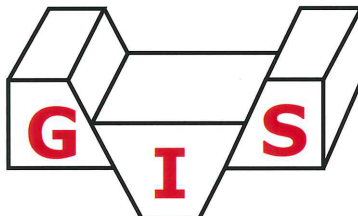

GROUND INVESTIGATION
FOR
PROPOSED EXTENSION
AT
TECHEMET LIMITED
NO.1 VANGUARD WAY
WILNECOTE
TAMWORTH

CLIENT: TECHEMET LTD
ARCHITECT: BUILDING DESIGN GROUP

DATE: SEPTEMBER 2023 **REPORT NO:** 2504

**GROUND INVESTIGATION
SPECIALISTS LIMITED**

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REPORT NO: 2504

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REPORT NO: 2504

GROUND INVESTIGATION
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NO.1 VANGUARD WAY
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1.0 INTRODUCTION

In July 2023 Ground Investigation Specialists Ltd (GIS) received an instruction from Building Design Group Ltd (BDG), acting as the Architect on behalf of Techemet Ltd, to carry out a ground investigation for a proposed extension to the company's metal processing facility at No 1 Vanguard, Tamworth, B77 5DY. The Planning Reference No issued by Tamworth Borough Council for the single storey extension was 0230/2022.

The purpose of the investigation was to ascertain the nature and structure of the near surface strata in order that an assessment could be made of certain geoenvironmental and geotechnical properties relating to the proposed extension, in addition to investigating the risks associated with past coal mining activity, as specified in Condition 4 of the Councils Planning Approval.

Fieldwork was carried out between 16th August and 13th September 2023 and consisted of sinking 4no. boreholes by percussive windowless sampling methods to inspect and sample the shallow strata and 4no. deeper boreholes by rotary open hole drilling methods to confirm the presence of potential shallow mine workings.

This report presents a factual account of the works undertaken and gives a geotechnical and geoenvironmental appraisal of the near surface soil conditions for the proposed extension and presence of certain contaminants, as well as an appraisal of the risks from past coal mining activity to the proposed development.

This report is for the sole use of Techemet Ltd and their advisors in support of the new extension No.1 Vanguard, Tamworth. No liability can be accepted for its use by other parties or for other developments proposals.

2.0 SITE LOCATION AND DESCRIPTION

Details of the site location, site description and conditions are presented in the Table 1 (overleaf).

Table 1: Site Location and Description

Site Address and Location	The site is located at Techemet Ltd, No.1 Vanguard, Ninian Way, Tamworth, B77 5DY, as shown in Figure 1 (below).  Figure 1. Aerial photograph (Google) showing the approximate location of site (extension) outlined in red.
Approx. National Grid Ref.	The grid reference for the approximate site centre is: 422000, 300587.
Approximate Site Area	The site area is approximately 0.12 ha.

Site Description	The site comprises a rectangular grassed area directly south and east of the existing Techemet Ltd metal processing facility. To the east is Ninian Way and to the south are industrial units nos. 12-14 Ninian Park. The site is relatively flat and there are occasional bushes and semi-mature trees estimated to be < 8 m tall on the southern boundary. Figure 2 below shows the existing conditions on site. Figure 2. Site photograph showing conditions at time of investigation, looking approximately northwest.
Access	There is vehicle access onto the site from Vanguard to the north and Ninian Way to the east.
Hazardous Material Storage	None identified during walkover survey.

3.0 ANTICIPATED GEOLOGY

With reference to British Geological Survey (BGS) sheets 154 for Lichfield (1: 50,000 series) and SK20SW (1:10,000 series) together with the online BGS lexicon, the site is expected to be underlain by bedrock of the Pennine Middle Coal Measures Formation (PMCM) comprising interbedded grey mudstone, siltstone and sandstone with common coal seams of previous economic interest. The Half Yard Coal seam is expected to subcrop near the centre of the site below any made ground/fill. This in turn may be underlain at shallow depth by the Four Foot Coal and Two Yard Coal seams which outcrop to the west of the site and are both shown dipping gently to the ESE. The site does not appear to be affected by faults, the nearest being c. 200 m west of the site trending southwest to northeast with the downthrow side to the northwest.

4.0 COAL MINING ACTIVITY

A CON29M Coal Mining Assessment report prepared by Groundsure (report ref: GS-8718092, May 2022) was provided to GIS. The report is included in Section 13.0 and the relevant key findings are summarised below.

- The property is within the zone of influence of recorded workings in 4 coal seams at depths of 40 – 85 m, last worked in 1939 Any ground movement due to this activity should have stopped.
- The site could be affected by shallow mine workings for which no plans exist (i.e. unrecorded).
- There are no records of coal mine entries (shafts or adits) located within 20 m of the site boundary.
- There are no records of damage arising from geological faults or other lines of weakness activated by coal mining for the site.
- The site is not affected by past opencast coal mining.

- There has not been a damage notice or subsidence claim for the property or within 50 m of the property since 31st October 1994 (records were not kept before this date).
- No mine gas emissions are recorded within the site boundary.

The report identified a potential risk to future development on the site posed by possible unrecorded shallow mine workings and recommended seeking further technical advice relating to the investigation and treatment, if deemed necessary to stabilise the ground before further development takes place.

5.0 SITE INVESTIGATION

5.1 Fieldwork

Fieldwork was carried out between 16th August and 13th September 2023 and consisted of sinking 4no. boreholes by percussive windowless sampling methods and 4no. boreholes by rotary open hole methods at the positions shown on the site plan in section 14.0.

5.1.1 Windowless Sampling Boreholes WS1 – WS4

On 16th August 2023 a Premier percussive windowless sampling rig was mobilised to sink boreholes WS1 and WS3 to a depth of 2.4 m, WS2 to 4.4 m and WS4 to 3.4 m.

Prior to drilling at each borehole position an inspection pit was dug by hand to a depth of 1.2 m in order to check for the presence of buried services. Continuous 1.0 m long undisturbed samples were then taken to ensure a complete soil profile to the base of each borehole. The samples, of a diameter reducing from 100 mm, were described and sub-sampled on site by a geotechnical engineer who produced the borehole logs in section 9.0.

Standard Penetration Tests (SPTs) were carried out from an initial depth of 1.2 m and then at regular 1 m intervals to determine the strength of the underlying strata.

On completion of drilling all boreholes were backfilled with arisings.

5.1.2 Rotary Boreholes R1 – R2

Between the 11th and 13th September, a Hands England rotary drilling rig was mobilised to sink boreholes R1 and R2 to a depth of 40 m and R3 and R4 to a depth of 20 m.

The method of drilling employed a drill bit which was rotated and advanced into the ground, using water as the flushing method. The chippings of rock-strata returned to the surface through the annulus between the drill rods and the borehole. The samples were logged at the surface continuously by the drilling foreman.

This drilling technique is particularly sensitive to the presence of mine workings as cavities or shattered strata are immediately apparent from changes in the rate of penetration and a loss or reduction in the volume of drilling flush returns.

The fair drawn logs of the exploratory boreholes are included in section 10.0, based on the foreman driller's description of the flush returns.

On completion of drilling all boreholes were backfilled with a mixture of arisings and cement.

5.2 Laboratory Testing

GIS specified the following schedule of laboratory testing. The results are presented in sections 11.0 and 12.0.

5.2.1 Contamination

Two samples of made ground comprising topsoil (WS2 at 0.2 m) and clay and sand (WS4 at 0.5 m) have been tested for a general suite of likely contaminants including asbestos, arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc, speciated polycyclic aromatic hydrocarbons (PAH), total petroleum hydrocarbons by Criteria Working Group (TPH CWG) and pH, along with their soil organic matter (SOM).

5.2.2 Geotechnical

To aid in their classification and determine the volume change potential of the shallow soils, 3no. samples of cohesive soil have been tested for their Atterberg Limits and moisture content.

To assess conditions considered aggressive to buried concrete and due to the potential for oxidation of pyrite in the natural bedrock strata, 4no. soil samples have been tested for Building Research Establishment Special Digest 1 (BRE SD1) Suite B which includes pH and the contents of water-soluble sulphate (using a 2:1 water/soil extract), acid soluble sulphate and total sulphur.

6.0 GROUND CONDITIONS

6.1 Strata Encountered

Full details of the strata encountered are presented on the borehole logs included in sections 9.0 and 10.0. However, as a brief guide, the main engineering geology horizons are described below.

Made Ground

All exploratory holes encountered a surface layer of made ground comprising soft dark grey-brown topsoil with some brick and concrete fragments and occasional whole bricks, to depths of 0.2 m (WS3) to 0.4 m (WS1, WS2).

Further made ground was encountered in WS4 to 1.3 m comprising grey and brown clayey silty sand with bricks and brick fragments below 0.8 m. Suspected made ground of a similar consistency was found in WS1 and WS3 to 0.9 m, though the recovered samples did not contain any brick.

Pennine Middle Coal Measures Formation (PMCM)

The anticipated weathered bedrock of the PMCM was encountered from depths of 0.4 m (WS2) to 1.3 m (WS4) and comprised soft to firm becoming stiff grey and brown mottled clay with increasing lithorelicts of mudstone and siltstone to between 1.5 m (WS3) and 2.7 m (WS4).

Below this in WS2 and WS4 the formation graded to extremely weak friable laminated grey and brown mottled mudstone, whereas in WS1 at 2.2 m was extremely weak to very weak friable grey and brown mottled sandstone.

In WS3 below a layer of firm laminated black coaly silty clay present from 1.5 to 2.1 m, extremely weak to very weak coal was proved to >2.4 m.

The deep rotary probe boreholes confirmed the underlying PMCM sequence, which comprised interbedded grey and occasionally brown or black mudstone and sandstone beds with several thin coal bands to a maximum depth of 37 m.

Table 1 (overleaf) provides a summary of the coal bands/seams encountered in boreholes R1 – R4 and WS3. In total, 5no. coal seams appear to have been encountered which have been interpreted as being the Half Yard Coal, 4 Foot Coal, 2 Yard Coal, Ryder Coal and Ell Coal seams. The bedrock appears to be dipping gently towards the WSW at approximately 7 – 8° from the horizontal.

During drilling, the foreman driller recorded no loss of flush returns in the boreholes or change in the rate of drilling to indicate the presence of voids or broken ground and all the coal bands were solid and intact.

Table 1: Summary of Coal Found in Boreholes R1 – R4 and WS3

<u>Borehole No.</u>	<u>Coal Encountered (m bgl)</u>	<u>Thickness (m)</u>	<u>Possible Coal Seam Name</u>
R1	7.1 – 7.9	0.8	Half Yard
	13.6 – 14.2	0.6	4 Foot
	14.4 – 15.0	0.6	
	23.0 – 23.8	0.8	2 Yard
	31.7 – 32.8	1.1	Ryder
R2	9.4 – 10.0	0.6	4 Foot
	10.2 – 10.7	0.5	
	19.2 – 20.0	0.8	2 Yard
	26.0 – 27.2	1.2	Ryder
	36.5 – 37.2	0.7	Ell
R3	3.2 – 3.5	0.3	Half Yard
	10.7 – 11.2	0.5	4 Foot
	11.4 – 11.9	0.5	
	18.0 – 19.0	1.0	2 Yard
R4	4.2 – 5.0	0.8	Half Yard
	13.7 – 14.4	0.7	4 Foot
	14.6 – 15.2	0.6	
WS3	2.1 – >2.4*	>0.3	Half Yard

* Base of coal not found due to borehole refusal.

6.2 Groundwater

The windowless sampling boreholes remained dry for the short period of time they were left open. Rotary probe drilling is not sensitive to small groundwater inflows due to the constant re-cycling of water through the borehole as a drilling fluid.

7.0 ENGINEERING DISCUSSION

7.1 Introduction

As shown on the site plan and drawings in section 14.0, it is proposed to construct a new extension to the southeast of the Techemet Ltd metal processing facility, which will be of lightweight steel framed construction with cladding and dwarf brick walls.

7.2 Mining

Whilst the borehole investigation has confirmed the presence of 5no. coal seams at depths of between 2 and 37 m, there was no evidence that any of the seams had been worked in the 4no. boreholes drilled. The area to be extended can be regarded as stable from a shallow mining point of view and no remedial measures are required to address land instability. Foundations for the new extension need only take account of the geotechnical properties of the near surface soils.

7.3 Foundations

The shallow ground conditions generally comprised a little topsoil onto some pockets of made ground to depths of 0.4 to 1.3 m, underlain by soft to firm, becoming stiff, grey and brown mottled clay of the weathered PMCM, grading to mudstone below depths of 1.8 to 2.7 m.

The uncorrected SPT N values increased with depth from a minimum value of 5 (WS4 at 1.2 m) to a maximum extrapolated value of 68 (WS4 at 3.0 m, based 50 hammer blows for 220 mm penetration of the SPT sampler).

Prior to construction, all remaining topsoil should be stripped from the extension footprint. Strip or pad foundations should be taken below any pockets of made ground and into the firm becoming stiff grey and brown mottled clay found at depths of 1.0 - 1.5 m. At this depth a 1m square pad foundation could have a maximum allowable bearing pressure of 130 kPa, reducing to 110 kPa for a 1m wide strip foundation, for which the resultant settlements should be within normal tolerable limits.

Care should be taken to ensure conditions at formation level are similar to those described on the borehole logs and that foundations are taken below any made ground (as encountered to a maximum depth of 1.3 m in WS4) or inferior pockets of soft clay.

