GDP-2371/R02

10th November 2026

Alex Whitehead – Managing Quantity Surveyor

GMI Construction Group
Middleton House
Westland Road
Leeds
LS11 5UH

Dear Al

GDP-2371_ George Hotel_ Updated CMRA_Issue1_101126.pdf
GEORGE HOTEL HUDDERSFIELD – UPDATED COAL MINING RISK ASSESSMENT
KIRKLEES COUNCIL PLANNING APPLICATION: 2025/48/91147/W

Please find herein an Updated Coal Mining Risk Assessment (CMRA).

1.0 PURPOSE OF UPDATED CMRA

This document has been prepared to accompany the Application to Discharge Condition 12.

This Report follows the final review of all available information as listed at Section 2.0 and completion of the Coal Authority (trading as Mining Remediation Authority) [herein referred to as the MRA] Planning Advice Service (PAS) process.

This Updated CMRA supersedes the conclusions and recommendations presented within the Phase 2 Site Investigation Report, Solmek, Ref S250101, September 2025.

This Updated CMRA also includes the proposed sub-station located adjacent to the hotel refurbishment.

2.0 EXISTING REPORTS

The following Reports and information are available and have been reviewed when preparing this Updated CMRA:

- [1] Phase 1 Contaminated Land Desk Study, 1620014217, Ramboll 2022;
- [2] Interpretive Site Investigation, Construction Evaluation, July 2023;
- [3] Technical Note – Geotechnical Assessment, Ramboll, July 2023;
- [4] Contaminated Land Interpretive Report, Ramboll, July 2023;

- [5] Scheme drawings including Matterport Survey;
- [6] Network Rail, Stage 2 Mining Report, Ref 178715, 9 October 2023. Inclusive of Evidence Files;
- [7] Solmek Phase 1: CMRA, Ref S250101, March 2025;
- [8] Solmek Phase 2: Site Investigation Report, Ref S250101, September 2025.
- [9] Coal Authority (trading as Mining Remediation Authority) letter following Planning Advice Service meeting on 24th August 2026, reference PAS00526.
- [10] Mine Plans (abandonment plans) reviewed on MRA Interactive Viewer.

GDP have undertaken phased reviews of all the above documents. The relevant summary contents of these reviews are provided within this Updated CMRA.

3.0 PLANNING STATUS

There are 2 Applications associated with the scheme, 1 for the main works to the hotel, see below, and a second proposed application for the new sub-station.

Kirklees Council Application: 2025/48/91147/W.

Location: George Hotel, St George's Square, Huddersfield, HD1 1JA.

Description / Development: Refurbishment and redevelopment of the George Hotel (including partial demolition, partial reconstruction and extension) to provide a 108-bedroom hotel with bar, restaurant, gym, conference facilities and ancillary facilities (Listed Building and within a Conservation Area).

The Mining Remediation Authority objected to the development prior to the Solmek Phase 1 CMRA [7] being submitted. The Objection was subsequently withdrawn and recommended wording for Conditions were set out in The Coal Authority Consultation Letter dated 10th June 2025, included at Appendix 4. These recommendations were incorporated as Condition 12 and 13 of the Decision Notice as extracted below.

> 12. No above ground development shall commence (excluding demolition of existing structures and site clearance) until:
>
> a) a scheme of intrusive investigations has been carried out on site to establish the risks posed to the development by past shallow coal mining activity; and
> b) any remediation works and/or mitigation measures to address land instability arising from coal mining legacy, as may be necessary, have been implemented on site in full in order to ensure that the site is made safe and stable for the development proposed.

13. The development hereby permitted shall not be first occupied or brought into use until a signed statement or declaration prepared by a suitably competent person confirming that the site is, or has been made, safe and stable for the approved development has been submitted to and approved in writing by the local planning authority. This document shall confirm the methods and findings of the intrusive site investigations and the completion of any remedial works and/or mitigation necessary to address the risks posed by past coal mining activity.

A separate CMRA has been requested by the LPA for the sub-station. During the PAS process it was proposed by GDP that due to the sub-station being within the red-line boundary this can be pragmatically addressed by incorporation into the completed CMRA for the main scheme, i.e. this Report, avoiding unnecessary duplication. This approach was agreed in principle during the Planning Advice Service (PAS) process, refer Section 7.0.

The Solmek Phase 2 report [8] has not previously been submitted to the LPA although was included within the information supplied to the MRA for review under the PAS process.

4.0 SUMMARY OF PREVIOUS SITE INVESTIGATIONS AND ASSESSMENTS

Construction Evaluation and Ramboll Geotechnical Assessment Technical Note [2], [3]

The Construction Evaluation investigation included 2 rotary boreholes (BH7 and BH9) located along the north west aspect of the development. These were stated to be for the purpose of informing pile and retaining wall design and to inform the ongoing CMRA process. At that time no boreholes were possible to the east elevation of the hotel along John William Street.

The investigations at that time were considered to have encountered the intact Soft Bed, also known as the Halifax Soft, coal at approximately 14m below the existing ground level. No evidence of worked ground or other mining legacy indicators were noted.

The following is a summary extracted from a GDP review undertaken in October 2023 to inform, at that time, the design of additional intrusive ground investigations (subsequently completed by Solmek).

> *The coal seam is recorded to be 400mm thick and intact where drilled. It is not associated with any other nearby seams and no other coal was encountered to a depth of 30m begl. The depth and elevation of the coal seam along the western wall (carpark) is as follows:*
>
> - *BH7: 13.8-14.2m begl. (no elevation given on log, GL estimated 88.0mAOD from Adept cross section 1a) [Coal at circa 74.2 -73.8mAOD].*
> - *BH9: 15.00-15.40m [73.41-73.01mAOD)].*
>
> *The depth of the coal seam below existing ground level on John William Street (JWS) can be estimated as follows:*

- *Elevation of pavement on JWS = 81.4mAOD at south end (Adept Section 1a) and 83.8mAOD at north end (Adept Section 3a).*
- *Top of Coal will therefore be at circa 8.0m begl at west end and 10.5m begl at east end.*

The proposed basement slab elevation is 84.2mAOD so it is in the region of 10.8m to top of coal seam below proposed basement level.

Extracts of the Construction Evaluation report are included at Appendix 2.

SOLMEK Phase 1 CMRA [7], [8]

The Phase 1 CMRA report [7] was previously submitted to the LPA and so has not been summarised herein. The contents are superseded by the records discussed within this Updated CMRA. The report was submitted to the MRA on 5th July 2025 for reconsultation with the response being a Material Consideration.

SOLMEK Phase 2 Site Investigation Report [8]

The Solmek Phase 2 Site Investigation took place in July 2025. The Phase 2 report, contrary to previous investigations by others, concluded that mine workings are present below the site or that that there is sufficient evidence of mining in the vicinity to assume that they are present.

The current conclusion of worked ground is based on loss of flush in 1 borehole, BH3, located close to the previous BH7 (Construction Evaluation) location. The Solmek report makes reference to information supplied by others but does not explicitly review the previous investigation findings.

GDP have reviewed the Solmek report's findings and recommendations and consider that there was only loss of drilling flush with no other indicators of worked ground stated on the relevant borehole logs, BH03. Such indicators can include observations of; easy drilling; sudden drop of tools; questionable returns, unusual reactions of the drill string such as jamming etc.

The strata above and below the Soft Bed coal (a soft textured / bright coal) particularly the underlying Soft Bed Flags is, with experience and from other documented accounts, prone to 'washing out' and loss of flush returns during rotary drilling particularly when water flush technique is being used. The Flags and the Sandstones are known to be open bedded and jointed and may be further disrupted and fractured by the nearby fault zone that has displaced the coal seam, represents a more permeable zone and may even have been a constraint to effective mining of the coal at this location.

Solmek BH03 was located close to the previous investigation BH7. It is plausible that the weaker ground conditions encountered in BH03 were due to the previous drilling using water flush.

The Phase 2 report, rather than undertake further records searches or to initiate the MRA PAS process, makes a recommendation for stabilisation of the site and for additional investigations in the basement area when accessible.

An extract of the Phase 2 report is included below. Within Table 3 GDP have queried the comment under Remarks for BH03 *'Loss of flush – inferred workings'*. This is because of the absence of any other observations and/or evidence commonly associated with worked ground. The further research and PAS process discussed within this Updated CMRA was undertaken after the findings of the Phase 2 report were initially queried.

During review of the Phase 2 report recommendations, a request for further clarifications regarding the log for BH03 was made. However, the recommendations for stabilisation and /or further investigations were defended on the basis that mine workings were known to be present in the vicinity of the Site.

[Continued….]

Extract from Solmek Phase 2 Site Investigation report [8]

foundations, however this would be dependent on approval from the regulatory authorities.

Table 3 below shows a summary of the ground conditions encountered within the rotary boreholes drilled to date highlighting possible mining related information.

TABLE 3: SOLID GEOLOGY SUMMARY

Borehole Reference	Depth of coal/possible workings (mbgl)	Thickness of coal/void (m)	Flush Returns (%)	Overlying Solid Geology Thickness (m)	Remarks
BH01	none	-	100	-	-
BH02	12.20-12.70	0.50	100	7.20	Intact Coal
BH03	12.70	No recovery	0	Approx. 7.70	Loss of flush – Inferred workings

From the BGS 1:10,000 Geological map the Soft Bed coal seam is shown to outcrop 210m to the north of the site with a section thickness of 0.60m. When compared to the BGS Borehole SE11NW22, a coal seam with a section thickness of 0.60m is also noted at a depth of 12.50m which is likely to be the Soft Bed coal seam. Previous site investigations, provided by the client, also noted a coal seam as shallow as 13.80mbgl (0.40m thick) at the west end of the current building therefore, the Soft Bed coal seam is expected at a depth of 15mbgl.

As only one coal seam has been encountered, this is likely to be the Soft Bed Seam.

The three rotary boreholes drilled to scheduled 40.00mbgl depth recorded possible workings at a depth of 12.70mbgl in BH03. Due to no recovery, a seam thickness could not be logged. **Due to the loss of flush in BH03 at 12.70mbgl and lack of recovery, it is suggested that workings may be present here**. When assessing the cover ratio, a minimum worked thickness of 1.00m has been adopted for seams <1.00m thickness (CIRIA C758D).

In this case, mine working thickness of 1.00m, with respective overlying solid geology thicknesses of 7.70m has been applied. This gives a cover ratio of 7.70, therefore treatment via grouting is required prior to development.

Information within this report should be made available to an experienced grouting contractor who can advise on expected costs, timescales and methods involved in the works. It should be noted that further areas of voided or collapsed workings may be present in areas of the site not investigated. Grouting works must take place in accordance with CIRIA guidance C758D "Abandoned Mine Workings Manual".

The current mining assessment is based on three rotary boreholes. In order to determine a more accurate cost for grouting the site, as well as to accurately delineate the boundaries of the area necessitating grouting, it is **recommended to undertake further proof drilling holes to ca. 20.00mbgl** in a closer grid pattern in beneath the footprints of any proposed buildings.

The drilling should consist primarily of rotary open-hole probing to investigate the presence of voids/broken rock, however it is also recommended to undertake a series of supplementary cored boreholes to provide greater detail regarding the composition and competence of the bedrock, notably the ceiling and basement rock above and below workings.

5.0 NETWORK RAIL STAGE 2 MINING REPORT [6]

In November 2023 a Network Rail Stage 2 Mining Report [6] was requested by the Principal Contractor, Morgan Sindall at that time, due to the north boundary of the hotel basement being a retaining wall supporting ground (St George's Square) this being under Network Rail remit. This is a requirement of the Construction Design and Management Regulations 2015.

Prior to the MRA PAS meeting the Stage 2 Mining Report Appendices including relevant plans and records (Evidence Files) for the development surrounds had not been provided. These comprehensive files have now been obtained and reviewed prior to this Updated CMRA.

The Network Rail files are also complimentary to the MRA records as discussed in the MRA PAS letter, refer Section 7.0.

The NR Stage 2 Mining Report confirms that the Halifax Soft (Soft Bed) coal is present below the railway corridor and is recorded at 0.4m thick. Various thicknesses for the seam have been stated in the reviewed NR documents from 0.4 up to 1.7m, although the lower figure is more common.

NR Plans provided within NR Stage 2 Report

Plan 6 NR Shallow Mine Workings: Room and Pillar MHD along railway corridor adjacent to the site but not including the site. Shallow mine workings were encountered beneath the railway corridor some distance to the south west of the site within the records for the railway tunnels dating to the late 1800s.

Plan 7 Probable Mine Workings: Indicates that the railway corridor adjacent to the site is probably affected by mine workings.

NR plans and additional geological information indicate the outcrop of the Soft Bed coal to the north of the site. The location of the outcrop and sub crop varies between information sources. An east to west trending fault is shown just to the north of the site. Noted that this is the surface expression of the fault and its orientation below ground is not known although it is stated elsewhere to downthrow to the south which would result in the coal seam being shallower or absent to the north of the fault.

NR Evidence Files

A full list of the evidence files is included within the NR Stage 2 Mining Report and these files were provided in digital format. Most of these files are of no relevance to the Site with the following having some relevance.

E-MISC 862 Huddersfield Station DDA Access

- Mining Report dated 1st October 2007.
- Soft Bed coal present below the site at shallow depth.
- No faults affecting the site.
- No records of workings beneath the station but probable that unrecorded workings are present.

- Workings pillar and stall at 10m depth encountered to the south west beneath tunnels in 1894.

E-MISC 873 Underbridge MVL3/91 Disused Parcels Subway, Huddersfield Station – to be infilled.

- Mining Report dated 29th January 2007.
- Similar report as to the above. Dependant on condition of underbridge investigations for shallow mine workings recommended.

E-MISC 1273 Huddersfield Viaduct (to north of site)

- Mining Report dated 29th March 2010.
- Workings encountered to north of a fault but southern area of viaduct not known to be affected by shallow mining which is the nearest to the Site. The workings to the south west beneath the tunnels are again mentioned and so workings below the southern part of the viaduct cannot be discounted.
- This file also contains the above related files.

E-MISC 2052 Huddersfield Station Canopy

- Mining Report dated 9th July 2014. No records of workings beneath the site.
- Incudes all of the above mining reports with some more up to date mapping but provides no further information.

E-MISC 2310 Huddersfield Station Capacity Project

- Mining Report dated 4th March 2016. No records of workings beneath the station.
- The Soft Bed seam is present beneath Huddersfield Station and it is probable that it has been worked throughout its length and due to shallow depth of the seam the potential for future subsidence remains a possibility.

E-MISC 2396 Huddersfield Station Platform Extensions

- A 1-page Stage 2 Assessment dated 19 August 2019 indicates that a ground investigation has been undertaken at this location. The current NR Stage 2 Mining Assessment does not include any details of this investigation.
- Many files are difficult to associate with a particular location.
- The relevant files above do not include any site investigation data.

Throughout the numerous evidence files, repeated reference is made to workings beneath the tunnels to the south west and to the northern end of the viaduct to the north. However, there has been no reference to actual workings encountered near to the station which is the closest asset to the Site.

Following review of the NR information it is concluded that this contains no information proving that workings are present beneath the Site. However, noteworthy, that MRA files indicate records of an investigation at the station that did encounter workings, refer Section 7.0.

The complete Network Rail Stage 2 Report excluding the evidence files, is included at Appendix 3. If individual evidence files are required these can be provided on request subject to any confidentiality restrictions.

6.0 MINE PLANS

A robust CMRA should obtain and review copies of relevant mining records. The relevant mine plans are often identified in the specialist searches such as the MRA Consultants Coal Mining Report (CCMR). However, the CCMR included within the Phase 1 CMRA [7] did not identify any available 'Abandoned mine catalogue numbers'. This was also confirmed within the PAS process wherein the MRA confirmed that they hold no records of mining beneath the site. No mine plans were observed for the area of the station or immediately adjacent areas during the review of the NR evidence files.

Copies of mine plans, abandonment plans and other records are now freely available via the MRA Map Viewer. Free, web-based and rapid access to the mine plan records has only been provided earlier in 2026, prior to that a request for a records search followed by purchase of the available plans was required. Following the PAS meeting GDP undertook a separate review of the database and was also unable to identify any relevant records pertaining to the site.

7.0 MINING REMEDIATION AUTHORITY PLANNING ADVICE SERVICE (PAS00562)

This Section provides a summary of the advice and additional mining related information relevant to the application Site provided by the MRA during the PAS process.

This information provided has been used to further inform the Updated CMRA. A copy of the PAS letter is included at Appendix 4.

A request for the PAS was made owing to a difference in opinions between consultants regarding evidence of mine workings and in particular to determine whether the MRA held

records that assist in the completion of a robust CMRA process. The opinions of the MRA, in the context of planning requirements under statutory consultation, were also sought.

Following the PAS meeting the MRA were able to undertake a further record. This revealed 9 permits in the general area for which the MRA have received no completion details to date. A non-extensive review (by the MRA) revealed the following summary information, extracted by GDP from the PAS letter.

Area (1) Green: *Understood to be associated with a proposed sub-way extension under the station from the east side involving a piled contiguous wall which was probed and grouted (to15m on a 6m grid) a proposed investigation phase of works was descoped.* It was not possible to locate *the completion information in respect to that area and it's unclear why the other investigations were descoped (not carried out) but the area of high mining risk red (3) does appear to have been modified as a result.*
Area (2) Pink: *Boreholes were undertaken drilled to 11.5 and 16m depth to target the soft bed coal (expected at c. 8m bgl). The boreholes encountered the coal at 7-9m depth voids and flush loss were encountered in 4 out of 7 holes. Intact coal and flush returns in 3 holes.*
Area (3) Red: *The high mining risk Area (3) encompasses the area of workings in the southern half of the Area 2 investigation area……..An assumption is that the exterior shape of the red (3) high risk mining area which abuts the George Hotel over c. half its perimeter, follows the area of Network Rail's (NR's) ownership and therefore interest.*
Area (4) Orange: *An area of investigation was undertaken in the north and this revealed no evidence of mine workings.*
Area (5) Blue: *An area of faulting within which the soft bed coal was found to be displaced upwards, close to the surface, shown on cross-sections as fault bound.*



Mine Entries

The MRA have confirmed the only historic mine entry identified in the local area from MRA records is (ref. 414416-004, OSGR 414115E, 416805N) confirmed to be just over 300 metres WSW of the George Hotel site boundary. This shaft was encountered during construction works and treated by grouting in 2023 its confirmed depth was 27.2m.

Other Comments

The information discussed from nearby Network Rail investigations was understood to not (subject to type and depth of investigations undertaken) identify shallow mine workings through intercepting the soft bed coal seam to the west of the hotel. The closest investigation on Network Rail land was recorded at positions more than 50m from the George Hotel site boundary others are significantly more distant.

The MRA advised contacting Network Rail to obtain details of any of the aforementioned investigations and other information.

8.0 SUB-STATION COAL MINING RISK ASSESSMENT

The sub-station is to be constructed on the west side of the hotel as indicated on the drawing included at Appendix 1.

On the basis of the assessments undertaken it is considered that this small building is also not affected by shallow coal mining. BH03 (Solmek, 2025) and BH7 (Construction Evaluation, 2023) are located close to the proposed structure.

The building is to be constructed on a reinforced concrete raft affording mitigation of differential ground movements in the unlikely event that was to occur.

9.0 CONCLUSIONS AND RECOMMENDATIONS

GDP consider that the Phase 2 Solmek Report and included CMRA [8] does not provide adequate evidence of mine workings or unstable ground beneath the Site and that the recommendations therein for stabilisation and further investigations are over precautionary and made in the absence of a comprehensive review of all available records.

Following review of the complete Network Rail Stage 2 CMRA and associated evidence files, along with additional mining related information provided by the MRA within PAS00526, it is further concluded that there is no evidence to suggest that mine workings are present below

the proposed development including the proposed sub-station location. No mine entries are recorded close to the development.

On the basis of the above lines of evidence no further consideration of mining legacy risks to foundations or other matters relating to construction are required.

However, given the recorded mining legacy close to the site the possibility of unrecorded features such as unrecorded workings and/or mine entries must remain a consideration in the Construction Phase Plan. This particularly relates to the demolition stage where in any subsurface features such as unrecorded mine entries could be encountered, albeit unlikely.

It remains a recommendation that if piles are to be used in the foundation design that these are designed to penetrate the coal seam to at least 2.0m beyond into competent sandstone rock of the Soft Bed Flags. The possibility of additional grout take has been highlighted in Geotechnical Risk Register.

