

Appendix 8A

Northwest Geotech Ltd, 2024 Ground Investigation Report



Client: Greensource

Client's Representative: Malachy Walsh & Partners

Report No.: 24-772

Date: August 2024

Status: Final For Issue

Northwest Geotech 24 Longfield Road Eglinton Derry BT47 3PY

www.northwestgeo.com info@northwestgeo.com





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Document Control Sheet

Report No.:		24-772			
Project Title:		Ballinlee Wind F	arm		
Client:		Greensource			
Client's Repres	sentative:	Malachy Walsh	& Partners		
Revision:	A00	Status:	Final	Issue Date:	22 nd Aug 2024
Prepared by:			Reviewed and	approved by:	
J h	uhl-		Paul MA	buera	
Lucy Newland BSc FGS			Paul McNamara BEng MICE MII		

The works were conducted in accordance with:

UK Specification for Ground Investigation 2nd Edition, published by ICE Publishing (2022)

British Standards Institute (2015) BS 5930:2015+A1:2020, Code of practice for site investigations.

BS EN 1997-2: 2007: Eurocode 7 - Geotechnical design - Part 2 Ground investigation and testing.

Geotechnical Society of Ireland (2016), Specification & Related Documents for Ground Investigation in Ireland

Laboratory testing was conducted in accordance with:

British Standards Institute BS 1377:1990 parts 2, 4, 5, 7 and 9



METHODS OF DESCRIBING SOILS AND ROCKS

Soil and rock descriptions are based on the guidance in BS5930:2015, The Code of Practice for Site Investigation.

Abbreviations use	ed on exploratory hole logs
U	Nominal 100mm diameter undisturbed open tube sample (thick walled sampler).
UT	Nominal 100mm diameter undisturbed open tube sample (thin walled sampler).
Р	Nominal 100mm diameter undisturbed piston sample.
В	Bulk disturbed sample.
LB	Large bulk disturbed sample.
D	Small disturbed sample.
С	Core sub-sample (displayed in the Field Records column on the logs).
L	Liner sample from dynamic sampled borehole.
W	Water sample.
ES/EW	Soil sample for environmental testing / Water sample for environmental testing.
SPT (s)	Standard penetration test using a split spoon sampler (small disturbed sample obtained).
SPT (c)	Standard penetration test using 60 degree solid cone.
(x,x/x,x,x,x)	Blows per increment during the standard penetration test. The initial two values relate to the seating drive (150mm) and the remaining four to the 75mm increments of the test length.
(Y for Z/ Y for Z)	Incomplete standard penetration test where the full test length was not achieved. The blows 'X' represent the total blows for the given seating or test length 'Z' (mm).
N=X	SPT blow count 'N' given by the summation of the blows 'X' required to drive the full test length (300mm).
HVP / HVR	In situ hand vane test result (HVP) and vane test residual result (HVR). Results presented in kPa.
V VR	Shear vane test (borehole). Shear strength stated in kPa. V: undisturbed vane shear strength VR: remoulded vane shear strength
Soil consistency description	In cohesive soils, where samples are disturbed and there are no suitable laboratory tests, N values may be used to indicate consistency on borehole logs – a median relationship of Nx5=Cu is used (as set out in Stroud & Butler 1975).
dd-mm-yyyy	Date at the end and start of shifts, shown at the relevant borehole depth. Corresponding casing and water depths shown in the adjacent columns.
∇	Water strike: initial depth of strike.
•	Water strike: depth water rose to.
Abbreviations relating	g to rock core – reference Clause 36.4.4 of BS 5930: 2015
TCR (%)	Total Core Recovery: Ratio of rock/soil core recovered (both solid and non-intact) to the total length of core run.
SCR (%)	Solid Core Recovery: Ratio of solid core to the total length of core run. Solid core has a full diameter, uninterrupted by natural discontinuities, but not necessarily a full circumference and is measured along the core axis between natural fractures.
RQD (%)	Rock Quality Designation: Ratio of total length of solid core pieces greater than 100mm to the total length of core run.
FI	Fracture Index: Number of natural discontinuities per metre over an indicated length of core of similar intensity of fracturing.
NI	Non Intact: Used where the rock material was recovered fragmented, for example as fine to coarse gravel size particles.
AZCL	Assessed zone of core loss: The estimated depth range where core was not recovered.
DIF	Drilling induced fracture: A fracture of non-geological origin brought about by the rock coring.
(xxx/xxx/xxx)	Spacing between discontinuities (minimum/average/maximum) measured in millimetres.



Ballinlee Wind Farm

1 EXECUTIVE SUMMARY

On the instructions of MWP, ("the Client's Representative"), acting on the behalf of Green Source ("the Client"), a ground investigation was undertaken at the above location to provide geotechnical and environmental information for input to the design and construction of a proposed Win Farm development.

This report details the work carried out on site, it contains a description of the site, the works undertaken and the exploratory hole logs.

