Our Reference: 4046-G-LR029 Rev A

Date: 13th December 2022

iD GeoEnvironmental Limited

North West & Midlands
Caledonian House, Tatton Street,
Knutsford, Cheshire, WA16 6AG
t: 01565 755557

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Mr Matt Davis
Story House
Lords Way
Kingmoor Business Park
Carlisle
CA6 4SL

Dear Mr Davis,

Phase 3A, Edgehill, Whitehaven; Plots 156 - 162 – Verification of Absence of Contamination

At the time of IDGs ground investigation the Former Phosphate Storage was occupied by a large subsoil stockpile. Remediation Strategy Report reference 4046-G-R021 dated June 2021 required further investigation of the Former Phosphate Storage Area.

We are therefore pleased to provide verification of the ground conditions beneath the above plots (the site) following removal of subsoil stockpiles and preparatory works to achieve proposed site levels.

The Phase 3A site location is shown on Drawing 4046-G-D048 in Appendix A.

Prior to commencement of development the site has been subject to several phases of ground investigation undertaken on behalf of Story Homes to establish ground conditions, risks associated with soil contamination and hazardous ground gas. A brief summary of these reports and their findings in relation to *contamination related issues* is presented below. We understand that these reports have been previously submitted to and approved by the Local Planning Authority.

Risks associated with investigation and assessment of ground stability risks associated with shallow mining have been discussed and verified in separate correspondence.

Ground Investigation Report History
The site has been subject to several phases of ground investigation which had taken place between 2011 and 2021 by Integra Consulting and latterly by IDG which are listed below.

- Geotechnical Investigation land at High Road, Rhodia, Whitehaven Cumbria, reference 2546 dated September 2011 prepared by Integra Consulting Engineers Limited (Integra)
- Phase 2 Geoenvironmental Ground Investigation land at High Road, Rhodia, Whitehaven Cumbria, reference 2725 dated February 2014 prepared by Integra Consulting Engineers
- 4046-G-R019 Rev B Supplementary Geoenvironmental Appraisal of land at Phase 3, Edgehill Park, Whitehaven, Cumbria, dated January 2021
- 4046-G-R021 Remediation Strategy for land at Phase 3A, Edgehill Park, Whitehaven dated June 2021.
- 4046-G-L012 Edgehill Park, Phase 3 Materials Classification dated 3rd August 2021
- 4046-G-L022 Edgehill Park Phase 3 - Topsoil Stockpile Testing Results dated July 2022

Summary of Report Findings
A detailed summary of the findings of Integra's geoenvironmental investigations is provided in the Supplementary Geoenvironmental Report 4046-G-R019 Rev B and Remediation Strategy Report reference

4046-G-R021 dated June 2021. For the purpose of this Verification Report, issues which influence Plots 156-216 are briefly summarised below.
The Boundary of the Plot footprints within Phase 3A are depicted on Drawing No. 4046-G-D077 A and the positions of the plots relative to the approved layout and exploratory holes are shown on Drawing 4046-G-D077 B.

Integra Reports 2546 (2010) & 2725 (2011)
Integra trial pits TP45, TP78 & TP79 excavated in proximity to the site record 0.3m of natural topsoil underlain by firm to stiff orange-brown, progressing into grey or red-purple slightly sandy slightly gravelly clay with frequent mudstone and sandstone cobbles. Coal Measures bedrock comprising sandstone was encountered between depths of 1.5m (TP45) and 2.7m (TP78).

Integra trial pit TP44 records 0.6m of Made Ground comprising thin deposits of slag, brick and red gravel/pebbles. The Made Ground is underlain by between 0.6 – 0.7m of stiff brown clay, in turn underlain by siltstone bedrock. TP44 was located within the former phosphorite storage area the former location of which is depicted on Drawing 4046-G-D077A in Appendix A.

No evidence of groundwater was encountered in any of the Integra exploratory holes.

IDG Reports

Supplementary Geoenvironmental Appraisal of land at Phase 3, Edgehill Park, Whitehaven - 4046-G-R019 Rev B (2020)
The report presents the findings of a trial pit investigation and rotary probing within Phase 3 which took place during September 2020. At the time of the 2020 investigation the site was located beneath a subsoil stockpile and it was not possible to carry out any trial pitting or rotary probing. However, a review of Integra data presented in the report 4046-G-R019 (2020) identified that Granular Made Ground in TP43 (2011) within the footprint of the Phosphorite Storage Area contained a minor localised concentration of beryllium and one marginally elevated concentration of dibenzo(ah)anthracene which exceed S4UL screening criteria. The probable source of these determinands was considered to be slag gravel and cobbles within the Granular Made Ground.

As part of this investigation supplementary ground gas monitoring wells were installed in shallow bedrock within the Phase 3 development area and a 3 month programme of supplementary ground gas monitoring was carried out. No significant methane or carbon dioxide concentrations or positive flow rates were detected. The site was classified Characteristic Situation 1.

Edgehill Park, Phase 3 Materials Classification - 4046-G-L012 (August 2021)
The letter report presents the findings of trial pitting carried out in August 2021 to obtain samples of the superficial deposits and bedrock for materials testing to inform Phase 3 Earthworks Specification. As part of the investigation, trial pits TP904, TP907 & TP908 were excavated in proximity to the site. The trial pit locations are depicted on Drawing No. 4046-G-D077 in Appendix A.

The trial pits proved between 0.1 -0.5m of cohesive made ground (reworked clay Glacial Till recently deposited by Story Homes as part of ongoing building works) underlain by Glacial Till to in excess of 1.8m depth. While no chemical analysis was undertaken at this time, no significant evidence of contamination was observed.

Remediation Strategy for land at Phase 3A, Edgehill Park, Whitehaven - 4046-G-R021 (June 2021)
Section 7.2 of the Remediation Strategy required further investigation of the former Phosphate Storage Area which IDG were unable to investigate during 2020. Drawing reference 4046-G-D077A in Appendix A shows that the Phosphorite Storage Area encroached into the north of the site.

Topsoil Stockpile Testing Results, 4046-G-L022 Edgehill Park Phase 3, dated July 2022
Further testing of the topsoil stockpile demonstrated that the site won topsoil, including topsoil sourced from a localised minor lead contamination did not represent a risk to end users and was suitable for re-use as growing medium.

Further Investigation of part of the Former Phosphate Storage Area - Plots 156-162, December 2022
IDG attended site on 6th December 2022 to excavate three trial pits TP1101-TP1103 within the gardens of Plots 156-162. Plots 161 & 162 are located within the footprint of the former Phosphate Storage Area. The trial pit locations are shown on Drawing No. 4046-G-D077A in Appendix A. Copies of the logs are presented in Appendix B.

The trial pits proved the following soil types:

- 0.05 – 0.25 thickness Made Ground (hardcore) - grey sandy gravel of quarried sandstone
- 0.4 – 1.55 thickness of Cohesive made Ground - yellow-brown and red-purple gravelly sandy silty clay interpreted to be reworked Glacial Till.
- 0.25 – 0.55 thickness of Relict/Reworked Topsoil – grey-brown slightly gravelly clayey sandy silt with organic odour and probable turf peds.
- From depths of between 1.0-2.25m bgl, yellow brown and grey progressing into red-purple gravelly sandy silty clay interpreted to be Glacial Till. Proven to 3.0m bgl.

No evidence of Granular Made Ground comprising slag cobbles or gravel was encountered.

Soil samples were obtained between depths of 0.2m and 0.5m bgl which were dispatched to the chemical laboratory with a suite of testing scheduled for pH, asbestos screens, toxic 9 metals, Beryllium suite, speciated PAH, BTEX, TPHCWG and TOC. The laboratory results are presented in Appendix C.

Comparison of the laboratory results with S4UL (2014) and C4SL screening criteria for a residential with plant uptake end use has not identified any evidence of contamination within the Made Ground which could represent a risk to end users of the development. In view of these findings, the placement of site won topsoil as growing medium is considered satisfactory. The laboratory site won topsoil stockpile test results are provided in correspondence reference 4046-G-L022 dated July 2022.

