Our Reference: 4046-G-L038

Date: 7th August 2024

Mr Matt Davis
Engineering Manager
Story Homes
Story House, Lords Way,
Kingmoor Business Park,
Carlisle,
CA6 4SL



Head Office

Dane Mill Business Centre, Broadhurst Lane, Congleton, Cheshire, CW12 1LA t: 01565 755557 www.id-geo.co.uk

Dear Mr Davis,

App. Ref. 4/24/2240/DOC – Land to the West of Valley View Road, Whitehaven

We understand that the Coal Authority have requested "confirmation of the implementation of the required shallow mine workings remediation works. You will recall that the Geoenvironmental Appraisal (December 2012), which accompanied the planning application, confirmed the works as necessary".

We assume that the date December 2012 is quoted in error as IDG Report reference 4046-G-R024 was issued in December 2021. Report 4046-G-R024 presented the findings of a supplementary mining investigation which concluded that shallow workings were present beneath the site which in the eastern third of the site could potentially affect stability of development. However, the findings of this report were superseded by IDG letter report 4046-G-L020 which presents the findings of a further phase of supplementary drilling carried out during June 2022.

The purpose of the 2022 investigation was to refine the geological model, refine understanding of the extent of mineworkings and depth of the untreated shaft reference 297515-008. Letter 4046-G-L020 includes a detailed review of previous investigations carried out in 2020 and 2021. A copy of correspondence reference 4046-G-L020 is presented in Appendix B.

The 2022 investigation confirmed that shallow workings were present within the Slaty Coal and that these workings potentially influenced a portion in the east of the site (section: Phase 4 Ground Stability Risks). The risk to surface stability assumed that site levels would remain as existing, although stated that any reduction in levels could bring areas further west within influencing distance. 4046-G-L020 concluded that comparison of the zone of influence with Story Homes 2022 development layout 66D-EHP4 Rev K indicated that several plots in the east of the development were potentially within the zone of influence of workings within the Slaty Coal (IDG Drawing 4046-G-D055 Rev D) and remediation was recommended at the positions of selected plots.

However, following further revisions and consideration of final site levels, the approved Story Homes layout (drawing No. VER 006 Rev D), does not have any plots located within the shallow mineworkings zone of influence. Furthermore, site levels have been increased in the east of Phase 4 and consequently original site levels have been maintained beneath the engineered fill.

Drawing VER 006 Rev D is reproduced within IDG drawing no. 4046-G-D055 Rev E presented in Appendix B. Drawing No 4046-G-D055 Rev E confirms that the approved layout lies outside of the zone of influence of shallow mineworkings and that remediation measures (i.e. grouting) are therefore no longer required.



Furthermore, we have visited site during preparatory works (topsoil strip, earthworks and excavation of service trenches) to assess for the presence of unrecorded shafts and adits and have not identified any evidence of surface disturbance.

We trust that this confirmation is satisfactory for the Coal Authority and Cumberland Council Planning Authority to discharge Condition 12.

Yours faithfully,



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

Enclosed:

Appendix A: Correspondence 4046-G-L020 Appendix B: Drawing No. 4046-G-D055 Rev E.

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Our Ref: 4046-G-L020

Date: 16th June 2022

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



Head Office

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Dear Mr Davis,

Supplementary Rotary Probehole Investigation – Phase 4, Edgehill Park, Whitehaven– Findings & Recommendations

We are pleased to present the findings of the supplementary mining investigation at the above site. IDG have previously issued the following reports in respect of shallow mineworkings at the Phase 4 site:

- Preliminary Geoenvironmental Investigation & Coal Mining Risk Assessment, Edgehill Park Whitehaven, Reference 4046-G-R015, dated October 2020.
- Hazardous Ground Gas Risk Assessment- Phase 4, Edgehill Park, Whitehaven, Cumbria, dated December 2020.
- Geoenvironmental Appraisal of land at Phase 4 Edgehill Park, Whitehaven, dated December 2021

Summary of Previous Report Findings

The site has recently been used for grazing. However, there is evidence of shallow clay pitting and potentially coal excavation in the northwest/west of the site. Historical OS maps show that a brickfield encroached into the west of the site and a pond (presumed to have been a clay pit) was present across the site's western boundary.

The Coal Authority record a mine shaft (297515-008) in the southwest of the site, of 2m diameter, however the depth is not recorded. The position of the shaft has been established by Story Homes and position depicted on a Topographic Survey. An off-site shaft (297515-007) is depicted within 20m of the southeastern site boundary and two off-site shafts (reference 297515-002 & 297515-003) are depicted within 20m of the northern boundary which correspond with the BGS recorded locations of Watson Pit, Bank Pit and Baxter Pit respectively.

The Coal Authority viewer also depicts "Development High Risk Zones" which correspond with the outcrop and shallow westerly dip of the Black Metal and Slaty Coal seams outcropping respectively beneath and immediately to the east of the site.

The Coal Authority Consultants Report states that abandoned mineworkings are present within the Main Coal at 69m depth and that workings dip at 4.4 degrees to the west.

IDG carried out an exploratory phase of rotary drilling during 2020 to establish depths and dip of shallow coal seams and potential for influence of shallow mineworkings. Six rotary probeholes (PH630-PH635) were drilled up to 33m bgl. Evidence of shallow mining was proven between 26.6m & 27.8m bgl in PH630 within the Slaty Coal seam which was predicted to become shallow and outcrop immediately east of the site. Further rotary probing took place during August 2021 when probeholes PH901-916 were drilled to further assess risks. Broken ground and void indicative of shallow mineworkings was proven in PH902, PH904, PH905, PH907 & PH909 between depths of 18.3m & 24.0m bgl in the north-eastern quarter of the site



which corresponded with a coal seam of between 0.6m and 1.3m in thickness interpreted to be the Slaty Coal. A summary of the 2020-21 probehole findings is summarised in Table 1.

Table 1: Summary of Exploratory Records

mAOD)	(m bgl)	Rockhead (m bgl)	Depth to Coal (m bgl)	Coal Thickness (m)	workings (m bgl)	Coal/workings (m AOD)	Influencing Distance of surface? (m bgl)
PH630 (90.5)	28.8	1.5	1.8	0.2	- (~8.7	88.7	Yes
111030 (30.3)	20.0	1.5	17.8	0.5	_	72.7	No
			18.5	0.5	-	72.0	No
			20.0	0.0	26.6-27.8	63.9	No
PH631 (83.0)	4.5	0.5	-	-	-	-	-
	30.0	0.8	7.0	0.3	_	76.7	No
	50.0	0.0	7.6	0.4	-	76.1	No
			16.0	1.0	-	67.7	No
PH633 (92.0)	33.0	0.8	7.3	0.4	-	84.7	No
, ,			22.6	0.5	-	69.4	No
			30.8	1.0	-	61.2	No
PH634 (88.5)	24.0	1.0	5.5	0.4	-	83.0	No
			6.1	0.3	-	82.4	No
			14.4	0.9	-	74.1	No
PH635 (86.9)	21.0	1.0	9.2	0.3	-	77.7	No
			10.6	0.2	-	76.3	No
			18.5	1.0	-	68.4	No
PH901 (90.5)	30.00	0.3	1.0	0.5	-	91.95	Yes
			18.0	0.3	-	74.95	No
			25.5	1.3	-	67.45	No
PH902 (91.0)	24.00	0.3	12.4	0.1	-	79.27	No
			13.0	0.1	-	78.67	No
					18.4 – 21.4	73.27	Yes
PH903 (87.0)	24.00	0.3	6.5	0.1		81.7	No
			15.00	0.5		73.2	No
PH904 (89.8)	21.0	0.3	11.5	0.1		78.5	No
			12.1	0.1		77.9	No
					18.5 – 19.8	71.5	No
PH905 (91.4)	42.0	0.3	15.0	0.1		79.25	No
					23.0 – 24.4	68.75	No
			39.5	1.0		52.25	No
PH906 (87.1)	24.0	0.3	6.5	0.1		81.74	No
			7.4	0.1		80.84	No
			15.5	0.6		72.74	No
PH907 (89.7)	21.0	0.3	10.2	0.2		79.67	No
			10.8	0.1	19 2 _ 10 E	78.87	No No
DU000 (07.0)	24.0	0.3	7.2	0.1	18.3 – 19.5	71.37	No
PH908 (87.0)	34.0	0.3	7.2	0.1		79.8	No No
			8.0 16.0	0.1 0.6		79.0 71.0	No No
			31.1	1.8		55.9	No
PH909 (89.3)	24.0	0.3	12.0	0.1		77.85	No
. 11303 (03.3)	24.0	5.5	12.6	0.1		77.85	No
					20.0 – 21.5	69.85	No
PH910 (88.4)	21.0	0.3	9.7	0.1		78.6	No
			10.5	0.1		77.8	No
			18.5	0.8		69.8	No
PH911 (87.0)	18.0	0.3	5.9	0.1		80.82	No
- (/		-	6.5	0.1		80.22	No

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Hole ID (Collar elevation mAOD)	Final Depth (m bgl)	Depth to Rockhead (m bgl)	Depth to Coal (m bgl)	Coal Thickness (m)	Probable workings (m bgl)	Top of Coal/workings (m AOD)	Influencing Distance of surface? (m bgl)
			14.7	0.7		72.02	No
PH912 (86.7)	33.0	0.3	6.5	0.1		79.65	No
			7.1	0.1		79.05	No
			15.3	0.6		70.85	No
			30.3	1.7		55.85	No
PH 913 (87.6)	24.0	0.3	10.7	0.2		77.6	No
			11.8	0.1		76.5	No
			19.5	0.8		68.8	No
PH914 (85.6)	18.0	0.3	6.5	0.1		78.7	No
			7.1	0.2		78.1	No
			15.2	0.8		70.0	No
PH915 (86.9)	24.0	0.3	12.0	0.1		73.5	No
			12.6	0.2		72.9	No
			20.8	0.7		64.7	No
PH916 (-)	27.0	0.3	14.8	0.1		74.45	No
			15.5	0.2		73.75	No
			23.6	0.8		65.85	No

A development risk zone was established in the east of the site based upon a maximum thickness of 1.3m, assuming 1.0m of weathered bedrock and mitigation comprising 10x seam thickness of bedrock.

Four shallow gas monitoring wells were installed including monitoring wells within the Black Metal Coal where this was close to outcrop during 2020. Four gas monitoring visits did not identify a significant risk from hazardous ground gas. A further two deep monitoring wells (PH902 & 907) were installed during 2021 to monitor the gas regime within the worked seam and abandoned workings.

Further discussion of gas monitoring to date is presented in the Hazardous Ground Gas Section later in this letter.

Subsequent to issue of the 2021 findings Story Homes have issued several revised development layouts extending beyond the extents of the previous rotary probing investigations culminating in Drawing reference 66D EHP4 Rev K issued to IDG on 5th June 2022. Further investigation to assess the potential for abandoned shallow mineworkings within the Slaty Coal seam and to establish the depth of the onsite mineshaft 297515-008 was recommended.

Scope of Works

The shallow mining investigation scope of works allowed for twenty three rotary probeholes to be drilled within Phase 4 to establish risks associated with shallow mineworkings in respect of the revised development boundaries.

The site location and positions of the exploratory locations are depicted on Exploratory Hole Location Plan Drawing No. 4046-G-D040 Rev D presented in Appendix A. A summary of our findings is presented below.

Supplementary Shallow Mining Investigation 2022

The supplementary intrusive investigation undertaken during June 2022, comprised twenty-three exploratory rotary probeholes (PH1001 to PH1023), drilled to a maximum depth of 42m using air and water flush and probeholes 271515-800 BH01 drilled to prove the base of the shaft. Copies of the probehole logs are presented in Appendix B. Hole locations are depicted on Drawing 4046-G-D055 Rev C in Appendix A.

The probehole records are summarised in Table 2 overleaf.

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Table 2: Summary of Exploratory Records

Hole ID (Collar elevation mAOD)	Final Depth (m bgl)	Depth to Rockhead (m bgl)	Depth to Coal (m bgl)	Coal Thickness (m)	Probable workings (m bgl)	Top of Coal/workings (m AOD)	Influencing Distance of surface? (m bgl)
PH1001 (90.8)	24.0	1.0	12.1	0.3	- (111 5/61)	78.7	No (III bgi)
PH1001 (90.8)	24.0	1.0	12.1	0.3	-	77.9	No
			12.9	0.2	20.0-21.6	70.8	No
D111002 (02.8)	30.0	0.9	3.0	0.4	-	89.8	+
PH1002 (92.8)	30.0	0.9	19.6	0.4			Yes
			27.5	0.8	-	73.2 65.3	No No
DUI4002 (04.0)	42.0	0.7			-		+
PH1003 (91.0)	42.0	0.7	10.0 25.5	0.3 15	_	81.0 65.5	No
			34.6	0.4	-	56.4	No No
D111004 (90 6)	20.0	1.5			-		+
PH1004 (89.6)	30.0	1.5	10.1	0.4		79.5	No
PH1005 (90.8)	30.0	0.9	10.3	0.1	-	78.9	No
			10.7	0.3	-	78.5	No
			19.8	0.7	-	70.3	No
PH1006 (89.2)	33.0	1.0	9.7	0.4	-	75.9	No
			10.6	0.2	-	76.3	No
			18.5	1.0	-	68.4	No
PH1007 (85.4)	21.0	0.3	1.0-1.3	0.3	-	84.1	Yes
			9.5	0.5	-	75.9	No
PH1008 (87.6)	21.00	2.0	7.5	0.2	-	80.1	No
			8.3	0.2	-	79.3	No
			16.4	0.8	-	71.2	No
PH1009 (84.0)	18.00	0.3	5.0	0.2	-	79.0	No
			9.0	0.2	-	75.0	No
PH1010 (89.8)	30.0	0.2	6.6	0.2	-	80.2	No
			7.2	0.2	-	79.6	No
			16.0	0.5	-	70.8	No
PH1011 (89.4)	30.0	1.0	13.8	0.2	-	75.6	No
			14.4	0.2	-	75.0	No
			22.7	1.0	-	66.6	No
PH1012 (88.8)	30.0	1.5	2.5	0.4	-	86.3	Yes
			18.0	0.2	-	70.8	No
			18.6	0.2	-	70.2	No
					24.5 – 27.4	64.3	No
PH1013 (89.7)	30.0	0.9	9.0	0.2	-	79.3	No
			26.0	1.0	-	62.3	No
PH1014 (87.0)	27.0	2.0	14.5	0.2	-	72.5	No
			15.4	0.2	-	71.6	No
			23.0	1.0	-	64.0	No
PH1015 (87.1)	30.0	0.3	3.0	0.2	-	84.1	No
, ,			19.0	1.0	-	68.1	No
			28.0	0.7	-	59.1	No
PH1016 (86.4)	30.0	1.0	8.0	0.3	-	78.8	No
- \/			25.0	0.9	_	61.4	No
PH1017 (84.5)	30.0	2.0	3.0	0.2	_	81.5	No
	30.0		18.4	0.2	_	66.1	No
			19.3	0.2	_	65.2	No
			27.9	0.6	_	56.6	No
PH1018 (84.2)	36.0	2.7	11.8	0.2	_	72.4	No
	30.0	2.,	12.5	0.2	_	71.7	No
			21.0	0.6	_	63.2	No
			21.0	0.0	<u> </u>	JJ.L	

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Hole ID (Collar elevation mAOD)	Final Depth (m bgl)	Depth to Rockhead (m bgl)	Depth to Coal (m bgl)	Coal Thickness (m)	Probable workings (m bgl)	Top of Coal/workings (m AOD)	Influencing Distance of surface? (m bgl)
PH1019 (81.6)	24.0	2.0	12.4	0.2	-	69.2	No
			13.0	0.2	-	68.6	No
			21.4	1.0	-	60.2	No
PH1020 (81.7)	21.0	1.0	6.0	0.1	-	75.7	No
			6.5	0.2	-	75.2	No
			15.1	0.7	-	66.6	No
PH1021 (86.9)	27.0	1.0	8.6	0.7	-	71.4	No
			24.2	0.8	-	55.8	No
			25.2	0.4	-	55.0	No
PH1022 (78.9)	24.0	0.3	3.6	0.9	-	75.3	Yes
			19.5	1.0	-	59.4	No
PH1023 (89.8)	30.0	0.7	10.3	0.4	-	79.5	No
			25.6	1.4	-	64.2	No

Table 2 shows that up to four seams of coal (PH1012 & PH1017) have been proven between depths of 2.5m and 34.6m bgl, although coal and clay encountered between 0.5 & 1.3m in PH1017 is considered indicative of the remains of a coal seam at outcrop.