At the time of writing and following comments made by the LPA the issue of hazardous permanent gases remains under assessment to determine the correct Characteristic Situation for the design of any gas protection to be included in the design of ground floors and basements.

Yours sincerely
GD Pickles Ltd



Jay Fox
BEng (Hons) PGDWasteMgmt FGS CGeol EurGeol CEnv MCIWM SiLC (NQMS SQP)
Technical Director

Appendix 1

Drawings

GD Pickles Ltd, registered in the UK: 09387115.
Biltons Farm, South Scarle Lane, Swinderby, Lincoln, LN6 9JA
T: 07768058151 or 07484100872
W: gdpickles.co.uk



Land Ownership

Application Boundary

Tree Removed

Rev	Description	Date	Dr by	App by
P2	Issued for HVSS comment	08.09.2026	MCS	GS
P1	Issued for Planning Approval.	15.07.2026	MCS	GS

original by	date created	approved by
MCS	05/12/26	GS

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E leeds@ahr.co.uk
www.ahr.co.uk

client name: GMI Construction Group

project: George Hotel Refurbishment

drawing: Proposed Site Plan - Substation

computer file: I:\0.32.1.11\DEM_Profiles_Folder_redirection\matt.stephenson\Documents\Revit Files\Local Files\Revit 2024\L054-AHR-ZZ-ZZ-ZZ-M-A-000002 - Site Model_matt.stephenson7MKLQ.rvt

plot date:

project number	scale
2024.00373.000	As indicated@A1

drawing number	rev	issue status
L054-AHR-90-ZZ-ZZ-D-A-90003	P2	S2

This drawing is to be read in conjunction with all related drawings. All dimensions must be checked and verified on site before commencing any work or producing shop drawings. The originator should be notified immediately of any discrepancy.
This drawing is copyright and remains the property of AHR.

1 Proposed Site Plan - Substation

1 : 200

Appendix 2

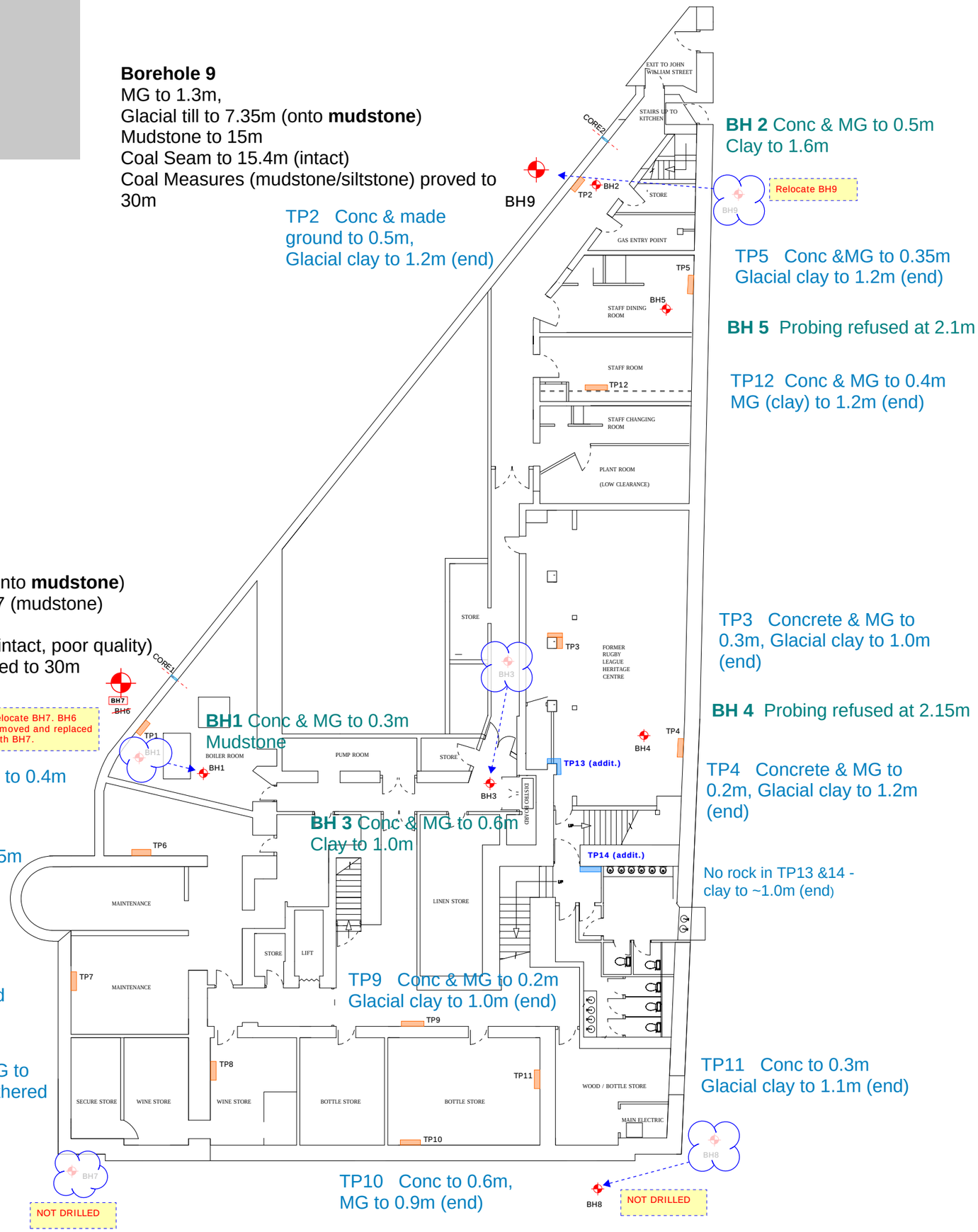
Extracts from Site Investigation Reports

GD Pickles Ltd, registered in the UK: 09387115.
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APPENDIX A
SUMMARY OF GROUND INVESTIGATION

Borehole 9
MG to 1.3m,
Glacial till to 7.35m (onto **mudstone**)
Mudstone to 15m
Coal Seam to 15.4m (intact)
Coal Measures (mudstone/siltstone) proved to 30m

Borehole 7
MG to 1m,
Glacial till to 5.3m (onto **mudstone**)
N16@4.2, N41 @5.7 (mudstone)
Mudstone to 13.8
Coal Seam to 14.2 (intact, poor quality)
Coal Measures proved to 30m



BH 2 Conc & MG to 0.5m
Clay to 1.6m

Relocate BH9

TP5 Conc &MG to 0.35m
Glacial clay to 1.2m (end)

BH 5 Probing refused at 2.1m

TP12 Conc & MG to 0.4m
MG (clay) to 1.2m (end)

TP3 Concrete & MG to 0.3m, Glacial clay to 1.0m (end)

BH 4 Probing refused at 2.15m

TP4 Concrete & MG to 0.2m, Glacial clay to 1.2m (end)

No rock in TP13 &14 - clay to ~1.0m (end)

TP11 Conc to 0.3m
Glacial clay to 1.1m (end)

Relocate BH7. BH6 removed and replaced with BH7.

BH1 Conc & MG to 0.3m
Mudstone

TP1 Conc & MG to 0.4m (end)

BH 3 Conc & MG to 0.6m
Clay to 1.0m

TP6 Conc & MG to 0.5m onto weathered **Mudstone** (end)

TP7 Conc & MG to 0.35m onto weathered **Mudstone** (end)

TP9 Conc & MG to 0.2m
Glacial clay to 1.0m (end)

TP8 Conc & MG to 0.45m onto weathered **Mudstone** (end)

TP10 Conc to 0.6m,
MG to 0.9m (end)

NOT DRILLED

NOT DRILLED

The GI comprised the internal inspection/foundation pits and internal 'boreholes' drilled using small window sample equipment and using hand held probing equipment.

External BHs were drilled (BH7 and BH9) for geotechnical, geo-environmental and mining risk purposes, and to allow the installation of monitoring wells (for gas and groundwater).

Mudstone proved over the southern part of the Site area ~ 300-500mm below slab level.
Glacial clay proved to depths ranging from 1m - 1.6m in investigation locations.
Probing terminated at a depth of approximately 2.1m within the eastern part of the Site.

Borehole 9 (GL 88.41, Slab level 81.4) implies that the foundations for the basement slab would be within the mudstone bedrock based on that location.

Silkstone Environmental Ltd
7 Hall Annex, Thorncliffe Park
Chapeltown, S35 2PH
Telephone: 0114 2573487

WINDOW SAMPLE LOG

Project	Window Sample No
George Hotel, Huddersfield	BH9

Job No	Date	Ground Level (m)	Co-Ordinates ()
23095	02-05-23 03-05-23	88.41	E 414,412.3 N 416,960.7

Contractor	Sheet
Ace Drilling Services	1 of 3

SAMPLES & TESTS				STRATA					
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION	Geology	Instrument/Backfill
				88.31		0.10	MADE GROUND: Bituminous material.		
				88.11		0.30	MADE GROUND: Type 1 gravel.		
				88.08		0.33	MADE GROUND: Thin metal sheet (2-3mm thick) with bitumin/tar		
				87.76		0.65	material on the underside.		
				87.61		0.80	MADE GROUND: Black slightly clayey sandy gravel. Sand is fine to		
				87.11		(0.50) 1.30	coarse. Gravel is subangular, fine to coarse of weathered mudstone and clinker with fragments of bitmac and coal. Slight smell of hydrocarbons.		
1.20		N5					MADE GROUND: Light brown gravelly sand. Sand is fine to coarse. Gravel is subangular, fine to coarse of sandstone with occasional brick.		
2.00		N4					MADE GROUND: Dark grey slightly sandy clayey gravel. Sand is fine to coarse. Gravel is subangular, fine to coarse of sandstone, brick and clinker.		
3.00		N1					Very soft to softlight brown/mottled grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular, fine to coarse of mudstone. (Head Deposits).		
4.00		N4				(6.05)	Becoming darker from 3m.		
5.00		N8					Becomes firm at 6m.		
6.00		N10							
7.00		N22		81.06		7.35			
8.00		N23					Extremely weak weathered grey MUDSTONE. (Pennine Lower Coal Measures).		
9.00		N34					Becoming moderately strong from 9.5m.		
9.45		N55							

Hole Progress and Water Observations						Window Sample Recovery				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Dia (m)	Rec (%)	1. Hand dug inspection pit followed by drilling using water flush. 2. Borehole terminated at 30m bgl due to reaching required depth. 3. No groundwater. 4. Backfilled with bentonite and arisings.

All dimensions in metres Scale 1:62.5	Client Kirklees Council	Method/ Plant Used Beretta GT54-6	Logged By P Smallwood/A Hives

WINDOW SAMPLE LOG 3M 23095 GEORGE HOTEL HUDDERSFIELD.GPJ GINT STD UK LIB 8.5.0.1 DB 02/05/2023

RAMBOLL

THE GEORGE HOTEL, HUDDERSFIELD

1620014217 ENG: SJM
SK008 P01 CHK: SM/PM
24/07/23 APP: NH

APPENDIX B

Stratigraphic Logs

constructiveevaluation
site investigation • building pathology

Rotary Core Log

Borehole No. **BH7**

Sheet 1 of 3

Project Name: The George Hotel	Project No. 22.1150	Co-ords: 414395.00 - 416933.00	Hole Type RC
Location: St Georges Square, Huddersfield, HD1 1JA		Level:	Scale 1:55
Client: William Birch & Sons Ltd		Dates: 01/12/2022 - 02/12/2022	Logged By SR/IB

Well	Water Strikes	Depth (m)	Type / FI	Coring TCR	Coring SCR	Coring RQD	Depth (m)	Level (m)	Legend	Stratum Description
							0.10			Brick Pavier Concrete
							0.35			TYPE 1 Gravel. Concrete blocks at base recovered up to 160mm diameter.
		0.80 - 1.00	D				1.00			
		1.20 - 2.70	B							Soft to firm brown and grey mottled slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to coarse of black mudstone and concretions of sandstone. (HEAD DEPOSITS)
		2.50 - 2.70	D							
		2.70 - 4.20	B							*- Becomes soft*
		3.50 - 3.70	D							
		4.20 - 5.30	B							*- Becomes very stiff* *- 1mm diameter roots*
		5.02 - 5.17	D							
G		5.30 - 5.70	B				5.30			Extremely weak to very weak thinly laminated dark grey mottled brown MUDSTONE (PENNINE LOWER COAL MEASURES FORMATION). Joints dip 05 - 15 degrees medium to widely spaced stepped smooth and tight stained orangish brown.
		~~5.70 - 6.50~~	C							
		5.70 - 6.50		91	39	25				
		~~6.50 - 8.00~~	C							
		6.50 - 8.00		93	37	17				
		~~8.00 - 9.50~~	C				8.00			Extremely weak thinly laminated dark grey MUDSTONE (PENNINE LOWER COAL MEASURES FORMATION). Joints dip 05 - 25 degrees medium spaced undulating rough and partly open infilled with brown clay and stained orangish brown.
		8.00 - 9.50		100	57	0				
		~~9.50 - 11.00~~	C							
		9.50 - 11.00		100	20	20	10.10			Very weak very thinly bedded dark grey MUDSTONE (PENNINE LOWER COAL MEASURES FORMATION). Joints dip 05 - 10 degrees medium spaced planar rough and clean (possible drilling induced).
		~~11.00 - 12.50~~	C							

Continued on next sheet

Remarks

1. Location CAT scanned prior to excavation and at 0.3m intervals to 1.2mbgl.
2. Cored through concrete, hand dug through Made Ground.
3. Switched to Windowless sampling at 1.2mbgl. Switched to Rotary coring at 5.3mbgl.
4. Borehole installed with 50mm pipework to 5.3mbgl.

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Rotary Core Log

Borehole No. **BH7**

Sheet 2 of 3

Project Name: The George Hotel	Project No. 22.1150	Co-ords: 414395.00 - 416933.00	Hole Type RC
Location: St Georges Square, Huddersfield, HD1 1JA		Level:	Scale 1:55
Client: William Birch & Sons Ltd		Dates: 01/12/2022 - 02/12/2022	Logged By SR/IB

Well	Water Strikes	Depth (m)	Type / FI	Coring TCR	Coring SCR	Coring RQD	Depth (m)	Level (m)	Legend	Stratum Description
		11.00 - 12.50		97	60	7				
		~~12.50 - 14.00~~	C							
		12.50 - 14.00		93	40	0				
		~~14.00 - 15.50~~	C				13.80			Fusain Coal Seam. Friable black and shiny.
		14.00 - 15.50		100	75	43	14.20			Moderately weak thinly bedded grey SILTSTONE/SANDSTONE (PENNINE LOWER COAL MEASURES FORMATION). Frequent fossil burrows of random orientation infilled with black mudstone.
		~~15.50 - 17.00~~	C				15.50			Medium Strong to Strong thinly interlaminated dark grey MUDSTONE/SANDSTONE (PENNINE LOWER COAL MEASURES FORMATION). Frequent fossil burrows of random orientation infilled with black mudstone. Joints dip 05 - 25 degrees medium spaced undulating smooth and rough tight and stained orangish brown. Joints dip 70 - 85 degrees widely spaced planar rough and tight stained orangish brown.
		15.50 - 17.00		93	61	56				
		~~17.00 - 18.50~~	C							
		17.00 - 18.50		97	86	55				
		~~18.50 - 20.00~~	C							
		18.50 - 20.00		81	68	44				
		~~20.00 - 21.50~~	C							
		20.00 - 21.50		73	55	37				
		~~21.50 - 23.00~~	C							

Continued on next sheet

Remarks

1. Location CAT scanned prior to excavation and at 0.3m intervals to 1.2mbgl.
2. Cored through concrete, hand dug through Made Ground.
3. Switched to Windowless sampling at 1.2mbgl. Switched to Rotary coring at 5.3mbgl.
4. Borehole installed with 50mm pipework to 5.3mbgl.

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Rotary Core Log

Borehole No.
BH7
Sheet 3 of 3

Project Name: The George Hotel	Project No. 22.1150	Co-ords: 414395.00 - 416933.00	Hole Type RC
Location: St Georges Square, Huddersfield, HD1 1JA		Level:	Scale 1:55
Client: William Birch & Sons Ltd		Dates: 01/12/2022 - 02/12/2022	Logged By SR/IB

Well	Water Strikes	Depth (m)	Type / FI	Coring TCR	Coring SCR	Coring RQD	Depth (m)	Level (m)	Legend	Stratum Description
		21.50 - 23.00		93	90	43				
		~~23.00 - 24.50~~	C							
		23.00 - 24.50		77	55	42				
		~~24.50 - 26.00~~	C							
		24.50 - 26.00		87	82	59				
		~~26.00 - 27.50~~	C							
		26.00 - 27.50		93	87	76				
		~~27.50 - 29.00~~	C							
		27.50 - 29.00		100	80	37				
		~~29.00 - 30.50~~	C							
		29.00 - 30.50		93	90	50				
							30.50			End of borehole at 30.50 m

23 24 25 26 27 28 29 30 31 32 33

Remarks
1. Location CAT scanned prior to excavation and at 0.3m intervals to 1.2mbgl.
2. Cored through concrete, hand dug through Made Ground.
3. Switched to Windowless sampling at 1.2mbgl. Switched to Rotary coring at 5.3mbgl.
4. Borehole installed with 50mm pipework to 5.3mbgl.

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Chapeltown, S35 2PH
Telephone: 0114 2573487

WINDOW SAMPLE LOG

Project				Window Sample No
George Hotel, Huddersfield				BH9
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23095	02-05-23 03-05-23	88.41	E 414,412.3 N 416,960.7	
Contractor				Sheet
Ace Drilling Services				1 of 3

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
				88.31		0.10	MADE GROUND: Bituminous material.		
				88.11		0.30	MADE GROUND: Type 1 gravel.		
				88.08		0.33	MADE GROUND: Thin metal sheet (2-3mm thick) with bitumin/tar materal on the underside.		
				87.76		0.65			
				87.61		0.80	MADE GROUND: Black slightly clayey sandy gravel. Sand is fine to coarse. Gravel is subangular, fine to coarse of weathered mudstone and clinker with fragments of bitmac and coal. Slight smell of hydrocarbons.		
						(0.50)			
1.20		N5		87.11		1.30	MADE GROUND: Light brown gravelly sand. Sand is fine to coarse. Gravel is subangular, fine to coarse of sandstone with occasional brick.		
2.00		N4					MADE GROUND: Dark grey slightly sandy clayey gravel. Sand is fine to coarse. Gravel is subangular, fine to coarse of sandstone, brick and clinker.		
3.00		N1					Very soft to softlight brown/mottled grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular, fine to coarse of mudstone. (Head Deposits).		
							Becoming darker from 3m.		
							Becomes firm at 6m.		
4.00		N4				(6.05)			
5.00		N8							
6.00		N10							
7.00		N22		81.06		7.35			
							Extremely weak weathered grey MUDSTONE. (Pennine Lower Coal Measures).		
8.00		N23					Becoming moderately strong from 9.5m.		
9.00		N34							
9.45		N55							

Hole Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Window Sample Recovery			
From	To	Dia (m)	Rec (%)

GENERAL REMARKS

1. Hand dug inspection pit followed by drilling using water flush.
2. Borehole terminated at 30m bgl due to reaching required depth.
3. No groundwater.
4. Backfilled with bentonite and arisings.

All dimensions in metres Scale 1:62.5	Client Kirklees Council	Method/ Plant Used Beretta GT54-6	Logged By P Smallwood/A Hives

WINDOW SAMPLE LOG 3M 23095 GEORGE HOTEL (ROTARY).GPJ GINT STD AGS 3_1.GDT 9/5/23

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Chapeltown, S35 2PH
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WINDOW SAMPLE LOG

Project				Window Sample No
George Hotel, Huddersfield				BH9
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23095	02-05-23 03-05-23	88.41	E 414,412.3 N 416,960.7	
Contractor				Sheet
Ace Drilling Services				2 of 3

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
						(7.65)	Extremely weak weathered grey MUDSTONE. (Pennine Lower Coal Measures). Becoming moderately strong from 9.5m. *(continued)*		
				73.41		15.00			
				73.01		15.40	Coal (Intact). (Fusain Coal seam).		
						(4.10)	Dark grey MUDSTONE. (Pennine Lower Coal Measures).		
				68.91		19.50			
							Light grey SILTONE/MUDSTONE with thin bands of dark grey mudstone between 22.5. and 26.5m. (Pennine Lower Coal Measures).		