We trust IDGs verification report is appropriate and is sufficient for Regulatory Approvals. Please do not hesitate to contact the undersigned if you have any questions.

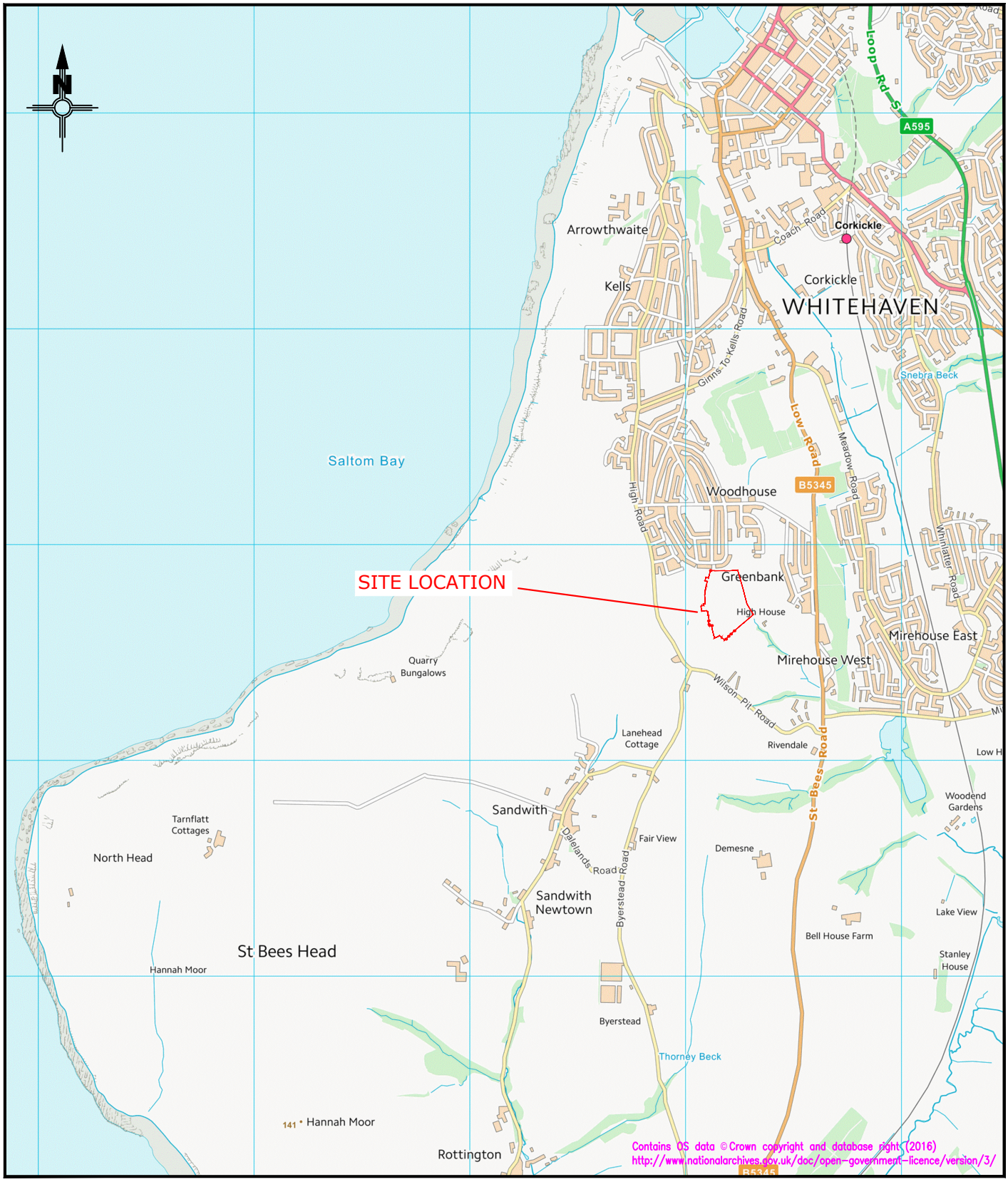
Yours sincerely,

[redacted]

Nick Ward BSc (Hons) FGS
for and on behalf of
iD GEOENVIRONMENTAL LIMITED

Enclosed:
Appendix A: Drawing No's. 4046-G-D048, 4046-G-D077A & 4046-G-D077B
Appendix B: Exploratory Records
Appendix C: Chemical Laboratory Results

APPENDIX A



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CLIENT	Story Homes
JOB TITLE	Phase 3A, Edgehill Park, Whitehaven
DRAWING TITLE	Site Location Plan

DRAWN BY	SIGNATURE	DATE	STATUS
NW		17-06-21	FINAL

APPROVED	SIGNATURE	DATE	SCALE	DRG No.
BRB		18-06-21	1:25,000@A4	4046-G-D048

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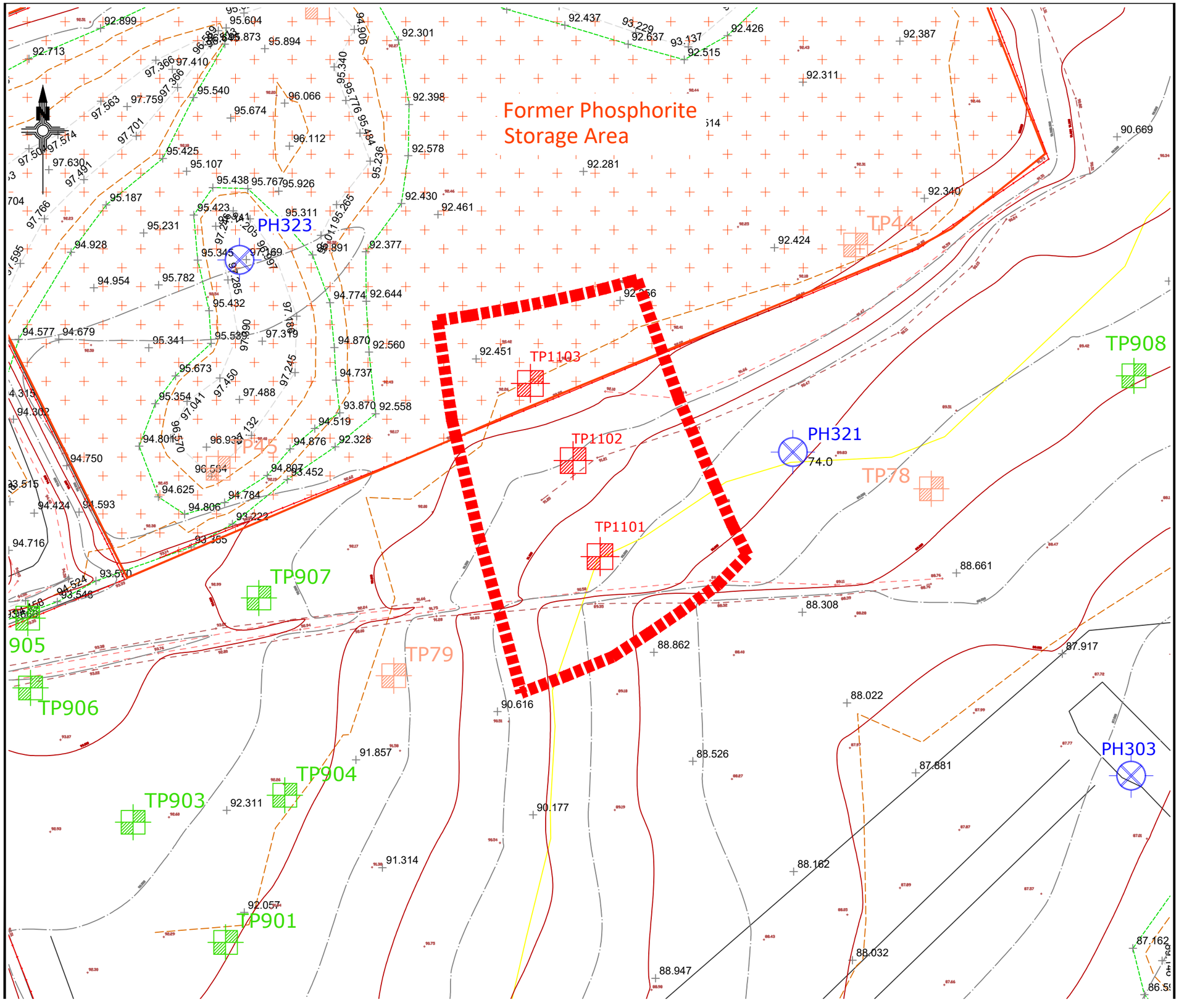

