EMS.2024.16	Health & Safety Plan	REMADA GEO CONSULTANTS
Site Investigation Projects 1271.03		

1 Project Description

Project	**Lidl Blackwood**	**Client**	**Lidl Great Britain Ltd**
Start Date	**18th November 2024**	**Principal Contractor**	**N/A**
Duration	**Up to 3 No. consecutive days on-site**		
Project No	**1271.04**	**Site Address**	**Penmaen Road, Blackwood, NP12 2DY**

Project Manager (See Job Board in Office for allocation and *for reporting structure see EMS Manual)*	Peter Searing	*The Project Manager is responsible for ensuring that the project is adequately resourced; that proposed scope of work has been agreed with the client; and for meeting the overall reporting or completion date.*
Project Engineer/Consultant *(for reporting structure see EMS Manual)*	Peter Searing	*The Project/Engineer is responsible for ensuring that this HASP is complete, that all activities are defined, that all site work complies with the specification or proposed scope of work, and that all activities are carried in accordance with this HASP and appended RAMS.*

Agreed Scope of Works

The scope of works proposed within Remada's proposal letter to client (ref: 1271.00.03, dated 23rd September 2024) and as per client purchase order, comprises:

- Obtain Coal Authority permit (standard turnaround)
- Mobilise Commachio GEO 205, crew and ancillary equipment to site.
- 3 No. rotary open holes to target 30m depth below existing site level.
- Plug each borehole with bentonite cement (complete backfill may not be possible if cavities are found).
- Update Coal Mining Risk Assessment and Phase 2 Reports, including logs and an assessment of the findings.

Scope / Activities	Yes/No	Notes
Site Investigation		
Site Walkover	No	
Utility Clearance	Yes	Client-supplied Topographic & Utility Survey drawing appended to this HASP.
Surveying / Setting out	Yes	Locations to be set out as per the appended drawing.
Trial Pitting	No	
Soakaway Testing	No	
Coring	No	

Dynamic Probing	No	
Window Sampling	No	
Rotary Boreholes	Yes	3 No. rotary boreholes (open not cored) be undertaken to a depth of 30m to find potential cavities. The three boreholes are required to rule out the chance of drilling through a pillar or stack i.e. to miss any cavity and to triangulate the direction and dip of any seam.
Well installations	No	
Sampling	No	
Ground gas Monitoring /sampling	No	
Groundwater Monitoring/sampling	No	
Surface water sampling	No	
Plate Bearing Tests	No	
CBR Tests	No	
Remediation		
Invasive species treatment	No	
Remediation Excavation	No	
Ex-situ Remediation	No	
In-situ soil treatment	No	
In situ groundwater treatment	No	
Earthworks	No	
Other	No	

2 Key Participants

Function	Client / Principal Contractor
Organisation	Lidl Great Britain Ltd
Address	Lidl Great Britain Ltd Waterton Industrial Estate, Off Cowbridge Road Bridgend CF31 3PH
Tel No(s)	Tel: 01656 678291
Contact(s)	Wendy Hurst – As above

Function	Site Investigation Consultant/Contractor
Organisation	Remada Ltd
Address	Forward House 17 High Street Henley in Arden B95 5AA
Tel No(s)	Office 0333 123 5222
Contact(s)	Greg Jones 07966 017009 Peter Dickinson 07885 300 691

Function	Rotary Drilling
Organisation	Regional Drilling Ltd
Address	Kirkstead Close Oakwood Derby
Tel No(s)	07817 035294
Contact(s)	Chris King – As above

3 Scope of Work (including technical information)

Site Description

The site occupies an approximately rectangular plot in the north-eastern area of the Penmaen Industrial Estate, situated to the west of Penmaen Road and south of the B4254 road. At the time of writing, the site comprises a Stagecoach bus depot, with associated bus stabling and servicing facilities.

The site is formed of two distinct areas. The northern half of the site is dominated by the main bus depot building, featuring a tri-pitched roof with associated flat roofed offices along the northern and western fringes. A separate, pitched roof building is present adjacent to the western boundary, whilst a flat-roofed electricity sub-station of brick construction is present in the north-western corner. The majority of the southern half of the site is asphalt-surfaced and used for the stabling of Stagecoach's local bus fleet. A small, rectangular patch of concrete is present adjacent to the southern boundary of the site although this appears to be flush with the surrounding surfacing.