The results of the Atterberg limit testing carried out on samples of the shallow clay confirm it has plasticity index in the range of 25 – 33 % and, therefore, a medium volume change potential due to changes in its moisture content. In accordance with the National House-Building Council (NHBC) guidance, strip or pad foundations on medium shrinkage soil should have a minimum depth of 0.9 m to account for seasonal changes in moisture content.

Excavations up to 1.5 m deep and are not expected to encounter significant influxes of groundwater, though any that does occur should be readily removed via intermittent pumping from open sumps. Water should not be allowed to stand in excavations and they should be kept open for the minimum time necessary before the concrete is poured to avoid potential softening of the clay and loss of bearing capacity.

Where any coal or coaly material such as that encountered below 1.5 m in WS3 is observed daylighting in excavations this should be removed to a distance of 1.0 m and replaced with lean

mix concrete or clean clay, so as to isolate the potentially combustible materials from oxygen and water.

7.4 Floor Slab

The case for employing a floating floor slab is marginal. Loadings in the order of 20 kPa are unlikely to result in noticeable differential or total settlements over the majority of the site. However, the boreholes do indicate the presence of a pocket of made ground thickening to the south east.

For a floor slab which will be spanning shallow made ground and natural soil it should be founded on a minimum thickness of 300 mm of well compacted hardcore after the soils at the reduced formation level have been proof rolled with a vibrating roller to remove any loose pockets. Mesh reinforcement should be incorporated top and bottom of the slab.

A fully suspended floor slab solution may be necessary if a design bearing pressure in excess of 20 kPa are required.

7.5 Classification for Buried Concrete

4no. samples of the shallow soil have been tested for conditions considered aggressive to buried concrete. Based on the results and following the procedure set out in section C5 and Table C1 of Special Digest 1:2005, the site should have a Design Sulphate Class (DS) of DS3 and an Aggressive Chemical Environment for Concrete Class (ACEC) of AC-2S.

8.0 SOIL CONTAMINATION ASSESSMENT

Two samples of made ground, one comprising topsoil (WS2 at 0.2 m) and the other sand (WS4 at 0.5 m) have been tested for a general suite of likely contaminants, including metals/metalloids, speciated PAHs, TPH CWG and asbestos.

The results have been compared with Generic Assessment Criteria (GAC) for Commercial land use known as “Suitable 4 Use Levels- S4ULs”, derived using the Contaminated Land Environmental Assessment ‘CLEA’ v1.06 software methodology by the Land Quality Management (LQM)/Chartered Institute of Environmental Health (CIEH), with the exception of lead for which the DEFRA Category 4 Screening Level for the same land use scenario has been used.

Table 2 (overleaf) provides a summary of the analysis data and comparison with the appropriate screening values.

All the S4UL’s for the organic contaminants are appropriate to a SOM content of 6 % based on an assessment of the results.

**Table 2: Summary of Made Ground Analysis Data for Metals,
Metalloids, pH, PAH and TPH**

<u>Determinand</u>	<u>Units</u>	Made Ground (TOPSOIL)	Made Ground (SAND)	<u>Screen</u>	<u>Source</u>
		WS2 0.20 m	WS4 0.50 m		
Arsenic	mg/kg	15.9	14.6	640	S4UL
Cadmium	mg/kg	0.6	0.3	190	S4UL
Chromium	mg/kg	54.2	17.5	8600	S4UL
Copper	mg/kg	957	131	68000	S4UL
Lead	mg/kg	107	56.0	2330	C4SL
Mercury	mg/kg	0.3	<0.1	1100	S4UL
Nickel	mg/kg	27.4	17.7	980	S4UL
Selenium	mg/kg	<1.0	<1.0	12000	S4UL
Zinc	mg/kg	183	128	730000	S4UL
pH	-	7.89	5.7	<5	ARB
Naphthalene	mg/kg	<0.02	<0.02	1100	S4UL
Acenaphthylene	mg/kg	<0.02	<0.02	100000	S4UL
Acenaphthene	mg/kg	0.02	<0.02	100000	S4UL
Fluorene	mg/kg	<0.02	<0.02	71000	S4UL
Phenanthrene	mg/kg	0.20	0.09	23000	S4UL
Anthracene	mg/kg	0.07	0.03	540000	S4UL
Fluoranthene	mg/kg	0.65	0.20	23000	S4UL
Pyrene	mg/kg	0.58	0.17	54000	S4UL
Benzo(a)anthracene	mg/kg	0.37	0.11	180	S4UL
Chrysene	mg/kg	0.34	0.10	350	S4UL
Benzo(b)fluoranthene	mg/kg	0.51	0.15	45	S4UL
Benzo(k)fluoranthene	mg/kg	0.21	0.06	1200	S4UL
Benzo(a)pyrene	mg/kg	0.36	0.08	36	S4UL
Indeno(123cd)pyrene	mg/kg	0.32	0.09	510	S4UL
Dibenz(ah)anthracene	mg/kg	0.07	<0.02	3.6	S4UL
Benzo(ghi)perylene	mg/kg	0.27	0.09	4000	S4UL
Aromatic TPH >C5-C7	mg/kg	<0.01	<0.01	86000	S4UL
Aromatic TPH >C7-C8	mg/kg	<0.01	<0.01	180000	S4UL
Aromatic TPH >C8-C10	mg/kg	<0.01	<0.01	17000	S4UL
Aromatic TPH >C10-C12	mg/kg	<10	<10	34000	S4UL
Aromatic TPH >C12-C16	mg/kg	<10	<10	38000	S4UL
Aromatic TPH >C16-C21	mg/kg	<1	<1	28000	S4UL
Aromatic TPH >C21-C35	mg/kg	48	20	28000	S4UL
Aromatic TPH >C35-C44	mg/kg	99	52	28000	S4UL
Aliphatic TPH >C5-C6	mg/kg	<0.1	<0.1	12000	S4UL
Aliphatic TPH >C6-C8	mg/kg	<0.1	<0.1	40000	S4UL
Aliphatic TPH >C8-C10	mg/kg	0.8	<0.1	11000	S4UL
Aliphatic TPH >C10-C12	mg/kg	<6	<6	47000	S4UL
Aliphatic TPH >C12-C16	mg/kg	<6	<6	90000	S4UL
Aliphatic TPH >C16-C35	mg/kg	<15	<15	1800000	S4UL
Aliphatic TPH >C35-C44	mg/kg	<10	<10	1800000	S4UL

C4SL = DEFRA Commercial use Category 4 Screening Level for Lead.

S4UL = Suitable 4 Use Levels developed by LQM/CIEH for Commercial use (6 % SOM for organic contaminants).

ARB = Arbitrary

Breaches are highlighted in **yellow**

Reference to Table 2 confirms that none of the determinands tested for in either sample had a concentration that exceeded their relevant commercial screening value.

In addition, no asbestos was detected in either sample.

No contaminants of concern have been identified and, given the site's relatively low environmental sensitivity, no further risk assessment or remedial measures are considered necessary.

As a standard precautionary measure, groundworkers involved in the construction works should wear standard PPE as normal (i.e. gloves, overalls, boots, helmets etc). A good standard of personal hygiene should be adopted, with the regular washing of hands, particularly before food is consumed.

**C.S. Noakes, MSci., MSc., FGS.
Ground Engineer**

**H.S. Lister, BSc., C. Geol., C Sci., FGS.,
Director**

Ground Investigation Specialists Limited

9.0 WINDOWLESS SAMPLING BOREHOLE LOGS

GROUND INVESTIGATION SPECIALISTS LIMITED

BOREHOLE RECORD	BORING COMMENCED: 16.08.23	TYPE OF BORING: Windowless Sampling	CLIENT: Techemet Ltd	BOREHOLE: WS1
	BORING COMPLETED: 16.08.23	DIAMETER OF HOLE: 100 – 60 mm	ARCHITECT: Building Design Group Ltd	
	GROUND LEVEL:	BOREHOLE CASING: None	CONTRACT: Techemet Extension, Tamworth	

DRILLING				SAMPLES				RESULTS OF TESTS											
DESCRIPTION OF STRATA	LEGEND	WATER LEVEL	THICK-NESS	DEPTH	Approx REDUCED LEVEL	DEPTH	TYPE	INDEX PROPERTIES					DENSITIES		STRENGTH TESTS			IN-SITU TESTS AND REMARKS (SPT Blows)	
								'N' VALUE	M/C %	LL %	PL %	PI	WET (kg/m ³)	DRY (kg/m ³)	TYPE	COHESION (kN/m ²)	ANGLE OF INTERNAL FRICTION (degrees)		
Made ground (soft dark grey-brown silty sandy TOPSOIL with some whole bricks, fine to coarse fragments of brick and concrete, rounded quartzite gravel and some rootlets).				GL														Service inspection pit hand dug to 1.2 m	
			0.36			0.20	E1												
Mad ground? (soft brown sub-soilly clayey silty SAND with some fine to coarse angular sandstone and mudstone gravel and some roots).				0.36															
			0.60			0.80	D2		13.9	30	15	15							
Firm slightly fissured blue-grey and brown mottled slightly silty CLAY with increasing lithorelicts of mudstone and sandstone, occasional black organic flecks and some semi-decomposed rootlets. becoming stiff below 1.6 m. (PENNINE MIDDLE COAL MEASURES FORMATION)			1.30			1.20	S3	14											(2.2.3.3.4.4.)
						1.50	D4												
						2.00	S5	50 blows for 275 mm penetration										(10.12.13.13.14.10 for 50 mm)	
Extremely weak friable grey and brown mottled clayey silty SANDSTONE. (PENNINE MIDDLE COAL MEASURES FORMATION)			2.20																
		0.225			2.25	D6													
Borehole Complete.																			

GROUNDWATER OBSERVATIONS: Dry.	▼ - Final groundwater level	W - Water Sample	D - Disturbed Sample	'N' - Standard or Cone Penetration Test Result	S - Standard Penetration Test
	▽ - Groundwater first struck	B - Bulk Sample	LL - Liquid Limit	T - Undrained Triaxial	S(C) - Standard Penetration Test with Cone
	▲ - Standpipe	T - Tub Sample	PL - Plastic Limit	M - Multi-stage Undrained Triaxial	V - Shear Vane Test
	• - Piezometer	E - Environmental Sample Suite	PI - Plasticity Index		

GROUND INVESTIGATION SPECIALISTS LIMITED

BOREHOLE RECORD	BORING COMMENCED: 16.08.23	TYPE OF BORING: Windowless Sampling	CLIENT: Techemet Ltd	BOREHOLE: WS2
	BORING COMPLETED: 16.08.23	DIAMETER OF HOLE: 100 – 60 mm	ARCHITECT: Building Design Group Ltd	
	GROUND LEVEL:	BOREHOLE CASING: None	CONTRACT: Techemet Extension, Tamworth	

[illegible]

GROUNDWATER OBSERVATIONS:	▼ - Final groundwater level	W - Water Sample	D - Disturbed Sample	'N' - Standard or Cone Penetration Test Result	S - Standard Penetration Test
Dry	▽ - Groundwater first struck	B - Bulk Sample	LL - Liquid Limit	T - Undrained Triaxial	S(C) - Standard Penetration Test with Cone
	▲ - Standpipe	T - Tub Sample	PL - Plastic Limit	M - Multi-stage Undrained Triaxial	V - Shear Vane Test
	● - Piezometer	E - Environmental Sample Suite	PI - Plasticity Index		

GROUND INVESTIGATION SPECIALISTS LIMITED

BOREHOLE RECORD	BORING COMMENCED: 16.08.23	TYPE OF BORING: Windowless Sampling	CLIENT: Techemet Ltd	BOREHOLE: WS3
	BORING COMPLETED: 16.08.23	DIAMETER OF HOLE: 100 – 60 mm	ARCHITECT: Building Design Group Ltd	
	GROUND LEVEL:	BOREHOLE CASING: None	CONTRACT: Techemet Extension, Tamworth	

[illegible]

GROUNDWATER OBSERVATIONS:	▼ - Final groundwater level	W - Water Sample	D - Disturbed Sample	'N' - Standard or Cone Penetration Test Result	S - Standard Penetration Test
Dry:	▽ - Groundwater first struck	B - Bulk Sample	LL - Liquid Limit	T - Undrained Triaxial	S(C) - Standard Penetration Test with Cone
	▲ - Standpipe	T - Tub Sample	PL - Plastic Limit	M - Multi-stage Undrained Triaxial	V - Shear Vane Test
	● - Piezometer	E - Environmental Sample Suite	PI - Plasticity Index		

GROUND INVESTIGATION SPECIALISTS LIMITED

BOREHOLE RECORD	BORING COMMENCED: 16.08.23	TYPE OF BORING: Windowless Sampling	CLIENT: Techemet Ltd	BOREHOLE: WS4
	BORING COMPLETED: 16.08.23	DIAMETER OF HOLE: 100 – 60 mm	ARCHITECT: Building Design Group Ltd	
	GROUND LEVEL:	BOREHOLE CASING: None	CONTRACT: Techemet Extension, Tamworth	