A total of four seams have been proven during drilling, including two seams proven in the majority of probeholes which correlate with the BGS stratigraphic column. These seams are indicated to dip at approximately 7-8 degrees to the West-South West. These coal seams are summarised as follows:

Black Metal Coal: the stratigraphically upper/shallowest named coal typically comprises two split seams of coal with a mudstone parting or one seam incorporating a very organic mudstone. The Black Metal seam was proven from 6.0m bgl (PH1020). While most often recognisable as two thin coals seams & parting this seam is also considered (based upon modelling) to be represented by 0.9m thick coal proven at 25.0m bgl in PH1016 and a 1.5m thick coal and organic mudstone encountered in PH1003 at 25.5m bgl.

Slaty Coal: The next deeper/lower coal (identified as being between 8.0-9.0m below the Black Metal Coal) of between 0.7 - 1.3m thickness is interpreted to be the Slaty Coal seam. Broken ground indicative of abandoned shallow mineworkings was encountered in PH1001 (20-21.6m) and PH1012 (24.5 – 27.4m).

A deeper coal seam which is typically 14.0-15.0m deeper than the Slaty Coal was proven at depths of 19.5m (PH1022) and 24.2m (PH1021) in the east of the site where it would be anticipated to be shallowest is interpreted to be the Ten Quarters Coal.

A thin seam of coal has also been encountered at shallow depth in PH1002, PH1012, PH1015 & PH1017 of between 0.2-0.4m thickness which dips beneath the western half of the site. This seam has been proven in a total of eight holes. However, no evidence of mine working has been encountered during drilling or is apparent as surface workings.

Discussion

The exploratory records, Table 1 & Table 2 indicate that abandoned coal mineworkings are present within one seam of coal of up to 1.3m in thickness which is interpreted to be the Slaty Coal. Evidence of abandoned workings has been encountered at eight locations (PH1001, PH1012, PH902, PH904, PH905 & PH907, PH909 & PH630), between depths of 18.3m bgl (PH907) and 27.8m bgl (PH630). Comparison of Table 1 & Table 2 with the Mining Influence Plan 4046-G-D055 Rev C indicates that evidence of workings within this seam predominate in the northeast of the investigation area, although probable workings were also proven in PH1012 southwest of the site's centre.

The Black Metal Coal has been proven numerous times during all three Phases of drilling: Despite evidence of locally thick expressions detailed above (PH1003), there has been no evidence encountered during any of the 3 phases of drilling which indicates this seam has been worked.

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A seam interpreted to be the Ten Quarters Coal seam was proven in PH1022 and PH1021 in the south east of the site where the seam is shallowest, which was also proven in PH912 between 30.3 and 32.0m bgl in 2021. No evidence of abandoned mineworkings has been encountered in this seam, although should any workings be present these would be mitigated by sufficient rock cover.

A thin seam of coal has also been encountered at shallow depth (PH1002, PH1012 & PH1017) which is potentially within influencing distance of the site surface. The seam is of between 0.2-0.4m thickness and dips beneath the western half of the site. This seam has been proven in a total of eight holes in 2022 (PH1002, PH1003, PH1004, PH1012, PH1015, PH1016, PH1017 & PH1023) and was also proven in PH630 (1.8m) and PH633 (7.3m) in 2020. However, no evidence of mine working has been encountered during drilling or is apparent as surface workings.

Shaft 297515-008

A platform was placed over the surveyed position of Coal Authority Shaft 297515-008 and BH01 drilled at the indicated centre. The base of the shaft was proven at 37.5m and 4.5m of solid rock was proven at the base of the shaft. Drilling within the shaft progressed without rotation and without significant returns (other than water blowing out at surface) indicating the fill materials to be very soft and saturated. The shaft is located adjacent to a surface water retention pond which has never filled or had cause to spill. It is likely that water is migrating into the shaft from the pond.

Shallow boreholes BH01/02-BH01/06 were drilled to a maximum of 9m at 0.5m centre's either side of BH01 to assess the shaft diameter. These encountered solid bedrock at 3.0m and indicate that the shaft is no more than 2.2m in diameter.

Phase 4 Ground Stability Risks

It is generally accepted that void migration will not migrate upwards for a distance greater than approximately 10x the worked seam thickness (i.e. 13m based upon maximum recorded seam thickness). There are little or no superficial deposits present at the site, however the surface of the mudstone bedrock has weathered to clay and we have therefore assumed the upper 1.0m of weathered bedrock to have the properties of superficial deposits. On this basis a total of 14m of overburden is required to mitigate against void migration from the roof of the worked seam.

Structure contours based upon the relative elevation of the base of the Slaty Coal are depicted on Drawing reference 4046-G-D055 Rev C which indicate the seam dips at approximately 7-8 degrees towards the southwest.

The structure contours indicate that the worked seam coincides with the proven base of Shaft 297515-008 and it is therefore likely that this shaft was used to provide access to the workings within the Slaty Coal seam. While a number of probeholes have been drilled in the vicinity of the shaft none have encountered shallow mineworkings. However, the structure contours also indicate that while probeholes in the west of the site were drilled up to depths of 30.0m, this depth of investigation has not been sufficient to reach the worked seam and to categorically prove workings extend to the shaft bottom. Nonetheless, the structure contouring is considered sufficiently consistent to confirm that shaft base and worked seam coincide. While workings have not been proven in any of the probehole's drilled in the south and southeast of the site, the risk of workings within the Slaty Coal cannot be discounted.

The area of the site surface which is potentially within influencing distance of the worked seam is also shown hatched in orange on Drawing no. 4046-G-D055 Rev C in Appendix A. This zone assumes that site levels will remain as existing. However, cut and fill is likely to reduce levels locally and consequently where earthworks reduce site levels this may bring areas of the site further west within influencing distance of the worked seam.

Drawing 4046-G-D055 Rev D shows the zone of influence relative to the most recent layout 66D EHP4 Rev K. The drawing shows that Plots 61, 62, 63, 66-69 in the south-eastern site corner are within the zone of influence and plots 25-33 and 48-51 (terrace) on the east of the site are partially within the zone of influence.

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Mineshaft reference 297515-008 is located between two pairs of semi-detached plots 85-86 & 87-88. Trial pitting carried out by Story to identify the shaft position has resulted in made ground backfill to at least 4.0m bgl. Furthermore, construction of the adjacent temporary surface water retention pond will result in further deposition of a significant thickness of Made Ground to re-instate ground levels. Construction of the shaft cap will therefore be lower (i.e. 4-5m) than the elevation of surrounding bedrock. The resultant zone of influence will therefore be correspondingly wider (based upon 45 degrees from the shaft cap) and this is likely to have implications for foundations of the adjacent plots.

Given the shallow depth to the abandoned workings (particularly in the east of the site) the likelihood of unrecorded shafts or adits is also high. Story Homes & their groundworks contractors should be *alert to the presence of any zones of darker, soft or unusual ground conditions* during site preparatory works. If in doubt IDG should be contacted at the earliest opportunity.

Recommendations

Given that examples of localised artisanal workings have been encountered elsewhere within the Edgehill development and that the Slaty Coal is close to outcrop in the east of the site, it is considered there is a high risk of artisanal workings within the coal seam. It is recommended that rotary drilling and if necessary grouting be carried out within the footprint plots 62 and 66-69 (and any further plots which may move into the influence zone as a consequence of reduction in ground levels) to eliminate any uncertainty associated with unidentified workings. It is considered that a minimum of 2 probeholes be drilled beneath each plot to assess for the presence of workings. A treatment specification will be required to inform any grouting works which drilling highlights. All holes will require grouting to eliminate risks of migrating ground gas from the worked seam. The ground gas monitoring wells will also require demolition & remediation/grouting to eliminate ground gas migration risks.

Plots 25-33 and 48-51 (terrace) on the east of the site are partially within the zone of influence of the worked seam. Review of probeholes PH634, PH903, PH906, PH908, PH1008, PH635, PH911 & PH1010 indicates the Slaty Coal to be between 0.5m and 0.9m thick beneath these plots and there is therefore likely to be sufficient rock cover to mitigate against migration of crownholes. However, this assumes site levels will remain as existing. Further review is recommended once finished development levels are approved.

Treatment and capping of the Shaft 297515-008 will be required. As discussed above, the shaft cap should be constructed in competent bedrock. This will require excavation of the Made Ground generated by previous investigations and during construction of the adjacent surface water retention pond to expose the undisturbed bedrock. Further consideration of the implications that the depth of the excavation and cap construction is likely to have upon foundations of adjacent plots is recommended; it is likely that a bespoke foundation design will be required.

Hazardous Ground Gas

Gas monitoring at deep wells (PH902 & PH907) and shallow wells (PH631A, PH633A & PH634A) has taken place since September 2021 to assess the potential for mines gases within the identified workings and assess whether there is evidence to indicate gas within the workings is migrating to surface and could represent a risk to the proposed development.

Monitoring visits have detected slightly elevated concentrations of methane (up to 4.3%) and carbon dioxide (up to 18%) accompanied by reduced oxygen concentrations and negligible follow rates. The highest methane and carbon dioxide concentrations have been detected at monitoring wells PH902 and PH907 which had response zones constructed in the abandoned mine workings, although its notable that no significant positive gas flows have been detected. Generally, only very low carbon dioxide and no methane with no significant positive gas flow rates have been detected at shallow monitoring wells within bedrock which is anticipated as being founding strata.

Based upon the results, there is not a significant gas risk and the site should be classified as Characteristic Situation 1 (CS1). However, significantly elevated concentrations of up to 18.7% carbon dioxide have been

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detected on two recent visits to PH631. At this stage the worst case assessment is that Characteristic Situation 2 (CS2) ground gas protection measures will be required in the vicinity of PH631, although further assessment of the significance of the elevated carbon dioxide at this one location will be provided in the final gas risk assessment.

Copies of the monitoring well installations are shown on the borehole logs presented in Appendix B.

Foundation & Earthworks Recommendations

The topographic survey indicates the shallow excavations which deepen towards the site's northwest corner are between 1.5-2.0m below the surface of the site to the east. The 2021 geoenvironmental investigation identified thin deposits of both Granular and soft Cohesive Made Ground within the base of the excavation which are unsuitable as founding material. It is recommended that the Made Ground and any soft clay be removed and replaced with competent natural material sourced from cut and fill operations or imported clean natural material.

Earthworks operations within the adjacent Phase 3 have struggled to excavate the appropriate materials from beneath the site and that it may be necessary to import appropriate inert natural materials from other sites. In these circumstances, an appropriate Remediation Strategy and Materials Management Plan will be required.

At this stage, adoption of the Rev K Development Layout reproduced in Drawing 4046-G-D055 Rev D assumes proof drilling and grouting will be required in the east of the site and that piled foundations will be required where Made Ground is likely to exceed 1.8m thickness. Bespoke foundations will be required for Plots 85-88 affected by Shaft 297515-008.

The proposed foundation solutions are subject to further investigation and potentially treatment of any shallow mineworkings. The final foundation solution will be provided by the Structural Engineer.

Please do not hesitate to contact us if you have any questions.

Yours sincerely,



Nick Ward BSc (Hons), FGS for and on behalf of

ID GEOENVIRONMENTAL LIMITED

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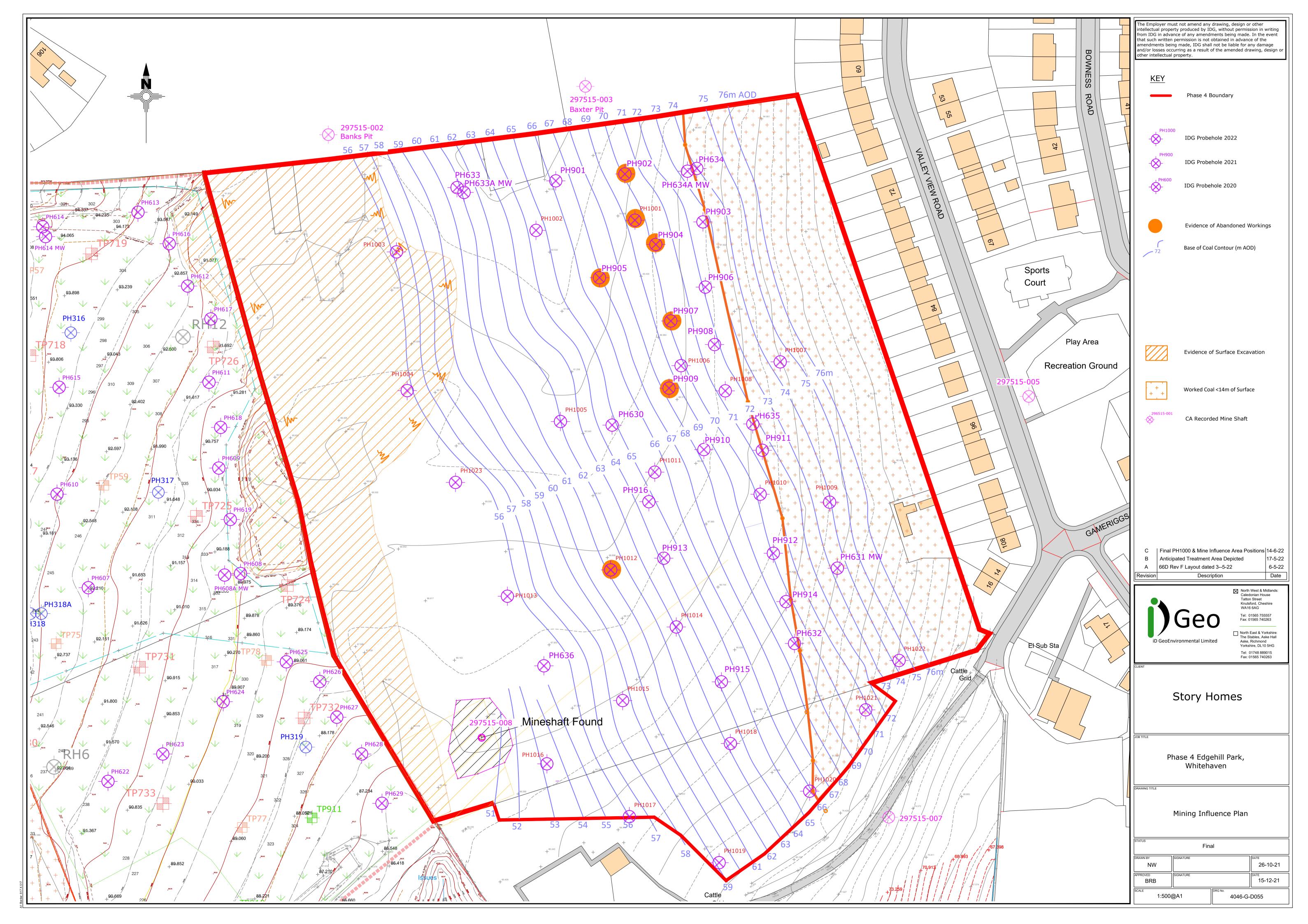
Appendix A: Drawing No. 4046-G-D055 Rev C

