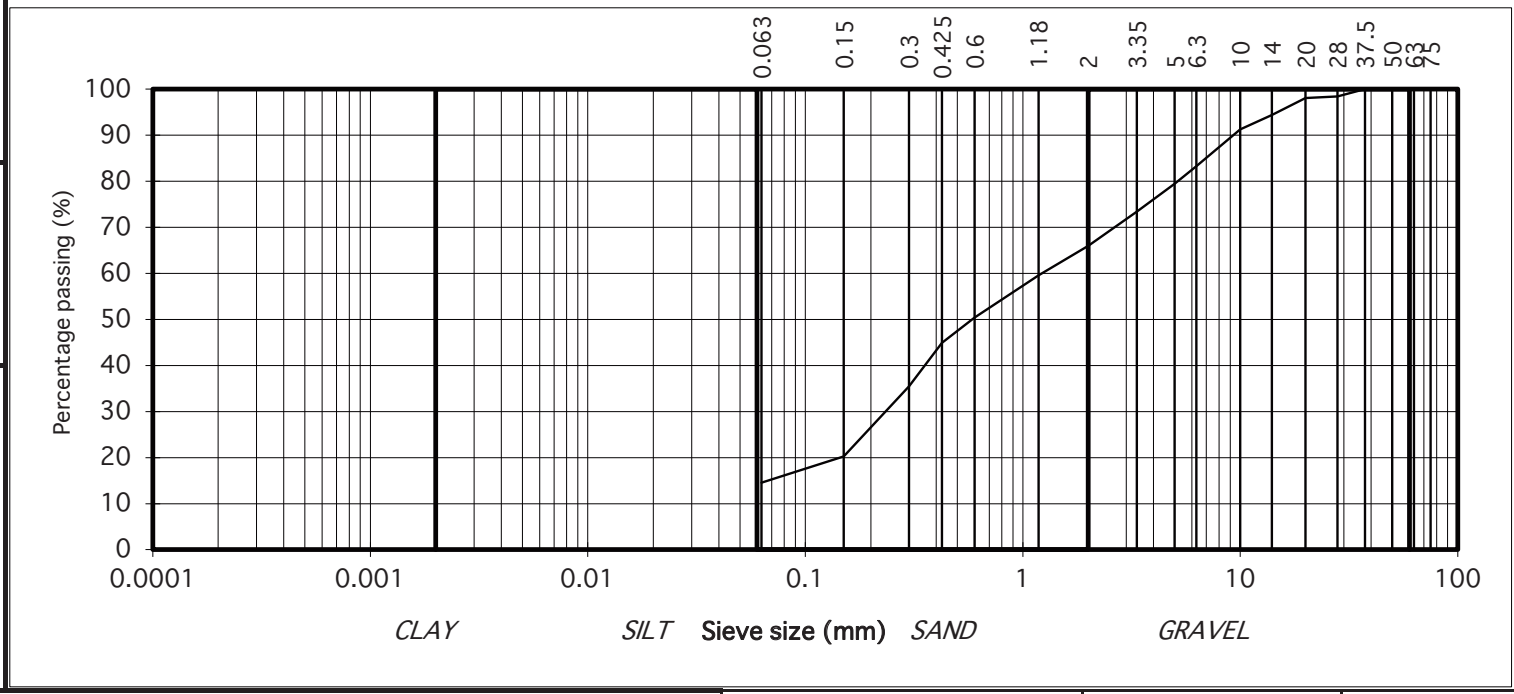
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	98	
20	98	
14	94	
10	91	
6.3	83	
5	79	
3.35	73	
2	66	
1.18	60	SAND
0.6	50	
0.425	45	
0.3	36	
0.15	20	
0.063	15	SILT/CLAY

Contract No.	25882	Report No.	R171145	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH52			
Sample No.*	AA212786	Lab. Sample No.		A25/1647
Sample Type:	B			
Depth* (m)	5.00	Customer:	MIL	
Date Received	25/06/2025	Date Testing started		25/06/2025
Description:	Grey clayey/silty, very gravelly, SAND			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

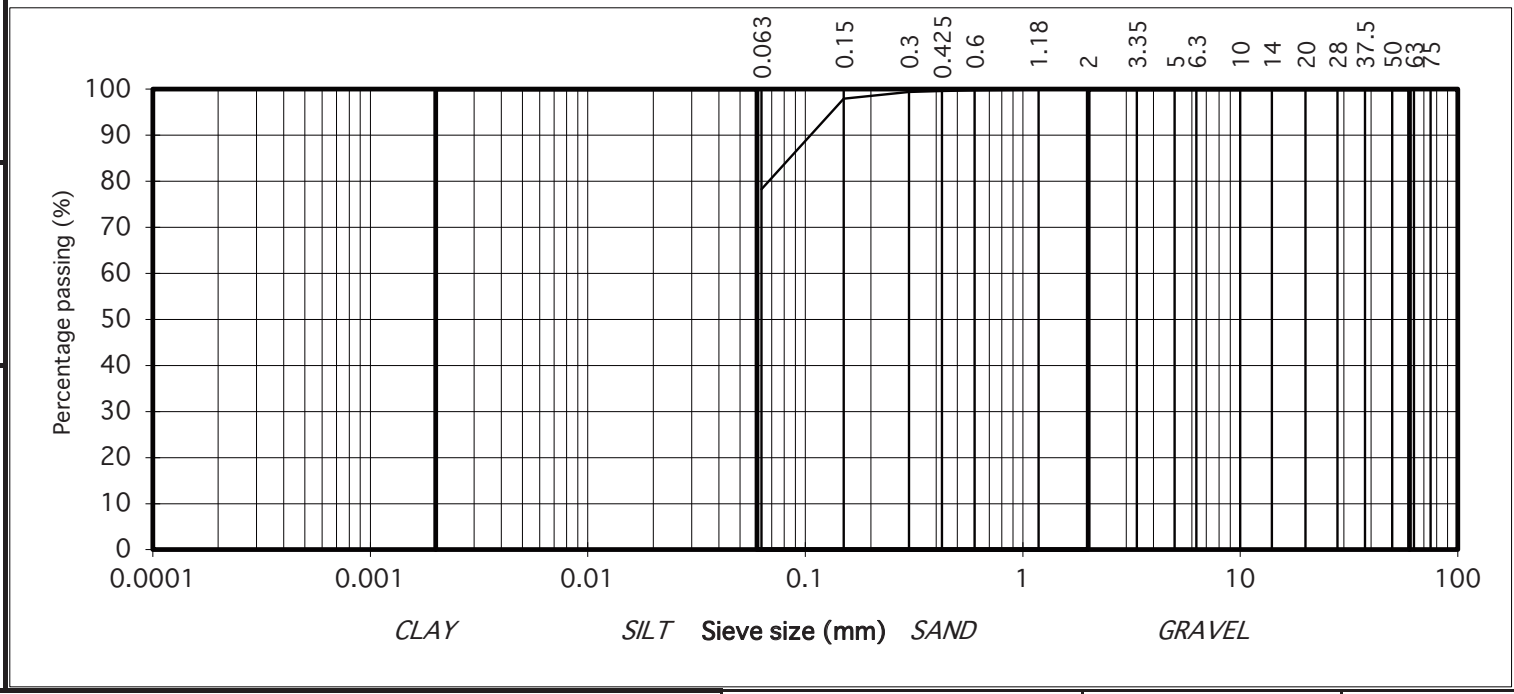
particle size	% passing
75	100
63	100
50	100
37.5	100
28	100
20	100
14	100
10	100
6.3	100
5	100
3.35	100
2	100
1.18	100
0.6	100
0.425	100
0.3	99
0.15	98
0.063	78

COBBLES | GRAVEL | SAND | SILT/CLAY

Contract No. 25882 Report No. R169099
Contract Name : Gas to Edenderry
BH/TP No. BH58
Sample No.* AA212769 Lab. Sample No. A25/1649
Sample Type: B
Depth* (m) 3.00 Customer: MIL
Date Received 01/05/2025 Date Testing started 10/05/2025
Description: Brown slightly sandy, SILT/CLAY

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

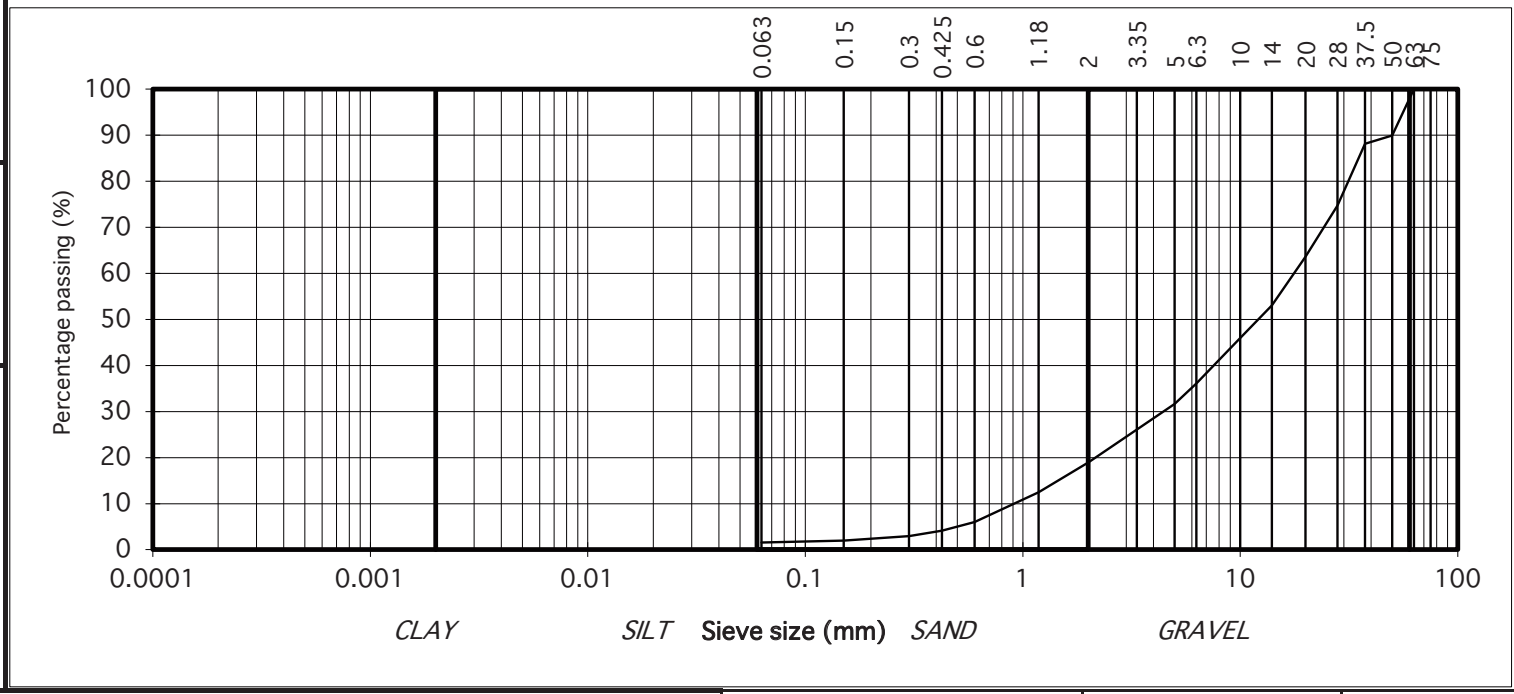
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	90	GRAVEL
37.5	88	
28	75	
20	64	
14	53	
10	46	
6.3	36	
5	32	
3.35	26	
2	19	
1.18	12	SAND
0.6	6	
0.425	4	
0.3	3	
0.15	2	
0.063	2	SILT/CLAY

Contract No.	25882	Report No.	R169100	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH58			
Sample No.*	AA212773	Lab. Sample No.		A25/1651
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		10/05/2025
Description:	Brown slightly silty, sandy, GRAVEL			
Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .			

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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

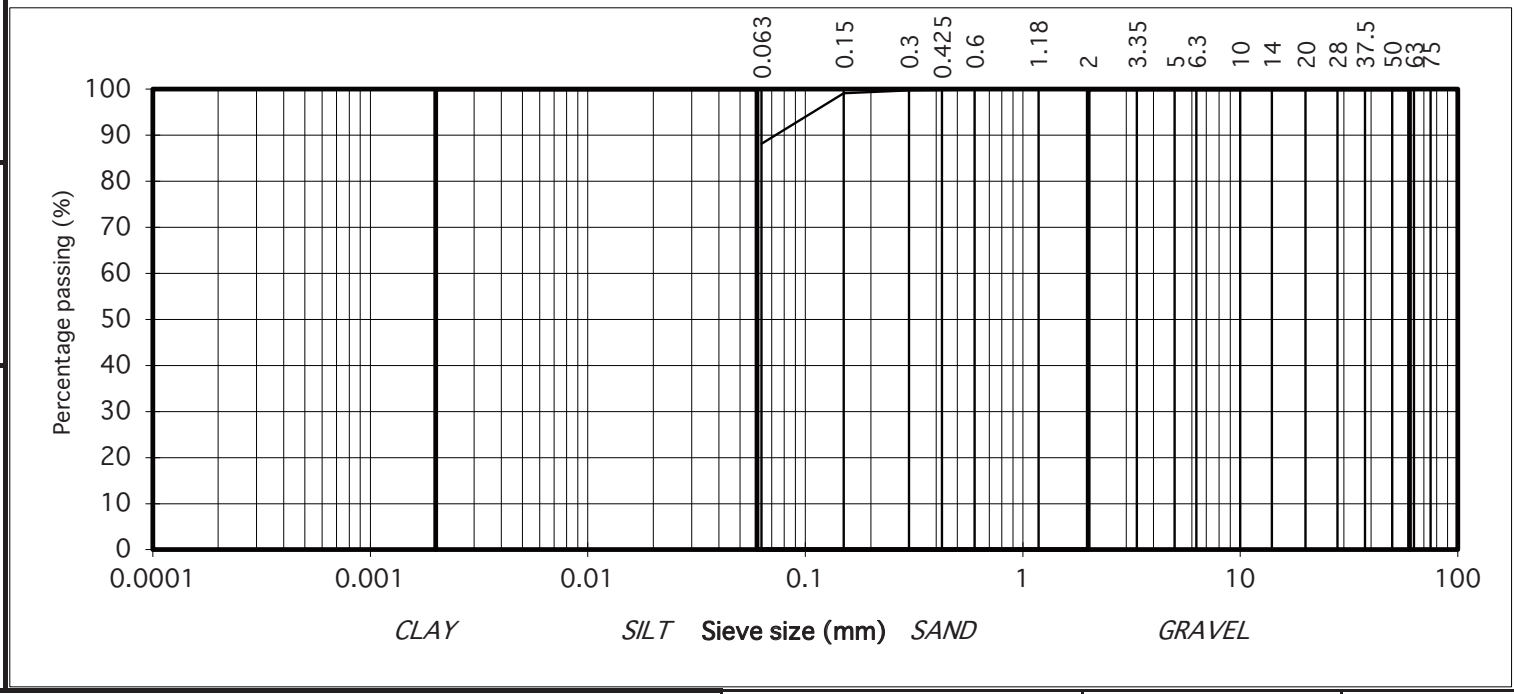
ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	100	
0.425	100	
0.3	100	
0.15	99	
0.063	88	SILT/CLAY

Contract No.	25882	Report No.	R169101	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH59			
Sample No.*	AA245045	Lab. Sample No.		A25/1653
Sample Type:	B			
Depth* (m)	5.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		10/05/2025
Description:	Brown slightly sandy, SILT/CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

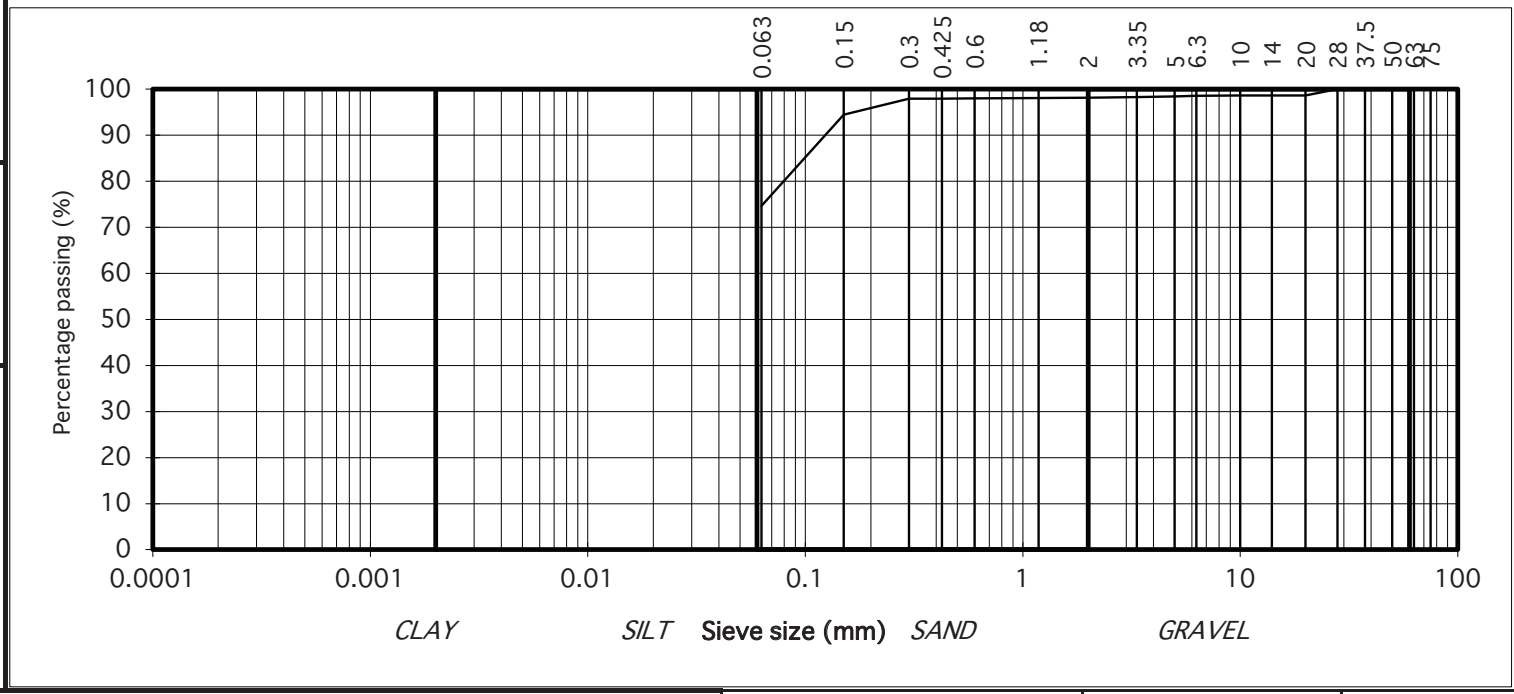
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	99	
14	99	
10	99	
6.3	99	
5	98	
3.35	98	
2	98	
1.18	98	SAND
0.6	98	
0.425	98	
0.3	98	
0.15	94	
0.063	75	SILT/CLAY

