

Appendix 13A
Ground Investigation Report

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IRISH DRILLING LIMITED

LOUGHREA, CO. GALWAY, IRELAND



CONTRACT DRILLING
SITE INVESTIGATION

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DERRYGREENAGH THERMAL POWER PROJECT

MAIN SITE AREA

SITE INVESTIGATION CONTRACT FACTUAL REPORT

Bord na Mona Powergen Ltd.,
Main Street,
Newbridge,
Co. Kildare.

	Prepared by	Approved by	Rev. Issue Date:	Revision No.
	Ronan Killeen	Declan Joyce	2 nd November 2023	23 _OY _101/02
<u>Signature</u>				

FOREWORD

The borehole and trial pit records have been compiled from an examination of the samples by a Geotechnical Engineer and from the Drillers' descriptions.

The report presents an opinion on the configuration of the strata within the site based on the borehole and trial pit results. The assumptions, though reasonable, are given for guidance only and no liability can be accepted for changes in conditions not revealed by the boreholes and trial pits.

The fieldwork was carried out in accordance with IS EN 1997-2 and BS5930:2015+A1:2020 Code of Practice for Site Investigations with precedence given to IS EN 1997-2 where applicable.

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1.0 Introduction.

Irish Drilling Ltd. (IDL) was instructed by Bord na Mona Powergen Limited to carry out a site investigation at the site of the proposed Derrygreenagh Thermal Power Site.

This site investigation was carried out at the Main Site Area to provide detailed factual geotechnical information of the underlying ground conditions for a proposed gas-fired power plant and ancillary grid connection works.

The fieldwork commenced on April 13th 2023 and was completed on July 31st 2023.

2.0 Site & Geology

The site is located at an existing Bord na Mona facility at Derrygreenagh Bog, County Offaly.

The fieldwork was carried out predominantly on peat bog and adjacent agricultural lands and bogland.

Weather conditions in general were quite variable with the majority of the fieldwork carried out over a typical spring/summer period in Ireland. Boglands in particular were occasionally difficult to access, due to rutting, as land became soft caused by sustained wet periods. Tractors and excavators were occasionally used to assist moving of plant and machinery.

Site Plans, prepared by the client's representatives and amended by IDL to show 'As-Built' fieldwork locations, are included with this report.

The following were the main published information sources used:

Geological Map of Ireland: 1:750,000 scale map series.

Site investigation data is available as point source data along the proposed route, and the majority of the ground in between the points can only be assumed to follow the characteristics of the nearest available data.

Overview of Subsoil Geology

Glacial Till:

Glacial Till is what was often referred to as Boulder Clay. It is a diverse material that is largely deposited sub-glacially and has a wide range of characteristics due to the variety of parent materials and different processes of deposition. Tills are often tightly packed, unsorted, heterogeneous, unbedded, and can have a wide range of particle sizes and types, which are often but not exclusively angular or sub-angular.

The type of parent material plays a critical role in providing the particles that create different subsoil permeability with sandstones giving rise to a high proportion of sand sized grains in the till matrix, clean limestones providing a relatively high proportion of silt, while shales, shaly limestones and mudstones break down to the finer clay sized particles.

Glacial Outwash Deposits:

Deposition of sand and gravel takes place mainly when glaciers are melting, which gives rise to large volumes of meltwater with great erosive and transporting power. The subsoils deposited in this environment are predominantly, but not exclusively, rounded to subrounded gravel and sand, with the finer fractions of clay and silt washed out.

Peat:

The deposition of peat occurred in post-glacial periods and is generally associated with the start of warmer and wetter climatic conditions. Peat is an unconsolidated usually dark brown to black organic material comprising a mixture of decomposed and undecomposed plant matter that accumulated in an acidic waterlogged environment. Peat has an extremely high-water content generally averaging over 90% by volume.

Solid Geology

The Geological Map of Ireland: 1:750,000 scale map series indicate that the site is underlain by the Carboniferous Limestone Rock Formations.

3.0 Fieldwork.

3.1 Fieldwork Plant:

The following plant was mobilised to site to carry out fieldwork operations:

Dando 2000 Cable Percussive Boring Rigs.
GT1100 GoTract Rotary Core Drilling Rigs.
Hyundai 140 LC-9 Wide-Track Excavator.

Fieldwork carried out to date has included the following:

3.2 Cable Percussive Boreholes:

Fourteen cable percussion (Shell & Auger) boreholes were completed using Dando 2000 Cable Percussive Boring Rigs. The boreholes were bored to 'refusal' or to depths as instructed by the client's representatives.

The borehole depths ranged from 3.50m to 9.20m below ground level and the boreholes completed at the Main Site Area are listed as follows:

BH 101
BH 102
BH 103
BH 104
BH 105
BH 106
BH 107
BH 109
BH 110
BH 111
BH 112
BH 116
BH 117
BH 118
BH PW301

In-Situ testing consisting of Standard Penetration Tests were carried out at regular intervals (predominantly 1.0m intervals) or as instructed by the client's representatives.

Disturbed bulk and jar soil samples were taken at each change in strata and were returned to the laboratory and logged by a Geotechnical Engineer and presented for testing. Groundwater samples were taken where possible and returned to the laboratory for storage and analysis.

Undisturbed (U100, Piston) soil samples were also recovered where possible in cohesive soils and returned to the laboratory for logging and testing.

A 50mm diameter standpipe was installed in a number of boreholes and as instructed by the Client's Engineer, to allow for monitoring of groundwater levels over a prolonged period of time.

Variable Head Permeability Tests (Rising and Falling Head) were carried out at a number of borehole standpipe locations and the records of same are included as Appendix 10.

A summary of water levels recorded during the fieldwork period is included with this report as Appendix 8.

Detailed engineering logs for the cable percussive boreholes completed are included with this report in Appendix 1.

3.3 Rotary Core Boreholes:

Fourteen rotary core boreholes were carried out to establish overburden conditions and rockhead and to establish the nature and integrity of the underlying rock.

The rotary core boreholes were predominantly carried out as 'extension follow-on' boreholes at locations where the cable percussive boreholes encountered 'refusals' at relatively shallow depths.

One further rotary core borehole (BH 111A) was completed as a 'stand-alone' borehole.

The boreholes were completed using wireline drilling techniques, and HQ size (64mm core diameter, 96mm hole diameter) drill strings to recover soil and rock core samples.

A water based flush system was used as the drilling medium while a biodegradable polymer gel was also used where necessary to aid the drilling and soil / rock recovery process.

The samples were stored in wooden boxes and returned to the laboratory where there were logged and photographed by a Geotechnical Engineer and presented for testing.

In-Situ testing consisting of Standard Penetration Tests were carried out in the overburden in a number of the boreholes.

The rotary core boreholes were carried out to depths ranging from 11.00m to 58.00m below ground level and the boreholes completed at the Main Site Area are listed as follows:

BH 101
BH 102
BH 103
BH 104
BH 105
BH 106
BH 107
BH 109
BH 110
BH 111
BH 111A
BH 112
BH 116
BH 117
BH 118.

A 50mm diameter standpipe was installed in a number of boreholes and as instructed by the Client's Engineer, to allow for monitoring of groundwater levels over a prolonged period of time.

Variable Head Permeability Tests (Rising and Falling Head) were carried out at a number of borehole standpipe locations and the records of same are included as Appendix 10.

A summary of water levels recorded during the fieldwork period is included with this report as Appendix 8.

Detailed engineering logs for the rotary core boreholes completed are included with this report in Appendix 2.

3.4 Trial Pits:

Fifteen trial pits were excavated on site using a 14T wide-padded tracked excavator.

The pits were logged and photographed by an Engineer with observations made on ground conditions, pit stability, water ingress and services encountered.

The pits were excavated to depths ranging from 0.50m to 4.80m below ground level and the trial pits completed at the Main Site Area are listed as follows:

TP 201
TP 202
TP 203
TP 204
TP 205
TP 206
TP 206A
TP 207
TP 208
TP 209
TP 210
TP 211
TP 212
TP 224
TP 311

Small and bulk disturbed soil samples were recovered at each change in strata and returned to the laboratory and presented for testing.

In-Situ Tests consisting of plate bearing tests were carried out at many of the trial pit locations, as instructed by the client's representatives. A 610mm diameter steel plate was used and was jacked against a tracked excavator.

The Plate Test graphs were used to measure the co-efficient of subgrade reaction (k_s) and to estimate the CBR values. The records of these test are included in Appendix 9 of this report.

In-Situ tests consisting of shear vane tests and thermal resistivity tests were also carried out where possible in cohesive soils and a summary of the shear vane test results and thermal resistivity results are included on the trial pit logs.

Detailed engineering logs for the trial pits completed are included with this report in Appendix 3.

3.5 Cone Penetration Tests:

Static Cone Penetration tests were carried out at eleven locations using a 20 tonne Track-mounted CPT Rig.

The tests were carried out by In-Situ Site Investigations Ltd to depths ranging from 0.24m to 17.01m below ground level and the tests completed at the Main Site Area are listed as follows:

CPT 201
CPT 202
CPT 203
CPT 204
CPT 205
CPT 206
CPT 207
CPT 209
CPT 211
CPT 212
CPT 213

The records of the cone penetration tests are included as a 'stand-alone' report in appendix 7. This report contains data for tests carried out at both the Main Site Area and Main Site (South Area).

3.6 Geophysical Surveys:

A Geophysical Survey was carried out by Minerex Geophysics Limited at the proposed thermal power site (Main Site Area and Main Site (South Area)).

The geophysical survey consisted of 2D-Resistivity and the main objectives of the survey were to determine ground conditions, estimate the depth to rock, overburden thickness and reduce the risk of encountering unknown subsurface conditions (including soft ground, shallow bedrock or bedrock karstification) during construction.

The geophysical models and interpretations give guidance about the geological ground and in conjunction with the boreholes a detailed picture of the subsurface conditions.

The records of the geophysical survey and interpretations for both the Main Site Area and Main Site South Area are included as a 'stand-alone' report in appendix 4A.

Vertical Electrical Sounding tests were also carried out by Minerex Geophysics Limited at the proposed thermal power site.

The tests were carried out using the Wenner Electrode Configuration and the records of same are presented as a 'stand-alone' report in Appendix 4B of this factual report.

A Ground Penetration Radar (GPR) Utility Survey was also carried out by Scantech Geoscience Ltd in and around the vicinity of the existing plant infrastructure (Main Site Area and Main Site South Area).

The purpose of this survey was to identify the presence of any underground services on site (using non-intrusive fieldwork methods) and the records of this survey have been included as a 'stand-alone' report in Appendix 6 of this factual report.

3.7 Acoustic Televiewer Survey:

An Acoustic Televiewer Survey was carried out by European Geophysical Surveys Limited.

The surveys were carried out at the following three rotary core locations: BH 103 and BH 111A. A survey was also carried out at an existing water well, namely PW 1.

The survey was carried out in the boreholes at depths ranging from 7.00m to 65.80m below ground level and consisted of some or all of the following: Optical Imager, Acoustic Imager, Natural Gamma, Caliper, Focused Resistivity, Fluid Temperature and Conductivity, Impeller Flowmeter and Full Wave Sonic.

The records of the televiewer survey are included as a 'stand-alone' report in appendix 5 of this report.

3.8 In-Situ Testing

Soil infiltration tests were also carried out at four locations (IT 1 to IT 4) in accordance with BRE 365 and the records of same are included with this report as Appendix 11A.

Soil percolation tests were also carried out at two locations (PT 1 to PT 2). The tests were completed by Brendan Slevin & Associates, Consulting Engineers in accordance with EPA Soil Assessment Guidelines and the records of same are included as a 'stand-alone' report in Appendix 11B of this report.

A pump test was carried out at an existing well at the Main Site Area (labelled PW 1 on the site plans). This well was completed in 2008 and a deployable yield of 630 cubic metres per day was determined at that time. Prior to commencement of the pump test reconditioning works were carried out on the well by Dempseys Water Well Drilling Limited.

The Pump test was subsequently carried out by Hydro Environmental Services and the records of the pump test are presented as a 'stand-alone' report in Appendix 11C of this factual report.

3.9 General Summary:

The fieldwork locations were set out on site using a Trimble CU Bluetooth GPS Surveying Unit and the co-ordinates are included on the logs presented in the appendices.

All fieldwork co-ordinates are reported to Irish Transverse Mercator (ITM) with Reduced Levels recorded relative to Malin Head Datum and with an accuracy level of + or – 0.10m.

Ground conditions encountered during the completion of the fieldwork were typical and as expected for this region and predominantly consisted of Peat overlying Glacial Till overlying Bedrock.

Made ground was also encountered at a number of fieldwork locations to depths of up to 2.90m below ground level.

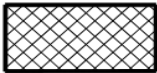
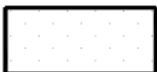
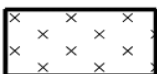
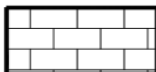
Very soft and soft brown Peat was encountered in many of the boreholes and trial pits to depths ranging from 0.40m to 4.80m below ground level.

The Glacial Tills in general consisted of slightly sandy slightly gravelly silt/clay with cobbles and boulders and/or silty sands and/or gravels with cobbles and boulders.

Intact bedrock was encountered in the rotary core boreholes at depths varying from 5.00m to 39.30m below ground level. Weathered bedrock was also encountered in a number of the boreholes at shallower depths.

It is further noted that bedrock was not encountered in many of the boreholes before borehole termination and for detailed descriptions of bedrock and ground conditions encountered please refer to the engineering logs included in the appendices of this report.

The following Key Legend Table details the symbology used on the engineering logs to describe ground conditions encountered:

Legend:	
	Made ground=mg
	Boulders and cobbles=b/c
	Gravel=g
	Sand=s
	Silt=si
	Clay=cl
	Peat=p
	Silty sand=s/si
	Rock=r

The fieldwork was carried out in accordance with IS EN 1997-2 and BS5930:2015+A1:2020 Code of Practice for Site Investigations with precedence given to IS EN 1997-2 where applicable.

4.0 Laboratory Testing

Representative samples recovered from the boreholes and trial pits were scheduled for testing in the laboratory.

The test schedules were prepared by the Client's Engineer and included some or all of the following tests on disturbed and undisturbed soil samples:

- * Natural Moisture Content.
- * Atterberg Limits.
- * Particle Density.
- * Particle Size Distribution.
- * Sedimentation.
- * Organic Content / Loss on Ignition.
- * Shearbox.
- * Triaxial.
- * Compaction (CBR).
- * Consolidation.
- * Chemical (pH, Sulphate (Total/Water), Chloride).
- * BRE SD1
- * Thermal Resistivity.

The test schedules included some or all of the following tests on rock core samples:

- * Point Load.
- * UCS.

The test schedules were carried out predominantly at the IDL Laboratory located at Loughrea, County Galway.

A number of specialist tests not available at the IDL laboratory were carried out by designated laboratories on a subcontract basis as follows:

Laboratory chemical tests were carried out by Alcontrol Laboratories, UK.
Shear Strength, Triaxial and Shear Box Tests were carried out by NMTL, County Carlow.

Soil samples (disturbed and undisturbed) in general were recovered from the excavation of trial pits and completion of cable percussive boreholes. Rock core samples were recovered from the completion of rotary core boreholes.

The records of soil and rock core laboratory test results carried out on same are reported in Appendix 12. The records of all laboratory tests completed on the fieldwork soil/rock samples for all three sites (Main Site Area, Main Site South Area and Cable/Pylon Route) are included in Appendix 12 and reference should be made only to the results relevant to this report, namely Main Site Area.

Environmental laboratory tests were also carried out on many soil samples recovered from the boreholes and trial pits.

The environmental laboratory tests were carried out by Alcontrol Laboratories, UK and the records of same are included as Appendix 13 of this report. The records of all environmental laboratory tests completed on the fieldwork soil samples for all three sites (Main Site Area, Main Site South Area and Cable/Pylon Route) are included in Appendix 13 and reference should be made only to the results relevant to this report, namely Main Site Area.

The soil and rock descriptions as noted on the borehole and trial pit logs are in general visual descriptions as observed and logged by our Engineers and are described in accordance with IS EN 1997-2 and BS5930:2015+A1:2020 Code of Practice for Site Investigations.

Soils descriptions (cohesive or otherwise) are also initially assessed based on the texture and 'feel' of the soil materials as witnessed by our Geotechnical Engineers and in accordance with IS EN 1997-2 and BS5930:2015+A1:2020.

Where laboratory classification tests have been carried out on soil or rock samples then these visual descriptions have been amended accordingly to take into account the results of these classification tests.

The records of all fieldwork, laboratory test results and photographs are included in the appendices of this Factual Report.