All information given in this report is based upon the ground conditions encountered during the site investigation works. However, there may be conditions at the site that have not been taken into account, such as unpredictable soil strata, contaminant concentrations, and water conditions between or below exploratory holes. It should be noted that groundwater levels usually vary due to seasonal and/or other effects and may at times differ to those recorded during the investigation. No responsibility can be taken for conditions not encountered through the scope of work commissioned, for example between exploratory hole points, or beneath the termination depths achieved.

This report was prepared by Northwest Geotech Ltd for the use of the Client and the Client's Representative in response to a particular set of instructions. Any other parties using the information contained in this report do so at their own risk and any duty of care to those parties is excluded.

2 SCOPE

The extent of the investigation, as instructed by the Client's Representative, included trial pits, soil logging, and the preparation of a factual report on the findings.

3 DESCRIPTION OF SITE

As shown on the site location plan in Appendix A, the works were conducted predominantly on agricultural land in the Ballinlee area of County Limerick. The site spreads from just above Dromin Road in the south moving north between Bruff and Athlacca Village ending in fields south of the R516 Road.

4 SITE OPERATIONS

4.1 Summary of site works

Site operations, which were conducted between 6th and 9th August 2024, comprised:

Twenty-four machine dug trial pits



The exploratory holes were located as instructed by the Client's Representative, as shown on the exploratory hole location plan in Appendix A.

4.2 Trial Pits

Twenty-four trial pits were excavated using a 3t tracked excavator fitted with a 400mm wide bucket, to depths of up to 2.70m...

Any water strikes encountered during excavation were recorded along with any changes in their levels as the excavation proceeded. The stability of the trial pit walls was noted on completion.

Appendix B presents the trial pit logs with photographs of the pits and arising provided in Appendix C.

5 GROUND CONDITIONS

5.1 General geology of the area

Published geological mapping indicate the superficial deposits underlying the site comprise Glacial Till with localised pockets of alluvium. These deposits are underlain by limestone and shale of the Ballysteen Formation.

5.2 Ground types encountered during investigation of the site

A summary of the ground types encountered in the exploratory holes is listed below, in approximate stratigraphic order:

- Topsoil: encountered typically in 200-400mm thickness across the site.
- Recent deposits (peat): encountered in TP01, TP02, TP04 as spongy dark brown amorphous peat in 0.25m-0.80m.
- **Glacial Till:** sandy gravelly clay, frequently with low to medium cobble and boulder content, typically firm or stiff in upper horizons, becoming very stiff with increasing depth.

5.3 Groundwater

Groundwater was encountered as seepage at depths of 1.40m and 2.20m in trial pits TP04 and TP16.

Details of the individual groundwater strikes, along with any relative changes in levels as works proceeded, are presented on the exploratory hole logs for each location.

Seasonal variation in groundwater levels should also be factored into design considerations.



6 REFERENCES

Geotechnical Society of Ireland (2016), Specification & Related Documents for Ground Investigation in Ireland

IS EN 1997-2: 2007: Eurocode 7 - Geotechnical design - Part 2 Ground investigation and testing. National Standards Authority of Ireland.

BS 5930: 2015+A1:2020: Code of practice for ground investigations. British Standards Institution.

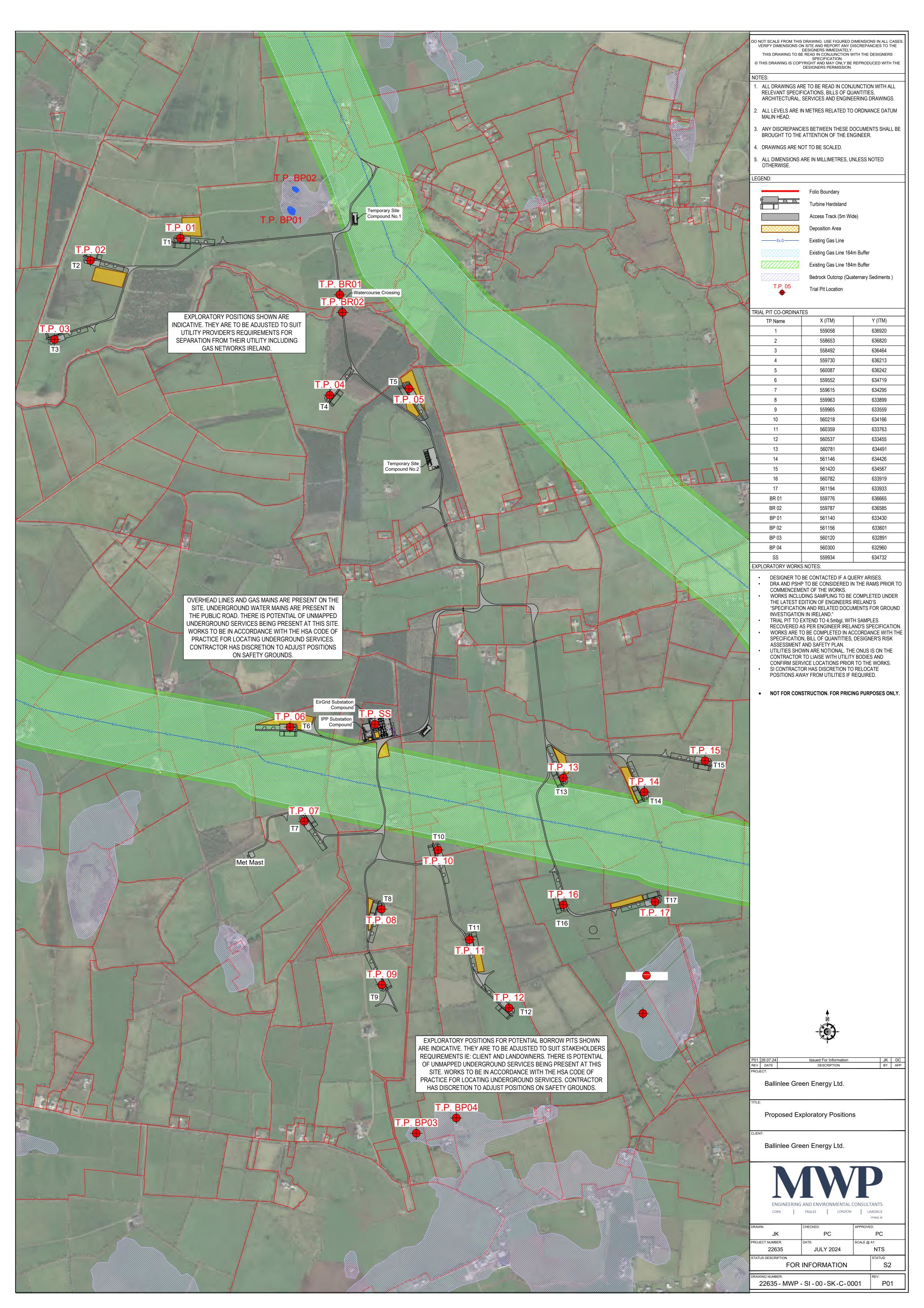
BS EN ISO 14688-1:2018: Geotechnical investigation and testing. Identification and classification of soil. Part 1 Identification and description.