Contract No. 25882 Report No. R169102
Contract Name : Gas to Edenderry
BH/TP No. BH59
Sample No.* AA245047 Lab. Sample No. A25/1654
Sample Type: B
Depth* (m) 7.00 Customer: MIL
Date Received 01/05/2025 Date Testing started 01/05/2025
Description: Grey slightly sandy, slightly gravelly, SILT/CLAY

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

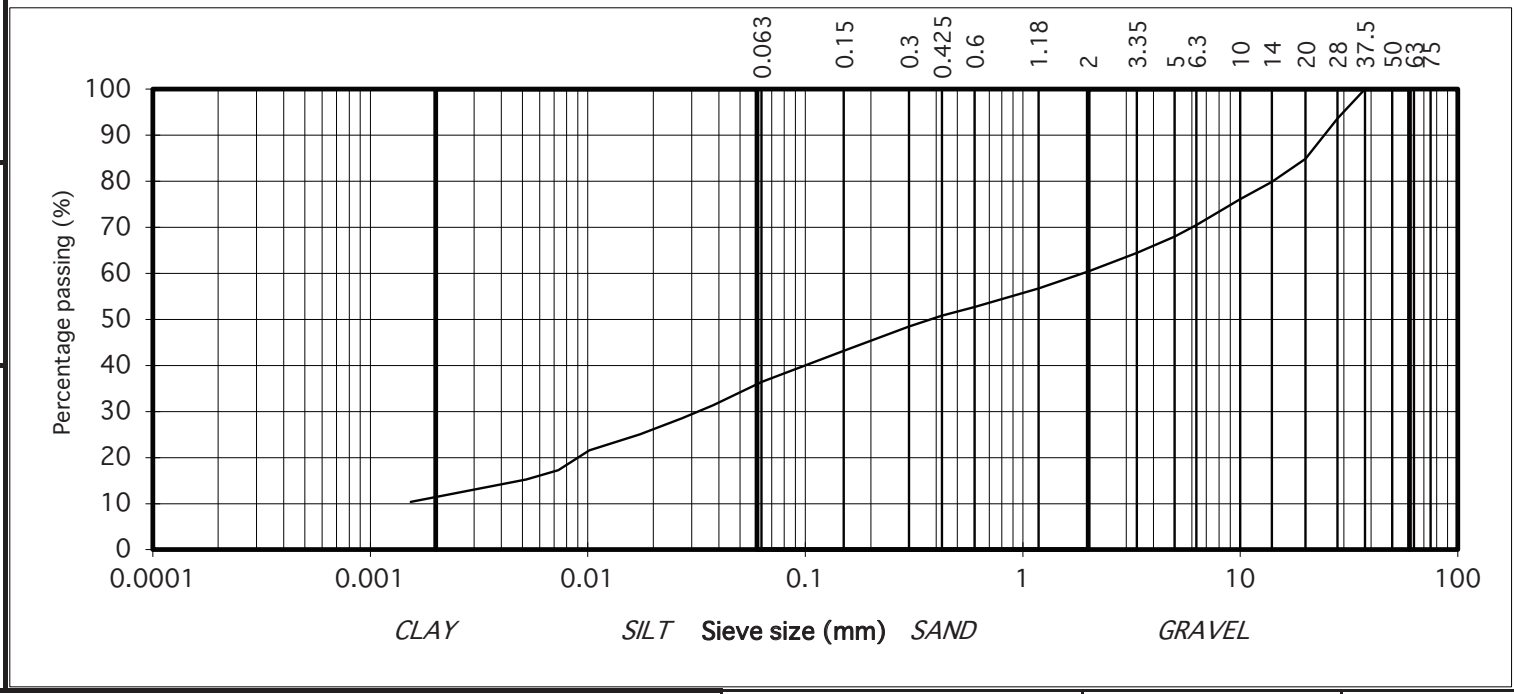
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	94	
20	85	
14	80	
10	76	
6.3	71	
5	68	
3.35	64	
2	60	
1.18	57	SAND
0.6	53	
0.425	51	
0.3	48	
0.15	43	
0.063	36	SILT/CLAY
0.038	31	
0.027	29	
0.017	25	
0.010	22	
0.007	17	
0.005	15	
0.002	10	

Contract No.	25882	Report No.	R169103	
Contract Name :	Gas to Edenderry			
BH/TP No.	TP1.1			
Sample No.*	AA245864	Lab. Sample No.		A25/1656
Sample Type:	B			
Depth* (m)	3.20	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		21/05/2025
Description:	Grey slightly sandy, gravelly, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

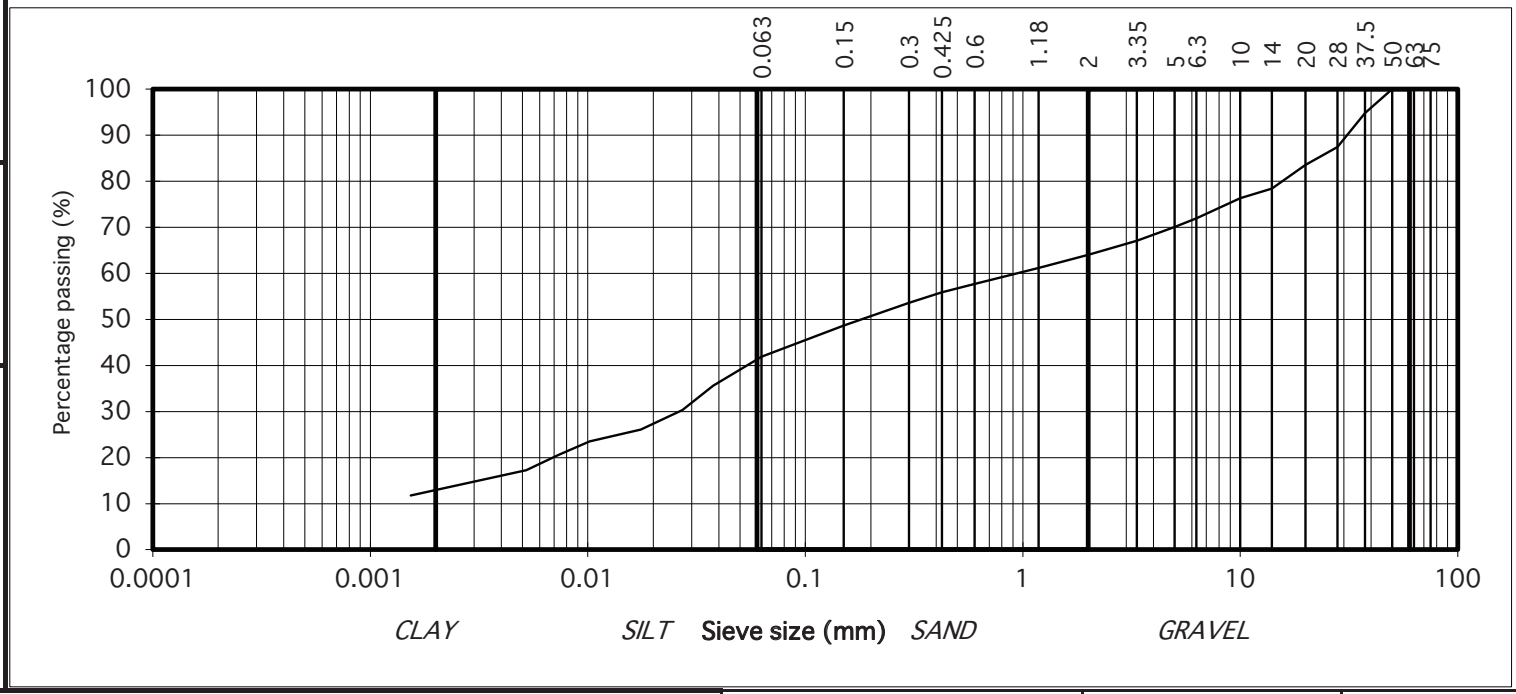
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	95	
28	87	
20	84	
14	78	
10	76	
6.3	72	
5	70	
3.35	67	
2	64	
1.18	61	SAND
0.6	58	
0.425	56	
0.3	54	
0.15	49	
0.063	42	SILT/CLAY
0.038	36	
0.027	30	
0.018	26	
0.010	24	
0.007	21	
0.005	17	
0.002	12	

Contract No.	25882	Report No.	R169104	
Contract Name :	Gas to Edenderry			
BH/TP No.	TP1.2			
Sample No.*	AA245864	Lab. Sample No.		A25/1658
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		21/05/2025
Description:	Grey slightly sandy, gravelly, CLAY			

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

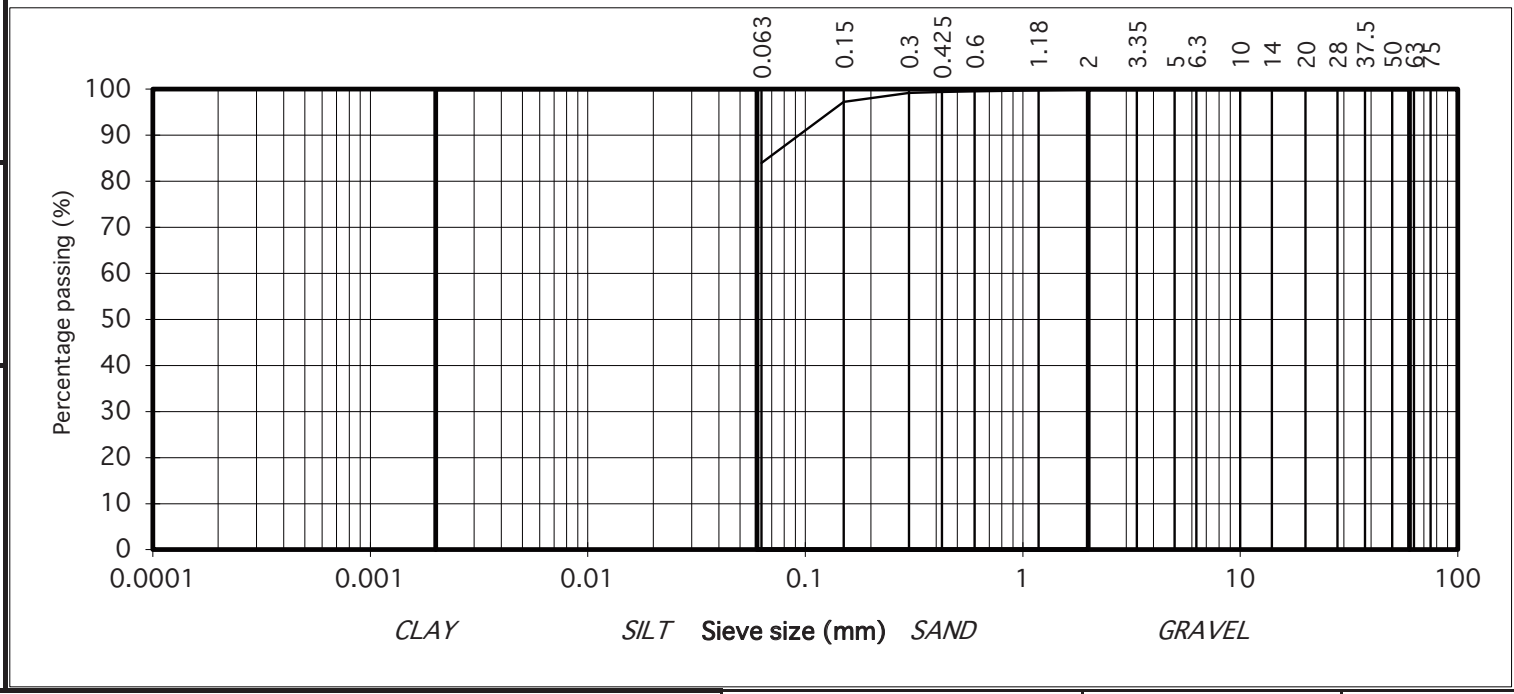
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	100	
0.425	99	
0.3	99	
0.15	97	
0.063	84	SILT/CLAY

Contract No.	25882	Report No.	R169105	
Contract Name :	Gas to Edenderry			
BH/TP No.	TP2.2			
Sample No.*	AA235894	Lab. Sample No.		A25/1662
Sample Type:	B			
Depth* (m)	3.50	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		21/05/2025
Description:	Grey slightly sandy, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

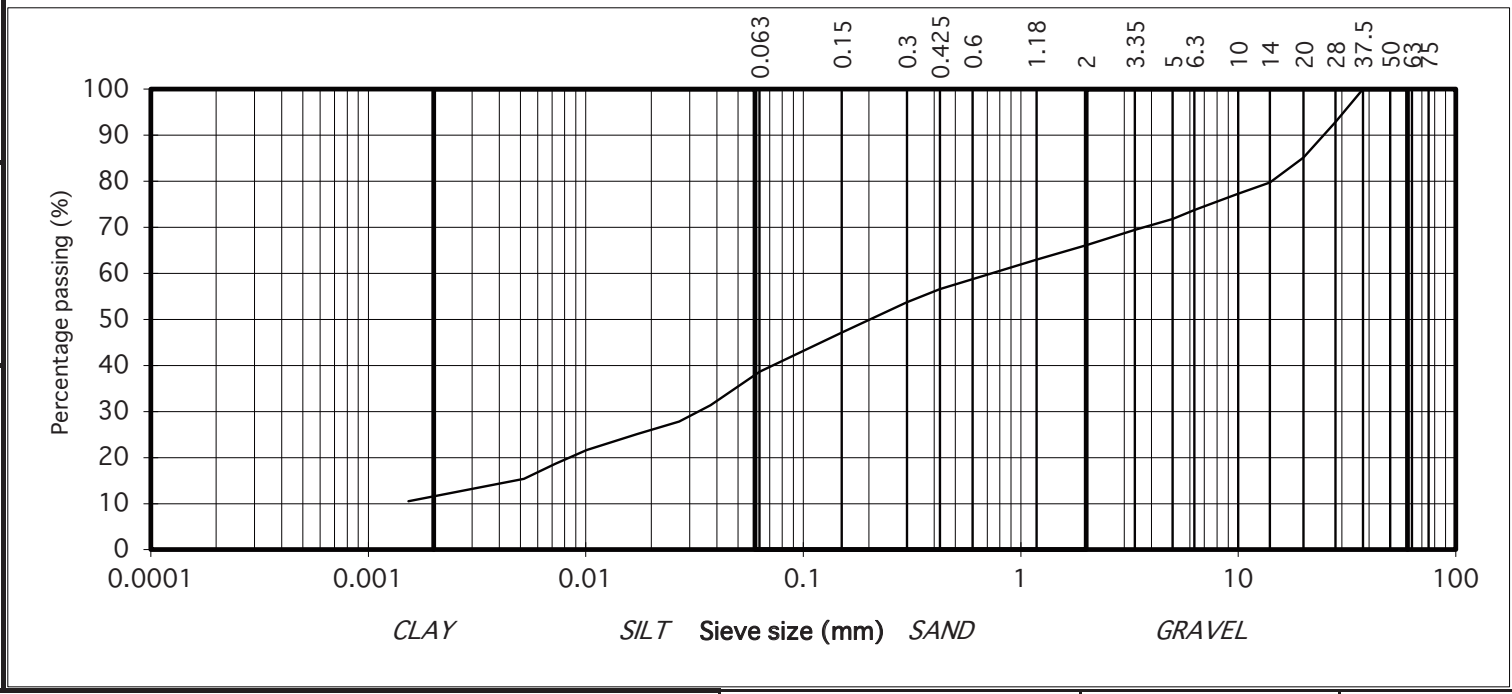
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	93	
20	85	
14	80	
10	77	
6.3	74	
5	72	
3.35	69	
2	66	
1.18	63	SAND
0.6	59	
0.425	57	
0.3	54	
0.15	47	
0.063	39	SILT/CLAY
0.037	31	
0.027	28	
0.017	25	
0.010	22	
0.007	19	
0.005	15	
0.002	11	

Contract No.	25882	Report No.	R169106	
Contract Name :	Gas to Edenderry			
BH/TP No.	TP3.2			
Sample No.*	AA235897	Lab. Sample No.		A25/1664
Sample Type:	B			
Depth* (m)	2.00	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		21/05/2025
Description:	Brown slightly sandy, slightly gravelly, CLAY			
Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	93	
28	87	
20	82	
14	78	
10	75	
6.3	70	
5	68	
3.35	64	
2	60	
1.18	57	SAND
0.6	53	
0.425	51	
0.3	48	
0.15	42	
0.063	35	SILT/CLAY
0.038	28	
0.027	25	
0.017	22	
0.010	20	
0.007	18	
0.005	16	
0.002	10	

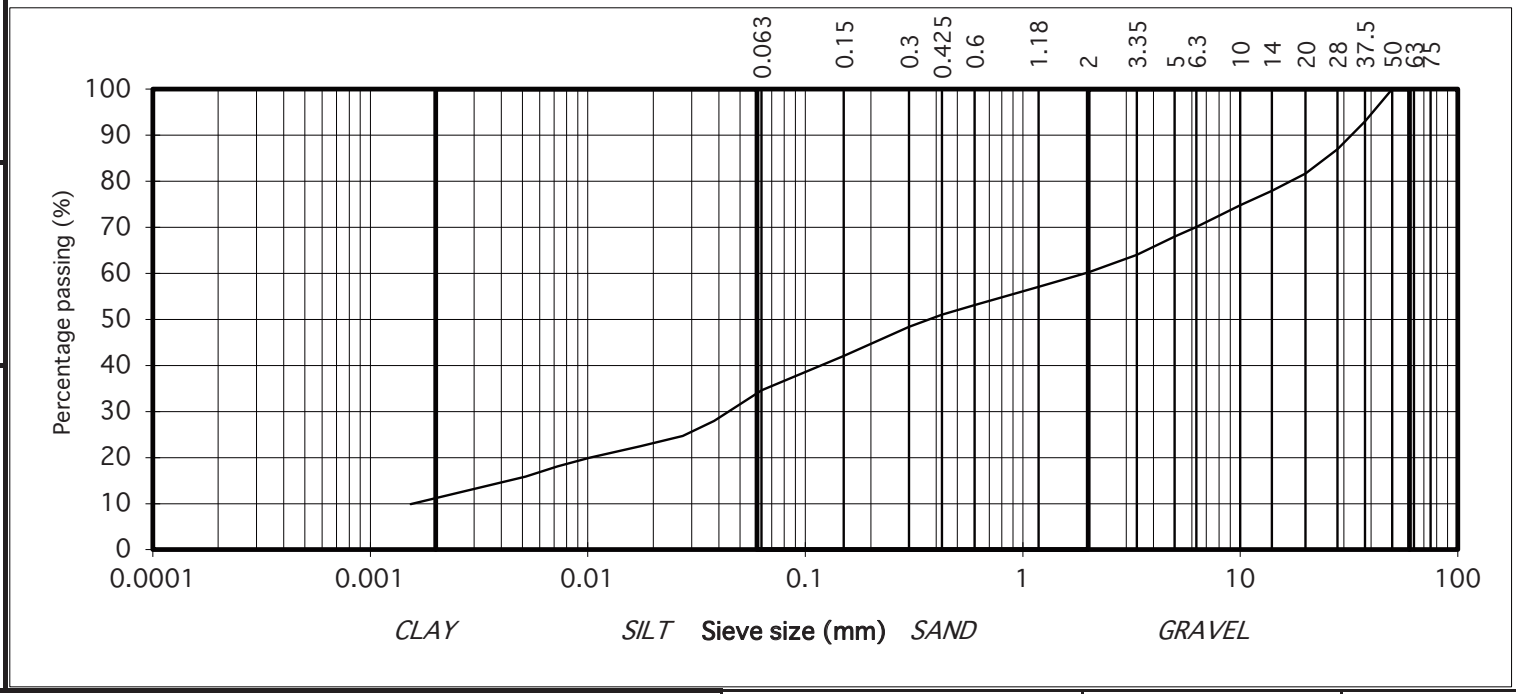
Contract No.	25882	Report No.	R169107	
Contract Name :	Gas to Edenderry			
BH/TP No.	TP3.4			
Sample No.*	AA245867	Lab. Sample No.		A25/1667
Sample Type:	B			
Depth* (m)	2.20	Customer:	MIL	
Date Received	01/05/2025	Date Testing started		22/05/2025
Description:	Brown slightly sandy, gravelly, CLAY			