Ronan Killeen

Ronan Killeen
Chartered Engineer
Irish Drilling Limited
November 2nd 2023

Appendix 1

Borehole Records

(Cable Percussive)



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BOREHOLE LOG

Project Derrygreenagh Power				Location Co Offaly		BOREHOLE No BH101					
Job No 2023OY104		Date 13-04-23 14-04-23		Ground Level (m OD) 83.67			Co-Ordinates () E 649,431.5 N 738,338.6				
Engineer Fichtner				GROUNDWATER STRIKES		Water strikes: 1st: dry 2nd: 3rd:		Rose to (@ 20 min.): Sealed at:		Sheet 1 of 2 Status FINAL	

SAMPLES & TESTS			Water	STRATA				Instrument/ Backfill	
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick- ness)	DESCRIPTION		
0.00-1.00	B1	N = 5 (2, 2, 2, 1, 1, 1)				(0.50)	MADE GROUND: Clause 804 type material, 3" & down and gravel.		
				83.17		0.50			MADE GROUND: Soft black slightly gravelly sandy ORGANIC SILT.
1.00	SPT			82.37		1.30	(0.80)		
1.00	ES								Soft dark brown PEAT.
1.00	D2								
1.00-1.50	B4			81.97		(0.40)			
				81.77		1.70	Soft brown peaty SILT with wood.		
2.00-2.45	U1005	14 blows					Firm grey slightly gravelly SILT with rare cobbles.		
2.50	D6								
2.50-3.00	B7								
						(1.90)			
3.00	SPT	N = 10 (2, 2, 2, 2, 3, 3)							
3.00	D8								
3.00-3.50	B10								
				79.87		3.80			
4.00	SPT	N = 22 (4, 5, 5, 6, 5, 6)					Medium dense brownish greyish yellow very sandy very silty fine and medium GRAVEL.		
4.00	D11								
4.00-4.50	B13								
5.00	SPT	N = 23 (5, 7, 5, 6, 5, 7)				(2.70)			
5.00	D14								
5.00-5.50	B16								
6.00	SPT	N = 23 (7, 6, 5, 4, 9, 5)							
6.00	D17								
6.00-6.50	B19			77.17		6.50			
							Medium dense brownish yellow silty sandy GRAVEL with rare cobbles.		
7.00	SPT	N = 19 (4, 4, 5, 5, 4, 5)							
7.00	D20								
7.00-7.50	B22					(2.10)			

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
13-04-23	17.30	6.50									Falling head test expedited in BH. BH backfilled.
14-04-23	08.00	6.50			6.00						

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Dando 2000		Driller DK	Logged By DK
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IDL AGS4 UK BH DERRYGREENAGHPS CP ALL FILE TO FINAL OCT 31 2023 GPJ ID GINT AGS 4 0 4 GDT 2/11/23



BOREHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		BOREHOLE No BH101
Job No 2023OY104	Date 13-04-23 14-04-23	Ground Level (m OD) 83.67	Co-Ordinates () E 649,431.5 N 738,338.6		
Engineer Fichtner		GROUNDWATER STRIKES	Water strikes: 1st: dry 2nd: 3rd:		
			Rose to (@ 20 min.): Sealed at:		Sheet 2 of 2 Status FINAL

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Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
14-04-23	13.00	8.60	8.60	203		8.6		1:00			Falling head test expedited in BH. BH backfilled.
All dimensions in metres Scale 1:50		Client: Bord na Mona			Method/ Plant Used	Dando 2000				Driller DK	Logged By DK

DL AGS4 UK BH DERRYGREENAGHPS CP ALL FILE TO FINAL OCT 31 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



BOREHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		BOREHOLE No BH102
Job No 2023OY104	Date 17-04-23 17-04-23	Ground Level (m OD) 82.94	Co-Ordinates () E 649,532.9 N 738,384.3		
Engineer Fichtner		GROUNDWATER STRIKES	Water strikes: 1st: dry 2nd: 3rd:		
			Rose to (@ 20 min.): Sealed at:		Sheet 1 of 1 Status FINAL

SAMPLES & TESTS			Water	STRATA				Instrument/ Backfill	
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick- ness)	DESCRIPTION		
0.00-1.00	B1	N = 8 (1, 1, 2, 2, 2, 2)		82.34		(0.60) 0.60	MADE GROUND: Site FILL.		
1.00	SPT			81.84		(0.50) 1.10	Firm dry black PEAT.		
1.00	ES			81.34		(0.50) 1.60	Soft blackish grey sandy peaty SILT with rare cobbles.		
1.00	D2								
1.00-1.50	B4	N = 4 (2, 1, 1, 1, 1, 1)				(2.00)	Soft black PEAT with wood.		
2.00	SPT								
2.00	D5								
2.00-2.50	B7								
3.00	D8	8 blows					3.60		Medium dense moist brown very silty very sandy fine and medium GRAVEL with rare cobbles. Cobbles are rounded.
3.00-3.45	U1009								
3.00-3.50	B10								
4.00	SPT								
4.00	D11								
4.00-4.50	B13								
5.00	SPT	50 for 150 mm (16, 19, 25, 25)	77.84			5.10			

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
17-04-23	16.30	5.10	5.10	203		5.1		1:00			Falling head test expedited in BH. BH backfilled.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Dando 2000		Driller DK	Logged By DK
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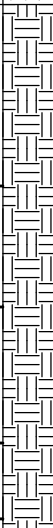
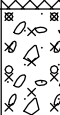
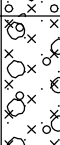
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BOREHOLE LOG

Project Derrygreenagh Power				Location Co Offaly		BOREHOLE No BH103
Job No 2023OY104	Date 17-04-23 17-04-23	Ground Level (m OD) 84.36	Co-Ordinates () E 649,513.6 N 738,320.7			
Engineer Fichtner			GROUNDWATER STRIKES	Water strikes: 1st: dry 2nd: 3rd:	Rose to (@ 20 min.): Sealed at:	Sheet 1 of 1 Status FINAL

SAMPLES & TESTS			Water	STRATA			Instrument/ Backfill		
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick- ness)		DESCRIPTION	
0.00-1.00	B1	N = 30 (5, 8, 8, 7, 6, 9)				(1.20)	MADE GROUND: Dense GRAVEL fill with metal.		
1.00	SPT			83.16	1.20				
1.00	D2			82.36		(0.80)	2.00		Dense brown silty sandy GRAVEL.
1.00-1.50	B4								
1.50	ES								
1.50	D5								
2.00	SPT	N = 33 (4, 6, 6, 9, 8, 10)			(0.90)	2.90	Stiff grey slightly sandy gravelly SILT with cobbles.		
2.00-2.50	B7								
3.00	SPT	50 for 240 mm (3, 5, 8, 29, 13, 0)		(0.50)	3.40	Stiff brown slightly sandy gravelly SILT. Gravel is fine.			
3.00	D8						80.96		
3.00-3.50	B10						80.86	3.50	Obstruction as boulder.
3.50	D11								

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
17-04-23	17.30	3.50	3.50	203		3.4	3.5	1:00			Falling head test expedited in BH. BH backfilled.
All dimensions in metres Scale 1:50		Client: Bord na Mona		Method/ Plant Used		Dando 2000			Driller BT		Logged By BT

IDL AGS4 UK BH DERRYGREENAGHPS CP ALL FILE TO FINAL OCT 31 2023 GPJ ID GINT AGS 4 0 4 GDT 2/11/23



BOREHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		BOREHOLE No BH104
Job No 2023OY104	Date 18-04-23 18-04-23	Ground Level (m OD) 82.93	Co-Ordinates () E 649,609.5 N 738,361.9		
Engineer Fichtner		GROUNDWATER STRIKES	Water strikes: 1st: dry 2nd: 3rd:	Rose to (@ 20 min.): Sealed at:	Sheet 1 of 2 Status FINAL

SAMPLES & TESTS			Water	STRATA				Instrument/ Backfill	
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick- ness)	DESCRIPTION		
0.00-1.00	B1	5 blows		82.43		(0.50) 0.50	Firm brown sandy SILT.		
1.00 1.00 1.00-1.45	ES D2 U1003			81.33		(1.10)	Firm dry blackPEAT.		
1.50-2.00	B4			80.23		(1.10)	Black slightly gravelly sandy ORGANIC SILT with wood.		
2.00	SPT								N = 2 (1, 1, 0, 1, 0, 1)
2.00-2.50	D5 B7 D8								
2.50									
3.00 3.00-3.50	SPT B10	79.03		(1.20)	Stiff grey sandy SILT with rare cobbles. Cobbles are angular of limestone.				
4.00 4.00 4.00-4.50	SPT D11 B13	N = 18 (3, 4, 6, 3, 4, 5)				Stiff moist reddish brown very sandy very gravelly SILT.			
5.00 5.00 5.00-5.50	SPT D14 B16								
6.00 6.00 6.00-6.50	SPT D17 B19								
7.00 7.00 7.00-7.50	SPT D20 B22								

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
						3	3.5	1:00			BH backfilled.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Dando 2000		Driller DK	Logged By DK
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DL AGS4 UK BH DERRYGREENAGHPS CP ALL FILE TO FINAL OCT 31 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



BOREHOLE LOG

Project Derrygreenagh Power				Location Co Offaly		BOREHOLE No BH104
Job No 2023OY104		Date 18-04-23 18-04-23		Ground Level (m OD) 82.93		
				Co-Ordinates () E 649,609.5 N 738,361.9		
Engineer Fichtner				GROUNDWATER STRIKES Water strikes: 1st: dry 2nd: 3rd:		Rose to (@ 20 min.): Sealed at:
						Sheet 2 of 2 Status FINAL

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Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
18-04-23	17.30	8.10	8.10	203		8.1		1:00			BH backfilled.



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BOREHOLE LOG

Project Derrygreenagh Power				Location Co Offaly		BOREHOLE No BH105
Job No 2023OY104	Date 18-04-23 19-04-23	Ground Level (m OD) 84.38		Co-Ordinates () E 649,562.6 N 738,294.9		
Engineer Fichtner			GROUNDWATER STRIKES	Water strikes: 1st: dry 2nd: 3rd:	Rose to (@ 20 min.): Sealed at:	Sheet 1 of 2 Status FINAL

SAMPLES & TESTS			Water	STRATA				Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	DESCRIPTION	
0.00-1.00	B1					(0.60)	MADE GROUND: Stiff grey gravelly CLAY fill.	
				83.78		0.60		
1.00	SPT	N = 23 (4, 5, 3, 6, 7, 7)					Stiff greyish brown sandy SILT.	
1.00	D2							
1.00-1.50	B4							
1.50	D5					(2.50)		
2.00	SPT	N = 19 (3, 3, 4, 5, 5, 5)						
2.00-2.50	B7							
				81.28		3.10		
3.00	D8						Stiff brown slightly sandy slightly gravelly SILT.	
3.00-3.45	U1009	16 blows						
3.50	D10							
4.00	SPT	N = 22 (3, 4, 5, 5, 6, 6)				(3.00)		
4.00-4.50	B12							
4.50	D13							
5.00	SPT	N = 18 (3, 5, 3, 4, 5, 6)						
5.00-5.50	B15							
5.50	D16			78.28		6.10		
6.50	SPT	N = 23 (2, 5, 6, 4, 6, 7)					Stiff dry greyish white sandy SILT.	
6.50-7.00	B18							
7.00	D19							

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
18-04-23	17.30	7.00	6.00	203							Falling head test expedited in BH. BH backfilled.
19-04-23	08.00	7.00									

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Dando 2000		Driller BT	Logged By BT
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IDL AGS4 UK BH DERRYGREENAGHPS CP ALL FILE TO FINAL OCT 31 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



Irish drilling LTD

BOREHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		BOREHOLE No BH105
Job No 2023OY104	Date 18-04-23 19-04-23	Ground Level (m OD) 84.38	Co-Ordinates () E 649,562.6 N 738,294.9		
Engineer Fichtner		GROUNDWATER STRIKES	Water strikes: 1st: dry 2nd: 3rd:	Rose to (@ 20 min.): Sealed at:	Sheet 2 of 2 Status FINAL

SAMPLES & TESTS			Water	STRATA				Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	DESCRIPTION	
8.00	SPT	N = 18 (3, 3, 2, 4, 5, 7)			x x x	(3.90)	Stiff dry greyish white sandy SILT. <i>(continued)</i>	
8.00-8.50	B21				x x x			
8.50	D22				x x x			
9.50	SPT	N = 11 (2, 1, 2, 2, 4, 3)			x x x			
9.50-10.00	B24			74.38	x x x	10.00		
10.00	D25			74.18		10.20	Obstruction as boulder.	
10.10	SPT	50 for 40 mm (25, 50)						
11.10		N = 11 (2, 1, 2, 2, 4, 3)						
12.10		N = 22 (2, 5, 4, 3, 5, 10)						

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
19-04-23	13.00	10.20			10.20	10.1	10.2	1:00			Falling head test expedited in BH. BH backfilled.
All dimensions in metres Scale 1:50		Client: Bord na Mona		Method/ Plant Used		Dando 2000			Driller BT	Logged By BT	

IDL AGS4 UK BH DERRYGREENAGHPS CP ALL FILE TO FINAL OCT 31 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



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BOREHOLE LOG

Project Derrygreenagh Power				Location Co Offaly		BOREHOLE No BH106
Job No 2023OY104	Date 19-04-23 20-04-23	Ground Level (m OD) 85.45	Co-Ordinates () E 649,588.7 N 738,249.7			
Engineer Fichtner			GROUNDWATER STRIKES	Water strikes: 1st: dry 2nd: 3rd:	Rose to (@ 20 min.): Sealed at:	Sheet 1 of 1 Status FINAL

SAMPLES & TESTS			Water	STRATA				Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	DESCRIPTION	
0.00-1.00	B1	50 for 150 mm (8, 10, 17, 33)		85.15		0.30	MADE GROUND: Dense gravelly FILL.	
1.00	SPT					(2.00)	Firm brownish grey slightly sandy slightly gravelly SILT with cobbles and boulders.	
1.00	D2							
1.00-1.50	B4							
1.50	D5	N = 41 (4, 5, 8, 7, 7, 19)		83.15		2.30	Firm brownish grey SILT with cobbles and boulders.	
2.00	SPT							
2.00-2.50	B7							
3.00	SPT							
3.00	D8	N = 27 (3, 3, 6, 5, 8, 8)						
3.00-3.50	B10							
3.50	D11							
4.00	SPT							
4.00	ES	N = 17 (2, 2, 3, 5, 4, 5)				(4.20)		
4.00-4.50	B13							
4.50	D14							
5.00	SPT							
5.00-5.50	B16	N = 20 (3, 4, 4, 4, 5, 7)						
5.50	D17							
6.50	SPT			78.95		6.50		
				78.85		6.60	Obstruction as boulder.	

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
19-04-23	17.30	2.00	6.50	203		1.3	1.6	1:00			Falling head test expedited in BH. BH backfilled.
20-04-23	08.00	2.00				2.45	2.7	1:00			
20-04-23	15.00	6.60				6.5	6.6	1:00			

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Dando 2000	Driller BT	Logged By BT
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IDL AGS4 UK BH DERRYGREENAGHPS CP ALL FILE TO FINAL OCT 31 2023 GPJ ID GINT AGS 4 0 4 GPT 2/11/23



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BOREHOLE LOG

Project Derrygreenagh Power				Location Co Offaly		BOREHOLE No BH107
Job No 2023OY104	Date 26-04-23 27-04-23	Ground Level (m OD) 87.19		Co-Ordinates () E 649,439.0 N 738,146.2		
Engineer Fichtner			GROUNDWATER STRIKES	Water strikes: 1st: dry 2nd: 3rd:	Rose to (@ 20 min.): Sealed at:	Sheet 1 of 2 Status FINAL

SAMPLES & TESTS			Water	STRATA				Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	DESCRIPTION	
0.00-1.00	B1						Grass over firm brown slightly sandy slightly gravelly SILT with cobbles.	
1.00	SPT	N = 15 (2, 3, 3, 4, 4, 4)				(2.40)		
1.00	D2							
1.00-1.50	B4							
1.50	ES							
1.50	D5							
2.00	SPT	N = 36 (5, 5, 8, 9, 9, 10)						
2.00-2.50	B7			84.79		2.40		
2.50	D8						Very stiff orangish brown slightly sandy slightly gravelly SILT.	
3.00	SPT	50 for 150 mm (8, 10, 16, 34)				(1.50)		
3.00-3.50	B10							
3.50	D11			83.29		3.90		
4.00	SPT	50 for 95 mm (13, 12, 39, 11)					Dense brownish orangish white silty SAND with cobbles. Cobbles are of siltstone.	
4.00-4.50	B13							
4.50	D14							
5.00	SPT	N = 29 (4, 6, 6, 7, 8, 8)						
5.00-5.50	B16							
5.50	D17							
6.50	SPT	N = 30 (5, 6, 4, 7, 9, 10)				(5.50)		
6.50-7.00	B19							
7.00	D20							

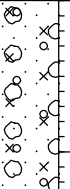
Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
26-04-23	17.30	8.00	8.00	203		2.6	2.8	1:00			Falling head test expedited in BH. BH backfilled.
27-04-23	08.00	8.00				3.3	3.5	1:00			
All dimensions in metres Scale 1:50		Client: Bord na Mona		Method/ Plant Used		Dando 2000			Driller BT		Logged By BT

IDL AGS4 UK BH DERRYGREENAGHPS CP ALL FILE TO FINAL OCT 31 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



BOREHOLE LOG

Project Derrygreenagh Power				Location Co Offaly		BOREHOLE No BH107
Job No 2023OY104	Date 26-04-23 27-04-23	Ground Level (m OD) 87.19	Co-Ordinates () E 649,439.0 N 738,146.2			
Engineer Fichtner			GROUNDWATER STRIKES	Water strikes: 1st: dry 2nd: 3rd:	Rose to (@ 20 min.): Sealed at:	Sheet 2 of 2 Status FINAL

SAMPLES & TESTS			Water	STRATA			Instrument/ Backfill	
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)		DESCRIPTION
8.00	SPT	N = 36 (6, 8, 7, 9, 9, 11)					Dense brownish orangish white silty SAND with cobbles. Cobbles are of siltstone. (continued)	
8.00-8.50	B22							
8.50	D23							
9.40	SPT	50 for 40 mm (25, 50)				77.79	9.40	
						77.69	9.50	

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
27-04-23	13.00	9.50				9.4	9.5	1:00			Falling head test expedited in BH. BH backfilled.
All dimensions in metres Scale 1:50		Client: Bord na Mona			Method/ Plant Used	Dando 2000				Driller BT	Logged By BT

DL AGS4 UK BH DERRYGREENAGHPS CP ALL FILE TO FINAL OCT 31 2023.GPJ ID GINT AGS4 0 4.GDT 2/11/23



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BOREHOLE LOG

Project Derrygreenagh Power				Location Co Offaly		BOREHOLE No BH109
Job No 2023OY104	Date 20-04-23 21-04-23	Ground Level (m OD) 82.73		Co-Ordinates () E 649,687.4 N 738,383.5		
Engineer Fichtner			GROUNDWATER STRIKES	Water strikes: 1st: dry 2nd: 3rd:	Rose to (@ 20 min.): Sealed at:	Sheet 1 of 2 Status FINAL

SAMPLES & TESTS			Water	STRATA				Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	DESCRIPTION	
0.00-1.00	B1				\\ \\ \\ \\		Firm dry black PEAT.	
					\\ \\ \\ \\	(1.20)		
1.00	SPT	N = 0 (1, 0, 0, 0, 0, 0)		81.53	\\ \\ \\ \\	1.20		
1.00	ES				\\ \\ \\ \\		Soft moist black PEAT.	
1.00	D2				\\ \\ \\ \\			
1.00-1.50	B4				\\ \\ \\ \\			
1.50	D5				\\ \\ \\ \\			
2.00-2.45	U1006	5 blows			\\ \\ \\ \\	(1.70)		
					\\ \\ \\ \\			
				79.83	\\ \\ \\ \\	2.90		
3.00	SPT	N = 1 (1, 0, 0, 1, 0, 0)			\\ \\ \\ \\		Soft moist brown PEAT.	
3.00	D7				\\ \\ \\ \\			
3.00-3.50	B9				\\ \\ \\ \\			
3.50	D10				\\ \\ \\ \\	(1.90)		
4.00	SPT	N = 3 (1, 1, 0, 1, 1, 1)			\\ \\ \\ \\			
4.00-4.50	B13				\\ \\ \\ \\			
4.50	D14			77.93	\\ \\ \\ \\	4.80		
5.00	SPT	N = 23 (3, 6, 5, 6, 6, 6)			x x x x		Stiff grey slightly sandy gravelly SILT.	
5.00-5.50	B16				x x x x	(1.70)		
5.50	D17				x x x x			
6.00	SPT	N = 21 (4, 7, 5, 5, 5, 6)			x x x x			
6.00-6.50	B19			76.23	x x x x	6.50		
7.00	SPT	N = 28 (4, 3, 9, 5, 6, 8)			x x x x		Stiff brownish grey sandy gravelly SILT with rare cobbles.	
7.00	D20				x x x x	(2.30)		
7.00-7.50	B22				x x x x			

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
20-04-23	17.30	5.50				7	7.5	0:30			Falling head test expedited in BH. BH backfilled.
21-04-23	08.00	5.50									
All dimensions in metres Scale 1:50		Client: Bord na Mona		Method/ Plant Used		Dando 2000			Driller DK		Logged By DK

IDL AGS4 UK BH DERRYGREENAGHPS CP ALL FILE TO FINAL OCT 31 2023 GPJ ID GINT AGS 4 0 4 GPT 2/11/23



BOREHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		BOREHOLE No BH109
Job No 2023OY104	Date 20-04-23 21-04-23	Ground Level (m OD) 82.73	Co-Ordinates () E 649,687.4 N 738,383.5		
Engineer Fichtner		GROUNDWATER STRIKES	Water strikes: 1st: dry 2nd: 3rd:		
			Rose to (@ 20 min.): Sealed at:		Sheet 2 of 2 Status FINAL

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Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
21-04-23	14.00	8.80	8.50	203		8.8		1:00			Falling head test expedited in BH. BH backfilled.
All dimensions in metres Scale 1:50		Client: Bord na Mona			Method/ Plant Used	Dando 2000				Driller DK	Logged By DK

DL AGS4 UK BH DERRYGREENAGHPS CP ALL FILE TO FINAL OCT 31 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



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BOREHOLE LOG

Project Derrygreenagh Power				Location Co Offaly		BOREHOLE No BH110
Job No 2023OY104	Date 27-04-23 28-04-23	Ground Level (m OD) 86.11		Co-Ordinates () E 649,461.4 N 738,212.7		
Engineer Fichtner			GROUNDWATER STRIKES	Water strikes: 1st: dry 2nd: 3rd:	Rose to (@ 20 min.): Sealed at:	Sheet 1 of 1 Status FINAL

SAMPLES & TESTS			Water	STRATA				Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	DESCRIPTION	
0.00-1.00	B1			85.71		(0.40) 0.40	MADE GROUND: GRAVEL.	
1.00	SPT	50 for 150 mm (10, 10, 18, 32)				(1.40)	Stiff brown slightly sandy gravelly SILT with cobbles. Gravel is coarse.	
1.00-1.50	D2 B4 D5			84.31		1.80		
2.00	SPT	50 for 75 mm (10, 15, 50)		83.71		(0.60) 2.40	COBBLES & BOULDERS.	
2.00-2.50	B7 D8						Very stiff slightly sandy slightly gravelly SILT.	
3.00	SPT	78 for 225 mm (9, 8, 11, 17, 50)				(3.60)		
3.00-3.50	B10 D11							
4.00	SPT	N = 38 (6, 8, 8, 8, 9, 13)						
4.00-4.50	B13 D14							
5.00	SPT	N = 50 (5, 7, 10, 9, 16, 15)						
5.00-5.50	B16 D17			80.11		6.00		
6.50	SPT	50 for 150 mm (16, 9, 21, 29)				(1.20)	Dense orangish brown silty SAND with cobbles.	
6.50-7.00	B19 D20			78.91		7.20		
7.20	SPT	50 for 75 mm (25, 50)		78.81		7.30	Obstruction as boulder.	