BS EN ISO 14688-2:2018: Geotechnical investigation and testing. Identification and classification of soil. Part 2 Principles for a classification.

BS 1377: 1990: Methods of test for soils for civil engineering purposes. British Standards Institution.



APPENDIX A Site and Exploratory Hole Location Plans





APPENDIX B Trial Pit Logs

North	west ech					Site Ballinlee Wind Farm		Trial Pit Number BP03
	hine: 3T Komatsu nod: Trial Pit Location 560141 E 632891 N				Level (mOD	Client Green Source		Job Number
		Locatio	n	Dates	7/00/0004	Engineer		24-0772 Sheet
				0.	7/08/2024			1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness) [escription	Legend Nate
			Secretary and the secretary an		(0.20)	TOPSOIL Very stiff orangish brown s CLAY with low cobble and coarse. Gravel is subangu Boulders are >300mm.	slightly sandy slightly gravell' boulder content. Sand is fin llar to subrounded fine to co	e to arse.
	13		The said			Scale (approx) 1:50	Logged By	Figure No. 24-0772.BP03
		Poster	and the said			1.00	FIVI	24-U112.DPU3

Northwest Geotech					Site Ballinlee Wind Farm		Trial Pit Number BP04
Alachine: 3T Komatsu lethod: Trial Pit Location 560311 E 632949 N	Ground	Level (mOD)	Client Green Source		Job Number 24-0772		
			Dates 07	7/08/2024	Engineer		Sheet
Depth (m) Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend
					TOPSOIL Stiff orangish brown slightl with low cobble and bould Gravel is subangular to su Complete at 0.40m	y sandy slightly gravelly CL/ er content. Sand is fine to co brounded fine to coarse.	AY parse.
					Trial pit stable No groundwater encountere Terminated on refusal on roo	d ckhead	
TP Production of the control of the							

North	west ech					Site Ballinlee Wind Farm		Trial Pi Numbe BP10	er
Machine: 3 Method: T		Dimensi	ions	Ground	Level (mOD	Client Green Source		Job Numbe 24-077	
		Location 559	n 9647 E 637063 N	Dates 07	7/08/2024	Engineer		Sheet	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness	ם	escription	Legend	Water
			Seven C AU 2074 13 18 AT GMT 401 90		(0.20) (0.40) (0.60)	TOPSOIL Stiff orangish brown slight with low cobble and bould Gravel is subangular to su Complete at 0.60m	ly sandy slightly gravelly CLA er content. Sand is fine to co brounded fine to coarse.	arse.	
			Level 4-Aug 909-413 (E-AL-CAM) soft 90 50-207, pick (4-ar-258-7.99 V Caunty Liments			Trial pit stable No groundwater encountere Terminated on refusal on roo	d ckhead		
						Scale (approx) 1:50	Logged By	Figure No. 24-0772.BP10	01