DRILLING			SAMPLES					RESULTS OF TESTS										
DESCRIPTION OF STRATA	LEGEND	WATER LEVEL	THICKNESS	DEPTH	Approx REDUCED LEVEL	DEPTH	TYPE	INDEX PROPERTIES					DENSITIES		STRENGTH TESTS			IN-SITU TESTS AND REMARKS (SPT Blows)
								'N' VALUE	M/C %	LL %	PL %	PI	WET (kg/m ³)	DRY (kg/m ³)	TYPE	COHESION (kN/m ²)	ANGLE OF INTERNAL FRICTION (degrees)	
Made ground (soft dark grey-brown silty sandy TOPSOIL with some whole bricks, fine to coarse fragments of brick and concrete, rounded quartzite, gravel and some rootlets).				GL														Service inspection pit hand dug to 1.2 m
Made ground (intermixed pockets of grey, brown and red-brown clayey silty SAND and firm silty CLAY with some mudstone, sandstone and quartzite gravel).			0.30	0.30		0.50	E1											
Made ground (dark grey-brown clayey silty SAND with some whole bricks, fine to coarse brick fragments and occasional mudstone and sandstone gravel).			0.50	0.80		1.00	D2											
Soft to firm, becoming firm, light grey and orange-brown mottled CLAY with some increasing mudstone and sandstone lithorelicts. becoming stiff below 1.6 m. (PENNINE MIDDLE COAL MEASURES FORMATION) Becoming very stiff and friable below 2.0 m.			0.45	1.25		1.20	S3	5									(1.-.1.1.1.2.)	
Extremely weak fissile friable laminated grey and brown mottled clayey slightly silty MUDSTONE. (PENNINE MIDDLE COAL MEASURES FORMATION)			0.67	2.70		3.00	S6	50 blows for 220 mm penetration										(9.15.16.17.17 for 70 mm)
Borehole Complete.				3.37														
GROUNDWATER OBSERVATIONS: ▽ - Final groundwater level Dry. ▽ - Groundwater first struck ▲ - Standpipe • - Piezometer		W - Water Sample B - Bulk Sample T - Tub Sample E - Environmental Sample Suite		D - Disturbed Sample LL - Liquid Limit PL - Plastic Limit PI - Plasticity Index		'N' - Standard or Cone Penetration Test Result T - Undrained Triaxial M - Multi-stage Undrained Triaxial		S - Standard Penetration Test S(C) - Standard Penetration Test with Cone V - Shear Vane Test										

10.0 ROTARY BOREHOLE LOGS

GROUND INVESTIGATION SPECIALISTS LIMITED

CONTRACT: Techemet Extension, Tamworth			BOREHOLE No. R1		
CLIENT: Techemet Ltd			SHEET 1 OF 1		
ARCHITECT: Building Design Group Ltd			JOB No. 2504		
DATES DRILLED: 11.09.23		RIG TYPE: Hands England		DRILLER: M.T.	
GROUND LEVEL:		DRILLING METHOD: Rotary Open Hole – water flush		ANGLE: Vertical	

Drilling & Casing Progress	Core Recovery %			DRILLERS STRATA DESCRIPTION	Legend	Depth (m)	Reduced Level (m)
	T	S	R				
P.W. casing to 3.00 m				Fill.	XXX	0.90	
				Brown CLAY (PENNINE MIDDLE COAL MEASURES FORMATION)	---	3.30	
				Brown MUDSTONE (PENNINE MIDDLE COAL MEASURES FORMATION)	---	4.80	
				Grey MUDSTONE (PENNINE MIDDLE COAL MEASURES FORMATION)	---	7.10	
				COAL (PENNINE MIDDLE COAL MEASURES FORMATION)	■	7.90	
				Grey MUDSTONE with sandstone bands. (PENNINE MIDDLE COAL MEASURES FORMATION)	---		
						13.20	
				Dark grey MUDSTONE (PENNINE MIDDLE COAL MEASURES FORMATION)	---	13.60	
				COAL (PENNINE MIDDLE COAL MEASURES FORMATION)	■	14.20	
				Black MUDSTONE (PENNINE MIDDLE COAL MEASURES FORMATION)	---	14.40	
				COAL (PENNINE MIDDLE COAL MEASURES FORMATION)	■	15.00	
				Grey MUDSTONE with sandstone bands. (PENNINE MIDDLE COAL MEASURES FORMATION)	---		
						17.80	
				Grey SANDSTONE. (PENNINE MIDDLE COAL MEASURES FORMATION)	...	20.00	
				Grey MUDSTONE. (PENNINE MIDDLE COAL MEASURES FORMATION)	---		
						23.00	
				COAL (PENNINE MIDDLE COAL MEASURES FORMATION)	■	23.80	
				Grey MUDSTONE with sandstone bands. (PENNINE MIDDLE COAL MEASURES FORMATION)	---	25.50	
				Grey SANDSTONE. (PENNINE MIDDLE COAL MEASURES FORMATION)	...	31.70	
				COAL (PENNINE MIDDLE COAL MEASURES FORMATION)	■	32.80	
				Grey MUDSTONE (PENNINE MIDDLE COAL MEASURES FORMATION)	---	33.50	
				Grey SANDSTONE. (PENNINE MIDDLE COAL MEASURES FORMATION)	...	40.00	
				Borehole Complete			

Ground gas readings on completion:
Oxygen 20.7%; Methane 0% LEL; Hydrogen Sulphide 0 PPM;
Carbon Monoxide 0 PPM.

REMARKS:				T = total core recovery S = solid core recovery R = rock quality designation		FIG NO.
Service inspection pit hand dug to 1.2 m.						

GROUND INVESTIGATION SPECIALISTS LIMITED

CONTRACT: Techemet Extension, Tamworth

BOREHOLE No. R2

CLIENT: Techemet Ltd

SHEET 1 OF 1

ARCHITECT: Building Design Group Ltd

JOB No. 2504

DATES DRILLED: 11.09.23

RIG TYPE: Hands England

DRILLER: M.T.

GROUND LEVEL:

DRILLING METHOD: Rotary Open Hole – water flush

ANGLE: Vertical

Drilling & Casing Progress	Core Recovery %			DRILLERS STRATA DESCRIPTION	Legend	Depth (m)	Reduced Level (m)
	T	S	R				
P.W. casing to 3.0 m.				Fill	XXX	1.30	
				Brown CLAY, grading to MUDSTONE. (PENNINE MIDDLE COAL MEASURES FORMATION)	---	3.60	
				Grey-brown MUDSTONE (PENNINE MIDDLE COAL MEASURES FORMATION)	---	5.20	
				Grey MUDSTONE with sandstone bands. (PENNINE MIDDLE COAL MEASURES FORMATION)	---	9.40	
				COAL (PENNINE MIDDLE COAL MEASURES FORMATION)	■	10.00	
				Black MUDSTONE (PENNINE MIDDLE COAL MEASURES FORMATION)	---	10.20	
				COAL (PENNINE MIDDLE COAL MEASURES FORMATION)	■	10.70	
				Grey MUDSTONE (PENNINE MIDDLE COAL MEASURES FORMATION)	---	11.80	
				Dark grey MUDSTONE (PENNINE MIDDLE COAL MEASURES FORMATION)	---	13.30	
				Grey MUDSTONE with sandstone bands. (PENNINE MIDDLE COAL MEASURES FORMATION)	---	19.20	
				COAL (PENNINE MIDDLE COAL MEASURES FORMATION)	■	20.00	
				Grey MUDSTONE. (PENNINE MIDDLE COAL MEASURES FORMATION)	---	22.60	
				Grey SANDSTONE. (PENNINE MIDDLE COAL MEASURES FORMATION)	· · ·	26.00	
				COAL (PENNINE MIDDLE COAL MEASURES FORMATION)	■	27.20	
				Grey MUDSTONE. (PENNINE MIDDLE COAL MEASURES FORMATION)	---	29.10	
				Grey SANDSTONE. (PENNINE MIDDLE COAL MEASURES FORMATION)	· · ·	36.50	
				COAL (PENNINE MIDDLE COAL MEASURES FORMATION)	■	37.20	
				Grey MUDSTONE. (PENNINE MIDDLE COAL MEASURES FORMATION)	---	40.00	
				Borehole Complete. Ground gas readings on completion: Oxygen 20.7%; Methane 0% LEL; Hydrogen Sulphide 0 PPM; Carbon Monoxide 0 PPM.			
	REMARKS:				T = total core recovery S = solid core recovery R = rock quality designation		FIG NO.
Service inspection pit hand dug to 1.2 m.							

GROUND INVESTIGATION SPECIALISTS LIMITED

CONTRACT: Techemet Extension, Tamworth

BOREHOLE No. R3

CLIENT: Techemet Ltd

SHEET 1 OF 1

ARCHITECT: Building Design Group Ltd

JOB No. 2504

DATES DRILLED: 13.09.23

RIG TYPE: Hands England

DRILLER: M.T.

GROUND LEVEL:

DRILLING METHOD: Rotary Open Hole – water flush

ANGLE: Vertical

Drilling & Casing Progress	Core Recovery %			DRILLERS STRATA DESCRIPTION	Legend	Depth (m)	Reduced Level (m)
	T	S	R				
P.W. casing to 3.0 m				Fill	XXX	0.80	
				Brown CLAY (PENNINE MIDDLE COAL MEASURES FORMATION)	---	1.50	
				Black CLAY (PENNINE MIDDLE COAL MEASURES FORMATION)	---	2.00	
				Brown CLAY (PENNINE MIDDLE COAL MEASURES FORMATION)	---	2.80	
				Brown – grey MUDSTONE (PENNINE MIDDLE COAL MEASURES FORMATION)	---	3.20	
				COAL (PENNINE MIDDLE COAL MEASURES FORMATION)	---	3.50	
				Grey MUDSTONE with sandstone bands. (PENNINE MIDDLE COAL MEASURES FORMATION)	---	10.50	
				Dark grey MUDSTONE (PENNINE MIDDLE COAL MEASURES FORMATION)	---	10.70	
				COAL (PENNINE MIDDLE COAL MEASURES FORMATION)	---	11.20	
				Black MUDSTONE (PENNINE MIDDLE COAL MEASURES FORMATION)	---	11.40	
				COAL (PENNINE MIDDLE COAL MEASURES FORMATION)	---	11.90	
				Grey MUDSTONE with sandstone bands. (PENNINE MIDDLE COAL MEASURES FORMATION)	---	18.00	
				COAL (PENNINE MIDDLE COAL MEASURES FORMATION)	---	19.00	
				Grey MUDSTONE with SANDSTONE BANDS (PENNINE MIDDLE COAL MEASURES FORMATION)	---	20.00	
				Borehole Complete.			
				Ground gas readings on completion: Oxygen 20.8%; Methane 0% LEL; Hydrogen Sulphide 0 PPM; Carbon Monoxide 0 PPM.			
REMARKS: Service inspection pit hand dug to 1.2 m					T = total core recovery S = solid core recovery R = rock quality designation		FIG NO.

GROUND INVESTIGATION SPECIALISTS LIMITED

CONTRACT: Techemet Extension, Tamworth		BOREHOLE No. R4
CLIENT: Techemet Ltd		SHEET 1 OF 1
ARCHITECT: Building Design Group Ltd		JOB No. 2504
DATES DRILLED: 13.09.23	RIG TYPE: Hands England	DRILLER: M.T.
GROUND LEVEL:	DRILLING METHOD: Rotary Open Hole – water flush	ANGLE: Vertical

Drilling & Casing Progress	Core Recovery %			DRILLERS STRATA DESCRIPTION	Legend	Depth (m)	Reduced Level (m)
	T	S	R				
P.W.casing to 3.0 m				Fill	XXX	0.90	
				Brown CLAY (PENNINE MIDDLE COAL MEASURES FORMATION)	---	2.70	
				Brown MUDSTONE (PENNINE MIDDLE COAL MEASURES)	---	4.20	
				COAL (PENNINE MIDDLE COAL MEASURES FORMATION)	■	5.00	
				Dark grey MUDSTONE (PENNINE MIDDLE COAL MEASURES FORMATION)	---	5.20	
				Grey MUDSTONE with sandstone bands. (PENNINE MIDDLE COAL MEASURES FORMATION)	---		
					---	13.70	
				COAL (PENNINE MIDDLE COAL MEASURES FORMATION)	■	14.40	
				Black MUDSTONE (PENNINE MIDDLE COAL MEASURES FORMATION)	---	14.60	
				COAL (PENNINE MIDDLE COAL MEASURES FORMATION)	■	15.20	
				Grey MUDSTONE with sandstone bands. (PENNINE MIDDLE COAL MEASURES FORMATION)	---		
					---	20.00	
				Borehole Complete.			
				Ground gas readings on completion: Oxygen 20.7%; Methane 0% LEL; Hydrogen Sulphide 0 PPM; Carbon Monoxide 0 PPM.			