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
27-04-23	17.30	6.00	6.00	203		1.3	1.7	1:00			Falling head test expedited in BH. BH backfilled.
28-04-23	08.00	6.00				2.2	2.6	1:00			
28-04-23	12.00	7.30				6.7	6.9	1:00			
						7.2	7.3	1:00			
All dimensions in metres Scale 1:50		Client: Bord na Mona		Method/ Plant Used		Dando 2000			Driller BT		Logged By BT

IDL AGS4 UK BH DERRYGREENAGHPS CP ALL FILE TO FINAL OCT 31 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



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BOREHOLE LOG

Project Derrygreenagh Power				Location Co Offaly		BOREHOLE No BH111					
Job No 2023OY104		Date 02-05-23 02-05-23		Ground Level (m OD) 87.59			Co-Ordinates () E 649,512.7 N 738,206.2				
Engineer Fichtner				GROUNDWATER STRIKES		Water strikes: 1st: dry 2nd: 3rd:		Rose to (@ 20 min.): Sealed at:		Sheet 1 of 1 Status FINAL	

SAMPLES & TESTS			Water	STRATA				Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	DESCRIPTION	
0.00-1.00	B1						Very stiff grey sandy gravelly SILT with cobbles.	
1.00	SPT	N = 45 (6, 8, 9, 17, 10, 9)				(1.90)		
1.00	D2							
1.00-1.50	B4							
1.50	ES							
1.50	D5			85.69		1.90		
2.00	SPT	N = 43 (3, 5, 7, 9, 9, 18)					Very stiff orangish brown slightly sandy gravelly SILT.	
2.00-2.50	B7							
3.00	SPT	N = 50 (7, 9, 9, 10, 14, 17)				(2.60)		
3.00	D8							
3.00-3.50	B10							
3.50	D11							
4.00	SPT	N = 50 (6, 7, 9, 15, 16, 10)					4.00-4.50: becoming slightly gravelly sandy.	
4.00-4.50	B13			83.09		4.50		
4.50	D14						Very dense grey SAND with cobbles.	
5.00	SPT	50 for 150 mm (9, 10, 18, 32)				(0.90)		
5.00	B16			82.19		5.40		
5.00-5.50	D17			82.09		5.50	Obstruction as possible rock.	
5.50								

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
02-05-23	17.30	5.50	5.50	203		0.4 5.4	0.9 5.5	1:00 1:00			Falling head test expedited in BH. BH backfilled.
All dimensions in metres Scale 1:50		Client: Bord na Mona		Method/ Plant Used		Dando 2000			Driller BT	Logged By BT	

IDL AGS4 UK BH DERRYGREENAGHPS CP ALL FILE TO FINAL OCT 31 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



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BOREHOLE LOG

Project Derrygreenagh Power				Location Co Offaly		BOREHOLE No BH112
Job No 2023OY104	Date 12-04-23 13-04-23	Ground Level (m OD) 84.42		Co-Ordinates () E 649,358.6 N 738,261.1		
Engineer Fichtner			GROUNDWATER STRIKES	Water strikes: 1st: dry 2nd: 3rd:	Rose to (@ 20 min.): Sealed at:	Sheet 1 of 1 Status FINAL

SAMPLES & TESTS			Water	STRATA				Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
0.00-1.00	B1	N = 12 (2, 3, 3, 4, 2, 3)			(0.60)	MADE GROUND: Tarmac, Clause 804 type material and road fill.		
0.60	ES				83.82	0.60		POSSIBLE MADE GROUND: Firm grey sandy gravelly CLAY with occasional cobbles. Cobbles are of limestone.
1.00	SPT							
1.00	D2							
1.00-1.50	B4							
2.00	SPT	N = 15 (3, 2, 4, 3, 4, 4)						
2.00	D5							
2.00-2.50	B7	81.52			2.90			
3.00	SPT	N = 19 (3, 4, 3, 6, 4, 6)			80.92	(0.60)		Stiff brown slightly sandy slightly gravelly SILT.
3.00	D8							
3.00-3.50	B10	3.50	Medium dense brown gravelly silty SAND with occasional cobbles.					
4.00	SPT	N = 19 (3, 4, 3, 6, 4, 6)			(1.60)			
4.00	D11							
4.00-4.50	B13	79.32				5.10		
5.10	SPT	50 for 150 mm (21, 4, 25, 25)						

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
12-04-23	17.30	5.10	5.10	203		5.1		1:00			
											Falling head test expedited in BH. BH backfilled.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Dando 2000		Driller DK	Logged By DK
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IDL AGS4 UK BH DERRYGREENAGHPS CP ALL FILE TO FINAL OCT 31 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



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BOREHOLE LOG

Project Derrygreenagh Power				Location Co Offaly		BOREHOLE No BH116
Job No 2023OY104	Date 11-05-23 12-05-23	Ground Level (m OD) 82.87		Co-Ordinates () E 649,743.1 N 738,296.4		
Engineer Fichtner			GROUNDWATER STRIKES	Water strikes: 1st: dry 2nd: 3rd:	Rose to (@ 20 min.): Sealed at:	Sheet 1 of 1 Status FINAL

SAMPLES & TESTS			Water	STRATA			Instrument/ Backfill	
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick- ness)		DESCRIPTION
0.00-1.00	B1	2 blows			                              	Firm brown fibrous PEAT.	                              	
1.00	D2							
1.00-1.45	U1003							
1.50	D4							
2.00	SPT							
2.00-2.50	B6							
2.50	D7	80.27	                     	2.60	Stiff grey sandy gravelly SILT with cobbles.	                     		
3.00	SPT	N = 36 (3, 2, 4, 7, 6, 19)	79.87	                   	(0.50) 3.00	Dense brownish grey very silty very sandy GRAVEL.	                   	
3.00-3.50	B9	79.37	                   	3.50	Stiff greyish white SILT.	                   		
3.50	D10	N = 29 (4, 4, 8, 7, 7, 7)			                 	(2.10)	Stiff greyish white SILT.	                 
4.00	SPT							
4.00-4.50	B12							
4.50	D13							
5.00	SPT							
5.00-5.50	B15	77.27	           	5.60	Greyish whitish brown limestone COBBLES.	           		
5.50	D16	50 for 170 mm (10, 15, 15, 21, 14)			         	(2.00)	Stiff greyish white SILT.	         
6.50	SPT							
6.50-7.00	B18							
7.00	ES							
7.00	D19							
7.50	SPT	50 for 0 mm (25, 50)	75.27	  	7.60			

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
11-05-23	17.30	7.60	7.00	203		3.45	3.7	1:00			50mm standpipe installed.
12-05-23	08.00	7.60				7.5	7.6	1:00			
12-05-23	10.00	7.60									
All dimensions in metres Scale 1:50		Client: Bord na Mona			Method/ Plant Used	Dando 2000			Driller BT		Logged By BT

IDL AGS4 UK BH DERRYGREENAGHPS CP ALL FILE TO FINAL OCT 31 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



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BOREHOLE LOG

Project Derrygreenagh Power				Location Co Offaly		BOREHOLE No BH117
Job No 2023OY104	Date 10-05-23 10-05-23	Ground Level (m OD) 82.78	Co-Ordinates () E 649,723.2 N 738,289.0			
Engineer Fichtner			GROUNDWATER STRIKES	Water strikes: 1st: dry 2nd: 3rd:	Rose to (@ 20 min.): Sealed at:	Sheet 1 of 1 Status FINAL

SAMPLES & TESTS			Water	STRATA				Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	DESCRIPTION	
0.00-1.00	B1	6 blows		81.88		(0.90) 0.90	Soft dark brown gravelly PEAT.	
1.00-1.45	D2 U1003			80.78		(1.10) 2.00	Grey silty SAND with cobbles. Cobbles are of limestone.	
1.50	D4			80.28		(0.50) 2.50	Very stiff brownish grey slightly gravelly sandy SILT.	
2.00	SPT	N = 50 (5, 8, 9, 17, 20, 4)		80.28		(0.50) 2.50	Dense grey silty SAND with cobbles. Cobbles are of limestone.	
2.00-2.50	B6							
2.50	D7							
3.00	SPT	50 for 225 mm (10, 8, 9, 13, 28)						
3.00-3.50	B9							
3.50	D10							
4.00	SPT	N = 50 (8, 9, 10, 10, 16, 14)		78.38		(1.90) 4.40	Stiff grey gravelly sandy SILT with cobbles.	
4.00-4.50	B12							
4.50	D13							
5.00	SPT	50 for 150 mm (6, 6, 7, 43)						
5.00-5.50	B15							
5.50	D16							
6.50	SPT	50 for 75 mm (25, 50)		76.08		(2.30) 6.70	Obstruction as boulder.	
6.50-7.00	B18			75.78		7.00		
7.00	D19							

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
10-05-23	16.00	7.00	7.00	203		2.4	2.6	1:00			BH backfilled.
						3.3	3.7	1:00			
						6.7	7	1:00			

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Dando 2000	Driller BT	Logged By BT
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BOREHOLE LOG

Project Derrygreenagh Power				Location Co Offaly		BOREHOLE No BH118
Job No 2023OY104	Date 12-05-23 15-05-23	Ground Level (m OD) 82.80		Co-Ordinates () E 649,594.2 N 738,364.9		
Engineer Fichtner			GROUNDWATER STRIKES	Water strikes: Rose to (@ 20 min.): Sealed at: 1st: 8.50m 2nd: 3rd:		Sheet 1 of 2 Status FINAL

SAMPLES & TESTS			Water	STRATA				Instrument/ Backfill		
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick- ness)	DESCRIPTION			
0.00-1.00	B1	3 blows				(0.80)	MADE GROUND: Grass over PEAT and CLAY fill.			
			82.00	0.80						
1.00	D2		N = 8 (2, 2, 2, 3, 1, 2)			(1.80)	Firm dry brown fibrous PEAT.			
1.00-1.45	U1003									
1.00-1.50	B4									
1.50	D5									
2.00	SPT	N = 8 (2, 2, 2, 3, 1, 2)			(1.80)	Firm dry brown fibrous PEAT.				
2.00-2.50	B7									
2.50	D8									
			80.20	2.60						
3.00	SPT	N = 35 (3, 4, 4, 5, 8, 18)			(1.90)	Stiff greyish brown sandy SILT with cobbles.				
3.00-3.50	B10									
3.50	ES									
3.50	D11									
4.00	SPT		N = 38 (5, 7, 10, 11, 8, 9)							(1.90)
4.00-4.50	B13									
4.50	D14									
		78.30		4.50						
					(0.50)	Stiff orangish brown sandy SILT.				
			77.80	5.00						
5.00	SPT	N = 37 (4, 5, 9, 7, 10, 11)			(0.50)	Stiff orangish brown sandy SILT.				
5.00-5.50	B15									
5.50	D16									
										
6.50	SPT	N = 29 (4, 5, 6, 8, 8, 7)			(4.10)	Stiff orangish brown sandy gravelly SILT.				
6.50-7.00	B18									
7.00	D19									
										
										

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
12-05-23	17.30	5.00				3.45	3.7	1:00			50mm standpipe installed.
15-05-23	08.00	5.00									
All dimensions in metres Scale 1:50		Client: Bord na Mona			Method/ Plant Used Dando 2000				Driller BT	Logged By BT	

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BOREHOLE LOG

Project Derrygreenagh Power				Location Co Offaly		BOREHOLE No BH118
Job No 2023OY104	Date 12-05-23 15-05-23	Ground Level (m OD) 82.80		Co-Ordinates () E 649,594.2 N 738,364.9		
Engineer Fichtner			GROUNDWATER STRIKES	Water strikes: 1st: 8.50m 2nd: 3rd:	Rose to (@ 20 min.): Sealed at:	Sheet 2 of 2 Status FINAL

SAMPLES & TESTS			Water	STRATA				Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	DESCRIPTION	
8.00	SPT	50 for 235 mm (8, 9, 9, 16, 17, 8)					Stiff orangish brown sandy gravelly SILT. (continued)	
8.00-8.50	B21							
8.50	D22							
9.10	SPT	50 for 10 mm (25, 50)		73.70		9.10	Obstruction as boulder.	
				73.60		9.20		
10.10		N = 29 (4, 5, 6, 8, 8, 7)						
11.10		N = 29 (4, 5, 6, 8, 8, 7)						
12.10		N = 44 (5, 5, 8, 9, 11, 16)						

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
15-05-23	13.00	9.20	9.00	203		9.1	9.2	1:00			50mm standpipe installed.
All dimensions in metres Scale 1:50		Client: Bord na Mona		Method/ Plant Used		Dando 2000			Driller BT	Logged By BT	

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BOREHOLE LOG

Project Derrygreenagh Power				Location Co Offaly		BOREHOLE No BHPW301
Job No 2023OY104	Date 19-04-23 20-04-23	Ground Level (m OD) 82.38		Co-Ordinates () E 649,637.1 N 738,409.7		
Engineer Fichtner			GROUNDWATER STRIKES	Water strikes: 1st: dry 2nd: 3rd:	Rose to (@ 20 min.): Sealed at:	Sheet 1 of 2 Status FINAL

SAMPLES & TESTS			Water	STRATA				Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	DESCRIPTION	
0.00-1.00	B1				\\ \\ \\ \\		Firm dry black PEAT.	
				81.48	\\ \\ \\ \\	0.90		
1.00	SPT	N = 0 (1, 0, 0, 0, 0, 0)			\\ \\ \\ \\		Soft moist black PEAT.	
1.00	ES				\\ \\ \\ \\			
1.00	D2				\\ \\ \\ \\			
1.00-1.50	B4				\\ \\ \\ \\	(1.60)		
1.50	D5				\\ \\ \\ \\			
2.00-2.45	U1006	6 blows		79.88	\\ \\ \\ \\	2.50		
					\\ \\ \\ \\		Firm brown PEAT with wood.	
3.00	SPT	N = 2 (1, 1, 0, 1, 0, 1)			\\ \\ \\ \\			
3.00-3.50	B7				\\ \\ \\ \\	(2.20)		
3.00-3.50	B9				\\ \\ \\ \\			
4.00	D10				\\ \\ \\ \\			
4.00-4.45	U10011	7 blows		77.68	\\ \\ \\ \\	4.70		
					\\ \\ \\ \\		Stiff moist brownish grey sandy SILT with rare cobbles.	
5.00	SPT	N = 19 (3, 4, 5, 5, 4, 5)			\\ \\ \\ \\	(1.80)		
5.00	D12				\\ \\ \\ \\			
5.00-5.50	B14				\\ \\ \\ \\			
6.00	SPT	N = 22 (4, 4, 5, 6, 6, 5)			\\ \\ \\ \\			
6.00	D15			75.88	\\ \\ \\ \\	6.50		
6.00-6.50	B17				\\ \\ \\ \\		Stiff brownish grey slightly gravelly slightly sandy SILT with rare cobbles. Cobbles are of limestone.	
7.00	SPT	N = 24 (3, 4, 5, 7, 5, 7)			\\ \\ \\ \\			
7.00	D18				\\ \\ \\ \\			
7.00-7.50	B20				\\ \\ \\ \\			

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
19-04-23	18.00	6.50				7.5	8	0:30			BH backfilled.
20-04-23	08.00	6.50									
All dimensions in metres Scale 1:50		Client: Bord na Mona		Method/ Plant Used		Dando 2000			Driller DK	Logged By DK	

IDL AGS4 UK BH DERRYGREENAGHPS CP ALL FILE TO FINAL OCT 31 2023 GPJ ID GINT AGS 4 0 4 GDT 2/11/23



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BOREHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		BOREHOLE No BHPW301
Job No 2023OY104	Date 19-04-23 20-04-23	Ground Level (m OD) 82.38	Co-Ordinates () E 649,637.1 N 738,409.7		
Engineer Fichtner		GROUNDWATER STRIKES	Water strikes: 1st: dry 2nd: 3rd:	Rose to (@ 20 min.): Sealed at:	Sheet 2 of 2 Status FINAL

SAMPLES & TESTS			Water	STRATA				Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	DESCRIPTION	
8.00	SPT	N = 28 (5, 8, 6, 8, 5, 9)				(3.60)	Stiff brownish grey slightly gravelly slightly sandy SILT with rare cobbles. Cobbles are of limestone. <i>(continued)</i>	
8.00	D21							
8.00-8.50	B23							
9.00	SPT	N = 24 (4, 4, 6, 6, 6, 6)						
9.00	D24							
9.00-9.50	B26							
10.00	SPT	25 for 75 mm (25, 25, 25)		72.28		10.10		
10.00	D27							

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia. mm	Water (bgl) Depth, m	From	To	Hours	From	To	
20-04-23	13.00	10.10	10.10	203		10.1		1:00			BH backfilled.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Dando 2000	Driller DK	Logged By DK
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Appendix 2 Borehole Records (Rotary Core)



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH101
Job No 2023OY104	Date 25-04-23 02-05-23	Ground Level (m OD) 83.67	Co-Ordinates () E 649,431.5 N 738,338.6		
Engineer Fichtner				Sheet 1 of 8 Status FINAL	

RUN DETAILS						STRATA		Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
						Discontinuities	Detail	
0.00						0.00 - 48.40 : overburden.		Open hole drilling. No recovery.