North	west ech					Site Ballinlee Wind Farm		Trial Pit Number BP102
Machine: 3		Dimensio	ons	Ground	Level (mOD)	Client Green Source		Job Number
		Location 559	679 E 637161 N	Dates 06	6/08/2024	Engineer		24-0772 Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness	Description (ss)		Legend X
				(0.20)	TOPSOIL Very stiff orangish brown is CLAY. Sand is fine to coarse subrounded fine to coarse. Complete at 0.70m Remarks Trial pit stable No groundwater encountered Terminated on refusal on ro	slightly sandy slightly gravell se. Gravel is subangular to b.	y	
			TP		:	Scale (approx)	Logged By	Figure No. 24-0772.BP102

Northwest Geotech					Site Ballinlee Wind Farm		Trial Pit Number BR01
Machine : 3T Komatsu Method : Trial Pit	Dimensions	S	Ground	Level (mOD	Client Green Source		Job Number 24-0772
Machine: 3T Komatsu	Location 559776	6 E 636665 N	Dates 06	5/08/2024	Engineer		Sheet 1/1
Depth (m) Sample / Tests	Water Depth (m)	Field Records	Level (mOD) (Thi	Depth (m) (Thickness)	escription	Legend Nater
				(0.20)	Stiff orangish brown slight Sand is fine to coarse. Grifine to coarse. Firm dark grey slightly sar Stiff orangish brown slight Sand is fine to coarse. Grifine to coarse.	ly sandy slightly gravelly CLA avel is subangular to subroun dy SILT. Sand is fine to coars ly sandy slightly gravelly CLA avel is subangular to subroun	se. (************************************
					Trial pit stable No groundwater encountere Terminated on refusal		
	TP	个等			Scale (approx) 1:50	Logged By PM ahase SYstem (GEODASY)	Figure No. 24-0772.BR01

North	west ech					Site Ballinlee Wind Farm		Trial Pit Number BR02
Machine: 3		Dimensio	ns	Ground	Level (mOD	Client Green Source		Job Number
		Location		Dates		Engineer		24-0772 Sheet
		5597	787 E 636585 N	07	7/08/2024			1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	escription	Legend Nater
			52 '28 '46 49 'N -8 '60 'Eo 'Aug 2024 14 58 2 Local 7 Aug 2024 14 58 2	35'31 248 W unty Limeric 8 GMT+01.00		Firm orangish brown sligh low cobble and boulder co Gravel is subangular to su	tly sandy gravelly CLAY/SILT ntent. Sand is fine to coarse brounded fine to coarse. d th of excavator	Figure No.
A	THE STATE OF THE S	The second	A PER STA		Drodu	1:50	PM	24-0772.BR02

North	west ech					Site Ballinlee Wind Farm		Trial Pit Number SS
	chine: 3T Kabotka hod: Trial Pit Location 559931 E 634648 N Location Field Records (m)			Ground	Level (mOD	Client Green Source		Job Number
motiliou 1 1	Location 559931 E 634648 N	n	Dates		Engineer		24-0772 Sheet	
		559	9931 E 634648 N	09	9/08/2024			1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness	pth n) Description mess)	Description	Legend variety
					1.30 1.30	TOPSOIL Very stiff orangish brown smedium cobble and bould Gravel is subangular to su	slightly sandy gravelly CLAY er content. Sand is fine to colbrounded fine to coarse.	
							T T	
	K	1	TP SS			Scale (approx) 1:50	Logged By	Figure No. 24-0772.SS
		To the second				1.50	FIVI	۷٦-0112.33

North Geot	west ech					Site Ballinlee Wind Farm		Trial P Numb TP0	er	
lachine: 3		Dimensio	ons	Ground	Level (mOD)	Client Green Source			Job Number 24-0772 Sheet	
		Location 5590	058 E 636920 N	Dates 06/08/2024		Engineer				
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	D	escription	Legend	t	
		Heat	ock 6 Aug 2024 10 41 34 GMT+99 900		(0.20) 0.20 0.20 0.20 0.70 0.70 0.80) 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50	TOPSOIL Soft to firm greyish brown CLAY. Sand is fine to coarsubrounded fine to coarse Spongy dark brown amorp		24/2 24/2 24/2 24/2 24/2 24/2 24/2 24/2		
		T				Trial pit stable Terminated due to max. read No groundwater encountere	ch of excavator d			
	*				\$	Scale (approx)	Logged By	Figure No.	_	

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24-0772.TP01

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North	west ech					Site Ballinlee Wind Farm		Trial Pit Number TP02
Machine : 3		Dimens	ions	Ground	Level (mOD	Client Green Source		Job Number
metriou :		Location 558	n 8653 E 636820 N	Dates 06	6/08/2024	Engineer		24-0772 Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness	ς;)	Description	Legend stee
	Western Charles and Charles an				(0.15 (0.25	Firm brown very sandy class and is fine to coarse. Very soft bluish grey CLA	yey SILT with organic mater	× · · × × × × × × × × × × × × × × × × ×
			TP)				I	
			A STATE OF THE STA			Scale (approx) 1:50	Logged By	Figure No. 24-0772.TP02
	A STATE OF	11-11-11	STATE STATE OF THE			1.JU	FIVI	27-U112.17UZ