Hole Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Window Sample Recovery			
From	To	Dia (m)	Rec (%)

GENERAL REMARKS

1. Hand dug inspection pit followed by drilling using water flush.
2. Borehole terminated at 30m bgl due to reaching required depth.
3. No groundwater.
4. Backfilled with bentonite and arisings.

All dimensions in metres Scale 1:62.5	Client Kirklees Council	Method/ Plant Used Beretta GT54-6	Logged By P Smallwood/A Hives

WINDOW SAMPLE LOG 3M 23095 GEORGE HOTEL (ROTARY).GPJ GINT STD AGS 3_1.GDT 9/5/23

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WINDOW SAMPLE LOG

Project				Window Sample No
George Hotel, Huddersfield				BH9
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23095	02-05-23 03-05-23	88.41	E 414,412.3 N 416,960.7	
Contractor				Sheet
Ace Drilling Services				3 of 3

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
							Light grey SILTONE/MUDSTONE with thin bands of dark grey mudstone between 22.5. and 26.5m. (Pennine Lower Coal Measures). *(continued)*		
						(10.50)			
				58.41		30.00			

Hole Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Window Sample Recovery			
From	To	Dia (m)	Rec (%)

GENERAL REMARKS

1. Hand dug inspection pit followed by drilling using water flush.
2. Borehole terminated at 30m bgl due to reaching required depth.
3. No groundwater.
4. Backfilled with bentonite and arisings.

All dimensions in metres Scale 1:62.5	Client Kirklees Council	Method/ Plant Used Beretta GT54-6	Logged By P Smallwood/A Hives

WINDOW SAMPLE LOG 3M 23095 GEORGE HOTEL (ROTARY).GPJ GINT STD AGS 3_1.GDT 9/5/23

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Borehole Log

Borehole No. **BH7**
Sheet 1 of 3

Project Name:	The George Hotel	Project No. 22.1150	Co-ords: 414395E - 416933N	Hole Type RC
Location:	St Georges Square, Huddersfield, HD1 1JA		Level:	Scale 1:56
Client:	William Birch & Sons Ltd		Dates: 01/12/2022	Logged By SR/IB

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.10			Brick Pavier Concrete
					0.35			TYPE 1 Gravel. Concrete blocks at base recovered up to 160mm diameter.
		0.80 - 1.00	D		1.00			
		1.20 - 2.70 1.20	B SPT	N=5 (2,1/1,1,1,2)				Soft to firm brown and grey mottled slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to coarse of black mudstone and concretions of sandstone. (HEAD DEPOSITS)
		2.50 - 2.70	D					
		2.70 - 4.20 2.70	B SPT	N=5 (1,1/1,1,1,2)				*- Becomes soft*
		3.50 - 3.70	D					
		4.20 - 5.30 4.20	B SPT	N=16 (2,2/3,3,4,6)				*- Becomes very stiff* *- 1mm diameter roots*
		5.02 - 5.17	D					
G		5.30 - 5.70	B		5.30			Extremely weak to very weak thinly laminated dark grey mottled brown MUDSTONE (PENNINE LOWER COAL MEASURES FORMATION). Joints dip 05 - 15 degrees medium to widely spaced stepped smooth and tight stained orangish brown.
		5.70 - 6.50 5.70	C SPT	N=41 (10,8/8,9,12,12)				
		6.50 - 8.00 6.50	C SPT	N=70 (9,12/10,12,22,26)				
		8.00 - 9.50 8.00	C SPT	0 (0 for 0mm/0 for 0mm)	8.00			Extremely weak thinly laminated dark grey MUDSTONE (PENNINE LOWER COAL MEASURES FORMATION). Joints dip 05 - 25 degrees medium spaced undulating rough and partly open infilled with brown clay and stained orangish brown.
		9.50 - 11.00 9.50	C SPT	0 (0 for 0mm/0 for 0mm)				
					10.10			Very weak very thinly bedded dark grey MUDSTONE (PENNINE LOWER COAL MEASURES FORMATION). Joints dip 05 - 10 degrees medium spaced planar rough and clean (possible drilling induced).
		11.00 - 12.50	C					

Remarks

1. Location CAT scanned prior to excavation and at 0.3m intervals to 1.2mbgl.
2. Cored through concrete, hand dug through Made Ground.
3. Switched to Windowless sampling at 1.2mbgl. Switched to Rotary coring at 5.3mbgl.
4. Borehole installed with 50mm pipework to 5.3mbgl.

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The concentrations of the selected determinants should be compared to the pipe material selection table in Appendix E, and consultation with the appropriate utility supply company is required to identify the most suitable service fabric. However, the pH levels may preclude the use of copper pipes depending on the depth of proposed service corridors.

7.6 Unexpected Contamination

If during the initial site strip or subsequent ongoing construction activities, any zones of odorous, brightly coloured or suspected contaminated ground, or suspected Asbestos Containing Materials (ACMs) are encountered, then the following procedure should be followed:

- Stop work in the affected area
- Contact Solmek and provide pictures of the affected area
- Solmek can visit site to investigate the material and provide guidance
- If required – Solmek can sample and test the material
- Once test results are returned, this will determine whether or not remediation will be required

7.7 Waste Classification

During the site strip and construction activities, material may be required to be removed from site. Any such material would require classification, in line with Environment Agency Technical Guidance *Waste Classification: Guidance on the classification and assessment of waste* (2015). This would classify the material as either Non-Hazardous or Hazardous Waste.

Once the material has been classified, determining the suitable landfill for disposal is governed by landfill directive Waste Acceptance Criteria (WAC) testing, with landfills categorized as Inert Waste, Stable Non-Reactive Hazardous Waste and Hazardous Waste.

If waste classification and/or WAC testing are not undertaken, material taken off site may be subject to WAC testing by the appropriate waste disposal company. The decision on whether or not to accept waste, or whether further testing is required, is at the discretion of the waste disposal company.

For this project, Waste Classification has not been requested by the client. Waste classification, in line with the aforementioned EA guidance, would be needed to classify the material as Hazardous or Non-Hazardous Waste. WAC testing would then be required to determine the suitability of the material for the relevant landfill.

8 MINING ASSESSMENT

8.1 Mining Assessment – Shallow Workings

For this site, the CMRA indicated the site was underlain by possible ancient shallow unrecorded mine workings, which would pose a risk to future development.

The ten times seam thickness rule states that where competent rock exceeds ten times the extracted seam thickness, then no major crown holing should occur at the surface (Structural Foundations Manual; M. F. Atkinson, *Spon Press* 2003). If the competent rock cover is less than ten times the extracted seam thickness, then recommendations suggest the workings must be grouted using a mixture of pulverised fuel ash (PFA) and cement placed into the area under pressure.

Multiple situations may mean a ratio in excess of 10x seam thickness is required to prevent crown hole collapse, including but not exclusive to; steeply dipping strata, presence of groundwater, a high extraction ratio noted, and multiple seam extractions underlying the site (CIRIA C758D, Table 5.1). Additionally, weak basement rock underlying the workings has potential to cause a separate collapse mechanism via pillars sinking.

Conversely, there are scenarios where the acceptable cover criterion may be decreased from 10x seam thickness, these include where a rigid non-degradable roof strata is present to stop the upward void migration and where low residual voidage is proven either via infilling or extensive collapse (CIRIA C758D, Table 5.1).

For certain developments, a ratio of less than 10x may be addressed via bridging techniques i.e. utilising raft

foundations, however this would be dependent on approval from the regulatory authorities.

Table 3 below shows a summary of the ground conditions encountered within the rotary boreholes drilled to date highlighting possible mining related information.

TABLE 3: SOLID GEOLOGY SUMMARY

Borehole Reference	Depth of coal/possible workings (mbgl)	Thickness of coal/void (m)	Flush Returns (%)	Overlying Solid Geology Thickness (m)	Remarks
BH01	none	-	100	-	-
BH02	12.20-12.70	0.50	100	7.20	Intact Coal
BH03	12.70	No recovery	0	Approx. 7.70	Loss of flush – Inferred workings

From the BGS 1:10,000 Geological map the Soft Bed coal seam is shown to outcrop 210m to the north of the site with a section thickness of 0.60m. When compared to the BGS Borehole SE11NW22, a coal seam with a section thickness of 0.60m is also noted at a depth of 12.50m which is likely to be the Soft Bed coal seam. Previous site investigations, provided by the client, also noted a coal seam as shallow as 13.80mbgl (0.40m thick) at the west end of the current building therefore, the Soft Bed coal seam is expected at a depth of 15mbgl.

As only one coal seam has been encountered, this is likely to be the Soft Bed Seam.

The three rotary boreholes drilled to scheduled 40.00mbgl depth recorded possible workings at a depth of 12.70mbgl in BH03. Due to no recovery, a seam thickness could not be logged. **Due to the loss of flush in BH03 at 12.70mbgl and lack of recovery, it is suggested that workings may be present here**. When assessing the cover ratio, a minimum worked thickness of 1.00m has been adopted for seams <1.00m thickness (CIRIA C758D).

In this case, mine working thickness of 1.00m, with respective overlying solid geology thicknesses of 7.70m has been applied. This gives a cover ratio of 7.70, therefore treatment via grouting is required prior to development.

Information within this report should be made available to an experienced grouting contractor who can advise on expected costs, timescales and methods involved in the works. It should be noted that further areas of voided or collapsed workings may be present in areas of the site not investigated. Grouting works must take place in accordance with CIRIA guidance C758D “Abandoned Mine Workings Manual”.

The current mining assessment is based on three rotary boreholes. In order to determine a more accurate cost for grouting the site, as well as to accurately delineate the boundaries of the area necessitating grouting, it is **recommended to undertake further proof drilling holes to ca. 20.00mbgl** in a closer grid pattern in beneath the footprints of any proposed buildings.

The drilling should consist primarily of rotary open-hole probing to investigate the presence of voids/broken rock, however it is also recommended to undertake a series of supplementary cored boreholes to provide greater detail regarding the composition and competence of the bedrock, notably the ceiling and basement rock above and below workings.

9 GROUND GAS ASSESSMENT

The proposed plan for the site is the redevelopment of the existing hotel and the deepening of the existing basement floor.

Ground gases such as carbon dioxide (CO_2), methane (CH_4), carbon monoxide (CO) and volatile organic compounds (VOCs) can be classed as a form of contamination where there is a potential risk to human health.

For this report, gas monitoring is via measuring emissions from BH03 that were installed during the sitework.

The gas monitoring will consist of six visits over a period of three months. The gas monitoring results will be presented as an addendum to this report.

10 GEOTECHNICAL TESTING AND ANALYSIS

Samples taken from the boreholes underwent a series of geotechnical tests at a UKAS accredited laboratory to aid foundation design and soil description. The geotechnical results are presented in Appendix D.

10.1 Moisture Contents

Three samples recovered from the boreholes have been subject to moisture content tests to determine the moisture profile at depths of 1.80mbgl. Moisture levels were between 4% and 9%.

10.2 Atterberg Limit Determinations

Three Atterberg Limit Determination tests were carried out on samples of cohesive material to classify the fine grained soils. The results were compared to the Casagrande Chart published in BS 5930 and showed the samples to generally be clay of low to intermediate plasticity.

The Plasticity Indices ranged from 15 to 21 with moisture contents recorded above/below the corresponding plastic limits. The cohesive material can be assessed as having a **medium** shrinkage potential in relation to NHBC Guidance Chapter 4.2.

10.1 Rock Uniaxial Compressive Strength (UCS) Tests

A series of 7no rock core samples taken were subjected to UCS testing, ranging in depth from 5.20mbgl to 17.20mbgl and comprised Mudstone.

Four of the samples exhibited ‘axial cleavage’ failure mode and three exhibited fragmented failure mode. UCS results were between 0.90 and 59.4MPa (equivalent to 900kPa to 59400kPa).

10.2 Point Load Testing

50no samples of rock core from BH01-BH03 were sent for Point Load Testing (both axial and diametral) to provide an indication of the strength of the rock. The corrected results ranged between 0.01 and 6.48 $Is_{(50)}$MPa, which can approximately be converted to UCS values of 0.24 to 155MPa.

10.3 Foundations

The following foundation recommendations are given assuming grouting works have been carried out under the site.

10.3.1 *Conventional Foundations upon Cohesive Deposits*

Based on plasticity index results, all cohesive soils at the site should be regarded as being of medium volume change potential. Foundations should therefore be placed at a minimum depth of 0.90m below original or finished ground level, whichever is the lower. However made ground is up to 1.50mbgl so foundations will require deepening accordingly.

Based on a conservative undrained shear strength of 45kN/m² a safe bearing capacity of 110kN/m² has been determined for strip foundations **0.60m wide founding on the natural low to medium strength clay at depths of around 1.50mbgl. Providing the safe bearing capacity is not exceeded settlements have been calculated to be less than 25mm.

Locally, foundations will require deepening due to made ground depths. All deepened sections should be adequately stepped, in accordance with NHBC Standards Chapter 4.4.

It should be recognised that clay rich soils can deteriorate fairly rapidly on exposure, particularly in periods of wet weather and frost. It would be prudent to protect all exposed soils in foundation excavations with a concrete blinding layer, particularly if they are likely to remain open for extended period of time.

Prior to placing foundation concrete, obvious soft or loose spots should be removed and replaced with suitably recompacted hardcore or lean mix concrete. In addition, all excavations should be inspected to ensure that they fully penetrate areas of disturbed ground.

Further advice should be sought from Solmek if unexpected ground conditions are encountered during redevelopment.

10.3.2 *General Foundation Comments*

It is recommended that an adequate drainage system for surface water be installed by a competent contractor in order to prevent surface water ponding or collecting during and post construction, which may in turn lead to deterioration of the founding stratum.

Prior to placing foundation concrete, obvious soft or loose spots should be removed and replaced with suitably recompacted hardcore or lean mix concrete. In addition, all excavations should be inspected to ensure that they fully penetrate areas of disturbed ground.

Further advice should be sought from Solmek if unexpected ground conditions are encountered during redevelopment.

10.4 Excavation

Based on the nature of the ground conditions encountered, excavations should be within the capacity of normal earthworks plant although breaking out of relict foundations and other obstructions should be anticipated. Stability of excavations will be poor in the made ground but should improve in the natural clay. Excavation sides should be designed, constructed and supported in accordance with the recommendations given in CIRIA Report No. 97: “Trenching Practice”.

10.5 Groundwater

Groundwater was not encountered during this investigation.

It should be noted the rapid rate of advancement of the exploratory holes may mask minor seepages and it should be borne in mind that water levels fluctuate with a number of influences including season, rainfall, dewatering and pumping activities.

SOLMEK

APPENDIX A



SOLMEK
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Tel: 01642 607083 Email: info@solmek.com

Figure Title

Site Location Plan

Project Number

S250101

Project Name

George Hotel, Huddersfield

Client

GMI Construction Group PLC

Date

September 2025

DRG Number

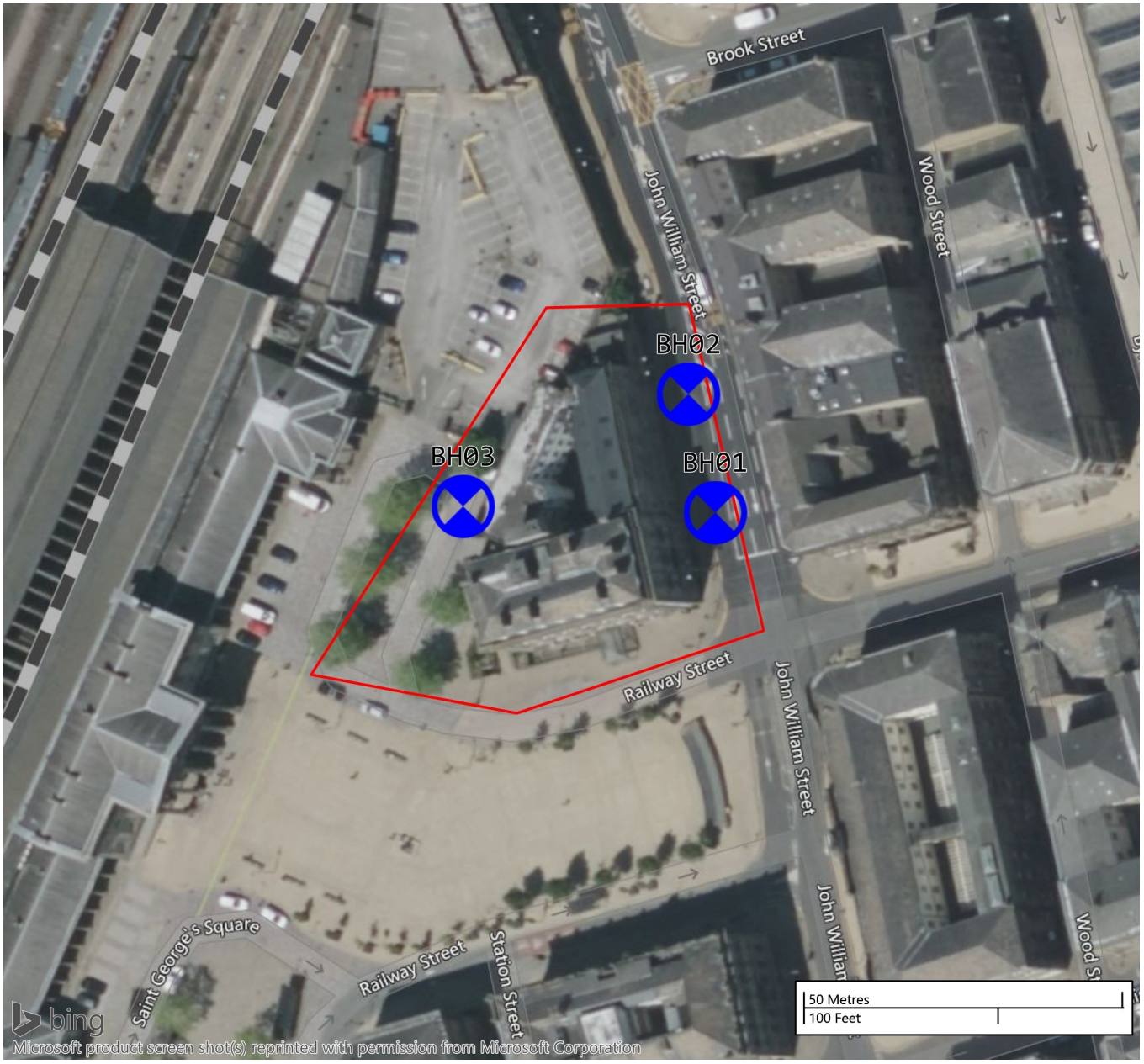
Figure 1

Scale

1:5000 @ A4 [DO NOT SCALE]

Legend Key

Project Bounds - Project Bounds



SOLMEK
12-16 Yarm Road, Stockton on Tees, TS18 3NA
Tel: 01642 607083 Email: info@solmek.com

Figure Title

Exploratory Hole Location Plan

Project Number

S250101

Project Name

George Hotel, Huddersfield

Client

GMI Construction Group PLC

Date

September 2025

DRG Number

Figure 2

Scale

1:1000 @ A4 [DO NOT SCALE]

Legend Key

- Locations By Type - Empty
- Locations By Type - RC
- Project Bounds - Project Bounds

APPENDIX B

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Stockton on Tees
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info@solmek.com

Rotary Coring Log

Scale 1:50 Sheet 1 of 4

BH01

Contract no:	S250101	**Site:**	George Hotel, Huddersfield	**Driller:**	ID Drilling Ltd
				Plant used:	MI3
				Started:	22/07/2025
Client:	GMI Construction Group PLC			**Ended:**	25/07/2025
Method:	Rotary Cored			**Backfilled:**	25/07/2025

GL (AOD):
Easting: 414434.20
Northing: 416935.78
Logged: GT
Status: FINAL

Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing: Depth (m)	Type	Results	Coring / Fractures: TCR (%)	SCR (%)	RQD (%)	Fracture
		0.03		MADE GROUND: Black tarmac.							
				MADE GROUND: Concrete.							
		0.70									
		0.90		MADE GROUND: Black clayey gravelly sand with rare cobbles of redbrick, concrete. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of mudstone, sandstone, concrete, and brick.							
		1.50		MADE GROUND: Soft black very sandy gravelly clay with rare cobbles of redbrick, concrete. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of mudstone, sandstone, concrete, and brick.							
				Soft to firm brown sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded of sandstone, mudstone, quartz and shale.							
		3.30		Completely weathered MUDSTONE, Recovered as Firm Brown slightly sandy slightly Gravelly CLAY. Sand fine to coarse. Gravel is angular to subrounded fine to Coarse of mudstone.							
				Not Rock, Completely Weathered							
		5.50		Extrememly weak to very weak very thinly laminated highly weathered grey MUDSTONE From 10m becomes weathered and very weak to weak.				87	30	7	NI 0 100
								33	0	0	NI 0 0
								95	75	24	NI 40 140

Hole Diameter

Depth Base (m)	Diameter (mm)

Casing Depths

Depth Base (m)	Diameter (mm)

General Remarks

1.2m Hand excavated inspection pit dug.
No groundwater encountered.