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
								0	58	Polymer	100	10 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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COL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH101
Job No 2023OY104	Date 25-04-23 02-05-23	Ground Level (m OD) 83.67	Co-Ordinates () E 649,431.5 N 738,338.6		
Engineer Fichtner				Sheet 2 of 8 Status FINAL	

RUN DETAILS						STRATA		Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
						Discontinuities	Detail	
9.00			74.67		9.00			Open hole drilling. No recovery. <i>(continued)</i>
20 -				<				

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
			9.00	96								10 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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COL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH101
Job No 2023OY104	Date 25-04-23 02-05-23	Ground Level (m OD) 83.67	Co-Ordinates () E 649,431.5 N 738,338.6		
Engineer Fichtner				Sheet 3 of 8 Status FINAL	

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Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Water Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
25/04/23	08.00	17.70										10 litres polydrill used. 50mm standpipe installed.
26/04/23	08.00	17.70										

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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COL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH101
Job No 2023OY104	Date 25-04-23 02-05-23	Ground Level (m OD) 83.67	Co-Ordinates () E 649,431.5 N 738,338.6		
Engineer Fichtner				Sheet 4 of 8 Status FINAL	

RUN DETAILS						STRATA			Instrument/ Backfill
Depth	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
Date						Discontinuities	Detail	Main	
24.40	-			x o x</					

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												10 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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COL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH101
Job No 2023OY104	Date 25-04-23 02-05-23	Ground Level (m OD) 83.67	Co-Ordinates () E 649,431.5 N 738,338.6		
Engineer Fichtner				Sheet 5 of 8 Status FINAL	

RUN DETAILS						STRATA	
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION	
						Discontinuities	Main
32.70 26.04 27.04	-	32.70 (25/75mm)		x o x x o x x o x x o x			Orangish greyish brown slightly gravelly silty fine to medium SAND. Gravel is angular to subangular fine to coarse of assorted grey limestone. (6.70m recovered). (<i>continued</i>)
34.20	13 --			x o x x o x x o x x o x			
35.70	7 --			x o x x o x x o x x o x			
37.20	7 --			x o x x o x x o x x o x			
38.70	20 --			x o x x o x x o x x o x			

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Water Strike	Standing	From (m)	To (m)	Type	Return (%)	
26/04/23	17.30	32.70										10 litres polydrill used. 50mm standpipe installed.
27/04/23	08.00	32.70										

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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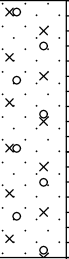
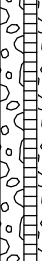
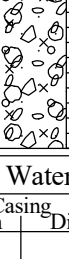
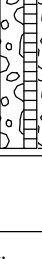
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DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH101
Job No 2023OY104	Date 25-04-23 02-05-23	Ground Level (m OD) 83.67	Co-Ordinates () E 649,431.5 N 738,338.6		
Engineer Fichtner					Sheet 6 of 8 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
40.20	13 - -		41.97		41.70			Orangish greyish brown slightly gravelly silty fine to medium SAND. Gravel is angular to subangular fine to coarse of assorted grey limestone. (6.70m recovered). <i>(continued)</i>	
41.70	47 - -							Dark grey and grey slightly sandy silty angular to subangular fine to coarse dark grey and grey limestone GRAVEL with frequent cobbles. Cobbles are of dark grey and grey limestone.	
43.20	20 - -								
44.70	47 - -				(6.70)				
46.20	40 - -								
47.70									

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												10 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH101
Job No 2023OY104	Date 25-04-23 02-05-23	Ground Level (m OD) 83.67	Co-Ordinates () E 649,431.5 N 738,338.6		
Engineer Fichtner					Sheet 7 of 8 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
	73 - -		35.27		48.40	48.40 - 58.00 Possible weathered rock.		Possible weathered rock. Strong thinly bedded dark grey and grey silty fine grained limestone with subvertical and vertical white calcite veinlets recovered as angular to subangular fine to coarse gravel and cobble sized clasts.	
	49.20								
	53 - -								
	50.50 27.04 28.04								
	45 - -								
	52.50								
	67 - -				(9.60)				
	53.70								
	33 - -								
	55.20								
13 -									

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
27/04/23	17.30	50.50										10 litres polydrill used. 50mm standpipe installed.
28/04/23	08.00	50.50										

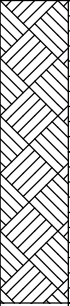
All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller AZ	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH101
Job No 2023OY104	Date 25-04-23 02-05-23	Ground Level (m OD) 83.67	Co-Ordinates () E 649,431.5 N 738,338.6		
Engineer Fichtner				Sheet 8 of 8 Status FINAL	

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
56.70	-					Possible weathered rock. Strong thinly bedded dark grey and grey silty fine grained limestone with subvertical and vertical white calcite veinlets recovered as angular to subangular fine to coarse gravel and cobble sized clasts. <i>(continued)</i>			
58.00	30		25.67		58.00				
58.05									

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS	
Date	Time	Depth	Casing Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)		
28/04/23	17.30	58.00											
02/05/23	08.00	58.00											
02/05/23	10.00	58.00											
All dimensions in metres Scale 1:50		Client: Bord na Mona			Method/ Plant Used		Rotary Core/DB-DeltaBase					Driller AZ	Logged By EAT

COL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH102
Job No 2023OY104	Date 24-04-23 26-04-23	Ground Level (m OD) 82.94	Co-Ordinates () E 649,532.9 N 738,384.3		
Engineer Fichtner					Sheet 1 of 6 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
0.00						0.00 - 39.30 : overburden.			Open hole drilling. No recovery.
	-				(6.00)				
6.00			76.94		6.00				
	-				(0.50)	No recovery.			
6.50		6.50 (28/75mm)	76.44		6.50	Grey and brown medium and coarse SAND. (0.40m recovered).			
	20				(1.50)				
8.00			74.94		8.00				

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
								0	45	Polymer	100	11 litres polydrill used. BH backfilled.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ/DK	Logged By EAT
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COL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH102
Job No 2023OY104	Date 24-04-23 26-04-23	Ground Level (m OD) 82.94	Co-Ordinates () E 649,532.9 N 738,384.3		
Engineer Fichtner					Sheet 2 of 6 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
9.50	13 - -	8.00 (50/225mm)							

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												11 litres polydrill used. BH backfilled.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller AZ/DK	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPJ ID GINT AGS 4 0 4 GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH102
Job No 2023OY104	Date 24-04-23 26-04-23	Ground Level (m OD) 82.94	Co-Ordinates () E 649,532.9 N 738,384.3		
Engineer Fichtner					Sheet 3 of 6 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill		
Depth	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION					
Date						Discontinuities	Detail	Main			
24.04 25.04 17.00	20 - -	17.00 (50/150mm)						Light greyish white slightly silty angular fine to coarse light grey 'bleached' fine grained weakly dolomitised limestone GRAVEL with frequent cobbles. Cobbles are of light and dark grey and brownish grey silty fine grained limestone. (continued)			
18.50	13 - -										
20.00	40 - -		20.00 (25/75mm)								
21.50	87 - -	23.00 (50/150mm)			(16.60)						
23.00	40 - -										

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
24/04/23	17.30	17.00	20.00	96								11 litres polydrill used. BH backfilled.
25/04/23	08.00	17.00										

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller AZ/DK	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH102
Job No 2023OY104	Date 24-04-23 26-04-23	Ground Level (m OD) 82.94	Co-Ordinates () E 649,532.9 N 738,384.3		
Engineer Fichtner					Sheet 4 of 6 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
24.50							Light greyish white slightly silty angular fine to coarse light grey 'bleached' fine grained weakly dolomitised limestone GRAVEL with frequent cobbles. Cobbles are of light and dark grey and brownish grey silty fine grained limestone. <i>(continued)</i>		
40 - -									
26.00		26.00 (50/225mm)							
40 - -									
27.50									
27 - -									
29.00		29.00 (25/75mm)							
27 - -									
30.50			52.44		30.50				
20 - -					(1.50)		Stiff greyish brown SILT. (0.30m recovered).		
32.00			50.94		32.00				

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												11 litres polydrill used. BH backfilled.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ/DK	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH102
Job No 2023OY104	Date 24-04-23 26-04-23	Ground Level (m OD) 82.94	Co-Ordinates () E 649,532.9 N 738,384.3		
Engineer Fichtner					Sheet 5 of 6 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
33.50	20 - -	32.00 (50/225mm)						Light greyish white slightly silty angular fine to coarse light grey 'bleached' fine grained weakly dolomitised limestone GRAVEL with frequent cobbles. Cobbles are of light and dark grey and brownish grey silty fine grained limestone.	
35.00	27 - -	35.00 (50/150mm)			(7.30)				
36.50	27 - -	38.00 (50/150mm)							
38.00	80 (32) 8	43.64			39.30				
40.00		12				39.50 - 39.50 Point Load Test: very strong. 39.30 - 45.00 Discontinuities, medium		Very strong locally extremely strong and strong thinly bedded dark grey silty fine grained LIMESTONE with subvertical and horizontal white calcite veinlets.	

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
25/04/23	17.30	40.00										11 litres polydrill used. BH backfilled.
26/04/23	08.00	40.00										

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller AZ/DK	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH102
Job No 2023OY104	Date 24-04-23 26-04-23	Ground Level (m OD) 82.94	Co-Ordinates () E 649,532.9 N 738,384.3		
Engineer Fichtner					Sheet 6 of 6 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
26.04									
	100 (37) -	28					spaced, locally very closely and closely spaced, dipping 10 to 12°, stepped, smooth, with 0.5 to 2mm thick orangish brown clay smear and minor surficial orangish brown iron stain. 39.60 - 41.90 Joint, vertical dip, stepped, rough, with 0.5 to 1mm thick orangish brown clay smear and minor surficial orangish brown iron stain, open.	Very strong locally extremely strong and strong thinly bedded dark grey silty fine grained LIMESTONE with subvertical and horizontal white calcite veinlets. <i>(continued)</i>	
41.30									
	100 (35) -	18					40.80 - 40.80 Point Load Test: extremely strong.		
					(5.70)		42.00 - 42.00 Point Load Test: very strong.		
42.50							41.90 - 42.70 Joint, vertical dip, stepped, rough, with 0.5 to 1mm thick orangish brown clay smear and minor surficial orangish brown iron stain, open.		
	100 (74) 55	8					43.10 - 43.10 Point Load Test: strong.		
43.50									
	100 (85) 58	8					43.80 - 43.80 Point Load Test: very strong.		
		6							
26.0445.00			37.94		45.00				

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
26/04/23	12.00	45.00										11 litres polydrill used. BH backfilled.
All dimensions in metres Scale 1:50		Client: Bord na Mona			Method/ Plant Used Rotary Core/DB-DeltaBase					Driller AZ/DK	Logged By EAT	

IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH103
Job No 2023OY104	Date 24-04-23 03-05-23	Ground Level (m OD) 84.36	Co-Ordinates () E 649,513.6 N 738,320.7		
Engineer Fichtner					Sheet 1 of 6 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
0.00						0.00 - 39.30 : overburden.		Open hole drilling. No recovery.	
3.50			80.86		3.50				
	13 - -							Subangular to subrounded fine to medium assorted orangish brown siltstone and assorted grey limestone GRAVEL. (0.70m recovered).	
5.00		5.00 (50/225mm)							
	13 - -				(4.50)				
6.50		6.50 (50)				very dense.			
	13 - -								
8.00			76.36		8.00				

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
								0	43.9	Polymer	100	15 litres polydrill used. 90mm televiwer pipe installed to 39.00m bgl.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller DK	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH103
Job No 2023OY104	Date 24-04-23 03-05-23	Ground Level (m OD) 84.36	Co-Ordinates () E 649,513.6 N 738,320.7		
Engineer Fichtner					Sheet 2 of 6 Status FINAL

RUN DETAILS						STRATA		Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
						Discontinuities	Detail	
9.50	20 - -	8.00 (50/150mm)	76.06		8.30			Very stiff light greenish grey SILT. (0.30m recovered).
								Orangish brown slightly silty fine to medium SAND. (0.40m recovered).
12.50	20 - -	9.50 (50/225mm)			(4.20)			
14.00	27 - -	12.00 (42/225mm)	71.86		12.50			Subangular to subrounded fine to medium assorted orangish brown siltstone and assorted grey limestone GRAVEL. (0.70m recovered).
15.50	13 - -	14.00 (50)	70.36		14.00			Very dense orangish brown slightly silty fine to medium SAND. (0.40m recovered).

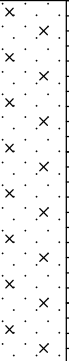
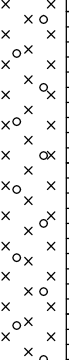
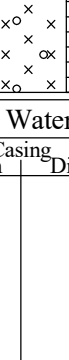
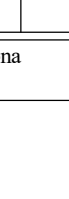
Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
26/04/23	17.30	11.00										15 litres polydrill used. 90mm televiewer pipe installed to 39.00m bgl.
27/04/23	08.00	11.00										
All dimensions in metres Scale 1:50		Client: Bord na Mona			Method/ Plant Used Rotary Core/DB-DeltaBase					Driller DK	Logged By EAT	

IDL AGS4 UK DH (SPTS) DERRYGREENAGHP5 RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH103
Job No 2023OY104	Date 24-04-23 03-05-23	Ground Level (m OD) 84.36	Co-Ordinates () E 649,513.6 N 738,320.7		
Engineer Fichtner					Sheet 3 of 6 Status FINAL

RUN DETAILS						STRATA		Instrument/ Backfill
Depth	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
Date						Discontinuities	Detail	
17.00	13 - -	17.00 (50/225mm)			(4.50)			Very dense orangish brown slightly silty fine to medium SAND. (0.40m recovered). (continued)
18.50	13 - -	18.50 (50)	65.86		18.50			Very stiff brown slightly gravelly SILT thickly interbedded with light orangish brown and orangish brown SILT. Gravel is angular fine to coarse of brown siltstone and subrounded fine to coarse grey limestone.
20.00	20 - -	20.00 (25/75mm)						
21.50	13 - -							
23.00	20 - -	23.00 (50/225mm)						
47 - -								

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												15 litres polydrill used. 90mm televiever pipe installed to 39.00m bgl.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller DK	Logged By EAT
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COL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH103
Job No 2023OY104	Date 24-04-23 03-05-23	Ground Level (m OD) 84.36	Co-Ordinates () E 649,513.6 N 738,320.7		
Engineer Fichtner				Sheet 4 of 6 Status FINAL	

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Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Water Strike	Standing	From (m)	To (m)	Type	Return (%)	
27/04/23	17.30	24.50	24.50	96								15 litres polydrill used. 90mm televiewer pipe installed to 39.00m bgl.
28/04/23	08.00	24.50										

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller DK	Logged By EAT
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DL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH103
Job No 2023OY104	Date 24-04-23 03-05-23	Ground Level (m OD) 84.36	Co-Ordinates () E 649,513.6 N 738,320.7		
Engineer Fichtner				Sheet 5 of 6 Status FINAL	

[illegible]

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Water Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
28/04/23	17.30	33.50										15 litres polydrill used. 90mm televiever pipe installed to 39.00m bgl.
02/05/23	08.00	33.50										

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller DK	Logged By EAT
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DL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH103
Job No 2023OY104	Date 24-04-23 03-05-23	Ground Level (m OD) 84.36	Co-Ordinates () E 649,513.6 N 738,320.7		
Engineer Fichtner					Sheet 6 of 6 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
Date						Discontinuities	Detail	Main	
	35					grey silt smear, open.		Strong locally medium strong and very strong thinly bedded grey silty fine grained LIMESTONE with subvertical and horizontal white calcite veinlets. <i>(continued)</i>	
40.70	100 (90)	8			(5.70)	41.04 - 41.04 Point Load Test: very strong.			
41.00	37					41.00 - 41.30 Possible joint, Non-intact as light grey slightly silty angular fine to medium gravel sized clasts.			
	100 (82)	23				41.30 - 41.30 Non-intact as light grey slightly silty angular fine to medium gravel sized clasts.			
42.60	42					41.77 - 41.77 Point Load Test: medium strong.			
	100 (46)	14				42.40 - 42.40 with subvertical dark grey fine grained chert nodule.			
43.90	10	15	40.46		43.90	43.90 - 43.90 becoming dark grey. 42.70 - 42.80 Joint, dipping 60°, stepped, smooth, with 0.5 to 1mm thick orangish brown clay smear and minor surficial orangish brown iron stain and powder, open. 42.90 - 43.10 Joint, subvertical dip, stepped, smooth, with 0.5 to 1mm thick light orangish brown clay smear and minor surficial orangish brown iron stain, open. 43.40 - 43.40 Point Load Test: medium strong.			

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
02/05/23	17.30	43.90										15 litres polydrill used. 90mm televiwer pipe installed to 39.00m bgl.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller DK	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHP5 RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH104
Job No 2023OY104	Date 02-05-23 05-05-23	Ground Level (m OD) 82.93	Co-Ordinates () E 649,609.5 N 738,361.9		
Engineer Fichtner				Sheet 1 of 7 Status FINAL	

RUN DETAILS						STRATA		Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
						Discontinuities	Main	
0.00						0.00 - 37.70 : overburden.	Open hole drilling. No recovery.	
	-				(9.00)			

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
								0	50.9	Polymer	100	5 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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DL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH104
Job No 2023OY104	Date 02-05-23 05-05-23	Ground Level (m OD) 82.93	Co-Ordinates () E 649,609.5 N 738,361.9		
Engineer Fichtner					Sheet 2 of 7 Status FINAL

RUN DETAILS						STRATA		Instrument/ Backfill
Depth	TCR (SCR)	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
Date	RQD					Discontinuities	Main	
02.05 9.00 03.05		9.00 (50)	73.93		9.00		Open hole drilling. No recovery. <i>(continued)</i>	
	7 - -							

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
02/05/23	17.30	9.00	9.00	96								5 litres polydrill used. 50mm standpipe installed.
03/05/23	08.00	9.00										

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller AZ	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH104
Job No 2023OY104	Date 02-05-23 05-05-23	Ground Level (m OD) 82.93	Co-Ordinates () E 649,609.5 N 738,361.9		
Engineer Fichtner					Sheet 3 of 7 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill	
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
16.30			66.63		16.30					
13 - -								Orangish brown slightly gravelly silty fine and medium SAND. Gravel is subangular fine to medium of brownish grey limestone.		
17.80		17.80 (50/150mm)			(3.00)					
20 - -										
19.30			63.63		19.30					
67 - -						20.80 - 20.80 Core run: 1 No dark grey limestone boulder 350mm in length.		Subangular to angular fine to coarse 'bleached' white and dark grey limestone brownish grey siltstone and grey limestone GRAVEL with occasional cobbles and occasional boulders. Cobbles are of grey and dark grey limestone.		
20.80										
73 - -										
22.30										
23.05 24.05										
100 - -										
23.80										

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
03/05/23	17.30	22.30										5 litres polydrill used. 50mm standpipe installed.
04/05/23	08.00	22.30										
All dimensions in metres Scale 1:50		Client: Bord na Mona		Method/ Plant Used		Rotary Core/DB-DeltaBase		Driller AZ		Logged By EAT		

IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH104
Job No 2023OY104	Date 02-05-23 05-05-23	Ground Level (m OD) 82.93	Co-Ordinates () E 649,609.5 N 738,361.9		
Engineer Fichtner					Sheet 4 of 7 Status FINAL

RUN DETAILS						STRATA		Instrument/ Backfill	
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail		Main
	53 - -							Subangular to angular fine to coarse 'bleached' white and dark grey limestone brownish grey siltstone and grey limestone GRAVEL with occasional cobbles and occasional boulders. Cobbles are of grey and dark grey limestone. <i>(continued)</i>	
25.30									
	67 - -								
26.80									
	53 - -								
28.30					(18.40)				
	27 - -								
29.80									
	13 - -								
31.30									
27									

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												5 litres polydrill used. 50mm standpipe installed.
All dimensions in metres Scale 1:50		Client: Bord na Mona			Method/ Plant Used			Rotary Core/DB-DeltaBase			Driller AZ	Logged By EAT

IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPJ ID GINT AGS 4 0 4 GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH104
Job No 2023OY104	Date 02-05-23 05-05-23	Ground Level (m OD) 82.93	Co-Ordinates () E 649,609.5 N 738,361.9		
Engineer Fichtner					Sheet 5 of 7 Status FINAL

RUN DETAILS						STRATA		
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
						Discontinuities	Detail	Main
32.80	-							Subangular to angular fine to coarse 'bleached' white and dark grey limestone brownish grey siltstone and grey limestone GRAVEL with occasional cobbles and occasional boulders. Cobbles are of grey and dark grey limestone. (continued)
34.30	27							
35.80	33							
37.30	60							
38.40	57 (17)	28	45.23		37.70	37.84 - 37.84 Point Load Test: weak. 37.70 - 47.00 Discontinuities, very closely and closely spaced, locally medium spaced, dipping 12 to 14 and 45 to 48°, stepped, rough, with 0.5 to 2mm thick dark grey silt smear and minor surficial orangish brown iron stain and powder.		Medium strong locally strong thinly bedded light brownish grey 'bleached' fine grained LIMESTONE with subrounded fine to coarse dark grey fine grained chert nodules.
40.00	100 (71) 19	20			(3.30)	39.45 - 39.45 Point Load Test: weak.		