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Remarks

Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.1331

Report No. **R169108** Contract No. 25882 Contract Name: Gas to Edenderry GNI

Customer MIL

Samples Received: 22/05/25 Date Tested: Various

BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH26	AA245049	2.0	A25/1896	B	11.2	26	14	12	59	WS	4.4	C L	Brown sandy gravelly CLAY
BH27	AA213951	1.0	A25/1898	B	8.9	24	13	11	64	WS	4.4	C L	Brown sandy gravelly CLAY
BH27A	AA213956	5.0	A25/1900	B	6.6	20	NP	NP	50	WS	4.4		Grey silty, very sandy, GRAVEL with occasional cobbles
BH28	AA222765	1.5	A25/1901	B	10.6	22	NP	NP	66	WS	4.4		Brown sandy gravelly SILT
BH28A	AA222767	3.0	A25/1902	B	5.5	20	NP	NP	51	WS	4.4		Brown silty, sandy, GRAVEL with some cobbles
BH28A	AA222773	9.0	A25/1905	B	3.7	24	NP	NP	9	WS	4.4		Brown slightly silty, slightly sandy, GRAVEL with many cobbles
BH29	AA223246	1.0	A25/1906	B	15.3	24	NP	NP	55	WS	4.4		Brown sandy gravelly SILT
BH33	AA222758	2.5	A25/1909	B	12.3	26	14	12	61	WS	4.4	C L	Brown sandy, slightly gravelly, CLAY
BH33	AA222761	5.5	A25/1910	B	10.6	23	NP	NP	54	WS	4.4		Brown sandy gravelly SILT
BH33	AA222763	7.5	A25/1911	B	12.7	24	13	11	61	WS	4.4	C L	Brown slightly sandy, slightly gravelly, CLAY
BH55	AA213963	2.0	A25/1912	B	16.6	25	NP	NP	81	WS	4.4		Brown sandy gravelly SILT
BH55	AA213968	7.0	A25/1913	B	21.3	25	NP	NP	99	WS	4.4		Grey sandy SILT

Preparation: WS - Wet sieved
AR - As received
NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method
4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed
U - Undisturbed

Remarks:
Results relate only to the specimen tested,in as received condition unless otherwise noted.
NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12.
Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information.
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IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by: H Byrne

Date: 29/07/25

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

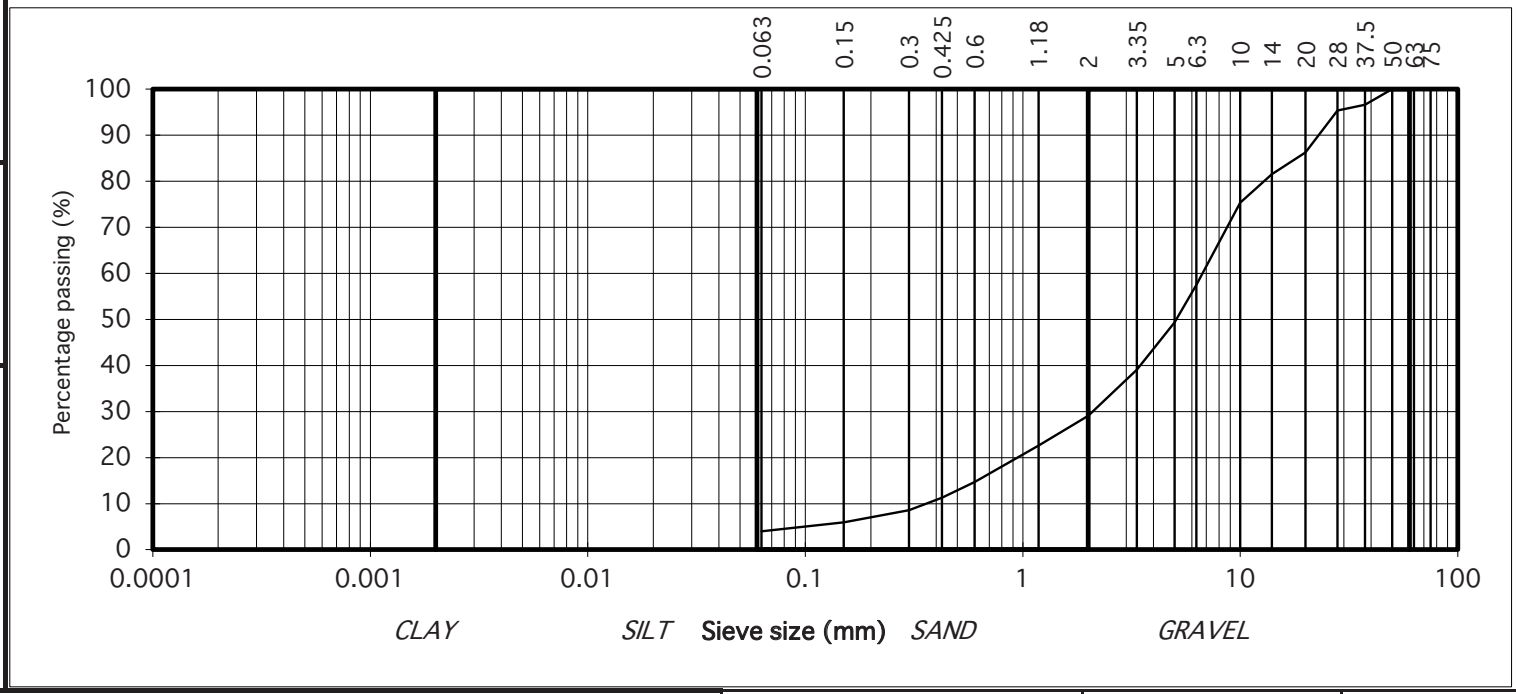
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	97	
28	95	
20	86	
14	82	
10	75	
6.3	57	
5	49	
3.35	39	
2	29	
1.18	23	SAND
0.6	15	
0.425	11	
0.3	9	
0.15	6	
0.063	4	SILT/CLAY

Contract No. 25882 Report No. R171139
Contract Name : Gas to Edenderry
BH/TP No. BH26
Sample No.* AA245051 Lab. Sample No. A25/1897
Sample Type: B
Depth* (m) 4.00 Customer: MIL
Date Received 08/05/2025 Date Testing started 25/06/2025
Description: Grey slightly clayey/silty, very sandy, GRAVEL

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	29/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

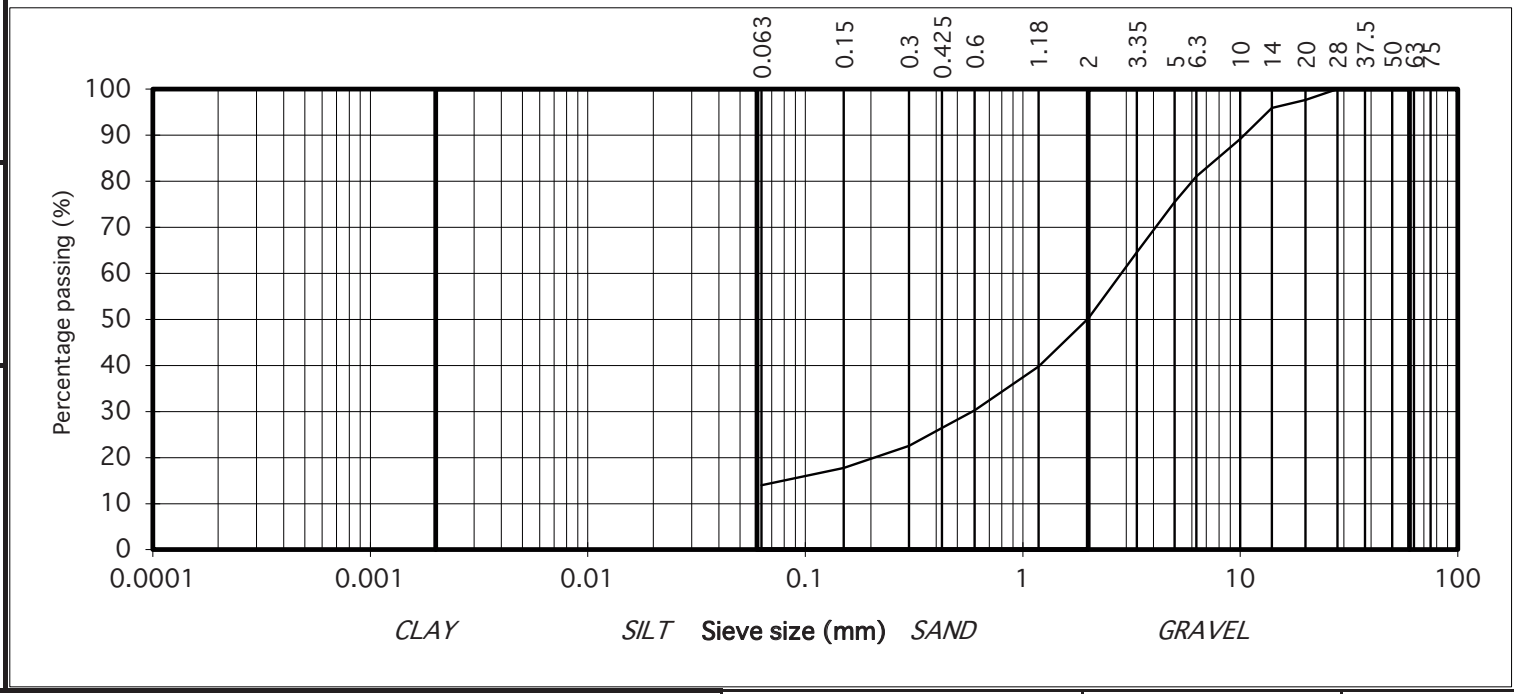
particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	98	
14	96	
10	89	
6.3	81	
5	75	
3.35	65	
2	50	
1.18	40	SAND
0.6	30	
0.425	26	
0.3	23	
0.15	18	
0.063	14	SILT/CLAY

Contract No.	25882	Report No.	R171140	
Contract Name :	Gas to Edenderry			
BH/TP No.	BH27			
Sample No.*	AA213953	Lab. Sample No.		A25/1899
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	08/05/2025	Date Testing started		25/06/2025
Description:	Brown clayey/silty, very sandy, GRAVEL			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

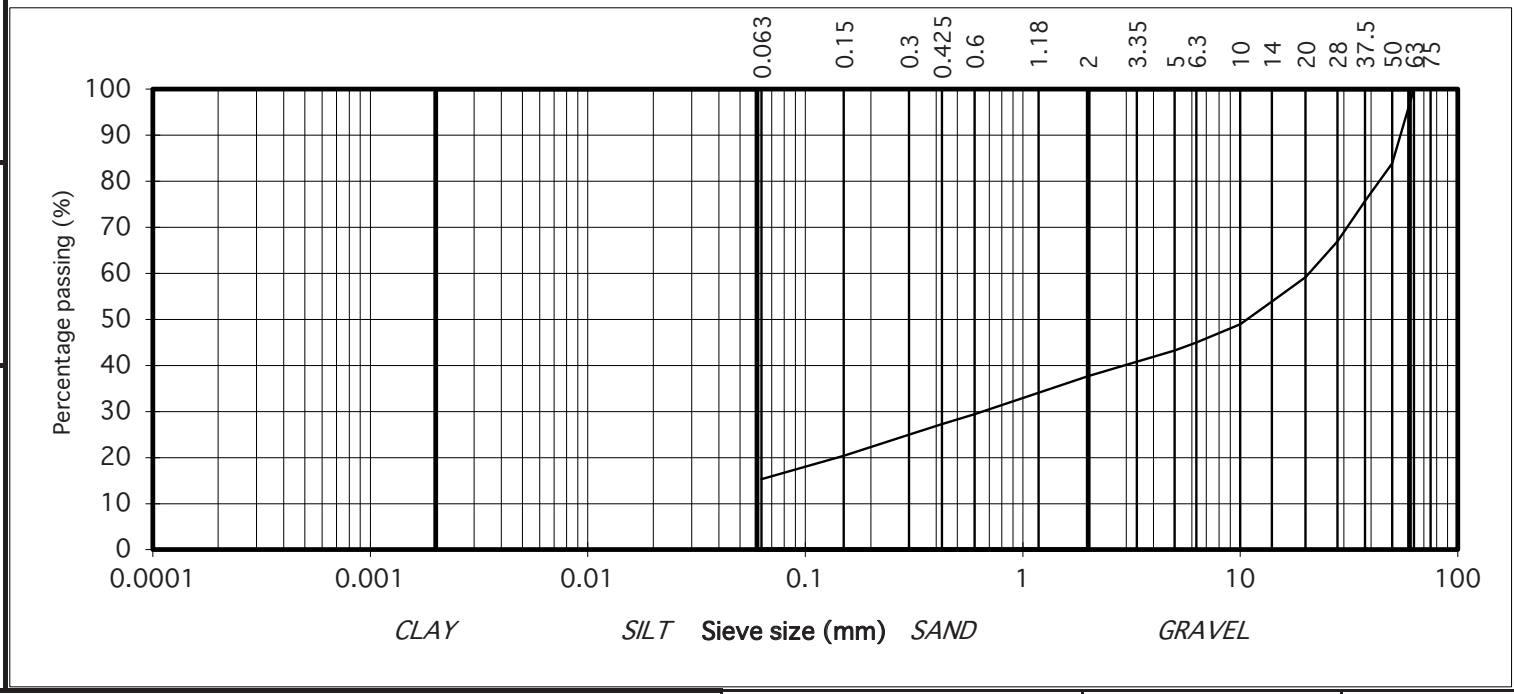
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	84	GRAVEL
37.5	76	
28	67	
20	59	
14	54	
10	49	
6.3	45	
5	43	
3.35	41	
2	38	
1.18	34	SAND
0.6	29	
0.425	27	
0.3	25	
0.15	20	
0.063	15	SILT/CLAY

Contract No. 25882 Report No. R169076
Contract Name : Gas to Edenderry GNI
BH/TP No. BH27A
Sample No.* AA213956 Lab. Sample No. A25/1900
Sample Type: B
Depth* (m) 5.00 Customer: MIL
Date Received 22/05/2025 Date Testing started 22/05/2025
Description: Grey silty, very sandy, GRAVEL with occasional cobbles

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

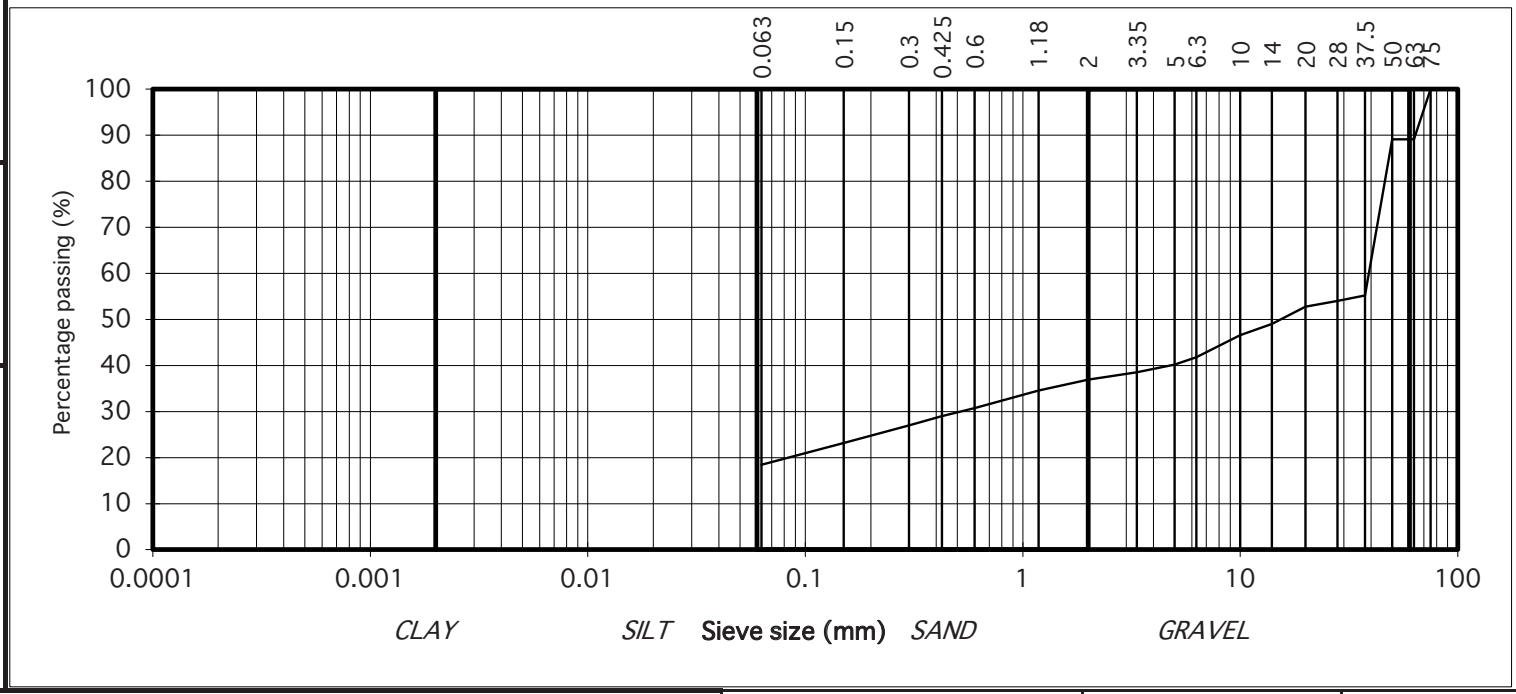
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	89	
50	89	GRAVEL
37.5	55	
28	54	
20	53	
14	49	
10	47	
6.3	42	
5	40	
3.35	39	
2	37	
1.18	35	SAND
0.6	31	
0.425	29	
0.3	27	
0.15	23	
0.063	18	SILT/CLAY