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KEY

- Site Boundary
- Former Phosphorite Storage Area
- TP1100 — IDG Trial Pit 2022
- TP900 — IDG Trial Pit 2021
- PH300 — IDG Probehole 2017
- TP — Integra Trial Pit (2009-11)

Revision	Description	Date

iD GeoEnvironmental Limited

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CLIENT

Story Homes

JOB TITLE

Phase 3A Edgehill Park

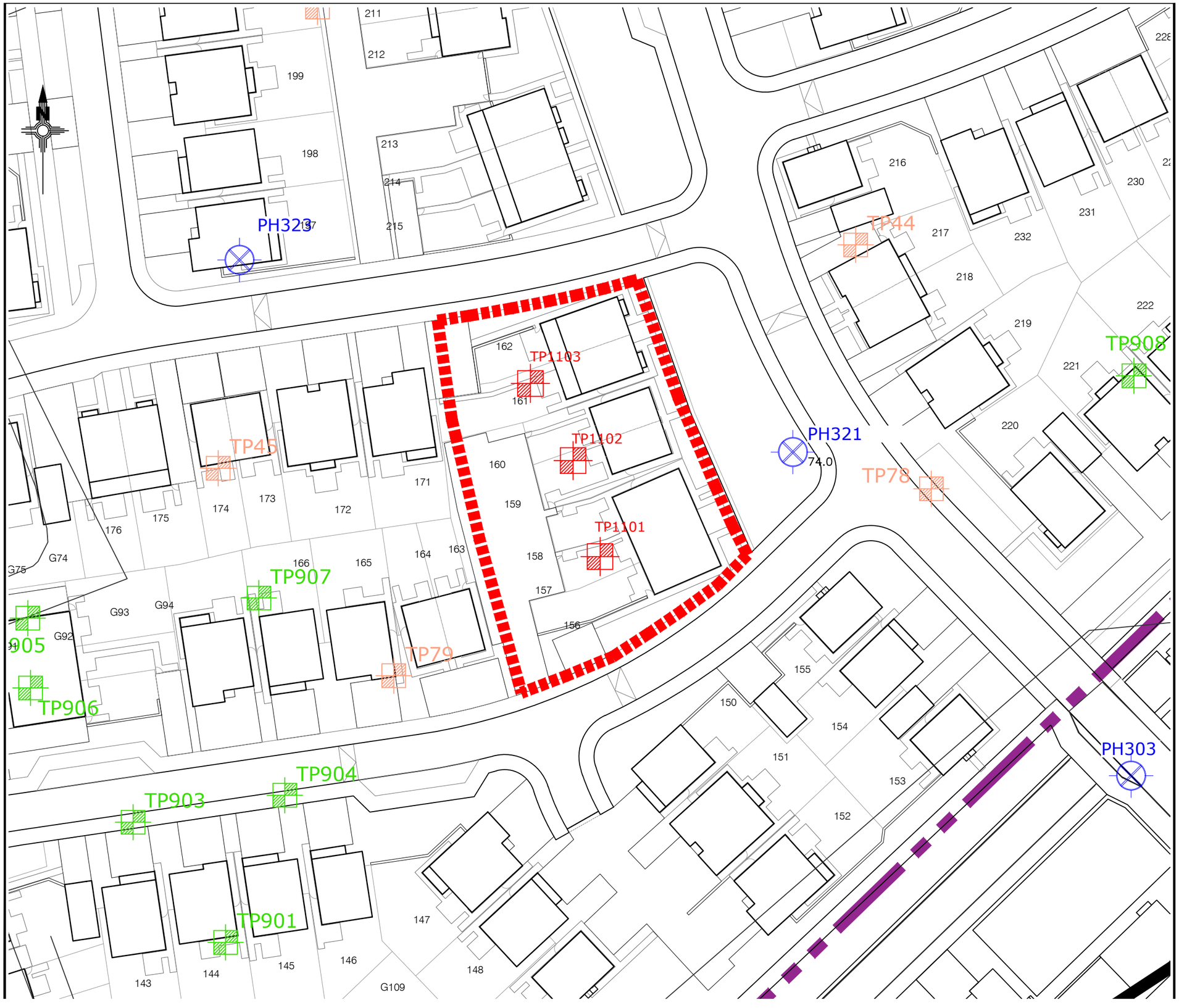
DRAWING TITLE

Verification Plan -
Plots 156-162

STATUS

Final

DRAWN BY	SIGNATURE	DATE
NW		9-12-22
APPROVED	SIGNATURE	DATE
BRB		13-12-22



KEY

- Site Boundary
- TP1100 — IDG Trial Pit 2022
- TP900 — IDG Trial Pit 2021
- PH300 — IDG Probehole 2017
- TP — Integra Trial Pit (2009-11)

Revision	Description	Date

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Fax: 01565 740263

CLIENT

Story Homes

JOB TITLE

Phase 3A Edgehill Park

DRAWING TITLE

Verification Plan -
Plots 156-162

STATUS

Final

DRAWN BY	SIGNATURE	DATE
NW		9-12-22
APPROVED	SIGNATURE	DATE
BRB		13-12-22

APPENDIX B

iD GeoEnvironmental Limited	Project Title: Rhodia, Whitehaven		TP1101
	Project Number: 4046	Client: Story Homes	Sheet 1 Of 1
	GL (mAOD): 90.10	N Coord: 515593	E Coord: 297142
Date: 06/12/2022	Method: Tracked Excavator	Logged By: NW	Scale: 1:25

Depth (m)	Type	Test Result	Level	Depth (m)	Description	Water
0.20	T		89.65	0.45	MADE GROUND: Dark grey sandy gravel of angular fine to coarse sandstone. (HARDCORE)	
0.50	ES		89.10	1.00	MADE GROUND: Soft yellow and light brown gravelly silty sandy clay. Gravel fine to coarse of angular to subrounded sandstone andmudstone. Interpreted to be reworked Glacial Till. (COHESIVE MADE GROUND)	
			88.70	1.40	MADE GROUND: Dark grey-brown slightly gravelly clayey sandy silt/silty sandy clay with occasional rootlets. Organic odour. Interpreted to be reworked topsoil. (MADE GROUND TOPSOIL)	
			88.30	1.80	Soft to firm yellow, grey and brown mottled gravelly silty sandy CLAY. Gravel fine to coarse of subroudned to subangular sandstone and mudstone. Interpreted to be weathered Glacial Till - possibly reworked. (GLACIAL TILL)	
			88.10	2.00	Stiff purple-brown mottled gravelly silty sandy CLAY. Gravel fine to coarse of subrounded to subangular sandstone and mudstone. (GLACIAL TILL)	
			87.10	3.00	1.40 - 1.50 Clay land drain. Slight flow.	
			86.10	4.00	End Of Trial Pit At 1.80 m	
			85.10	5.00		