Flush Returns

From (m)	To (m)	Flush Type	Flush (%)

Ground Water

Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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Rotary Coring Log

Scale 1:50 Sheet 2 of 4

BH01

Contract no:	S250101	**Site:**	George Hotel, Huddersfield	**Driller:**	ID Drilling Ltd
				Plant used:	MI3
				Started:	22/07/2025
Client:	GMI Construction Group PLC			**Ended:**	25/07/2025
Method:	Rotary Cored			**Backfilled:**	25/07/2025

GL (AOD):
Easting: 414434.20
Northing: 416935.78
Logged: GT
Status: FINAL

Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing			Coring / Fractures			
					Depth (m)	Type	Results	TCR (%)	SCR (%)	RQD (%)	Fracture
				Extrememly weak to very weak very thinly laminated highly weathered grey MUDSTONE From 10m becomes weathered and very weak to weak.				100	65	11	NI 0 160
								87	43	0	NI 0 70
		13.00		Weak very thinly laminated grey MUDSTONE with very thin to thin laminations of grey Siltstone. Disc 1) 0 degrees, very closely to medium spaced, planar to undulating, smooth, partially open to open, clay infilled fractures. From 16m becomes MUDSTONE with very thin laminations to thin beds of light grey SILTSTONE.				87	85	55	NI 110 220
								97	80	30	NI 60 170
								100	94	49	NI 50 250
								93	93	56	NI 80 170
								100	94	65	NI 100 180

Hole Diameter		Casing Depths		General Remarks	Flush Returns				Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	1.2m Hand excavated inspection pit dug. No groundwater encountered.	From (m)	To (m)	Flush Type	Flush (%)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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Rotary Coring Log

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BH01

Contract no:	S250101	**Site:**	George Hotel, Huddersfield	**Driller:**	ID Drilling Ltd
				Plant used:	MI3
				Started:	22/07/2025
Client:	GMI Construction Group PLC			**Ended:**	25/07/2025
Method:	Rotary Cored			**Backfilled:**	25/07/2025

GL (AOD):
Easting: 414434.20
Northing: 416935.78
Logged: GT
Status: FINAL

Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing			Coring / Fractures			
					Depth (m)	Type	Results	TCR (%)	SCR (%)	RQD (%)	Fracture
				Weak very thinly laminated grey MUDSTONE with very thin to thin laminations of grey Siltstone. Disc 1) 0 degrees, very closely to medium spaced, planar to undulating, smooth, partially open to open, clay infilled fractures. From 16m becomes MUDSTONE with very thin laminations to thin beds of light grey SILTSTONE.							
								100	99	71	NI 70 220
								100	98	52	NI 60 330
								100	96	53	NI 90 340
								100	100	40	20 70 180
								100	97	67	NI 110 300
		28.85		Moderatly strong to strong light grey SILTSTONE with very thin to thin laminations of grey Mudstone. Disc 1) 0 degrees, very closely to widely spaced, planar ,smooth, partially open to open fractures.				100	100	91	20 200 530

Hole Diameter		Casing Depths		General Remarks
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	1.2m Hand excavated inspection pit dug. No groundwater encountered.

Flush Returns			
From (m)	To (m)	Flush Type	Flush (%)

Ground Water				
Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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Rotary Coring Log

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BH01

Contract no:	S250101	**Site:**	George Hotel, Huddersfield	**Driller:**	ID Drilling Ltd
				Plant used:	MI3
				Started:	22/07/2025
Client:	GMI Construction Group PLC			**Ended:**	25/07/2025
Method:	Rotary Cored			**Backfilled:**	25/07/2025

GL (AOD):
Easting: 414434.20
Northing: 416935.78
Logged: GT
Status: FINAL

Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing			Coring / Fractures			
					Depth (m)	Type	Results	TCR (%)	SCR (%)	RQD (%)	Fracture
				Moderatly strong to strong light grey SILTSTONE with very thin to thin laminations of grey Mudstone. Disc 1) 0 degrees, very closely to widely spaced, planar ,smooth, partially open to open fractures.				100	95	76	NI 120 840
		30.70		Weak very thinly laminated dark grey MUDSTONE with very thin to thin laminations of grey Siltstone. Disc 1) 0 degrees, very closely to widely spaced, planar to undulating, smooth, partially open to open, clay infilled fractures.				100	97	92	NI 300 370
								100	100	95	60 110 630
								100	91	80	NI 170 510
								100	95	79	NI 220 240
				No recovery - Ground the rock away due to blockage.				100	0	0	NI 0 30
		40.00		End of Borehole at 40.000m				100	0	0	NI 0 20

Hole Diameter		Casing Depths		General Remarks
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	1.2m Hand excavated inspection pit dug. No groundwater encountered.

Flush Returns				Ground Water				
From (m)	To (m)	Flush Type	Flush (%)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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Scale 1:50 Sheet 1 of 5

BH02

Contract no:	S250101	**Site:**	George Hotel, Huddersfield	**Driller:**	ID Drilling Ltd
				Plant used:	MI3
				Started:	28/07/2025
Client:	GMI Construction Group PLC			**Ended:**	01/08/2025
Method:	Rotary Cored			**Backfilled:**	01/08/2025

GL (AOD):
Easting: 414429.88
Northing: 416954.45
Logged: GT
Status: FINAL

Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing: Depth (m)	Type	Results	Coring / Fractures: TCR (%)	SCR (%)	RQD (%)	Fracture
		0.03		MADE GROUND: Black tarmac. MADE GROUND: Concrete.							
		0.70		MADE GROUND: Black clayey gravelly sand with rare cobbles of redbrick, concrete. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of mudstone, sandstone, concrete, and brick.							
		0.90		MADE GROUND: Soft black very sandy gravelly clay with rare cobbles of redbrick, concrete. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of mudstone, sandstone, concrete, and brick.							
		1.50		Soft to firm brown sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of sandstone, mudstone, quartz and shale.							
				Not Rock, Completely Weathered							
		3.00		Completely weathered MUDSTONE, Recovered as Firm Brown slightly sandy slightly Gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded, fine to coarse of mudstone.							
				Not Rock, Completely Weathered							
		5.00		Extremely weak to very weak very thinly laminated highly weathered grey MUDSTONE. From 10m becomes weathered and very weak to weak.				91	48	26	NI 0 160
		6.40		Weak very thinly laminated grey MUDSTONE with very thin to thin laminations of grey Siltstone. Disc 1) 0 degrees, very closely to closely, planar to undulating, smooth, partially open to open, clay infilled fractures. From 9.70m becomes MUDSTONE with very thin laminations of light grey SILTSTONE.				100	47	7	NI 0 110
								91	74	7	NI 0 110

Hole Diameter		Casing Depths		General Remarks
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	1.2m Hand excavated inspection pit dug. No groundwater encountered.

Flush Returns				Ground Water				
From (m)	To (m)	Flush Type	Flush (%)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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Rotary Coring Log

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BH02

Contract no:	S250101	**Site:**	George Hotel, Huddersfield	**Driller:**	ID Drilling Ltd
				Plant used:	MI3
				Started:	28/07/2025
Client:	GMI Construction Group PLC			**Ended:**	01/08/2025
Method:	Rotary Cored			**Backfilled:**	01/08/2025

GL (AOD):
Easting: 414429.88
Northing: 416954.45
Logged: GT
Status: FINAL

Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing			Coring / Fractures			
					Depth (m)	Type	Results	TCR (%)	SCR (%)	RQD (%)	Fracture
				Weak very thinly laminated grey MUDSTONE with very thin to thin laminations of grey Siltstone. Disc 1) 0 degrees, very closely to closely, planar to undulating, smooth, partially open to open, clay infilled fractures. From 9.70m becomes MUDSTONE with very thin laminations of light grey SILTSTONE.				87	61	0	NI 0 70
								100	77	0	NI 20 80
		12.20		Extremely weak black COAL. Recovered as angular to subangular, fine to coarse. Gravel and Cobbles of COAL. Intact, no workings							
		12.70		Weak light grey SILTSTONE with very thin to thin laminations of grey mudstone. Disc 1) 0 degrees, very closely to closely, planar ,smooth, partially open to open fractures.				100	95	13	NI 110 200
								47	40	7	NI 50 110
								93	63	0	NI 50 90
		16.90		Weak very thinly laminated grey MUDSTONE with very thin to thin beds of grey sandstone and siltstone. Disc 1) 0 degrees, very closely to medium spaced, planar to undulating, smooth, partially open to open, clay infilled fractures.				96	93	57	NI 90 360
								93	91	51	NI 90 210

Hole Diameter		Casing Depths		General Remarks
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	1.2m Hand excavated inspection pit dug. No groundwater encountered.

Flush Returns			
From (m)	To (m)	Flush Type	Flush (%)

Ground Water				
Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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BH02

Contract no:	S250101	**Site:**	George Hotel, Huddersfield	**Driller:**	ID Drilling Ltd
				Plant used:	MI3
				Started:	28/07/2025
Client:	GMI Construction Group PLC			**Ended:**	01/08/2025
Method:	Rotary Cored			**Backfilled:**	01/08/2025

GL (AOD):		
Easting:	414429.88	
Northing:	416954.45	
Logged:	GT	
Status:	FINAL	

Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing			Coring / Fractures			
					Depth (m)	Type	Results	TCR (%)	SCR (%)	RQD (%)	Fracture
				Weak very thinly laminated grey MUDSTONE with very thin to thin beds of grey sandstone and siltstone. Disc 1) 0 degrees, very closely to medium spaced, planar to undulating, smooth, partially open to open, clay infilled fractures.							
								27	25	7	NI 50 100
								87	82	27	NI 90 240
								100	91	53	NI 90 200
								67	63	27	NI 40 240
								75	72	52	NI 50 240
								92	89	65	NI 110 250
								80	79	56	NI 140 240

Hole Diameter		Casing Depths		General Remarks
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	1.2m Hand excavated inspection pit dug. No groundwater encountered.

Flush Returns			
From (m)	To (m)	Flush Type	Flush (%)

Ground Water				
Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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Rotary Coring Log

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BH02

Contract no:	S250101	**Site:**	George Hotel, Huddersfield	**Driller:**	ID Drilling Ltd
				Plant used:	MI3
				Started:	28/07/2025
Client:	GMI Construction Group PLC			**Ended:**	01/08/2025
Method:	Rotary Cored			**Backfilled:**	01/08/2025

GL (AOD):
Easting: 414429.88
Northing: 416954.45
Logged: GT
Status: FINAL

Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing			Coring / Fractures			
					Depth (m)	Type	Results	TCR (%)	SCR (%)	RQD (%)	Fracture
				Weak very thinly laminated grey MUDSTONE with very thin to thin beds of grey sandstone and siltstone. Disc 1) 0 degrees, very closely to medium spaced, planar to undulating, smooth, partially open to open, clay infilled fractures.							
								95	95	51	NI 40 310
								93	91	75	NI 40 310
		34.20		Moderately strong to strong light grey SILTSTONE with very thin to thin beds of sandstone. Disc 1) 0 degrees, very closely to medium spaced, planar ,smooth, partially open to open fractures.				91	91	81	NI 230 440
		35.90		Weak very thinly laminated grey MUDSTONE with very thin to thin beds of grey sandstone and siltstone. Disc 1) 0 degrees, very closely to widely spaced, planar to undulating, smooth, partially open to open, clay infilled fractures.				100	95	87	NI 200 770
								95	90	69	NI 90 420
								100	99	87	NI 170 560

Hole Diameter		Casing Depths		General Remarks
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	1.2m Hand excavated inspection pit dug. No groundwater encountered.

Flush Returns				Ground Water				
From (m)	To (m)	Flush Type	Flush (%)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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Scale 1:50 Sheet 5 of 5

BH02

Contract no:	S250101	**Site:**	George Hotel, Huddersfield	**Driller:**	ID Drilling Ltd
				Plant used:	MI3
				Started:	28/07/2025
Client:	GMI Construction Group PLC			**Ended:**	01/08/2025
Method:	Rotary Cored			**Backfilled:**	01/08/2025

GL (AOD):
Easting: 414429.88
Northing: 416954.45
Logged: GT
Status: FINAL

Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing			Coring / Fractures			
					Depth (m)	Type	Results	TCR (%)	SCR (%)	RQD (%)	Fracture
		40.20		Weak very thinly laminated grey MUDSTONE with very thin to thin beds of grey sandstone and siltstone. Disc 1) 0 degrees, very closely to widely spaced, planar to undulating, smooth, partially open to open, clay infilled fractures.				89	84	41	NI 70 230
		41.20		Moderately strong to strong light grey SILTSTONE with very thin to thin beds of sandstone. Disc 1) 0 degrees, very closely to closely, planar ,smooth, partially open to open fractures.							
				End of Borehole at 41.200m							

Hole Diameter		Casing Depths		General Remarks
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	1.2m Hand excavated inspection pit dug. No groundwater encountered.

Flush Returns			
From (m)	To (m)	Flush Type	Flush (%)

Ground Water				
Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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Rotary Coring Log

Scale 1:50 Sheet 1 of 4

BH03

Contract no:	S250101	**Site:**	George Hotel, Huddersfield	**Driller:**	ID Drilling Ltd
				Plant used:	MI3
				Started:	04/08/2025
Client:	GMI Construction Group PLC			**Ended:**	07/08/2025
Method:	Rotary Cored			**Backfilled:**	07/08/2025

GL (AOD):
Easting: 414394.34
Northing: 416936.65
Logged: GT
Status: FINAL

Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing: Depth (m)	Type	Results	Coring / Fractures: TCR (%)	SCR (%)	RQD (%)	Fracture
		0.10		MADE GROUND: Car park surface, Brick Pavier.							
				MADE GROUND: Concrete.							
		0.35		MADE GROUND: Dark brown, clayey, gravelly, sand with rare cobbles of redbrick, concrete. Sand is fine to coarse. Gravel is fine to coarse, subangular to angular of mudstone, sandstone, concrete, and brick.							
		1.50		Soft to firm, light brown, sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of mudstone, sandstone and shale.							
				CLAY - Drift deposits							
		2.70		Soft to firm, brown and grey mottled, slightly sandy, slightly gravelly, CLAY. Sand is fine to coarse. Gravel is subangular to rounded, fine to coarse of sandstone and mudstone.							
				NO Recovery							
		5.80		Soft, light brown to yellow, sandy , slightly gravelly, CLAY. Sand is fine to coarse. Gravel is subangular to rounded, fine to coarse of sandstone and mudstone							
		6.00						100			
		6.20		soft, light brown to yellow, sandy , turning gravelly at 6m, CLAY. Sand is fine to coarse. Gravel i ssubangular to rounded, fine to coarse of sandstone and mudstone	6.20	HV	85kPa				
		6.70		Stiff to very stiff, dark brown, slightly gravelly, slightly sandy, CLAY. Sand is fine to coarse. Gravel is subangular to rounded, fine to coarse of sandstone and mudstone:				37			
				Extrememly weak to very weak, highly weathered, very thinly laminated, grey MUDSTONE. From 9.4m becoming very weak/weak; with with rounded planar fragments. From 10m becomes weathered and very weak to weak.				37			

Hole Diameter		Casing Depths		General Remarks
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	
				1.2m Hand excavated inspection pit dug. No groundwater encountered. Borehole termination: From 31.20m very little (19cm) to no recovery. Due to closely spaced natural rock fractures, sections of core <100mm, dislodging and jamming drilling bit, causing wearing of material to mud. 5 hrs of drilling to cover 3m of depth with no recovery. Drilling slowed by loss of water supply, with constant water top up from hose. Unable to maintain drilling water levels as suspected to be lost in natural closely spaced rock fractures. Drilling Polamar added with no effect. Geoboring so unable to switch to short 1m runs. Driller did not have enough rods to conduct SPT at 34m.

Flush Returns				Ground Water				
From (m)	To (m)	Flush Type	Flush (%)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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Rotary Coring Log

Scale 1:50 Sheet 2 of 4

BH03

Contract no:	S250101	**Site:**	George Hotel, Huddersfield	**Driller:**	ID Drilling Ltd
				Plant used:	MI3
				Started:	04/08/2025
Client:	GMI Construction Group PLC			**Ended:**	07/08/2025
Method:	Rotary Cored			**Backfilled:**	07/08/2025

GL (AOD):
Easting: 414394.34
Northing: 416936.65
Logged: GT
Status: FINAL

Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing: Depth (m)	Type	Results	Coring / Fractures: TCR (%)	SCR (%)	RQD (%)	Fracture
				Extrememly weak to very weak, highly weathered, very thinly laminated, grey MUDSTONE. From 9.4m becoming very weak/weak; with with rounded planar fragments. From 10m becomes weathered and very weak to weak.				100	26	7	NI 30 100
		10.70		Very weak to weak, extremely weathered, very thinly laminated dark grey MUDSTONE with very thin to thin laminations of grey Siltstone. 0 - 10 degrees of fracture dip, very closely to widely spaced, planar to rough, partially open to open, with stained brown/orange clay infilled fractures.							
		11.00		Very weak to weak, extremely weathered, very thinly laminated dark grey MUDSTONE with very thin to thin laminations of grey Siltstone. 0 - 10 degrees of fracture dip, very closely to widely spaced, planar to rough, partially open to open, with stained brown/orange clay infilled fractures.				42	40	0	NI 80 90
		12.70		NO RECOVERY: Mud clogging water flush *NO RECOVERY* *Flush blocked, casings pulled, cleaned and replaced; NO RECOVERY*							
		16.20		Weak, dark grey, thin bedding MUDSTONE, with frequent fossil burrows of random orientation, infilled with black mudstone, joints 0 - 5 degrees, rough, open, <2mm infilled with dark grey mud.				43	37	25	NI 90 190
		18.50		Weak, laminated dark grey MUDSTONE with to thin <2mm to wide <30mm laminations of grey Siltstone. Disc 1) 0 degrees, very closely to widely spaced, planar to undulating, smooth, partially open to open, clay infilled fractures.				75	65	65	NI 120 310
		19.20		Weak, laminated dark grey MUDSTONE with very thin to thin <2mm laminations of grey Siltstone. 5-10 degree <150mm spaced smooth to rough, open fractures infilled with clay.				29	25	19	NI 140 150

Hole Diameter		Casing Depths		General Remarks
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	1.2m Hand excavated inspection pit dug. No groundwater encountered. Borehole termination: From 31.20m very little (19cm) to no recovery. Due to closely spaced natural rock fractures, sections of core <100mm, dislodging and jamming drilling bit, causing wearing of material to mud. 5 hrs of drilling to cover 3m of depth with no recovery. Drilling slowed by loss of water supply, with constant water top up from hose. Unable to maintain drilling water levels as suspected to be lost in natural closely spaced rock fractures. Drilling Polamar added with no effect. Geoboring so ~~unable to switch to short 1m runs. Driller did not have enough rods to conduct SPT at~~ 34m.