Contract No.	25882	Report No.	R169077	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH28A			
Sample No.*	AA222767	Lab. Sample No.		A25/1902
Sample Type:	B			
Depth* (m)	3.00	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		22/05/2025
Description:	Brown silty, sandy, GRAVEL with some cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

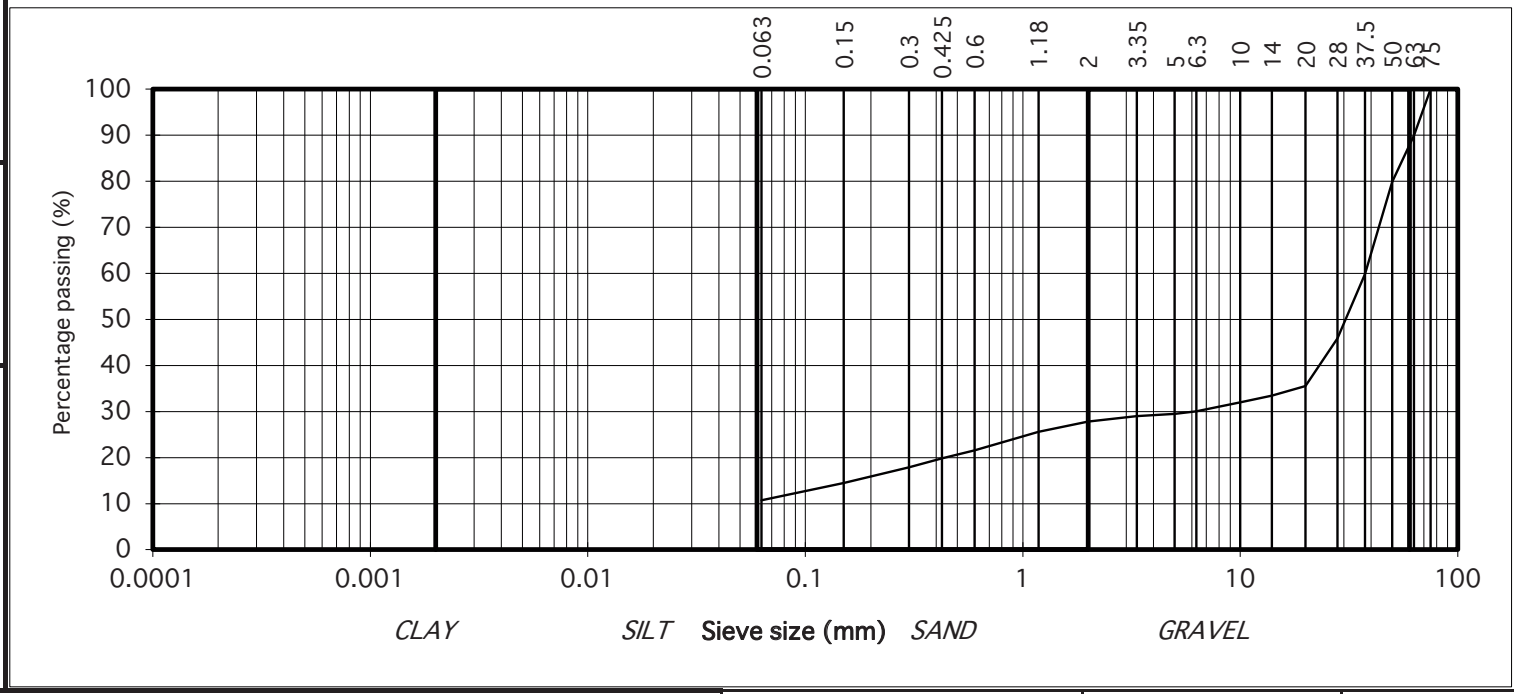
particle size	% passing	
75	100	COBBLES
63	90	
50	80	GRAVEL
37.5	60	
28	46	
20	36	
14	33	
10	32	
6.3	30	
5	30	
3.35	29	
2	28	
1.18	26	SAND
0.6	22	
0.425	20	
0.3	18	
0.15	14	
0.063	11	SILT/CLAY

Contract No.	25882	Report No.	R169078
Contract Name :	Gas to Edenderry GNI		
BH/TP No.	BH28A		
Sample No.*	AA222769	Lab. Sample No.	A25/1903
Sample Type:	B		
Depth* (m)	5.00	Customer:	MIL
Date Received	22/05/2025	Date Testing started	22/05/2025
Description:	Brown clayey/silty, sandy, GRAVEL with some cobbles		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

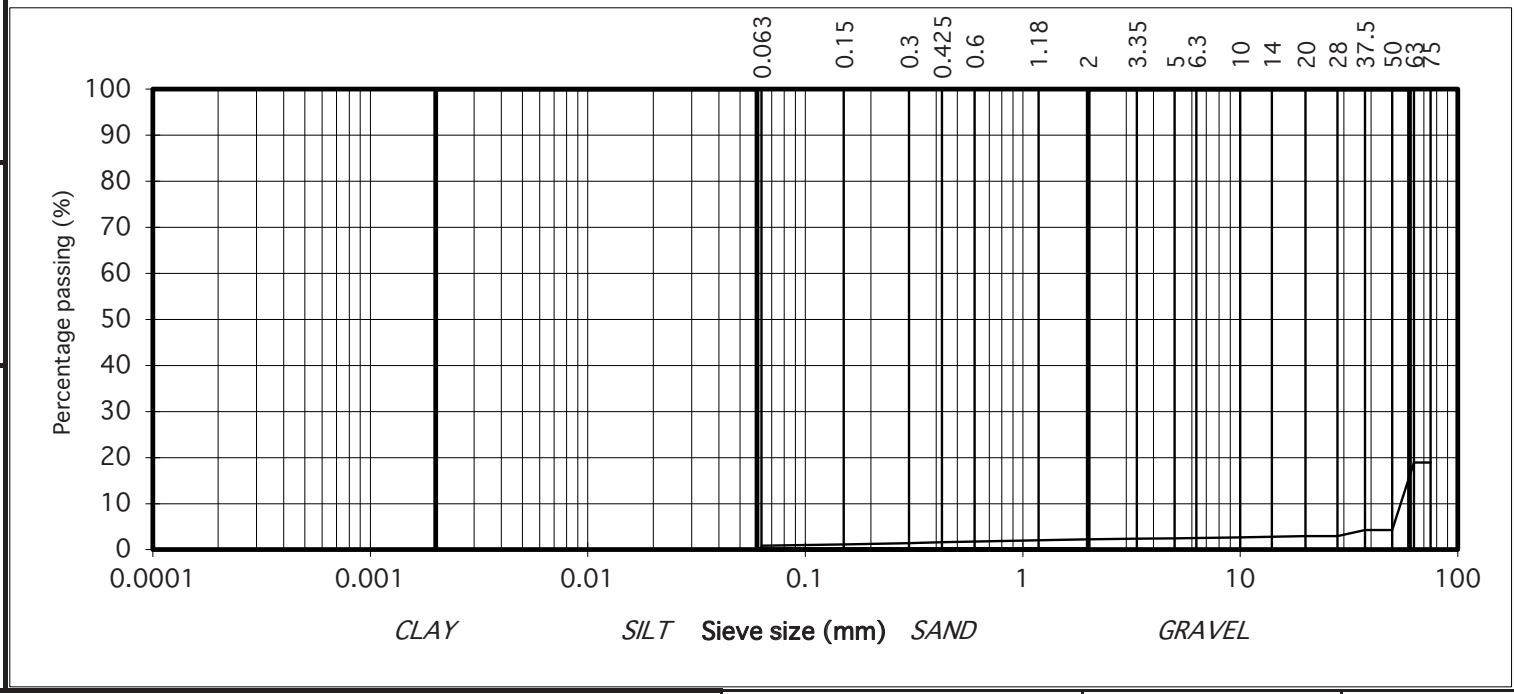
particle size	% passing	
75	19	COBBLES
63	19	
50	4	GRAVEL
37.5	4	
28	3	
20	3	
14	3	
10	3	
6.3	3	
5	2	
3.35	2	
2	2	
1.18	2	SAND
0.6	2	
0.425	2	
0.3	1	
0.15	1	
0.063	1	SILT/CLAY

Contract No.	25882	Report No.	R169161	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH28A			
Sample No.*	AA222771	Lab. Sample No.		A25/1904
Sample Type:	B			
Depth* (m)	7.00	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		22/05/2025
Description:	COBBLES with brown slightly clayey/silty, slightly sandy, gravel			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	06/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

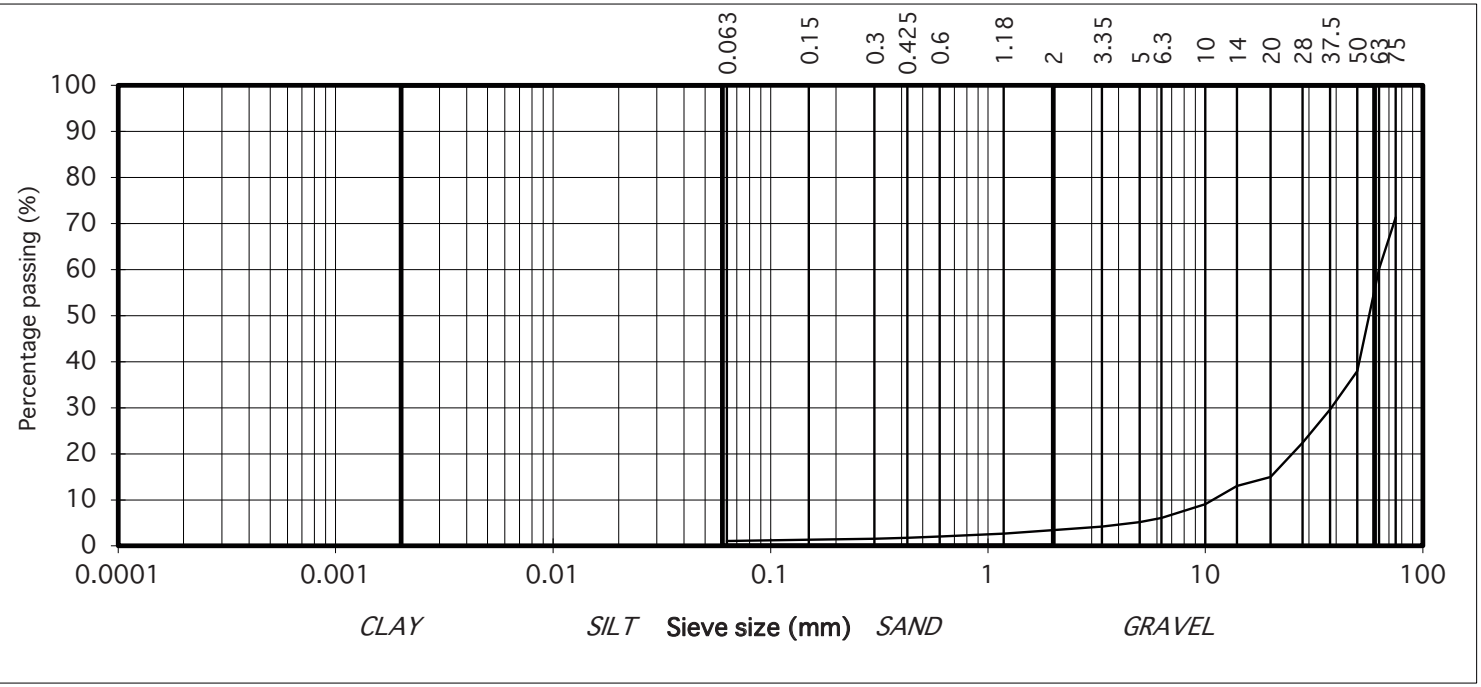
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	71	COBBLES
63	60	
50	38	GRAVEL
37.5	30	
28	22	
20	15	
14	13	
10	9	
6.3	6	
5	5	
3.35	4	
2	3	
1.18	3	SAND
0.6	2	
0.425	2	
0.3	2	
0.15	1	
0.063	1	SILT/CLAY

Contract No.	25882	Report No.	R169079	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH28A			
Sample No.*	AA222773	Lab. Sample No.		A25/1905
Sample Type:	B			
Depth* (m)	9.00	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		22/05/2025
Description:	Brown slightly silty, slightly sandy, GRAVEL with many cobbles			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

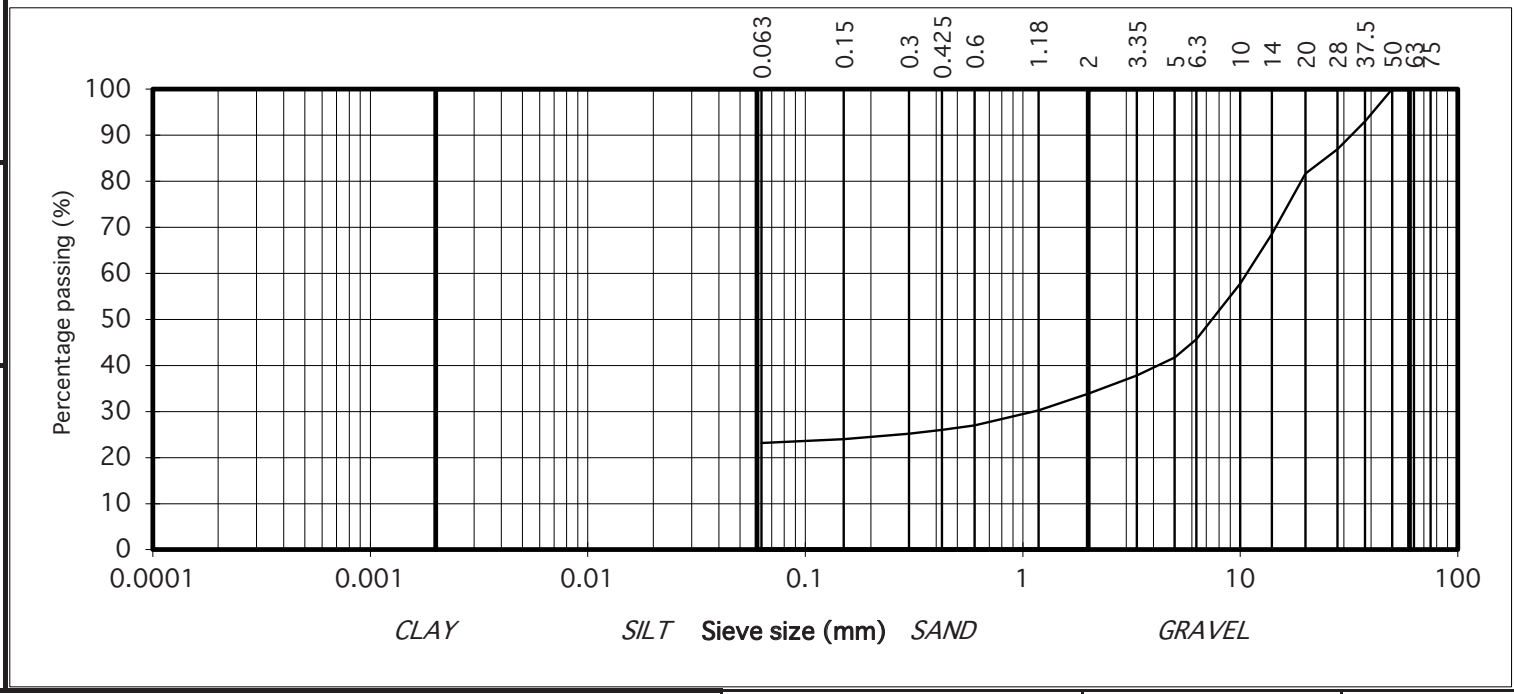
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	93	
28	87	
20	82	
14	69	
10	58	
6.3	46	
5	42	
3.35	38	
2	34	
1.18	30	SAND
0.6	27	
0.425	26	
0.3	25	
0.15	24	
0.063	23	SILT/CLAY

Contract No.	25882	Report No.	R169080	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH29			
Sample No.*	AA223249	Lab. Sample No.		A25/1907
Sample Type:	B			
Depth* (m)	4.00	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		22/05/2025
Description:	Brown slightly sandy, very gravelly, SILT/CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

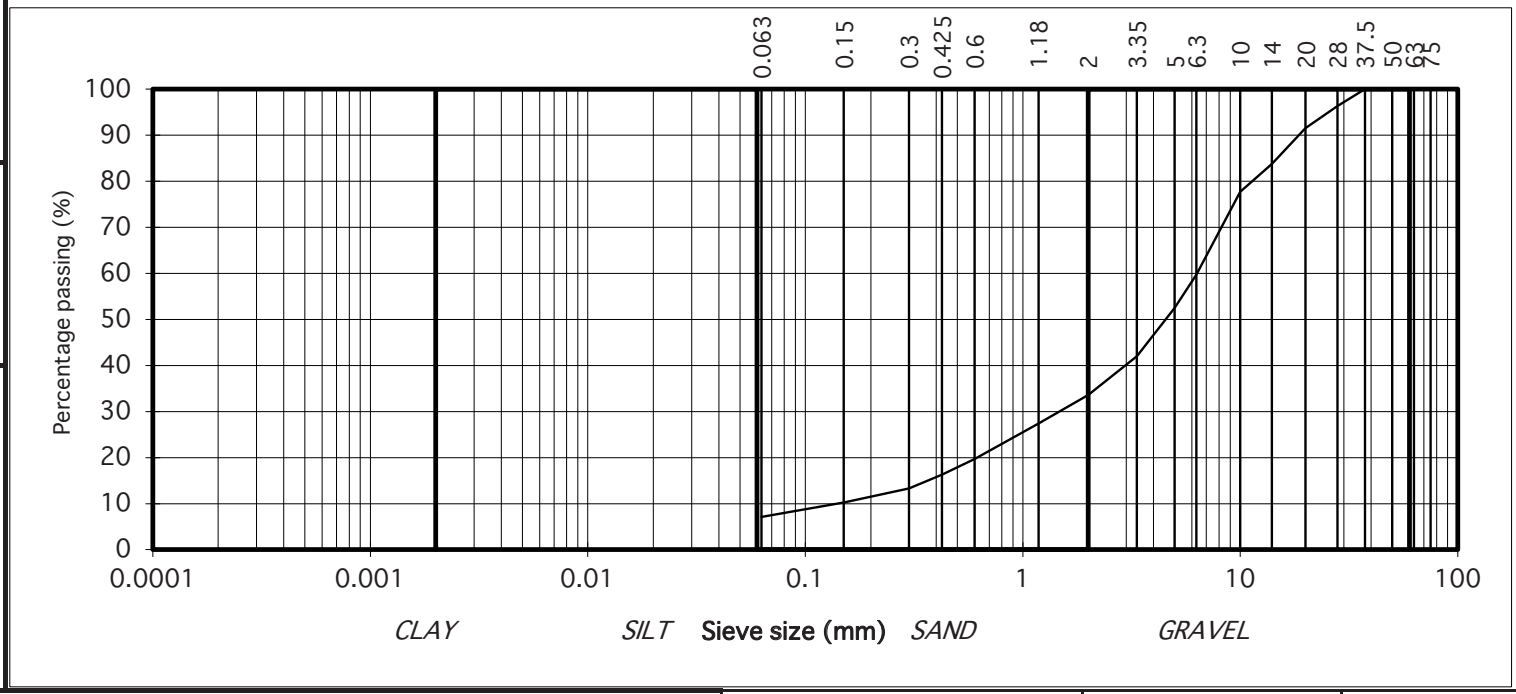
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	96	
20	92	
14	84	
10	78	
6.3	60	
5	52	
3.35	42	
2	34	
1.18	27	SAND
0.6	20	
0.425	16	
0.3	13	
0.15	10	
0.063	7	SILT/CLAY