KEY

D - Disturbed Sample
B - Bulk Sample
W - Water Sample
V - Hand Shear Vane kPa

▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

No Groundwater Encountered

iD GeoEnvironmental Limited

Project Title: Rhodia, Whitehaven			TP1102
Project Number: 4046	Client: Story Homes		Sheet 1 Of 1
GL (mAOD): 91.10	N Coord: 515607		E Coord: 297137
Date: 06/12/2022	Method: Tracked Excavator	Logged By: NW	Scale: 1:25

Depth (m)	Type	Test Result	Level	Depth (m)	Description	Water
			90.85	0.25	MADE GROUND: Dark grey sandy gravel of angular fine to coarse sandstone. (HARDCORE)	
0.40	ES				MADE GROUND: Soft yellow and light brown gravelly silty sandy clay. Gravel fine to coarse of subangular to subrounded sandstone and mudstone. Interpreted to be reworked Glacial Till. (COHESIVE MADE GROUND)	
			90.10	1.00		
			90.00	1.10	MADE GROUND: Dark grey-brown slightly gravelly clayey sandy silt/silty sandy clay with occasional rootlets. Slight organic odour. Interpreted to be reworked topsoil. (MADE GROUND TOPSOIL)	
			89.45	1.65		
			89.30	1.80	Firm to stiff yellow, grey and brown mottled gravelly silty sandy CLAY. Gravel fine to coarse of subrounded to subangular sandstone and mudstone. (GLACIAL TILL)	
			89.10	2.00		
			89.00	2.10	Stiff purple-brown mottled gravelly silty sandy CLAY. Gravel fine to coarse of subrounded to subangular sandstone and mudstone. (GLACIAL TILL)	
					End Of Trial Pit At 2.10 m	
			88.10	3.00		
			87.10	4.00		
			86.10	5.00		

KEY

D - Disturbed Sample
B - Bulk Sample
W - Water Sample
V - Hand Shear Vane kPa

▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

No Groundwater Encountered

iD GeoEnvironmental Limited	Project Title: Rhodia, Whitehaven	**TP1103**
	Project Number: 4046 / Client: Story Homes	Sheet 1 Of 1
	GL (mAOD): 92.40 / N Coord: 515607	E Coord: 297132
Date: 06/12/2022	Method: Tracked Excavator / Logged By: NW	Scale: 1:25

Depth (m)	Type	Test Result	Level	Depth (m)	Description	Water
0.30	ES		92.20	0.20	MADE GROUND: Dark grey sandy gravel of angular fine to coarse sandstone. (HARDCORE)	
			91.40	1.00	MADE GROUND: Purple-brown and yellow-brown gravelly silty sandy clay. Gravel fine to coarse of subangular to subrounded sandstone and mudstone. Interpreted to be reworked Glacial Till. (COHESIVE MADE GROUND)	
			90.65	1.75	MADE GROUND: Dark grey-brown slightly gravelly clayey sandy silt with occasional rootlets and peds of organic matter (turf?). Slight organic odour. Interpreted to be reworked topsoil. (MADE GROUND TOPSOIL)	
			90.40	2.00		
			90.15	2.25	Firm to stiff yellow, grey and brown mottled gravelly silty sandy CLAY. Gravel fine to coarse of subrounded to subangular sandstone and mudstone. (GLACIAL TILL)	
			89.75	2.65	Stiff purple-brown mottled gravelly silty sandy CLAY. Gravel fine to coarse of subrounded to subangular sandstone and mudstone. (GLACIAL TILL)	
			89.40	3.00	End Of Trial Pit At 2.95 m	
			88.40	4.00		
			87.40	5.00		

KEY

D - Disturbed Sample
B - Bulk Sample
W - Water Sample
V - Hand Shear Vane kPa

▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

No Groundwater Encountered

iD GeoEnvironmental Limited	Project Title: Rhodia, Whitehaven		TP904
	Project Number: 4046	Client: Story Homes	Sheet 1 Of 1
	GL (mAOD): 92.50	N Coord: 515562	E Coord: 297099
Date: 09/06/2021	Method: Tracked Excavator	Logged By: SD	Scale: 1:25

Depth (m)	Type	Test Result	Level	Depth (m)	Description	Water
			92.40	0.10	MADE GROUND: Grey-brown, very sandy very gravelly clay. (COHESIVE MADE GROUND)	
0.50 - 1.00	B				Stiff, light brown mottled orange and grey, slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is rounded to subangular fine to coarse of coal, limestone, quartzite and sandstone. (GLACIAL TILL)	
1.00 - 1.50	B		91.50	1.00	Very stiff, purple-brown, sandy gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is rounded to subangular fine to coarse of coal, limestone, quartzite and sandstone. Cobbles are rounded and subangular of same lithologies as gravel. (GLACIAL TILL) 1.30 - 1.35 Pocket of groundwater.	▼
			90.60	1.90		
			90.50	2.00	End Of Trial Pit At 1.90 m	
			89.50	3.00		
			88.50	4.00		
			87.50	5.00		

KEY

D - Disturbed Sample
B - Bulk Sample
W - Water Sample
V - Hand Shear Vane kPa

▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

Pocket of groundwater at 1.3m bgl. Pit sides stable.

iD GeoEnvironmental Limited	Project Title: Rhodia, Whitehaven		TP907
	Project Number: 4046	Client: Story Homes	Sheet 1 Of 1
	GL (mAOD): 93.40	N Coord: 515588	E Coord: 297096
Date: 09/06/2021	Method: Tracked Excavator	Logged By: SD	Scale: 1:25

Depth (m)	Type	Test Result	Level	Depth (m)	Description	Water
			93.25	0.15	MADE GROUND: Grey-brown, very sandy very gravelly clay. (COHESIVE MADE GROUND)	
			93.00	0.40	MADE GROUND TOPSOIL: Grass over brown, clayey silty sandy topsoil. (MADE GROUND TOPSOIL)	
0.50 - 1.00	B				Firm becoming stiff, light brown mottled orange and grey, slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is rounded to subangular fine to coarse of coal, limestone, quartzite and sandstone. (GLACIAL TILL)	
0.90	SV	V=73kPa	92.40	1.00		
1.05	SV	V=71kPa			1.10 - 1.80 Becoming stiff, friable, purple-brown mottled grey.	
1.30	SV	V=*				
			91.60	1.80	End Of Trial Pit At 1.80 m	
			91.40	2.00		
			90.40	3.00		
			89.40	4.00		
			88.40	5.00		

KEY

D - Disturbed Sample
B - Bulk Sample
W - Water Sample
V - Hand Shear Vane kPa

▽ - Groundwater Strike
▼ - Groundwater Level

REMARKS

No Groundwater Encountered
Pit sides stable. *Hand Shear Vane test not possible due to friable ex-situ material.

iD GeoEnvironmental Limited	Project Title: Rhodia, Whitehaven		TP908
	Project Number: 4046	Client: Story Homes	Sheet 1 Of 1
	GL (mAOD): 89.80	N Coord: 515618	E Coord: 297211
Date: 09/06/2021	Method: Tracked Excavator	Logged By: SD	Scale: 1:25

Depth (m)	Type	Test Result	Level	Depth (m)	Description	Water
0.01 - 0.50	B				MADE GROUND: Grey-brown, sandy gravelly clay with low cobble content. Cobbles are subangular of limestone. (COHESIVE MADE GROUND)	
0.50 - 1.00	B		89.30	0.50	Stiff becoming very stiff, light brown mottled black and grey, slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is rounded to subangular fine to coarse of coal, limestone, quartzite and sandstone. (GLACIAL TILL)	
1.00	SV	V=103kPa	88.80	1.00	1.00 - 1.60 Becoming very stiff, grey-brown mottled grey.	
1.30	SV	V=123kPa	88.20	1.60	End Of Trial Pit At 1.60 m	
			87.80	2.00		
			86.80	3.00		
			85.80	4.00		
			84.80	5.00		

KEY

D - Disturbed Sample
B - Bulk Sample
W - Water Sample
V - Hand Shear Vane kPa

▽ - Groundwater Strike
▼ - Groundwater Level

AGS

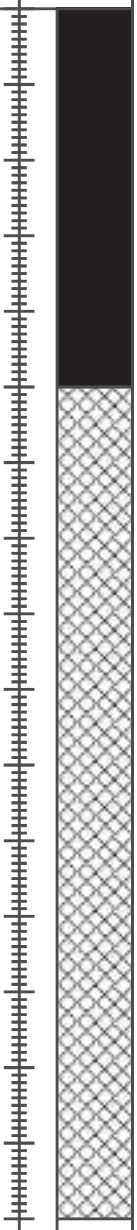
REMARKS

No Groundwater Encountered
Pit sides stable.