Geote		T			_	Ballinlee Wind Farm		TP0:
ethod: Ti	T Komatsu rial Pit	Dimension	ons	Ground	Level (mOD)	Olient Green Source		Job Numbe 24-077
		Location		Dates		Engineer		Sheet
		558	492 E 636464 N	06	6/08/2024			1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness	D	escription	Legend
			April 6 Aug 2014 1 1 48 28 (MJ 40) 20 52 20 20 3 4 1 48 28 (MJ 40) 20 52 20 20 3 48 18 25 25 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		(0.30) (0.30) (0.30) (0.50) (0.50) (1.60) (1.60) (1.60)	TOPSOIL Soft to firm dark brown pea Firm grey and brown slight medium cobble and boulde Gravel is subangular to su (Boulders are 400mm) Soft to firm bluish grey slig CLAY with medium cobble	ly sandy gravelly CLAY with er content. Sand is fine to coabrounded fine to coarse. htty sandy slightly gravelly sil and boulder content. Sand is gular to subrounded fine to	arse.
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		No. of	The state of the s		:	Scale (approx)	Logged By	Figure No.
		2500000						

North Geote	west ech					Site Ballinlee Wind Farm		Trial Pit Number TP04
Machine: 3		Dimens	sions	Ground	Level (mOD)	Client Green Source		Job Number 24-0772
		Locatio 55	on 69730 E 636213 N	Dates 06	6/08/2024	Engineer		Sheet
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	D	escription	Legend
			Seepage (1) at 1.40m.		(0.20)	TOPSOIL Soft to firm orangish brown CLAY with organic materia Spongy dark brown amorp	ly sandy slightly gravelly CLA er content. Sand is fine to con brounded fine to coarse.	×Max × We will be a second of the second of
	11/		TP of		S	Scale (approx)	Logged By	Figure No. 24-0772.TP04

Machine : 3T Komatsu Dimensions Ground Level (mOD) Client Job Num Method : Trial Pit Location Dates 06/08/2024 Engineer Shed 560087 E 636242 N 1	
Location Dates 06/08/2024 Engineer Shed 560087 E 636242 N 1	
	t
Depth (m) Sample / Tests Water Depth (m) Field Records Level (mOD) Description Leger	Water
TOPSOIL Firm crangible from slightly sandy alignity gravely CLVY (0.80) Firm crangible from slightly sandy alignity gravely CLVY Grave is subangular to subrounded fine to coarse. Complete at 1.00m Remarks Trial pil stable Normarks and coarse of the subrounded fine to coarse. Trial pil stable Normarks and coarse of the subrounded fine to coarse. Trial pil stable Normarks and coarse of the subrounded fine to coarse.	
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Geot	2.5					Ballinlee Wind Farm		TPO
achine:3 ethod:T	T Komatsu rial Pit	Dimension	ons	Ground	Level (mOD)	Client Green Source Engineer		Job Numb 24-07
		Location		Dates				Sheet
			560 E 634724 N	07	7/08/2024			1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness	D	escription	Legeno
					(0.40) - (0.40) - (0.40)	TOPSOIL	indy CLAY/SILT with organic parse.	; ×××× · · · · · · · · · · · · · · · · ·
					0.80	Firm orangish brown and c CLAY/SILT. Sand is fine to	greyish brown slightly sandy coarse.	[× \\]
					2.00	Complete at 2.00m		×
			Methods 3 to 1 to			Remarks Trial pit stable No groundwater encounterer Terminated due to max. read	d ch of excavator	
		P	on any one of the control of the con		:	Scale (approx)	Logged By	Figure No.
		1				1:50	PM	24-0772.TP0

North Geote	west ech					Site Ballinlee Wind Farm		Trial Pit Number TP07
Machine: 3		Dimensi	ons	Ground	Level (mOD)	Client Green Source		Job Number
Method : 11	iai fil	Location 559	n 9634 E 634297 N	Dates 09	9/08/2024	Engineer		24-0772 Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	D	escription	Legend to A
					(0.20) 0.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20	TOPSOIL Firm to stiff orangish brow with low cobble and bould Gravel is subangular to su	n slightly gravelly very sandy boulder content and pockets ine to coarse sand. Sand is filar to subrounded fine to coa	Y C C C
			IP FF		5	Scale (approx) 1:50	Logged By	Figure No. 24-0772.TP07

North Geote	west ech					Site Ballinlee Wind Farm		Trial Pit Number TP08
Machine : 3t		Dimensio	ons	Ground	Level (mOD	Client Green Source		Job Number
wethou . II		Location		Dates	2/09/2024	Engineer		24-0772 Sheet
		559	963 E 633899 N	08	9/08/2024			1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	escription	Legend variety
		No.	62*27*18:307*N. 8*39:20.676*W Unumme Reviol Control 9 Aug 2024 11:02:17 GMT+01:00 cotal: 9 Aug 2024 11:02:16 GMT+01:00		(0.20) 1.70 1.70	Firm orangish brown sligh with low cobble and bould Gravel is subangular to su	tly sandy slightly gravelly CL er content. Sand is fine to co brounded fine to coarse.	AY arse.
		67	TP		Dradu	Scale (approx) 1:50	Logged By PM	Figure No. 24-0772.TP08