REMARKS:	T = total core recovery S = solid core recovery R = rock quality designation	FIG NO.
-----------------	--	----------------

Service inspection pit hand dug to 1.2 m

11.0 CONTAMINATION LABORATORY TEST RESULTS



ANALYTICAL TEST REPORT

Contract no: 125976

Contract name: Tamworth

Client reference: J.2504

Clients name: Ground Investigation Specialists

Clients address: 43 Bell Place
Dudley Road
Wolverhampton
WV2 4LY

Samples received: 18 August 2023

Analysis started: 18 August 2023

Analysis completed: 25 August 2023

Report issued: 25 August 2023

Key

U	UKAS accredited test
M	MCERTS & UKAS accredited test
\$	Test carried out by an approved subcontractor
I/S	Insufficient sample to carry out test
N/S	Sample not suitable for testing
NAD	No Asbestos Detected

Approved by:

E. McCulloch

Ellis McCulloch
Senior Reporting Administrator

Chemtech Environmental Limited

SAMPLE INFORMATION

MCERTS (Soils):

Soil descriptions are only intended to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions. MCERTS accreditation applies for sand, clay and loam/topsoil, or combinations of these whether these are derived from naturally occurring soils or from made ground, as long as these materials constitute the major part of the sample. Other materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Lab ref	Sample id	Depth (m)	Sample description	Material removed	% Removed	% Moisture
125976-1	WS2	0.20	Sandy Clay with Gravel & Roots	-	-	15.6
125976-2	WS4	0.50	Sand with Gravel & Roots	-	-	11.8

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SOILS

Lab number			125976-1	125976-2
Sample id			WS2	WS4
Depth (m)			0.20	0.50
Date sampled			16/08/2023	16/08/2023
Test	Method	Units		
Arsenic	\$ ^M	mg/kg	15.9	14.6
Cadmium	\$ ^M	mg/kg	0.6	0.3
Chromium	\$ ^M	mg/kg	24.2	17.5
Copper	\$ ^M	mg/kg	957	131
Lead	\$ ^M	mg/kg	107	56.0
Mercury	\$ ^M	mg/kg	0.3	< 0.1
Nickel	\$ ^M	mg/kg	27.4	17.7
Selenium	\$ ^M	mg/kg	< 1.0	< 1.0
Zinc	\$ ^M	mg/kg	183	128
pH	CE004 ^M	units	7.9	5.7
Total Organic Carbon (TOC)	CE197	% w/w C	4.2	4.3
Estimate of OMC (calculated from TOC)	CE197	% w/w	7.2	7.4
PAH				
Naphthalene	CE087 ^M	mg/kg	<0.02	<0.02
Acenaphthylene	CE087 ^M	mg/kg	<0.02	<0.02
Acenaphthene	CE087 ^M	mg/kg	0.02	<0.02
Fluorene	CE087 ^U	mg/kg	<0.02	<0.02
Phenanthrene	CE087 ^M	mg/kg	0.20	0.09
Anthracene	CE087 ^U	mg/kg	0.07	0.03
Fluoranthene	CE087 ^M	mg/kg	0.65	0.20
Pyrene	CE087 ^M	mg/kg	0.58	0.17
Benzo(a)anthracene	CE087 ^U	mg/kg	0.37	0.11
Chrysene	CE087 ^M	mg/kg	0.34	0.10
Benzo(b)fluoranthene	CE087 ^M	mg/kg	0.51	0.15
Benzo(k)fluoranthene	CE087 ^M	mg/kg	0.21	0.06
Benzo(a)pyrene	CE087 ^U	mg/kg	0.36	0.08
Indeno(123cd)pyrene	CE087 ^M	mg/kg	0.32	0.09
Dibenz(ah)anthracene	CE087 ^M	mg/kg	0.07	<0.02
Benzo(ghi)perylene	CE087 ^M	mg/kg	0.27	0.09
PAH (total of USEPA 16)	CE087	mg/kg	3.97	1.17
TPH				
VPH Aromatic (>EC5-EC7)	CE067	mg/kg	<0.01	<0.01
VPH Aromatic (>EC7-EC8)	CE067	mg/kg	<0.01	<0.01
VPH Aromatic (>EC8-EC10)	CE067	mg/kg	<0.01	<0.01
EPH Aromatic (>EC10-EC12)	CE250	mg/kg	<10	<10
EPH Aromatic (>EC12-EC16)	CE250	mg/kg	<10	<10
EPH Aromatic (>EC16-EC21)	CE250	mg/kg	<1	<1
EPH Aromatic (>EC21-EC35)	CE250	mg/kg	48	20
EPH Aromatic (>EC35-EC44)	CE250	mg/kg	99	52
VPH Aliphatic (>C5-C6)	CE067	mg/kg	<0.1	<0.1
VPH Aliphatic (>C6-C8)	CE067	mg/kg	<0.1	<0.1

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SOILS

Lab number			125976-1	125976-2
Sample id			WS2	WS4
Depth (m)			0.20	0.50
Date sampled			16/08/2023	16/08/2023
Test	Method	Units		
VPH Aliphatic (>C8-C10)	CE067	mg/kg	0.8	<0.1
EPH Aliphatic (>C10-C12)	CE250	mg/kg	<6	<6
EPH Aliphatic (>C12-C16)	CE250	mg/kg	<6	<6
EPH Aliphatic (>C16-C35)	CE250	mg/kg	<15	<15
EPH Aliphatic (>C35-C44)	CE250	mg/kg	<10	<10
Subcontracted Analysis				
Asbestos (qualitative)	\$	-	NAD	NAD

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METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
\$ ^M	Arsenic	Aqua regia digest, ICP-MS	Dry	M	0.5	mg/kg
\$ ^M	Cadmium	Aqua regia digest, ICP-MS	Dry	M	0.2	mg/kg
\$ ^M	Chromium	Aqua regia digest, ICP-MS	Dry	M	1	mg/kg
\$ ^M	Copper	Aqua regia digest, ICP-MS	Dry	M	4	mg/kg
\$ ^M	Lead	Aqua regia digest, ICP-MS	Dry	M	1	mg/kg
\$ ^M	Mercury	Aqua regia digest, ICP-MS	Dry	M	0.1	mg/kg
\$ ^M	Nickel	Aqua regia digest, ICP-MS	Dry	M	1	mg/kg
\$ ^M	Selenium	Aqua regia digest, ICP-MS	Dry	M	1	mg/kg
\$ ^M	Zinc	Aqua regia digest, ICP-MS	Dry	M	4.5	mg/kg
CE004	pH	Based on BS 1377, pH Meter	As received	M	-	units
CE197	Total Organic Carbon (TOC)	Carbon Analyser	Dry		0.1	% w/w C
CE197	Estimate of OMC (calculated from TOC)	Calculation from Total Organic Carbon	Dry		0.1	% w/w
CE087	Naphthalene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Acenaphthylene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Acenaphthene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Fluorene	Solvent extraction, GC-MS	As received	U	0.02	mg/kg
CE087	Phenanthrene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Anthracene	Solvent extraction, GC-MS	As received	U	0.02	mg/kg
CE087	Fluoranthene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Pyrene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Benzo(a)anthracene	Solvent extraction, GC-MS	As received	U	0.02	mg/kg
CE087	Chrysene	Solvent extraction, GC-MS	As received	M	0.03	mg/kg
CE087	Benzo(b)fluoranthene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Benzo(k)fluoranthene	Solvent extraction, GC-MS	As received	M	0.03	mg/kg
CE087	Benzo(a)pyrene	Solvent extraction, GC-MS	As received	U	0.02	mg/kg
CE087	Indeno(123cd)pyrene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Dibenz(ah)anthracene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Benzo(ghi)perylene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	PAH (total of USEPA 16)	Solvent extraction, GC-MS	As received		0.34	mg/kg
CE067	VPH Aromatic (>EC5-EC7)	Headspace GC-FID	As received		0.01	mg/kg
CE067	VPH Aromatic (>EC7-EC8)	Headspace GC-FID	As received		0.01	mg/kg
CE067	VPH Aromatic (>EC8-EC10)	Headspace GC-FID	As received		0.01	mg/kg
CE250	EPH Aromatic (>EC10-EC12)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
CE250	EPH Aromatic (>EC12-EC16)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
CE250	EPH Aromatic (>EC16-EC21)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
CE250	EPH Aromatic (>EC21-EC35)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
CE250	EPH Aromatic (>EC35-EC44)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
CE067	VPH Aliphatic (>C5-C6)	Headspace GC-FID	As received		0.1	mg/kg
CE067	VPH Aliphatic (>C6-C8)	Headspace GC-FID	As received		0.1	mg/kg
CE067	VPH Aliphatic (>C8-C10)	Headspace GC-FID	As received		0.1	mg/kg
CE250	EPH Aliphatic (>C10-C12)	Solvent extraction, GCxGC-FID	As received		6	mg/kg
CE250	EPH Aliphatic (>C12-C16)	Solvent extraction, GCxGC-FID	As received		6	mg/kg
CE250	EPH Aliphatic (>C16-C35)	Solvent extraction, GCxGC-FID	As received		15	mg/kg
CE250	EPH Aliphatic (>C35-C44)	Solvent extraction, GCxGC-FID	As received		10	mg/kg

Chemtech Environmental Limited

METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
\$	Asbestos (qualitative)	HSG 248, Microscopy	Dry	U	-	-

Chemtech Environmental Limited

DEVIATING SAMPLE INFORMATION

Comments

Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.

For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.

Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

Key

N	No (not deviating sample)
Y	Yes (deviating sample)
NSD	Sampling date not provided
NST	Sampling time not provided (waters only)
EHT	Sample exceeded holding time(s)
IC	Sample not received in appropriate containers
HP	Headspace present in sample container
NCF	Sample not chemically fixed (where appropriate)
OR	Other (specify)

Lab ref	Sample id	Depth (m)	Deviating	Tests (Reason for deviation)
125976-1	WS2	0.20	N	
125976-2	WS4	0.50	N	

Chemtech Environmental Limited

ADDITIONAL INFORMATION

Notes

Opinions and interpretations expressed herein are outside the UKAS accreditation scope.

Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.

All testing carried out at Unit 6 Parkhead, Stanley, DH9 7YB, except for subcontracted testing.

Methods, procedures and performance data are available on request.

Results reported herein relate only to the material supplied to the laboratory.

This report shall not be reproduced except in full, without prior written approval.

Samples will be disposed of 4 weeks from initial receipt unless otherwise instructed.

For soils and solids, all results are reported on a dry basis. Samples dried at no more than 30°C in a drying cabinet.

For soils and solids, analytical results are inclusive of stones, where applicable.

Moisture Content Calculated on a Wet Weight basis

12.0 GEOTECHNICAL LABORATORY TEST RESULTS

GEOLABS Limited
Unit D3 HRS Business Park
Granby Avenue
Birmingham
B33 0SJ

Tel: +44(0) 121 296 4600
Fax: +44(0) 121 296 4599
email: admin@geolabs.co.uk
web: www.geolabs.co.uk

Ground Investigation Specialists Limited
First Floor, Lowcroft House
Church Road
Wombourne
WV5 9EZ

18 September 2023

Report No : GEO/38710/02

Page 1 of 1

For the attention of Mr C Noakes

Our ref **GEO / 38710**
Your Ref **J.2504**

Date samples received 21/08/2023
Date written instructions received 21/08/2023
Date testing commenced 22/08/2023
Date of sample disposal 16/10/2023

Project **TAMWORTH**

Further to your instructions we have pleasure in enclosing the results of the tests you requested in the attached figures.

LABORATORY TEST REPORT

Item No	Test Quantity	Description
1	~	Liquid & Plastic Limits Summary
~	3	Water Content
2	3	Liquid & Plastic Limits
3	~	Geochemical Test Summary
~	4	BRE SD1 Suite B - Natural ground + pyrite

Any opinions or interpretations expressed herein are outside the scope of UKAS accreditation. All results contained in this report are provisional unless signed by an approved signatory. The results contained in this report relate only to samples received in the laboratory and are tested 'as received' unless otherwise stated. This report should not be reproduced, except in full, without the written approval of the laboratory. The results reported are applicable only to the test items received by the laboratory.

All the necessary data required by the documented test procedures has been recorded and will be stored for a period of not less than 6 years. This data will be issued to yourselves at your request. All samples will be disposed of after the date shown above. Written confirmation will be required to retain the samples beyond this period and a storage charge may be applied.

We trust that the above meets your requirements and should you require any further information or assistance, please do not hesitate to contact us.

Yours faithfully
on behalf of **GEOLABS Limited**



J A Reynolds
Director

Test Type:	Sample condition:
1 - 1 point 80g / 30° fall cone method.	1 - As Received
2 - 4 point 80g / 30° fall cone method.	2 - Air Dried
3 - Non plastic determination.	3 - Washed & Air Dried



LIQUID AND PLASTIC LIMITS

Location WS1
Depth (m) 0.80
Sample Type D

Description:

Brown mottled dark brown very sandy CLAY with rare fine to medium gravel.

Insufficient sample for 4 point test ,

Preparation : Sample as received with discrete coarse particles removed by hand.