Geo Structures Civils

Project Title: Rhodia, Whitehaven		PH303
Project Number: 4046	Client: Story Homes	Sheet 1 Of 3
GL (mAOD): 87.44	N Coord: 515565	E Coord: 297211
Date: 05/12/2016	Method: Casagrande C6	Driller: GDC Ltd
		Logged By: NW

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	Water	Standpipe
						86.44		1.00	Turf and topsoil over brown sandy gravelly CLAY. (GLACIAL TILL)		
						85.44		2.00			
						84.94		2.50			
						84.44		3.00	Black MUDSTONE. (PENNINE MIDDLE COAL MEASURES)		
						83.44		4.00			
						82.44		5.00			
						81.44		6.00			
						80.44		7.00			
						80.34		7.10	Grey-black COAL with MUDSTONE partings. (PENNINE MIDDLE COAL MEASURES)		
						79.44		8.00			
						79.14		8.30	Black COAL. (PENNINE MIDDLE COAL MEASURES)		
						78.44		9.00			
						77.44		10.00	Grey MUDSTONE with SILTSTONE laminations. (PENNINE MIDDLE COAL MEASURES)		
						76.44		11.00			
						75.44		12.00			
						74.44		13.00			
						73.44		14.00			
						72.44		15.00			
						71.44		16.00	Borehole Continues		



KEY

D - Disturbed Sample
B - Bulk Sample
U - Undisturbed
W - Water Sample
S - Standard Penetration Test
C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

No Groundwater Encountered

Scale: 1:100

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks

Daily Log Of Depths

Date	Casing	Water

Flushing Medium

From	To	Type

Geo Structures Civils

Project Title: Rhodia, Whitehaven		PH303
Project Number: 4046	Client: Story Homes	Sheet 2 Of 3
GL (mAOD): 87.44	N Coord: 515565	E Coord: 297211
Date: 05/12/2016	Method: Casagrande C6	Driller: GDC Ltd
		Logged By: NW

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	Water	Standpipe
						70.84		16.60	Grey MUDSTONE with SILTSTONE laminations. (PENNINE MIDDLE COAL MEASURES)		
						70.44		17.00			
						69.94		17.50	Black COAL with MUDSTONE partings. (PENNINE MIDDLE COAL MEASURES)		
						69.44		18.00			
						68.44		19.00	Grey SILTSTONE (PENNINE MIDDLE COAL MEASURES)		
						67.44		20.00			
						66.94		20.50			
						66.44		21.00	Yellow to white SILTSTONE. (PENNINE MIDDLE COAL MEASURES)		
						65.44		22.00			
						64.44		23.00	Brown MUDSTONE with SILTSTONE laminations. (PENNINE MIDDLE COAL MEASURES)		
						63.44		24.00			
						62.44		25.00			
						61.44		26.00			
						60.44		27.00			
						59.44		28.00			
						58.44		29.00			
						57.44		30.00			
						56.44		31.00			
						55.84		31.60	Black COAL with MUDSTONE partings. (PENNINE MIDDLE COAL MEASURES)		
						55.44		32.00	Borehole Continues		

KEY

D - Disturbed Sample
B - Bulk Sample
U - Undisturbed
W - Water Sample
S - Standard Penetration Test
C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

No Groundwater Encountered

Scale: 1:100

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks

Daily Log Of Depths

Date	Casing	Water

Flushing Medium

From	To	Type

Geo Structures Civils

Project Title: Rhodia, Whitehaven		PH303
Project Number: 4046	Client: Story Homes	Sheet 3 Of 3
GL (mAOD): 87.44	N Coord: 515565	E Coord: 297211
Date: 05/12/2016	Method: Casagrande C6	Driller: GDC Ltd
		Logged By: NW

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	Water	Standpipe
						54.44		33.00	Black COAL with MUDSTONE partings. (PENNINE MIDDLE COAL MEASURES)		
						53.84		33.60			
						53.44		34.00	White SILTSTONE. (PENNINE MIDDLE COAL MEASURES)		
						52.44		35.00			
						51.44		36.00	End Of Borehole At 36.00 m		
						50.44		37.00			
						49.44		38.00			
						48.44		39.00			
						47.44		40.00			
						46.44		41.00			
						45.44		42.00			
						44.44		43.00			
						43.44		44.00			
						42.44		45.00			
						41.44		46.00			
						40.44		47.00			
						39.44		48.00			

KEY

D - Disturbed Sample
B - Bulk Sample
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C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

No Groundwater Encountered

Scale: 1:100

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks

Daily Log Of Depths

Date	Casing	Water

Flushing Medium

From	To	Type

Geo Structures Civils

Project Title: Rhodia, Whitehaven		PH321
Project Number: 4046	Client: Story Homes	Sheet 1 Of 3
GL (mAOD): 90.11	N Coord: 515607	E Coord: 297166
Date: 08/12/2016	Method: Casagrande C6	Driller:
		Logged By: NW

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	Water	Standpipe
						89.11		1.00	Brown gravelly silty sandy CLAY. (PENNINE MIDDLE COAL MEASURES)		
						88.11		2.00			
						87.81		2.30	Red silty MUDSTONE. (PENNINE MIDDLE COAL MEASURES)		
						87.11		3.00			
						86.41		3.70	Light grey and dark grey MUDSTONE beds. (PENNINE MIDDLE COAL MEASURES)		
						86.11		4.00			
						85.11		5.00			
						84.11		6.00			
						83.11		7.00			
						82.11		8.00			
						81.51		8.60	Grey MUDSTONE and grey-brown SILTSTONE laminations. (PENNINE MIDDLE COAL MEASURES)		
						81.11		9.00			
						80.11		10.00			
						79.11		11.00			
						78.11		12.00			
						77.11		13.00			
						76.41		13.70			
						76.11		14.00			
						75.91		14.20	Dark grey MUDSTONE. (PENNINE MIDDLE COAL MEASURES)		
						75.11		15.00	Wet black COAL. (PENNINE MIDDLE COAL MEASURES)		
						74.11		16.00	Dark grey MUDSTONE. (PENNINE MIDDLE COAL MEASURES)		
									Borehole Continues		

KEY

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N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

Scale: 1:100

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks
12/8/2016	14				
12/8/2016	23.2				

Daily Log Of Depths			Flushing Medium		
Date	Casing	Water	From	To	Type

Geo Structures Civils

Project Title: Rhodia, Whitehaven		PH321
Project Number: 4046	Client: Story Homes	Sheet 2 Of 3
GL (mAOD): 90.11	N Coord: 515607	E Coord: 297166
Date: 08/12/2016	Method: Casagrande C6	Driller:
		Logged By: NW