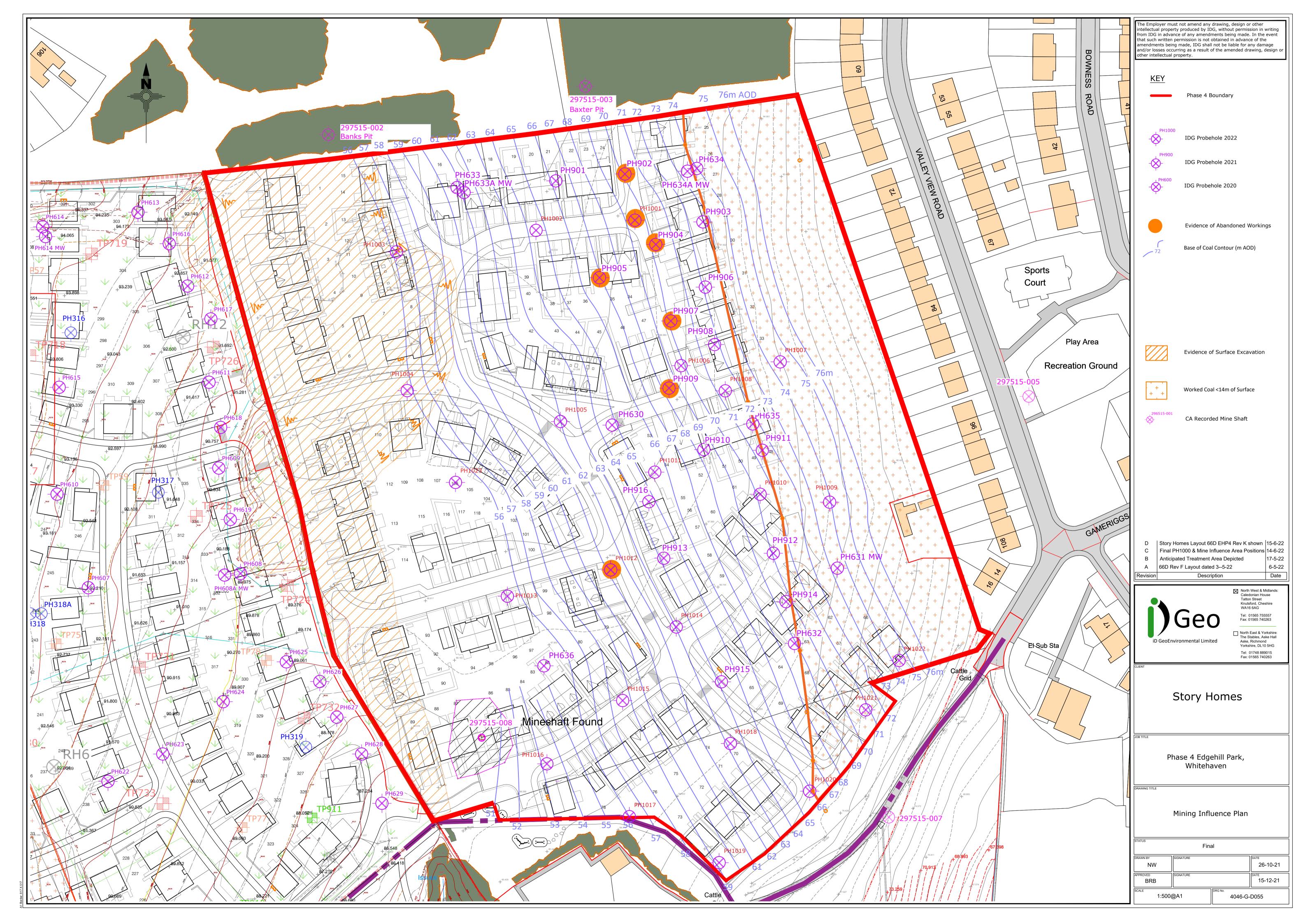
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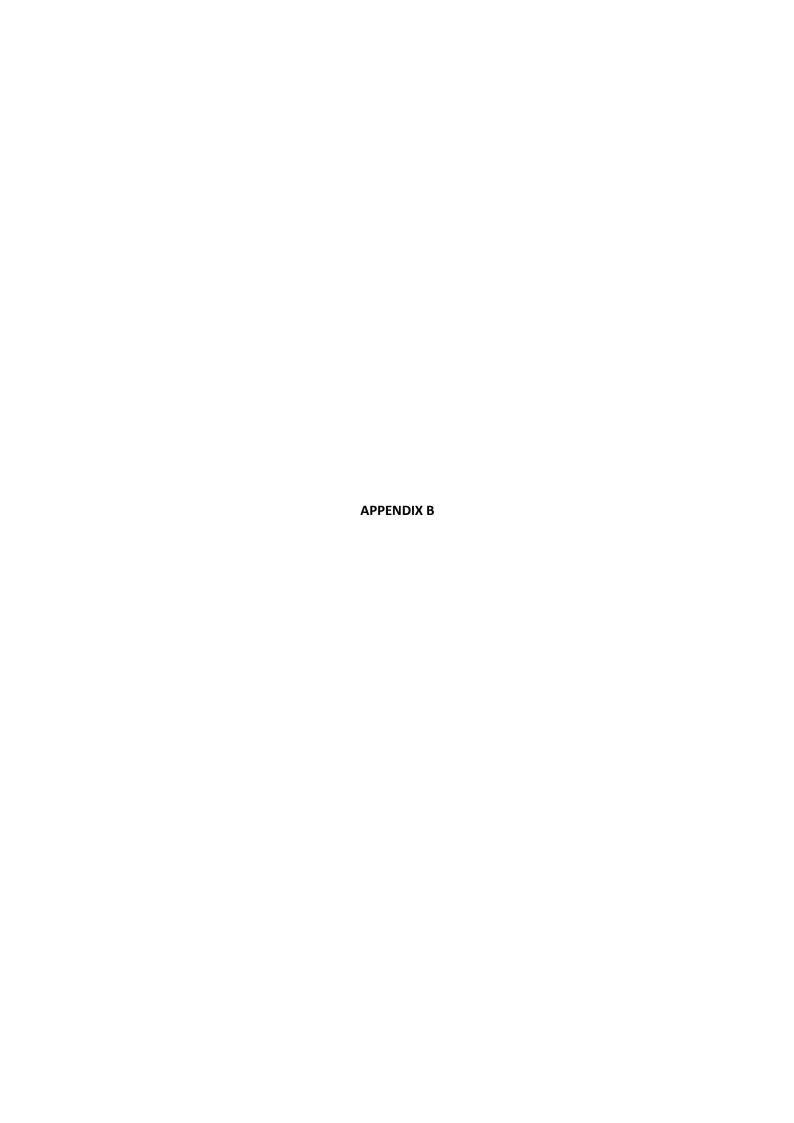
Appendix B: Rotary Probe Hole logs PH630-PH636, PH901-PH916 & PH1001 – PH1023

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iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 85.40)		N Coord: 5	15823		E Coor	d: 2974	25		
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Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	andpipe
						64.40_		21.00	(MIDDL	Borehole At					
KEY D - Disturbed : B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea	le ed mple Penetrat etration n Test 'I ar Vane atter Stri	Test N' Value kPa ke		No Gr Water	Flush	ter Enco	untered			Date Daily Log C	Strike	Level S Water	Minutes Flushi From	Casing ng Mediu	Remark Im Type
				Scale:	1:100										

• •			Pro	oject Title	e: Rhod	lia, White	ehaven				P	H1	0	80	
	ie e	0	Pro	oject Nur	mber: 40)46		Client: Sto	ry Homes		Sheet '				
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 87.60)		N Coord: 5	15813		E Coor	d: 2974	08		
Date: 06/06/20	22		Me	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	d By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n			V	Vater Sta	andpipe
						87.30 85.60 83.10 80.10 79.90 79.30 79.10		2.00 	Sandy (TOPSC Yellov Interpi MUDS (MIDDL Grey M' (MIDDL Dark (recove gravel. (MIDDL Grey M' (MIDDL Grey M' (MIDDL Grey M (MIDDL Grey M Iaminat (MIDDL	DIL) N-brown reted to be TONE. E COAL ME UDSTONE. E COAL ME Grey/black red as fine E COAL ME UDSTONE. E COAL ME	silty De wea ASURE ASURE ASURE ASURE ASURE ASURE ASURE ASURE	CLAY tthered S) S) STONE tr shale S) S) Si siltstone			
KEY D - Disturbed 3 B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea Groundwa Groundwa	le ed mple Penetrat etration n Test 'I ar Vane atter Stri	Test N' Value kPa ke		1	ARKS oundwa		ountered			Daily Log O	Strike	Level S Water	Minute Flush From	ing Mediu	Remark Im Type
Groundwa		Scale:	1:100												

F	Project Title: Rhodia, Wh	hitehaven				PI	 1	00	380	
S Geo	Project Number: 4046		Client: Stor	y Homes		Sheet 2				
iD GeoEnvironmental Limited	GL (mAOD): 87.60		N Coord: 5	15813		E Coor	d: 29740	08		
Date: 06/06/2022	Method: Casagrande C6	6	Driller: GD0			Logged	l By: NW	1		
Core/Samples TCR SCR RQD) FI ISPT Leve	el Legend	Depth (m)	Description				Wa	ater Sta	ındpipe
	71.20		16.40	laminati (MIDDLE COAL. (MIDDLE Grey MU (MIDDLE	UDSTONE ons. E COAL ME E COAL ME IDSTONE. E COAL ME	ASURE ASURE	S) S)		***************************************	
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	REMARKS No Groundwater En Air Scale: 1:100	ncountered		-	Water Strik Date Daily Log C Date	Strike		Minutes Flushir	Casing ng Mediu	Remark m Type

• •			Pro	oject Title	e: Rhod	lia, Whit	ehaven				PI	H1	0	09	
	ie e	0	Pro	oject Nui	mber: 40	046		Client: Sto	ry Homes		Sheet '				
iD GeoEnviror	mental Lim	ited	GL	_ (mAOD): 84.00)		N Coord: 5	15777		E Coor	d: 2974	25		
Date: 07/06/20	22		Me	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	l By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n			W	ater Sta	andpipe
	Y Disturbed Sample Bulk Sample					79.50 79.00 78.80 78.20		0.20 1.20 1.20 1.20 1.50	Sandy (TOPSC) Weat! MUDS (MIDDL) Grey M (MIDDL) COAL. (MIDDL) Black M (MIDDL) Grey M (MIDDL) COAL. (MIDDL) Grey M (MIDDL)	DIL) DIE	ASURE ASURE ASURE ASURE ASURE ASURE ASURE ASURE ASURE	brown S) STONE r shale S) S) COAL S)			
B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea	le Id Inple Penetrat Perration In Test It In Vane Interestration	Test N' Value kPa ke		1			ountered			Date Daily Log Contact	Strike	Level s Water	Minute:	s Casing ing Mediu	Remark Im Type
		Scale:	1:100												

• •			Pr	oject Title	e: Rhod	lia, White	ehaven				PI	H1	00	<u> </u>	
	ie.	0	Pr	oject Nur	mber: 40)46		Client: Stor	ry Homes		Sheet 2				
iD GeoEnviror	nmental Lim	nited	GL	_ (mAOD): 84.00)		N Coord: 5	15777		E Coor	d: 2974	25		
Date: 07/06/20)22		Me	ethod: C	asagrar	nde C6		Driller: GD0	C		Logged	l By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			Wa	ater Sta	andpipe
	in GeoEnvironmental Limited ate: 07/06/2022 re/Samples TCR SCR RC - Disturbed Sample - Bulk Sample - Bulk Sample - Undisturbed - Water Sample - Standard Penetration Test - Cene Prentent Test - Cene Prentent Test - Penetration Test - Cene Prentent Test - Hand Shear Vane kPau - Hand Shear Vane kPau - Groundwater Strike					66.00		and the state of t	(MIDDL	UDSTONE. E COAL ME					
B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea	ole ed mple Penetrat etration n Test 'I ar Vane atter Stri	ion Test Test N' Value kPa ke			Flush	I ter Enco	untered			Water Strik Date Daily Log (Date	Strike	Level S Water	Minutes Flushir	Casing Casing	Remark Im Type

P				Project Title: Rhodia, Whitehaven							PH1010				
Geo Pro				roject Number: 4046				Client: Story Homes			Sheet 1 Of 2				
ID GeoEnvironmental Limited GL				(mAOD): 86.80				N Coord: 515780		E Coord: 297420					
Date: 07/06/2022 Me				ethod: Casagrande C6				Driller: GDC			Logged By: NW				
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1				ater Sta	ındpipe
						84.80_ 83.30 80.20 80.00 79.60 79.40		2.00 3.50 7.20 7.40 16.00	sandy I (TOPSC) We at I M U D S (WEAT COAL I Grey M (MIDDL Dark (recove gravel. (MIDDL Grey M (MIDDL COAL. (MIDDL Grey M (MIDDL	DIL) nered year STONE. HERED PEI MEASURES UDSTONE. E COAL ME grey/black red as fine	EASURE EASURE EASURE EASURE	S) STONE r shale S) S)			
KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test C - Cone Penetration Test				REMARKS No Groundwater Encountered Air flush						Water Strik	Strike	Level	Minutes	Casing	Remark
N - Penetration Test 'N' Value V - Hand Shear Vane kPa - Groundwater Strike									Daily Log Of Depth Date Casing			S Water	Flushi	ng Mediu	m Type
▼ - Groundwater Level				Scale: 1:100											

P	Project Title: Rhod	ia, Whiteha	aven				PI	H1	0	10	
) Geo	Project Number: 40	146		Client: Stor	y Homes		Sheet 2				
ID GeoEnvironmental Limited	GL (mAOD): 86.80			N Coord: 5	15780		E Coor	d: 29742	20		
Date: 07/06/2022	Method: Casagran	ide C6		Driller: GD0	<u> </u>		Logged	l By: NV	V		
Core/Samples TCR SCR RQD	FI ISPT	Level Le	gend	Depth (m)	Description	ı			W	ater Sta	ındpipe
		70.30 60.80 60.40		26.00 26.40	Dark gro (MIDDL Grey MI (MIDDL	E COAL ME JDSTONE. E COAL ME E COAL ME JDSTONE. E COAL ME	DSTON ASURE ASURE	E. S)			
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	REMARKS No Groundwat Air flush Scale: 1:100	ter Encount	tered			Water Strik Date Daily Log C Date	Strike		Minutes Flushi From	ng Mediu	Remark:

			Pr	oject Titl	e: Rhod	lia, Whit	ehaven				PI	1 1	0	<u>11</u>	
	ie.	0	Pr	oject Nu	mber: 40	046		Client: Sto	ry Homes		Sheet ²				
iD GeoEnviror	nmental Lim	iited	GI	L (mAOD): 89.40)		N Coord: 5	15787		E Coor	d: 2973	86		
Date: 07/06/20)22		М	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	l By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	ndpipe
						88.40_ 87.40_ 87.40_ 78.70_ 75.60 75.40_ 75.00 74.80		13.80	Dark (MIDDL (MID	brown silty brown silty bred to be hi ne bedrock. HERED PEI MEASURES TONE. HERED PEI MEASURES TUDSTONE TONE. E COAL ME	y sandy ighly we have selected as we have sele	CLAY athered MIDDLE brown MIDDLE illtstone S) STONE r shale S) S) S)			
KEY D - Disturbed B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea	ole ed mple Penetrat etration n Test 'I ar Vane atter Stri	ion Test Test N' Value kPa ke		No Gr Air flu			ountered			Date Daily Log C	Strike	Level S Water	Minutes Flushi From	s Casing ing Mediu	Remark: m Type

	Project Ti	tlo: Phos	dia Mhite	ohovon					11		1 1	
•	Project ii	tie. Knot	lia, vvriitė	enaven	.			ואן	H1	U	11	
) Geo	Project N	umber: 40	046		Client: Stor	y Homes		Sheet 2	2 Of 2			
iD GeoEnvironmental Limited	GL (mAO	D): 89.40	0		N Coord: 5	15787		E Coor	d: 2973	86		
Date: 07/06/2022	Method:	Casagra	nde C6		Driller: GD0	C		Logged	d By: NV	V		
Core/Samples TCR SCR RC	QD FI	ISPT	Level	Legend	Depth (m)	Description	1			w	ater Sta	ndpipe
			66.70		22.70	COAL. (MIDDL Grey M (MIDDL	LE COAL ME UDSTONE. LE COAL ME	ASURE	S)			
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	No G Air fl	MARKS Groundwa ush		untered			Date Daily Log C	Strike	Level S Water	Minutes Flushi From	Casing	Remark Im Type