Water Content : (BS EN ISO 17892-1:2014+A1:2022) 13.9 %

Estimated percentage passing 425µm sieve : 99 %

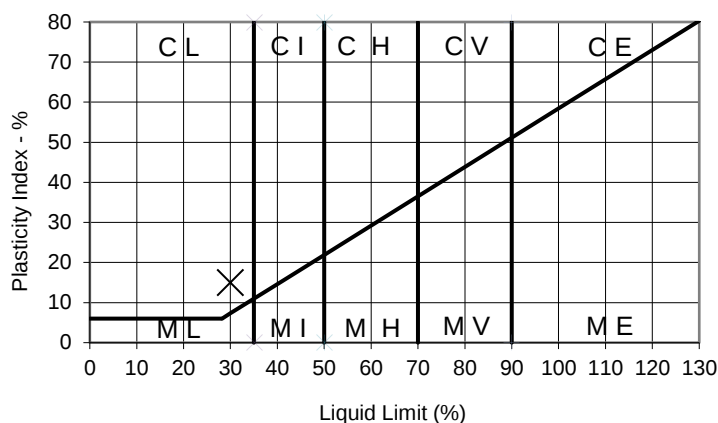
*Liquid Limit - Fall Cone 1 point Method (cone angle 30°) : 30 %

Plastic Limit : 15 %

Plasticity Index : 15 %

Equivalent Water Content of material passing 425µm sieve : 14.1 %

Liquidity Index : -0.06



Insufficient sample for 4 point test

***One point liquid limit test readings**

Cone penetration 19.9 mm

Water content 30.4 %

One point method correlation factor : BS 1377-2 : 2022 : 5.3.2 1.000

Tested by AD
Checked and Approved by

P Kluba

P Kluba - Senior Technician
15/09/2023

Project Number:

GEO / 38710

Project Name:

**TAMWORTH
J.2504**

GEOLABS



LIQUID AND PLASTIC LIMITS

Location WS2
 Depth (m) 1.00
 Sample Type D

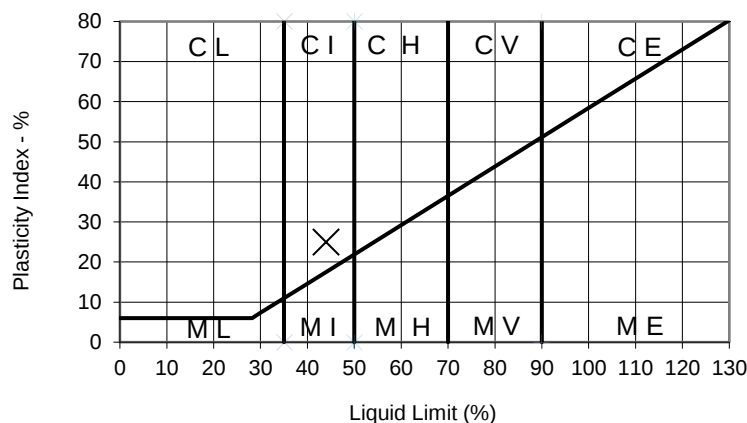
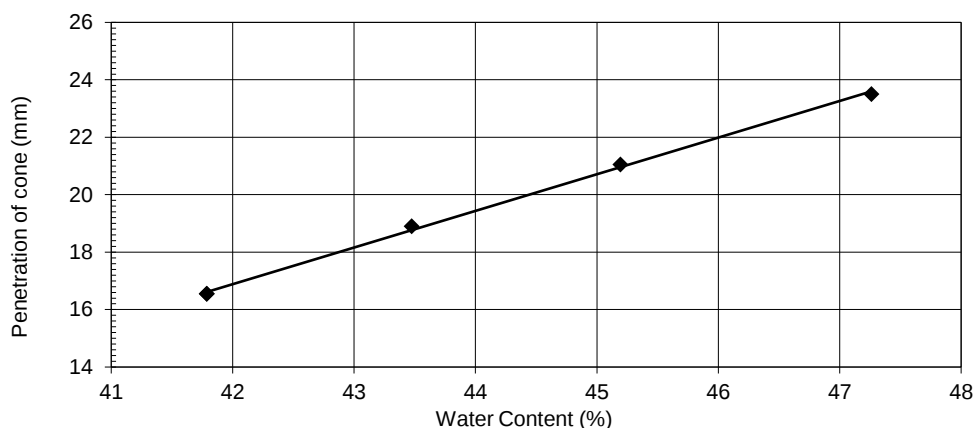
Description:

Greyish brown mottled brown and light grey sandy CLAY.

Preparation : Sample as received.

Water Content : (BS EN ISO 17892-1:2014+A1:2022) 15.0 %
 Estimated percentage passing 425µm sieve : 100 %
 Liquid Limit - Fall Cone 4 point Method (cone angle 30°) with decreasing water content : 44 %
 Plastic Limit : 19 %
 Plasticity Index : 25 %

Equivalent Water Content of material passing 425µm sieve : 15.0 %
 Liquidity Index : -0.16



Tested by AD
 Checked and Approved by

P Kluba

P Kluba - Senior Technician
 15/09/2023

Project Number:

GEO / 38710

Project Name:

**TAMWORTH
 J.2504**

GEOLABS



LIQUID AND PLASTIC LIMITS

Location WS3
Depth (m) 1.20
Sample Type D

Description:

Greyish brown mottled light brown and light grey slightly sandy
CLAY.

Preparation : Sample as received.

Water Content : (BS EN ISO 17892-1:2014+A1:2022) 24.1 %

Estimated percentage passing 425µm sieve : 100 %

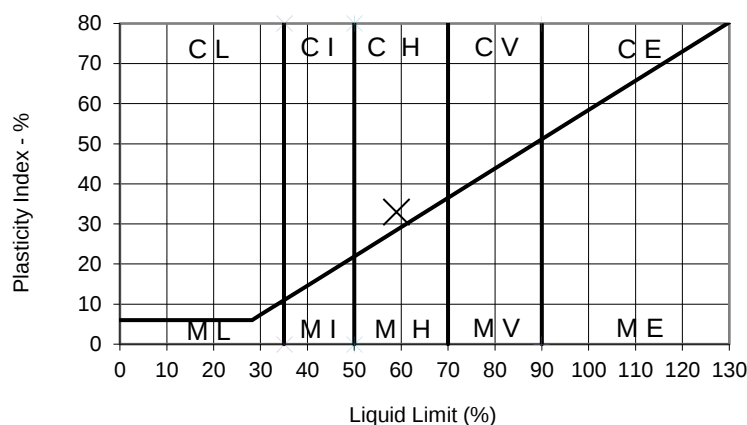
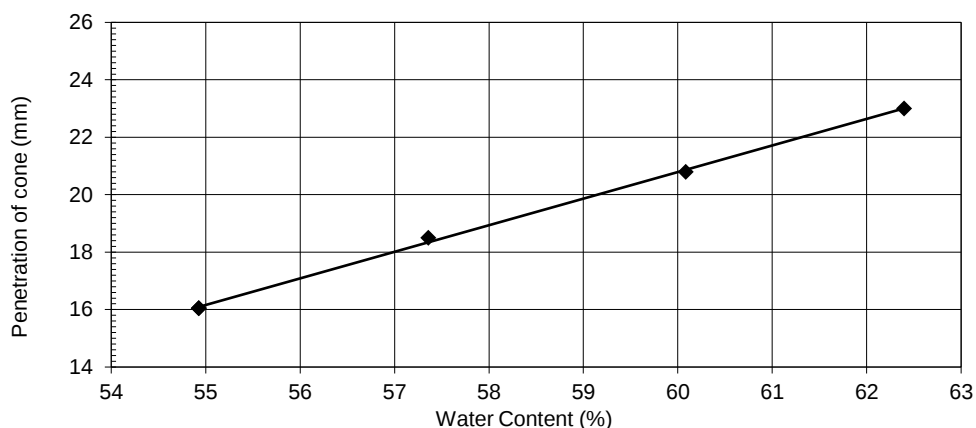
Liquid Limit - Fall Cone 4 point Method (cone angle 30°) with decreasing water content : 59 %

Plastic Limit : 26 %

Plasticity Index : 33 %

Equivalent Water Content of material passing 425µm sieve : 24.1 %

Liquidity Index : -0.06



Tested by AD
Checked and Approved by

P Kluba

P Kluba - Senior Technician
15/09/2023

Project Number:

GEO / 38710

Project Name:

**TAMWORTH
J.2504**

GEOLABS



SUMMARY OF CHEMICAL TESTS ON SOIL

Location	Depth m	Sample Ref	Sample Type	pH Value	Total Acid Soluble Sulphate as SO ₄ %	Water Soluble Sulphate as SO ₄ 2:1 Water:Soil Extract g/l	Total Sulphur %	Water Soluble Chloride g/l	Water Soluble Nitrate g/l	Magnesium g/l	Organic Content %	Mass Loss on Ignition %	Carbonate Content %
WS1	0.80		D	7.9	0.056	2.1	0.040	-	-	-	-	-	-
WS2	1.00		D	8.1	< 0.010	0.019	0.012	-	-	-	-	-	-
WS3	1.20		D	6.2	0.047	0.11	0.056	-	-	-	-	-	-
WS4	1.70		D	6.9	0.018	0.11	< 0.010	-	-	-	-	-	-

Tested by Eurofins Chemtest Ltd : MCERTS / UKAS No 2183

Checked and Approved by:



J A Reynolds - Director
18/09/2023

Project Number:

GEO / 38710

Project Name:

**TAMWORTH
J.2504**

GEOLABS®

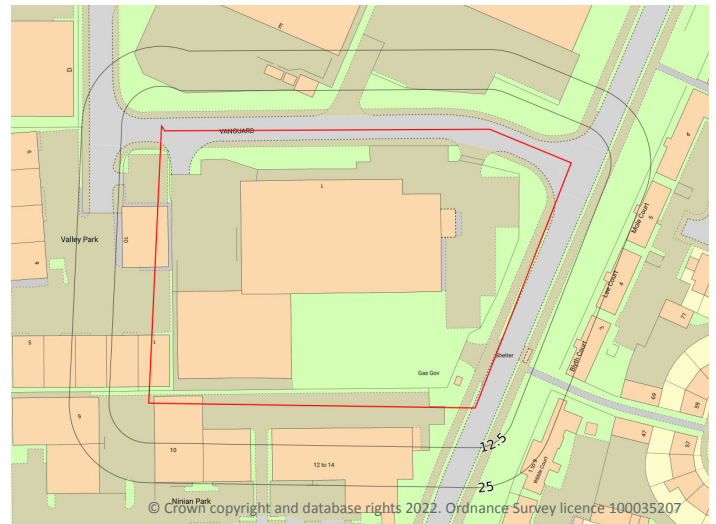
13.0 GROUNDSURE COAL MINING (CON29M) ASSESSMENT REPORT

TECHEMET LTD, 1, VANGUARD, TAME VALLEY INDUSTRIAL ESTATE, TAMWORTH, B77 5DY

Professional opinion

Inc. integrated mine entry interpretive assessment

Site plan



Search results

	1. Past underground coal mining Identified	page 5		9. Coal mining subsidence claims Not identified
	2. Present underground coal mining Not identified			10. Mine gas emissions Not identified
	3. Future underground coal mining Not identified			11. Emergency Call Out incidents Not identified
	4. Shafts and adits (mine entries) Not identified			12. Withdrawal of support Not identified
	5. Coal mining geology Not identified			13. Working facilities orders Not identified
	6. Past opencast coal mining Not identified			14. Payments to copyhold owners Not identified
	7. Present opencast coal mining Not identified			Cheshire Brine Not identified
	8. Future opencast coal mining Not identified			

Coal mining (CON29M) assessment

We consider there to be a potential risk to the property from past coal mining activity. For further details refer to: Past underground coal mining.



Coal mining

Past underground coal mining

Potential risk due to past underground coal mining has been identified within the boundary of the property. Whilst no further searches are required, it should be noted that in the event of coal mining settlement or subsidence occurring the property will benefit from the protection of the Coal Mining Subsidence Acts of 1991 and as amended 1994.

Next steps for consideration:

- A visual inspection of the property by a suitably qualified and experienced person may be of value in identifying any currently identifiable mining related settlement or subsidence effects.

Coal Mining Subsidence Act 1991

If any coal mining subsidence damage has occurred, as determined by the appropriate persons/bodies, the property will benefit from the protection of the Coal Mining Subsidence Acts of 1991 and as amended 1994.

This Act, however, does not apply where coal was worked or gotten by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester. In this instance it would be prudent to have the property visually inspected for signs of mining related settlement or subsidence by a suitably qualified and experienced person, who could be sought through <https://www.ricsfirms.com/>.

The Coal Authority provide a call out service on 01623 646 333 to take remedial action concerning the movement or collapse of any coal entries or coal mining surface hazards. Further details can be found on www.groundstability.com.

CON29M reports are a requirement for conveyancing and are recommended throughout the official Coal Mining Reporting Area. This is the area within which it is deemed prudent to clarify the risk presented by coal mining, using the questions laid out in the Law Society's CON29M form. The need for a CON29M does not always translate to an identification of risk, and reports will often be assessed as free from risk or 'Passed' even though they are within the official Coal Mining Reporting Area.

Development risk

In view of the mining circumstances a prudent developer would seek appropriate technical advice before any works are undertaken.

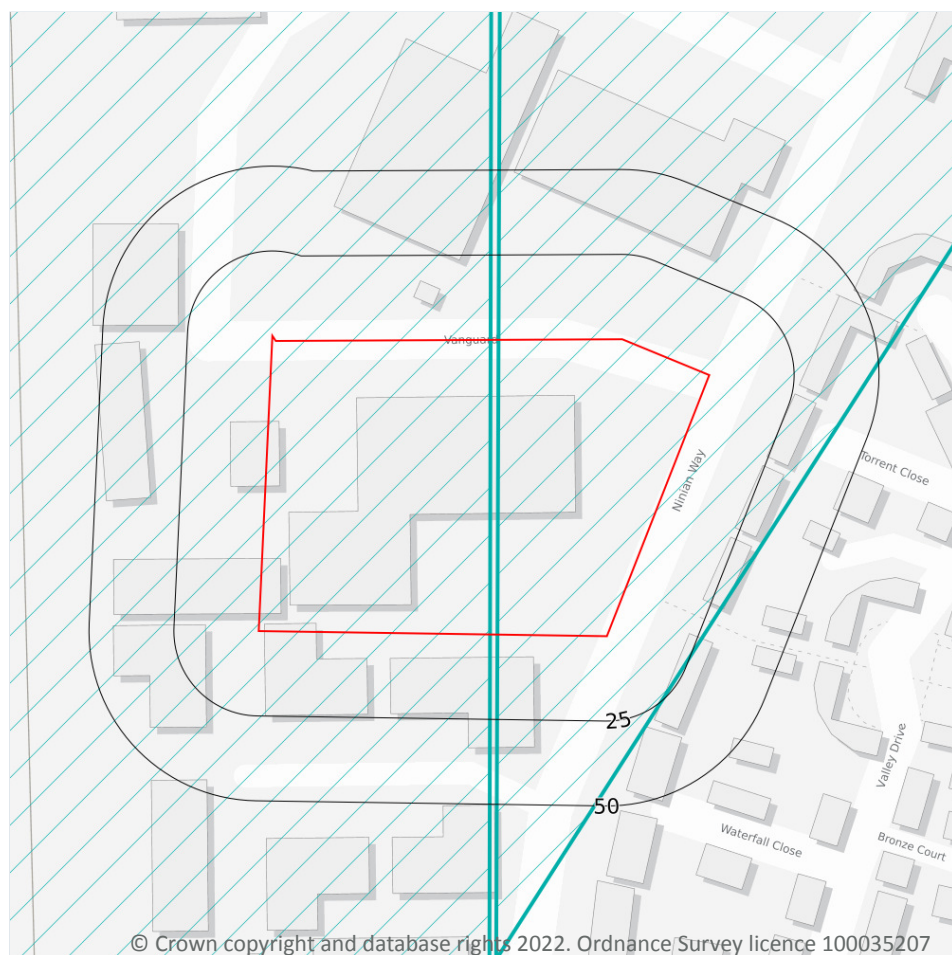
Therefore if development proposals are being considered, technical advice relating both to the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply good engineering practice developed for mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or mines of coal without the permission of the



Coal Authority.