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
04/05/23	17.30	40.00										5 litres polydrill used. 50mm standpipe installed.
05/05/23	08.00	40.00										

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller AZ	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH104
Job No 2023OY104	Date 02-05-23 05-05-23	Ground Level (m OD) 82.93	Co-Ordinates () E 649,609.5 N 738,361.9		
Engineer Fichtner					Sheet 6 of 7 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
05.05								Medium strong locally strong thinly bedded light brownish grey 'bleached' fine grained LIMESTONE with subrounded fine to coarse dark grey fine grained chert nodules. <i>(continued)</i>	
41.00	100 (44) 21	26	41.93		41.00	40.86 - 40.86 Point Load Test: medium strong.		Very strong locally strong thinly bedded dark grey fine grained LIMESTONE with subvertical and horizontal white calcite veinlets and subrounded fine to coarse dark grey fine grained chert nodules.	
41.80	100 (91) 51	12				41.70 - 41.70 Point Load Test: strong.			
42.80	100 (61) 11	10			(3.20)	42.31 - 42.31 Point Load Test: strong.			
44.20	100 (72) 18	12	38.73		44.20	43.80 - 43.80 Point Load Test: strong.		Very strong locally strong thinly interbedded medium strong light greyish brown weakly dolomitised fine grained LIMESTONE and dark grey fine grained LIMESTONE with subrounded medium to coarse dark grey fine grained chert nodules.	
45.50	100 (49) 11	26				44.50 - 44.50 Point Load Test: medium strong.			
46.80	100 (43) 22	20			(2.80)	46.36 - 46.36 Point Load Test: medium strong.			
		NI	35.93		47.00	47.00 - 47.00 Point Load Test: weak.		CAVITY.	
					(0.60)	47.00 - 47.60 CAVITY.			
	53 (18) 9	NR	35.33		47.60	47.60 - 49.30 Non-intact as angular fine to coarse gravel sized clasts with a little			

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												5 litres polydrill used. 50mm standpipe installed.

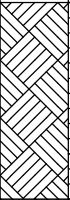
All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH104
Job No 2023OY104	Date 02-05-23 05-05-23	Ground Level (m OD) 82.93	Co-Ordinates () E 649,609.5 N 738,361.9		
Engineer Fichtner				Sheet 7 of 7 Status FINAL	

RUN DETAILS						STRATA			Instrument/ Backfill		
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION					
						Discontinuities	Detail	Main			
48.30	100 - -	NI	33.63		(1.70)	orangish brown clay and surficial orange and orangish brown iron stain and powder.	Weathered rock. Very strong locally medium strong strong and weak thinly interbedded medium strong light greyish brown weakly dolomitised fine grained LIMESTONE recovered as angular fine to coarse gravel sized clasts with a little orangish brown clay and surficial orange and orangish brown iron stain and powder. (continued)				
49.40					4					(1.60)	49.40 - 49.40 Point Load Test: weak. 49.30 - 50.90 Discontinuities, closely spaced, locally medium spaced, dipping 12 to 14 and 45 to 48°, stepped, rough, with 0.5 to 1mm thick dark grey silt smear.
50.90											7
50.90	100 (80) 42	7	32.03								

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Water Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
05/05/23	17.30	50.90										5 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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COL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH105
Job No 2023OY104	Date 08-05-23 09-05-23	Ground Level (m OD) 84.38	Co-Ordinates () E 649,562.6 N 738,294.9		
Engineer Fichtner					Sheet 1 of 6 Status FINAL

RUN DETAILS						STRATA		Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
						Discontinuities	Detail	
0.00						0.00 - 37.20 : overburden.		Open hole drilling. No recovery.

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia	Core Dia mm	Water Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
								0	45	Polymer	100	6 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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COL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH105
Job No 2023OY104	Date 08-05-23 09-05-23	Ground Level (m OD) 84.38	Co-Ordinates () E 649,562.6 N 738,294.9		
Engineer Fichtner					Sheet 2 of 6 Status FINAL

RUN DETAILS						STRATA		Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
						Discontinuities	Detail	
10.50	8 - -		73.88				Open hole drilling. No recovery. <i>(continued)</i>	
11.70	33 - -	11.70 (25/75mm)	72.78		(1.10)		No recovery. Drillers Comment: Sand.	
13.20	53 - -				(4.60)		Very stiff orangish brown thickly laminated slightly gravelly SILT. Gravel is subangular to angular fine whitish grey and white 'bleached' limestone.	
14.70	40 - -	14.70 (25/75mm)						

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
			10.50	96								6 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHP5 RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH105
Job No 2023OY104	Date 08-05-23 09-05-23	Ground Level (m OD) 84.38	Co-Ordinates () E 649,562.6 N 738,294.9		
Engineer Fichtner					Sheet 3 of 6 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
16.20			68.18		16.20				Very stiff dark brown gravelly SILT. Gravel is subrounded to subangular fine and medium of brownish grey siltstone and assorted grey limestone.
7 - -									
17.70		17.70 (25/75mm)							
7 - -					(4.70)				
19.20									Very stiff brown sandy gravelly SILT. Sand is fine to coarse. Gravel is subangular fine of white 'bleached' limestone.
7 - -									
20.70		20.70 (25/75mm)	63.48		20.90				
67 - -					(1.40)				
22.20			62.08		22.30				Light orangish grey slightly silty angular to subangular fine to coarse light grey 'bleached' fine grained weakly dolomitised limestone GRAVEL with occasional cobbles and occasional boulders. Cobbles are of light and dark grey and brownish grey silty fine grained limestone.
92 - -									
23.50									

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS	
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)		
08/05/23	17.30	23.50											
09/05/23	08.00	23.50										6 litres polydrill used. 50mm standpipe installed.	
All dimensions in metres Scale 1:50		Client: Bord na Mona			Method/ Plant Used			Rotary Core/DB-DeltaBase				Driller AZ	Logged By EAT

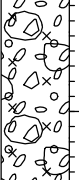
IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH105
Job No 2023OY104	Date 08-05-23 09-05-23	Ground Level (m OD) 84.38	Co-Ordinates () E 649,562.6 N 738,294.9		
Engineer Fichtner					Sheet 4 of 6 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
Date						Discontinuities	Detail	Main	
	25 - -							Light orangish grey slightly silty angular to subangular fine to coarse light grey 'bleached' fine grained weakly dolomitised limestone GRAVEL with occasional cobbles and occasional boulders. Cobbles are of light and dark grey and brownish grey silty fine grained limestone. <i>(continued)</i>	
25.10									
	25 - -								
26.70									
	33 - -				(10.40)				
28.20									
	33 - -								
29.70									
	60 - -								
30.70									
	90 - -					31.70 - 31.70 Core run: 1 No brownish grey limestone boulder 210mm in length.			
31.70						32.70 - 32.70 Core run: 1 No light			

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												6 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller AZ	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHP5 RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH105
Job No 2023OY104	Date 08-05-23 09-05-23	Ground Level (m OD) 84.38	Co-Ordinates () E 649,562.6 N 738,294.9		
Engineer Fichtner					Sheet 5 of 6 Status FINAL

RUN DETAILS						STRATA		Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
						Discontinuities	Detail	
32.70	100 - -		51.68		32.70	brownish grey limestone boulder 550mm in length.		
34.10	64 - -				(4.50)		Very stiff light orangish grey gravelly SILT with rare cobbles. Gravel is angular fine to coarse of light brownish grey weakly dolomitised limestone. Cobbles are of light brownish grey weakly dolomitised limestone.	
35.70	19 - -							
37.20	20 - -		47.18		37.20	37.20 - 45.00 Discontinuities, very closely and closely spaced, locally medium spaced, dipping 12 to 14 and 54 to 56°, stepped, rough, with 0.5 to 20mm thick brown silt smear.	Very strong locally weak thinly bedded grey fine grained LIMESTONE with subvertical and horizontal white calcite veinlets.	
38.70	100 (69) 37	15				37.80 - 37.80 Point Load Test: weak.		
		NI						
		8						
	73 (25) -	20				39.20 - 39.20 Point Load Test: weak.		
						39.80 - 40.80 No recovery. Possible area		

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												6 litres polydrill used. 50mm standpipe installed.

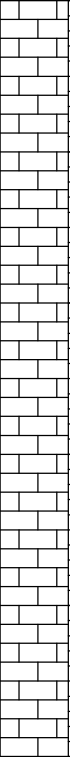
All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller AZ	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHP5 RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH105
Job No 2023OY104	Date 08-05-23 09-05-23	Ground Level (m OD) 84.38	Co-Ordinates () E 649,562.6 N 738,294.9		
Engineer Fichtner					Sheet 6 of 6 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill					
Depth	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION								
Date						Discontinuities	Detail	Main						
40.20	55 (22) - 100 (48) 21 100 (81) 41 100 (83) 46	NR 4 24 6 20 8			(7.80)	of core loss as washout of fines during drilling. No record of cavity. 40.80 - 40.80 possible area of core loss.	Very strong locally weak thinly bedded grey fine grained LIMESTONE with subvertical and horizontal white calcite veinlets. <i>(continued)</i>							
41.30						41.30 - 41.30 Point Load Test: weak.								
42.00						41.52 - 41.52 Point Load Test: weak.								
						42.60 - 42.60 becoming light brownish grey.								
43.50						42.64 - 42.64 Point Load Test: very strong.								
						43.50 - 43.50 white calcite vein.								
						44.40 - 44.40 Point Load Test: very strong.								
44.50						44.65 - 44.65 brown silt.								
45.00														

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
09/05/23	14.00	45.00										6 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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COL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH106
Job No 2023OY104	Date 10-05-23 11-05-23	Ground Level (m OD) 85.45	Co-Ordinates () E 649,588.7 N 738,249.7		
Engineer Fichtner				Sheet 1 of 4 Status FINAL	

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Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
			6.00	96				0	25	Polymer	100	3 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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COL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH106
Job No 2023OY104	Date 10-05-23 11-05-23	Ground Level (m OD) 85.45	Co-Ordinates () E 649,588.7 N 738,249.7		
Engineer Fichtner					Sheet 2 of 4 Status FINAL

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Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												3 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller AZ	Logged By EAT
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DL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 21/1/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH106
Job No 2023OY104	Date 10-05-23 11-05-23	Ground Level (m OD) 85.45	Co-Ordinates () E 649,588.7 N 738,249.7		
Engineer Fichtner					Sheet 3 of 4 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
16.20			69.05	○ × × × × ×	16.40				
13 -				× × × × × ×					
17.70		17.70 (25/75mm)		× × × × × ×					
13 -				× × × × × ×	(4.30)				
19.20				× × × × × ×					
13 -				× × × × × ×					
20.70		20.70	64.75	× × × × × ×	20.70				
20 -				× × × × × ×					
22.20				× × × × × ×					
20 -				× × × × × ×	(4.30)				
23.70		23.70		× × × × × ×					
10.05 11.05				× × × × × ×					

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All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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COL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH106
Job No 2023OY104	Date 10-05-23 11-05-23	Ground Level (m OD) 85.45	Co-Ordinates () E 649,588.7 N 738,249.7		
Engineer Fichtner					Sheet 4 of 4 Status FINAL

[illegible]

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
11/05/23	11.00	25.00										3 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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COL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH107
Job No 2023OY104	Date 15-05-23 16-05-23	Ground Level (m OD) 87.19	Co-Ordinates () E 649,439.0 N 738,146.2		
Engineer Fichtner				Sheet 1 of 4 Status FINAL	

RUN DETAILS						STRATA		Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
						Discontinuities	Main	
0.00						0.00 - 25.00 : overburden.	Open hole drilling. No recovery.	

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
								0	25	Polymer	100	2 litres polydrill used. BH backfilled.

All dimensions in metres Scale: 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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COL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



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DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH107
Job No 2023OY104	Date 15-05-23 16-05-23	Ground Level (m OD) 87.19	Co-Ordinates () E 649,439.0 N 738,146.2		
Engineer Fichtner					Sheet 2 of 4 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
15.05 16.05	9.00		78.19		9.00			Open hole drilling. No recovery. <i>(continued)</i>	
								Light brownish grey silty subrounded to angular fine to coarse white and grey and dark grey limestone GRAVEL with occasional cobbles and occasional boulders. Cobbles are of white and grey and dark grey limestone.	
10.10	81 - -					11.70 - 11.70 Core run: 1 No grey limestone boulder 340mm in length.			
	50 - -								
11.70		11.70 (25/75mm)							
	19 - -								
13.30									
	56 - -								
14.90		14.90 (25/75mm)							
	40 - -								

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
15/05/23	17.30	9.00	9.00	96								
16/05/23	08.00	9.00										2 litres polydrill used. BH backfilled.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller AZ	Logged By EAT
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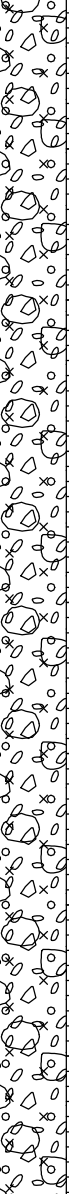
IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



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DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH107
Job No 2023OY104	Date 15-05-23 16-05-23	Ground Level (m OD) 87.19	Co-Ordinates () E 649,439.0 N 738,146.2		
Engineer Fichtner					Sheet 3 of 4 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
16.40	20 - -	17.90 (25/75mm)			(16.00)	17.90 - 17.90 Core run: 1 No dark grey limestone boulder 220mm in length.		Light brownish grey silty subrounded to angular fine to coarse white and grey and dark grey limestone GRAVEL with occasional cobbles and occasional boulders. Cobbles are of white and grey and dark grey limestone. <i>(continued)</i>	
17.90	67 - -								
19.10	53 - -								
20.40	19 - -								
22.00	19 - -	20.40 (25/75mm)				20.40 - 20.40 Core run: 1 No light grey vuggy limestone boulder 220mm in length.			
23.60									
		23.60 (25/75mm)							

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												2 litres polydrill used. BH backfilled.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller AZ	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHP5 RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH107
Job No 2023OY104	Date 15-05-23 16-05-23	Ground Level (m OD) 87.19	Co-Ordinates () E 649,439.0 N 738,146.2		
Engineer Fichtner				Sheet 4 of 4 Status FINAL	

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Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
16/05/23	16.00	25.00										2 litres polydrill used. BH backfilled.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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DL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH109
Job No 2023OY104	Date 07-06-23 12-06-23	Ground Level (m OD) 82.73	Co-Ordinates () E 649,687.4 N 738,383.5		
Engineer Fichtner					Sheet 1 of 7 Status FINAL

RUN DETAILS						STRATA		Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
						Discontinuities	Main	
0.00						0.00 - 54.20 : overburden.	Open hole drilling. No recovery.	
	-				(10.70)			

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
								0	54.2	Polymer	100	6 gallons polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller PMcG	Logged By EAT
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DL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



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DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH109
Job No 2023OY104	Date 07-06-23 12-06-23	Ground Level (m OD) 82.73	Co-Ordinates () E 649,687.4 N 738,383.5		
Engineer Fichtner					Sheet 2 of 7 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
10.70			72.03		10.70	Open hole drilling. No recovery. <i>(continued)</i>			
	20 -			x x					

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
			15.00	96								6 gallons polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller PMcG	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH109
Job No 2023OY104	Date 07-06-23 12-06-23	Ground Level (m OD) 82.73	Co-Ordinates () E 649,687.4 N 738,383.5		
Engineer Fichtner					Sheet 3 of 7 Status FINAL

RUN DETAILS						STRATA		Instrument/ Backfill
Depth	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
Date						Discontinuities	Detail	
	-			x . x .<				

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Water Strike	Standing	From (m)	To (m)	Type	Return (%)	
07/06/23	17.30	19.70										6 gallons polydrill used. 50mm standpipe installed.
08/06/23	08.00	19.70										

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller PMcG	Logged By EAT
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COL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH109
Job No 2023OY104	Date 07-06-23 12-06-23	Ground Level (m OD) 82.73	Co-Ordinates () E 649,687.4 N 738,383.5		
Engineer Fichtner					Sheet 4 of 7 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
Date						Discontinuities	Detail	Main	
24.20				x 					

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												6 gallons polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller PMcG	Logged By EAT
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COL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH109
Job No 2023OY104	Date 07-06-23 12-06-23	Ground Level (m OD) 82.73	Co-Ordinates () E 649,687.4 N 738,383.5		
Engineer Fichtner				Sheet 5 of 7 Status FINAL	

RUN DETAILS						STRATA			Instrument/ Backfill
Depth	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
Date						Discontinuities	Detail	Main	
	20			x				Very dense brown silty coarse SAND. <i>(continued)</i>	
	-			x	(43.50)				
	-			x					
33.20				x					
				x					
				x					
				x					
	13			x					
	-			x					
	-			x					
34.70		34.70 (50)		x					
08.05 09.06				x					
				x					
	20			x					
	-			x					
	-			x					
36.20				x					
				x					
				x					
	20			x					
	-			x					
	-			x					
37.70		37.70		x					
				x					
				x					
	20			x					
	-			x					
	-			x					
39.20				x					
				x					
				x					
	20			x					
	-			x					

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Water Strike	Standing	From (m)	To (m)	Type	Return (%)	
08/05/23	17.30	34.70										6 gallons polydrill used. 50mm standpipe installed.
09/06/23	08.00	34.70										

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller PMcG	Logged By EAT
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DL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH109
Job No 2023OY104	Date 07-06-23 12-06-23	Ground Level (m OD) 82.73	Co-Ordinates () E 649,687.4 N 738,383.5		
Engineer Fichtner					Sheet 6 of 7 Status FINAL

RUN DETAILS						STRATA		Instrument/ Backfill
Depth	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
Date						Discontinuities	Detail	
40.70	-	40.70 (47/150mm)		x			Very dense brown silty coarse SAND. <i>(continued)</i>	
				x				
				x				
				x				
				x				
				x				
				x				
42.20	13			x				
	-			x				
	-			x				
				x				
				x				
				x				
				x				
43.70	13	43.70 (50/225mm)		x				
	-			x				
	-			x				
				x				
				x				
				x				
				x				
45.20	13			x				
	-			x				
	-			x				
				x				
				x				
				x				
				x				
46.70	13	46.70 (50/225mm)		x				
	-			x				
	-			x				
				x				
				x				
				x				
				x				