Flush Returns			
From (m)	To (m)	Flush Type	Flush (%)

Ground Water				
Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

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Rotary Coring Log

Scale 1:50 Sheet 3 of 4

BH03

Contract no:	S250101	**Site:**	George Hotel, Huddersfield	**Driller:**	ID Drilling Ltd
				Plant used:	MI3
				Started:	04/08/2025
Client:	GMI Construction Group PLC			**Ended:**	07/08/2025
Method:	Rotary Cored			**Backfilled:**	07/08/2025

GL (AOD):
Easting: 414394.34
Northing: 416936.65
Logged: GT
Status: FINAL

Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing: Depth (m)	Type	Results	Coring / Fractures: TCR (%)	SCR (%)	RQD (%)	Fracture
				Weak, laminated dark grey MUDSTONE with very thin to thin <2mm laminations of grey Siltstone. 5-10 degree <150mm spaced smooth to rough, open fractures infilled with clay.							
								76	68	33	NI 80 240
		22.20		Weak, laminated dark grey MUDSTONE with very thin/ thin <2mm laminations of grey Siltstone. 5-10 degree <150mm spaced smooth to rough, open fractures infilled with clay with 1) closely spaced horizontal planar tight - open <1mm fractures. 2) infrequent 80 degree tight blocky fractures with brown staining.				100	93	67	8 120 180
								95	89	68	NI 110 240
								57	55	9	20 90 130
								59	57	29	25 90 180
		28.00		Weak, laminated dark grey MUDSTONE/SILTSTONE, with medium spaced fracture sets <400mm spacing of 45 - 80 degree tight to open <2mm undulating rough with brown staining.				40	31	0	12 50 95

Hole Diameter		Casing Depths		General Remarks
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	1.2m Hand excavated inspection pit dug. No groundwater encountered. Borehole termination: From 31.20m very little (19cm) to no recovery. Due to closely spaced natural rock fractures, sections of core <100mm, dislodging and jamming drilling bit, causing wearing of material to mud. 5 hrs of drilling to cover 3m of depth with no recovery. Drilling slowed by loss of water supply, with constant water top up from hose. Unable to maintain drilling water levels as suspected to be lost in natural closely spaced rock fractures. Drilling Polamar added with no effect. Geoboring so ~~unable to switch to short 1m runs. Driller did not have enough rods to conduct SPT at~~ 34m.

Flush Returns			
From (m)	To (m)	Flush Type	Flush (%)

Ground Water				
Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

SOLMEK
12-16 Yarm Road
Stockton on Tees
TS18 3NA
01642 607083
info@solmek.com

Rotary Coring Log

Scale 1:50 Sheet 4 of 4

BH03

Contract no:	S250101	**Site:**	George Hotel, Huddersfield	**Driller:**	ID Drilling Ltd
				Plant used:	MI3
				Started:	04/08/2025
Client:	GMI Construction Group PLC			**Ended:**	07/08/2025
Method:	Rotary Cored			**Backfilled:**	07/08/2025

GL (AOD):
Easting: 414394.34
Northing: 416936.65
Logged: GT
Status: FINAL

Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing			Coring / Fractures			
					Depth (m)	Type	Results	TCR (%)	SCR (%)	RQD (%)	Fracture
				Weak, laminated dark grey MUDSTONE/SILTSTONE, with medium spaced fracture sets <400mm spacing of 45 - 80 degree tight to open <2mm undulating rough with brown staining.				67	31	29	NI 160 180
				NO RECOVERY: section of core stuck in drill bit							
								13	13	8	12 30 30
		34.20		End of Borehole at 34.200m							

Hole Diameter		Casing Depths		General Remarks
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	1.2m Hand excavated inspection pit dug. No groundwater encountered. Borehole termination: From 31.20m very little (19cm) to no recovery. Due to closely spaced natural rock fractures, sections of core <100mm, dislodging and jamming drilling bit, causing wearing of material to mud. 5 hrs of drilling to cover 3m of depth with no recovery. Drilling slowed by loss of water supply, with constant water top up from hose. Unable to maintain drilling water levels as suspected to be lost in natural closely spaced rock fractures. Drilling Polamar added with no effect. Geoboring so unable to switch to short 1m runs. Driller did not have enough rods to conduct SPT at 34m.

Flush Returns			
From (m)	To (m)	Flush Type	Flush (%)

Ground Water				
Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)

Appendix 3

Network Rail Stage 2 Mining Report

GD Pickles Ltd, registered in the UK: 09387115.
Biltons Farm, South Scarle Lane, Swinderby, Lincoln, LN6 9JA
T: 07768058151 or 07484100872
W: gdpickles.co.uk

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Date: 19 October 2023
Project Code: 178715
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Author: Leon Hawley (Please use the above email address for any correspondence)
Our Ref: Con 1392

Stage 2 Mining Report

1 Introduction

Further to your request for a Stage 2 Mining Report, which we understand is required for the Huddersfield - Saint Georges Square Project. Following the demolition of the George Hotel, the excavated basement within the building underpins Network Rail retaining walls. Works will include excavation and reconstruction of the walls with associated infrastructure, with the possible use of a tower or telecrane.

Changes in ground loading, diversion of underground services, significant alterations to drainage, the use of heavy non-track plant and a site compound will be required for the works.

It is unknown whether the works will involve the installation of foundations or intrusive ground support.

This report discharges Network Rail's obligation to share mining information under the Construction, Design and Management Regulations 2015. This report covers the following Network Rail ELR and mileage extents:

ELR	Mileage From	Mileage To
MVL3	25.1181	25.1597

Table 1 - ELR and mileage extents covered by this report

The search area for this report has been depicted on the attached plan and should include all temporary and enabling work areas. Where this is not the case, please send us the location details of all temporary and enabling work areas using the following email address: nationalminingengineer@networkrail.co.uk

2 Site Location, Description and Topography (1) (2)

The site is located in the town of Huddersfield in West Yorkshire, England. The railway is orientated southwest (low mileage) to northeast (high mileage) on ELR: MVL3 (Manchester Victoria and Huddersfield Line - Stalybridge Station to Heaton Lodge Junction). Huddersfield railway station is located within the site boundary.

The approximate centre of the site is located at OS Grid Reference SE 143,169.

Ordnance Survey (OS) 5m contours and the Network Rail Geo-RINM viewer indicate that the track elevation at the site lies between 88 and 89m OD falling from high to low mileage. At the low mileage end the site is in cutting beneath surrounding road crossings and at the high mileage end of the site the site is on viaduct over surrounding roads. The ground level immediately surrounding the site ranges between approximately 80 to 95m OD falling to the northeast.

The site is on the western side of the River Colne valley with the elevation of the surrounding land rising to the west. The river is located approximately 850m to the east of the site. The land-use surrounding the site comprises railway station infrastructure at and surrounding Huddersfield Station, urban, commercial and residential areas.

The topography of the site and adjacent land is shown on Plan No 1.

3 Geological Summary

3.1 Superficial Geology (3) (4) (5) (6) (7) (8)

The BGS Superficial 10k dataset indicates that the site is predominantly underlain by Head deposits comprising clay, silt, sand and gravel. At the low mileage end of the site there is an area with no superficial deposits shown to be present. The location of superficial deposits at the site and in the wider vicinity are shown on Plan No 2.

The BGS Artificial 10k dataset indicates that Artificial Deposits comprising Worked Ground are present at the low mileage end of the site and Made Ground is present at the high mileage end of the site. These deposits are shown to be localised and do not cover the entire area within the site boundary, however further Artificial Deposits associated with railway infrastructure are anticipated. The location of artificial deposits at the site and in the wider vicinity are shown on Plan No 3.

The BGS Advanced Superficial Thickness Model (ASTM) records an 1m to 3m thickness beneath the site, where present.

3.2 Solid Geology (3) (4) (9) (10) (11) (12)

The BGS Bedrock 10k dataset indicates that the site is underlain by the Pennine Lower Coal Measures Formation (PLCM). The Middle Band Rock comprising Sandstone is recorded to the south just beyond the low mileage site boundary and the Soft Bed Flags comprising sandstone are recorded just northwest beyond the the high mileage boundary.

The BGS Lexicon of Named Rock Units (https://webapps.bgs.ac.uk/lexicon/lexicon.cfm?pub=PLCM) describes the PLCM as: "*Interbedded grey mudstone, siltstone and pale grey sandstone, commonly with mudstones containing marine fossils in the lower part, and more numerous and thicker coal seams in the upper part.*"

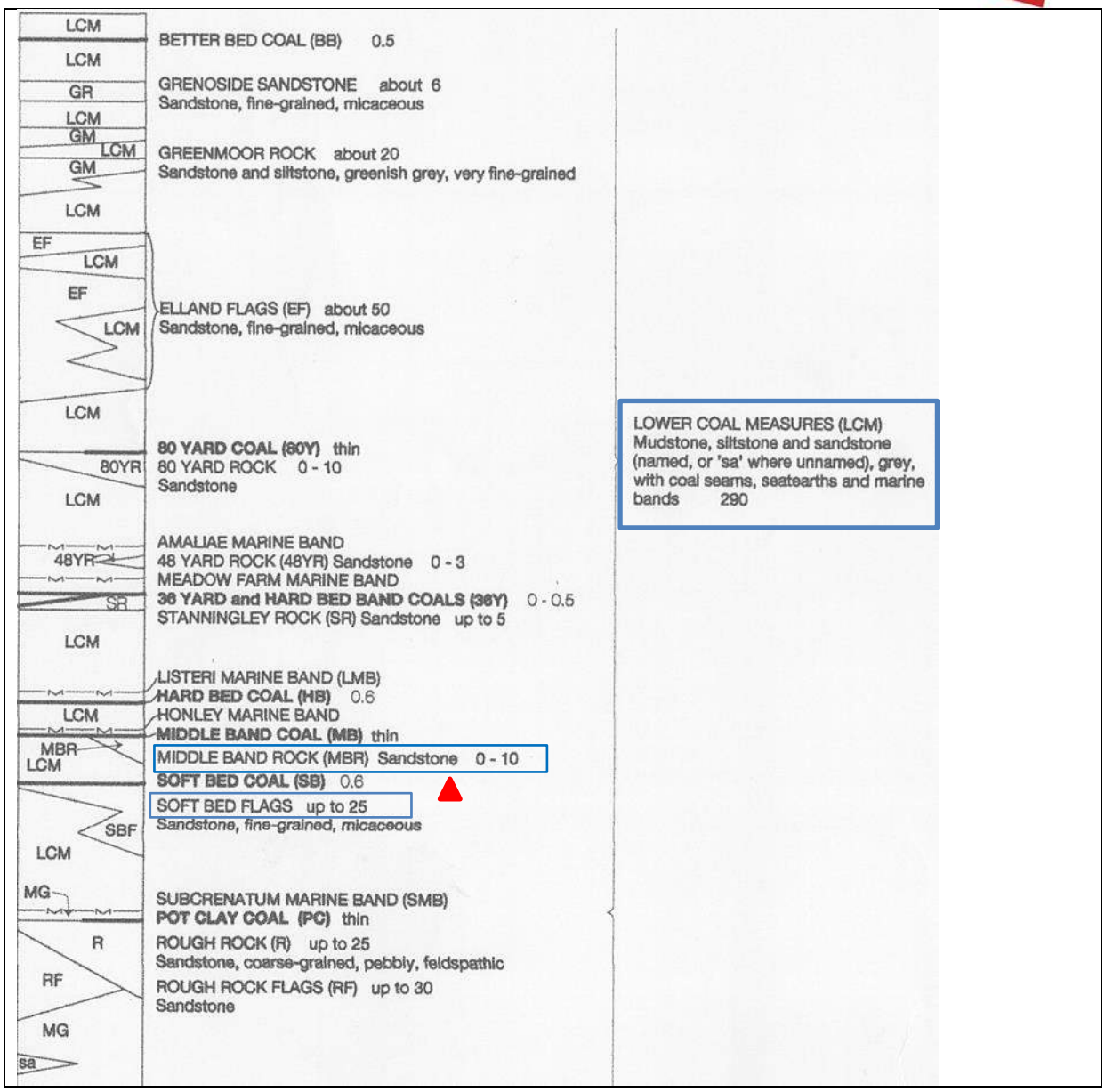
(https://webapps.bgs.ac.uk/lexicon/lexicon.cfm?pub=MBR) describes the Middle Band Rock as: "*A thin and relatively impersistent thinly bedded rubbly sandstone notable mainly in the north of the district and around Huddersfield.*"

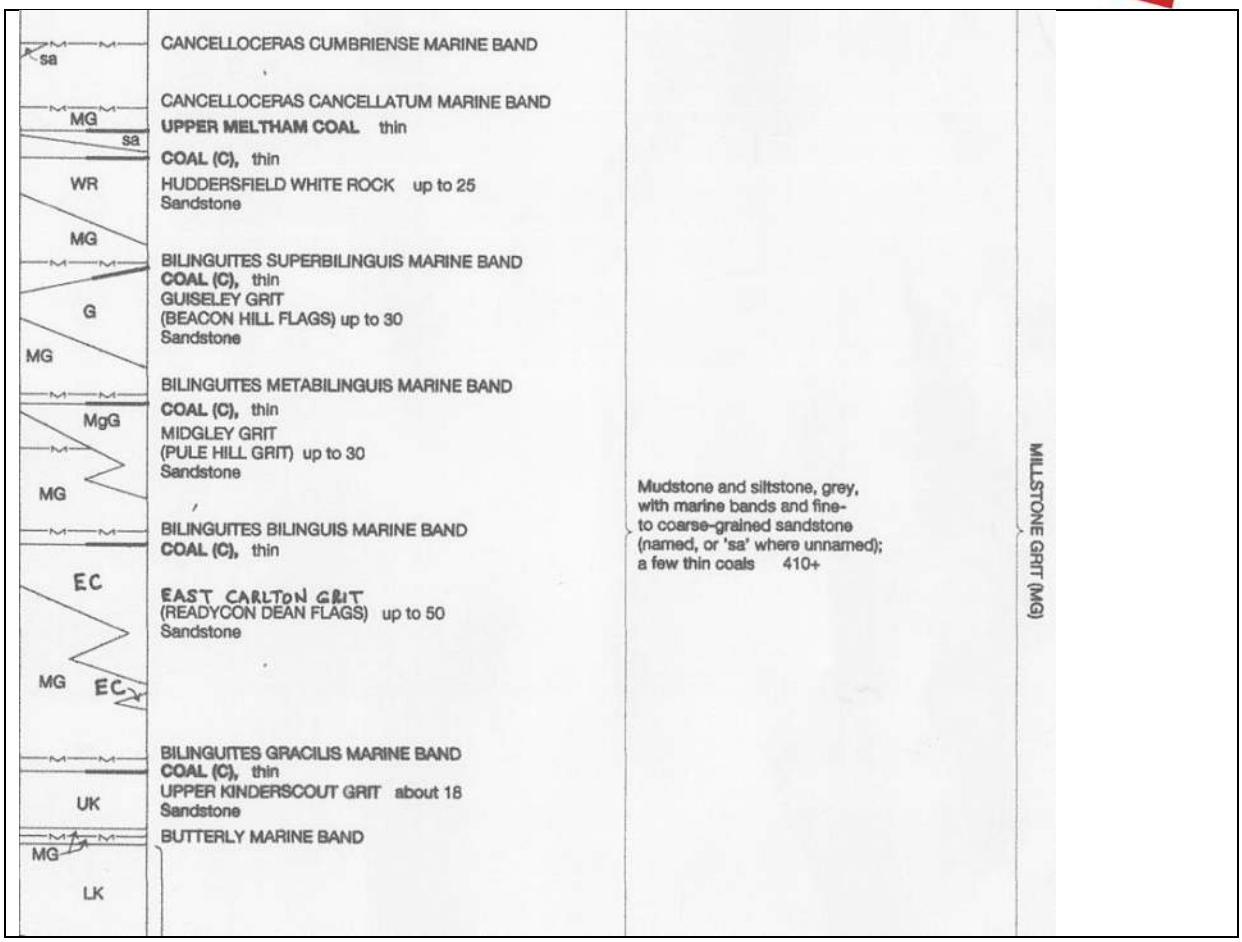
(https://webapps.bgs.ac.uk/lexicon/lexicon.cfm?pub=SBF) describes the Soft Bed Flags as: "*Generally fine-grained, thinly-bedded and cross-bedded to flaggy sandstone interbedded with mudstone.*"

The stratigraphical sequence is illustrated on the BGS 1:10,000 Sheet SE11NW (2000) and an extract of this is presented below illustrating a generalised vertical section of the geology beneath site.

Stratigraphic column annotation key:

Key	Description
	= Coal outcrops recorded as intersecting or within influencing distance of the site
	= Bedrock recorded at or within vicinity of the site


LCM
BETTER BED COAL (BB) 0.5
LCM
GR
GRENOSIDE SANDSTONE about 6
Sandstone, fine-grained, micaceous
LCM
GM
LCM
GREENMOOR ROCK about 20
Sandstone and siltstone, greenish grey, very fine-grained
GM
LCM
EF
LCM
EF
LCM
ELLAND FLAGS (EF) about 50
Sandstone, fine-grained, micaceous
LCM
80 YARD COAL (80Y) thin
80YR
80 YARD ROCK 0 - 10
Sandstone
LCM
AMALIAE MARINE BAND
48YR
48 YARD ROCK (48YR) Sandstone 0 - 3
MEADOW FARM MARINE BAND
SR
36 YARD and HARD BED BAND COALS (36Y) 0 - 0.5
STANNINGLEY ROCK (SR) Sandstone up to 5
LCM
LISTERI MARINE BAND (LMB)
HARD BED COAL (HB) 0.6
LCM
HONLEY MARINE BAND
MIDDLE BAND COAL (MB) thin
MBR
LCM
MIDDLE BAND ROCK (MBR) Sandstone 0 - 10
SOFT BED COAL (SB) 0.6
SOFT BED FLAGS up to 25
Sandstone, fine-grained, micaceous
SBF
LCM
MG
SUBCRENATUM MARINE BAND (SMB)
POT CLAY COAL (PC) thin
R
ROUGH ROCK (R) up to 25
Sandstone, coarse-grained, pebbly, feldspathic
RF
ROUGH ROCK FLAGS (RF) up to 30
Sandstone
MG
sa
LOWER COAL MEASURES (LCM)
Mudstone, siltstone and sandstone (named, or 'sa' where unnamed), grey, with coal seams, seatearths and marine bands 290



Extract of generalised vertical section showing sequence from 1:10,560 series Sheet SE11NW (2000)

There are no dip/dip direction data on BGS mapping in the close vicinity of the site. The BGS 1:10,000 Sheet SE11NW records to the east of the site a dip direction as east at an angle of 4 degrees, however the stratigraphy at the site shows apparent folding of strata. The Pot Clay Coal and associated fireclay, present beneath the site is known to have been mined in the region (See Section 4.2.4).

A summary of the coal outcrops that are recorded to be cropping within influencing distance of the site in the CA Faults and BGS 10k Linear datasets, and BGS 1:10,000 Sheet SE11NW, is summarised in the table below.

CA code	CA Description (BGS Description)	Thickness range on BGS 1:10,000 Geological Map SE11NW (m)	Comments
NY450K	Halifax Soft (Soft Bed)	0.6	At the boundary at the high mileage end of the site

Table 2 - Summary of Coal Outcrops

Bedrock geology is presented on Plan No. 4.

3.2.1 Geological Faults (3) (13)

There is one geological fault recorded intersecting the site shown on the CA Faults dataset as well as BGS 1:10,560 County Series Sheet Yorkshire 246SE. The fault is summarised in Table 3 below.

Plan Location intersecting track (M. Yds)	Alignment	Downthrow Direction (Throw)	Conjectured	Comments
25.1482	East-West	South	No	Not shown on BGS 10k Linear dataset or BGS 1:10,000 or 1:50,000 Sheets

Table 3 - Summary of Geological Faults.

The fault is presented on Plan No. 4.

3.3 Boreholes (7) (14)

There are numerous BGS boreholes located around the site. The locations of boreholes in the area surrounding the site are shown on Plan No 2 and logs can be accessed via the following webpage:

https://mapapps2.bgs.ac.uk/geoindex/home.html

3.4 Landslides (15)

The BGS landslides dataset identifies areas at risk of slope instability (Class C or greater) within 100m of the site. The locations are shown on Plan No 5.

For further guidance please refer to the following webpage:
https://www.bgs.ac.uk/datasets/bgs-geosure-landslides/landslides-property-hazard-information/

3.5 Soluble Strata (16)

The BGS Soluble Rock Dataset does not indicate that dissolution hazards are present at the site.

4 Mining Records

4.1 Mine Entries (17) (18) (19)

NR has no records of mine entries within 50m of NR assets. However due to the history of mining in this area, it is possible that unrecorded mine entries are present in the vicinity of the site.

4.2 Underground Mining

4.2.1 Recorded Underground Mining (20) (21)

Table 4 provides a summary of recorded and proven NR mine workings within influencing distance of NR assets.

NR Hazard ID	Hazard Type	Seam/ Vein Name	Mine Name	Extracted thickness (m)	Minimum depth below track level (m) (Confidence)	Evidence of working / Other Comments
RP118	Room & Pillar Mining	Soft Bed	Unknown	0.6	5 (High)	Proven: Primary Source = E-MISC-602 Mileage = 25.0316 to 25.1189 M.Yds Dip Direction/ Angle = East/4 degrees Treated (inadequate design, bulk filled in 1880)

Table 4 - NR recorded and proven underground mining summary

The NR proven mine workings are shown on Plan No 6.

There are no CA recorded mine workings within influencing distance of NR assets.