North	west ech					Site Ballinlee Wind Farm		Trial Pit Number TP09
Machine: 3		Dimens	ions	Ground	Level (mOD) Client Green Source		Job Number 24-0772
		Location 559	n 9987 E 633565 N	Dates 09	9/08/2024	Engineer		Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness) C	Description	Nater Nater
					(0.25 1.20 1.80	TOPSOIL Very stiff orangish brown swith medium cobble and browns. Gravel is subangular firm orangish brown sligh with medium cobble and browns. Gravel is subangular firm orangish brown sligh with medium cobble and browns.	slightly sandy gravelly CLAY/ soulder content. Sand is fine iterated in the subrounded fine to continuous trip gravelly very sandy CLAY soulder content. Sand is fine iterated in the subrounded fine to content to subrounded fine to content iterated in the subrounded fine to content iterated iterated in the subrounded fine to content iterated i	/SILT to Object arse.
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			A STATE OF THE STA			1.00	PIVI	24-0112.1P09

North Geote	west ech					Site Ballinlee Wind Farm		Trial Pit Number TP10
Machine: 37		Dimens	ions	Ground	Level (mOD	Client Green Source		Job Number
		Location 560	n 0218 E 634166 N	Dates 09	9/08/2024	Engineer		24-0772 Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness))	escription	Legend a
					(0.20)	TOPSOIL Firm to stiff orangish brow CLAYwith medium cobble to coarse. Gravel is subar coarse. With pockets of fir	n slightly sandy slightly grave and boulder content. Sand is gular to subrounded fine to see to coarse silty sand.	ally sine
			Section of the sectio			Trial pit stable No groundwater encountere Terminated on boulders	d	
	AND 124 AND	AP 7550	The same of the sa		-			
		TR	TO MAN THE STATE OF THE STATE O			Scale (approx)	Logged By	Figure No.

Northwest Geotech					Site Ballinlee Wind Farm		Trial Pit Number TP11
Machine : 3T Komatsu Method : Trial Pit	Dimens	ions	Ground	Level (mOD	Client Green Source		Job Number
Method : marrit			Datas				24-0772
	Location 560	n 0359 E 633760 N	Dates 07	7/08/2024	Engineer		Sheet 1/1
Depth (m) Sample / Te	sts Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend X
				(0.25)	TOPSOIL Very stiff orangish brown shigh cobble and boulder cogravel is subangular to suare >350mm.	slightly sandy gravelly CLAY vontent. Sand is fine to coarse brounded fine to coarse. Bou	
X		TP II			Scale (approx)	Logged By	Figure No. 24-0772.TP11

Northwest Geotech						Site Ballinlee Wind Farm		Trial Pit Number TP12
Machine: 3T Komats Method: Trial Pit	u	Dimensi	ons	Ground	Level (mOD)	Client Green Source		Job Number
		Location 560	1 1537 E 634455 N	Dates 07	7/08/2024	Engineer		24-0772 Sheet 1/1
Depth (m) Sampl	e / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness	D	escription	Legend 5
					(0.25) (0.25) (0.45) (0.45) (1.00) (1.00) (1.00) (1.00)	Gravel is subangular to su	tly sandy slightly gravelly CLA er content. Sand is fine to coabrounded fine to coarse.	- 0: -
	TP		SPECIAL PROPERTY OF THE PROPER			Scale (approx) 1:50	Logged By	Figure No. 24-0772.TP12

North Geot	nwest ech					Site Ballinlee Wind Farm		Trial Pit Number TP13
Machine: 3		Dimensi	ons	Ground	Level (mOD)	Client Green Source		Job Number 24-0772
		Location 560	າ 0781 E 634491 N	Dates 06	6/08/2024	Engineer		Sheet
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	D	escription	Legend
			then's Aug 2074 17 44 57 6MT+01.00 Levis & Xug 2024 17 41 54 6 6MT+01.30 V 52 27 V 14 5 6 6MT+01.30 V Coulty timents		2.50	TOPSOIL		e to
		1	PB		:	Scale (approx)	Logged By	Figure No.
			A STATE OF THE STA			1:50	PM	24-0772.TP13

	Dimensi		Site Ballinlee Wind Farm Trial Pi Number TP14				
	Machine: 3T Komatsu Dimensions Method: Trial Pit			Level (mOD)	Client Green Source		Job Number 24-0772
	Location 561	1 1146 E 634426 N	Dates 06/08/2024		Engineer		Sheet 1/1
Depth (m) Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	D	escription	Legend
		Oyunha 6 Aug 2024 18 12/25 GMT+01-00 Consil 6 Aug 2024 18 13 23 68/17 68 TW 52 27 3 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		2.20	TOPSOIL	d ulders	
		The state of the s			Scale (approx)	Logged By	Figure No.