Developers should be aware that the investigation of coal seams/former mines of coal may have the potential to generate and/or displace underground gases and these risks both under and adjacent to the development should be fully considered in developing any proposals. The need for effective measures to prevent gases entering into public properties either during investigation or after development also needs to be assessed and properly addressed. This is necessary due to the public safety implications of any development in these circumstances.

Coal mining (CON29M)



- Site Outline
- Search buffers in metres (m)
- Mine entries
 - Adits
 - Shafts
 - Calculated 'zone of influence'
- Subsidence claims
 - Awaiting decision
 - Rejected
 - Admitted
 - Deferred
 - Settled
 - Withdrawn
- Probable shallow coal mine workings
- Coal outcrops
- Past shallow coal mine workings

Coal mining (CON29M)

The map above shows relevant, mappable hazards identified that could constitute a risk to the property. It does not necessarily show all features or potential issues identified in this report. Further details of any features shown indicating the location of Mine Entries or Subsidence Claims can be found in the relevant sections of this report (4 and 9 respectively).

Responses to the Law Society CON29M Coal Mining search enquiries are produced using official Coal Authority data and the expert interpretation of Groundsure. This report is prepared in accordance with The Law Society CON29M (2018) Guidance Notes. Additional interpretation and calculation of mine entry zones of influence has also been carried out by Groundsure using Coal Authority and British Geological Survey data.

Please read this report carefully, and in particular any sections flagged with an amber 'i'.



The Law Society

These enquiries are The Law Society CON29M (2018) Coal Mining search enquiries and are used with permission of The Law Society. The Law Society CON29M Coal Mining search enquiries are protected by copyright owned by The Law Society of 113 Chancery Lane, London WC2A 1PL. The Law Society has no responsibility for information provided in response to CON29M (2018) Coal Mining search enquiries within this report or otherwise.

1. Past underground coal mining



Is the property within the zone of likely physical influence on the surface of past underground coal workings?

- The property lies within the potential zone of influence of recorded workings in 4 seam(s) of coal. The most recent underground working in the area was in 1939. These workings lie between 40 metres and 85 metres. Any ground movement due to this coal mining activity should have stopped.
- The property is indicated to lie in an area where coal deposits have been worked at shallow depth in the past but for which no plan exists.

2. Present underground coal mining



Is the property within the zone of likely physical influence on the surface of present underground coal workings?

- The property does not lie within the boundary of an underground site from which coal is being removed by underground methods.

3. Future underground coal mining



(a) Is the property within any geographical area for which the Coal Authority is determining whether to grant a licence to remove coal by underground methods?

- The property does not lie within the boundary of an underground site for which the Coal Authority is determining whether to grant a licence to remove coal by underground methods.

(b) Is the property within any geographical area for which a licence to remove coal by underground methods has been granted?

- The property does not lie within the boundary of an underground site for which a licence to remove coal by underground methods has been granted.

(c) Is the property within the zone of likely physical influence on the surface of planned future underground coal workings?



- The property does not lie within the zone of likely physical influence on the surface of planned future underground workings.

(d) Has any notice of proposals relating to underground coal mining operations been given under section 46 of the Coal Mining Subsidence Act 1991?

- No notices have been given under Section 46 of the Coal Mining Subsidence Act 1991 stating that the land is at risk of subsidence.

4. Shafts and adits (mine entries)



Are there any shafts and adits or other entries to underground coal mine workings within the property or within 20 metres of the boundary of the property?

- No coal mine entries are recorded to lie within 20 metres of the property.

5. Coal mining geology



Is there any record of any fault or other line of weakness due to coal mining at the surface within the boundary of the property that has made the property unstable?

- No damage arising from geological faults or other lines of weakness activated by coal mining are recorded within the property.

6. Past opencast coal mining



Is the property situated within the geographical boundary of an opencast site from which coal has been removed in the past by opencast methods?

- The property does not lie within the boundary of an opencast site from which coal was removed by opencast methods.

7. Present opencast coal mining



Is the property within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods?

- The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

8. Future opencast coal mining



(a) Is the property within 800 metres of the boundary of an opencast site for which the Coal Authority are determining whether to grant a licence to remove coal by opencast methods?

- **The property does not lie within 800 metres of the boundary of an opencast site for which the Coal Authority are determining whether to grant a licence to remove coal by opencast methods.**

(b) Is the property within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted?

- **The property does not lie within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.**

9. Coal mining subsidence claims



(a) Has any damage notice or claim for alleged coal mining subsidence damage to the property been given, made or pursued since 31st October 1994?

- **We have no evidence of a damage notice or subsidence claim for the property or within 50m of the property since 31st October 1994.**

(b) In respect of any such notice or claim has the responsible person given notice agreeing that there is a remedial obligation or otherwise accepted that a claim would lie against them?

- **Not applicable.**

(c) In respect of any such notice or acceptance has the remedial obligation or claim been discharged?

- **Not applicable.**

(d) Does any current "Stop Notice" delaying the start of remedial works or repairs affect the property?

- **There are no current Stop Notices delaying the start of remedial works or repairs to the property.**

(e) Has any request been made under Section 33 of the 1991 Act to execute preventive works before coal is worked, which would prevent the occurrence or reduce the extent of subsidence damage to any buildings, structures or works and, if yes, has any person withheld consent or failed to comply with any such request to execute preventive works?

- **There is no record of a request that has been made to carry out preventive works before coal is worked under Section 33 of the Coal Mining Subsidence Act 1991.**

NB. Records of damage notices or subsidence claims before 31st October 1994 are excluded from The Coal Authority data from which this search is compiled.

10. Mine gas emissions



Does the Coal Authority have record of any mine gas emission within the boundary of the property being reported that subsequently required action by the Authority to mitigate the effects of the mine gas emission?

- No mine gas emissions are recorded within the boundary of the property.

11. Emergency Surface Hazard Call Out incidents



Have the Coal Authority carried out any work on or within the boundaries of the property following a report of an alleged hazard related to coal mining under the Authority's Emergency Surface Hazard Call Out procedures?

- No Emergency Surface Hazard Call Out procedures are recorded against the property.

12. Withdrawal of support



(a) Does the land lie within a geographical area in respect of which a notice of entitlement to withdraw support has been published?

- The property does not lie in an area where the right to withdraw support has been granted.

(b) Does the land lie within a geographical area in respect of which a revocation notice has been given under section 41 of the Coal Industry Act 1994?

- The property does not lie within a geographical area in which a revocation notice has been given under section 41 of the Coal Industry Act 1994.

13. Working facilities orders



Is the property within a geographical area subject to an order in respect of the working of coal under the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof?

- The property is not in an area where a court order has been issued.

14. Payments to owners of former copyhold land



(a) Has any relevant notice, which may affect the property, been given?

- The property does not lie within former copyholder land.

(b) If yes, has any notice of retained interests in coal and coal mines been given?

- **No notices of retained interests in coal and coal mines been given.**

(c) If yes, has any acceptance notice or rejection notice been served?

- **No acceptance or rejection notices have been served.**

(d) If any such acceptance notice has been served, has any compensation been paid to a claimant?

- **No compensation has been paid to a claimant.**

CON29M notes and guidance

This report is prepared in accordance with The Law Society Guidance Notes 2018; under which all replies to these enquiries are made. Groundsure's Terms and Conditions are applicable at the time the report was produced.

Property owners have the benefit of statutory protection (under the Coal Mining Subsidence Act 1991). This contains provision for the making good, to the reasonable satisfaction of the owner, of physical damage from disused coal mine workings including disused coal mine entries. A leaflet setting out the rights and obligations of either the Coal Authority or other responsible persons under the 1991 Act can be obtained by telephoning 0345 762 6848. Further information can be found on their website:

www.groundstability.com.

The Coal Authority, regardless of responsibility and in conjunction with other public bodies, provide an emergency call out facility in coalfield areas to assess the public safety implications of mining features (including disused mine entries).

The Coal Authority emergency telephone number at all times is 01623 646333.

Responses to The Law Society CON29M (2018) Coal Mining Search enquiries and associated findings and recommendations relating to coal mining risk have been provided by Groundsure Ltd. Groundsure Ltd have additionally provided information relating to the Cheshire Brine Compensation Area, and have compiled all information into this report.

Queries should be made of Groundsure Ltd on 0844 415 9000, or via email: info@groundsure.com.

CON29M report limitations

This CON29M (2018) Coal Mining Report has been carried out with reference to all available official Coal Authority licensed data, an extensive collection of abandoned mine plans, maps and records. From this material, we have endeavoured to provide as accurate a report as possible. Any and all analysis and interpretation of licensed Coal Authority data in this report is made by Groundsure

The information provided in this report by Groundsure Ltd has been compiled in response to The Law Society CON29M (2018) Coal Mining search enquiries. The scope of the assessment is limited to interpretation of past, present and future extraction of coal, and does not consider the impact from non-coal mining hazards and/or natural ground stability hazards. The Law Society's Guidance Notes 2018 recommends separate enquiries to the appropriate sources are made with regard to other minerals.

The Report is created by a remote investigation and reviews only information provided by the client (address and site location boundaries) and from the databases of publicly available and/or licensable information that enable a desk-based assessment of the Site. The Report does not include a Site Investigation, nor does Groundsure Ltd make additional specific information requests of the regulatory authorities for any relevant information they may hold.

This report is concerned solely with the Site searched and should not be used in connection with nearby properties, as only known coal mining features that could potentially have a direct influence upon the Site searched are considered relevant; other features present in the general area may have been omitted for ease of reference.

This report is confidential to the client, the client's legal advisor and the client's Mortgage lender, as defined in the Groundsure terms & conditions, and as such may be used by them for conveyancing or related purposes. Groundsure has no liability toward any person or organisation not party to commissioning this report. This report or any part of it is not permitted to be reproduced, copied, altered or in any other way distributed by any other person or organisation.

Additional mine entry assessment is based on and limited to the data supplied by the Coal Authority at the time of production. In order to determine whether a property is within the likely zone of influence of a disused coal mine entry the following is considered: the actual or plotted position of the mine entry, its known or assumed diameter and the thickness of superficial deposits above rockhead. Where these figures are not known, assumptions based on established estimations have been made.



CON29M report licensing

This report contains Data provided by the Coal Authority. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the Coal Authority and permission should be sought from Groundsure Ltd prior to any re-use.

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This report may contain plans and records held by the Coal Authority and made publicly available at the time of inspection which may include British Geological Survey and Ordnance Survey data.

Conveyancing Information Executive and our terms & conditions

IMPORTANT CONSUMER PROTECTION INFORMATION

This search has been produced by Groundsure Ltd, Sovereign House, Church Street, Brighton, BN1 1UJ. Tel: 08444 159 000. Email: info@groundsure.com. Groundsure adheres to the Conveyancing Information Executive Standards.

The Standards

- Conveyancing Information Executive Members shall act in a professional and honest manner at all times in line with the Conveyancing Information Executive Standards and carry out the delivery of the Search with integrity and due care and skill.
- Compliance with the Conveyancing Information Executive Standards will be a condition within the Conveyancing Information Executive Member's Terms and Conditions.
- Conveyancing Information Executive Members will promote the benefits of and deliver the Search to the agreed standards and in the best interests of the customer and associated parties.

Complaints Advice

If you have a query or complaint about your search, you should raise it directly with the search firm, and if appropriate ask for any complaint to be considered under their formal internal complaints procedure.

If you remain dissatisfied with the firm's final response, after your complaint has been formally considered, or if the firm has exceeded the response timescales, you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). The Ombudsman can award up to £5,000 to you if the Ombudsman finds that you have suffered actual financial loss and/or aggravation, distress or inconvenience as a result of your search provider failing to keep to the Standards.

Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs.

COMPLAINTS PROCEDURE: If you want to make a complaint, we will:

- acknowledge it within 5 working days of receipt
- normally deal with it fully and provide a final response, in writing, within 20 working days of receipt
- liaise, at your request, with anyone acting formally on your behalf

Complaints should be sent to:

Operations Director, Groundsure Ltd, Sovereign House, Church Street, Brighton, BN1 1UJ. Tel: 08444 159 000. Email: info@groundsure.com If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman scheme (TPOs): Tel: 01722 333306, E-mail: admin@tpos.co.uk We will co-operate fully with the Ombudsman during an investigation and comply with their final decision.

Groundsure's Terms and Conditions can be viewed online at this link: <https://www.groundsure.com/terms-and-conditions-jan-2020/>

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Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information in your report. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference>.