Contract No.	25882	Report No.	R171141
Contract Name :	Gas to Edenderry		
BH/TP No.	BH29		
Sample No.*	AA223251	Lab. Sample No.	A25/1908
Sample Type:	B		
Depth* (m)	6.00	Customer:	MIL
Date Received	08/05/2025	Date Testing started	25/06/2025
Description:	Grey clayey/silty, very sandy, GRAVEL		

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
H Byrne	29/07/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

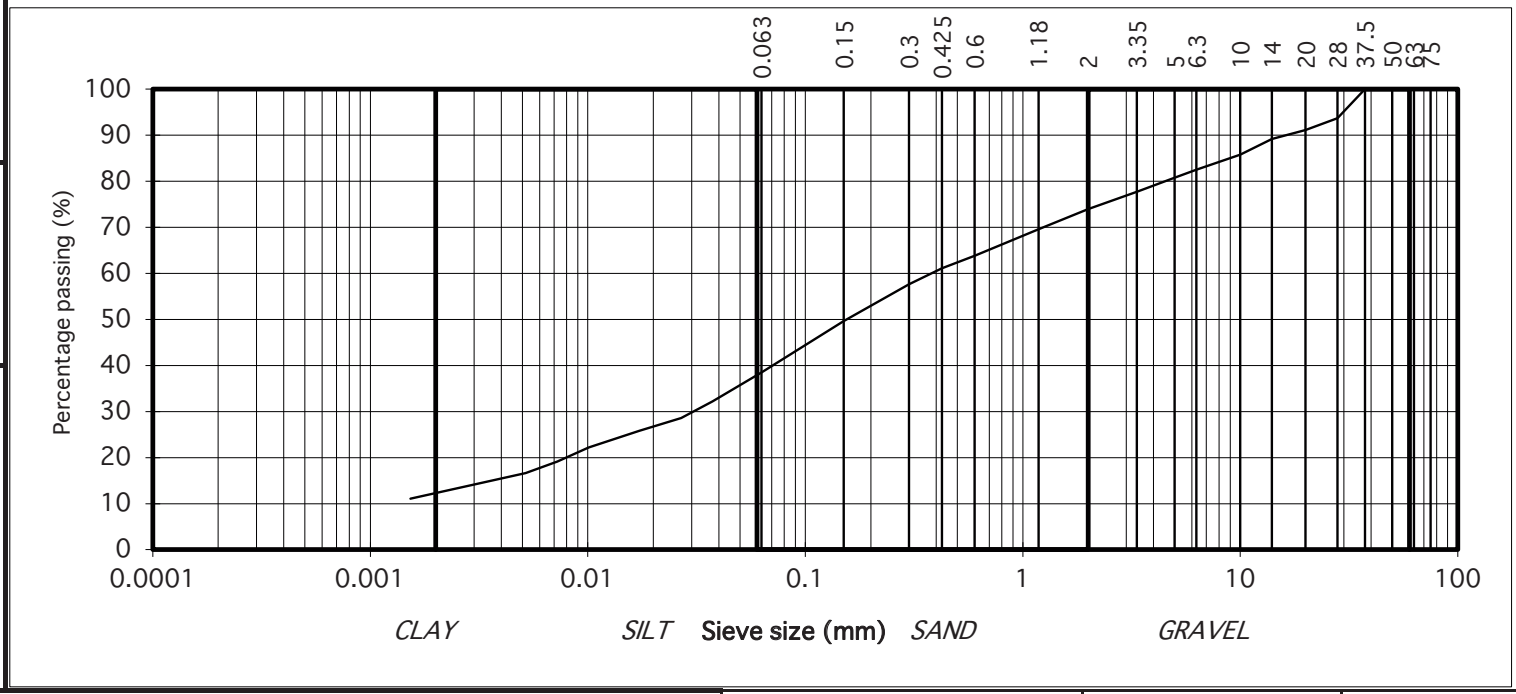
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	94	
20	91	
14	89	
10	86	
6.3	83	
5	81	
3.35	78	
2	74	
1.18	70	SAND
0.6	64	
0.425	61	
0.3	58	
0.15	50	
0.063	39	SILT/CLAY
0.037	32	
0.027	29	
0.017	26	
0.010	22	
0.007	19	
0.005	17	
0.002	11	

Contract No.	25882	Report No.	R169711	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH33			
Sample No.*	AA222758	Lab. Sample No.		A25/1909
Sample Type:	B			
Depth* (m)	2.50	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		31/05/2025
Description:	Brown sandy, slightly gravelly, CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
This report shall not be reproduced except in full without the written approval of the Laboratory.

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .



IGSL Ltd Materials Laboratory

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

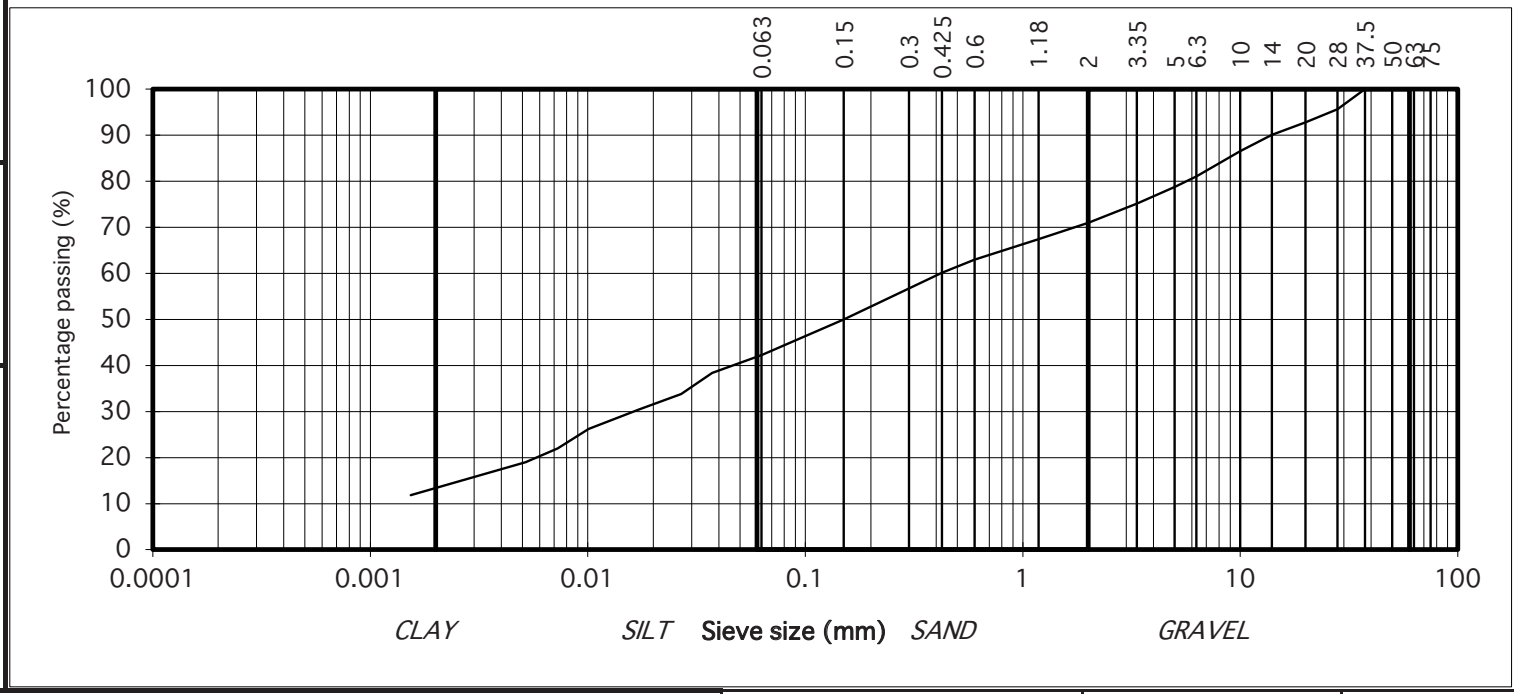
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	96	
20	93	
14	90	
10	87	
6.3	81	
5	79	
3.35	75	
2	71	
1.18	67	SAND
0.6	63	
0.425	60	
0.3	57	
0.15	50	
0.063	42	SILT/CLAY
0.037	38	
0.027	34	
0.017	31	
0.010	26	
0.007	22	
0.005	19	
0.002	12	

Contract No. 25882 Report No. R171142
Contract Name : Gas to Edenderry
BH/TP No. BH33
Sample No.* AA222763 Lab. Sample No. A25/1911
Sample Type: B
Depth* (m) 7.50 Customer: MIL
Date Received 08/05/2025 Date Testing started 25/06/2025
Description: Brown slightly sandy, slightly gravelly, CLAY

Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

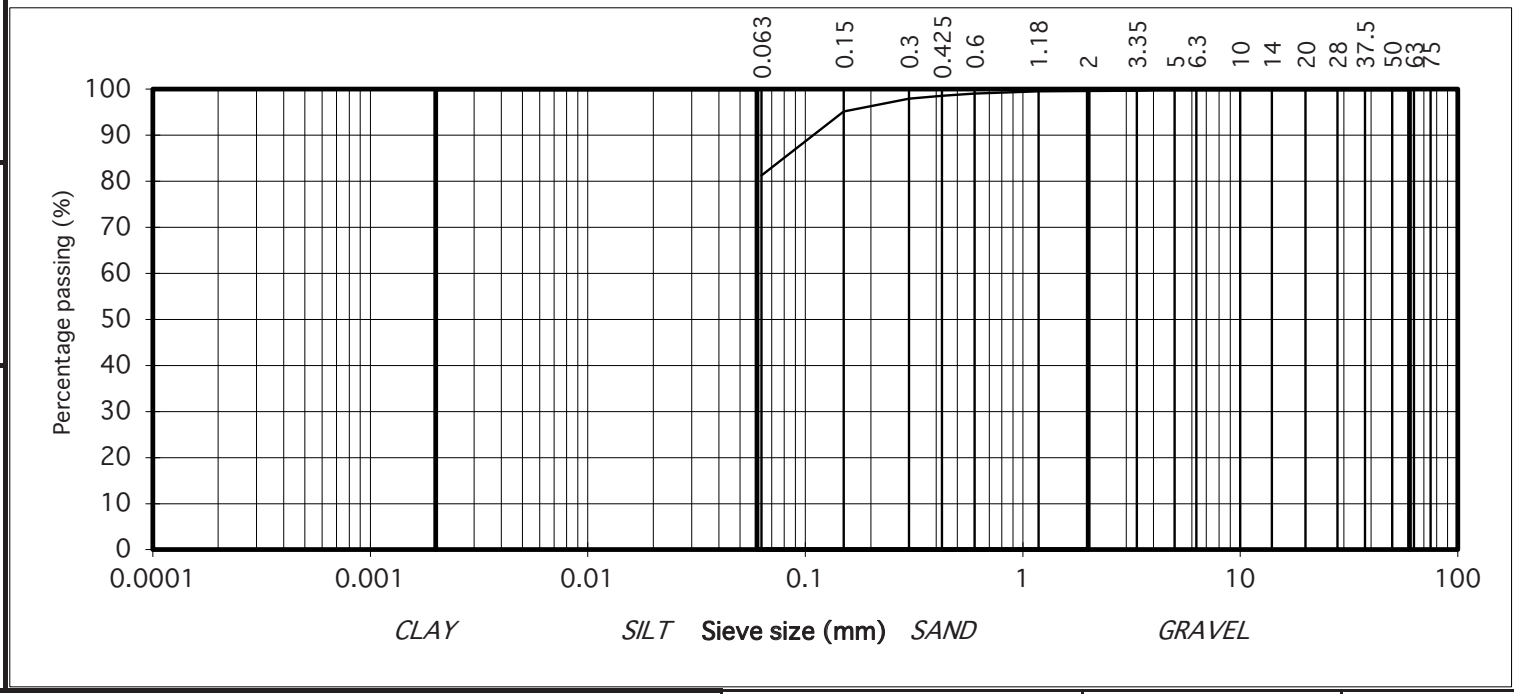
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	100	
1.18	100	SAND
0.6	99	
0.425	99	
0.3	98	
0.15	95	
0.063	81	SILT/CLAY

Contract No.	25882	Report No.	R169095	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH55			
Sample No.*	AA213971	Lab. Sample No.		A25/1914
Sample Type:	B			
Depth* (m)	9.00	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		22/05/2025
Description:	Grey slightly sandy, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

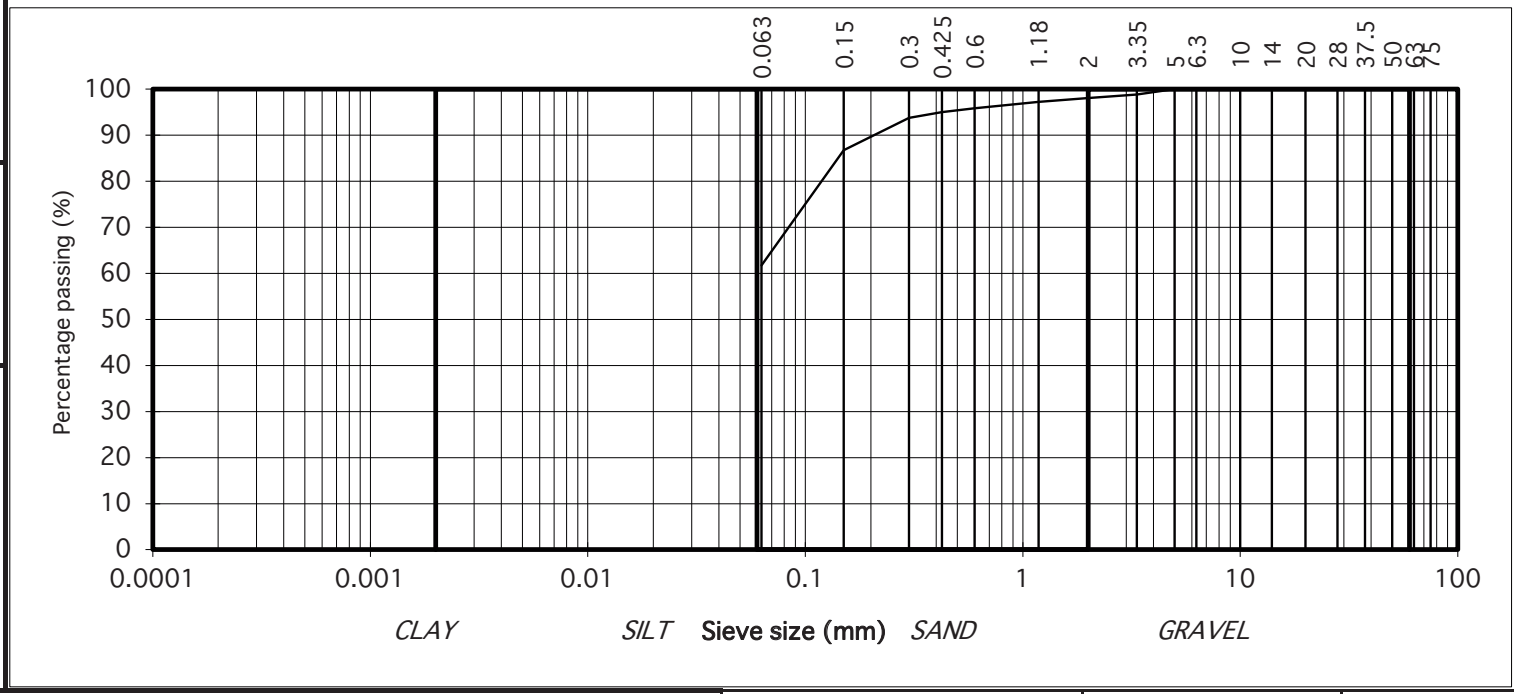
ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	99	
2	98	
1.18	97	SAND
0.6	96	
0.425	95	
0.3	94	
0.15	87	
0.063	62	SILT/CLAY

Contract No.	25882	Report No.	R169097	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH55			
Sample No.*	AA213973	Lab. Sample No.		A25/1915
Sample Type:	B			
Depth* (m)	11.00	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		22/05/2025
Description:	Grey sandy, slightly gravelly, SILT/CLAY			