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												6 gallons polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller PMcG	Logged By EAT
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DL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH109
Job No 2023OY104	Date 07-06-23 12-06-23	Ground Level (m OD) 82.73	Co-Ordinates () E 649,687.4 N 738,383.5		
Engineer Fichtner					Sheet 7 of 7 Status FINAL

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All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller PMcG	Logged By EAT
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COL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



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DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH110
Job No 2023OY104	Date 12-05-23 15-05-23	Ground Level (m OD) 86.11	Co-Ordinates () E 649,461.4 N 738,212.7		
Engineer Fichtner					Sheet 1 of 3 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
0.00						0.00 - 14.70 : overburden.		Open hole drilling. No recovery.	
-	-				(1.50)				
1.50			84.61		1.50				
-	50				(1.20)	2.70 - 2.70 Core run: 1 No dark grey limestone boulder 320mm in length.		Subangular coarse light grey and dark grey limestone GRAVEL with rare boulders.	
2.70			83.41		2.70				
-	13							Light orangish brown slightly gravelly silty fine to coarse SAND. Gravel is subrounded to angular fine to coarse of assorted grey limestone.	
4.20									
-	13								
5.70									
-	13								
7.20									
-	13								

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
			1.50	96				0	20.7	Polymer	100	2 litres polydrill used. BH backfilled.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller AZ	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHP5 RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



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DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH110
Job No 2023OY104	Date 12-05-23 15-05-23	Ground Level (m OD) 86.11	Co-Ordinates () E 649,461.4 N 738,212.7		
Engineer Fichtner					Sheet 2 of 3 Status FINAL

RUN DETAILS						STRATA		Instrument/ Backfill	
Depth	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
Date						Discontinuities	Detail		Main
8.70	-	8.70 (48/75mm)			(12.00)			Light orangish brown slightly gravelly silty fine to coarse SAND. Gravel is subrounded to angular fine to coarse of assorted grey limestone. (continued)	
13	-								
10.20									
13	-								
12.05 11.70 15.05		11.70 (22/75mm)							
7	-								
13.20									
7	-								
14.70		14.70 (25/75mm)	71.41		14.70	14.70 - 16.20 Non-intact as weathered rock.		Weathered rock. Medium strong and strong thinly bedded grey fine grained limestone recovered as angular fine to coarse gravel sized clasts with a little orangish brown clay.	
100 (21) -		NI			(1.50)				

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
12/05/23 15/05/23	17.30 08.00	11.70 11.70										

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller AZ	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH110
Job No 2023OY104	Date 12-05-23 15-05-23	Ground Level (m OD) 86.11	Co-Ordinates () E 649,461.4 N 738,212.7		
Engineer Fichtner					Sheet 3 of 3 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
16.20	100 (57) 14	20	69.91		16.20	16.00 - 16.00 Point Load Test: very strong.	Very strong locally strong and medium strong thinly bedded dark grey silty fine grained LIMESTONE with subvertical and horizontal white calcite veinlets and subrounded fine and medium gravel sized dak grey fine grained chert nodules.		
						16.30 - 16.30 white calcite vein. 16.20 - 20.70 Discontinuities, very closely and closely spaced, locally medium spaced, dipping 12 to 14 and 54 to 56°, stepped, rough, with 0.5 to 3mm thick light greyish brown silt smear. 16.30 - 16.60 Joint, subvertical dip, planar, smooth, with 0.5 to 1mm thick greyish brown silt smear, open.			
17.70									16.95 - 16.95 Point Load Test: very strong.
18.70			NI			17.90 - 17.90 Point Load Test: medium strong.			
19.70						19.20 - 19.20 Point Load Test: very strong.			
20.70	100 (96) 51	12							
20.70			65.41		20.70	20.44 - 20.44 Point Load Test: medium strong. 20.70 - 20.70 becoming dark bluish grey.			

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
15/05/23	14.00	20.70										2 litres polydrill used. BH backfilled.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller AZ	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHP5 RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



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DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH111
Job No 2023OY104	Date 11-05-23 11-05-23	Ground Level (m OD) 87.59	Co-Ordinates () E 649,512.7 N 738,206.2		
Engineer Fichtner					Sheet 1 of 2 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
0.00						0.00 - 5.00 : overburden.		Open hole drilling. No recovery.	
	- - -				(1.50)				
1.50			86.09		1.50			Greyish brown slightly silty subrounded to subangular fine to coarse grey and dark grey limestone GRAVEL.	
	28 - -								
2.90					(3.50)				
	13 - -								
4.40									
	80 (29) 7		82.59		5.00				
5.90		17				5.00 - 11.00 Discontinuities, very closely and closely spaced, locally medium spaced, dipping 12 to 14 and 45 to 47°, stepped, rough, with 0.5 to 30mm thick grey silt smear.		Very strong locally strong thinly bedded grey silty fine grained LIMESTONE with subvertical and horizontal white calcite veinlets and subrounded fine to coarse gravel sized dak grey fine grained chert nodules.	
	100 (73) 21	21							
6.90						6.80 - 6.80 Point Load Test: strong.			
	100 (76) 35	20							
						7.85 - 7.85 brownish grey silt.			

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
			1.50	96				0	11	Polymer	100	1 litre polydrill used. BH backfilled.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller AZ	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH111
Job No 2023OY104	Date 11-05-23 11-05-23	Ground Level (m OD) 87.59	Co-Ordinates () E 649,512.7 N 738,206.2		
Engineer Fichtner					Sheet 2 of 2 Status FINAL

RUN DETAILS						STRATA		Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
						Discontinuities	Detail	
8.40	100 (74) 34	22			(6.00)	7.84 - 7.84 Point Load Test: very strong.		Very strong locally strong thinly bedded grey silty fine grained LIMESTONE with subvertical and horizontal white calcite veinlets and subrounded fine to coarse gravel sized dak grey fine grained chert nodules. <i>(continued)</i>
						8.40 - 8.40 becoming brownish grey.		
9.40						9.20 - 9.20 Point Load Test: very strong.		
	100 (73) 32	14				9.65 - 9.65 becoming brownish grey.		
						10.03 - 10.03 Point Load Test: very strong.		
11.05						11.00		

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
11/05/23	15.00	11.00										1 litre polydrill used. BH backfilled.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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DL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH111A
Job No 2023OY104	Date 14-06-23 16-06-23	Ground Level (m OD) 87.59	Co-Ordinates () E 649,513.7 N 738,205.5		
Engineer Fichtner				Sheet 1 of 3 Status FINAL	

RUN DETAILS						STRATA	
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION	
						Discontinuities	Detail
						Main	
0.00						0.00 - 7.00 : overburden.	Open hole drilling. No recovery.
6.00	40	26	81.59		6.00		
7.00			80.59		7.00		
8.00	100 (65) 19					7.00 - 20.70 medium spaced, locally closely spaced, dipping 12 to 14°, stepped, rough, with 0.5 to 8mm thick brownish grey silt smear and minor orangish brown iron stain.	Very strong locally weak medium strong and strong thickly bedded light grey cherty fine and medium grained LIMESTONE with 'anastomosing' white calcitic veinlets.

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Water Strike	Standing	From (m)	To (m)	Type	Return (%)	
14/06/23	17.30	6.00	6.00	96				0	20.7	Polymer	100	6 gallons polydrill used. 50mm standpipe installed.
15/06/23	08.00	6.00										

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller PMcG	Logged By EAT
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DL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



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DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH111A
Job No 2023OY104	Date 14-06-23 16-06-23	Ground Level (m OD) 87.59	Co-Ordinates () E 649,513.7 N 738,205.5		
Engineer Fichtner					Sheet 2 of 3 Status FINAL

RUN DETAILS						STRATA		Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
						Discontinuities	Detail	
8.60	100 (85) 35	6				7.30 - 7.30 Point Load Test: strong. 7.10 - 7.40 Joint, subvertical dip, stepped, rough, with 0.5 to 10mm thick light orangish brown clay smear, open to wide.	Very strong locally weak medium strong and strong thickly bedded light grey cherty fine and medium grained LIMESTONE with 'anastomosing' white calcitic veinlets. (continued)	
	94 (71) 55	6				7.55 - 7.55 UCS: weak. 7.55 - 7.90 Joint, subvertical dip, stepped, rough, with 0.5 to 10mm thick light orangish brown clay smear, open to wide. 7.95 - 8.10 Joint, subvertical dip, stepped, smooth, with 0.5 to 1mm thick orangish brown clay smear, open.		
10.20		NR				8.34 - 8.34 Point Load Test: very strong.		
	100 (88) 37	8				9.22 - 9.22 UCS: strong.		
11.40		8				9.70 - 9.70 Point Load Test: very strong. 10.00 - 10.60 Joint, subvertical dip, stepped, smooth, with 0.5 to 1mm thick orangish brown clay smear, open. 10.10 - 10.20 Possible area of core loss. No recovery as probable washout of fines during drilling. No record of cavity.		
	100 (85) 52	7				10.80 - 10.80 Point Load Test: strong. 12.20 - 12.20 Point Load Test: strong.		
13.00								
	100 (82) 39	20			(12.70)	13.40 - 13.40 Point Load Test: very strong. 13.70 - 14.00 Non-intact as angular fine to medium gravel sized clasts. 14.00 - 14.00 medium strong brownish grey fine grained 'bleached' weakly dolomitised limestone.		
14.00		NI						
	100 (70) 30	8				14.15 - 14.15 UCS: medium strong.		
						15.00 - 15.00 Point Load Test: medium strong.		
15.06 15.60 16.06	100	26				15.50 - 15.60 Joint, dipping 60°, stepped, rough, with 0.5 to 1mm thick orangish brown clay smear and minor		

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
15/06/23 16/06/23	17.30 08.00	15.60 15.60										6 gallons polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller PMcG	Logged By EAT
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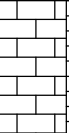
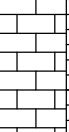
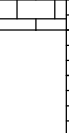
IDL AGS4 UK DH (SPTS) DERRYGREENAGHP5 RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



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DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH111A
Job No 2023OY104	Date 14-06-23 16-06-23	Ground Level (m OD) 87.59	Co-Ordinates () E 649,513.7 N 738,205.5		
Engineer Fichtner					Sheet 3 of 3 Status FINAL

RUN DETAILS						STRATA		Instrument/ Backfill
Depth	TCR (SCR)	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
Date	RQD					Discontinuities	Detail	
16.40	(64) 55	9				orangish brown iron stain, open.		Very strong locally weak medium strong and strong thickly bedded light grey cherty fine and medium grained LIMESTONE with 'anastomosing' white calcitic veinlets. (continued)
	100 (73) 46					15.90 - 15.90 Point Load Test: strong. 15.90 - 16.40 Joint, subvertical dip, stepped, rough, with 0.5 to 4mm thick orangish brown clay smear, open to moderately wide.		
17.70						17.16 - 17.16 Point Load Test: very strong.		
		8				17.60 - 19.35 Joint, subvertical dip, stepped, rough, with 0.5 to 4mm thick orangish brown clay smear, open to moderately wide.		
		NI				17.70 - 18.00 Non-intact as angular fine to medium gravel sized clasts.		
	81 (61) 43	12				19.70 - 19.70 medium strong brownish grey fine grained 'bleached' weakly dolomitised limestone.		
19.30		8				19.14 - 19.14 Point Load Test: weak.		
			67.89		19.70	19.40 - 19.40 Point Load Test: very strong. 19.70 - 20.70 CAVITY.		CAVITY.
	28 (11) -	NR			(1.00)			
20.70			66.89			20.70		

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
16/06/23	14.00	20.70										6 gallons polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller PMcG	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



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DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH112
Job No 2023OY104	Date 04-05-23 05-05-23	Ground Level (m OD) 84.42	Co-Ordinates () E 649,358.6 N 738,261.1		
Engineer Fichtner					Sheet 1 of 5 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
0.00						0.00 - 40.00 : overburden.		Open hole drilling. No recovery.	
	- - -				(5.00)				
5.00		5.00 (46)	79.42		5.00				
	20 - -							Very stiff light grey sandy gravelly SILT with rare cobbles. Sand is fine to coarse. Gravel is subangular fine to coarse of assorted brown sandstone and assorted grey limestone. Cobbles are of dark grey limestone.	
6.50		6.50 (31)			(3.00)	6.50 - 6.50 becoming orangish brown.			
	20 - -								
8.00			76.42		8.00				

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
								0	40	Polymer	100	15 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller DK	Logged By EAT
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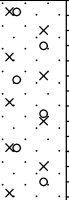
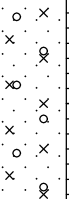
IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH112
Job No 2023OY104	Date 04-05-23 05-05-23	Ground Level (m OD) 84.42	Co-Ordinates () E 649,358.6 N 738,261.1		
Engineer Fichtner					Sheet 2 of 5 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
9.50	20 - -	8.00 (44)			(3.00)			Angular medium greyish brown siltstone GRAVEL.	
	9.50	9.50 (46/150mm)							
11.00	20 - -		73.42		11.00			Dark blackish brown slightly gravelly silty fine to medium SAND. Gravel is subrounded to subangular fine to coarse of greyish brown siltstone and grey limestone.	
	11.00	11.00 (50/225mm)							
12.50	20 - -								
	12.50	12.50 (38)							
14.00	20 - -								
	14.00	14.00 (50/225mm)							
15.50	20 - -								
	15.50	15.50 (25/75mm)							

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												15 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller DK	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHP5 RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH112
Job No 2023OY104	Date 04-05-23 05-05-23	Ground Level (m OD) 84.42	Co-Ordinates () E 649,358.6 N 738,261.1		
Engineer Fichtner				Sheet 3 of 5 Status FINAL	

RUN DETAILS						STRATA			Instrument/ Backfill
Depth	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
Date						Discontinuities	Detail	Main	
17.00	20 - -	17.00 (50/150mm)		⊗ ⊗					

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All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller DK	Logged By EAT
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COL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH112
Job No 2023OY104	Date 04-05-23 05-05-23	Ground Level (m OD) 84.42	Co-Ordinates () E 649,358.6 N 738,261.1		
Engineer Fichtner					Sheet 4 of 5 Status FINAL

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Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												15 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller DK	Logged By EAT
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DL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



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DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH112
Job No 2023OY104	Date 04-05-23 05-05-23	Ground Level (m OD) 84.42	Co-Ordinates () E 649,358.6 N 738,261.1		
Engineer Fichtner					Sheet 5 of 5 Status FINAL

RUN DETAILS						STRATA		Instrument/ Backfill
Depth	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
Date						Discontinuities	Detail	
		32.00 (25/75mm)						

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
05/05/23	16.00	40.00										15 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller DK	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH116
Job No 2023OY104	Date 13-06-23 14-06-23	Ground Level (m OD) 82.87	Co-Ordinates () E 649,743.1 N 738,296.4		
Engineer Fichtner					Sheet 1 of 3 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
0.00						0.00 - 22.10 : overburden.		Open hole drilling. No recovery.	

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
								0	22.1	Polymer	100	2 gallons polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller PMcG	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHP5 RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH116
Job No 2023OY104	Date 13-06-23 14-06-23	Ground Level (m OD) 82.87	Co-Ordinates () E 649,743.1 N 738,296.4		
Engineer Fichtner				Sheet 2 of 3 Status FINAL	

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
10.10	20 - -	10.10 (50/225mm)			(3.80)	Dark orangish brown fine and medium SAND. (continued)			
11.60	13 - -		71.27		11.60	Subrounded to subangular fine to coarse assorted grey limestone GRAVEL.			
13.10	13 - -	13.10 (47/150mm)			(3.00)				
14.60	13 - -		68.27		14.60	Dark reddish brown silty fine SAND.			
	20 - -								

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
			10.50	96								2 gallons polydrill used. 50mm standpipe installed.

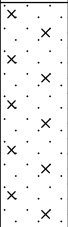
All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller PMcG	Logged By EAT
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DL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH116
Job No 2023OY104	Date 13-06-23 14-06-23	Ground Level (m OD) 82.87	Co-Ordinates () E 649,743.1 N 738,296.4		
Engineer Fichtner				Sheet 3 of 3 Status FINAL	

RUN DETAILS						STRATA			Instrument/ Backfill		
Depth	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION					
Date						Discontinuities	Detail	Main			
16.10	20 - -	16.10 (25/75mm)			(3.00)			Dark reddish brown silty fine SAND. <i>(continued)</i>	 		
17.60								65.27		17.60	Subangular fine to medium assorted grey limestone GRAVEL with surficial dark orangish brown iron stain.
20 - -											
19.10	19.10 (50/225mm)	20 - -	20.60	62.27	20.60	Dark reddish brown silty fine and medium SAND.					
20 - -	13 - -	22.10 (47/150mm)									
22.10								60.77		22.10	
23.06											

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
13/06/23	17.30	22.10										2 gallons polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller PMcG	Logged By EAT
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DL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH117
Job No 2023OY104	Date 30-05-23 06-06-23	Ground Level (m OD) 82.78	Co-Ordinates () E 649,723.2 N 738,289.0		
Engineer Fichtner				Sheet 1 of 7 Status FINAL	

RUN DETAILS						STRATA		Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
						Discontinuities	Main	
0.00						0.00 - 55.40 : overburden.	Open hole drilling. No recovery.	
	- . .				(7.50)			
7.50			75.28		7.50		Assorted light grey and dark grey limestone COBBLES.	