	Pr	roject Title	e: Rhod	lia, Whit	ehaven				PI	H1	0	12	
Geo	Pr	oject Nur	mber: 40)46		Client: Stor	ry Homes		Sheet ²				
iD GeoEnvironmental Limited	GI	L (mAOD): 88.80)		N Coord: 5	15756		E Coor	d: 2973	71		
Date: 07/06/2022	M	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	l By: NV	V		
Core/Samples TCR SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	ndpipe
		88.60 87.30 86.30 85.90		1.50 2.50 2.90	Black M (MIDDL Grey MIDDL Grey Siltsto (MIDDL Grey MIDDL		ASURE ASURE ASURE ASURE	brown S) S) h thir					
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		No Gr Air flus			ountered			Water Strik Date Daily Log C Date	Strike	Level S Water	Minutes Flushi From	cong Mediu	Remark:

			Pro	oject Title	e: Rhod	lia, White	ehaven				P	H1	0	12	
1)0	ie.	0	Pro	oject Nui	mber: 40	046		Client: Stor	ry Homes		Sheet 2				
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 88.80)		N Coord: 5	15756		E Coor	d: 2973	71		
Date: 07/06/20	22		Me	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	d By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	/ater Sta	andpipe
						70.80 70.60 70.20 70.00 64.30		18.00 18.20 18.60 18.80 18.30 24.50	COAL. (MIDDL Black Mine tak (MIDDL COAL (MIDDL Grey Mine) (MIDDL Grey Mine) (MIDDL Grey Mine) (MIDDL Solid dream)	E COAL ME MUDSTONE DUIAT SHAILE E COAL ME UDSTONE E COAL ME UDSTONE E COAL ME	EASURE Frecov gravel. EASURE EASURE EASURE EASURE EASURE	S) ered as S) S) drilling			
KEY D - Disturbed S B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea	ed mple Penetrat etration n Test 'I ar Vane ater Stri	Test N' Value kPa ke		No Gr Air flus		ter Encc	untered			Date Daily Log (Date	Strike	Level SS Water	Minute Flush From	s Casing ing Mediu	Remark Im Type

• • •			Pro	oject Title	e: Rhod	lia, Whit	ehaven				PI	H1	0	13	
()	ie e	0	Pro	oject Nui	mber: 40)46		Client: Stor	ry Homes		Sheet ²				
iD GeoEnviron	mental Lim	ited	GL	. (mAOD): 88.30)		N Coord: 5	15747		E Coor	d: 2973	38		
Date: 06/06/202	22		Ме	thod: C	asagrar	nde C6		Driller: GD	С		Logged	l By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	ndpipe
						88.10 87.40 86.30 86.30 79.30 79.10		0.20 0.90 1.2.00 2.00 1.3.00 1.00 1	Sandy I (TOPSC) Yellow Interpretended in the precent of the precen	brown silty brown silty bred to be hi ne bedrock. HERED PEI MEASURES TONE. HERED PEI MEASURES UDSTONE. E COAL ME	y sandy ghly we NNINE I (1) (2) (2) (2) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	CLAY athered MIDDLE brown MIDDLE S) STONE r shale S) s)			
KEY D - Disturbed S B - Bulk Sampl U - Undisturbe W - Water San S - Standard P C - Cone Pene N - Penetratior V - Hand Sheat Groundwa	le d nple renetrat etration Test 'N r Vane ater Stril	Test N' Value kPa ke			sh		puntered			Date Daily Log C	Strike	Level S Water	Minute: Flushi	ng Mediu	Remark

• •			Pro	oject Title	e: Rhod	lia, White	ehaven				PI	H1	0	13	
	ie e	0	Pro	oject Nui	mber: 40	046		Client: Stor	ry Homes		Sheet 2	2 Of 2			
iD GeoEnviror	nmental Lim	ited	GL	_ (mAOD): 88.30)		N Coord: 5	15747		E Coor	d: 2973	38		
Date: 06/06/20	22		Me	ethod: C	asagrar	nde C6		Driller: GD0	C		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n	•		W	ater Sta	ndpipe
						62.30_		22.30	Black o (MIDDL COAL. (MIDDL Dark orecove gravel. (MIDDL	rganic MUD: E COAL ME E COAL ME grey/black red as fine E COAL ME	STONE. ASURE MUDS a tabula EASURE	S) STONE sr shale S)			
KEY D - Disturbed 3 B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea	ed mple Penetrat etration n Test 'N ar Vane ater Stril	ion Test Test N' Value kPa ke		No Gr Air flus		ter Encc	ountered			Date Daily Log (Date	Strike	Level S Water	Minutes Flushin	Casing ng Mediu	Remark:
										1			<u> </u>	1	

• •			Pr	oject Titl	e: Rhoo	dia, Whit	ehaven				PI	H1	0	14	
1)0	ie.	0	Pr	oject Nu	mber: 40	046		Client: Stor	ry Homes		Sheet ²				
iD GeoEnviror	nmental Lim	iited	GL	_ (mAOD): 87.00)		N Coord: 5	15737		E Coor	d: 2973	92		
Date: 07/06/20	22		Me	ethod: C	Casagrai	nde C6		Driller: GD	С		Logged	l By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			V	Vater Sta	andpipe
						72.50 72.50 72.30 71.60 71.40		14.50 15.60	COAL. (MIDDL Grey M. Iaminat (MIDDL Grey M. (MIDDL Grey M. (MIDDL Grey M. (MIDDL Grey M. (MIDDL	E COAL ME UDSTONE. E COAL ME UDSTONE. E COAL ME UDSTONE. E COAL ME	ASURE ASURE ASURE	brown S) iltstone S) S)			
KEY D - Disturbed 3 B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea - Groundwa - Groundwa	ed mple Penetrat etration n Test 'I ar Vane ater Stri	ion Test Test N' Value kPa ke		No Gr Air flu:			ountered		Borehol	Date Daily Log (Date	Strike	Level S Water	Minute Flush From	es Casing ning Mediu To	Remark:

•		Project Ti	le: Rhoc	lia, White	ehaven				PI	H1	0	14	
() Geo)	Project N	ımber: 40)46		Client: Stor	y Homes		Sheet 2				
iD GeoEnvironmental Limited		GL (mAO	D): 87.00)		N Coord: 5	15737		E Coor	d: 2973	92		
Date: 07/06/2022		Method:	Casagrar	nde C6		Driller: GD0	0		Logged	d By: NV	V		
Core/Samples TCR SC	CR RQI	D FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	ndpipe
				64.00_		23.00	COAL. (MIDDL Grey MI (MIDDL	E COAL ME UDSTONE. E COAL ME	ASURE	S)			
KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration C - Cone Penetration Test N - Penetration Test 'N' V V - Hand Shear Vane kPa	st ′alue	No G Air fl	MARKS roundwaush		untered			Date Daily Log C	Strike		Minutes Flushii	Casing on the control of the control	Remark Im Type

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	ie e	0	Pro	oject Nui	mber: 40	046		Client: Sto	ry Homes		Sheet ⁻	1 Of 2			
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 87.10)		N Coord: 5	15713		E Coor	d: 2973	75		
Date: 07/06/20	22		Me	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	/ater Sta	ndpipe
						86.90 85.10_ 84.10_ 83.90		3.00 3.00 15.60	Sandy I (TOPSC) Weath MUDS (WEAT COAL I fine tal (MIDDL Grey I lamina (MIDDL MIDDL MIDDL MIDDL MIDDL MIDDL MIDDL	ered pale TONE. HERED PEI MEASURES MUDSTONE DUIAT Shale E COAL ME MUDSTONE TONE TONE TONE TONE TONE TONE TONE	yellow NNINE I TERCOV gravel. ASURE With s TASURE	STONE			
KEY D - Disturbed S B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetratio V - Hand Shea - Groundwa Groundwa	ed mple Penetrat etration n Test 'I ar Vane ater Stri	Test N' Value kPa ke		No Gr Air flus			ountered			Water Strike Date Daily Log C Date	Strike	Level S Water	Minute: Flushi From	s Casing ing Mediu	Remark m Type
					00										

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1)0	ie e	0	Pro	oject Nur	mber: 40	046		Client: Stor	ry Homes		Sheet 2				
iD GeoEnviron	nmental Lim	nited	GL	. (mAOD): 87.10)		N Coord: 5	15713		E Coor	d: 2973	75		
Date: 07/06/20	22		Me	ethod: C	asagrar	nde C6		Driller: GD0	С		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	ndpipe
						59.10_ 58.40_ 57.10_		28.00	COAL (MIDDL Grey M laminat (MIDDL Grey M (MIDDL Grey M (MIDDL	with thin b tions. E COAL ME IUDSTONE tions. E COAL ME	EASURE With s EASURE dry) EASURE	udstone (S) (SS) (SS) (SS)	3	հասավատակատակատակատակատակատակատակատակատակատ	
KEY D - Disturbed S B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea U - Groundwa Groundwa	ed mple Penetrat etration on Test 'N ar Vane ater Stril	ion Test Test N' Value kPa ke		1	sh	ter Encc	untered			Date Daily Log C	Strike	Level S Water	Minutes Flushi From	Casing	Remark:

			Pro	oject Title	e: Rhod	lia, Whit	ehaven				PI	H1	0	16	
1)0	ie e	0	Pro	oject Nur	mber: 40)46		Client: Stor	ry Homes		Sheet ²				
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 86.40)		N Coord: 5	15693		E Coor	d: 2973	51		
Date: 06/06/20	22		Me	thod: C	asagrar	nde C6		Driller: GD	С		Logged	l By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	ındpipe
						78.80 78.40_		7.60 8.30	Sandy I (TOPSC) Weath MUDS (WEAT COAL M Grey M (MIDDL COAL. (MIDDL Grey M Iaminat (MIDDL	DIL) DIETED PER MEASURES UDSTONE. E COAL ME TONE. E COAL ME	Inaic ASURE ASURE ASURE ASURE ASURE	brown MIDDLE S) clayey S) s)		 	
KEY D - Disturbed 3 B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene	le d nple Penetrat						ountered			Water Strik	Strike	Level	Minutes	s Casing	Remark
N - Penetration V - Hand Shea	n Test 'I ar Vane	√ Value kPa								Daily Log (T			_l ng Mediu T_	
- Groundwa				Scale:	1:100					Date	Casing	Water	From	То	Туре

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1)0	ie e	0	Pro	oject Nur	mber: 40)46		Client: Stor	ry Homes		Sheet 2				
iD GeoEnviron	mental Lim	ited	GL	. (mAOD): 86.40)		N Coord: 5	15693		E Coor	d: 2973	51		
Date: 06/06/20	22		Me	ethod: C	asagrar	nde C6		Driller: GD0	C		Logged	l By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	ndpipe
						62.90 61.40 60.50		23.50	Dark (recove gravel. (MIDDL Grey Mamina (MIDDL COAL. (MIDDL Grey Mamina (MIDDL	grey/black red as fine E COAL ME	MUDS tabula E with s ASURE ASURE ASURE	STONE r shale S) iltstone S) iltstone S)	-	հուսավաստիտումիատովաստոկատուկատովաստիտումիատովաստոկատուկատումիատովաստոկատումիաստիտումիաստի	
KEY D - Disturbed S B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea	le Id Inple Penetrat Perration In Test 'N In Vane Interestration	Test N' Value kPa ke		1	sh	ter Enco	untered			Date Daily Log Contact	Strike	Level S Water	Minutes Flushi From	ng Mediu	Remark:

			Pro	oject Title	e: Rhoc	lia, Whit	ehaven				PI	H1	0	17	
1)0	ie e	0	Pro	oject Nur	mber: 40	046		Client: Stor	ry Homes		Sheet ²				
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 84.50)		N Coord: 5	15676		E Coor	d: 2973	78		
Date: 07/06/20	22		Me	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	l By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n			W	ater Sta	ındpipe
						82.50_ 82.20 81.50_ 81.30		0.20 0.20 2.30 3.3.2 3.3.3 3.00	sandy I (TOPSC Weat! MUDS (MIDDL Grey M lamina' (MIDDL COAL. (MIDDL Pale y Siltsto (MIDDL	OIL) nered ye STONE. ECOALME MUDSTONE	ASURE ASURE STON ations.	brown S) illtstone S) NE with S) S)		- իստուդիստուդիասուկատուկասուդիստուկատուկատուրասուկատուկասուկատուկասուկատուկատուկատուկատուկատուկատու	
KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test C - Cone Penetration Test										Water Strik	Strike	Level	Minutes	s Casing	Remark
C - Cone Penetration Test N - Penetration Test 'N' Value V - Hand Shear Vane kPa										Daily Log (of Denth	s	Flushi	ng Mediu	m
💆 - Groundwa	ater Stri	ke								Date Date	Casing	Water	From	To	Туре
▼ - Groundwater Level Scale: 1:100															

			Pr	oject Title	e: Rhod	lia, White	ehaven				PI	H1	0	17	
	ie.	0	Pr	oject Nui	mber: 40	046		Client: Stor	ry Homes		Sheet 2				
iD GeoEnviror	nmental Lim	nited	GL	_ (mAOD): 84.50)		N Coord: 5	15676		E Coor	d: 2973	78		
Date: 07/06/20)22		Me	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	l By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			Wa	ater Sta	ndpipe
						66.50_ 66.10 65.90 65.20 65.00 56.60 56.60		18.00 18.40 19.50 19.50 27.90 28.50	Black M (MIDDL COAL. (MIDDL Grey M (MIDDL COAL (MIDDL COAL (MIDDL GREY M (MIDDL	E COAL ME UDSTONE. E COAL ME	ASURE ASURE ASURE ASURE ASURE	S) S) S) S) S) S) S) S)			
KEY D - Disturbed a B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetratio V - Hand Shea	ole ed mple Penetrat etration n Test 'I ar Vane atter Stri	ion Test Test N' Value kPa ke		No Gr Water		ter Enco	untered			Date Daily Log Contact	Strike	Level S Water	Minutes Flushir From	Casing g Mediu	Remark m Type

• •			Pro	oject Title	e: Rhod	lia, White	ehaven				P	H1	0	18	
1)0	ie.	0	Pro	oject Nur	mber: 40	046		Client: Stor	ry Homes		Sheet ¹				
iD GeoEnviron	nmental Lim	ited	GL	. (mAOD): 84.20)		N Coord: 5	15700		E Coor	d: 2974	10		
Date: 07/06/20	22		Me	ethod: C	asagrar	nde C6		Driller: GD0	С		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n			V	Vater Sta	andpipe
						75.20_ 73.20_ 71.50		9.00 11.80 12.70 12.70	Dark (recove gravel. (MIDDL Black or (MIDDL COAL. (MIDDL Grey M (MIDDL Grey M (MIDDL	DIL) nered yes STONE. E COAL ME MUDSTONE tions. E COAL ME	MUDS angula SASURE SASU	STONE			
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										Water Strik Date Daily Log 0	Strike	Level	Minute	es Casing	Remark
▼ - Groundwa ▼ - Groundwa	ater Stri	ke		Scale:	1:100					Date	Casing	Water	From	То	Туре

• •			Pro	oject Title	e: Rhod	lia, White	ehaven				P	H1	0	18	
1)0	ie e	0	Pro	oject Nui	mber: 40)46		Client: Stor	ry Homes		Sheet 2				
iD GeoEnviron	nmental Lim	ited	GL	. (mAOD): 84.20)		N Coord: 5	15700		E Coor	d: 2974	10		
Date: 07/06/20	22		Me	thod: C	asagrar	nde C6		Driller: GD0	С		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	andpipe
						63.20_		21.60 21.60	COAL. (MIDDL Grey M (MIDDL	E COAL ME UDSTONE. E COAL ME	ASURE	S)			
KEY D - Disturbed S B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea	le ed mple Penetrat etration n Test 'I ar Vane atter Stri	Test N' Value kPa ke			sh	ter Enco	untered			Date Daily Log Contact	Strike	Level S Water	Minutes Flushi From	ng Mediu	Remark Jum Type