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Depth (m)	Description	Water	Standpipe
						73.11	17.00	Dark grey MUDSTONE. (PENNINE MIDDLE COAL MEASURES)		
						72.81	17.30	Black COAL. (PENNINE MIDDLE COAL MEASURES)		
						72.41	17.70	Dark grey MUDSTONE. (PENNINE MIDDLE COAL MEASURES)		
						72.11	18.00	Black COAL. (PENNINE MIDDLE COAL MEASURES)		
						71.11	19.00	Grey MUDSTONE and grey-brown SILTSTONE laminations (PENNINE MIDDLE COAL MEASURES)		
						70.11	20.00			
						69.11	21.00			
						68.11	22.00			
						67.11	23.00			
						66.91	23.20	Grey SILTSTONE with MUDSTONE laminations. (PENNINE MIDDLE COAL MEASURES) 23.20 - 26.40 High groundwater returns.		
						66.11	24.00			
						65.11	25.00			
						64.11	26.00			
						63.71	26.40			
						63.51	26.60	Hard black MUDSTONE. (PENNINE MIDDLE COAL MEASURES)		
						63.11	27.00	Black COAL. (PENNINE MIDDLE COAL MEASURES)		
						62.71	27.40	White very silty MUDSTONE and SILTSTONE beds. (PENNINE MIDDLE COAL MEASURES)		
						62.11	28.00			
						61.11	29.00			
						60.11	30.00			
						59.51	30.60	Grey MUDSTONE and SILTSTONE beds. (PENNINE MIDDLE COAL MEASURES)		
						59.11	31.00			
						58.11	32.00	Borehole Continues		

KEY

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V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

Scale: 1:100

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks
12/8/2016	14				
12/8/2016	23.2				

Daily Log Of Depths

Date	Casing	Water

Flushing Medium

From	To	Type

Geo Structures Civils

Project Title: Rhodia, Whitehaven		PH321
Project Number: 4046	Client: Story Homes	Sheet 3 Of 3
GL (mAOD): 90.11	N Coord: 515607	E Coord: 297166
Date: 08/12/2016	Method: Casagrande C6	Driller:
		Logged By: NW

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	Water	Standpipe
						57.11		33.00	Grey MUDSTONE and SILTSTONE beds. (PENNINE MIDDLE COAL MEASURES)		
						56.11		34.00			
						55.11		35.00			
						54.11		36.00			
						53.11		37.00	End Of Borehole At 36.00 m		
						52.11		38.00			
						51.11		39.00			
						50.11		40.00			
						49.11		41.00			
						48.11		42.00			
						47.11		43.00			
						46.11		44.00			
						45.11		45.00			
						44.11		46.00			
						43.11		47.00			
						42.11		48.00			

KEY

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S - Standard Penetration Test
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N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

Scale: 1:100

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks
12/8/2016	14				
12/8/2016	23.2				

Daily Log Of Depths

Date	Casing	Water

Flushing Medium

From	To	Type

Geo Structures Civils

Project Title: Rhodia, Whitehaven		PH323
Project Number: 4046	Client: Story Homes	Sheet 1 Of 3
GL (mAOD): 95.50	N Coord: 515633	E Coord: 297093
Date: 09/12/2016	Method: Casagrande C6	Driller: GDC Ltd
		Logged By: NW

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	Water	Standpipe
						94.50		1.00	Scrub over MADE GROUND with brick and concrete		
						93.50		2.00			
						92.50		3.00			
						91.50		4.00			
						90.50		5.00			
						89.70		5.80			
						89.50		6.00	Red brown SILTSTONE with SANDSTONE bands.		
						88.50		7.00			
						87.70		7.80			
						87.50		8.00	Red brown SANDSTONE with pinkish brown MUDTSONE bands(Hard Drilling).		
						86.50		9.00			
						85.50		10.00			
						84.50		11.00			
						83.50		12.00			
						82.50		13.00			
						81.50		14.00			
						80.50		15.00			
						79.50		16.00	Borehole Continues		

KEY

D - Disturbed Sample
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U - Undisturbed
W - Water Sample
S - Standard Penetration Test
C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

No Groundwater Encountered
Collar height estimated.

Scale: 1:100

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks

Daily Log Of Depths

Date	Casing	Water

Flushing Medium

From	To	Type

Geo Structures Civils

Project Title: Rhodia, Whitehaven		PH323
Project Number: 4046	Client: Story Homes	Sheet 2 Of 3
GL (mAOD): 95.50	N Coord: 515633	E Coord: 297093
Date: 09/12/2016	Method: Casagrande C6	Driller: GDC Ltd
		Logged By: NW

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	Water	Standpipe
						78.50		17.00	Red brown SANDSTONE with pinkish brown MUDTSONE bands(Hard Drilling).		
						77.50		18.00			
						76.50		19.00			
						75.50		20.00			
						74.50		21.00			
						74.00		21.50	Dark grey MUDSTONE. (PENNINE MIDDLE COAL MEASURES)		
						73.70		21.80			
						73.50		22.00	Black COAL. (PENNINE MIDDLE COAL MEASURES)		
						72.50		23.00			
						72.00		23.50	Dark grey MUDSTONE. (PENNINE MIDDLE COAL MEASURES)		
						71.50		24.00			
						70.50		25.00	Yellow SANDSTONE (Hard Drilling). (PENNINE MIDDLE COAL MEASURES)		
						69.50		26.00			
						69.30		26.20	Dark grey MUDSTONE with Coal traces. (PENNINE MIDDLE COAL MEASURES)		
						68.90		26.60			
						68.50		27.00			
						67.50		28.00	Black COAL. (PENNINE MIDDLE COAL MEASURES)		
						66.50		29.00	Light grey MUDSTONE. (PENNINE MIDDLE COAL MEASURES)		
						65.70		29.80			
						65.50		30.00	Yellow brown SANDSTONE (Hard Drilling). (PENNINE MIDDLE COAL MEASURES)		
						64.50		31.00			
						64.30		31.20	Light and dark grey MUDSTONE. Coal flash at 35.8m. (PENNINE MIDDLE COAL MEASURES)		
						63.50		32.00	Borehole Continues		

KEY

D - Disturbed Sample
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U - Undisturbed
W - Water Sample
S - Standard Penetration Test
C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

No Groundwater Encountered
Collar height estimated.

Scale: 1:100

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks

Daily Log Of Depths

Date	Casing	Water

Flushing Medium

From	To	Type

Geo Structures Civils

Project Title: Rhodia, Whitehaven		PH323
Project Number: 4046	Client: Story Homes	Sheet 3 Of 3
GL (mAOD): 95.50	N Coord: 515633	E Coord: 297093
Date: 09/12/2016	Method: Casagrande C6	Driller: GDC Ltd
		Logged By: NW

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	Water	Standpipe
						62.50		33.00	Light and dark grey MUDSTONE. Coal flash at 35.8m. (PENNINE MIDDLE COAL MEASURES)		
						61.50		34.00			
						60.50		35.00			
						59.50		36.00	End Of Borehole At 36.00 m		
						58.50		37.00			
						57.50		38.00			
						56.50		39.00			
						55.50		40.00			
						54.50		41.00			
						53.50		42.00			
						52.50		43.00			
						51.50		44.00			
						50.50		45.00			
						49.50		46.00			
						48.50		47.00			
						47.50		48.00			

KEY

D - Disturbed Sample
B - Bulk Sample
U - Undisturbed
W - Water Sample
S - Standard Penetration Test
C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

No Groundwater Encountered
Collar height estimated.

Scale: 1:100

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks

Daily Log Of Depths

Date	Casing	Water

Flushing Medium

From	To	Type

integra consulting
Civil & Structural Engineers

Second Floor
Fountain House
Fountain Street
Manchester
M2 2EE

Tel : 0161 237 3400
Fax : 0161 237 3635
Email : manchester@integraconsulting.co.uk
Web : www.integraconsulting.co.uk

Trial Pit Log.