The CA dataset records no spine roadways within the vicinity of the site.

The site may have suffered historic subsidence as a result of past mining.

4.2.2 Probable Underground Mining (20) (22)

Table 5 provides a summary of probable NR mine workings within influencing distance of NR assets.

NR Hazard ID	Hazard Type	Seam/ Vein Name	Mine Name	Extracted thickness (m)	Minimum depth below track level (m) (Confidence)	Evidence of working / Other Comments
RP119	Room & Pillar Mining	Soft Bed	Unknown	0.6	4 (Assumed)	Probable: Primary Source = E-MISC-1273 Mileage = 25.1170 to 25.1643 M.Yds Dip Direction/ Angle = East/4 degrees

Table 5 - NR recorded underground mining summary

The NR recorded mine workings are shown on Plan No 7.

The CA records probable shallow depth (<30m BGL) mine workings underlying the site. The locations of CA probable workings are shown on Plan No. 8.

4.2.3 CA Development Risk (23)

The site DOES lie within areas that the Coal Authority have identified as "Development High Risk".

http://mapapps2.bgs.ac.uk/coalauthority/home.html

Where the site works will involve the disturbance of coal or coal mining features are identified during the works, The Coal Authority and the Network Rail mining team shall be notified without delay.

4.2.4 Non-Coal Mining Risk

There are records of mining for Rock (Fireclay (The Pot Clay)) within the ARUP Review of Mining Instability 500m to the east of the site and Pot Clay Coal is present beneath the site.

If any mining features are identified during the works, the NR mining team shall be notified without delay.

5 Surface Mining (19) (23) (24) (25)

The BGS BritPits database holds no records of surface mining features within 250m of the site.

There is no recorded surface mining in the CA Unlicensed Opencast or NR Surface Inspection Sites dataset.

6 Landfill (26) (27)

NR does not hold any records relating to landfill hazards within 250m of the site.

7 Cost and Programme Risk

Based on the information provided in the request form relating to both the nature and location of the works and the appended records, there is a **HIGH** risk to the project cost and programme.

8 Next Steps

High mining risk:

The site is designated high risk due to the presence of proven and probable underground mine workings at shallow depth beneath the site, the proximity to a coal outcrop which is present under the site at shallow depth and the potential for unrecorded mine entries.

The project manager shall appoint a competent consultant to undertake a review of this report and prepare a Mining Risk Assessment. A copy of the Mining Risk Assessment shall be provided to the PME, RAM(G), Principal Designer and Principal Contractor.

The project team shall be aware of and comply with the requirements set out in the Network Rail Standard NR/L2/CIV/191 The Mining Manual Modules 1 & 5, which can be downloaded by following the below links:

Module	Title
NR/L2/CIV/191/01	Managing the risk from abandoned underground mines to existing infrastructure
NR/L2/CIV/191/05	Managing the risk from mining in design and construction

Table 6 - Mining Manual modules 1 and 5

9 Limitations

This report has been compiled from archive information held by Network Rail's Mining Team; there can be no guarantee of completeness, reliability or accuracy of the supplied records. Network Rail mining team cannot be held responsible for any omissions or errors in the information provided. In particular, it should be noted that the Coal Authority Data Set consulted during the preparation of this report only extends 50m beyond the Network Rail ownership boundary, as a consequence of this sites that have been subject to historic ground movement due to deep mining may not be identified.

Records appended should only be used in connection with the delivery of this project. The Client must satisfy themselves as to the appropriateness of releasing this report and appended documents to third parties outside of Network Rail. Whilst previous mining reports might be included as part of the evidence files released in association with this project they should be treated with caution as they may not include information currently available and may not accord with NR's current position with respect to mining risk. Any concerns regarding the content of this Stage 2 Mining Report should be discussed with the PME.

We are aware that additional records pertinent to this site may be available from other sources, including those summarised in the table below:

Resource	Records Available
The Coal Authority (CA)	Records of past coal mining activity The following interactive map viewer provides useful information on risks associated with past coal mining activity: http://mapapps2.bgs.ac.uk/coalauthority/home.html
The Local Planning Authority	Details of land developments under local planning control. Such may include records associated the design and construction of new develops adjacent to the railway line including desk study, ground investigation and remediation reports.
British Geological Survey (BGS)	A wealth of resources including geological maps and site investigation boreholes are available from the Onshore GeoIndex available at the following link: http://mapapps2.bgs.ac.uk/geoindex/home.html

Table 7 - Other potential sources of mining records

References

1. **OS.** *Terrain 5 (dataset).*
2. **NR.** *Geo-RINM Viewer.*
3. **BGS.** *1:10,000 Geological Sheet SE11NW .* 2000.
4. —. *1:10,560 County Series Sheet Yorkshire 246.* 1871.
5. —. *Advanced Superficial Thickness Model (Dataset).*
6. —. *DiGMap10_GB10kSuperficial (Dataset).* 2023.
7. —. *GeoIndex Interactive Viewer.* 2023.
8. —. *10k Artifical (Dataset).* 2023.
9. —. 1:50,000 Sheet 77 Huddersfield. [Online] 2003. https://webapps.bgs.ac.uk/data/MapsPortal/home.html.
10. —. *DiGMap10_GB10kBedrock (Dataset).* 2023.
11. **CA.** *Outcrops (dataset).* 2023.
12. **BGS.** *10k Linear dataset.* 2023.
13. **CA.** *Faults (Dataset).* 2023.
14. **BGS.** *BGS Boreholes (Dataset).* 2023.
15. —. *GeoSureV8_Landslides (Dataset).* 2023.
16. —. *GeoSureV8_SolubleRocks (Dataset).* 2023.
17. **NR.** *Mine Entries (Dataset).* 2023.
18. **CA.** *Mine Entries (Dataset).* 2023.
19. **BGS.** *BritPits (Dataset).* 2023.
20. **NR.** *Shallow Mining.* 2023.
21. **CA.** *Underground Workings (Dataset).* 2023.
22. —. *Probable Mining (Dataset).* 2023.
23. —. *CA Interactive Map Viewer.* 2023.
24. —. *CA Unlicensed Opencast (Dataset).* 2023.
25. **NR.** *Surface Inspection Sites (Dataset).* 2023.
26. —. *Landfill and wastebook (Dataset).* 2023.
27. —. *Tips (Dataset).* 2023.

Acronym	Meaning
ASTM	Advanced Superficial Thickness Model
BGS	British Geological Survey
CA	Coal Authority
ELR	Engineers Line Reference
ESR	Emergency Speed Restriction
m BGL	Metres Below Ground Level
m OD	Metres Ordnance Datum
M. Yds.	Miles. Yards.
NR	Network Rail
OS	Ordnance Survey

Table 8 – Acronyms

Folder/File Name	Record/File Type	Description
Report Plans	8 JPG	Report Plans (No's 1 to 8)
Geology	6 JPEG	BGS 1:10,000 Geological Sheet SE11NW (Huddersfield West), BGS 1:50,000 Sheet 77 Huddersfield (2003), BGS One Inch Old Series Sheet 88NE, BGS 1:10,560 County Series Sheet Yorkshire 246SE.
Arup	3 PDF, 1 JPEG	Extracts from Arup Review of Mineral Instability in Great Britain Mining Area Schedules 79R10, West Yorkshire Elland Flags Case Study, 'The Country Around Huddersfield and Halifax' published 1930 and Arup Regional Atlas of Mining Area Planning Region Yorkshire and Humberside.
NR Hazard Folder - RP118	3 PDF	Schedule Data Sheet with appended plans, Mining Report E-MISC-602 'Bridge No. 88: Huddersfield North and South Tunnels, Manchester and Huddersfield Line (MVL3)' and Mining Report 'Mineworkings between 25 Miles 22 ½ Chains and 25 Miles 53 Chains, Manchester to Huddersfield Line (MVL3)'
NR Hazard Folder - RP119	1 PDF	Mining Report E-MISC-1273 'Bridge No. 92 Huddersfield Viaduct'
Con 0078	2 PDF, 12 JPEG, 1 Word Doc, 1 XLS	Stage 2 Mining Report (Con0078 – MVL3 24.1298 – 26.0440 M.Yds) dated 2022 and associated plans, request form and Stage 1 Report
E-MISC-410 2001-2002 WORKS PROGRAMME	1 PDF	Works Programme – Structures 7 2001/2002 mining summary
E-MISC-538	1 PDF, 3 JPG	Mining Report 'Bridge No. 9, Hanson Lane, Almonbury, Penistone and Huddersfield Line (PEH)' and associated plans
E-MISC-551	1 PDF	Plain Line Track Renewals 2002/2003 mining information
E-MISC-589 Track Renewals 2003-2004	1 PDF	Track Renewals 2003/2004 mining information
E-MISC-602 Huddersfield Tunnels MVL3	1 PDF	Mining information relating to Bridge No. 88: Huddersfield North and South Tunnels, Manchester and Huddersfield Line (MVL3)
E-MISC-610	1 PDF	'Huddersfield: Access Route, Manchester and Huddersfield Line (MVL3)' Licence to access land at Huddersfield Station
E-MISC-666	1 PDF	Mining Enquiry relating to Hillhouse Lane Huddersfield, Huddersfield and Manchester Line (MVL3)
E-MISC-773	1 PDF	Illegal dumping on land at Alder Street, Huddersfield. Leeds, Dewsbury and Huddersfield Line (MVL3)'
E-MISC-862	1 PDF	Huddersfield Station, Leeds, Dewsbury and Huddersfield Line (MVL3)

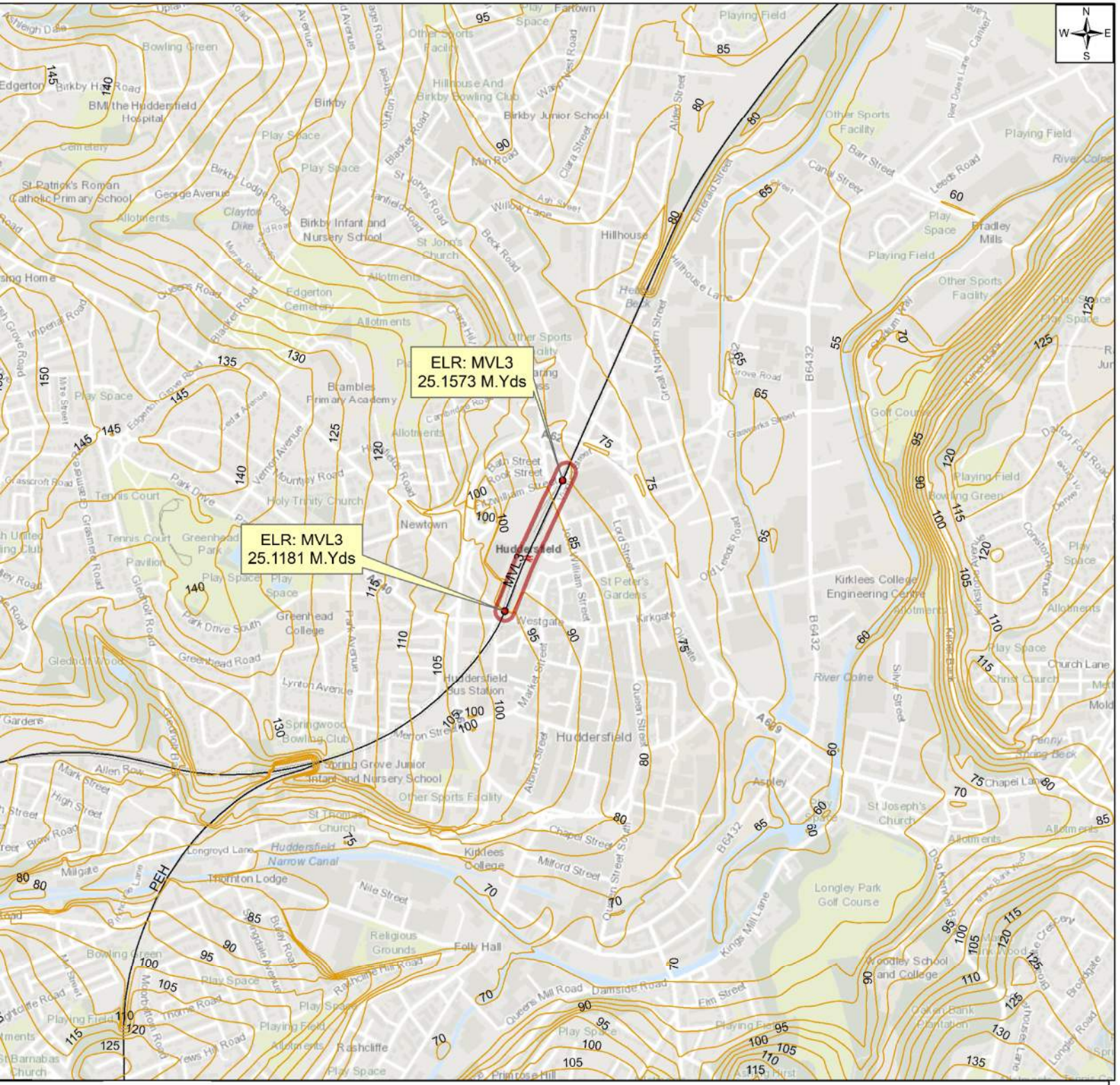
E-MISC-873	1 PDF	Mining Report 'Bridge No. 91A – Parcel Subway (Disused), Leeds, Dewsbury and Huddersfield Line (MVL3)'
E-MISC-1273	1 PDF	Mining Report 'Bridge No. 92 Huddersfield Viaduct
E-MISC-1343	1 PDF	Mining Report 'Huddersfield Depot and Stabling Facilities, Leeds, Dewsbury and Huddersfield Line (MVL3) 26M 0493Y to 26M 1669Y'
E-MISC-1400	1 PDF	Mining Stability Report 'Johnny Moore's to Huddersfield Tunnel'
E-MISC-1403	1 PDF	Mining Stability Report 'Huddersfield to Heaton Lodge, Leeds, Dewsbury and Huddersfield Line (MVL3)'
E-MISC-1705 Transpennine Electrification Project (MVL3)	1 PDF	Mining Report 'Transpennine Electrification Project, Manchester and Huddersfield Line (MVL3) 8M 1430Y to 25M 1122Y, Leeds, Dewsbury and Huddersfield Line (MVL3) 25M 1122Y to 29M 0990Y'
E-MISC-2017 Huddersfield Tunnels 88T & 89T (MVL3)	4 PDF, 1 Word Doc	Mining Stability Report 'MVL3 88T Huddersfield North Tunnel, MVL3 89T Huddersfield South Tunnel, Manchester and Huddersfield Line (MVL3)', plan and evidence files
E-MISC-2052 MVL3 Huddersfield Station Canopy	2 PDF, 1 Word Doc	Mining Stability Report 'Huddersfield Station Canopy' and evidence files.
E-MISC-2310 Huddersfield Station MVL3 25.0000 – 27.0880	25 PDF, 4 Msg, 1 Word Doc	Mining Stability Report 'Huddersfield Station MVL3 25.0000 – 27.0880 M. Yds' and evidence files, Mining Report Request, Huddersfield Notification of Site Investigation into Coal Measures Strata, Drilling email
E-MISC-2385	5 PDF, 19 XLS, 3 Word Doc, 11 Msg	High Level Mining Assessment (2017) TPE Train Lengthening including messages and drawings related to projects
E-MISC-2396	Several documents of various file formats	Pre-Construction Mining Information relating to TPE Train lengthening – Huddersfield Station, Stage 2 Mining Report MVL3 25.1100 to 25.1620 M.Yds, Mining Report at MVL3 25.100 to 25.1620 M.Yds.
E-MISC-2662	72 PDF, 14 JPG, 2 Msg, 18 XLS, 27 Word Doc, 5 Powerpoint	Stage 2 Mining Report (MVL3 26.0370 to 26.1370) dated 2021 including plans, MVL3 25.0060 to 26.0370 dates 2021 including plans and MVL3 26.1370 to 27.1250 dated 2020 including plans. GI Scope for area and MRA Underbridge MVL3/100 Peels Pit 2020 including mine plans from the area. MRA for MVL3/98 (Fieldhouse), MVL3/99 (Ridings), MRA for Gledholt to Huddersfield Viaduct
F8	1 PDF, 80 JPEG	Plans showing depths to Shertcliffe Coal, Black Bed and Better Bed by River Calder, longitudinal sections of Halifax Hard Bed coal and Clay, Plans of workings in Halifax Hard Bed Coal and Clay and Halifax Soft Bed, Huddersfield Hillhouse slip, plans relating to the Engine Shed, Goods depot

		and Sidings at Hillhouse Huddersfield, The Whitley Beaumont Estate, plan of collieries within the estate at Bradley, handwritten notes of suggested purchase of Halifax Hard Bed Coal and Clay between Bridges No. 96 and 97, Plans of the Huddersfield and Manchester Line land ownership, Location of Anglo American Oil Company oil works relative to workings at Huddersfield and Manchester Railway, location of Fieldhouse Fire Clay Works, hidden shaft at Bradley Tunnel, Plan showing Huddersfield and Manchester railway next to Sir John Ramsden's Canal and lock, longitudinal section showing 30 yards between the Hard Bed Coal, Ganister & Clay relative to Soft Bed Coal and Fireclay at Hillhouse Depot, Fieldhouse Section of Pit, Bottom Bed of Coal at Lane Colliery at the northern end of the viaduct in Huddersfield, miscellaneous unidentifiable plans of workings.
L_15	1 PDF, 5 JPG	Report on Leeds Fireclay Company, Plans showing workings at Wortley & Farnley Station
LM-MISC-1373	2 PDF	Mining Reports 'Liverpool to Leeds Linespeed Improvements, Various Locations'
LNE-SPR-16-313	1 PDF, 8 JPG	Mining Report 'Mineworkings between 25 Miles 22 ½ Chains and 25 Miles 53 Chains, Manchester to Huddersfield Line (MVL3)', Several plans of Huddersfield 2nd Tunnel
LNE-SPR-16-314	2 PDF	Mining Reports 'Shaft at 25 Miles 34 ½ Chains, Manchester to Huddersfield (MVL3)' and 'Huddersfield South Tunnel, Well at 25 Miles 38 Chains, Manchester to Huddersfield Line (MVL3)'
LNE-SPR-16-315	2 PDF, 1 JPG	Mining Reports 'Shaft at 25 Miles 41 Chains, Manchester to Huddersfield (MVL3)' and 'Huddersfield South Tunnel Well at 25 Miles 45 Chains, Manchester to Huddersfield Line (MVL3)' Plan of Huddersfield 2nd Tunnel Old Coal Workings Plan
LNE-SPR-16-316	1 PDF	Mining Report 'Mineworkings between 26 Miles 18 Chains and 26 Miles 23 Chains, Manchester to Huddersfield Line (MVL3)'
X11	9 JPEG	Hill House Mines workings, Field House Colliery Hard Bed Coal and Fireclay workings, coal workings between Fieldhouse and Bradford Road, workings and Hard Bed Coal hollows at Hillhouse Sidings, workings in Halifax Hard Bed Coal and Clay at the Fieldhouse Colliery, plans of railway locations
X389	23 JPEG	Plans and sections of Huddersfield 2nd Tunnel old coal workings and shafts associated with NR Hazards RP118, S238, S239, S240 and S241.

Y-MISC-29	1 PDF, 2 JPG	Historical communication relating to former workings and plans in the vicinity of Huddersfield Hillhouse Siding.