Coal Mining Report Insurance Policy



Coal Mining Report Insurance Policy

The Schedule

Policy Number: The Reference contained in the **Coal Mining Search Report**

Premium: £1.40 inclusive of Insurance Premium Tax at 12%

Property: The property which is the subject of the **Coal Mining Search Report**

Limit of Indemnity: £100,000 increasing by 10% compound per annum on each anniversary of and for the first 10 years following the **Commencement Date**

Commencement Date: The date of the **Coal Mining Search Report**

You/Your:

1. A purchaser of the **Property**
2. A lender providing a **Mortgage** in connection with a purchase of the **Property**
3. A lender providing a **Mortgage** by way of a re-mortgage of the **Property**

Definitions

Where a word is defined below or in the schedule it shall carry the same meaning wherever it appears in bold text in this policy

Insured Use: The continued use of the **Property** as a single house or flat or a single commercial premises

Market Value: The value as determined by a surveyor appointed by agreement between **You** and **Us** or (in default of agreement) the President for the time being of the Royal Institution of Chartered Surveyors

Mortgage: A mortgage or charge secured on the **Property** by an institutional mortgage lender

Coal Mining Search Report: The coal mining search report attached to this policy

Search: An official search comprising a search in form CON29M (2018) being mining searches relating to coal and brine in the area in which the **Property** is situated

We/Our/Us:

Zurich Insurance plc. A public limited company incorporated in Ireland. Registration No. 13460. Registered Office: Zurich House, Ballsbridge Park, Dublin 4, Ireland. UK Branch registered in England and Wales Registration No. BR7985. UK Branch Head Office: The Zurich Centre, 3000 Parkway, Whiteley, Fareham, Hampshire PO15 7JZ.

Zurich Insurance plc is authorised by the Central Bank of Ireland and authorised and subject to limited regulation by the Financial Conduct Authority. Details about the extent of our authorisation by the Financial Conduct Authority are available from us on request. Our FCA Firm Reference Number is 203093.

Communications may be monitored or recorded to improve our service and for security and regulatory purposes.

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Your Policy

This is a legal document and should be kept in a safe place.

This policy is an agreement between **You** and **Us** and cover is provided subject to the payment of the **Premium**.

You must read this policy and its conditions, exclusions, schedule and any endorsements as one contract. Please read all of them to make sure that they provide the cover **You** require. If they do not, please contact **Us** or **Your** insurance adviser who arranged the policy for **You**.

When **You** take out and make changes to the cover provided by this policy, **You** must take reasonable care to ensure that **You** accurately answer any questions which **We** ask of **You** and that any information **You** give **Us** is accurate. If **You** are taking out this policy for purposes which are mainly related to **Your** trade, business or profession, **You** must also let **Us** know about all facts which are material to **Our** decision to provide **You** with insurance. Failure to meet these obligations could result in this policy being invalidated, a claim not being paid, or an additional premium being charged.

Fair presentation of the risk

a) At inception of this policy and also whenever changes are made to it at **Your** request **You** must:

- i) where **You** have taken out this policy for purposes which are wholly or mainly related to **Your** trade, business or profession, disclose to **Us** all material facts in a clear and accessible manner and not misrepresent any material facts, and
- ii) where **You** have taken out this policy for purposes which are wholly or mainly unrelated to **Your** trade, business or profession, take reasonable care not to misrepresent any material facts.

b) If **You** do not comply with clause a) of this condition **We** may:

- i) avoid this policy which means that **We** will treat it as if it had never existed and refuse all claims where any non-disclosure or misrepresentation by **You** is proven by **Us** to be deliberate or reckless in which case **We** will not return the premium paid by **You**; and
- ii) recover from **You** any amount **We** have already paid for any claims including costs or expenses **We** have incurred.

c) If **You** do not comply with clause a) of this condition and the non-disclosure or misrepresentation is not deliberate or reckless this policy may be affected in one or more of the following ways depending on what **We** would have done if **We** had known about the facts which **You** failed to disclose or misrepresented:

- i) if **We** would not have provided **You** with any cover **We** will have the option to:
 1. avoid the policy which means that **We** will treat it as if it had never existed and repay the premium paid; and
 2. recover from **You** any amount **We** have already paid for any claims including costs or expenses **We** have incurred
- ii) if **We** would have applied different terms to the cover **We** will have the option to treat this policy as if those different terms apply. **We** may recover any payments made by **Us** on claims which have already been paid to the extent that such claims would not have been payable had such additional terms been applied
- iii) if **We** would have charged **You** a higher premium for providing the cover **We** will charge **You** the additional premium which **You** must pay in full.

d) If any insured person, other than **You**, is responsible for a misrepresentation or failure to make a fair presentation of the risk, **We** will invoke the remedies available to **Us** under this condition as against that particular person as if a separate insurance contract had been issued to them leaving the remainder of the policy unaffected.

NB: For the purposes of the duty of disclosure stated in paragraphs a) i) and ii) above the content of the **Coal Mining Search Report** will be deemed to satisfy **Your** disclosure obligations.

Cover

1. **You** are in the process of purchasing the **Property** relying on the **Coal Mining Search Report** and/or
2. **You** (being a lender) have agreed to provide a **Mortgage** in connection with **Your** borrower's purchase or re-mortgage of the **Property** relying on the **Coal Mining Search Report**.

We will pay the following losses sustained by **You** arising out of the **Property** being affected by any matter which would have been revealed by a **Search** had one been carried out on the date of the **Coal Mining Search Report** but which was not revealed by the **Coal Mining Search Report**:



1. any reduction in **Market Value** of the **Property** calculated at the date **You** become aware of the matter(s) and/or loss in connection with a **Mortgage** as a result of such reduction.
2. all other costs and expenses including out of court settlement costs incurred by **Us** or by **You** with **Our** prior written agreement.

Waiver of Breach of Policy Condition

We will not exercise **Our** right to avoid **Our** liability to **You** in respect of loss where **You** have inadvertently breached any term or condition of the policy provided that such breach does not prejudice **Our** rights and remedies under the policy or otherwise directly or indirectly result in or increase the amount of any loss.

Protection for Mortgagees and Successors in Title

We will not avoid **Our** liability to make a payment to **You** solely because another person breaches the terms and conditions of this policy, provided such breach was not committed on **Your** behalf or with **Your** agreement, and **We** will invoke the remedies available to **Us** under the Policy as against that other person as if a separate insurance contract had been issued to them leaving the remainder of the policy unaffected.

Joint Insured

Any party insured under this policy standing in the relation of parent company, subsidiary company, associated company, branch office or joint venture partner to each other will be deemed to be joint insured for the purposes of this policy and jointly liable and responsible for any breach of any terms and conditions of this policy. If there is any inconsistency between this clause and any other term of this policy, this clause shall prevail.

Exclusions

We will not pay for any:

1. amount in excess of the **Limit of Indemnity**.
2. loss which would be recoverable under a household buildings insurance policy.
3. loss arising from any matter that **You** were aware of at the **Commencement Date**.
4. loss if the **Property** is used for any purpose other than the **Insured Use**.

Claims Conditions and How to Claim

1. **You** must:

- i) give **Us** written notice as soon as possible of any potential or actual claim or any circumstances likely to result in a claim. Please provide the policy number, **Your** name, the full address of the **Property** and a brief description of the incident that has occurred. Notifications should be sent to: Speciality Lines Claims Team, Zurich Insurance, 8th Floor, 70 Mark Lane, London, EC3R 7NQ. Email: claims@uk.zurich.com, Enquiry line: telephone 0207 648 3523
- ii) pass all court documents and/or other communications to **Us** as soon as possible after receipt
- iii) not deal with, make any admission of liability or attempt to settle a claim without **Our** prior written agreement.
- iv) agree to and carry out at **Our** expense all things necessary to minimise any loss.
- v) provide all information and assistance that **We** may require to help defend and settle the claim.

2. **We** are entitled to:

- i) decide how to settle or defend a claim and may carry out proceedings in the name of any person insured under this policy, including proceedings for recovering any claim.
- ii) pay to **You** at any time, an amount equal to the **Limit of Indemnity** or any lower amount for which the claim can be settled, after deduction of any sum already paid. **We** may then give up control of and have no further liability in connection with the claim.

3. If **We** admit liability for a claim but there is a dispute as to the amount to be paid the dispute will be referred to an arbitrator. The arbitrator will be appointed jointly by **You** and **Us** in accordance with the law at the time. **You** may not take any legal action against **Us** over the dispute before the arbitrator has reached a decision.

4. If **You** or anyone acting on Your behalf:

- a) makes a fraudulent or exaggerated claim under this policy; or
- b) uses fraudulent means or devices including the submission of false or forged documents in support of a claim whether or not the claim is itself genuine; or
- c) makes a false statement in support of a claim whether or not the claim is itself genuine; or
- d) submits a claim under this policy for loss or damage which **You** or anyone acting on **Your** behalf or in connivance with **You** deliberately caused; or
- e) realises after submitting what **You** reasonably believed was a genuine claim under this policy and then fails to tell **Us** that **You** have not suffered any loss or damage; or
- f) suppresses information which **You** know would otherwise enable **Us** to refuse to pay a claim under this policy

We will be entitled to refuse to pay the whole of the claim and recover any sums that **We** have already paid in respect of the claim.

If any fraud is perpetrated by or on behalf of an insured person and not on behalf of **You** this condition should be read as if it applies only to that insured person's claim and references to this policy should be read as if they were references to the cover effected for that person alone and not to the policy as a whole.

5. If any claim is covered by any other insurance, **We** will not pay for more than **Our** share of that claim.

6. The most **We** will pay for any loss (or all losses in the aggregate), including costs and expenses agreed by **Us** is the **Limit of Indemnity**. Once **We** have paid a loss or losses equal to the amount of the **Limit of Indemnity**, **We** will have no further liability under this policy.

General Conditions

1. Neither **You** (nor anyone acting on **Your** behalf) must disclose the existence of this policy to any other party except **Your** legal and other professional advisers, prospective purchasers, lessees and tenants of the **Property**, their respective mortgagees, legal and other professional advisers.

2. In the UK the law allows both **You** and **Us** to choose the law applicable to the contract. This contract will be subject to the relevant law of England and Wales, Scotland, Northern Ireland, the Isle of Man or the Channel Islands depending upon the Property address stated in the Schedule. If there is any dispute as to which law applies it will be English law. The parties agree to submit to the exclusive jurisdiction of the English courts.

3. Notwithstanding any other terms of this policy **We** will be deemed not to provide cover nor will **We** make any payment or provide any service or benefit to **You** or any other party to the extent that such cover, payment, service, benefit and/or any business or activity of **Yours** would violate any applicable trade or economic sanctions law or regulation.

Cancellation Clause

If **You** have taken out this policy for purposes which are wholly or mainly unrelated to **Your** trade, business or profession, **You** may cancel this policy within 14 days of receiving the policy by writing to **Us** and in such event **We** may, at **Our** discretion, charge **You** for the time that **You** have been on cover. Any refund will be made to the party who paid the premium. If **You** do cancel, **You** may be in breach of the terms of **Your** mortgage or the terms of the contract for the sale of **Your** property. If **You** are in doubt, **You** may wish to seek legal advice prior to cancellation.

Fair Processing and Complaints Procedure Our Complaints Procedure

Our commitment to customer service

We are committed to providing a high level of customer service. If you feel we have not delivered this, we would welcome the opportunity to put things right for you.

Who to contact in the first instance

Many concerns can be resolved straight away. Therefore in the first instance, please get in touch with your usual contact at Zurich or your broker or insurance intermediary, as they will generally be able to provide you with a prompt response to your satisfaction.

Contact details will be provided on correspondence that we or our representatives have sent you.

Many complaints can be resolved within a few days of receipt

If we can resolve your complaint to your satisfaction within the first few days of receipt, we will do so. Otherwise, we will keep you

updated with progress and will provide you with our decision as quickly as possible.

Next steps if you are still unhappy

If you are not happy with the outcome of your complaint, you may be able to ask the Financial Ombudsman Service to review your case.

We will let you know if we believe the ombudsman service can consider your complaint when we provide you with our decision. The service they provide is free and impartial, but you would need to contact them within 6 months of the date of our decision.

More information about the ombudsman and the type of complaints they can review is available via their website www.financial-ombudsman.org.uk.

You can also contact them as follows:

Post: Financial Ombudsman Service, Exchange Tower, London, E14 9SR

Telephone: 08000 234567 (free on mobile phones and landlines)

Email: complaint.info@financial-ombudsman.org.uk

If the Financial Ombudsman Service is unable to consider your complaint, you may wish to obtain advice from the Citizens Advice Bureau or seek legal advice.

The Financial Services Compensation Scheme (FSCS)

We are covered by the Financial Services Compensation Scheme (FSCS) which means that you may be entitled to compensation if we are unable to meet our obligations to you. Further information is available on www.fscs.org.uk or by contacting the FSCS directly on 0800 678 1100.

How we use your information

Who controls your personal information

This notice tells you how Zurich Insurance plc ('Zurich'), as data controller, will deal with your personal information. Where Zurich introduces you to a company outside the group, that company will tell you how your personal information will be used.

You can ask for further information about our use of your personal information or complain about its use in the first instance, by contacting our Data Protection Officer at: Zurich Insurance Group, Tri-centre 1, Newbridge Square, Swindon, SN1 1HN or by emailing the Data Protection Officer at GBZ.General.Data.Protection@uk.zurich.com.

If you have any concerns regarding our processing of your personal information, or are not satisfied with our handling of any request by you in relation to your rights, you also have the right to make a complaint to the Information Commissioner's Office. Their address is: First Contact Team, Information Commissioner's Office, Wycliffe House, Water Lane, Wilmslow, SK9 5AF.