North	west ech					Site Ballinlee Wind Farm		Trial Pit Number TP15
Machine : 3T Komatsu Dimensions Ground Level (mOD)					Numb		Job Number	
Method : Ti	rial Pit					Green Source		24-0772
		Location 561	420 E 634567 N	Dates 06/08/2024		Engineer		Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness))	escription	Kegend Age
			S2**7.40 976 N G**3 L656 W Cody (Line) of the Cody		(0.25)	TOPSOIL Very stiff orangish brown s CLAY with medium cobble to coarse. Gravel is suban coarse.	slightly sandy slightly gravelly and boulder content. Sand i gular to subrounded fine to	
TP 5						Scale (approx) 1:50	Logged By	Figure No. 24-0772.TP15

Num	Machine: 3T Komatsu Dimensions Ground Level (mOD				Level (mOD)	Ballinlee Wind Farm) Client		TP1
Complete at 2.20m Comp	Dimonolone .		Ground Level (mOD)				Numb 24-07	
Depth (m) Sample / Tests Depth (m) Sample / Tests Depth (m) Field Records (m) Depth (m) Depth (m) Depth (m) Description Leger (m) Depth (m) Description (m) De				Dates 07	7/08/2024	Engineer		Sheet
TOPSOIL (0,20) (0,00) (0,00) (0,00) (0,00) (1,00)	Dougle			Laval	Donth			1/1
Very stiff orangish brown slightly sandy gravally CLAY with low cobbe content. Sand is to coarse. 0.30	(m) Sample / To	ts Depth (m)	Field Records	(mOD)	Depth (m) (Thickness)	D	escription	Legend
Almost 7 Act 2004 to 0.00 State of the control of t			Seepage (1) at 2.20m.		(0.70)	Very stiff orangish brown s low cobble content. Sand subangular to subrounded. Firm bluish grey very sand. Soft to firm orangish brown gravelly CLAY with low colfine to coarse. Gravel is st coarse. Complete at 2.20m	fine to coarse. By SILT with lenses of fine sand.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
		Д.	County Services Newsold 7 Acro 2016 1002 200 pin of the Local 7 Acro 2016 1002 20 and Full to				ch of excavator	

Northwest Geotech				Site Ballinlee Wind Farm Trial PriNumber TP1				
Machine : 3T Komatsu Method : Trial Pit		Dimensions		Ground Level (mOD)		Client Green Source		r 2
		Location 5611	94 E 633933 N	Dates 07/08/2024		Engineer	Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20)	TOPSOIL Very stiff orangish brown slightly sandy slightly gravelly CLAY with low cobble and boulder content. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse. Complete at 1.40m		
		Netwo	52"2718 225" 8"54"18 42 W downly Limited of ork: 6 Aug 2024 19 JD 10 GMT+01:00 cal: 6 Aug 2024 19 JD 11 GMT+01:00			Remarks Trial pit stable		