Remarks: Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

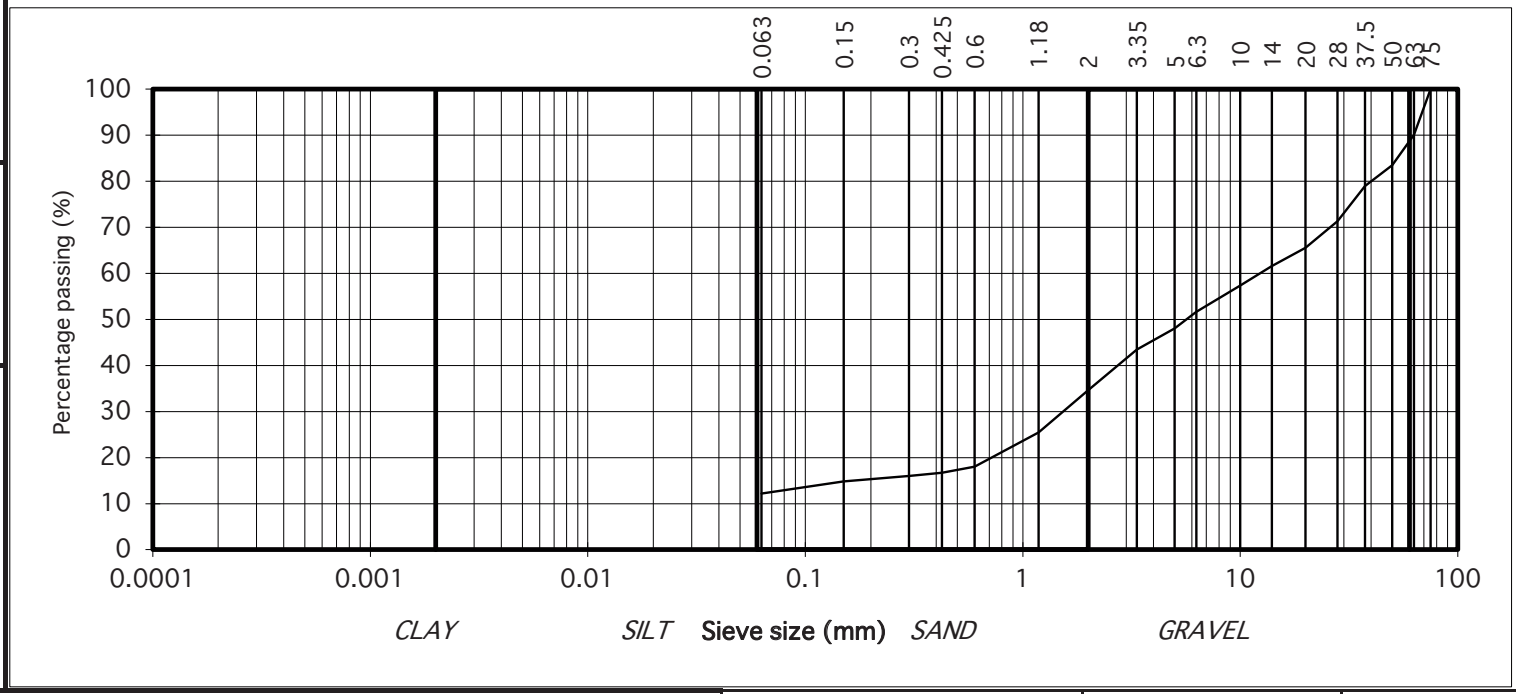
TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 133T

particle size	% passing	
75	100	COBBLES
63	90	
50	84	GRAVEL
37.5	79	
28	71	
20	66	
14	62	
10	57	
6.3	52	
5	48	
3.35	43	
2	35	
1.18	25	SAND
0.6	18	
0.425	17	
0.3	16	
0.15	15	
0.063	12	SILT/CLAY

Contract No.	25882	Report No.	R169098	
Contract Name :	Gas to Edenderry GNI			
BH/TP No.	BH55			
Sample No.*	AA213975	Lab. Sample No.		A25/1916
Sample Type:	B			
Depth* (m)	13.00	Customer:	MIL	
Date Received	22/05/2025	Date Testing started		22/05/2025
Description:	Grey clayey/silty, very sandy, GRAVEL with some cobbles			
Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
H Byrne	05/06/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

Appendix 5

Chemical / Environmental Laboratory Results (Soil)

25-16703

25-17444

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	25-16703-1
Initial Date of Issue:	03-Jun-2025
Re-Issue Details:	
Client	*IGSL*
Client Address:	*M7 Business Park* *Naas* *County Kildare* *Ireland*
Contact(s):	*Darren Keogh*
Project	*25882 Edenderry*
Quotation No.:	*Q24-35198*
Date Received:	20-May-2025
Order No.:	
Date Instructed:	20-May-2025
No. of Samples:	*21*
Turnaround (Wkdays):	7
Results Due:	29-May-2025
Date Approved:	03-Jun-2025
Approved By:	



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: 25882 Edenderry

Client: IGSL				**Chemtest Job No.:**		25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198				**Chemtest Sample ID.:**		1975518	1975520	1975523	1975525	1975527	1975528	1975529	1975531
				Client Reference:		*BH30*	*BH36*	*BH39*	*BH58*	*TP1.1*	*TP1.2*	*TP2.1*	*TP2.2*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*0.50*	*1.00*	*0.50*	*0.50*	*0.15*	*0.20*
				Date Sampled:		*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**								
Ammonium	U	1220	10:1	mg/l	0.050	0.66	0.79	0.82	0.79	0.51	0.54	0.56	0.64
Ammonium	N	1220	10:1	mg/kg	0.10	8.1	9.6	10	10	5.8	5.9	6.1	6.9

Results - Leachate

Project: 25882 Edenderry

Client: IGSL				**Chemtest Job No.:**		25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198				**Chemtest Sample ID.:**		1975532	1975534	1975535	1975537	1975538
				Client Reference:		*TP3.1*	*TP3.2*	*TP3.3*	*TP3.4*	*TP3.5*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*0.50*	*0.50*	*0.50*	*0.50*
				Date Sampled:		*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**					
Ammonium	U	1220	10:1	mg/l	0.050	0.62	0.73	0.84	0.94	0.93
Ammonium	N	1220	10:1	mg/kg	0.10	6.8	8.0	9.0	10	10

Results - Soil

Project: 25882 Edenderry

Client: IGSL				**Chemtest Job No.:**		25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198				**Chemtest Sample ID.:**		1975518	1975519	1975520	1975521	1975522	1975523	1975524
				Client Reference:		*BH30*	*BH35*	*BH36*	*BH37*	*BH38*	*BH39*	*BH39*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*0.50*	*1.00*	*1.00*	*7.00*	*0.50*	*2.00*
				Date Sampled:		*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
				Asbestos Lab:		DURHAM		DURHAM			DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		N	2192		N/A	-		-			-	
Asbestos Identification		U	2192		N/A	No Asbestos Detected		No Asbestos Detected			No Asbestos Detected	
Moisture		N	2030	%	0.020	8.2	59	22	18	14	19	35
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones	Stones and Roots	Stones and Roots	Stones	None	Stones and Roots	None
Soil Texture		N	2030		N/A	Sand	Loam	Clay	Clay	Sand	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0		8.1		8.3	8.0		8.0
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40		< 0.40			< 0.40	
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010		< 0.010	< 0.010		< 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		< 0.010		0.081	0.050		0.026
Total Sulphur		U	2175	%	0.010		0.35		0.080	0.070		0.10
Sulphur (Elemental)		M	2180	mg/kg	1.0	< 1.0		3.6			6.7	
Chloride (Water Soluble)		M	2220	g/l	0.010		U/S		< 0.010	< 0.010		< 0.010
Nitrate (Water Soluble)		N	2220	g/l	0.010		U/S		< 0.010	< 0.010		0.016
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50		< 0.50			< 0.50	
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	9.5		28			5.3	
Ammonium (Water Soluble)		M	2220	g/l	0.01		U/S		< 0.01	< 0.01		< 0.01
Sulphate (Total)		U	2430	%	0.010	0.054		0.16			0.098	
Sulphate (Acid Soluble)		U	2430	%	0.010		0.072		0.051	0.045		0.057
Arsenic		M	2455	mg/kg	0.5	4.2		5.5			6.2	
Barium		M	2455	mg/kg	0.5	34		59			55	
Cadmium		M	2455	mg/kg	0.10	1.2		0.62			0.70	
Chromium		M	2455	mg/kg	0.5	18		8.9			10	
Molybdenum		M	2455	mg/kg	0.5	0.7		1.4			0.5	
Antimony		N	2455	mg/kg	2.0	< 2.0		< 2.0			< 2.0	
Copper		M	2455	mg/kg	0.50	10		9.9			10	
Mercury		M	2455	mg/kg	0.05	0.05		< 0.05			< 0.05	
Nickel		M	2455	mg/kg	0.50	32		25			27	
Lead		M	2455	mg/kg	0.50	13		10			10	
Selenium		M	2455	mg/kg	0.25	0.43		0.64			0.58	
Zinc		M	2455	mg/kg	0.50	65		46			49	
Chromium (Trivalent)		N	2490	mg/kg	1.0	18		8.9			10	
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50		< 0.50			< 0.50	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05			< 0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05			< 0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05			< 0.05	
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05		< 0.05			< 0.05	

Results - Soil

Project: 25882 Edenderry

Client: IGSL				**Chemtest Job No.:**		25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198				**Chemtest Sample ID.:**		1975518	1975519	1975520	1975521	1975522	1975523	1975524
				Client Reference:		*BH30*	*BH35*	*BH36*	*BH37*	*BH38*	*BH39*	*BH39*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*0.50*	*1.00*	*1.00*	*7.00*	*0.50*	*2.00*
				Date Sampled:		*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
				Asbestos Lab:		DURHAM		DURHAM			DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25		< 0.25			< 0.25	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	10		15			11	
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	14		15			11	
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	9.9		22			19	
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	39		48			40	
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	24		26			26	
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	73		99			82	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05			< 0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05			< 0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05			< 0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25		< 0.25			< 0.25	
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	82		100			95	
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	130		140			120	
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	110		140			130	
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	41		90			57	
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	31		48			43	
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	360		470			400	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50		< 0.50			< 0.50	
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	430		570			480	
Mineral Oil EPH		N	2670	mg/kg	10	97		130			110	
Benzene		M	2760	µg/kg	1.0	< 1.0		< 1.0			< 1.0	
Toluene		M	2760	µg/kg	1.0	< 1.0		< 1.0			< 1.0	
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0		< 1.0			< 1.0	
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0			< 1.0	
o-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0			< 1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0		< 1.0			< 1.0	
Naphthalene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Acenaphthene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Fluorene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Phenanthrene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Chrysene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	

Results - Soil

Project: 25882 Edenderry

Client: IGSL						25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198						1975518	1975519	1975520	1975521	1975522	1975523	1975524
						BH30	*BH35*	*BH36*	*BH37*	*BH38*	*BH39*	*BH39*
						SOIL	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
						1.00	*0.50*	*1.00*	*1.00*	*7.00*	*0.50*	*2.00*
						15-May-2025	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
						DURHAM		DURHAM			DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
Coronene		N	2800	mg/kg	0.10	< 0.10		< 0.10			< 0.10	
PCB 28		U	2815	mg/kg	0.010	< 0.010		< 0.010			< 0.010	
PCB 52		U	2815	mg/kg	0.010	< 0.010		< 0.010			< 0.010	
PCB 101		U	2815	mg/kg	0.010	< 0.010		< 0.010			< 0.010	
PCB 118		U	2815	mg/kg	0.010	< 0.010		< 0.010			< 0.010	
PCB 153		U	2815	mg/kg	0.010	< 0.010		< 0.010			< 0.010	
PCB 138		U	2815	mg/kg	0.010	< 0.010		< 0.010			< 0.010	
PCB 180		U	2815	mg/kg	0.010	< 0.010		< 0.010			< 0.010	
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05		< 0.05			< 0.05	
Total Phenols		M	2920	mg/kg	0.10	< 0.10		< 0.10			< 0.10	

Results - Soil

Project: 25882 Edenderry

Client: IGSL						**Chemtest Job No.:**	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198						**Chemtest Sample ID.:**	1975525	1975526	1975527	1975528	1975529	1975530	1975531
						Client Reference:	*BH58*	*BH59*	*TP1.1*	*TP1.2*	*TP2.1*	*TP2.1*	*TP2.2*
						Sample Type:	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
						Top Depth (m):	*1.00*	*1.00*	*0.50*	*0.50*	*0.15*	*2.00*	*0.20*
						Date Sampled:	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
						Asbestos Lab:	DURHAM		DURHAM	DURHAM	DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type		N	2192		N/A		-		-	-	-		-
Asbestos Identification		U	2192		N/A		No Asbestos Detected		No Asbestos Detected	No Asbestos Detected	No Asbestos Detected		No Asbestos Detected
Moisture		N	2030	%	0.020		18	35	17	16	17	16	16
Soil Colour		N	2030		N/A		Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A		Stones	Stones and Roots	Stones	Stones and Roots	Stones and Roots	Stones	Roots
Soil Texture		N	2030		N/A		Clay	Clay	Clay	Clay	Clay	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0			7.6				8.0	
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40		< 0.40		< 0.40	< 0.40	< 0.40		< 0.40
Magnesium (Water Soluble)		N	2120	g/l	0.010			0.013				< 0.010	
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010			0.18				0.019	
Total Sulphur		U	2175	%	0.010			0.10				0.030	
Sulphur (Elemental)		M	2180	mg/kg	1.0		1.3		< 1.0	< 1.0	< 1.0		1.1
Chloride (Water Soluble)		M	2220	g/l	0.010			< 0.010				< 0.010	
Nitrate (Water Soluble)		N	2220	g/l	0.010			0.022				0.038	
Cyanide (Total)		M	2300	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50		16		6.1	3.1	6.7		5.6
Ammonium (Water Soluble)		M	2220	g/l	0.01			< 0.01				< 0.01	
Sulphate (Total)		U	2430	%	0.010		0.057		0.058	0.069	0.10		0.11
Sulphate (Acid Soluble)		U	2430	%	0.010			0.081				0.028	
Arsenic		M	2455	mg/kg	0.5		5.7		11	9.5	6.1		6.2
Barium		M	2455	mg/kg	0.5		87		160	100	71		69
Cadmium		M	2455	mg/kg	0.10		1.2		1.2	1.8	0.95		1.1
Chromium		M	2455	mg/kg	0.5		15		30	31	14		14
Molybdenum		M	2455	mg/kg	0.5		0.8		2.0	2.1	1.0		0.8
Antimony		N	2455	mg/kg	2.0		< 2.0		< 2.0	< 2.0	< 2.0		< 2.0
Copper		M	2455	mg/kg	0.50		17		20	30	14		16
Mercury		M	2455	mg/kg	0.05		0.06		0.08	0.07	< 0.05		< 0.05
Nickel		M	2455	mg/kg	0.50		41		74	74	36		37
Lead		M	2455	mg/kg	0.50		16		23	24	13		15
Selenium		M	2455	mg/kg	0.25		0.75		1.3	1.5	0.90		1.0
Zinc		M	2455	mg/kg	0.50		71		120	120	60		67
Chromium (Trivalent)		N	2490	mg/kg	1.0		15		30	31	14		14
Chromium (Hexavalent)		N	2490	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05		< 0.05	< 0.05	< 0.05		< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05		< 0.05	< 0.05	< 0.05		< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05		< 0.05	< 0.05	< 0.05		< 0.05
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05		< 0.05	< 0.05	< 0.05		< 0.05

Results - Soil

Project: 25882 Edenderry

Client: IGSL						**Chemtest Job No.:**	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198						**Chemtest Sample ID.:**	1975525	1975526	1975527	1975528	1975529	1975530	1975531
						Client Reference:	*BH58*	*BH59*	*TP1.1*	*TP1.2*	*TP2.1*	*TP2.1*	*TP2.2*
						Sample Type:	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
						Top Depth (m):	*1.00*	*1.00*	*0.50*	*0.50*	*0.15*	*2.00*	*0.20*
						Date Sampled:	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
						Asbestos Lab:	DURHAM		DURHAM	DURHAM	DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25		< 0.25		< 0.25	< 0.25	< 0.25		< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00		11		8.7	10	8.8		9.3
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00		12		2.2	2.1	2.4		2.3
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00		13		< 2.0	< 2.0	< 2.0		< 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00		36		< 3.0	< 3.0	7.3		16
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00		29		< 10	< 10	< 10		< 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00		73		12	13	18		29
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05		< 0.05		< 0.05	< 0.05	< 0.05		< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05		< 0.05		< 0.05	< 0.05	< 0.05		< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05		< 0.05		< 0.05	< 0.05	< 0.05		< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25		< 0.25		< 0.25	< 0.25	< 0.25		< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00		89		< 1.0	< 1.0	< 1.0		< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00		130		< 1.0	< 1.0	< 1.0		< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00		110		< 2.0	< 2.0	< 2.0		< 2.0
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00		42		< 2.0	< 2.0	5.4		18
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00		38		1.1	4.0	< 1.0		4.0
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00		380		< 5.0	< 5.0	6.2		20
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00		450		13	15	25		49
Mineral Oil EPH		N	2670	mg/kg	10		100		12	13	18		29
Benzene		M	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0
Toluene		M	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0
Ethylbenzene		M	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0
m & p-Xylene		M	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0
o-Xylene		M	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0
Naphthalene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Acenaphthylene		N	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Acenaphthene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Fluorene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Phenanthrene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Anthracene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Fluoranthene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Pyrene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Chrysene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10		< 0.10		< 0.10	< 0.10	< 0.10		< 0.10

Results - Soil

Project: 25882 Edenderry

Client: IGSL				**Chemtest Job No.:**		25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198				**Chemtest Sample ID.:**		1975525	1975526	1975527	1975528	1975529	1975530	1975531
				Client Reference:		*BH58*	*BH59*	*TP1.1*	*TP1.2*	*TP2.1*	*TP2.1*	*TP2.2*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.00*	*0.50*	*0.50*	*0.15*	*2.00*	*0.20*
				Date Sampled:		*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
				Asbestos Lab:		DURHAM		DURHAM	DURHAM	DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
Coronene		N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10
PCB 28		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010	< 0.010		< 0.010
PCB 52		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010	< 0.010		< 0.010
PCB 101		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010	< 0.010		< 0.010
PCB 118		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010	< 0.010		< 0.010
PCB 153		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010	< 0.010		< 0.010
PCB 138		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010	< 0.010		< 0.010
PCB 180		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010	< 0.010		< 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05		< 0.05	< 0.05	< 0.05		< 0.05
Total Phenols		M	2920	mg/kg	0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10

Results - Soil

Project: 25882 Edenderry

Client: IGSL						**Chemtest Job No.:**	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198						**Chemtest Sample ID.:**	1975532	1975533	1975534	1975535	1975536	1975537	1975538
						Client Reference:	*TP3.1*	*TP3.1*	*TP3.2*	*TP3.3*	*TP3.3*	*TP3.4*	*TP3.5*
						Sample Type:	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
						Top Depth (m):	*1.00*	*2.00*	*0.50*	*0.50*	*1.00*	*0.50*	*0.50*
						Date Sampled:	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
						Asbestos Lab:	DURHAM		DURHAM	DURHAM		DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type		N	2192		N/A		-		-	-		-	-
Asbestos Identification		U	2192		N/A		No Asbestos Detected		No Asbestos Detected	No Asbestos Detected		No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020		11	9.4	12	14	11	16	16
Soil Colour		N	2030		N/A		Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A		Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture		N	2030		N/A		Clay	Clay	Clay	Clay	Clay	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0			8.5			8.6		
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40		< 0.40		< 0.40	< 0.40		< 0.40	< 0.40
Magnesium (Water Soluble)		N	2120	g/l	0.010			< 0.010			< 0.010		
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010			< 0.010			< 0.010		
Total Sulphur		U	2175	%	0.010			0.026			0.020		
Sulphur (Elemental)		M	2180	mg/kg	1.0		< 1.0		< 1.0	< 1.0		< 1.0	< 1.0
Chloride (Water Soluble)		M	2220	g/l	0.010			< 0.010			< 0.010		
Nitrate (Water Soluble)		N	2220	g/l	0.010			< 0.010			< 0.010		
Cyanide (Total)		M	2300	mg/kg	0.50		< 0.50		< 0.50	< 0.50		< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50		5.9		9.5	5.7		2.8	15
Ammonium (Water Soluble)		M	2220	g/l	0.01			< 0.01			< 0.01		
Sulphate (Total)		U	2430	%	0.010		0.041		0.046	0.026		0.033	0.023
Sulphate (Acid Soluble)		U	2430	%	0.010			0.013			0.013		
Arsenic		M	2455	mg/kg	0.5		11		6.1	5.7		6.0	4.6
Barium		M	2455	mg/kg	0.5		35		33	52		34	35
Cadmium		M	2455	mg/kg	0.10		1.9		1.7	0.90		1.0	0.71
Chromium		M	2455	mg/kg	0.5		20		18	16		17	16
Molybdenum		M	2455	mg/kg	0.5		1.5		0.7	0.6		< 0.5	0.6
Antimony		N	2455	mg/kg	2.0		< 2.0		< 2.0	< 2.0		< 2.0	< 2.0
Copper		M	2455	mg/kg	0.50		18		16	11		17	14
Mercury		M	2455	mg/kg	0.05		0.07		0.07	0.06		0.08	0.08
Nickel		M	2455	mg/kg	0.50		47		40	38		44	36
Lead		M	2455	mg/kg	0.50		17		13	12		13	13
Selenium		M	2455	mg/kg	0.25		0.84		0.77	0.60		0.81	0.55
Zinc		M	2455	mg/kg	0.50		100		73	76		81	79
Chromium (Trivalent)		N	2490	mg/kg	1.0		20		18	16		17	16
Chromium (Hexavalent)		N	2490	mg/kg	0.50		< 0.50		< 0.50	< 0.50		< 0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05		< 0.05	< 0.05		< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05		< 0.05	< 0.05		< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05		< 0.05	< 0.05		< 0.05	< 0.05
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05		< 0.05	< 0.05		< 0.05	< 0.05