•		Pro	oject Title	e: Rhod	ia, White	ehaven				PI	H1	0	18	
) Ge	90	Pro	oject Nur	mber: 40)46		Client: Stor	y Homes		Sheet 3				
iD GeoEnvironmental I	Limited	GL	. (mAOD): 84.20)		N Coord: 5	15700		E Coor	d: 2974	10		
Date: 07/06/2022		Мє	ethod: C	asagrar	nde C6		Driller: GD0	0		Logged	d By: NV	V		
Core/Samples TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	andpipe
					48.20		36.00	(MIDDL	DDSTONE. E COAL ME				—————————————————————————————————————	
KEY D - Disturbed Samp B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetr C - Cone Penetratio N - Penetration Test V - Hand Shear Van U - Groundwater S T - Groundwater Le	ration Test on Test t 'N' Value ne kPa trike		1	sh	ter Enco	untered			Date Daily Log Contact	Strike		Minutes Flushi From	Casing mg Mediu	Remark Im Type

• • •			Pro	oject Title	e: Rhod	lia, Whit	ehaven				P	H1	0	19	
	ie e	0	Pro	oject Nur	mber: 40)46		Client: Stor	ry Homes		Sheet '				
iD GeoEnviror	nmental Lim	ited	GL	_ (mAOD): 81.60)		N Coord: 5	15662		E Coor	d: 2974	06		
Date: 07/06/20	22		Me	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	Vater Sta	ndpipe
						79.60_ 79.60_ 72.20 69.20 69.00 68.60_ 68.40		9.40 12.60 13.00	Dark (MIDDL) COAL. (MIDDL) COAL. (MIDDL) COAL. (MIDDL) COAL. (MIDDL)	DIL) nered yes STONE. E COAL ME MUDSTONE tions. E COAL ME	MUDS angula ASURE	STONE			
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							ountered			Water Strik Date Date Daily Log (Strike	Level	Minute	cs Casing	Remark
💆 - Groundwa	V - Hand Shear Vane kPa ✓ - Groundwater Strike									Date Date	Casing	Water	From	To	Туре
Scale: 1:100															

• •			Pro	oject Title	e: Rhod	lia, White	ehaven				P	H1	0	19	
1)0	ie e	0	Pro	oject Nur	mber: 40)46		Client: Stor	ry Homes		Sheet 2				
iD GeoEnviron	mental Lim	iited	GL	. (mAOD): 81.60)		N Coord: 5	15662		E Coor	d: 2974	06		
Date: 07/06/20	22		Me	thod: C	asagrar	nde C6		Driller: GD0	С		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	andpipe
						60.20 59.20 57.60_		21.40	21.00 - COAL ((MIDDL Grey M (MIDDL	21.40 Damp moist). E COAL ME UDSTONE. E COAL ME	MUDS ASURE	TONE. S)		հուսովուսովուսովուսովուսովուսովուսովուսո	
KEY D - Disturbed S B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea Groundwa Groundwa	le Id Inple Penetrat Perration In Test 'N In Vane Interestration	Test N' Value kPa ke			Flush	ter Enco	untered			Daily Log C	Strike	Level	Minutes Flushi From	Casing	Remark

			Pro	oject Title	e: Rhod	lia, Whit	ehaven				P	H1	0	20	
1)0	ie e	0	Pro	oject Nui	mber: 40	046		Client: Stor	ry Homes		Sheet ⁻				
iD GeoEnviror	nmental Lim	ited	GL	_ (mAOD): 81.70)		N Coord: 5	15685		E Coor	d: 2974	36		
Date: 08/06/20	22		Me	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	d By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			V	Vater Sta	ındpipe
						79.70_ 78.80 78.50 75.70 75.60 75.00 75.00 66.60 65.90		2.00 3.20 3.20 6.00 6.50 6.70 15.10	sandy (TOPSC) Weath MUDS (MIDDL) Grey MI (MIDDL) Black COAL (MIDDL) Dark grey (MIDDL) Grey MI (MIDDL) Grey MI (MIDDL) Grey MI (MIDDL) COAL (MIDDL) Grey Siltsto (MIDDL) COAL (MIDDL) Pale grey (MIDDL) Pale grey (MIDDL)	DIL) DIE PER OF YEAR OF TONE. E COAL ME UDSTONE. E COAL ME ORGANIC MUDSTONE. E COAL ME UDSTONE. E COAL ME UDSTONE. E COAL ME UDSTONE. E COAL ME MUDSTONE E COAL ME MUDSTONE E COAL ME MUDSTONE E COAL ME WITH STONE WITH STO	ASURE	brown S) S) NE with S) E. S) Sh thin S) churous S)			
KEY D - Disturbed S B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea	ed mple Penetrat etration n Test 'I ar Vane ater Stri	Test N' Value kPa ke		No Gr Water	ARKS oundwa Flush		Duntered		20101101	Water Strik Date Daily Log C	Strike	Level S Water	Minute Flush From	Casing Mediu	Remark:

•			Pro	oject Title	e: Rhod	lia, White	ehaven				P	H1	0	20	
	ie e	0	Pro	oject Nui	mber: 40	046		Client: Stor	ry Homes		Sheet 2	2 Of 2			
iD GeoEnviror	nmental Lim	ited	GL	_ (mAOD): 81.70)		N Coord: 5	15685		E Coor	d: 2974	36		
Date: 08/06/20	22		Me	ethod: C	asagrar	nde C6		Driller: GD	C		Logged	By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n	•		W	ater Sta	andpipe
						60.70_		21.00	(MIDĎL	Borehole At	EASURE				
KEY D - Disturbed 3 B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea - Groundwa	ed mple Penetrat etration n Test 'N ar Vane ater Stril	Test N' Value kPa ke				ter Enco	ountered			Date Daily Log C	Strike	Level S Water	Minutes Flushi	ng Mediu	Remark
▼ - Groundwa	ater Lev	el		Scale:	1:100										
										1					

			Pro	oject Title	e: Rhod	lia, Whit	ehaven				PI	H1	0	21	
1)0	ie.	0	Pro	oject Nur	mber: 40)46		Client: Sto	ry Homes		Sheet ²				
iD GeoEnviror	nmental Lim	ited	GL	_(mAOD): 80.00)		N Coord: 5	15711		E Coor	d: 2974	54		
Date: 08/06/20	22		Me	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	l By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n			V	/ater Sta	andpipe
						79.80 - 78.00_ - 75.00_ - 71.40 - -		2.00 5.00 1.00	Sandy (TOPSC) Weath MUDS (MIDDL) Grey Mi (MIDDL) Dark (recove gravel. (MIDDL) COAL odour. (MIDDL) Grey Mi (MIDDL)	DIL) nered year STONE. ECOAL ME UDSTONE. ECOAL ME grey/black red as fine ECOAL ME	ASURE MUDS tabula	brown S) STONE r shale S) hurous			
KEY D - Disturbed 3 B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea V - Groundwa Groundwa	ed mple Penetrat etration n Test 'I ar Vane ater Stri	Test N' Value kPa ke		No Gr Water	Flush		ountered			Date Daily Log Contact	Strike	Level S Water	Minute Flush From	s Casing ing Mediu	Remarks Im Type
▼ - Groundwater Level Scale: 1:100															

F	Project Title: Rhodia	a, White	haven				P	H1	0	21	
S Geo	Project Number: 404	46		Client: Stor	ry Homes		Sheet 2				
iD GeoEnvironmental Limited	GL (mAOD): 80.00			N Coord: 5	15711		E Coor	d: 2974	54		
Date: 08/06/2022	Method: Casagrand	de C6		Driller: GD0	C		Logged	d By: NV	V		
Core/Samples TCR SCR RQD	FI ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	andpipe
		56.00 55.80 54.40 53.00		24.00 24.20 25.20 25.60 27.00	Dark (recove gravel. (MIDDL COAL. (MIDDL COAL. (MIDDL Grey MI (MIDDL Grey MI (MIDDL MIDDL MIDDL MIDDL COAL)	grey/black red as fine E COAL ME E COAL ME E COAL ME UDSTONE. E COAL ME UDSTONE. E COAL ME Borehole At	MUDS tabula ASURE ASURE ASURE	STONE or shale S) S) S) S)			
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	REMARKS No Groundwate Water Flush	er Encou	untered			Water Strik Date Daily Log C	Strike	Level S Water	Minute:	c Casing	Remark Im Type

iD GeoEnvironmental Limited	Project Number: 4046 GL (mAOD): 78.90 Method: Casagrande C6	Client: Story Homes N Coord: 515727 Driller: GDC	PH102 Sheet 1 Of 2 E Coord: 297464	
Date: 07/06/2022	· ,		E Coord: 297464	
	Method: Casagrande C6	Driller: GDC		
Core/Samples TCR SCR RQI			Logged By: NW	
			Wate	er Standpipe
	76.90	TOPSOIL sandy LO (TOPSOIL We at he M U D S T (MIDDLE Grey MUE (MIDDLE Grey	COAL MEASURES) DOSTONE. COAL MEASURES) DOSTONE. COAL MEASURES) DOSTONE With Siltstone	իսուսախոստվուսուվուսուվուսուկուսուկուսովուսուվուսուվուսուվուսուկուսուկուսուկուսովուսուվուսուվուսուվուսուվուսու
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	REMARKS No Groundwater Encounter Water Flush Scale: 1:100	ed C	Daily Log Of Depths Flushing	Casing Remark Medium To Type

• •			Pro	oject Title	e: Rhod	lia, White	ehaven				P	H1	02	22	
1)0	ie e	0	Pro	oject Nur	mber: 40)46		Client: Stor	y Homes		Sheet 2				
iD GeoEnviron	nmental Lim	ited	GL	. (mAOD): 78.90)		N Coord: 5	15727		E Coor	d: 2974	64		
Date: 07/06/20	22		Me	ethod: C	asagrar	nde C6		Driller: GD0	0		Logged	l By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	ndpipe
	re/Samples TCR SCR F - Disturbed Sample - Bulk Sample - Undisturbed - Water Sample - Standard Penetration Test - Cene tration Test - Penetration					59.40		19.50	COAL. (MIDDL Grey M lamina (MIDDL	E COAL ME	ASURE : with S	S) iltstone S)			
B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea U - Groundwa	le d mple Penetrat etration n Test 'N ar Vane ater Stril	Test N' Value kPa ke		1	Flush	Ler Enco	Luntered			Water Strik Date Daily Log C	Strike	Level S Water	Minutes Flushii From	Casing on the control of the control	Remark m Type

			Pro	oject Title	e: Rhod	lia, Whit	ehaven				PI	H1	0	23	
1)0	ie e	0	Pro	oject Nui	mber: 40)46		Client: Stor	ry Homes		Sheet '				
iD GeoEnviron	nmental Lim	ited	GL	. (mAOD): 89.80)		N Coord: 5	15784		E Coor	d: 2973	21		
Date: 06/06/20	22		Мє	thod: C	asagrar	nde C6		Driller: GD	С		Logged	l By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n			W	ater Sta	ındpipe
	e/Samples TCR SCR I					89.60 89.10 88.30 88.30 79.50 79.10		9.60 1.70	Sandy I (TOPSC Yellow Interpre mudsto (MIDDL Weat I M U D S (WEAT COAL I Grey M (MIDDL Black o COAL (MIDDL Grey M lamina (MIDDL	DIL) brown silty bred to be hi ne bedrock. E COAL ME nered ye STONE. HERED PEI MEASURES UDSTONE E COAL ME ck organic M. E COAL ME organic MU traces. E COAL ME	y sandy ighly we in the interest of the intere	CLAY athered S) brown MIDDLE S) DNE. S) NE with S)		 	
B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration	le d nple Penetrat etration n Test 'N	ion Test Test N' Value					ountered			Water Strik Date Daily Log (Strike	Level	Minutes	s Casing	Remark
💆 - Groundwa	ater Stri	ke		Scale:	1:100					Date	Casing	Water	From	То	Туре

•	Pr	oject Title	e: Rhod	lia, White	ehaven				P	H1	02	23	
() Geo	Pr	oject Nur	mber: 40)46		Client: Stor	ry Homes		Sheet 2				
ID GeoEnvironmental Limited	GL	_ (mAOD): 89.80)		N Coord: 5	15784		E Coor	d: 2973	21		
Date: 06/06/2022	Me	ethod: C	asagrar	nde C6		Driller: GD0	С		Logged	d By: NV	V		
Core/Samples TCR SCR F	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	ndpipe
				64.20		25.60	Moist b as fine (MIDDL COAL. (MIDDL Wet da recover (MIDDL	lack MUDST tabular shale E COAL ME	ONE ree e gravel. ASURE	covered. S) STONE shale. S)	I	հուսուվուսուվուսուվուսուվուսուվուսովուսո	
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		No Gr Air flus		ter Enco	untered			Date Daily Log (Date	Strike	Level S Water	Minutes Flushii From	Casing	Remark

			Pro	oject Title	e: Rhod	lia, Whit	ehaven				P	H9	90	1	
1)0	ie.	0	Pro	oject Nui	mber: 40	046		Client: Stor	ry Homes		Sheet ¹				
iD GeoEnviron	nmental Lim	ited	GL	_(mAOD): 92.95	5		N Coord: 5	15681		E Coor	d: 2973	72		
Date: 01/09/20	21		Me	ethod:				Driller: GD	С		Logged	l By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			M	/ater Sta	andpipe
						92.65 91.95 91.45 89.95 86.95	× × × × × × × × × × × × × × × × × × ×	1.50 1.50 1.4.00	Grey-bl as fine (MIDDL	er brown silty E COAL ME brown clay red MUDST E COAL ME ty MUDSTO E COAL ME brown SIL IUDSTONE E COAL ME COAL ME COAL ME COAL ME	ASURE Interpret ONE. ASURE NE. ASURE TSTON I lamin ASURE ASURE CASURE	S) ed to be S) S) S) NE with ations S) S)		***************************************	
KEY D - Disturbed S B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea	ed mple Penetrat etration n Test 'I ar Vane ater Stri	Test N' Value kPa ke		No Gr	ARKS oundwa		ountered			Water Strik Date Daily Log (Date	Strike	Level S Water	Minute Flush From	s Casing ing Mediu	Remark m Type

			Pro	oject Titl	e: Rhod	lia, White	ehaven				PI	H9	a N	1	
1)0	ie.	0	Pro	oject Nu	mber: 40)46		Client: Sto	ry Homes		Sheet 2			I	
iD GeoEnviror	nmental Lim	ited	GL	_ (mAOD): 92.95	5		N Coord: 5	15681		E Coor	d: 2973	72		
Date: 01/09/20	21		Me	ethod:				Driller: GD	С		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	ndpipe
	SY Disturbed Sample Bulk Sample					75.95_ 74.95_ 74.65 71.95_ 67.45 66.15 65.45	× × × × × × × × × × × × × × × × × × ×	28.80	as fine (MIDDL Black M (MIDDL COAL. (MIDDL Grey-ba (MIDDL Grey-ba (MIDDL Grey M (MIDDL Grey M (MIDDL Hard MUDS (MIDDL	ACK MUDST to medium s.E. COAL ME IUDSTONE.E.E.COAL ME ACK MUDSTO.E.E.COAL ME IE.E.COAL ME IE.E.E.COAL ME IE.E.E.E.E.E.E.E.E.E.E.E.E.E.E.E.E.E.E	EASURE EASURE TONE ASURE ASURE ASURE ASURE EASURE EASURE EASURE EASURE EASURE	S) Il traces. S) S) S) and ations S) S) E with S)		 	
B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea U - Groundwa	ed mple Penetrat etration n Test 'I ar Vane ater Stri	Test N' Value kPa ke		No Gr	ARKS oundwa	ter Encc	ountered			Water Strik Date Daily Log (Date	Strike	Level S Water	Minutes Flushi From	s Casing ng Mediu	Remark:

			Pr	oject Titl	e: Rhoc	lia, Whit	ehaven				PI	H9	90	2	
	ie.	0	Pr	oject Nu	mber: 40	046		Client: Stor	ry Homes		Sheet ²		_		
iD GeoEnviror			GL	_ (mAOD): 91.67	7		N Coord: 5	15889		E Coor	d: 2973	79		
Date: 01/09/20	21		Me	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	า			W	/ater St	andpipe
	re/Samples TCR SCR RQD					90.37 - 79.27 79.17 78.67 78.57		1.30 1.30 1.30 1.30 1.3.00 1.3.00 1.3.10	Sandy (TOPSC Yellov Interp MUDS (MIDDL Grey a MUDS (MIDDL Grey M (MIDDL Grey M (MIDDL Grey M (MIDDL Grey M (MIDDL	w-brown reted to b TONE. E COAL ME	silty pe wea ASURE ASURE ASURE ASURE	CLAY athered S) s of silty S) S) S)			
B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene	ed mple Penetrat etration n Test 'I ar Vane ater Stri	Test N' Value kPa ke		No Gr Air Mi			ountered			Date Daily Log (Date	Strike		Minutes Flushi From	s Casing	

			Pro	oject Title	e: Rhod	lia, White	ehaven				P	H9	902	2	
1)0	ie e	0	Pro	oject Nui	mber: 40	046		Client: Stor	ry Homes		Sheet 2				
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 91.67	7		N Coord: 5	15889		E Coor	d: 2973	79		
Date: 01/09/20	21		Мє	ethod: C	asagrar	nde C6		Driller: GD0	С		Logged	d By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n			W	ater Sta	andpipe
						73.27		21.40	Broken Probab (PROB) Solid dr (MIDDL	Ground & Gro	loss of rkings KINGS) o returns	f flush		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
KEY D - Disturbed 3 B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea	ed mple Penetrat etration n Test 'I ar Vane ater Stri	Test N' Value kPa ke		No Gr Air Mis		ter Encc	Lountered			Water Strik Date Daily Log C	Strike	Level S Water	Minutes Flushii From	Casing ng Mediu	Remark:

			Pr	oject Titl	e: Rhoo	lia, Whit	ehaven				PI	H9	90	3	
	ie.	0	Pr	oject Nu	mber: 40	046		Client: Stor	ry Homes		Sheet ²				
iD GeoEnviror	nmental Lim	iited	GI	L (mAOD): 88.20)		N Coord: 5	15872		E Coor	d: 2974	07		
Date: 01/09/20)21		М	ethod: C	Casagrai	nde C6		Driller: GD	С		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	/ater Sta	ındpipe
						87.90 86.90 81.70 81.60		1.30 5.00 15.50	COAL. (MIDDL Grey MIDDL	E COAL ME UDSTONE. E COAL ME UDSTONE. E COAL ME	silty De wea ASURE NE. ASURE ASURE ASURE ASURE	CLAY ttherec S) S) S) udstone			
KEY D - Disturbed a B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea - Groundwa - Groundwa	ole ed mple Penetrat etration n Test 'I ar Vane atter Stri	Test N' Value kPa ke		No Gr Air Mi		ter Enco	untered			Water Strik Date Daily Log (Date	Strike	Level S Water	Minutes Flushi From	s Casing ing Mediu	Remark m Type

			Pr	roject Titl	e: Rhoc	lia, White	ehaven				PI	HS	<u>)U</u>	3	
i) (ie e	0	Pr	roject Nu	mber: 40	046		Client: Stor	ry Homes		Sheet 2		,	J	
iD GeoEnviron	ımental Lim	ited	G	L (mAOD): 88.20)		N Coord: 5	15872		E Coor	d: 2974	07		
Date: 01/09/20	21		M	ethod: C	asagrar	nde C6		Driller: GD0	C		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n	•		W	ater Sta	andpipe
	iD GeoEnvironmental Limited ate: 01/09/2021 TCR SCR RO Pre/Samples TCR SCR RO Disturbed Sample Bulk Sample Undisturbed Und					64.20	× × × × × × × × × × × × × × × × × × ×	24.00	laminai (MIDDL	Borehole At	ASURE	S)			
B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea U - Groundwa	le d mple Penetrat etration n Test 'N ar Vane ater Stril	Test N' Value kPa ke		No Gr Air Mi		ter Enco	untered			Date Daily Log (Date	Strike	Level S Water	Minutes Flushi From	ng Mediu	Remark:

			Pro	oject Title	e: Rhod	lia, White	ehaven				PI	H 9	90	4	
1)0	ie.	0	Pro	oject Nur	mber: 40)46		Client: Stor	ry Homes		Sheet ²				
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 90.00)		N Coord: 5	15862		E Coor	d: 2973	89		
Date: 01/09/20	21		Мє	ethod: C	asagrar	nde C6		Driller: GD0	С		Logged	l By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	ı			W	ater Sta	ındpipe
						88.70 88.70 		1.50 1.20 1.20	Sandy (TOPSC Yellov Interpi MUDS (MIDDL Grey al MUDST (MIDDL Grey M (MIDDL Grey M (MIDDL Grey M (MIDDL	V-brown reted to be TONE. E COAL ME and dark grefone. E COAL ME	silty pe wea ASURE y bands ASURE ASURE ASURE	CLAY thereo S) of silty S) NE with S) S)			
KEY D - Disturbed 3 B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene	le d nple Penetrat etration	ion Test Test		1			ountered			Water Strik	Strike	Level	Minutes	s Casing	Remark
N - Penetration V - Hand Shea V - Groundwa	ar Vane	kPa								Daily Log C				ing Mediu	
▼ - Groundwa				Scale:	1:100					Date	Casing	Water	From	То	Туре

			Pro	oject Title	e: Rhod	lia, Whit	ehaven				P	H9	904	4	
	зe	O	Pro	oject Nui	mber: 40	046		Client: Stor	ry Homes		Sheet :				
iD GeoEnviror	nmental Lim	nited	GL	. (mAOD): 90.00)		N Coord: 5	15862		E Coor	d: 2973	89		
Date: 01/09/20	21		Me	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	andpipe
	XEY D - Disturbed Sample B - Bulk Sample J - Undisturbed V - Water Sample S - Standard Penetration Test C - Cone Penetration Test T - Penetration Test 'N' Value T - Hand Shear Vane kPa Z - Groundwater Strike					71.50 71.00_ 70.20_ 69.00_		18.50 19.80	Broken Probab (PROB) Partial Driller r to drillir (MIDDL Partial MUDS' (MIDDL	Ground & sile minework ABLE WORK returns coreported very grogress. E COAL ME Returns corone with E COAL ME Borehole At	loss of kings KINGS) nprising little re ASURE Dmprisi coal tr	COAL Sistance S) ng grey aces. S)			
B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetratio V - Hand Shea	ole ed mple Penetrat etration n Test 'I	tion Test Test N' Value		1		ter Enco	ountered			Water Strike Date Date Daily Log 0	Strike	Level	Minutes	s Casing	Remark
Groundwa	ater Stri	ke		Scale:	1:100					Date	Casing		From	То	Туре

			Pr	oject Title	e: Rhod	lia, White	ehaven				PI	HS	90	5	
1)0	ie e	0	Pr	oject Nui	mber: 40	046		Client: Stor	ry Homes		Sheet ¹				
iD GeoEnviror	mental Lim	iited	GL	_ (mAOD): 91.75	5		N Coord: 5	15845		E Coor	d: 2973	67		
Date: 01/09/20	21		Me	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			V	Vater Sta	andpipe
						91.45 90.75		1.00	Sandy (TOPSC Yellov Interpi MUDS (MIDDL Grey al MUDST (MIDDL	DIL) W-brown reted to be TONE. E COAL ME nd dark gre TONE. E COAL ME	silty pe wea ASURE y bands ASURE DSTON ASURE	CLAY athered s of silty s of silty ES)			
KEY D - Disturbed S B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea	le d nple Penetrat etration n Test 'I ar Vane	Test V Value kPa				ter Enco	ountered			Date Date Daily Log O	Strike		Minute Flush From	ning Mediu	
▼ - Groundwa				Scale:	1:100					Date	Casing	vvaler	FIOM	10	Туре

			Pro	oject Title	e: Rhod	lia, White	ehaven				PI	H 9	90	5	
1)0	ie e	0	Pro	oject Nur	mber: 40)46		Client: Stor	ry Homes		Sheet 2				
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 91.75	5		N Coord: 5	15845		E Coor	d: 2973	67		
Date: 01/09/20	21		Ме	thod: C	asagrar	nde C6		Driller: GD0	C		Logged	l By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n			w	ater Sta	andpipe
						68.75_ 67.35		23.00	Broken Probab (PROB) Solid drecove compri (MIDDL	Ground - Ile Minewor ABLE WORL FILLING Grey Ground - Ile Minewor ABLE WORL FILLING Grey E COAL ME	loss of kings. KINGS)	S) S) flush -	-	հուսաիտոսիտոսիտոսիտոսիտոսիտոսիտոսիտոսիտոսիտոս	
KEY D - Disturbed S B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea Groundwa Groundwa Groundwa	le ed mple Penetrat etration n Test 'N ar Vane atter Stril	Test N' Value kPa ke				ter Enco	ountered			Daily Log C	Strike	Level S Water	Minutes Flushi From	casing Casing	Remark Jum Type
Giouriawa		Scale:	1:100												

	Project Title: Rhod	ia, White	haven				PI	H9	90	5	
() Geo	Project Number: 40)46		Client: Stor	y Homes		Sheet 3				
ID GeoEnvironmental Limited	GL (mAOD): 91.75	i		N Coord: 5	15845		E Coor	d: 2973	67		
Date: 01/09/2021	Method: Casagran	nde C6		Driller: GD0	0		Logged	d By: NV	V		
Core/Samples TCR SCR RQE) FI ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	ndpipe
		52.25		39.50	conpri (MIDDL)	rilling accommy of up to sing grey E COAL ME Partial return E COAL ME UDSTONE. E COAL ME Borehole At	o 50% MUDST ASURE ASURE ASURE	S) eturns. S)			
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	REMARKS No Groundwat Air Mist Scale: 1:100	ter Encou	untered			Water Strik Date Daily Log C	Strike	Level S Water	Minutes Flushi From	ng Mediu	Remark

			Pro	oject Title	e: Rhod	lia, Whit	ehaven				P	H9	90	6	
1)0	ie e	0	Pro	oject Nui	mber: 40)46		Client: Stor	ry Homes		Sheet ¹				
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 88.24	ļ		N Coord: 5	15847		E Coor	d: 2974	09		
Date: 01/09/20	21		Ме	thod: C	asagrar	nde C6		Driller: GD0	С		Logged	l By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n			v	Vater Sta	andpipe
						87.94 86.74 81.74 81.64 80.84 80.74		1.50 6.50 6.60 7.50	Sandy (TOPSC Yellov Interpl MUDS (MIDDL Grey al MUDST (MIDDL COAL (MIDDL Grey M (MIDDL Grey M (MIDDL COAL (MIDDL	DIL) w-brown reted to be TONE. E COAL ME and dark gre FONE. E COAL ME	silty De wea ASURE UDSTO ASURE ASURE ASURE	CLAY thereo S) s of silty S) NE with S) S) S)			
KEY D - Disturbed S B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea	le d nple Penetrat etration n Test 'N	Test N' Value					ountered			Water Strik Date Date Daily Log (Strike	Level	Minute	cs Casing	Remark
- Groundwa		Scale:	1:100					Date	Casing	Water	From	To	Туре		

			Pro	oject Title	e: Rhod	lia, Whit	ehaven				P	H9	90	6	
1)0	ie e	0	Pro	oject Nui	mber: 40)46		Client: Stor	ry Homes		Sheet 2			_	
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 88.24	ļ		N Coord: 5	15847		E Coor	d: 2974	09		
Date: 01/09/20	21		Ме	thod: C	asagrar	nde C6		Driller: GD	С		Logged	d By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			١	Nater Sta	andpipe
KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test						64.24_64.24		24.00 224.00	Grey SILTS (MIDDL	E COAL ME M U D S T S T O N E I E COAL ME	ΓΟΝΕ amina ASURE	with ations S)		հուսուվուսովուսովուսովուսովուսովուսովուս	
D - Disturbed S B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetratioo V - Hand Shea	ed enple Penetrat etration on Test 'I' ar Vane	Test N' Value kPa					ountered			Daily Log C	Strike	Level S Water	Minut Flusl From	hing Medi	Remark Jm Type
- Groundwa		Scale:	1:100						2 229		. 5.11	1.5	7.5		

			Pr	oject Title	e: Rhod	lia, Whit	ehaven				PI	HS	90	7	
1)0	ie.	0	Pr	oject Nui	mber: 40	046		Client: Stor	ry Homes		Sheet ²				
iD GeoEnviror			GL	(mAOD): 89.67	7		N Coord: 5	15847		E Coor	d: 2973	88		
Date: 02/09/20	21		Me	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	Vater St	andpipe
						79.67 79.47 78.87 78.77		1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50	Sandy (TOPSC Yellov Interpl MUDS (MIDDL Grey sil (MIDDL Dark gr (MIDDL Grey M (MIDDL Grey M (MIDDL Grey M (MIDDL Grey M (MIDDL	rey-black M traces. E COAL ME UDSTONE E COAL ME UDSTONE E COAL ME UDSTONE E COAL ME	silty De wea ASURE NE. ASURE DSTON ASURE ASURE ASURE	CLAY tthered S) E. S) NE with S) S)			
KEY D - Disturbed S B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea		No Gr Air Mis		ter Enco	ountered			Date Daily Log Contact	Strike		Minute Flush From	es Casing ing Media			

			Pro	oject Title	e: Rhod	lia, White	ehaven				PI	H9	90	7	
	ie.	0	Pro	oject Nur	mber: 40)46		Client: Stor	ry Homes		Sheet 2				
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 89.67	7		N Coord: 5	15847		E Coor	d: 2973	88		
Date: 02/09/20	21		Me	ethod: C	asagrar	nde C6		Driller: GD0	С		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n			w	ater Sta	andpipe
KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed						71.37		18.30	Broken loss of minew (PROB/ Solid dr (MIDDL	ground acof returns orkings. ABLE WORK illing - no re E COAL ME	ccompa s - pr KINGS) eturns. EASURE	nied by obable			
D - Disturbed	ed mple Penetrat etration n Test 'I ar Vane ater Stri	Test N' Value kPa ke		1	st		untered			Water Strik Date Daily Log (Date	Strike	Level S Water	Minutes Flushi From	Casing	Remark:

			Pro	oject Title	e: Rhod	lia, White	ehaven				P	H9	90	8	
1)0	ie.	0	Pro	oject Nur	mber: 40)46		Client: Stor	ry Homes		Sheet ¹				
iD GeoEnviror	nmental Lim	ited	GL	_ (mAOD): 87.00)		N Coord: 5	15821		E Coor	d: 2974	14		
Date: 02/09/20	21		Me	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	d By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			M	/ater Sta	andpipe
						86.70 85.20 82.00 79.80 79.70 79.00 78.90		1.80 1.80 7.20 7.30 8.10	Sandy (TOPSC Yellov Interpl MUDS (MIDDL Grey al MUDST (MIDDL Dark gr (MIDDL Grey M (MIDDL Grey M (MIDDL Grey M (MIDDL	OIL) w-brown reted to both TONE. E COAL ME and dark gre FONE. E COAL ME ey-black MU E COAL ME	silty De wea ASURE JOSTON ASURE ASURE ASURE ASURE	CLAY thereo S) s of silty S) E. S) NE with S)			
KEY D - Disturbed S B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea	ed Inple Penetratetration In Test 'I In Vane	Test V Value kPa				ter Enco	untered			Daily Log C	Strike Of Depth			ing Mediu	
- Groundwa		Scale:	1:100					Date	Casing	Water	From	То	Туре		

Project Title: Rhodia, Whiteha											PI	H 9	90	8	
1)0	ie e	0	Pro	oject Nui	mber: 40)46		Client: Stor	y Homes		Sheet 2				
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 87.00)		N Coord: 5	15821		E Coor	d: 2974	14		
Date: 02/09/20	21		Ме	ethod: C	asagrar	nde C6		Driller: GD0	0		Logged	l By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			V	Vater S	tandpipe
D - Disturbed Sample						55.90		16.60	Grey SILTS (MIDDL	E COAL ME E COAL ME E COAL ME	ASURE	with ations S)		իոսոսիոսոսիոսոսիոսոսիոսոսիոսոսիոսոսիոս	
	le ed mple Penetrat etration n Test 'I ar Vane atter Stri	Test N' Value kPa ke		No Gr Air Mis			ountered			Date Daily Log (Date	Strike		Minute Flush From	es Casin	