Table 9 - Inventory of attached records

Signatories	
Prepared by:	Leon Hawley
	Senior Geotechnical Engineer
Prepared for and on behalf of:	R N Rushton
	Principal Mining Engineer



NetworkRail

NationalMiningEngineer@networkrail.co.uk

HUDDERSFIELD, SAINT GEORGES SQUARE
30M DEEP BOREHOLES
PLAN 1 - TOPOGRAPHY & WORKSITE

ELR: MVL3 - 25.1181 to 25.1573 M.Yds

Scale	1:10,000	**File Ref**	Con 139
Date	04/10/2023	**Prepared By**	LH
GIS Version	10.6.1	**Template Version**	8.2.3

Legend

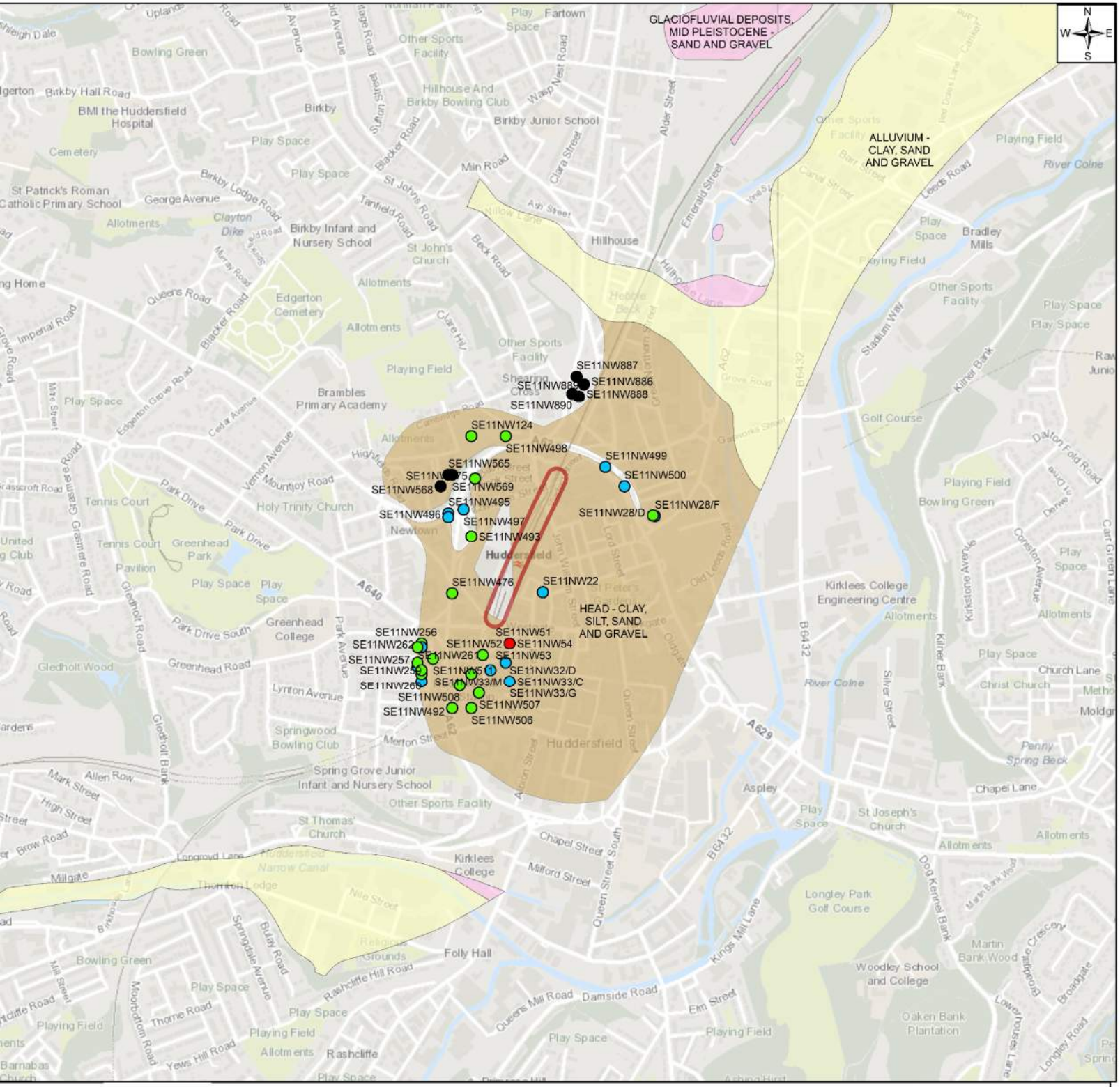
- Site Boundary
- OS Terrain5 Contours (mOD)
- Rail Network (ELR)

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NetworkRail

NationalMiningEngineer@networkrail.co.uk

HUDDERSFIELD, SAINT GEORGES SQUARE
30M DEEP BOREHOLES
PLAN 2 - SUPERFICIAL DEPOSITS & BGS BOREHOLES
ELR: MVL3 - 25.1181 to 25.1573 M.Yds

Scale	1:10,000	**File Ref**	Con 139
Date	04/10/2023	**Prepared By**	LH
GIS Version	10.6.1	**Template Version**	8.2.3

Legend

Site Boundary

BGS Boreholes within 250m of the site boundary

Depth (m)

- Confidential, restricted or unknown
- 0-10
- 10-30
- 30+

BGS 10k Superficial

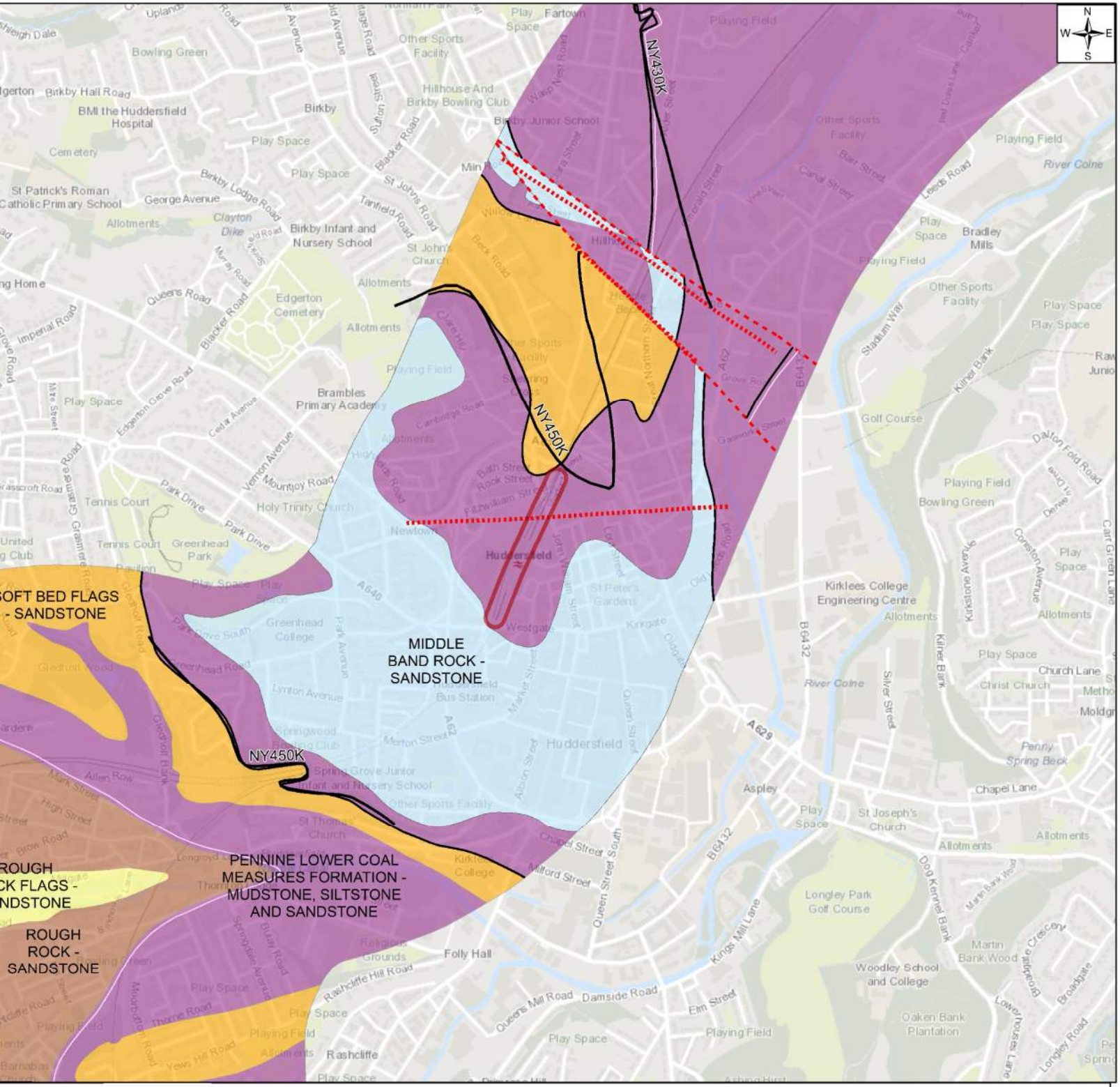
- ALLUVIUM - CLAY, SAND AND GRAV
- GLACIOFLUVIAL DEPOSITS, MID PLEISTOCENE - SAND AND GRAVE
- HEAD - CLAY, SILT, SAND AND GRA

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NationalMiningEngineer@networkrail.co.uk

HUDDERSFIELD, SAINT GEORGES SQUARE
30M DEEP BOREHOLES
PLAN 4 - BEDROCK GEOLOGY
ELR: MVL3 - 25.1181 to 25.1573 M.Yds

Scale	1:10,000	**File Ref**	Con 139
Date	04/10/2023	**Prepared By**	LH
GIS Version	10.6.1	**Template Version**	8.2.3

Legend

- Site Boundary
- CA Outcrops
- CA Faults

BGS 10k Linear

- FAULT
- FOSSIL_HORIZON
- OUTCROP

BGS 10k Bedrock

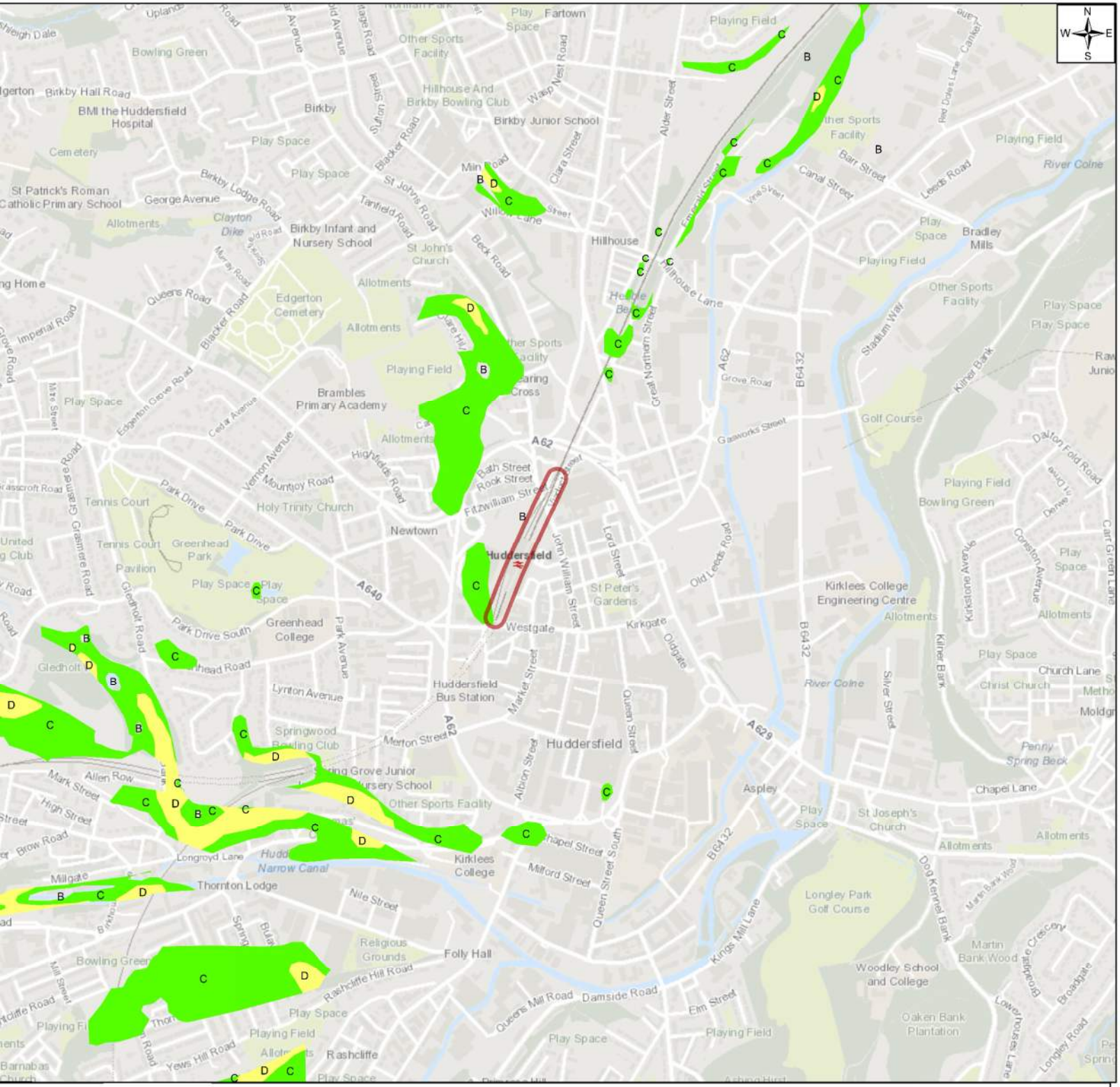
- MIDDLE BAND ROCK - SANDSTONE
- MILLSTONE GRIT GROUP [SEE ALSO MIGR] - MUDSTONE, SILTSTONE AND SANDSTONE
- PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE
- ROUGH ROCK - SANDSTONE
- ROUGH ROCK FLAGS - SANDSTONE
- SOFT BED FLAGS - SANDSTONE

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NationalMiningEngineer@networkrail.co.uk

HUDDERSFIELD, SAINT GEORGES SQUARE
30M DEEP BOREHOLES
PLAN 5 - BGS LANDSLIDES
ELR: MVL3 - 25.1181 to 25.1573 M.Yds

Scale	1:10,000	**File Ref**	Con 139
Date	04/10/2023	**Prepared By**	LH
GIS Version	10.6.1	**Template Version**	8.2.3

Legend

Site Boundary

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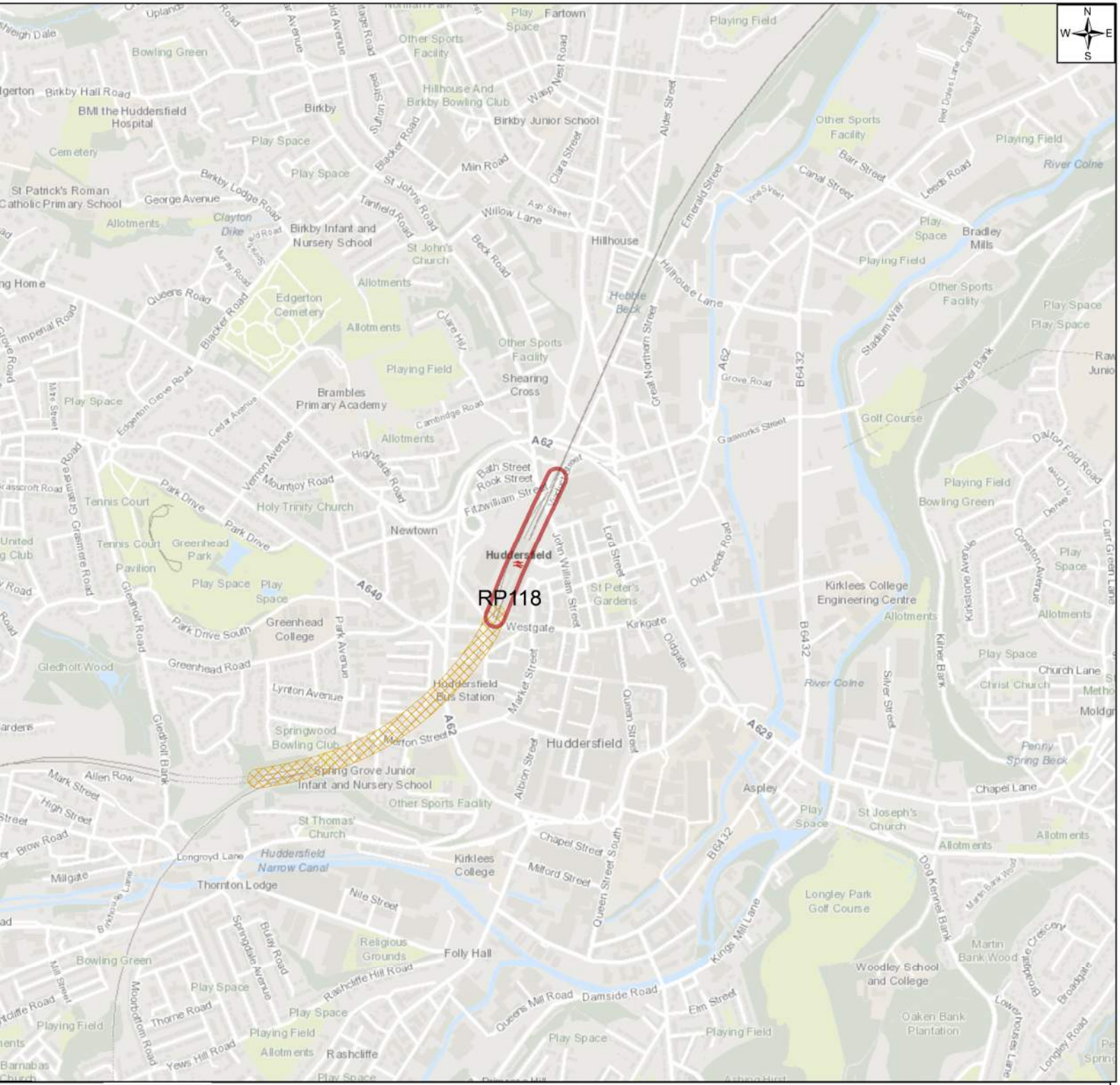
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NetworkRail

NationalMiningEngineer@networkrail.co.uk

HUDDERSFIELD, SAINT GEORGES SQUARE
30M DEEP BOREHOLES
PLAN 6 - NR SHALLOW MINEWORKINGS
ELR: MVL3 - 25.1181 to 25.1573 M.Yds

Scale	1:10,000	**File Ref**	Con 139
Date	04/10/2023	**Prepared By**	LH
GIS Version	10.6.1	**Template Version**	8.2.3

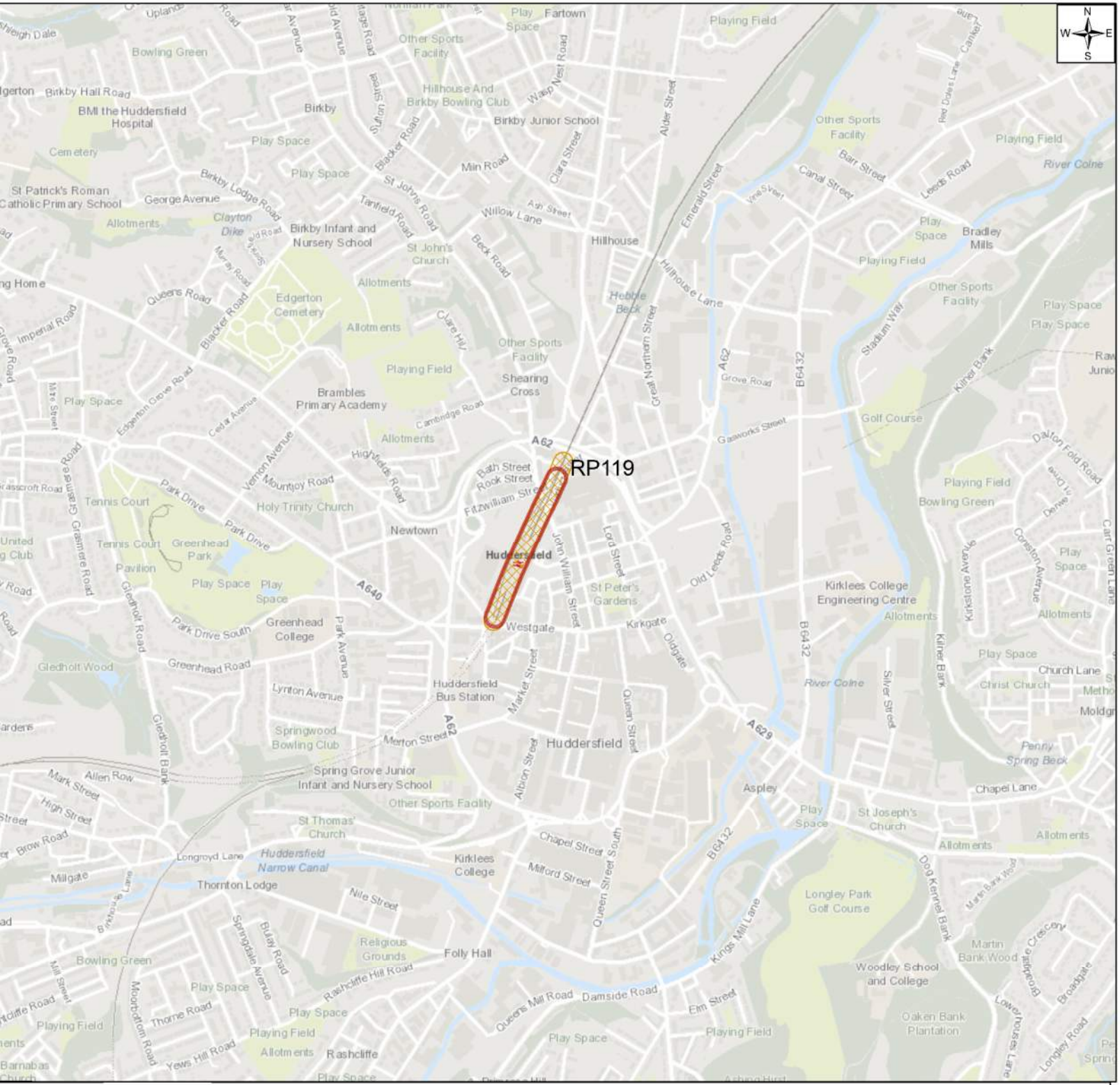
Legend

- Site Boundary
- Room and Pillar MHD selection

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NationalMiningEngineer@networkrail.co.uk