Results - Soil

Project: 25882 Edenderry

Client: IGSL				**Chemtest Job No.:**		25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198				**Chemtest Sample ID.:**		1975532	1975533	1975534	1975535	1975536	1975537	1975538
				Client Reference:		*TP3.1*	*TP3.1*	*TP3.2*	*TP3.3*	*TP3.3*	*TP3.4*	*TP3.5*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*0.50*	*0.50*	*1.00*	*0.50*	*0.50*
				Date Sampled:		*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
				Asbestos Lab:		DURHAM		DURHAM	DURHAM		DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25		< 0.25	< 0.25		< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	7.5		8.3	8.0		4.9	5.7
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	2.2		1.6	2.3		2.0	1.8
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0		< 2.0	< 2.0		< 2.0	< 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	< 3.0		< 3.0	< 3.0		< 3.0	< 3.0
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10		< 10	< 10		< 10	< 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	9.7		10	10		6.9	7.4
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25		< 0.25	< 0.25		< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	< 2.0		< 2.0	< 2.0		< 2.0	< 2.0
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	< 2.0		< 2.0	< 2.0		< 2.0	< 2.0
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	< 1.0		< 1.0	2.5		< 1.0	< 1.0
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	< 5.0		< 5.0	< 5.0		< 5.0	< 5.0
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50		< 0.50	< 0.50		< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	11		12	12		< 10	< 10
Mineral Oil EPH		N	2670	mg/kg	10	< 10		10	10		< 10	< 10
Benzene		M	2760	µg/kg	1.0	< 1.0		< 1.0	1.3		< 1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0		< 1.0	2.8		< 1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10

Results - Soil

Project: 25882 Edenderry

Client: IGSL				**Chemtest Job No.:**		25-16703	25-16703	25-16703	25-16703	25-16703	25-16703	25-16703
Quotation No.: Q24-35198				**Chemtest Sample ID.:**		1975532	1975533	1975534	1975535	1975536	1975537	1975538
				Client Reference:		*TP3.1*	*TP3.1*	*TP3.2*	*TP3.3*	*TP3.3*	*TP3.4*	*TP3.5*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*0.50*	*0.50*	*1.00*	*0.50*	*0.50*
				Date Sampled:		*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*	*15-May-2025*
				Asbestos Lab:		DURHAM		DURHAM	DURHAM		DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
Coronene		N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10
PCB 28		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	< 0.010
PCB 52		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	< 0.010
PCB 101		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	< 0.010
PCB 118		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	< 0.010
PCB 153		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	< 0.010
PCB 138		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	< 0.010
PCB 180		U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	< 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05		< 0.05	< 0.05		< 0.05	< 0.05
Total Phenols		M	2920	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10

Results - Single Stage WAC

Project: 25882 Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-16703							
Chemtest Sample ID:	1975518							
Sample Ref:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:	*BH30*							
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.38	3	5	6
Loss On Ignition	2610		M	%	0.88	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.6	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.028	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0003	0.0025	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0008	0.0076	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0003	0.0029	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.004	0.040	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.099	< 1.0	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	250	2500	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.0	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	3.7
WAC Sample Weight	1053

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-16703							
Chemtest Sample ID:	1975520							
Sample Ref:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:	*BH36*							
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	3.1	3	5	6
Loss On Ignition	2610		M	%	6.3	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		7.8	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.072	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0012	0.012	0.5	2	25
Barium	1455		U	0.019	0.19	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0017	0.017	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0034	0.034	0.5	10	30
Nickel	1455		U	0.0007	0.0075	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.009	0.093	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.10	1.0	10	150	500
Sulphate	1220		U	7.6	76	1000	20000	50000
Total Dissolved Solids	1020		N	120	1200	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.6	56	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.1
WAC Sample Weight	716.4

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-16703							
Chemtest Sample ID:	1975523							
Sample Ref:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:	*BH39*							
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	1.4	3	5	6
Loss On Ignition	2610		M	%	3.9	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.3	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.067	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0007	0.0067	0.5	2	25
Barium	1455		U	0.011	0.11	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0015	0.015	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0003	0.0033	0.5	10	30
Nickel	1455		U	0.0009	0.0094	0.4	10	40
Lead	1455		U	0.0008	0.0081	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.006	0.062	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.095	< 1.0	10	150	500
Sulphate	1220		U	2.0	20	1000	20000	50000
Total Dissolved Solids	1020		N	61	610	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.9	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.5
WAC Sample Weight	1048

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-16703							
Chemtest Sample ID:	1975525							
Sample Ref:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:	*BH58*							
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	2.5	3	5	6
Loss On Ignition	2610		M	%	2.4	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.058	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0007	0.0075	0.5	2	25
Barium	1455		U	0.008	0.082	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0021	0.021	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	< 0.0002	< 0.0020	0.5	10	30
Nickel	1455		U	0.0015	0.015	0.4	10	40
Lead	1455		U	0.0010	0.010	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.006	0.061	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.098	< 1.0	10	150	500
Sulphate	1220		U	1.4	14	1000	20000	50000
Total Dissolved Solids	1020		N	43	430	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.8	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	12
WAC Sample Weight	1074

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-16703							
Chemtest Sample ID:	1975527							
Sample Ref:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:	*TP1.1*							
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	1.0	3	5	6
Loss On Ignition	2610		M	%	2.4	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.2	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.020	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0044	0.044	0.5	2	25
Barium	1455		U	0.010	0.10	20	100	300
Cadmium	1455		U	0.00021	0.0021	0.04	1	5
Chromium	1455		U	0.0019	0.019	0.5	10	70
Copper	1455		U	0.0049	0.049	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0014	0.014	0.5	10	30
Nickel	1455		U	0.0032	0.032	0.4	10	40
Lead	1455		U	0.0029	0.029	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0007	0.0066	0.1	0.5	7
Zinc	1455		U	0.009	0.089	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.12	1.2	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	38	380	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	6.4	64	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	1.5
WAC Sample Weight	955.8

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-16703							
Chemtest Sample ID:	1975528							
Sample Ref:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:	*TP1.2*							
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.53	3	5	6
Loss On Ignition	2610		M	%	2.3	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.3	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.024	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0031	0.031	0.5	2	25
Barium	1455		U	0.007	0.066	20	100	300
Cadmium	1455		U	0.00024	0.0024	0.04	1	5
Chromium	1455		U	0.0017	0.017	0.5	10	70
Copper	1455		U	0.0056	0.056	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0011	0.011	0.5	10	30
Nickel	1455		U	0.0037	0.037	0.4	10	40
Lead	1455		U	0.0039	0.039	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0010	0.0097	0.1	0.5	7
Zinc	1455		U	0.010	0.10	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.11	1.1	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	32	320	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.8	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	2.6
WAC Sample Weight	678.9

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-16703							
Chemtest Sample ID:	1975529							
Sample Ref:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:	*TP2.1*							
Top Depth(m):	*0.15*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	1.3	3	5	6
Loss On Ignition	2610		M	%	3.6	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.1	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.052	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0005	0.0055	0.5	2	25
Barium	1455		U	0.012	0.12	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0018	0.018	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0003	0.0030	0.5	10	30
Nickel	1455		U	0.0010	0.0096	0.4	10	40
Lead	1455		U	0.0007	0.0066	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.009	0.090	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.096	< 1.0	10	150	500
Sulphate	1220		U	2.2	22	1000	20000	50000
Total Dissolved Solids	1020		N	48	480	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	3.7
WAC Sample Weight	783.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-16703							
Chemtest Sample ID:	1975531							
Sample Ref:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:	*TP2.2*							
Top Depth(m):	*0.20*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	2.1	3	5	6
Loss On Ignition	2610		M	%	3.4	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		7.9	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.097	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0007	0.0068	0.5	2	25
Barium	1455		U	0.010	0.10	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0016	0.016	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0004	0.0040	0.5	10	30
Nickel	1455		U	0.0008	0.0078	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.011	0.11	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.096	< 1.0	10	150	500
Sulphate	1220		U	6.4	64	1000	20000	50000
Total Dissolved Solids	1020		N	74	740	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.2	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	4.8
WAC Sample Weight	689.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-16703							
Chemtest Sample ID:	1975532							
Sample Ref:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:	*TP3.1*							
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.64	3	5	6
Loss On Ignition	2610		M	%	1.3	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.044	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0028	0.028	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	0.00019	0.0019	0.04	1	5
Chromium	1455		U	0.0016	0.016	0.5	10	70
Copper	1455		U	0.0055	0.055	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0008	0.0085	0.5	10	30
Nickel	1455		U	0.0068	0.068	0.4	10	40
Lead	1455		U	0.0023	0.023	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.019	0.19	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.22	2.2	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	55	550	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.7	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	3.0
WAC Sample Weight	868.6

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-16703							
Chemtest Sample ID:	1975534							
Sample Ref:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:	*TP3.2*							
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	1.3	3	5	6
Loss On Ignition	2610		M	%	1.2	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.1	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.022	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0015	0.015	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	0.00014	0.0014	0.04	1	5
Chromium	1455		U	0.0012	0.012	0.5	10	70
Copper	1455		U	0.0038	0.038	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0003	0.0025	0.5	10	30
Nickel	1455		U	0.0030	0.030	0.4	10	40
Lead	1455		U	0.0013	0.013	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.011	0.11	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.13	1.3	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	50	500	4000	60000	100000
Phenol Index	1920		U	0.16	1.6	1	-	-
Dissolved Organic Carbon	1610		U	4.0	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	5.5
WAC Sample Weight	790.4

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-16703							
Chemtest Sample ID:	1975535							
Sample Ref:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:	*TP3.3*							
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.21	3	5	6
Loss On Ignition	2610		M	%	1.4	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.1	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.023	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0012	0.013	0.5	2	25
Barium	1455		U	0.006	0.065	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0009	0.0094	0.5	10	70
Copper	1455		U	0.0029	0.029	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0003	0.0028	0.5	10	30
Nickel	1455		U	0.0019	0.019	0.4	10	40
Lead	1455		U	0.0011	0.011	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.012	0.12	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.14	1.4	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	51	510	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.0	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.1
WAC Sample Weight	750.4

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-16703							
Chemtest Sample ID:	1975537							
Sample Ref:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:	*TP3.4*							
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.22	3	5	6
Loss On Ignition	2610		M	%	1.5	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.1	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.034	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0004	0.0042	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0020	0.020	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	< 0.0002	< 0.0020	0.5	10	30
Nickel	1455		U	0.0013	0.013	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.006	0.061	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.12	1.2	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	39	390	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.7	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	16
WAC Sample Weight	957.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 25882 Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-16703							
Chemtest Sample ID:	1975538							
Sample Ref:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:	*TP3.5*							
Top Depth(m):	*0.50*							
Bottom Depth(m):								
Sampling Date:	*15-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.71	3	5	6
Loss On Ignition	2610		M	%	1.6	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.1	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.090	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0008	0.0082	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0009	0.0087	0.5	10	70
Copper	1455		U	0.0022	0.022	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0002	0.0024	0.5	10	30
Nickel	1455		U	0.0029	0.029	0.4	10	40
Lead	1455		U	0.0011	0.011	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.010	0.097	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.10	1.0	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	39	390	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.9	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	14
WAC Sample Weight	753.1

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
1975518			*BH30*	*15-May-2025*	E	Amber Glass 250ml
1975518			*BH30*	*15-May-2025*	E	Plastic Tub 500g
1975520			*BH36*	*15-May-2025*	E	Amber Glass 250ml
1975520			*BH36*	*15-May-2025*	E	Plastic Tub 500g
1975523			*BH39*	*15-May-2025*	E	Amber Glass 250ml
1975523			*BH39*	*15-May-2025*	E	Plastic Tub 500g
1975525			*BH58*	*15-May-2025*	E	Amber Glass 250ml
1975525			*BH58*	*15-May-2025*	E	Plastic Tub 500g
1975527			*TP1.1*	*15-May-2025*	E	Amber Glass 250ml
1975527			*TP1.1*	*15-May-2025*	E	Plastic Tub 500g
1975528			*TP1.2*	*15-May-2025*	E	Amber Glass 250ml
1975528			*TP1.2*	*15-May-2025*	E	Plastic Tub 500g
1975529			*TP2.1*	*15-May-2025*	E	Amber Glass 250ml
1975529			*TP2.1*	*15-May-2025*	E	Plastic Tub 500g
1975531			*TP2.2*	*15-May-2025*	E	Amber Glass 250ml
1975531			*TP2.2*	*15-May-2025*	E	Plastic Tub 500g
1975532			*TP3.1*	*15-May-2025*	E	Amber Glass 250ml
1975532			*TP3.1*	*15-May-2025*	E	Plastic Tub 500g
1975534			*TP3.2*	*15-May-2025*	E	Amber Glass 250ml
1975534			*TP3.2*	*15-May-2025*	E	Plastic Tub 500g
1975535			*TP3.3*	*15-May-2025*	E	Amber Glass 250ml
1975535			*TP3.3*	*15-May-2025*	E	Plastic Tub 500g
1975537			*TP3.4*	*15-May-2025*	E	Amber Glass 250ml
1975537			*TP3.4*	*15-May-2025*	E	Plastic Tub 500g
1975538			*TP3.5*	*15-May-2025*	E	Amber Glass 250ml
1975538			*TP3.5*	*15-May-2025*	E	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.
Any comments or interpretations are outside the scope of UKAS accreditation.
The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.
Uncertainty of measurement for the determinands tested are available upon request .
None of the results in this report have been recovery corrected.
All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.
All Asbestos testing is performed at the indicated laboratory .
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - The required amount of sample for analysis was not received
H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.
All water samples will be retained for 14 days from the date of receipt.
Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	25-17444-1
Initial Date of Issue:	17-Jun-2025
Re-Issue Details:	
Client	*IGSL*
Client Address:	*M7 Business Park* *Naas* *County Kildare* *Ireland*
Contact(s):	*Darren Keogh*
Project	*Edenderry*
Quotation No.:	*Q24-34387*
Order No.:	
No. of Samples:	*7*
Turnaround (Wkdays):	7
Date Approved:	17-Jun-2025
Approved By:	
Details:	David Smith, Technical Director

Date Received:	27-May-2025
Date Instructed:	27-May-2025
Results Due:	04-Jun-2025

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: Edenderry

Client: IGSL				**Chemtest Job No.:**		25-17444	25-17444	25-17444	25-17444
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1978296	1978299	1978301	1978302
Order No.:				*Client Sample Ref.:*		*BH26*	*BH33*	*BH28A*	*BH65*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*1.50*	*1.00*	*1.00*
				Date Sampled:		*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**				
Ammonium	U	1220	10:1	mg/l	0.050	< 0.050	< 0.050	< 0.050	< 0.050
Ammonium	N	1220	10:1	mg/kg	0.10	0.21	0.46	0.36	0.34

Results - Soil

Project: Edenderry

Client: IGSL				**Chemtest Job No.:**		25-17444	25-17444	25-17444	25-17444	25-17444	25-17444	25-17444
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1978296	1978297	1978298	1978299	1978300	1978301	1978302
Order No.:				*Client Sample Ref.:*		*BH26*	*BH26*	*BH29*	*BH33*	*BH33*	*BH28A*	*BH65*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*1.00*	*1.50*	*2.50*	*1.00*	*1.00*
				Date Sampled:		*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*
				Asbestos Lab:		DURHAM			DURHAM		DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		N	2192		N/A	-			-		-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected			No Asbestos Detected		No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	19	9.2	12	5.7	9.8	11	10
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones and Roots	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture		N	2030		N/A	Clay	Clay	Clay	Clay	Clay	Loam	Clay
pH (2.5:1) at 20C		N	2010		4.0		8.6	8.6		8.7		
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40			< 0.40		< 0.40	< 0.40
Magnesium (Water Soluble)		N	2120	g/l	0.010		< 0.010	< 0.010		< 0.010		
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		< 0.010	< 0.010		< 0.010		
Total Sulphur		U	2175	%	0.010		0.020	0.030		0.050		
Sulphur (Elemental)		M	2180	mg/kg	1.0	< 1.0			< 1.0		< 1.0	< 1.0
Chloride (Water Soluble)		M	2220	g/l	0.010		< 0.010	< 0.010		< 0.010		
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010	< 0.010		< 0.010		
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50			< 0.50		< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.2			2.5		2.4	1.7
Ammonium (Water Soluble)		M	2220	g/l	0.01		< 0.01	< 0.01		< 0.01		
Sulphate (Total)		U	2430	%	0.010	0.030			0.018		0.027	0.019
Sulphate (Acid Soluble)		U	2430	%	0.010		0.022	0.016		0.020		
Arsenic		M	2455	mg/kg	0.5	3.3			2.4		4.7	3.6
Barium		M	2455	mg/kg	0.5	32			25		39	27
Cadmium		M	2455	mg/kg	0.10	0.44			0.45		0.69	0.67
Chromium		M	2455	mg/kg	0.5	17			12		24	16
Molybdenum		M	2455	mg/kg	0.5	< 0.5			< 0.5		0.6	< 0.5
Antimony		N	2455	mg/kg	2.0	< 2.0			< 2.0		< 2.0	< 2.0
Copper		M	2455	mg/kg	0.50	9.5			8.2		12	11
Mercury		M	2455	mg/kg	0.05	< 0.05			< 0.05		< 0.05	< 0.05
Nickel		M	2455	mg/kg	0.50	30			25		38	35
Lead		M	2455	mg/kg	0.50	9.0			7.9		11	8.2
Selenium		M	2455	mg/kg	0.25	< 0.25			< 0.25		< 0.25	0.26
Zinc		M	2455	mg/kg	0.50	43			36		53	47
Chromium (Trivalent)		N	2490	mg/kg	1.0	17			12		24	16
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50			< 0.50		< 0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05			< 0.05		< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05			< 0.05		< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05			< 0.05		< 0.05	< 0.05
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05			< 0.05		< 0.05	< 0.05