			Pro	oject Title	e: Rhod	lia, Whit	ehaven				P	H9	908	8	
1)0	ie e	0	Pro	oject Nui	mber: 40)46		Client: Stor	y Homes		Sheet 3				
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 87.00)		N Coord: 5	15821		E Coor	d: 2974	14		
Date: 02/09/20	21		Ме	thod: C	asagrar	nde C6		Driller: GD0	0		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	ı			W	ater Sta	andpipe
						54.10		32.90 34.00	Grey M (MIDDL	LE COAL ME UDSTONE. LE COAL ME Borehole At	ASURE	S)			
KEY D - Disturbed 3 B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea - Groundwa - Groundwa	le ed mple Penetrat etration n Test 'I ar Vane atter Stri	Test N' Value kPa ke					ountered			Water Strik Date Daily Log (Date	Strike		Minutes Flushii From	Casing ong Mediu	Remark Im Type
- Groundwa	alei LEV	OI.		Scale:	1:100										

			Pro	oject Title	e: Rhod	lia, White	ehaven				PI	H 9	909	9	
1)0	ie e	0	Pro	oject Nur	mber: 40)46		Client: Stor	ry Homes		Sheet ²				
iD GeoEnviror	nmental Lim	ited	GL	_ (mAOD): 89.85	5		N Coord: 5	15810		E Coor	d: 2973	93		
Date: 02/09/20	21		Мє	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	l By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n			W	ater Sta	andpipe
						88.35 88.35 86.35		1.50 3.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1	Dark gr (MIDDL Dark gr (MIDDL COAL t (MIDDL Grey M (MIDDL Grey M (MIDDL Grey M (MIDDL	V-brown reted to be TONE. E COAL ME ty MUDSTO E COAL ME ey-black MU E COAL ME	silty De wea ASURE NE. ASURE DSTON ASURE UDSTO ASURE ASURE	CLAY thered S) S) E. S) NE with		***************************************	
KEY D - Disturbed : B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene	le d nple Penetrat						ountered			Water Strik	Strike	Level	Minutes	Casing	Remark
N - Penetration V - Hand Shea	n Test 'I ar Vane	√ Value kPa								Daily Log (ng Mediu T_	
- Groundwa				Scale:	1:100					Date	Casing	Water	From	То	Туре

• •			Pro	oject Title	e: Rhod	lia, White	ehaven				P	H9	90	9	
1)0	ie e	0	Pro	oject Nur	mber: 40)46		Client: Stor	ry Homes		Sheet 2				
iD GeoEnviron	nmental Lim	ited	GL	. (mAOD): 89.85	5		N Coord: 5	15810		E Coor	d: 2973	93		
Date: 02/09/20	21		Me	ethod: C	asagrar	nde C6		Driller: GD0	С		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n			W	ater Sta	andpipe
				69.85		21.50	Broken by parti mudst probab (PROB, Solid compris traces (PROB,	/soft ground al loss of retone with le backfilled drilling - psing grey mu ABLE WORK Borehole At	d acconturns colcoal tridings) partial dstone v	npaniec mprising aces orkings returns with coa	2				
KEY D - Disturbed S B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea	le ed mple Penetrat etration n Test 'I ar Vane atter Stri	Test N' Value kPa ke		1	st	ter Enco	untered			Date Daily Log Contact	Strike	Level S Water	Minute: Flushi From	ng Mediu	Remark Jum Type

			Pro	oject Title	e: Rhod	lia, White	ehaven				PI	H9	1	0	
1)0	ie.	0	Pro	oject Nur	mber: 40)46		Client: Stor	ry Homes		Sheet ²				
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 88.30)		N Coord: 5	15821		E Coor	d: 2973	94		
Date: 02/09/20	21		Мє	thod: C	asagrar	nde C6		Driller: GD0	С		Logged	d By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	ı			W	ater Sta	ndpipe
	e/Samples TCR SCR F Disturbed Sample Bulk Sample					78.60 78.50 77.70		9.70 9.80 1.50	Sandy (TOPSC Yellov Interpi MUDS (MIDDL Grey al MUDST (MIDDL Grey M (MIDDL Grey M (MIDDL Grey M (MIDDL	OIL) w-brown reted to b TONE. E COAL ME nd dark gre FONE. E COAL ME	silty De wea ASURE J bands ASURE ASURE ASURE ASURE	CLAY ttherec S) s of silty S) NE with S) S)			
B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F	le d nple Penetrat	ion Test					ountered			Water Strik	Strike	Level	Minutes	s Casing	Remark
N - Penetration V - Hand Shea	n Test 'I ar Vane	√ Value kPa								Daily Log (Flushi	ing Mediu	m
_ Croundwe		Scale:	1:100					Date	Casing	Water	From	То	Туре		

	Project Title: Rhod	ia, Whitehaven				PI	H 9	1(\overline{J}	
() Geo	Project Number: 40)46	Client: Stor	ry Homes		Sheet 2				
iD GeoEnvironmental Limited	GL (mAOD): 88.30)	N Coord: 5	15821		E Coor	d: 2973	94		
Date: 02/09/2021	Method: Casagran	nde C6	Driller: GD0	С		Logged	l By: NV	V		
Core/Samples TCR SCR RQE	D FI ISPT	Level Legend	Depth (m)	Description				Wa	ater Sta	ndpipe
		69.80	18.50 19.30 19.30 19.30	COAL. (MIDDLE Grey SILTST (MIDDLE	COAL ME M U D S T O N E I COAL ME	ASURE ONE amina ASURE	S) with tions S)			
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	REMARKS No Groundwat Air Mist Scale: 1:100	ter Encountered	ı	<u>D</u>	Vater Strik Date Daily Log C	Strike		Minutes Flushir From	Casing g Mediu	Remark m Type

			Pr	oject Title	e: Rhod	lia, White	ehaven				PI	H9	1	1	
1)0	ie e	0	Pr	oject Nui	mber: 40	046		Client: Stor	ry Homes		Sheet ²				
iD GeoEnviror	nmental Lim	ited	GL	_ (mAOD): 86.72	2		N Coord: 5	15780		E Coor	d: 2974	14		
Date: 02/09/20	21		Me	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	l By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	/ater Sta	andpipe
	Pisturbed Sample Bulk Sample Undisturbed Water Sample Standard Penetration Test Penetration					86.42 85.72 83.22 80.82 80.72 80.22 80.12		3.50 5.90 6.50 6.50 1.00	Sandy (TOPSC Yellov Interpi MUDS (MIDDL Yellow- (MIDDL Grey a MUDST (MIDDL Grey M (MIDDL	W-brown reted to be TONE. E COAL ME brown mudd E COAL ME and dark gre FONE. E COAL ME	silty De wea ASURE LY SAND ASURE LY bands ASURE ASURE ASURE ASURE ASURE ASURE ASURE ASURE	CLAY othered S) STONE S) S of silty S) NE with S) S) With tions			
B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea U - Groundwa	ed mple Penetrat etration n Test 'I ar Vane ater Stri	Test N' Value kPa ke		No Gr Air Mi		ter Enco	untered			Date Daily Log Contact	Strike	Level S Water	Minute Flush From	s Casing ing Mediu	Remark m Type
	Croanawater Strike														

•			Pro	oject Title	e: Rhod	lia, White	ehaven				P	H9)1	1	
	ie.	0	Pro	oject Nui	mber: 40	046		Client: Stor	ry Homes		Sheet :				
iD GeoEnviror	nmental Lim	nited	GL	_ (mAOD): 86.72	2		N Coord: 5	15780		E Coor	d: 2974	14		
Date: 02/09/20	21		Me	ethod: C	asagrar	nde C6		Driller: GD	0		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	ı			W	ater Sta	ndpipe
						68.72		18.00	(MIDDL	MUDST STONE I LE COAL ME	amina ASURE	S)			
KEY D - Disturbed B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea	ole ed nple Penetrat etration n Test 'I ar Vane	ion Test Test N' Value kPa				ter Enco	ountered			Daily Log (Strike Strike			ng Mediu	
▼ - Groundwa				Scale:	1:100					Date	Casing	Water	From	То	Туре
														<u> </u>	

		Pr	oject Title	e: Rhod	lia, White	ehaven				P	H9	12	2	
() Ge	0	Pr	oject Nui	mber: 40	046		Client: Stor	ry Homes		Sheet				
iD GeoEnvironmental Li	imited	GL	(mAOD): 86.15	5		N Coord: 5	15759		E Coor	d: 2974	10		
Date: 02/09/2021		Ме	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	d By: NV	V		
Core/Samples TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	ndpipe
	e/Samples TCR SCR F - Disturbed Sample - Bulk Sample - Undisturbed - Water Sample - Water Sample - Standard Peneration Test - Cene Peration Test - Peneration Test - Peneration Test Not Value - Hand Shear Vane kPa - Groundwater Strike				79.65 79.55 79.05 78.95 70.25		1.00 1.00 6.50 6.60 7.10 7.20	Sandy (TOPSC Yellov Interp MUDS (MIDDL Grey al MUDST (MIDDL Grey M (MIDDL	OIL) w-brown reted to b TONE. E COAL ME nd dark gre FONE. E COAL ME	silty De Wea ASURE ASURE ASURE ASURE ASURE ASURE ASURE	CLAY athered S) s of silty S) NE with S) with stions S)			
C - Cone Penetration N - Penetration Test V - Hand Shear Vane Groundwater St	ation Test n Test 'N' Value e kPa rike		No Gr Air Mis		I ter Encc	untered			Daily Log C	Strike		Minutes Flushi From	Casing ng Mediu	Remark m Type

•			Pro	oject Titl	e: Rhod	lia, White	ehaven				PI	H9) 1	2	
	ie e	0	Pro	oject Nu	mber: 40	046		Client: Stor	ry Homes		Sheet 2				
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 86.15	5		N Coord: 5	15759		E Coor	d: 2974	10		
Date: 02/09/20	21		Me	ethod: C	asagrar	nde C6		Driller: GD0	C		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n	•		W	/ater Sta	andpipe
						55.85		30.30	COAL. (MIDDL	LE COAL ME	ASURE				
KEY D - Disturbed S B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea	ole Indicate of the contract	Test V Value kPa		1		ter Enco	untered			Water Strik Date Daily Log (Strike	Level	Minute	s Casing	Remark
✓ - Groundwa✓ - Groundwa										Date	Casing	Water	From	То	Туре
				Scale:	1:100									+	

			Pro	oject Title	e: Rhod	lia, White	ehaven				P	H 9	12	2	
1)0	ie e	0	Pro	oject Nur	mber: 40)46		Client: Stor	y Homes		Sheet 3				
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 86.15	5		N Coord: 5	15759		E Coor	d: 2974	10		
Date: 02/09/20	21		Me	thod: C	asagrar	nde C6		Driller: GD0			Logged	l By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n			W	ater Sta	andpipe
				53.15			(MIDDL	UDSTONE. E COAL ME Borehole At				սոսովուսովուսովուսովուսովուսովուսովուսո			
KEY D - Disturbed 3 B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea - Groundwa Groundwa	le ed mple Penetrat etration n Test 'I ar Vane atter Stri	Test N' Value kPa ke			st	Ler Enco	untered			Water Strike Date Daily Log C	Strike		Minutes Flushi From	Casing	Remark:

			Pro	oject Title	e: Rhod	lia, White	ehaven				PI	H9	13	3	
	ie e	0	Pro	oject Nui	mber: 40)46		Client: Stor	ry Homes		Sheet ²				
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 88.30)		N Coord: 5	15749		E Coor	d: 2973	87		
Date: 03/09/20	21		Me	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	l By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	ı			W	ater Sta	ndpipe
						88.00 87.30 87.30 81.80	· · · · · · · · · · · · · · · · · · ·	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Sandy (TOPSC Yellov Interp MUDS (MIDDL Yellow- (MIDDL Grey a MUDS (MIDDL Grey M (MIDDL Grey M (MIDDL Grey M (MIDDL	OIL) w-brown reted to be TONE. E COAL ME brown mudd E COAL ME	silty De wea ASURE y SAND ASURE UDSTO ASURE ASURE ASURE	CLAY thereo S) STONE S) of silty S) NE with S) S)			
KEY D - Disturbed: B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea	le nple Penetrat etration n Test 'I' ar Vane	ion Test Test N' Value kPa		1			ountered			Daily Log (Strike Of Depth			ing Mediu	
- Groundwa		Scale:	1:100					Date	Casing	Water	From	То	Туре		

			Pro	oject Title	e: Rhod	lia, White	ehaven				P	H9	13	3	
1)0	ie e	0	Pro	oject Nur	mber: 40)46		Client: Stor	ry Homes		Sheet 2				
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 88.30)		N Coord: 5	15749		E Coor	d: 2973	87		
Date: 03/09/20	21		Me	ethod: C	asagrar	nde C6		Driller: GD0	С		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	ndpipe
	re/Samples TCR SCR R - Disturbed Sample - Bulk Sample - Undisturbed - Water Sample - Water Sample - Standard Penertration Test - Cene Peratration Test - Cene Peratration Test - Cene Patration Test - Cene Tation Test New Yeau - Groundwater Strike					68.80		19.50	COAL. (MIDDL Grey SILTS (MIDDL	E COAL ME M U D S 1 S T O N E I S E COAL ME	ASURE ΓΟΝΕ amina ASURE	S) with ations S)			
B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea U - Groundwa	le ed mple Penetrat etration n Test 'I ar Vane atter Stri	Test N' Value kPa ke		1	st	ter Enco	untered			Daily Log C	Strike	Level S Water	Minutes Flushin	Casing ng Mediu	Remark m Type
				Joans.	00										

			Pro	oject Title	e: Rhod	lia, White	ehaven				PI	H9	1	4	
1)0	ie e	0	Pro	oject Nui	mber: 40	046		Client: Stor	ry Homes		Sheet ²				
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 85.20)		N Coord: 5	15739		E Coor	d: 2974	17		
Date: 04/09/20	21		Me	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	l By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	Vater Sta	ndpipe
	re/Samples TCR SCR R Positive Sample Bulk Sample Undisturbed Water Sample Standard Peneration Test Cone Penetration Test Peneration Tes					78.70 78.60 78.10 77.90		0.30 1.00 1.00 6.50 6.60 7.30	Sandy (TOPSC Yellov Interpi MUDS (MIDDL Grey al MUDST (MIDDL Grey M (MIDDL Grey M (MIDDL Grey M (MIDDL COAL. (MIDDL Grey M (MIDDL	OIL) w-brown reted to b TONE. E COAL ME and dark gre	silty De wea ASURE ASURE ASURE ASURE ASURE	CLAY thereo S) of silty S) S) S) S)			
B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea	ed mple Penetrat etration n Test 'I ar Vane ater Stri	Test N' Value kPa ke		1		ter Enco	ountered			Daily Log C	Strike	Level S Water	Minute Flush From	cs Casing Ling Mediu	Remark m Type
- Groundwa	Z - Groundwater Strike														

			Pro	oject Title	e: Rhod	lia, White	ehaven				P	H9)1	4	
1)0	ie e	0	Pro	oject Nur	mber: 40)46		Client: Stor	ry Homes		Sheet 2				
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 85.20)		N Coord: 5	15739		E Coor	d: 2974	17		
Date: 04/09/20	21		Me	ethod: C	asagrar	nde C6		Driller: GD0	С		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	andpipe
						67.20_		18.00	(MIDDL	MUDST STONE I LE COAL ME	amina ASURE	S)			
KEY D - Disturbed S B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea Groundwa Groundwa	le ed mple Penetrat etration n Test 'I ar Vane atter Stri	ion Test Test N' Value kPa ke		1	st	Leter Enco	untered			Date Daily Log (Date	Strike		Minute: Flushi From	ng Mediu	Remark:

			Pro	oject Titl	e: Rhod	lia, White	ehaven				P	H 9	1:	5	
	ie e	0	Pro	oject Nu	mber: 40	046		Client: Stor	ry Homes		Sheet ⁻				
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 85.50)		N Coord: 5	15718		E Coor	d: 2973	82		
Date: 04/09/20	21		Мє	ethod: C	asagrar	nde C6		Driller: GD	С		Logged	l By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n			W	ater Sta	ındpipe
	re/Samples TCR SCR R Posturbed Sample Bulk Sample Undisturbed Water Sample Undisturbed Scandar Peneration Test Cene Paragraphic Peneration Test Cene Pation Test Cene Pation Test Cone Fration Te					73.50 73.40 72.70		1.30 1.30 1.30 1.30 1.30 1.30 1.30 1.30	Sandy (TOPSC Yellov Interpl MUDS (MIDDL Grey al MUDST (MIDDL Grey M (MIDDL COAL. (MIDDL Grey M (MIDDL	OIL) w-brown reted to b TONE. E COAL ME and dark gre	silty pe wea ASURE ASURE ASURE ASURE	CLAY thered S) of silty S) S)		հուսուկուսովուսուկուսուկուսովուսովուսովու	
B - Bulk Samp U - Undisturbe	le d			1			ountered			Water Strik	Strike	Level	Minutes	s Casing	Remark
S - Standard F C - Cone Pene	Penetratetratetration	Test													
V - Hand Shea	ar Vane ater Stri	kPa ke								Daily Log O	Of Depth Casing	S Water	Flushi From	ng Mediu	m Type
▼ - Groundwa	ater Lev	el		Scale:	1:100										75-

			Pro	oject Title	e: Rhod	lia, White	ehaven				PI	H9	1:	5	
1)0	ie e	0	Pro	oject Nur	mber: 40)46		Client: Stor	ry Homes		Sheet 2				
iD GeoEnviror	nmental Lim	iited	GL	. (mAOD): 85.50)		N Coord: 5	15718		E Coor	d: 2973	82		
Date: 04/09/20	21		Me	ethod: C	asagrar	nde C6		Driller: GD0	С		Logged	l By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	andpipe
				64.70		20.80	COAL. (MIDDL Grey SILTS (MIDDL	E COAL ME M U D S T S T O N E I E COAL ME	ASURE ONE amina ASURE	S) with tions S)		—————————————————————————————————————			
KEY D - Disturbed S B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea	le ed mple Penetrat etration n Test 'I ar Vane atter Stri	Test N' Value kPa ke		1		ter Enco	untered			Daily Log C	Strike	Level S Water	Minutes Flushi From	casing Casing Mediu	Remark Jm Type
▼ - Groundwa	ater Lev	el		Scale:	1:100										

			Pr	oject Titl	e: Rhoc	lia, White	ehaven				PI	H 9	1	6	
	ie.	0	Pr	oject Nu	mber: 40)46		Client: Stor	ry Homes		Sheet ²				
iD GeoEnviror	nmental Lim	iited	GL	_ (mAOD): 89.25	5		N Coord: 5	15770		E Coor	d: 2973	70		
Date: 04/09/20)21		Me	ethod: C	Casagrar	nde C6		Driller: GD0	С		Logged	l By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n	•		W	/ater Sta	ndpipe
						74.45 74.35 73.55		1.30 1.30 1.50 1.5.70	Sandy (TOPSC Yellov Interpi MUDS (MIDDL Grey al MUDST (MIDDL COAL. (MIDDL Grey M	OIL) w-brown reted to b TONE. E COAL ME nd dark gre	silty De wea EASURE ASURE EASURE	CLAY thereo S) s of silty S) S)			
KEY D - Disturbed and B - Bulk Samp U - Undisturbed and Formation W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Sheat U - Groundwar Groundwar Groundwar	ole ed mple Penetrat etration n Test 'I ar Vane atter Stri	Test N' Value kPa ke		No Gr Air Mi		ter Encc	untered		<u>'</u>	Date Daily Log (Strike	Level	Minute Flush From	ing Mediu	Remark m Type

• •			Pro	oject Title	e: Rhod	lia, Whit	ehaven				P	H9	1	6	
1)0	ie e	0	Pro	oject Nui	mber: 40)46		Client: Stor	ry Homes		Sheet 2				
iD GeoEnviror	nmental Lim	iited	GL	. (mAOD): 89.25	5		N Coord: 5	15770		E Coor	d: 2973	70		
Date: 04/09/20	21		Me	thod: C	asagrar	nde C6		Driller: GD0	С		Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	andpipe
				65.65		23.60	COAL. (MIDDL Grey SILTS (MIDDL	E COAL ME M U D S 1 S T O N E I E COAL ME	ASURE ONE amina ASURE	S) with itions S)		 			
KEY D - Disturbed S B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea	le ed mple Penetrat etration n Test 'I ar Vane atter Stri	ion Test Test N' Value kPa ke			st		ountered			Daily Log C	Strike	Level S Water	Minutes Flushi From	s Casing ng Mediu	Remark Jm Type

			Pro	oject Titl	e: Rhod	lia, White	ehaven				P	H6	3	0	
1)0	ie.	0	Pro	oject Nu	mber: 40	046		Client: Stor	ry Homes		Sheet ¹				
iD GeoEnviron	nmental Lim	nited	GL	_ (mAOD): 90.50)		N Coord: 5	15681		E Coor	d: 2973	72		
Date: 10/09/20	20		Мє	ethod:				Driller: GD	С		Logged	l By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n			W	ater Sta	andpipe
	KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test C - Cone Penetration Test					89.00 88.70 88.50 88.00 88.00	× × × × × × × × × × × × × × × × × × ×	1.50 1.80 2.50 2.50 14.80	Grey sil (MIDDL) Grey sil (MIDDL) Grey sil (MIDDL) Yellow grey M (MIDDL) Grey M (MIDDL) Grey sil (MIDDL) Grey sil (MIDDL)	E COAL ME Ty MUDSTO E COAL ME Ty MUDSTO E COAL ME Ty MUDSTONE E COAL ME UDSTONE E COAL ME Ty MUDSTONE E COAL ME	ASURE NE. ASURE ASURE TSTON I lamin: ASURE ASURE ASURE ASURE ASURE	S) S) S) SE with ations S) S)			
B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F	ed mple Penetrat etration n Test 'I ar Vane ater Stri	ion Test Test N' Value kPa ke		No Gr	ARKS oundwa	ter Encc	ountered			Date Daily Log Contact	Strike	Level S Water	Minutes Flushi From	Casing	Remark m Type

• •			Pro	oject Title	e: Rhod	lia, White	ehaven				PI	H6	3	0	
1)0	ie.	0	Pro	oject Nui	mber: 40	046		Client: Stor	ry Homes		Sheet 2				
iD GeoEnviron	nmental Lim	nited	GL	. (mAOD): 90.50)		N Coord: 5	15681		E Coor	d: 2973	72		
Date: 10/09/20	20		Me	thod:				Driller: GD	С		Logged	l By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	ı			w	ater Sta	andpipe
	KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test C - Cone Penetration Test C - Penetration Test N - Penetration Test 'N' Value V - Hand Shear Vane kPa					72.70 72.30 72.00 71.50 64.00 63.90 62.70		17.80 18.20 18.50 19.00 26.60 27.80	COAL. (MIDDL Black M (MIDDL COAL. (MIDDL Grey SILTS (MIDDL BROK RETUF WORK (MIDDL SOLID RETUF (MIDDL	E COAL ME E COAL ME EN GRO RNS - PRO INGS. E COAL ME D DRILL RNS. E COAL ME Borehole At	ASURE ASURE ASURE TONE amina ASURE UND BABLE NG ASURE NG ASURE 28.80 m	S) and tions S) NO COAL S) - NO S) S)			
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Project Number: 4046 GL (mAOD): 83.00 N Coord: 515756 E Coord: 297444 Date: 10/09/2020 Method: Casagrande C6 Driller: GDC Logged By: NW Core/Samples TCR SCR RQD FI ISPT Level Loggerd Depth (m) Description 82.50 82.40 79.40 79.40 79.40 79.40 79.60	• • •			Pro	oject Title	e: Rhod	lia, Whit	ehaven				P	H6	3	1	
Dute: 10/09/2020 Method: Casagrande C6 Driller: GDC Logged By: NW Core/Samples TCR SCR ROD F1 ISPT Level Legenc Depth (m) Description REMARKS D- Disturbed Sample B- Duts Sample P- Dute: 10/09/2020 REMARKS No Groundwater Encountered REMARKS REMARKS No Groundwater Encountered		ie.	0	Pro	oject Nur	mber: 40)46		Client: Stor	ry Homes		1				
Core/Samples TCR SCR RQD FI ISPT Level Legend Depth (m) Description Water Standpipe 8.2.50	iD GeoEnviror	nmental Lim	nited	GL	. (mAOD): 83.00)		N Coord: 5	15756		E Coor	d: 2974	44		
REMARKS No Groundwater Encountered REMARKS No Groundwater Encountered Water Strikes Date Water Strikes Date Strike Itevel Minutes Date Strike Itevel Minutes Date Strike Itevel Minutes Date Strike Itevel Minutes Date Da	Date: 10/09/20)20		Мє	ethod: C	asagrar	nde C6	_	Driller: GD	С		Logged	d By: NV	٧		
KEY D - Disturbed Sample B - But Sample U - Undisturbed W - Water Strikes W - Groundwater From U - Person Total U - Undisturbed W - Water Strikes U - Undisturbed W - Water Strike U - Undisturbed W - Water Strike U - Undisturbed W - Water Strikes U - Undisturbed W - Water Strike U - Undisturbed U - Undistu	Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n			W	/ater Sta	andpipe
D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test C - Cone Penetration Test 'N' Value V - Hand Shear Vane kPa - Groundwater Strike - Groundwater Level No Groundwater Encountered Date Strike Level Minutes Casing Remark Date Date Date Strike Level Minutes Casing Remark Date Dat		D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test					79.40 78.60 78.50	× × × × × × × × × × × × × × × × × × ×	2.40 3.60 4.40 4.50	CLAY. (MIDDL Yellow MUDS' (MIDDL Grey SILTS (MIDDL Black coal tr. (MIDDL Grey sil (MIDDL	E COAL ME -brown SII TONE Iam E COAL ME M U D S STONE I E COAL ME organic MU aces. E COAL ME ty MUDSTO	ASURE TSTOI inations ASURE TONE amina ASURE JDSTOI ASURE ASURE	S) NE and s. S) and ations S) NE with	H .		
☐ Groundwater Strike ☐ Groundwater Level ☐ Date Casing Water From To Type	D - Disturbed B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetratio	ole ed mple Penetrat etration n Test 'I	tion Test Test N' Value		1			ountered			Date	Strike				Remark
	💆 - Groundwa	ater Stri	ke		Scale:	1:100									T	

			Pro	oject Title	e: Rhod	lia, White	ehaven				PI	H6	3	2	
1)0	ie e	0	Pro	oject Nui	mber: 40	046		Client: Stor	ry Homes		Sheet ¹				
iD GeoEnviror	nmental Lim	ited	GL	. (mAOD): 83.70)		N Coord: 5	15726		E Coor	d: 2974	34		
Date: 10/09/20	20		Me	ethod:				Driller: GD	С		Logged	d By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	n			W	/ater Sta	andpipe
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(ie e	0	Pro	oject Nui	mber: 40	046		Client: Stor	y Homes		Sheet 2			_	
iD GeoEnviron	mental Lim	ited	GL	. (mAOD): 83.70)		N Coord: 5	15726		E Coor	d: 2974	34		
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Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			V	Vater St	andpipe
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	ie.	0	Pro	oject Nui	mber: 40	046		Client: Stor	ry Homes		Sheet ²				
iD GeoEnviror	nmental Lim	nited	GL	. (mAOD): 92.00)		N Coord: 5	15879		E Coor	d: 2973	09		
Date: 11/09/20	20		Me	thod: C	asagrar	nde C6		Driller:			Logged	d By: NV	٧		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	ı			W	ater Sta	andpipe
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			Pr	oject Title	e: Rhod	ia, White	ehaven				P	H6	33	3	
	зe	0	Pr	oject Nur	mber: 40)46		Client: Stor	ry Homes		Sheet :				
iD GeoEnviror	nmental Lim	iited	Gl	_ (mAOD): 92.00)		N Coord: 5	15879		E Coor	d: 2973	09		
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	ie e	0	Pro	oject Nur	mber: 40)46		Client: Stor	ry Homes		Sheet 3				
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						59.00		33.00	SILTS (MIDDL	silty MUE TONE lar E COAL ME Borehole At	ninatio ASURE	ns. S)			
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	зe	0	Pr	oject Nur	mber: 40)46		Client: Sto	ry Homes		Sheet ¹				
iD GeoEnviror	nmental Lim	nited	Gl	_ (mAOD): 88.52	2		N Coord: 5	15890		E Coor	d: 2974	03		
Date: 11/09/20	20		Me	ethod: C	asagrar	nde C6		Driller:			Logged	d By: NV	V		
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	andpipe
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	roject Nui	mber: 40)46		Client: Story Homes			Sheet 2 Of 2							
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Date: 11/09/20	20		М	ethod: C	asagrar	nde C6		Driller:			Logged By: NW				
Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	1			W	ater Sta	ndpipe
					Grey silty MUDSTON SILTSTONE laminatio (MIDDLE COAL MEASURE						ns. S)				
KEY D - Disturbed S B - Bulk Samp U - Undisturbe W - Water Sar S - Standard F C - Cone Pene N - Penetration V - Hand Shea - Groundwa Groundwa		ARKS					Water Strik Date 15/09/2020 Daily Log C	Strike 0	Level S Water	Minutes Flushin	Casing ng Mediu	Remarks m Type			
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1)0	ie e	0	Pro	oject Nui	mber: 40)46		Client: Story Homes			Sheet 1 Of 2				
iD GeoEnviror	nmental Lim	ited	GL	(mAOD): 86.90)		N Coord: 515803			E Coord: 297418				
Date: 11/09/2020 M			Me	ethod:				Driller: GDC			Logged By: NW				
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KEV				PEM	ARKS	85.90_ 83.90_ 77.70 77.40 77.30 76.90_ 76.00_		3.00 9.20 9.50 9.60 10.90	CLAY. (MIDDL Yellow MUDS: (MIDDL Grey sil (MIDDL Black o (MIDDL COAL. (MIDDL COAL (MIDL COAL (MIDDL COAL (MIDDL COAL (MIDDL COAL (MIDDL COAL (MIDL COAL (MIDDL COAL (MIDDL COAL (MIDDL COAL (MIDDL COAL (MIDL COAL (MIDDL COAL (MIDDL COAL (MIDDL COAL (MIDDL COAL (MIDL COAL (MIDDL COAL (MIDDL COAL (MIDDL COAL (MIDDL COAL (MIDL COAL (MIDDL COAL (MIDDL COAL (MIDDL COAL (MIDDL COAL (MIDL COAL (MIDDL COAL (MIDDL COAL (MIDDL COAL (MIDDL COAL (MIDL COAL (MIDDL COAL (MIDL COAL	E COAL ME E COAL ME TOAL ME E COAL ME TOAL ME TOAL ME E COAL ME TOAL ME TOAL ME TONE I ar E COAL ME	ASURE ASURE STONE. ASURE DSTON Innation ASURE	S) ed silty S) S) S) Si WE with S) E with ns.		***************************************	
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iD GeoEnviror	nmental Lim	nited	GL	_ (mAOD): 86.90)		N Coord: 515803			E Coord: 297418							
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iD GeoEnviror	nmental Lim	nited	GL	_ (mAOD): 87.80)		N Coord: 515724			E Coord: 297350				
Date: 11/09/20)20		Мє	ethod: C	asagrar	nde C6		Driller: GDC			Logged By: NW				
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Date: 11/09/2020 Me				ethod: C	asagrar	nde C6		Driller: GDC			Logged By: NW				
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