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
			7.50	96				0	55.4	Polymer	100	4 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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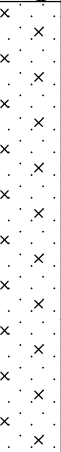
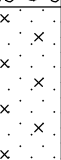
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DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH117
Job No 2023OY104	Date 30-05-23 06-06-23	Ground Level (m OD) 82.78	Co-Ordinates () E 649,723.2 N 738,289.0		
Engineer Fichtner					Sheet 2 of 7 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill				
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION							
						Discontinuities	Detail	Main					
8.90	20 - -	8.90 (25/75mm)	73.88		(1.40) 8.90			Assorted light grey and dark grey limestone COBBLES. <i>(continued)</i>					
	7 - -							10.40	7 - -	11.90	13.40	14.90	Grey silty fine and medium SAND.
10.40	7 - -	11.90 (25/75mm)	70.88		(3.00) 11.90								
	7 - -							13.40	14.90	7 - -	Pinkish brown silty fine to coarse SAND.		
11.90	7 - -	14.90 (25/75mm)	67.88		(3.00) 14.90								
	7 - -												
13.40	7 - -												
14.90	7 - -												

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												4 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller AZ	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH117
Job No 2023OY104	Date 30-05-23 06-06-23	Ground Level (m OD) 82.78	Co-Ordinates () E 649,723.2 N 738,289.0		
Engineer Fichtner					Sheet 3 of 7 Status FINAL

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All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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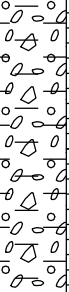
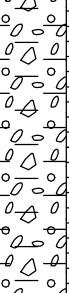
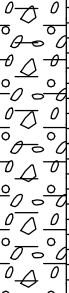
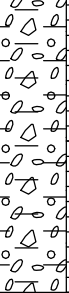
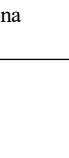
DL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH117
Job No 2023OY104	Date 30-05-23 06-06-23	Ground Level (m OD) 82.78	Co-Ordinates () E 649,723.2 N 738,289.0		
Engineer Fichtner					Sheet 4 of 7 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
		23.90 (25/75mm)			(13.50)			Subangular fine to medium brownish grey 'bleached' weakly dolomitised limestone GRAVEL with a little orangish brown clay. (continued)	
25.40	27 - -								
26.90	27 - -								
		26.90 (25/75mm)							
28.40	13 - -								
									
29.90	13 - -								
		29.90 (25/75mm)							
	20 - -								
31.40									

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												4 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller AZ	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHP5 RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



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DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH117
Job No 2023OY104	Date 30-05-23 06-06-23	Ground Level (m OD) 82.78	Co-Ordinates () E 649,723.2 N 738,289.0		
Engineer Fichtner					Sheet 5 of 7 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) ROD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
32.90	20 - -	32.90 (25/75mm)	49.88		32.90		Subangular fine to medium brownish grey 'bleached' weakly dolomitised limestone GRAVEL with a little orangish brown clay. (continued)		
	Brown coarse SAND.								
34.40	7 - -				(3.00)				
35.90	7 - -	35.90 (25/75mm)	46.88		35.90				
37.40	7 - -						Subangular fine to medium brownish grey 'bleached' weakly dolomitised limestone GRAVEL with some grey silt.		
38.90	13 - -	38.90 (25/75mm)							
	13 - -								

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												4 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH117
Job No 2023OY104	Date 30-05-23 06-06-23	Ground Level (m OD) 82.78	Co-Ordinates () E 649,723.2 N 738,289.0		
Engineer Fichtner					Sheet 6 of 7 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
31.05 01.06	40.40	41.90 (25/75mm)							

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
31/05/23	17.30	40.40										4 litres polydrill used. 50mm standpipe installed.
01/06/23	08.00	40.40										

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase	Driller AZ	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH117
Job No 2023OY104	Date 30-05-23 06-06-23	Ground Level (m OD) 82.78	Co-Ordinates () E 649,723.2 N 738,289.0		
Engineer Fichtner					Sheet 7 of 7 Status FINAL

RUN DETAILS						STRATA		Instrument/ Backfill	
Depth	TCR (SCR)	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
Date	RQD					Discontinuities	Detail		Main
49.40	-	47.90 (25/75mm)			(3.00)			No recovery. Core loss as probable washout of fines during drilling. No record of cavity. <i>(continued)</i>	
	-								
	-								
	-								
50.90	20		31.88		50.90			Subangular fine to medium brownish grey 'bleached' weakly dolomitised limestone GRAVEL with a little orangish brown clay.	
-									
52.40	-		30.38		52.40			Assorted grey limestone COBBLES.	
-									
53.90	80		28.88		53.90			Subangular fine to medium brownish grey 'bleached' weakly dolomitised limestone GRAVEL with a little orangish brown clay.	
-									
55.40	40		27.38		55.40				
01.06	-								

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
01/06/23	17.30	55.40										4 litres polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller AZ	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHP5 RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH118
Job No 2023OY104	Date 19-06-23 19-06-23	Ground Level (m OD) 82.80	Co-Ordinates () E 649,594.2 N 738,364.9		
Engineer Fichtner					Sheet 1 of 3 Status FINAL

RUN DETAILS						STRATA		Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
						Discontinuities	Detail Main	
0.00						0.00 - 12.80 : overburden.	Open hole drilling. No recovery.	

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
								0	13.3	Polymer	100	2 gallons polydrill used. BH backfilled.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller PMcG	Logged By EAT
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COL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23



Irish drilling LTD

DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH118
Job No 2023OY104	Date 19-06-23 19-06-23	Ground Level (m OD) 82.80	Co-Ordinates () E 649,594.2 N 738,364.9		
Engineer Fichtner					Sheet 2 of 3 Status FINAL

RUN DETAILS						STRATA			Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
9.00	27 -		73.80		9.00			Open hole drilling. No recovery. <i>(continued)</i>	
									Subangular to subrounded fine to coarse assorted dark grey and light grey limestone GRAVEL.
10.50	17 -				(3.80)				
12.30	61 -		70.00		12.80				
13.60	80 (23) -	NR/NI				12.80 - 18.70 Non-intact as weathered rock. No recovery as washout of fines during drilling.No record of cavity.		Probable weathered rock. Very strong extremely strong and strong light whitish grey 'bleached' weakly dolomitised fine grained limestone with surficial orangish brown iron stain recovered as angular to subangular fine to coarse gravel and cobble sized clasts.	
						13.55 - 13.55 Point Load Test: strong.			
14.60	69 (22) 9					14.60 - 14.60 Point Load Test: strong.			
			14.90 - 14.90 Point Load Test: very strong.						
15.90					(5.90)				

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
			9.00	96				13.3	20.3	Polymer	0	2 gallons polydrill used. BH backfilled.

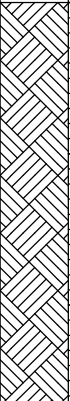
All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller PMcG	Logged By EAT
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IDL AGS4 UK DH (SPTS) DERRYGREENAGHP5 RC ALL FILE TO FINAL NOV 2 2023 GPU ID GINT AGS 4 0 4 GDT 2/11/23



DRILLHOLE LOG

Project Derrygreenagh Power			Location Co Offaly		DRILLHOLE No BH118
Job No 2023OY104	Date 19-06-23 19-06-23	Ground Level (m OD) 82.80	Co-Ordinates () E 649,594.2 N 738,364.9		
Engineer Fichtner					Sheet 3 of 3 Status FINAL

RUN DETAILS						STRATA		Instrument/ Backfill
Depth	TCR (SCR) RQD	(SPT) Fracture Index	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
Date						Discontinuities	Detail	
16.50	50 - -	NI	64.10		18.70	16.70 - 16.70 Point Load Test: strong.	Probable weathered rock. Very strong extremely strong and strong light whitish grey 'bleached' weakly dolomitised fine grained limestone with surficial orangish brown iron stain recovered as angular to subangular fine to coarse gravel and cobble sized clasts. <i>(continued)</i>	
17.60	55 (13) -							
18.70	72 (19) -							
	100 (53) 25					18.70 - 20.30 Non-intact as weathered rock.	Weathered rock. Strong and very strong thinly bedded grey and dark grey cherty fine grained limestone with flat and elongate medium and coarse gravel sized chert nodules recovered as angular fine to coarse gravel and cobble sized clasts with a little grey silt.	
19.0620.30						62.50		

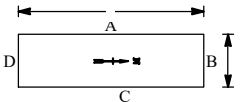
Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
19/06/23	17.30	20.30										2 gallons polydrill used. BH backfilled.

All dimensions in metres Scale 1:50	Client: Bord na Mona	Method/ Plant Used	Rotary Core/DB-DeltaBase		Driller PMcG	Logged By EAT
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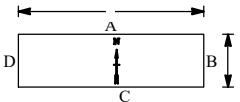
COL AGS4 UK DH (SPTS) DERRYGREENAGHPS RC ALL FILE TO FINAL NOV 2 2023.GPJ ID GINT AGS 4 0 4.GDT 2/11/23

Appendix 3

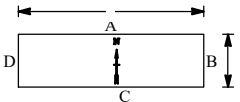
Trial Pit Records

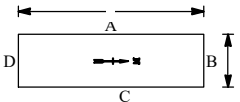
PROJECT: Derrygreenagh Power										TRIALPIT: TP201	
LOCATION: Co Offaly										Sheet 1 of 1	
CLIENT: Bord na Mona							Co-ordinates: E 649,371.5 N 738,404.1		Rig: Hyundai HX 140		
ENGINEER: Fichtner									Rev: FINAL		
Ground level: 81.39m O.D.									DATE: 2.5.23		
GROUNDWATER Water strikes: Rose to after: 1st: dry 2nd: 3rd:							PIT DIRECTION: 0° PIT DIMENSION: 4.80m * 1.60 LOGGED BY: DF		 Shoring/Support: N/A Stability: Pit stable.		
Depth (m)	Date	Water	Samples	Depth (m)	SPT (N) In Situ Vane Tests	LEGEND	Elevation m O.D.	Depth (m)	DESCRIPTION	Instrument/ Backfill	
0							80.69	0.70	Plastic black amorphous PEAT. H9.		
1			B 1	1.00-1.20					Firm orangish brown fibrous PEAT. H3. 1.00: thermal resistivity test.		
2							78.59	2.80			
3			ES B 2 D 3	2.80-3.00 2.80-3.00 2.80-3.00			78.39	3.00	Soft damp grey slightly gravelly sandy SILT with occasional cobbles. Sand is fine to coarse. Gravel is angular fine to coarse. Cobbles are angular of limestone.		
4			B 4 B 5	3.40-3.60 3.40-3.60			76.89	4.50	Firm light grey slightly sandy gravelly SILT with occasional cobbles. Gravel is angular to subrounded fine to coarse. Cobbles are angular to subrounded of limestone. 3.30-4.50: with occasional boulders. Boulders are subrounded of limestone. Boulders are up to 400mm in length.		
5						END					
6											
7											
8											
9											
10											
Remarks: TP dry on excavation. TP backfilled with arisings.										Scale: 1:50	
Irish drilling LTD										Ph. Fax	

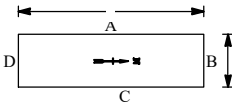
TRIALPIT DERRYGREENAGHPS TPS ALL FILE TO FINAL NOV 1 2023.GPJ ID GINT AGS 4.0.4.GDT 1/11/23

PROJECT: Derrygreenagh Power										TRIALPIT: TP202	
LOCATION: Co Offaly										Sheet 1 of 1	
CLIENT: Bord na Mona							Co-ordinates: E 649,497.7 N 738,453.3		Rig: Hyundai HX 140		
ENGINEER: Fichtner									Rev: FINAL		
Ground level: 81.36m O.D.									DATE: 2.5.23		
GROUNDWATER Water strikes: 1st: dry 2nd: 3rd: Rose to after:						PIT DIRECTION: 90° PIT DIMENSION: 4.50m * 1.60 LOGGED BY: DF		 Shoring/Support: N/A Stability: Pit stable.			
Depth (m)	Date	Water	Samples	Depth (m)	SPT (N) In Situ Vane Tests	LEGEND	Elevation m O.D.	Depth (m)	DESCRIPTION	Instrument/ Backfill	
0						    	80.86	0.50	Grass over plastic black amorphous PEAT. H8.		
1			ES B 1	1.00 1.00-1.20		    		Firm orangish brown fibrous PEAT. H2 B3 F3 R1 W1 TV0 TH0 A0. 1.00: thermal resistivity test.			
2						    					
3			B 2	3.00-3.20		    					
4						    	76.86	4.50			
5						END					
6											
7											
8											
9											
10											
Remarks: TP dry on excavation. TP backfilled with arisings.										Scale: 1:50	
 Irish drilling LTD										Ph. Fax	

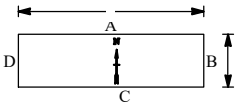
TRIALPIT DERRYGREENAGHPS TPS ALL FILE TO FINAL NOV 1 2023.GPJ ID GINT AGS 4.0.4.GDT 1/11/23

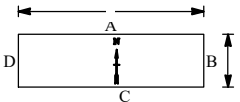
PROJECT: Derrygreenagh Power LOCATION: Co Offaly										TRIALPIT: TP203 Sheet 1 of 1	
CLIENT: Bord na Mona ENGINEER: Fichtner							Co-ordinates: E 649,589.4 N 738,470.5			Rig: Hyundai HX 140 Rev: FINAL	
Ground level: 81.22m O.D.										DATE: 3.5.23	
GROUNDWATER Water strikes: Rose to after: 1st: dry 2nd: 3rd:							PIT DIRECTION: 90° PIT DIMENSION: 4.50m * 1.60 LOGGED BY: DF			 Shoring/Support: N/A Stability: Pit unstable. Sidewall collapse.	
Depth (m)	Date	Water	Samples	Depth (m)	SPT (N) In Situ Vane Tests	LEGEND	Elevation m O.D.	Depth (m)	DESCRIPTION	Instrument/ Backfill	
0						 	80.87	0.35	Grass over plastic black amorphous PEAT. H8 B1 F1 R0 W0 TV0 TH0 A0.		
1			B 1	1.00-1.20		 		Firm orangish brown fibrous PEAT. H2 B2 F3 R1 W1 TV0 TH0 A1.			
2						 					
3			B 2	2.80-3.00		 		2.40-3.60: with decaying trees stumps			
4						 	77.62	3.60			
5						END					
6											
7											
8											
9											
10											
Remarks: TP dry on excavation. TP backfilled with arisings.										Scale: 1:50	
 Irish drilling LTD										Ph. Fax	

PROJECT: Derrygreenagh Power LOCATION: Co Offaly						TRIALPIT: TP204 Sheet 1 of 1									
CLIENT: Bord na Mona ENGINEER: Fichtner						Co-ordinates: E 649,368.8 N 738,329.6						Rig: Hyundai HX 140 Rev: FINAL			
Ground level: 83.56m O.D.												DATE: 2.5.23			
GROUNDWATER Water strikes: Rose to after: 1st: dry 2nd: 3rd:						PIT DIRECTION: 0° PIT DIMENSION: 4.20m * 1.60 LOGGED BY: DF						 Shoring/Support: N/A Stability: Pit stable.			
Depth (m)	Date	Water	Samples	Depth (m)	SPT (N) In Situ Vane Tests	LEGEND	Elevation m O.D.	Depth (m)	DESCRIPTION	Instrument/ Backfill					
0							83.31	0.25	MADE GROUND: Soft brown silty PEAT.						
			B 1	0.50-0.70					MADE GROUND: Greyish brown peaty gravelly SAND. Sand is medium to coarse. Gravel is angular to subrounded fine to coarse. Cobbles are subangular to subrounded.						
			ES	0.80-0.85			82.71	0.85							
1			B 2	0.85-1.00			82.56	1.00	MADE GROUND: Stiff yellowish brown slightly gravelly sandy CLAY with occasional cobbles. Gravel is angular to subrounded fine to coarse. Cobbles are subangular to subrounded.						
			D 3	0.85-1.00											
							82.21	1.35	MADE GROUND: Stiff grey slightly sandy gravelly SILT with occasional cobbles. Gravel is subangular to subrounded fine to coarse. Cobbles are subrounded of limestone.						
			B 4	1.60-1.80					1.00: thermal resistivity test.						
2									Firm orangish brown and black fibrous PEAT.						
									H2.						
			B 5	2.50-2.70			81.11	2.45	Soft brownish grey slightly gravelly slightly sandy SILT with occasional cobbles and rootlets. Sand si fine to coarse. Gravel is angular to subangular fine to coarse. Cobbles are subangular.						
3			B 6	2.50-2.70					2.80: becoming firm.						
							80.16	3.40	Light brown silty sandy angular to subangular fine to medium GRAVEL. Sand is fine to coarse.						
4			B 7	3.60-3.80											
							79.16	4.40							
						END									
5															
6															
7															
8															
9															
10															
Remarks: TP dry on excavation. TP backfilled with arisings.										Scale: 1:50					
 Irish drilling LTD										Ph. Fax					

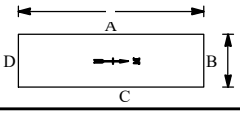
PROJECT: Derrygreenagh Power LOCATION: Co Offaly						TRIALPIT: TP205 Sheet 1 of 1				
CLIENT: Bord na Mona ENGINEER: Fichtner				Co-ordinates: E 649,422.6 N 738,388.3		Rig: Hyundai HX 140 Rev: FINAL				
Ground level: 81.90m O.D.						DATE: 3.5.23				
GROUNDWATER Water strikes: Rose to after: 1st: dry 2nd: 3rd:				PIT DIRECTION: 0° PIT DIMENSION: 4.50m * 1.60 LOGGED BY: DF		 Shoring/Support: N/A Stability: Pit stable.				
Depth (m)	Date	Water	Samples	Depth (m)	SPT (N) In Situ Vane Tests	LEGEND	Elevation m O.D.	Depth (m)	DESCRIPTION	Instrument/ Backfill
0									MADE GROUND: Heather over spongy black pseudo fibrous PEAT.	
1			B 1	0.75-0.95			81.15	0.75	Firm brownish black fibrous PEAT. H3 B1 F1 R1 W3 TV0 TH0 A1.	
2							80.70	1.20	Firm orangish brown fibrous PEAT. H2 F3 R2 W3 TV0 TH0 A1.	
3			ES B 2 D 3	2.45-2.55 2.50-2.70 2.50-2.70			79.45	2.45	Firm greenish grey slightly sandy SILT with decaying organic material. Sand is fine.	
4			B 4	3.30-3.50			79.20	2.70	Soft damp grey slightly gravelly sandy SILT with occasional cobbles. Sand is fine to coarse. Gravel is angular to subangular fine to coarse. Cobbles are subangular.	
5			B 5	4.20-4.40			77.40	4.50	3.90-4.50: locally black in colour.	
6						END				
7										
8										
9										
10										
Remarks: Seepage of water at 1.80m bgl. TP backfilled with arisings.										Scale: 1:50
 Irish drilling LTD										Ph. Fax

TRIALPIT DERRYGREENAGHPS TPS ALL FILE TO FINAL NOV 1 2023.GPJ ID GINT AGS 4.0 4.GDT 1/11/23

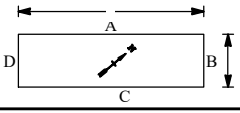
PROJECT: Derrygreenagh Power										TRIALPIT: TP206	
LOCATION: Co Offaly										Sheet 1 of 1	
CLIENT: Bord na Mona							Co-ordinates: E 649,305.8 N 738,252.8		Rig: Hyundai HX 140		
ENGINEER: Fichtner									Rev: FINAL		
Ground level: 83.52m O.D.									DATE: 8.5.23		
GROUNDWATER Water strikes: Rose to after: 1st: dry 2nd: 3rd:							PIT DIRECTION: 90° PIT DIMENSION: 4.60m * 1.80 LOGGED BY: DF		 Shoring/Support: N/A Stability: Pit stable.		
Depth (m)	Date	Water	Samples	Depth (m)	SPT (N) In Situ Vane Tests	LEGEND	Elevation m O.D.	Depth (m)	DESCRIPTION	Instrument/ Backfill	
0							83.02	0.50	MADE GROUND: Black and grey peaty fine to coarse SAND and subrounded to rounded fine to coarse GRAVEL.		
						END					
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
Remarks: TP dry on excavation. TP backfilled with arisings. Move location to TP206A.										Scale: 1:50	
 Irish drilling LTD										Ph. Fax	