Site Geology

Geological maps indicate the site to be underlain by superficial Devensian Till, designated as a Secondary Undifferentiated Aquifer. The bedrock of the Grovesend Formation (a Secondary A Aquifer) typically comprising mudstones and siltstone with well-developed coals and 'Pennant' sandstone.

The 1:50,000 series BGS map sheet 249 (Newport) dated 1986 indicates that the site is bisected by a WNW-ESE orientated fault in the northern area, which downthrows towards the south. The BGS mapping also shows a NE-SW orientated fault joining this WNW-ESE fault on-site, downthrowing towards the north-west. However, the Envirocheck report obtained for the study site indicates this to be present immediately to the north of the site and joining the WNW-ESE fault adjacent to the north-western corner.

The shallowest worked coal underlying the site is indicated to be the 0.76m thick Mynyddisllwyn seam, located 90m beneath the site, but at 46m depth to the north of WNW-ESE orientated fault. A further succession of worked coal seams is indicated by the Coal Authority, but these are indicated to be present at depths >600m beneath the study site within the Middle and Lower Coal Measures.

The Coal Authority have recorded five claims for alleged subsidence damage within 50m of the site boundary. This includes a claim for damage to the Gossard International building on Penmaen Road (NP12 2DX) which was settled by repairs to the value of £13,426.58 in 1995.

Permit

Remada has applied for a permit to enter / disturb Coal Authority Interests. Coal Authority Permit 29106 grants the ground investigation by 3 boreholes to 30m depth to determine the presence of shallow mine workings. A key requirement is that the rotary drilling is undertaken using water flush as the drilling medium.

The Coal Authority permit is appended.

Unexploded Ordnance (UXO)

Freely available Zetica Unexploded Ordnance (UXO) risk mapping indicates the site to be located within an area where the bomb risk is 'Low'. Therefore, no UXO precaution measures are considered necessary for any subsequent intrusive investigation, based on the information available for the site to date

The UXO risk mapping is appended.

Activities

Activities – by Remada

- Site Management
- Technical supervision of setting out and drilling subcontractors
- Logging of arisings.

Activities – by Regional Drilling

- 3 No. rotary holes to maximum 30m depth
- Supply of licenced standpipe and bowser to aid drilling.
- Backfilling of all three rotary holes with bentonite upon completion.