What personal information we collect about you

We will collect and process the personal information that you give us by phone, e-mail, filling in forms, including on our website, and when you report a problem with our website. We also collect personal information from your appointed agent such as your trustee, broker, intermediary or financial adviser in order to provide you with the services you have requested and from other sources, such as credit reference agencies and other insurance companies, for verification purposes. We will also collect information you have volunteered to be in the public domain and other industry-wide sources. We will only collect personal information that we require to fulfil our contractual or legal requirements unless you consent to provide additional information. The type of personal information we will collect includes; basic personal information (i.e. name, address and date of birth), occupation and financial details, health and family information, claims and convictions information and where you have requested other individuals be included in the arrangement, personal information about those individuals.

If you give us personal information on other individuals, this will be used to provide you with a quotation and/or contract of insurance and/or provision of financial services. You agree you have their permission to do so. Except where you are managing the contract on another's behalf, please ensure that the individual knows how their personal information will be used by Zurich. More information about this can be found in the 'How we use your personal information' section.

How we use your personal information

We and our selected third parties will only collect and use your personal information (i) where the processing is necessary in connection with providing you with a quotation and/or contract of insurance and/or provision of financial services that you have requested; (ii) to meet our legal or regulatory obligations; or (iii) for our 'legitimate interests'. It is in our legitimate interests to collect

your personal information as it provides us with the information that we need to provide our services to you more effectively including providing you with information about our products and services. We will always ensure that we keep the amount of information collected and the extent of any processing to the absolute minimum to meet this legitimate interest. Examples of the purposes for which we will collect and use your personal information are:

1. to provide you with a quotation and/or contract of insurance;
2. to identify you when you contact us;
3. to deal with administration and assess claims;
4. to make and receive payments;
5. to obtain feedback on the service we provide to you;
6. to administer our site and for internal operations including troubleshooting, data analysis, testing, research, statistical and survey purposes;
7. for fraud prevention and detection purposes.

We will contact you to obtain consent prior to processing your personal information for any other purpose, including for the purposes of targeted marketing unless we already have consent to do so.

Who we share your personal information with

Where necessary, we will share the personal information you gave us for the purposes of providing you with the goods and services you requested with the types of organisations described below:

associated companies including reinsurers, suppliers and service providers;
introducers and professional advisers;
regulatory and legal bodies;
survey and research organisations;
credit reference agencies;
healthcare professionals, social and welfare organisations; and
other insurance companies

Or, in order to meet our legal or regulatory requirements, with the types of organisations described below:

regulatory and legal bodies;
central government or local councils;
law enforcement bodies, including investigators;
credit reference agencies; and
other insurance companies

How we use your personal information for websites and email communications

When you visit one of our websites we may collect information from you such as your email address or IP address. This helps us to track unique visits and monitor patterns of customer website traffic, such as who visits and why they visit.

We use cookies and/or pixel tags on some pages of our website. A cookie is a small text file sent to your computer. A pixel tag is an invisible tag placed on certain pages of our website but not on your computer. Pixel tags usually work together with cookies to assist us to provide you with a more tailored service. This allows us to monitor and improve our email communications and website. Useful information about cookies, including how to remove them, can be found on our websites.

How we transfer your personal information to other countries

Where we transfer your personal information to countries that are outside of the UK and the European Union (EU) we will ensure that it is protected and that the transfer is lawful. We will do this by ensuring that the personal information is given adequate safeguards by using 'standard contractual clauses' which have been adopted or approved by the UK and the EU, or other solutions that are in line with the requirements of European data protection laws.

A copy of our security measures for personal information transfers can be obtained from our Data Protection Officer at: Zurich Insurance Group, Tri-centre 1, Newbridge Square, Swindon, SN1 1HN, or by emailing the Data Protection Officer at GBZ.General.Data.Protection@uk.zurich.com.

How long we keep your personal information for

We will retain and process your personal information for as long as necessary to meet the purposes for which it was originally

collected. These periods of time are subject to legal, tax and regulatory requirements or to enable us to manage our business.

Your data protection rights

You have a number of rights under the data protection laws, namely:

- to access your data (by way of a subject access request);
 - to have your data rectified if it is inaccurate or incomplete;
 - in certain circumstances, to have your data deleted or removed;
 - in certain circumstances, to restrict the processing of your data;
 - a right of data portability, namely to obtain and reuse your data for your own purposes across different services;
 - to object to direct marketing;
 - not to be subject to automated decision making (including profiling), where it produces a legal effect or a similarly significant effect on you;
 - to claim compensation for damages caused by a breach of the data protection legislation.
- if we are processing your personal information with your consent, you have the right to withdraw your consent at any time.

We will, for the purposes of providing you with a contract of insurance, processing claims, reinsurance and targeted marketing, process your personal information by means of automated decision making and profiling where we have a legitimate interest or you have consented to this.

What happens if you fail to provide your personal information to us

If you do not provide us with your personal information, we will not be able to provide you with a contract or assess future claims for the service you have requested.

Fraud prevention and detection

In order to prevent and detect fraud we may at any time:

- check your personal data against counter fraud systems
- use your information to search against various publicly available and third party resources
- use industry fraud tools including undertaking credit searches and to review your claims history
- share information about you with other organisations including but not limited to the police, the Insurance Fraud Bureau (IFB), other insurers and other interested parties.

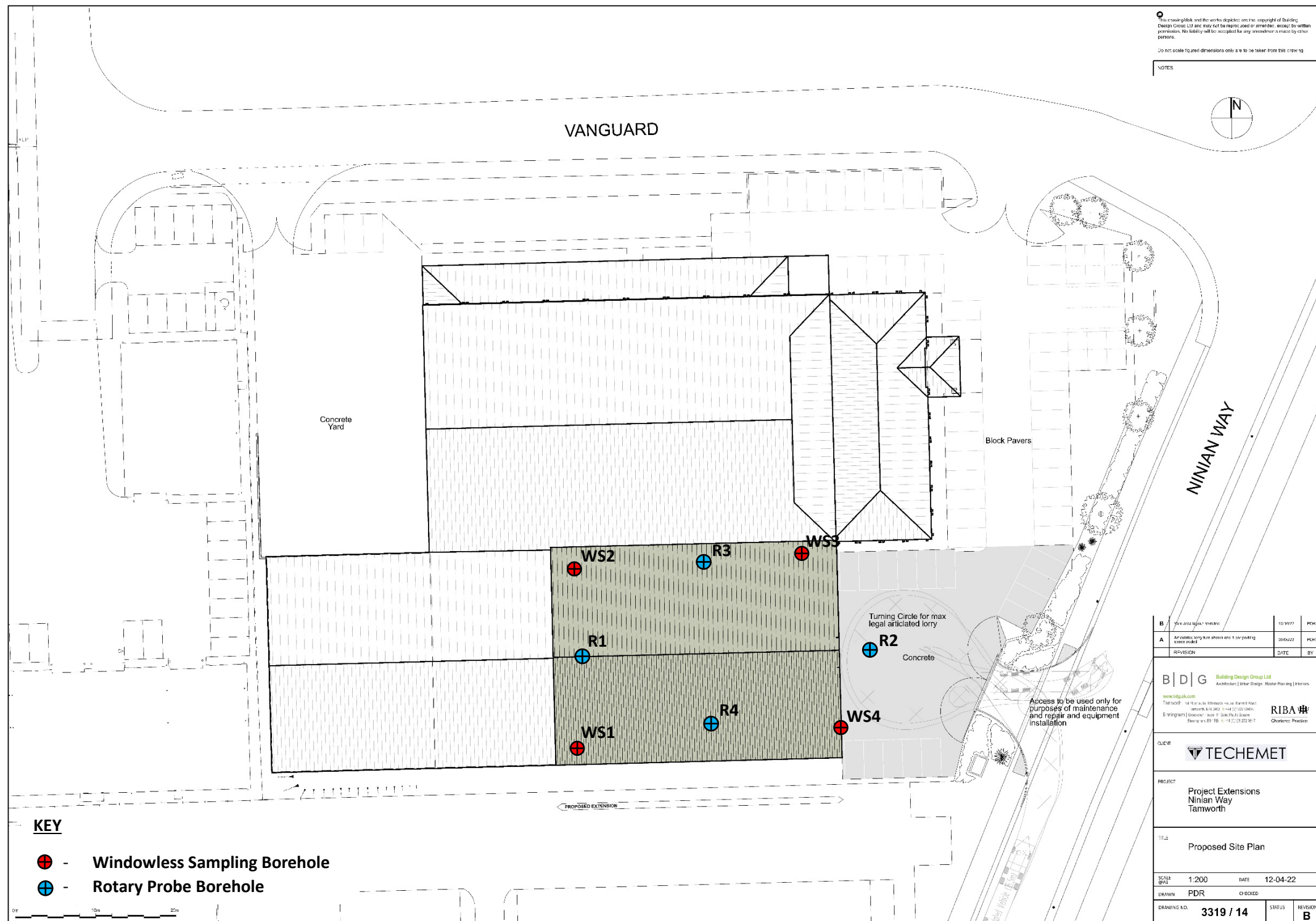
If you provide false or inaccurate information and fraud is identified, the matter will be investigated and appropriate action taken. This may result in your case being referred to the Insurance Fraud Enforcement Department (IFED) or other police forces and fraud prevention agencies. You may face fines or criminal prosecution. In addition, Zurich may register your name on the Insurance Fraud Register, an industry-wide fraud database.

Claims history

We may pass information relating to claims or potential claims to any relevant database. We and other insurers may search these databases when you apply for insurance, when claims or potential claims are notified to us or at time of renewal to validate your claims history or that of any other person or property likely to be involved in the policy or claim.

This helps to check information provided and prevent fraudulent claims.

14.0 SITE PLANS AND DRAWINGS





VERTICALLY LAID COMPOSITE
CLADDING MICRORIB FINISH
COLOUR MOORLAND GREEN
BS12B21

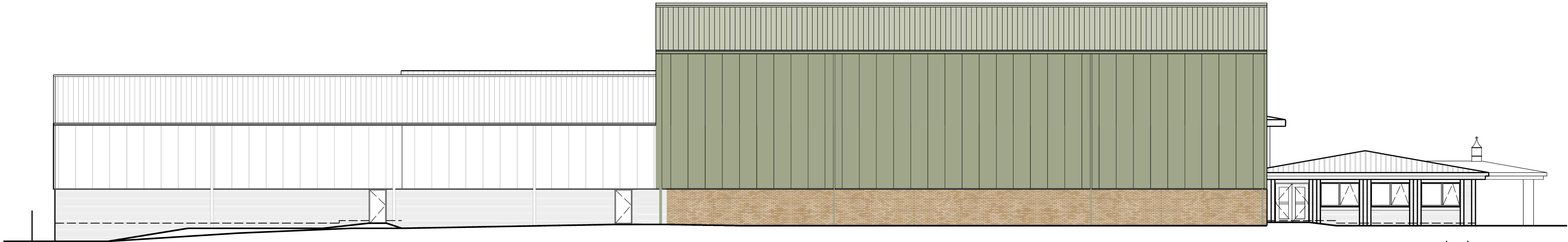
PERSONNEL DOORS COLOUR
GREEN TO MATCH EXISTING
BUFF FACING BRICKWORK TO
MATCH EXISTING

SHUTTER DOOR COLOUR MOORLAND
GREEN TO MATCH EXISTING BS12B21

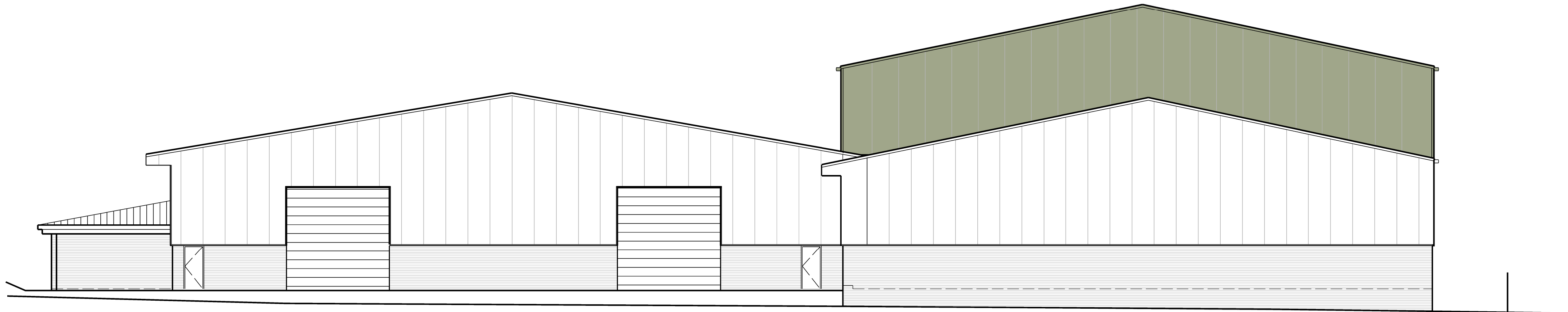
E FRONT ELEVATION TO NINIAN WAY
scale 1:125



N SIDE ELEVATION TO VANGUARD
scale 1:125



S SIDE ELEVATION
scale 1:125



W REAR ELEVATION
scale 1:125

0m 5m 10m

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Do not scale figured dimensions only are to be taken from this drawing

NOTES

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RIBA  Chartered Practice		
CLIENT TECHEMET		
PROJECT Project Extensions Ninian Way Tamworth		
TITLE Proposed Elevations		
SCALE @A1	1:125	DATE 12-04-22
DRAWN PDR	CHECKED	
DRAWING NO. 3319 / 16	STATUS	REVISION