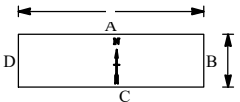
PROJECT: Derrygreenagh Power LOCATION: Co Offaly							TRIALPIT: TP206A Sheet 1 of 1			
CLIENT: Bord na Mona ENGINEER: Fichtner					Co-ordinates: E 649,307.5 N 738,249.3		Rig: Hyundai HX 140 Rev: FINAL			
Ground level: 83.62m O.D.							DATE: 8.5.23			
GROUNDWATER Water strikes: Rose to after: 1st: dry 2nd: 3rd:					PIT DIRECTION: 90° PIT DIMENSION: 4.80m * 2.00 LOGGED BY: DF		 Shoring/Support: N/A Stability: Pit stable.			
Depth (m)	Date	Water	Samples	Depth (m)	SPT (N) In Situ Vane Tests	LEGEND	Elevation m O.D.	Depth (m)	DESCRIPTION	Instrument/ Backfill
0							83.52	0.10	MADE GROUND: Dark grey GRAVEL.	
							83.22	0.40	MADE GROUND: Greyish brown fine to coarse SAND and subrounded to rounded fine to coarse GRAVEL with frequent cobbles. Cobbles are subrounded.	
			B 1 B 2	0.50-0.70 0.50-0.70					MADE GROUND: Stiff greyish brown slightly gravelly slightly sandy SILT with frequent cobbles. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse. Cobbles are angular to rounded.	
1			ES	1.00-1.10			82.42	1.20	0.70-1.20: with occasional boulders. Boulders are subangular to subrounded of limestone.	
			B 3	1.50-1.70			82.07	1.55	Spongy orangish black pseudo fibrous PEAT. H6 B1 F2 R1 W1 TV0 TH0 A0.	
2			B 4 B 5	2.40-2.60 2.40-2.60			81.82	1.80	Firm greyish brown slightly gravelly sandy SILT with occasional cobbles. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse. Cobbles are subrounded.	
									Firm grey slightly gravelly sandy SILT with frequent cobbles and occasional boulders. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse. Cobbles are subrounded. Boulders are subrounded of limestone. Gravel content increasing with depth.	
3									2.30-4.00: becoming locally soft.	
4			B 6 B 7	4.00-4.20 4.00-4.20			79.62	4.00	Stiff light brown gravelly SILT with occasional cobbles. Gravel is angular to subangular fine to coarse. Cobbles are subrounded.	
							79.12	4.50		
5						END				
6										
7										
8										
9										
10										
Remarks: Moved location from TP206. TP dry on excavation. TP backfilled with arisings.										Scale: 1:50
 Irish drilling LTD										Ph. Fax

TRIALPIT DERRYGREENAGHPS TPS ALL FILE TO FINAL NOV 1 2023.GPJ ID GINT AGS 4.0.4.GDT 1/11/23

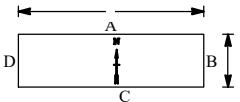
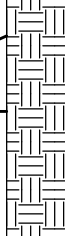
PROJECT: Derrygreenagh Power LOCATION: Co Offaly										TRIALPIT: TP207 Sheet 1 of 1	
CLIENT: Bord na Mona ENGINEER: Fichtner							Co-ordinates: E 649,641.4 N 738,293.5			Rig: Hyundai HX 140 Rev: FINAL	
Ground level: 83.49m O.D.										DATE: 3.5.23	
GROUNDWATER Water strikes: Rose to after: 1st: dry 2nd: 3rd:							PIT DIRECTION: 0° PIT DIMENSION: 4.70m * 1.60 LOGGED BY: DF			 Shoring/Support: N/A Stability: Pit stable.	
Depth (m)	Date	Water	Samples	Depth (m)	SPT (N) In Situ Vane Tests	LEGEND	Elevation m O.D.	Depth (m)	DESCRIPTION	Instrument/ Backfill	
0							83.19	0.30	MADE GROUND: Firm brown peaty SILT.		
							83.04	0.45	Stiff greyish white SILT.		
							82.84	0.65	Stiff yellowish brown SILT.		
1			BATE B 1 0.60-0.70 D 2 0.60-0.70 ES 1.00-1.10				82.29	1.20	Firm damp yellowish brown and black slightly sandy SILT. Sand is fine to coarse. 0.85-1.20: becoming gravelly. Gravel is angular to subrounded fine to coarse.		
			B 3 1.40-1.60 B 4 1.40-1.60				81.89	1.60	Firm light grey slightly sandy slightly gravelly SILT with frequent cobbles. Sand is fine to coarse. Gravel is angular to subangular fine to coarse. Cobbles are subrounded of limestone.		
2							81.49	2.00	Very soft wet light grey slightly sandy slightly gravelly SILT with occasional cobbles. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse. Cobbles are angular.		
			B 5 2.40-2.60				80.69	2.80	Grey mottled orangish brown slightly sandy silty angular to rounded fine to coarse GRAVEL with frequent cobbles. Sand is fine to coarse. Cobbles are subrounded.		
3									Stiff light brown and orangish brown slightly sandy gravelly SILT with occasional cobbles. Sand is fine to coarse. Gravel is angular to subangular fine to coarse. Cobbles are subrounded of limestone.		
			B 6 3.40-3.60 B 7 3.40-3.60								
4							78.99	4.50			
5						END					
6											
7											
8											
9											
10											
Remarks: TP dry on excavation. TP backfilled with arisings.										Scale: 1:50	
 Irish drilling LTD										Ph. Fax	

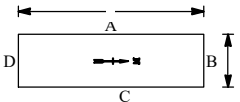
TRIALPIT DERRYGREENAGHPS TPS ALL FILE TO FINAL NOV 1 2023.GPJ ID GINT AGS 4.0.4.GDT 1/11/23

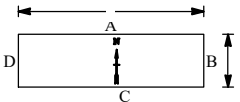
PROJECT: Derrygreenagh Power LOCATION: Co Offaly										TRIALPIT: TP208 Sheet 1 of 1	
CLIENT: Bord na Mona ENGINEER: Fichtner						Co-ordinates: E 649,786.6 N 738,266.5		Rig: Hyundai HX 140 Rev: FINAL			
Ground level: 82.91m O.D.								DATE: 29.6.23			
GROUNDWATER Water strikes: Rose to after: 1st: dry 2nd: 3rd:						PIT DIRECTION: 40° PIT DIMENSION: 4.00m * 1.80 LOGGED BY: PC		 Shoring/Support: N/A Stability: Pit stable.			
Depth (m)	Date	Water	Samples	Depth (m)	SPT (N) In Situ Vane Tests	LEGEND	Elevation m O.D.	Depth (m)	DESCRIPTION	Instrument/ Backfill	
0							82.51	0.40	MADE GROUND: Ferns over firm dark blackish brown and grey mottled spongy pseudo fibrous PEAT and clayey sandy SILT with some visible plastic. Sand is fine to coarse.		
			B 1 D 2	0.50-0.60 0.50-0.60					Spongy dark blackish brown pseudo fibrous PEAT. H6 B1 F1 R1 W2 TV2 TH2 A1.		
1											
							81.31	1.60			
2			B 3 D 4 ES 5	2.00-2.10 2.00-2.10 2.00-2.00			80.91	2.00	Soft damp light brownish grey slightly sandy gravelly SILT with rare cobbles. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse of limestone. Cobbles are subrounded to rounded of limestone.		
			B 6 D 7	2.50-2.60 2.50-2.60					Firm light brownish grey slightly gravelly sandy SILT with rare cobbles and rare boulders. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse of limestone. Cobbles are subrounded to rounded of limestone. Boulders are subrounded to rounded of limestone. Boulders are up to 350mm in length. 2.50-3.00: becoming slightly gravelly slightly sandy.		
3							79.91	3.00			
			S 8 B 9 D 10	3.50-3.60 3.50-3.60 3.50-3.60			79.31	3.60	Stiff brownish grey slightly sandy very gravelly SILT with occasional cobbles and rare boulders. Sand is fine to coarse. Gravel is subrounded to rounded fine to coarse of limestone. Cobbles are subrounded to rounded of limestone. Boulders are subrounded to rounded of limestone. Boulders are up to 400mm in length.		
4						END					
5											
6											
7											
8											
9											
10											
Remarks: TP dry on excavation. TP backfilled with arisings.										Scale: 1:50	
 Irish drilling LTD										Ph. Fax	

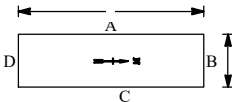
PROJECT: Derrygreenagh Power							TRIALPIT: TP209			
LOCATION: Co Offaly							Sheet 1 of 1			
CLIENT: Bord na Mona					Co-ordinates: E 649,665.8 N 738,226.4		Rig: Hyundai HX 140			
ENGINEER: Fichtner							Rev: FINAL			
Ground level: 82.77m O.D.							DATE: 3.5.23			
GROUNDWATER Water strikes: Rose to after: 1st: dry 2nd: 3rd:					PIT DIRECTION: 90° PIT DIMENSION: 4.20m * 1.80 LOGGED BY: DF		 Shoring/Support: N/A Stability: Pit stable.			
Depth (m)	Date	Water	Samples	Depth (m)	SPT (N) In Situ Vane Tests	LEGEND	Elevation m O.D.	Depth (m)	DESCRIPTION	Instrument/ Backfill
0									MADE GROUND: Grass over trench over 6" concrete pipe covered by brown fine to coarse SAND and subrounded to rounded fine to coarse GRAVEL with stiff yellowish brown slightly sandy slightly gravelly CLAY on either side of trench.	
1			B 1 B 2 B 3	0.50 0.50-0.70 1.00-1.10 1.30-1.50 1.30-1.50			81.57	1.20	1.00: thermal resistivity test. Stiff orangish brown slightly sandy slightly gravelly SILT with occasional cobbles. Sand is fine to coarse. Gravel is angular to subangular fine to coarse. Cobbles are subangular. 1.90-3.00: with occasional boulders. Boulders are subangular of limestone. Boulders are up to 500mm in length.	
2										
3							79.77	3.00	Grey gravelly coarse SAND. Gravel is angular to subangular fine to coarse.	
4							79.62	3.15	Stiff reddish brown sandy gravelly SILT with frequent cobbles. Sand is fine to coarse. Gravel is angular to subangular fine to coarse. Cobbles are angular to subangular.	
5							78.27	4.50		
6						END				
7										
8										
9										
10										
Remarks: TP dry on excavation. TP backfilled with arisings.									Scale: 1:50	
Irish drilling LTD									Ph. Fax	

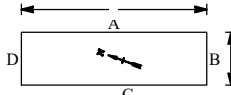
TRIALPIT DERRYGREENAGHPS TPS ALL FILE TO FINAL NOV 1 2023.GPJ ID GINT AGS 4.0.4.GDT 1/11/23

PROJECT: Derrygreenagh Power LOCATION: Co Offaly							TRIALPIT: TP210 Sheet 1 of 1			
CLIENT: Bord na Mona ENGINEER: Fichtner					Co-ordinates: E 649,510.0 N 738,159.5		Rig: Hyundai HX 140 Rev: FINAL			
Ground level: 82.58m O.D.							DATE: 8.5.23			
GROUNDWATER Water strikes: Rose to after: 1st: dry 2nd: 3rd:					PIT DIRECTION: 90° PIT DIMENSION: 4.50m * 1.60 LOGGED BY: DF		 Shoring/Support: N/A Stability: Pit stable.			
Depth (m)	Date	Water	Samples	Depth (m)	SPT (N) In Situ Vane Tests	LEGEND	Elevation m O.D.	Depth (m)	DESCRIPTION	Instrument/ Backfill
0							82.33	0.25	MADE GROUND: Grass over grey coarse SAND and subrounded to rounded fine to coarse GRAVEL with frequent cobbles. Cobbles are subrounded to rounded. Stiff orangish brown slightly sandy slightly gravelly SILT with occasional cobbles. Gravel is angular coarse. Cobbles are angular of limestone. 0.45: 8" concrete pipe running parallel to TP/railway line. Limestone COBBLES and BOULDERS with brown silty gravel. Gravel is angular to subangular fine to coarse. Boulders are up to 800mm in length. 1.00: thermal resistivity test failed. Strata too gravelly.	
		B 1	0.50-0.70			81.83	0.75			
		B 2	0.50-0.70							
		ES	1.00							
1							80.98	1.60		
2						END				
3										
4										
5										
6										
7										
8										
9										
10										
Remarks: TP dry on excavation. TP backfilled with arisings.										Scale: 1:50
 Irish drilling LTD										Ph. Fax

PROJECT: Derrygreenagh Power										TRIALPIT: TP211	
LOCATION: Co Offaly										Sheet 1 of 1	
CLIENT: Bord na Mona						Co-ordinates: E 649,425.9 N 738,170.0		Rig: Hyundai HX 140			
ENGINEER: Fichtner								Rev: FINAL			
Ground level: 85.59m O.D.								DATE: 9.5.23			
GROUNDWATER Water strikes: Rose to after: 1st: dry 2nd: 3rd:						PIT DIRECTION: 0° PIT DIMENSION: 4.50m * 1.80 LOGGED BY: DF		 Shoring/Support: N/A Stability: Pit stable.			
Depth (m)	Date	Water	Samples	Depth (m)	SPT (N) In Situ Vane Tests	LEGEND	Elevation m O.D.	Depth (m)	DESCRIPTION	Instrument/ Backfill	
0							85.34	0.25	MADE GROUND: Grass over firm dark brown organic SILT.		
			DATE B 1 0.50 D 2 0.50-0.70	0.50-0.70			85.09	0.50	Firm orangish brown slightly gravelly SILT with occasional cobbles. Cobbles are subangular to subrounded.		
			ES B 3 1.00-1.10 D 4 1.00-1.20	1.00-1.20			84.69	0.90	Firm brownish grey slightly gravelly SILT with occasional cobbles. Gravel is subrounded fine to coarse. Cobbles are subrounded.		
1									Firm brown slightly gravelly slightly sandy SILT with occasional cobbles. Sand is fine to coarse. Gravel is subangular fine to medium. Cobbles are subangular.		
							83.89	1.70	Stiff orange and brown SILT.		
2			B 5 2.00-2.20 D 6 2.00-2.20	2.00-2.20			82.89	2.70	Stiff orange and brown SILT with occasional cobbles. Cobbles are angular of shale.		
3											
			B 7 3.40-3.60	3.40-3.60			81.09	4.50			
4											
5											
6											
7											
8											
9											
10											
END											
Remarks: TP dry on excavation. TP backfilled with arisings.										Scale: 1:50	
Irish drilling LTD										Ph. Fax	

PROJECT: Derrygreenagh Power LOCATION: Co Offaly							TRIALPIT: TP212 Sheet 1 of 1			
CLIENT: Bord na Mona ENGINEER: Fichtner					Co-ordinates: E 649,358.5 N 738,190.7		Rig: Hyundai HX 140 Rev: FINAL			
Ground level: 84.22m O.D.							DATE: 9.5.23			
GROUNDWATER Water strikes: Rose to after: 1st: dry 2nd: 3rd:					PIT DIRECTION: 90° PIT DIMENSION: 4.50m * 1.80 LOGGED BY: DF		 Shoring/Support: N/A Stability: Pit stable.			
Depth (m)	Date	Water	Samples	Depth (m)	SPT (N) In Situ Vane Tests	LEGEND	Elevation m O.D.	Depth (m)	DESCRIPTION	Instrument/ Backfill
0							83.97	0.25	MADE GROUND: Grass over firm brown SILT.	
			DATE B 1 0.50 D 2 0.50-0.70	0.50-0.70			83.52	0.70	Light brown silty fine SAND with occasional cobbles. Cobbles are subangular.	
1			ES B 3 1.10-1.20 B 4 1.10-1.30 B 5 1.40-1.60 D 5 1.40-1.60	1.10-1.20 1.10-1.30 1.40-1.60 1.40-1.60			82.87	1.35	Firm light brown slightly gravelly sandy SILT with lenses of silty sand. Sand is fine.	
2							82.22	2.00	Stiff orangish brown slightly gravelly CLAY. Gravel is angular to subangular fine to medium.	
3			B 6 2.50-2.70 D 7 3.00-3.20	2.50-2.70 3.00-3.20			79.92	4.30	Orangish brown and black slightly sandy angular fine to coarse GRAVEL. Sand is fine to coarse. 2.70-3.30: with lenses of stiff whitish grey SILT on southern side of TP. 3.00-4.30: with occasional cobbles. Cobbles are angular.	
4						END				
5										
6										
7										
8										
9										
10										
Remarks: TP dry on excavation. TP backfilled with arisings.									Scale: 1:50	
 Irish drilling LTD									Ph. Fax	

PROJECT: Derrygreenagh Power							TRIALPIT: TP224			
LOCATION: Co Offaly							Sheet 1 of 1			
CLIENT: Bord na Mona					Co-ordinates: E 649,296.1 N 738,355.3		Rig: Hyundai HX 140			
ENGINEER: Fichtner							Rev: FINAL			
Ground level: 79.41m O.D.							DATE: 14.6.23			
GROUNDWATER Water strikes: Rose to after: 1st: dry 2nd: 3rd:					PIT DIRECTION: 0° PIT DIMENSION: 4.60m * 2.00 LOGGED BY: MM		 Shoring/Support: N/A Stability: Pit stable.			
Depth (m)	Date	Water	Samples	Depth (m)	SPT (N) In Situ Vane Tests	LEGEND	Elevation m O.D.	Depth (m)	DESCRIPTION	Instrument/ Backfill
0									Spongy dry black pseudo fibrous PEAT. H5 B1 F2 R0 W1 TV0 TH0 A0.	
1			ES	0.90-1.00			78.51	0.90	Soft bluish grey sandy gravelly SILT. Sand is medium. Gravel is medium of limestone.	
2			B 1	1.80-2.00			77.61	1.80	Wet brownish grey very sandy angular to subangular fine to medium limestone GRAVEL. Sand is medium to coarse.	
			B 2	2.30-2.50			76.91	2.50		
						END				
3										
4										
5										
6										
7										
8										
9										
10										
Remarks: Ingress of water at 1.80 bgl. TP backfilled with arisings.										Scale: 1:50
 Irish drilling LTD										Ph. Fax

PROJECT: Derrygreenagh Power										TRIALPIT: TP311	
LOCATION: Co Offaly										Sheet 1 of 1	
CLIENT: Bord na Mona							Co-ordinates: E 649,693.1 N 738,488.7			Rig: Hyundai HX 140	
ENGINEER: Fichtner										Rev: FINAL	
Ground level: 79.27m O.D.										DATE: 22.5.23	
GROUNDWATER Water strikes: Rose to after: 1st: dry 2nd: 3rd:					PIT DIRECTION: 160° PIT DIMENSION: 4.00m * 2.00 LOGGED BY: PC					Shoring/Support: N/A Stability: Pit unstable. Sidewall collapse from g/l.	
Depth (m)	Date	Water	Samples	Depth (m)	SPT (N) In Situ Vane Tests	LEGEND	Elevation m O.D.	Depth (m)	DESCRIPTION	Instrument/Backfill	
0											
			B 1 D 2 VANE	0.40-0.50 0.40-0.50 0.50	33mm vane 12 kN/m² 14 kN/m² 12 kN/m²		78.97 78.87	0.30 0.40	MADE GROUND: Dry spongy brownish black pseudo fibrous PEAT as dust. Firm orangish brown fibrous PEAT. H2 B3 F3 R2 W0 TV1 TH1 A0. Spongy dark orangish brown pseudo fibrous PEAT. H5 B0 F2 R2 W1 TV1 TH1 A1.		
1											
2			B 3 D 4	2.40-2.50 2.40-2.50			77.17	2.10	Spongy dark brown pseudo fibrous PEAT. H6 B1 F1 R1 W3 TV1 TH1 A1.		
3											
			B 5 ES 6	3.90-4.00 3.90-4.00			75.77 75.27	3.50 4.00	Blue and grey mottled slightly silty sandy angular to subangular fine to coarse sandstone and limestone GRAVEL with some plant material and rootlets. Sand is fine to coarse.		
4						END					
5											
6											
7											
8											
9											
10											
Remarks: TP dry on excavation. TP backfilled with arisings.										Scale: 1:50	
Irish drilling LTD										Ph. Fax	