Proposed Exploratory Hole Location Plan

- Appended

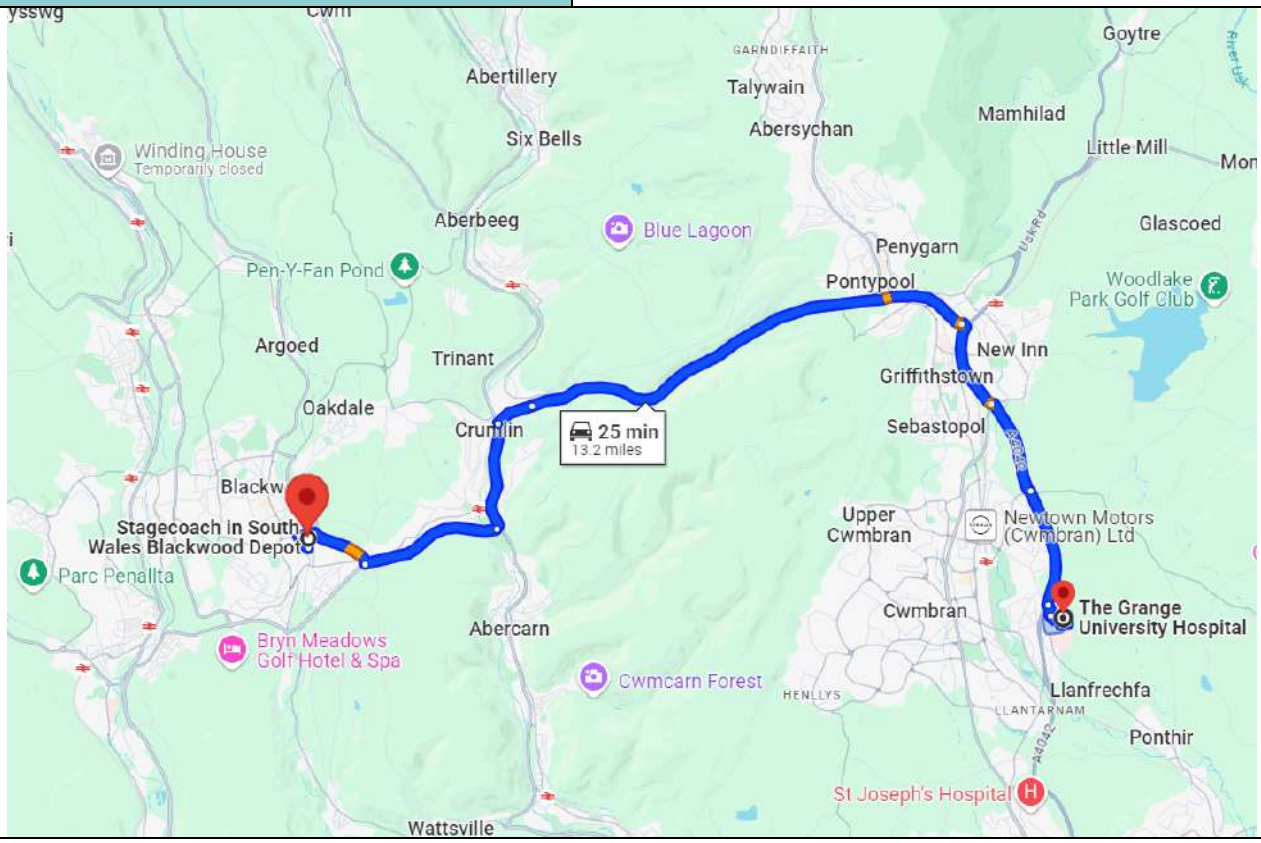
Laboratory Testing (Provisional – Dependent on ground conditions encountered)

- None

4 ESSENTIAL REPORTING CONTACTS IN THE EVENT OF AN INJURY, ALSO SAFETY, ENVIRONMENTAL or DAMAGE RELATED INCIDENT or OTHER CONCERNS

Remada	Greg Jones	07966 017 009
Client	Wendy Hurst	01656 678291

Emergency Assembly Point	Site Entrance
Location of First Aid Facilities	Site Vehicle
First Aider (s)	Peter Searing
Nearest A&E Hospital	The Grange University Hospital Llanfrechfa Grange Caerleon Road Cwmbran NP44 8YN Non-Emergency Tel: 01633 493100 Emergency Tel: 999