Results - Soil

Project: Edenderry

Client: IGSL				**Chemtest Job No.:**		25-17444	25-17444	25-17444	25-17444	25-17444	25-17444	25-17444
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1978296	1978297	1978298	1978299	1978300	1978301	1978302
Order No.:				*Client Sample Ref.:*		*BH26*	*BH26*	*BH29*	*BH33*	*BH33*	*BH28A*	*BH65*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*1.00*	*1.50*	*2.50*	*1.00*	*1.00*
				Date Sampled:		*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*
				Asbestos Lab:		DURHAM			DURHAM		DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25			< 0.25		< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0			< 2.0		< 2.0	< 2.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0			< 1.0		< 1.0	1.3
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0			< 2.0		< 2.0	2.7
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	15			11		9.5	14
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10			< 10		< 10	< 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	16			11		9.5	18
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05			< 0.05		< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05			< 0.05		< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05			< 0.05		< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25			< 0.25		< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0			< 1.0		< 1.0	< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0			< 1.0		< 1.0	< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	13			12		12	13
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	5.5			< 2.0		< 2.0	2.0
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	11			7.8		7.8	8.1
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	19			14		14	15
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50			< 0.50		< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	34			25		23	33
Mineral Oil EPH		N	2670	mg/kg	10	16			11		< 10	18
Benzene		M	2760	µg/kg	1.0	< 1.0			< 1.0		< 1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0			< 1.0		< 1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0			< 1.0		< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0			< 1.0		< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0			< 1.0		< 1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0			< 1.0		< 1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	0.13			< 0.10		< 0.10	< 0.10
Pyrene		M	2800	mg/kg	0.10	0.12			< 0.10		< 0.10	< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10

Results - Soil

Project: Edenderry

Client: IGSL				**Chemtest Job No.:**		25-17444	25-17444	25-17444	25-17444	25-17444	25-17444	25-17444
Quotation No.: Q24-34387				**Chemtest Sample ID.:**		1978296	1978297	1978298	1978299	1978300	1978301	1978302
Order No.:				*Client Sample Ref.:*		*BH26*	*BH26*	*BH29*	*BH33*	*BH33*	*BH28A*	*BH65*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*2.00*	*1.00*	*1.50*	*2.50*	*1.00*	*1.00*
				Date Sampled:		*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*	*20-May-2025*
				Asbestos Lab:		DURHAM			DURHAM		DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
Coronene		N	2800	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10
PCB 28		U	2815	mg/kg	0.010	< 0.010			< 0.010		< 0.010	< 0.010
PCB 52		U	2815	mg/kg	0.010	< 0.010			< 0.010		< 0.010	< 0.010
PCB 101		U	2815	mg/kg	0.010	< 0.010			< 0.010		< 0.010	< 0.010
PCB 118		U	2815	mg/kg	0.010	< 0.010			< 0.010		< 0.010	< 0.010
PCB 153		U	2815	mg/kg	0.010	< 0.010			< 0.010		< 0.010	< 0.010
PCB 138		U	2815	mg/kg	0.010	< 0.010			< 0.010		< 0.010	< 0.010
PCB 180		U	2815	mg/kg	0.010	< 0.010			< 0.010		< 0.010	< 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05			< 0.05		< 0.05	< 0.05
Total Phenols		M	2920	mg/kg	0.10	< 0.10			< 0.10		< 0.10	< 0.10

Results - Single Stage WAC

Project: Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-17444							
Chemtest Sample ID:	1978296							
Sample Ref:	*BH26*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*20-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.98	3	5	6
Loss On Ignition	2610		M	%	3.8	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		7.8	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0080	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0006	0.0060	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0013	0.013	0.5	10	70
Copper	1455		U	0.0025	0.025	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0013	0.013	0.5	10	30
Nickel	1455		U	0.0016	0.016	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0006	0.0057	0.1	0.5	7
Zinc	1455		U	0.005	0.050	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.37	3.7	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	65	650	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.0	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	9.0
WAC Sample Weight	855.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: Edenderry

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-17444							
Chemtest Sample ID:	1978299							
Sample Ref:	*BH33*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*1.50*							
Bottom Depth(m):								
Sampling Date:	*20-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.58	3	5	6
Loss On Ignition	2610		M	%	0.98	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.011	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	< 0.0002	< 0.0020	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0008	0.0078	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0039	0.039	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.003	0.031	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.18	1.8	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	46	460	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.8	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	2.6
WAC Sample Weight	807.9

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: Edenderry

Chemtest Job No:	25-17444					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	1978301							
Sample Ref:	*BH28A*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*20-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.32	3	5	6
Loss On Ignition	2610		M	%	1.7	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.021	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0003	0.0029	0.5	2	25
Barium	1455		U	0.006	0.065	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0014	0.014	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0027	0.027	0.5	10	30
Nickel	1455		U	0.0005	0.0051	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.004	0.039	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.24	2.4	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	44	440	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.6	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	4.4
WAC Sample Weight	936.8

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: Edenderry

Chemtest Job No:	25-17444					**Landfill Waste Acceptance Criteria Limits**		
Chemtest Sample ID:	1978302							
Sample Ref:	*BH65*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:								
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*20-May-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.93	3	5	6
Loss On Ignition	2610		M	%	1.4	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total Of 17 PAHs Lower	2800		N	mg/kg	< 1.0	100	--	--
pH at 20C	2010		M		8.5	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.022	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	< 0.0002	< 0.0020	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0010	0.010	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0005	0.0048	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.003	0.030	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.19	1.9	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	39	390	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	< 2.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	13
WAC Sample Weight	1096

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
1978296	*BH26*			*20-May-2025*	E	Amber Glass 250ml
1978296	*BH26*			*20-May-2025*	E	Plastic Tub 500g
1978299	*BH33*			*20-May-2025*	E	Amber Glass 250ml
1978299	*BH33*			*20-May-2025*	E	Plastic Tub 500g
1978301	*BH28A*			*20-May-2025*	E	Amber Glass 250ml
1978301	*BH28A*			*20-May-2025*	E	Plastic Tub 500g
1978302	*BH65*			*20-May-2025*	E	Amber Glass 250ml
1978302	*BH65*			*20-May-2025*	E	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.
Any comments or interpretations are outside the scope of UKAS accreditation.
The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.
Uncertainty of measurement for the determinands tested are available upon request .
None of the results in this report have been recovery corrected.
All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.
All Asbestos testing is performed at the indicated laboratory .
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - The required amount of sample for analysis was not received
H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.
All water samples will be retained for 14 days from the date of receipt.
Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Appendix 6

Geotechnical Laboratory Results (Rock)

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

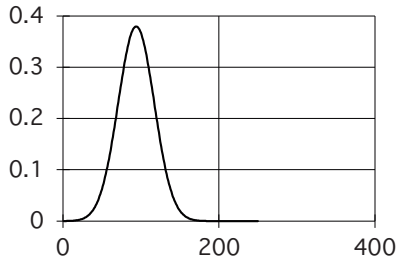
Contract: Gas to Bord na Mona Edenderry
Contract no. 25882
Sample Type: Core
Date of test: 03/09/2025

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC28A	12.3	78	20.0	1.222	3.29	4.02	88	d	//
	15.6	78	23.0	1.222	3.78	4.62	102	d	//
	16.5	78	15.0	1.222	2.47	3.01	66	d	//
	17.8	78	16.0	1.222	2.63	3.21	71	d	//
	18.6	78	17.0	1.222	2.79	3.41	75	d	//
RC29	8.8	78	18.0	1.222	2.96	3.61	80	d	//
	11.4	78	16.0	1.222	2.63	3.21	71	d	//
	14.2	78	20.0	1.222	3.29	4.02	88	d	//
	16.0	78	22.0	1.222	3.62	4.42	97	d	//
	16.5	78	19.0	1.222	3.12	3.81	84	d	//
RC30A	6.9	78	15.0	1.222	2.47	3.01	66	d	//
	8.1	78	13.0	1.222	2.14	2.61	57	d	//
	9.8	78	21.0	1.222	3.45	4.22	93	d	//
	10.1	78	33.0	1.222	5.42	6.63	146	d	//
	14.2	78	29.0	1.222	4.77	5.82	128	d	//
	15.8	78	27.0	1.222	4.44	5.42	119	d	//
RC31A	6.4	78	26.0	1.222	4.27	5.22	115	d	//
	9.7	78	28.0	1.222	4.60	5.62	124	d	//
	10.4	78	21.0	1.222	3.45	4.22	93	d	//
	13.7	78	19.0	1.222	3.12	3.81	84	d	//
	16.0	78	24.0	1.222	3.94	4.82	106	d	//
	17.0	78	26.0	1.222	4.27	5.22	115	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	22	22
Minimum	2.61	57
Average	4.27	94
Maximum	6.63	146
Standard Dev.	1.05	23
Upper 95% Confidence Limit	6.33	139.32
Lower 95% Confidence Limit	2.21	48.61

Comments:
*UCS taken as k x Point Load Is(50): k= 22

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

Appendix 7

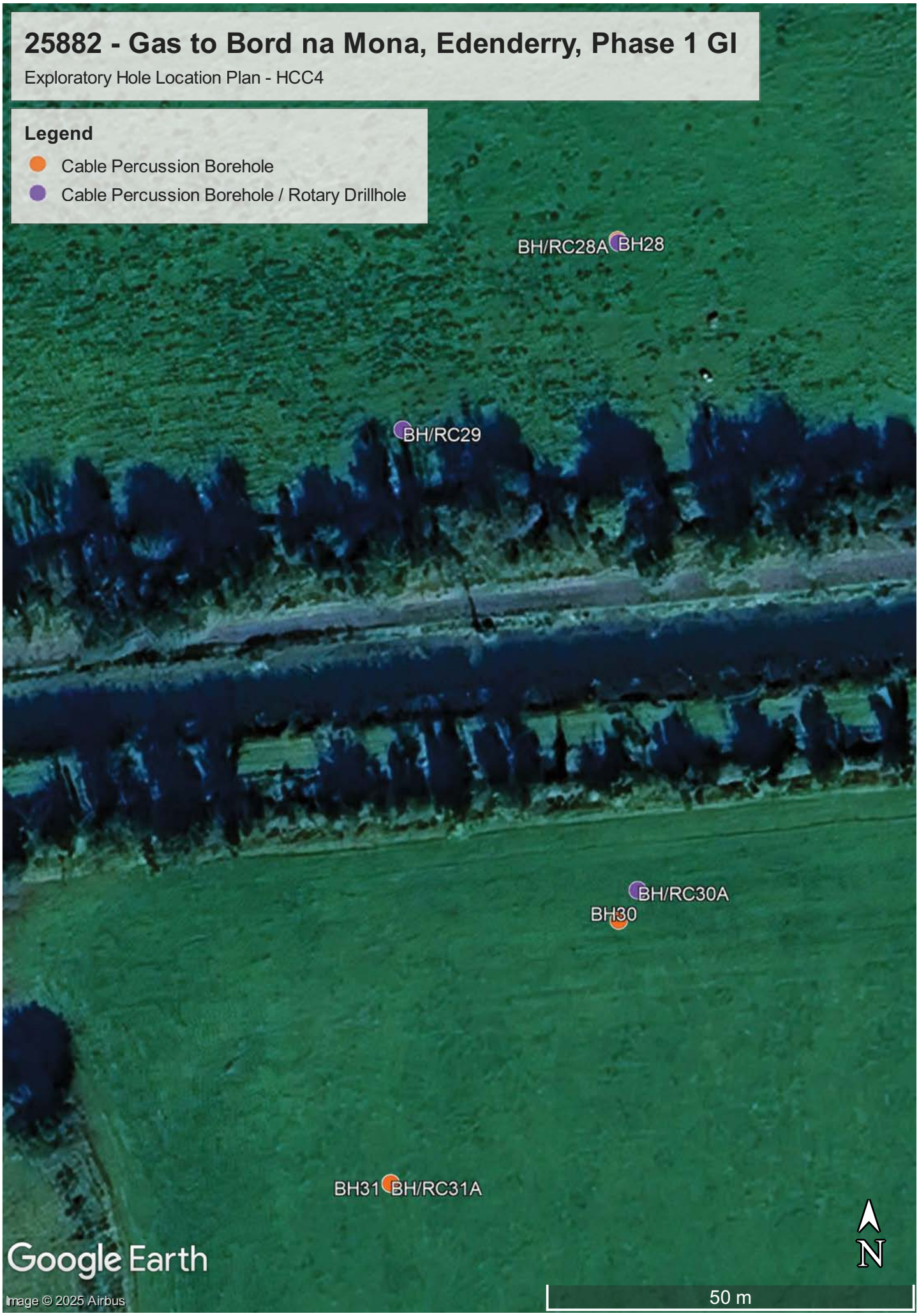
Exploratory Hole Location Plan

25882 - Gas to Bord na Mona, Edenderry, Phase 1 GI

Exploratory Hole Location Plan - HCC4

Legend

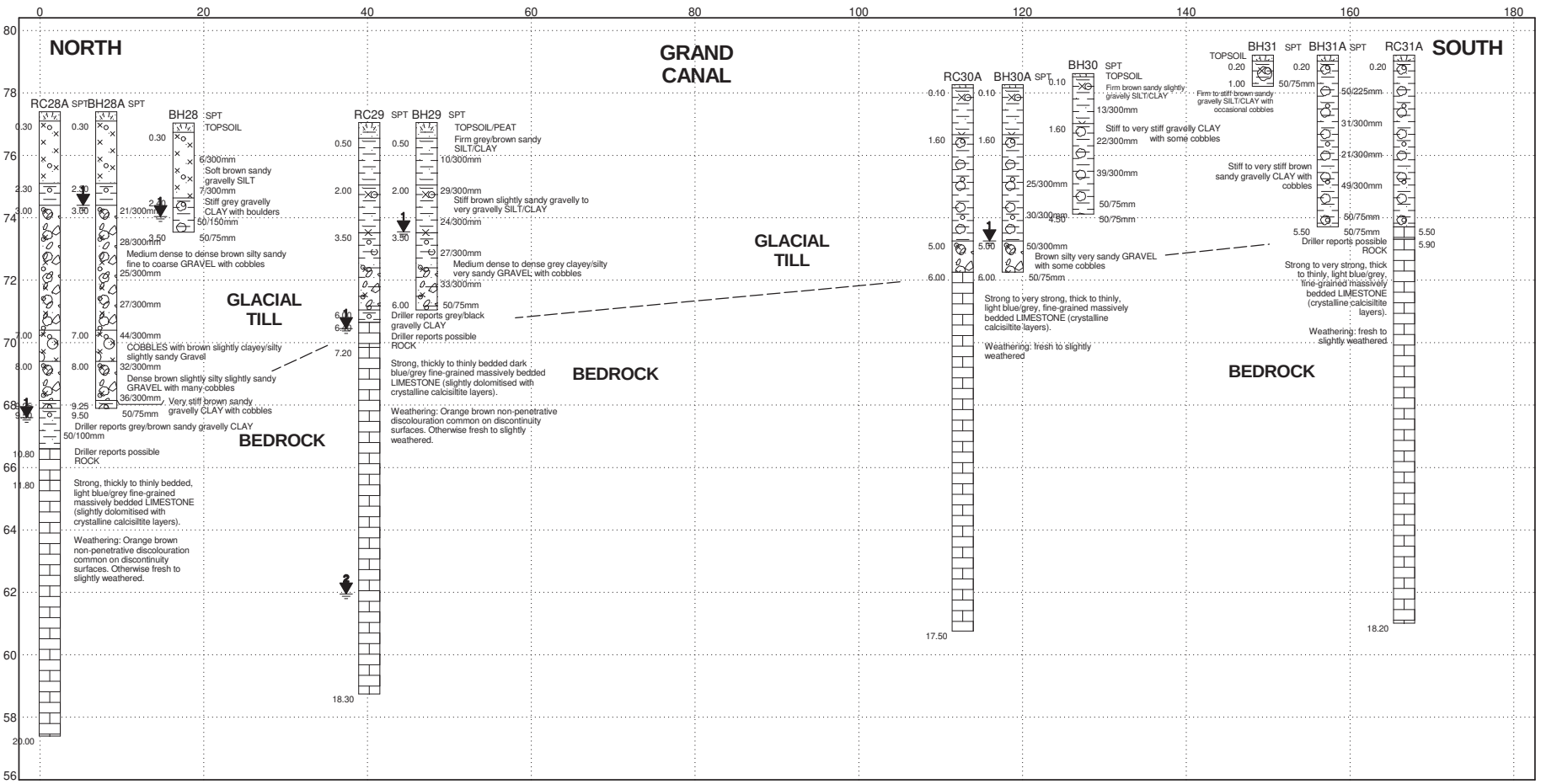
- Cable Percussion Borehole
- Cable Percussion Borehole / Rotary Drillhole

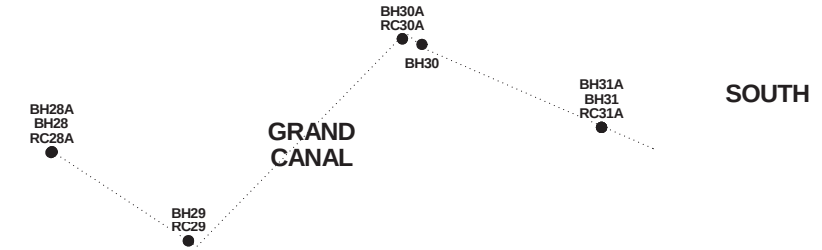


Appendix 8

Geological Cross Section

N-S HCC4





LITHOLOGY GRAPHICS

- TOPSOIL
- Sandy gravelly SILT
- Gravelly cobbly CLAY
- Gravelly CLAY
- Silty sandy cobbly GRAVEL
- Silty gravelly sandy COBBLES
- Sandy gravelly cobbly CLAY
- Silty sandy CLAY
- Sandy gravelly silty CLAY
- Clayey silty sandy cobbly GRAVEL
- Cobbly CLAY
- Sandy gravelly silty CLAY with cobbles
- Sandy gravelly CLAY
- LIMESTONE

SUBSURFACE SECTION N - S (HCC4)

Client: Murphy International Limited

Project: Gas to Bord na Mona, Edenderry, Phase 1 GI

Number: 25882

FENCE A3 CARRIGTWOHILL 25882.GPJ IGSL.GDT 4/9/25