Project: Whitehaven Cumbria	Weather Today: Dry and bright Recently: Dry	Job No. 2074 Date: 22/04/09

Level: 92.3m AOD

Trial Pit No: 44

Depth	Description	Water	Samples Ref	Details	Depth
	MADE GROUND: slag				
	MADE GROUND: granular hardcore		S	2kg	0.5
1000	Firm brown sandy CLAY with gravel, cobbles and rock fragments		S	2kg	1.0
			HV	70kN/m2	1.8
			S	2kg	1.5
2000	Medium strong, grey SILTSTONE ▽		UCS	25–50 MPa	2.3
3000					
4000					
5000					

Key :

▽ Water strike

▽ Hole terminated

S – Solid (weight in Kg)
W – Water (Volume in Litres)
HV – Hand Vane
UCS – Unconfined Compressive Strength (MPa)

Ground Water: YES ☐ NO ☒ Level: _____ Rate: _____

Soil Sample: YES ☒ NO ☐ Level: 0.5, 1.0 and 1.5m below ground level

Excavation Stable: YES ☒ NO ☐

Comments:

integra consulting
Civil & Structural Engineers

Second Floor
Fountain House
Fountain Street
Manchester
M2 2EE

Tel : 0161 237 3400
Fax : 0161 237 3635
Email : manchester@integraconsulting.co.uk
Web : www.integraconsulting.co.uk

Trial Pit Log.

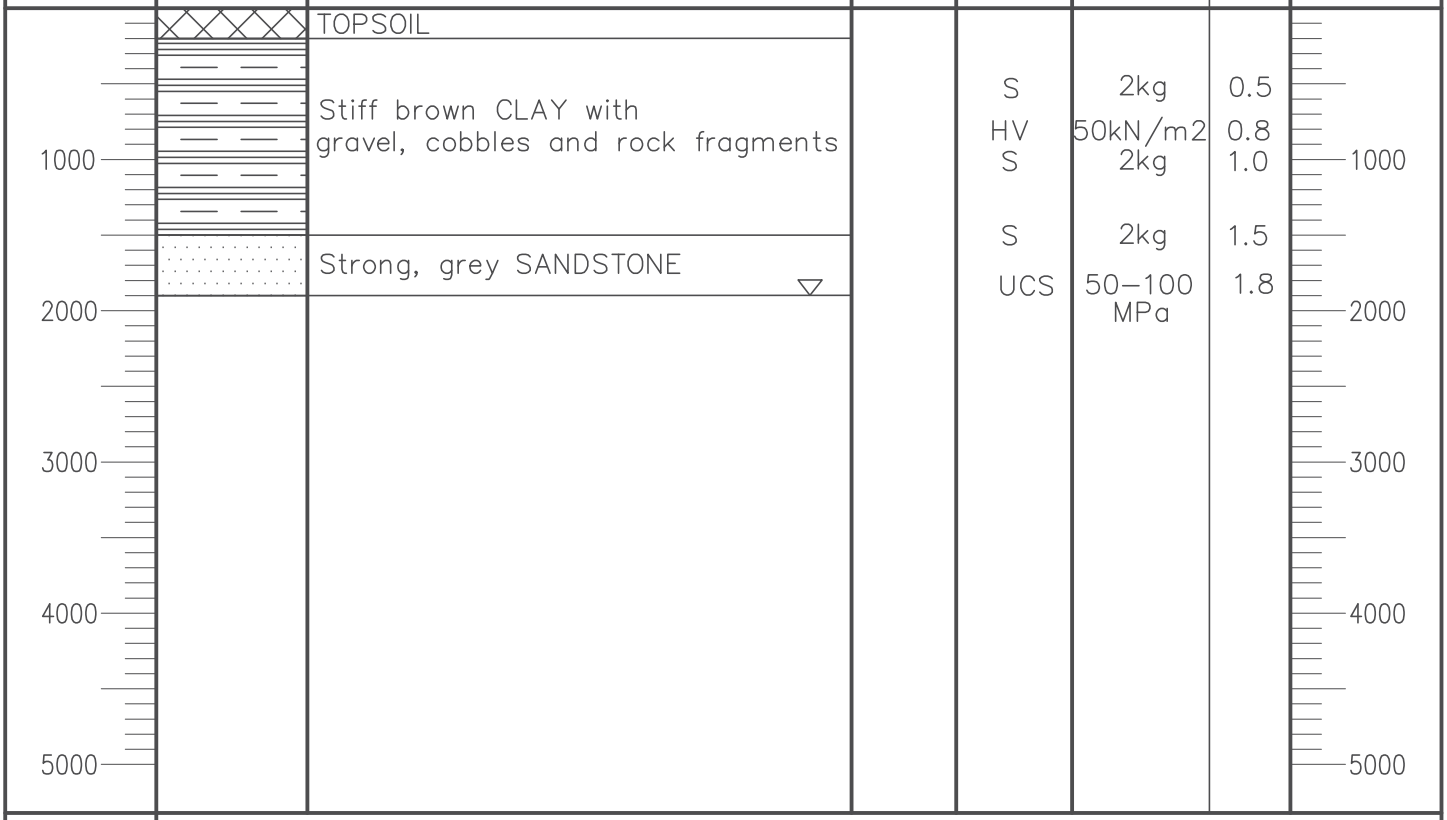
Project: Whitehaven
Cumbria

Weather Today: Dry and bright
Recently: Dry

Job No. 2074
Date: 22/04/09

Level: 92.1m AOD

Trial Pit No: 45



Depth	Description	Water	Samples Ref	Details	Depth
	TOPSOIL				
	Stiff brown CLAY with gravel, cobbles and rock fragments		S	2kg	0.5
			HV	50kN/m2	0.8
			S	2kg	1.0
			S	2kg	1.5
	Strong, grey SANDSTONE		UCS	50–100 MPa	1.8

Key :

Water strike

Hole terminated

S – Solid (weight in Kg)
W – Water (Volume in Litres)
HV – Hand Vane
UCS – Unconfined Compressive Strength (MPa)

Ground Water: YES ☐ NO ☒ Level: _____ Rate: _____

Soil Sample: YES ☒ NO ☐ Level: 0.5, 1.0 and 1.5m below ground level

Excavation Stable: YES ☒ NO ☐

Comments:

integra consulting
Civil & Structural Engineers

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Email : manchester@integraconsulting.co.uk
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Trial Pit Log. No. 78

Project: Whitehaven
Cumbria

Weather Today: Dry
Recently: Wet

Job No. 2546
Date: 25/05/11

Level: (m)	Description	Legend	Water	Sampling Ref	Sampling Details	Sampling Depth	Level: (m)
0.00	Dark brown TOPSOIL with rootlets.			S	1kg	0.20	0.00
	Stiff, light brown/orange, sandy, slightly gravelly CLAY with occasional rounded sandstone boulders.			Hv(19)	90–140	0.50	
				S	3kg	0.70	
1.00	–from 1.45m friable, dark grey, gravelly, –from 1.6m frequent mudstone and sandstone cobbles			Hv(19)	91–116	1.00	1.00
2.00				S	2kg	1.75	2.00
	Strong, yellow SANDSTONE.						
3.00							3.00
4.00							4.00
5.00							5.00

Key :

Water strike

Hole terminated

S – Solid (weight in Kg)
W – Water (Volume in Litres)
Hv(19) = Hand Shear Vane Test (size of vane in mm)
Shear strengths in KPa (* = from bulk ex–situ sample)

Ground Water: YES ☐ NO ☒ Level: _____ Rate: _____

Soil Sample: YES ☒ NO ☐ Level: 0.2/0.7 & 1.75 metres

Excavation Stable: YES ☒ NO ☐

Comments:
Trial pit complete at 2.70m due to sandstone bedrock obstruction.