HUDDERSFIELD, SAINT GEORGES SQUARE
30M DEEP BOREHOLES
PLAN 7 - NR PROBABLE SHALLOW MINEWORK

ELR: MVL3 - 25.1181 to 25.1573 M.Yds

Scale	1:10,000	**File Ref**	Con 139
Date	04/10/2023	**Prepared By**	LH
GIS Version	10.6.1	**Template Version**	8.2.3

Legend

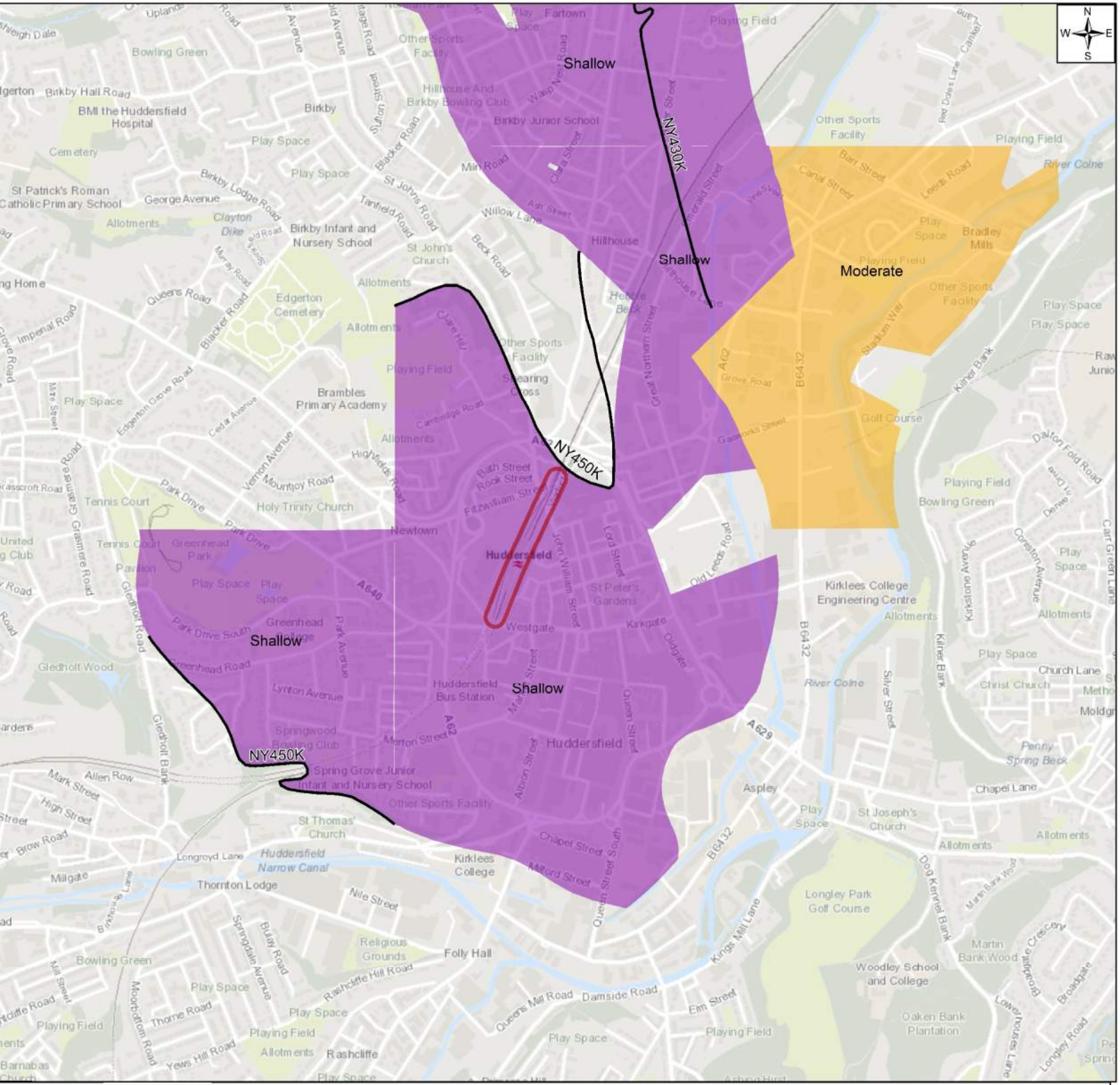
- Site Boundary
- Room and Pillar MHD

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NetworkRa

NationalMiningEngineer@networkrail.co.uk

HUDDERSFIELD, SAINT GEORGES SQUARE
30M DEEP BOREHOLES
PLAN 8 - CA PROBABLE MINEWORKINGS

ELR: MVL3 - 25.1181 to 25.1573 M.Yds

Scale	1:10,000	**File Ref**	Con 139
Date	04/10/2023	**Prepared By**	LH
GIS Version	10.6.1	**Template Version**	8.2.3

Legend

- Site Boundary
- CA Outcrops
- CA Probable Workings (Moderate Depth)
- CA Probable Workings (S… Depth)

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Appendix 4

Coal Authority (Trading as Mining Remediation Authority) Correspondence

GD Pickles Ltd, registered in the UK: 09387115.
Biltons Farm, South Scarle Lane, Swinderby, Lincoln, LN6 9JA
T: 07768058151 or 07484100872
W: gdpickles.co.uk

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG
: 01623 637 119 (Planning Enquiries)
: planningconsultation@coal.gov.uk
: www.gov.uk/coalauthority

Kirklees Council

[By email: DC.Admin@kirklees.gov.uk]

10th June 2025

Dear Ms Rann

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Thank you for your notification of 5 June 2025 seeking the further views of the Coal Authority on the above.

The Coal Authority response: ?)

The Coal Authority previously objected to this application in a letter dated 21st May 2025 as no site specific Coal Mining Risk Assessment was submitted by the applicant to support the application.

We note that this application is accompanied by a Consultee Response prepared by AHR Building Consultancy, including an up to date Coal Mining Risk Assessment report (S250101) prepared by Solmek Ltd, dated 18th March 2025. The report has been based

upon a review of coal mining and geological information, and concludes that unrecorded underground coal mine workings at shallow depth may be present beneath the site.

The report makes recommendations for ground investigations to be carried out on the site in order to establish the extent of any unrecorded shallow mine workings and to inform any remedial works and mitigation measures needed to ensure the site is safe and stable.

The intrusive site investigations should be designed and undertaken by competent persons and should be appropriate to assess the ground conditions on the site in order to establish the coal mining legacy present and the risks it may pose to the development and inform any remedial works and/or mitigation measures that may be necessary.

The applicant should note that Permission is required from the Coal Authority Permit and Licensing Team before undertaking any activity, such as ground investigation and ground works, which may disturb coal property. Please note that any comments that the Coal Authority may have made in a Planning context are without prejudice to the outcomes of a Permit application.

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It should be noted that wherever coal resources or coal mine features exist at shallow depth or at the surface, there is the potential for mine gases to exist. These risks should always be considered by the LPA. The Planning & Development team at the Coal Authority, in its role of statutory consultee in the planning process, only comments on gas issues if our data indicates that gas emissions have been recorded on the site. However, the absence of such a comment should not be interpreted to imply that there are no gas risks present. Whether or not specific emissions have been noted by the Coal Authority, local planning authorities should seek their own technical advice on the gas hazards that may exist, and appropriate measures to be implemented, from technically competent personnel.

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We also note that where SUDs are proposed as part of the development scheme consideration will need to be given to the implications of this in relation to the stability and public safety risks posed by coal mining legacy. The developer should seek their own advice from a technically competent person to ensure that a proper assessment has been made of the potential interaction between hydrology, the proposed drainage system and ground stability, including the implications this may have for any mine workings which may be present beneath the site.

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The Planning Team at the Coal Authority concurs with the conclusions of the Coal Mining Risk Assessment report; that coal mining legacy potentially poses a risk to the proposed development and that investigations are required, along with possible remedial measures, in order to ensure the safety and stability of the proposed development.

As such, should planning permission be granted for the proposed development, we would recommend that the following conditions are included on the Decision Notice:

The Coal Authority therefore 2) 2 '@ to the proposed development &'@ (' *) . Whilst we appreciate that you may wish to make some amendment to the choice of words, we would respectfully request that the specific parameters to be satisfied are not altered by any changes that may be made.

Should planning permission be granted for this proposal, we also request that the following wording is included as Informative Notes on any decision notice:

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treatment of coal mine workings and coal mine entries for ground stability purposes. Failure to obtain permission to enter or disturb our property will result in the potential for court action. Application forms for Coal Authority permission and further guidance can be obtained from The Coal Authority's website at: www.gov.uk/get-a-permit-to-deal-with-a-coal-mine-on-your-property

2 - Shallow coal seams

In areas where shallow coal seams are present caution should be taken when carrying out any on site burning or heat focused activities.

3- Requirement for Incidental Coal Agreements

If any future development has the potential to encounter coal seams which require excavating, for example excavation of building foundations, service trenches, development platforms, earthworks, non-coal mineral operations, an Incidental Coal Agreement will be required from the Coal Authority. Further information regarding Incidental Coal Agreements can be found here - https://www.gov.uk/government/publications/incidental-coal-agreement/guidance-notes-for-applicants-for-incidental-coal-agreements

The following statement provides the justification why the Coal Authority considers that a pre-commencement condition is required in this instance:

The undertaking of intrusive site investigations, prior to the commencement of development, is considered to be necessary to ensure that adequate information pertaining to ground conditions and coal mining legacy is available to enable appropriate remedial and mitigatory measures to be identified and carried out before building works commence on site. This is in order to ensure the safety and stability of the development, in accordance with paragraphs 187, 196 and 197 of the National Planning Policy Framework.

Please do not hesitate to contact me if you would like to discuss this matter further.

Yours sincerely,

Peter Woodcock | *BSc (Hons), AssocRTPI*
Assistant Planning and Development Manager

Disclaimer

The above consultation response is provided by the Coal Authority as a statutory consultee and is based upon the latest available data and the electronic consultation records held by the Coal Authority since 1 April 2013. The comments made are also based on the information provided to the Coal Authority by the Local Planning Authority and/or information that has been published on the Council's website for consultation purposed in relation to this specific planning application. The views and conclusions contained in this response may be subject to review and amendment by the Coal Authority if additional or new data/information (such as a revised Coal Mining Risk Assessment) is provided by the Local Planning Authority or the applicant for consultation purposes.

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG
T: 01623 637 119 (Planning Enquiries)
E: planningconsultation@coal.gov.uk
W: www.gov.uk/coalauthority

For the attention of: Jay Pickles, Technical Director

GD Pickles Limited,
Biltons Farm,
South Scarle Lane,
Swinderby,
Lincoln,
Lincolnshire LN6 9JA

27th August 2026

Dear Jay,

Re: PAS00526

George Hotel, St George's Square, Huddersfield, HD1 1JA

Thank you for your instruction of 7th August 2026 seeking a meeting (held 24th August) and the written views of the Coal Authority (trading as the Mining Remediation Authority) concerning the George Hotel redevelopment in Huddersfield, which we provide below.

Further to the Planning Advice Service meeting held on 24 August 2026, the Mining Remediation Authority has considered the matters discussed in relation to the proposed redevelopment of the George Hotel and the associated substation. The meeting was useful in clarifying the scope of the coal mining legacy considerations, the interpretation of the Phase 2 site investigation information conducted by Solmek, and the proportionate approach proposed to addressing the substation within the existing Coal Mining Risk Assessment (CMRA) framework.

The MRA understands that the site comprises the former George Hotel, the southern part of which is a listed building. Following demolition of the relevant element's changes include a modified basement and complex local changes in level with new piers supported on piled foundations and spanning floor slab. The proposed substation is located immediately adjacent to the main hotel footprint and within the wider proposed works area. Retaining structures and Network Rail infrastructure are also present nearby, and these factors should continue to be taken into account when considering ground risk, constructability and foundation design.

We note that a Phase 1 Coal Mining Risk Assessment prepared by Solmek was initially submitted, with subsequent Phase 2 borehole investigation undertaken. Borehole (BH03) recorded loss of flush, which Solmek interpreted as potentially indicative of unrecorded shallow mine workings associated with the soft bed coal. Borehole records have confirmed the thickness where proven, of the soft bed coal as 0.4m located at an expected depth of c.11m below the proposed new basement level. However, an adjacent borehole located very close to borehole (BH03) did not record corroborating evidence of workings. We accept that loss of borehole flush can occur in soft mudstones/coal and, in isolation, does not necessarily confirm the presence of mine workings. The interpretation should therefore be made using professional judgement and considered alongside the full drilling logs, adjacent borehole evidence, available mining records and any other relevant site investigation records and information. As confirmed in our recent meeting MRA records do not confirm any shallow recorded workings beneath or in the general locality of the site but the reason why the site does occupy a development high risk area (DHRA) is because the presence of the soft bed coal a workable seam, is present beneath the site and has the potential to have been mined at shallow depth.

As we discussed a further review of information held by the MRA surrounding the George Hotel site has been possible since our meeting. This has produced a mix of results, and the main information has been compiled onto the image centred on the Huddersfield Railway Station below. Records indicate at least 9 permits in the general area, several of which have no completion details submitted. Based on a non-extensive examination of all permits the evidence from investigations reported on indicate the following. Annotated area (1) associated we understand with a proposed subway extension under the station form the east side involving a piled contiguous wall was probed and grouted (to 15m on a 6m grid) a proposed investigation phase of works was later descoped. It was not possible to locate the completion information in respect to that area and it's unclear why the other investigations were descoped (not carried out) but the area of high mining risk red (3) does appear to have

been modified as a result. Area (2) was subject to investigations and completion information was supplied. It confirms that seven boreholes were undertaken drilled to 11.5 and 16m depth to target the soft bed coal (expected at c. 8m bgl) The boreholes encountered the coal at 7-9m depth voids and flush loss were encountered in 4 out of 7 holes. Intact coal and flush returns in 3 holes. The high mining risk area (3) encompasses I understand the area of workings in the southern half of the investigation area. An area of investigation was undertaken in the north (4) and this revealed no evidence of mine workings. The area (5) is an area of faulting within which the soft bed coal was found to be displaced upwards, close to the surface, shown on cross-sections as fault bound.

An assumption is that the exterior shape of the red (3) high risk mining area which abuts the George Hotel over c. half its perimeter, follows the area of Network Rail's (NR's) ownership and therefore interest.



On the basis of the information discussed at the meeting, and subject to the database review noted above, the Authority's position is that the available evidence does not presently

demonstrate the existence of recorded shallow mine workings affecting the site but the categorisation of high mining risk by NR in the area will need consideration. The only historic mine entry identified in the local area from MRA records and as mentioned in discussion is (ref. 414416-004, OSGR 414115E, 416805N) confirmed to be just over 300 metres WSW of the George Hotel site boundary. This shaft was encountered during construction works and treated by grouting in 2023 its confirmed depth was 27.2m. The information discussed from nearby Network Rail investigations was not understood (subject to type and depth of investigations undertaken) to identify shallow mine workings through intercepting the soft bed coal seam to the west of the hotel. As commented on in the meeting the closest investigation on Network Rail land is recorded at positions more than 50m from the George Hotel site boundary others are significantly more distant.

Investigations were granted a permit for the market area (east of Byram Street) west of the George Hotel, but no completion information could be located. Given that NR have commissioned considerable works in the near locality and should have the full findings we would strongly recommend you contact their mining engineers to establish what they may be able to tell, or share with you, to assist in finalising your CMRA.

In respect of the proposed substation, we note from the meeting that this element of the proposal was accidentally omitted, and a separate planning application is now being sought. The Authority considers that, given the substation will fall within the original applications red line boundary, its proximity to the main development footprint and the assessment work already undertaken, it is appropriate, in our view, for the existing Coal Mining Risk Assessment to be revised. The revised CMRA should explicitly include reference to the substation location, plan and supporting information. This may be prepared as an addendum or revision to the current assessment rather than as a wholly separate standalone CMRA. The acceptability of that approach remains a matter for the Local Planning Authority in its role as decision maker.

The revised or addendum Coal Mining Risk Assessment should clearly explain the relationship between the substation and the wider redevelopment, address the available drilling information, and set out the basis for the conclusions reached in respect of coal mining legacy risk. Any conclusions from the assessment should then be carried forward into the foundation design and construction methodology. We understand the substation is to be founded on a reinforced raft.

The foundation strategy discussed during the meeting, including piles for columns, a suspended ground floor and likely CFA piling, and it was acknowledged that the final design

should appropriately reflect the Coal Mining Risk Assessment conclusions which GDP confirmed would be subject to an update to the document and remain dynamic as to reflect any relevant emerging information. As stressed in the meeting in accordance with recommendations in industry guidance (CIRIA C758D) the MRA's preference would be for the design piles to be designed and constructed to penetrate through the coal seam, with appropriate allowance for potential minor grout loss during piling due to the expected condition of the weak mudstones present. This is principally a construction and cost risk to be managed by the design and contracting team, rather than a matter which, on the information presently available, would prevent technical deliverability.

If additional information is available from Solmek regarding drilling resistance, flushing behaviour, or any other relevant drilling indicators associated with borehole 3, this should be provided to inform the final assessment. If no further intrusive investigation is proposed, the rationale for that position should be clearly set out in the revised or addendum Coal Mining Risk Assessment, with reference to the available borehole evidence, mining records and the adopted foundation design risk-management measures referred to in the meeting.

Once you have gathered your findings and made recommendations the Coal Authority's planning team will of course adopt a proportionate response. The existing Coal Mining Risk Assessment will be updated to include the substation, and the agreed risk-management measures are incorporated into the foundation design. The Authority would expect the Local Planning Authority to be provided with the revised or addendum assessment for consideration as part of the planning process, including the application to discharge Condition 12 of the approved consent in the first instance. You must ensure within the CMRA the professional views and opinions expressed give clear recommendations. If in GDP's opinion no further investigations or treatment works are considered necessary, the details of the risk management methodology mentioned should be set out and subsequently implemented.

We anticipate in such a scenario being able to recommend to the LPA the discharge of Condition 12 on this basis, should they choose to consult us. As a reminder, Condition 13 will then, following completion of all major groundworks require a written statement or declaration from the competent person, GDP, confirming the conditions requirements have been fully met and the final suitability of the ground and foundations proven. This should confirm that the site is safe and stable for the development proposed.

If you would like to discuss this matter further, please contact me on the above number.

Yours sincerely,

Leigh Sharpe

Geotechnical & Development Manager

Disclaimer

The above consultation response is provided by the Coal Authority as a statutory consultee and is based upon the latest available data and the electronic consultation records held by the Coal Authority since 1 April 2013. The comments made are also based on the information provided to the Coal Authority by the Local Planning Authority and/or information that has been published on the Council's website for consultation purposed in relation to this specific planning application. The views and conclusions contained in this response may be subject to review and amendment by the Coal Authority if additional or new data/information (such as a revised Coal Mining Risk Assessment) is provided by the Local Planning Authority or the applicant for consultation purposes.

In formulating this response the Coal Authority has taken full account of the professional conclusions reached by the competent person who has prepared the Coal Mining Risk Assessment or other similar report. In the event that any future claim for liability arises in relation to this development the Coal Authority will take full account of the views, conclusions and mitigation previously expressed by the professional advisors for this development in relation to ground conditions and the acceptability of development.