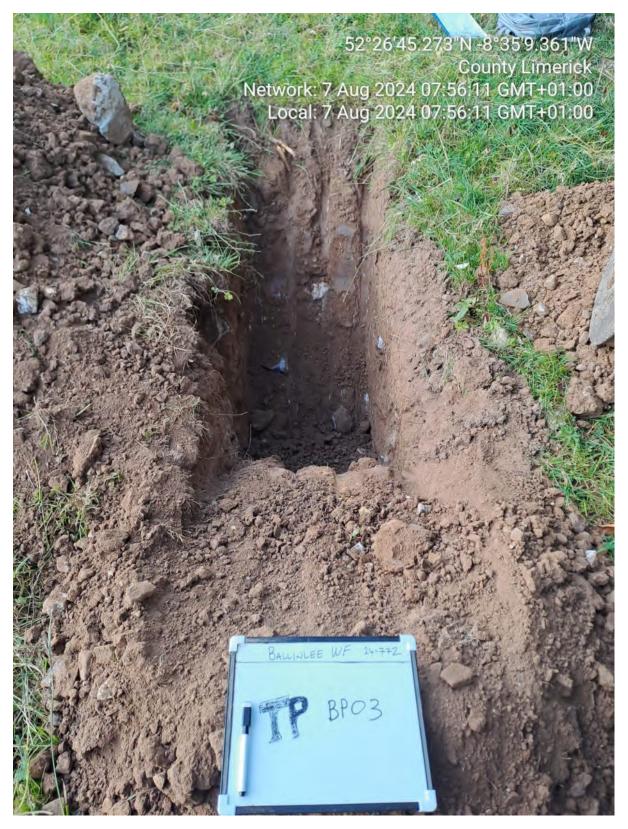


Trial pit stable No groundwater encountered Trial pit abandoned due to livestock

Scale (approx)		Logged By	Figure No.	
	1:50	PM	24-0772.TP17	



APPENDIX C Trial Pit Photos











Trial Pit: BP04



Trial Pit: BP101



Trial Pit: BP101



Trial Pit: BP102



Trial Pit: BP102



Trial Pit: BR01



Trial Pit: BR01





Trial Pit: BR01



Trial Pit: BR02



Trial Pit: SS



Trial Pit: SS



Trial Pit: TP01



Trial Pit: TP01



Trial Pit: TP02



Trial Pit: TP02



Trial Pit: TP02



Trial Pit: TP02



Trial Pit: TP03



Trial Pit: TP03



Trial Pit: TP04



Trial Pit: TP04



Trial Pit: TP05



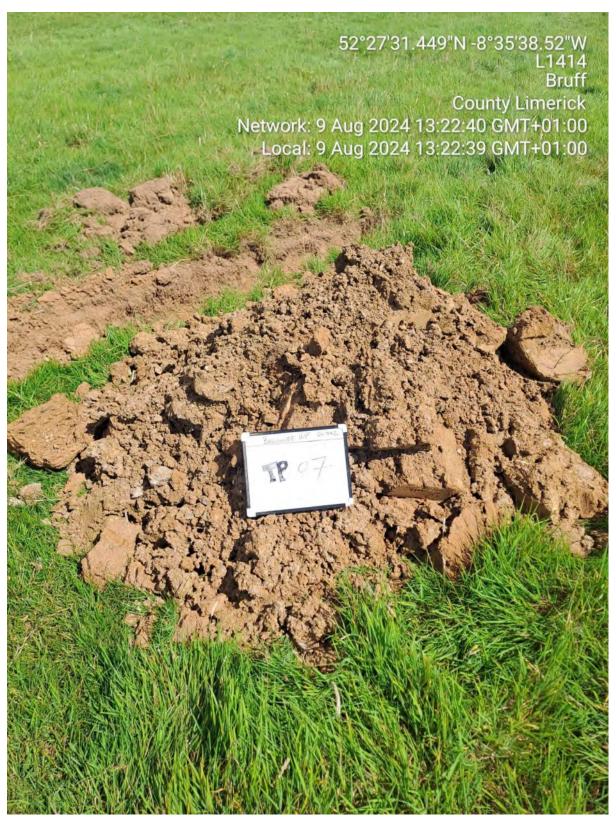
Trial Pit: TP05



Trial Pit: TP06



Trial Pit: TP06

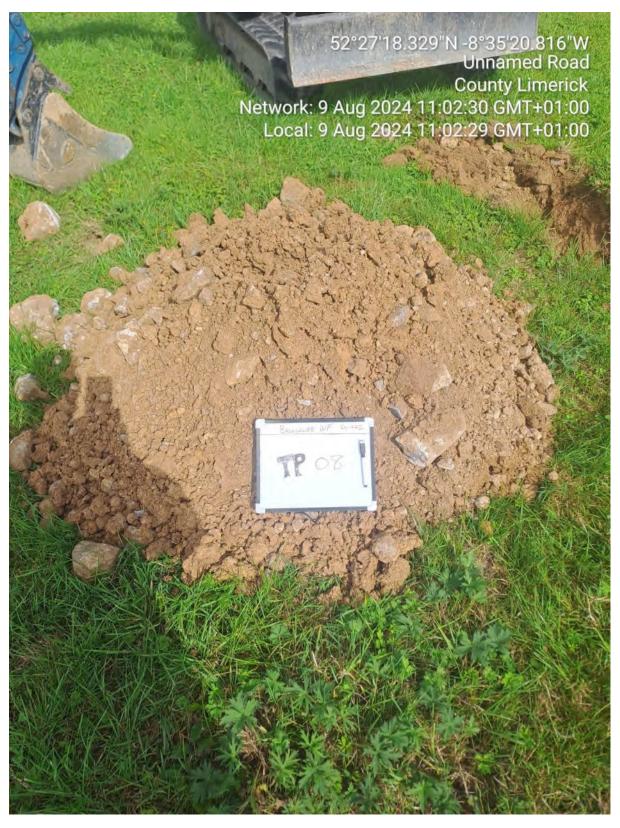


Trial Pit: TP07



Trial Pit: TP07





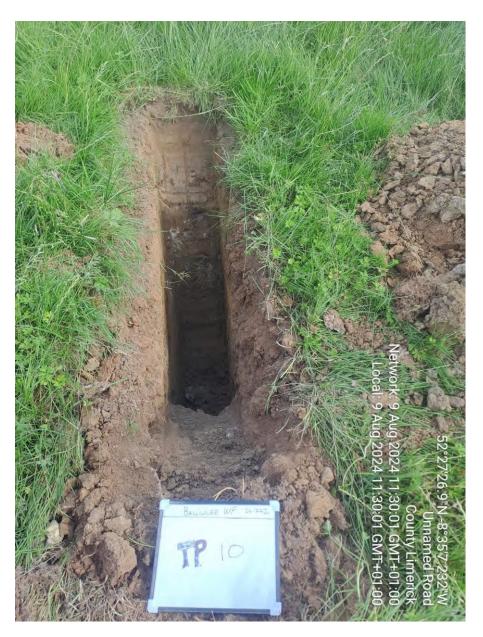
Trial Pit: TP08



Trial Pit: TP09



Trial Pit: TP09



Trial Pit: TP10



Trial Pit: TP10



Trial Pit: TP11



Trial Pit: TP11



Trial Pit: TP12



Trial Pit: TP12



Trial Pit: TP13



Trial Pit: TP13



Trial Pit: TP14



Trial Pit: TP14



Trial Pit: TP15



Trial Pit: TP15



Trial Pit: TP16



Trial Pit: TP16



Trial Pit: TP17



Trial Pit: TP17