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Civil & Structural Engineers

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Manchester
M2 2EE

Tel : 0161 237 3400
Fax : 0161 237 3635
Email : manchester@integraconsulting.co.uk
Web : www.integraconsulting.co.uk

Trial Pit Log. No. 79

Project: Whitehaven
Cumbria

Weather Today: Dry
Recently: Wet

Job No. 2546
Date: 25/05/11

Level: (m)	Description	Legend	Water	Sampling Ref	Sampling Details	Sampling Depth	Level: (m)
	Black TOPSOIL with rootlets.						
	Stiff, friable, light orange/brown, gravelly, sandy CLAY with occasional rounded sandstone cobbles. Gravel is fine sandstone. Sand is fine.			Hv(19) S	75–95 3kg	0.45 0.55	
1.00	– from 1.20 very stiff, red/purple, gravelly. Frequent subrounded sandstone/mudstone cobbles.			Hv(19)	155–180	1.00	1.00
2.00				S	2kg	1.80	2.00
3.00				S	1kg	2.80	3.00
4.00							4.00
5.00							5.00

Key :

Water strike

Hole terminated

S – Solid (weight in Kg)
W – Water (Volume in Litres)
Hv(19) = Hand Shear Vane Test (size of vane in mm)
Shear strengths in KPa (* = from bulk ex-situ sample)

Ground Water: YES ☐ NO ☒ Level: _____ Rate: _____

Soil Sample: YES ☒ NO ☐ Level: 0.55, 1.8 & 2.8 metres

Excavation Stable: YES ☒ NO ☐

Comments:

APPENDIX C

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 22/12026
Issue Number: 1 **Date:** 12 December, 2022

Client:
iD GeoEnvironmental Ltd (Knutsford)
Caledonian House
Tatton Street
Knutsford
WA16 6AG

Project Manager: Nick Ward
Project Name: P3 Plots 156-162, Edgehill Park, Whitehaven
Project Ref: 4046
Order No: N/A
Date Samples Received: 08/12/22
Date Instructions Received: 08/12/22
Date Analysis Completed: 12/12/22

Approved by:

Holly Neary-King
Client Services Supervisor

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME
UKAS TESTING 1247

Envirolab Job Number: 22/12026

Client Project Name: P3 Plots 156-162, Edgehill Park, Whitehaven

Client Project Ref: 4046

Lab Sample ID	22/12026/1	22/12026/2	22/12026/3	22/12026/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP1101	TP1101	TP1102	TP1103						
Depth to Top	0.20	0.50	0.40	0.30						
Depth To Bottom										
Date Sampled	06-Dec-22	06-Dec-22	06-Dec-22	06-Dec-22						
Sample Type	Soil	Soil	Soil	Soil						
Sample Matrix Code	6A	6A	6A	6A						
% Stones >10mm$_A$	<0.1	<0.1	<0.1	20.8				% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	8.12	7.21	8.12	8.26				pH	0.01	A-T-031s
Arsenic$_D$$^{M\#}$	9	8	8	6				mg/kg	1	A-T-024s
Barium$_D$	37	90	73	147				mg/kg	1	A-T-024s
Beryllium$_D$	<0.5	0.9	0.8	1.1				mg/kg	0.5	A-T-024s
Cadmium$_D$$^{M\#}$	1.0	1.3	1.0	0.9				mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	25	21	23	21				mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	20	24	19	26				mg/kg	1	A-T-024s
Lead$_D$$^{M\#}$	13	36	11	11				mg/kg	1	A-T-024s
Mercury$_D$	<0.17	<0.17	<0.17	0.19				mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	13	29	14	17				mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	<1	<1	<1				mg/kg	1	A-T-024s
Vanadium$_D$$^{M\#}$	21	33	18	28				mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	20	30	25	40				mg/kg	5	A-T-024s

Envirolab Job Number: 22/12026

Client Project Name: P3 Plots 156-162, Edgehill Park, Whitehaven

Client Project Ref: 4046

Lab Sample ID	22/12026/1	22/12026/2	22/12026/3	22/12026/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP1101	TP1101	TP1102	TP1103						
Depth to Top	0.20	0.50	0.40	0.30						
Depth To Bottom										
Date Sampled	06-Dec-22	06-Dec-22	06-Dec-22	06-Dec-22						
Sample Type	Soil	Soil	Soil	Soil						
Sample Matrix Code	6A	6A	6A	6A						
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	-	NAD	NAD	NAD						A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-						A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-						A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	-	N/A	N/A	N/A						A-T-045

Envirolab Job Number: 22/12026

Client Project Name: P3 Plots 156-162, Edgehill Park, Whitehaven

Client Project Ref: 4046

Lab Sample ID	22/12026/1	22/12026/2	22/12026/3	22/12026/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP1101	TP1101	TP1102	TP1103						
Depth to Top	0.20	0.50	0.40	0.30						
Depth To Bottom										
Date Sampled	06-Dec-22	06-Dec-22	06-Dec-22	06-Dec-22						
Sample Type	Soil	Soil	Soil	Soil						
Sample Matrix Code	6A	6A	6A	6A						
PAH-16MS										
Acenaphthene$_A^{M\#}$	-	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	-	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	-	<0.02	<0.02	<0.02				mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	-	<0.04	<0.04	<0.04				mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	-	<0.04	<0.04	<0.04				mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	-	<0.05	<0.05	<0.05				mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	-	<0.05	<0.05	<0.05				mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	-	<0.07	<0.07	<0.07				mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	-	<0.06	<0.06	<0.06				mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	-	<0.04	<0.04	<0.04				mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	-	<0.08	<0.08	<0.08				mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	-	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	-	<0.03	<0.03	<0.03				mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	-	<0.03	<0.03	<0.03				mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	-	<0.03	<0.03	<0.03				mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	-	<0.07	<0.07	<0.07				mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	-	<0.08	<0.08	<0.08				mg/kg	0.01	A-T-019s

Envirolab Job Number: 22/12026

Client Project Name: P3 Plots 156-162, Edgehill Park, Whitehaven

Client Project Ref: 4046

Lab Sample ID	22/12026/1	22/12026/2	22/12026/3	22/12026/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP1101	TP1101	TP1102	TP1103						
Depth to Top	0.20	0.50	0.40	0.30						
Depth To Bottom										
Date Sampled	06-Dec-22	06-Dec-22	06-Dec-22	06-Dec-22						
Sample Type	Soil	Soil	Soil	Soil						
Sample Matrix Code	6A	6A	6A	6A						
TPH CWG with Clean Up										
Ali >C5-C6$_A^{\#}$	-	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C6-C8$_A^{\#}$	-	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	-	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	-	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	-	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	-	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	-	4	<1	<1				mg/kg	1	A-T-055s
Total Aliphatics$_A$	-	4	<1	<1				mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$	-	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	-	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	-	<1	<1	<1				mg/kg	1	A-T-055s
Aro >C10-C12$_A$	-	<1	<1	<1				mg/kg	1	A-T-055s
Aro >C12-C16$_A$	-	1	<1	<1				mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	-	3	<1	<1				mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	-	4	<1	<1				mg/kg	1	A-T-055s
Total Aromatics$_A$	-	8	<1	<1				mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_A$	-	12	<1	<1				mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$	-	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	-	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	-	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	-	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	-	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	-	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: iD GeoEnvironmental Ltd (Knutsford), Caledonian House, Tatton Street, Knutsford, WA16 6AG

Project: P3 Plots 156-162, Edgehill Park, Whitehaven

Clients Project No: 4046

Project No: 22/12026

Date Received: 08/12/2022 (am)

Cool Box Temperatures (°C): 0.1

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	22/12026/1	22/12026/2	22/12026/3	22/12026/4
Client Sample No				
Client Sample ID/Depth	TP1101 0.20m	TP1101 0.50m	TP1102 0.40m	TP1103 0.30m
Date Sampled	06/12/22	06/12/22	06/12/22	06/12/22
A-T-019s		12/12/2022	12/12/2022	12/12/2022
A-T-022s		09/12/2022	09/12/2022	09/12/2022
A-T-024s	12/12/2022	12/12/2022	12/12/2022	12/12/2022
A-T-031s	12/12/2022	12/12/2022	12/12/2022	12/12/2022
A-T-044	12/12/2022	12/12/2022	12/12/2022	12/12/2022
A-T-045		09/12/2022	09/12/2022	09/12/2022
A-T-055s		12/12/2022	12/12/2022	12/12/2022
Calc-As Recd		12/12/2022	12/12/2022	12/12/2022

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report