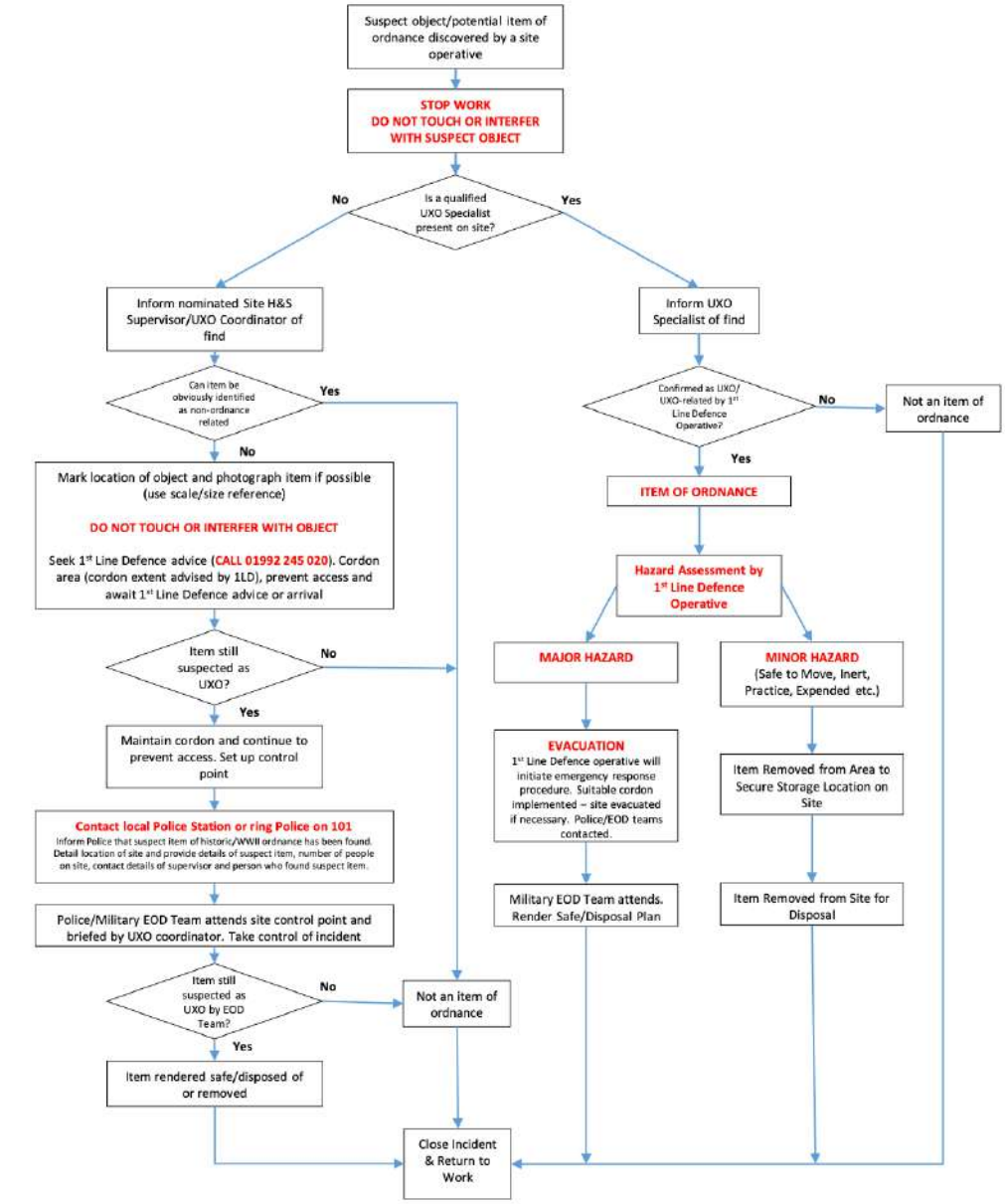
RESPONSE & KEY AGENCIES 'PHONE NUMBERS						
FIRE	999					
POLICE	999					
AMBULANCE	999					
Gas	National Emergency Service Number 0800 111 999					
GAS (linesearch listed company)	Southern Gas Network – 0800 111 999	**Wales & West 02920278912 Emergency Only 0800111999**	Cadent			
ELECTRICITY	UK Powercut National Number Phone 105					
ELECTRICITY (linesearch listed company	UK Power Networks 0800 316 3105	Western Power Distribution 0800 6783 105	SSE	United Utilities 0800 195 4141	SP Energy Networks 0800 001 5400	**National Grid 0800 6783 105**
WATER https://www.water.org.uk/customers/find-your-supplier	Anglian Water	Dwr Cymru / Welsh Water 0800 052 0130	Hafren Dwfrdwy	Northumbrian Water	Severn Trent Water 03457 500 500	South West Water
	Southern Water 0330 303 0368	Thames Water 0800 714 614	United Utilities 0345 672 3723	Wessex	Yorkshire Water	
	Affinity Water	Portsmouth Water	South East Water	South Staffs Water	SES Water	
SEWAGE https://www.water.org.uk/customers/find-your-supplier	Anglian Water	Dwr Cymru / Welsh Water 0800 052 0130	Hafren Dwfrdwy	Northumbrian Water	Severn Trent Water 03457 500 500	South West Water
	Southern Water 0330 303 0368	Thames Water 0800 714 614	United Utilities 0345 672 3723	Wessex	Yorkshire Water	
COMMUNICATIONS BT)	BT 0800 023 2023	Virgin 0870 0130 045				

5. EMERGENCY ACTIONS (may be substituted for client specific protocols)

Gas	• Mark and clear the area of all personnel and equipment. • If it is possible, locate the local gas stopcock and isolate. • Inform National Grid on the emergency response number • Contact other emergency service(s) if the situation demands it.
Fuel lines and spillages	• Mark and clear the area of all personnel and equipment. • If it is possible, locate the fuel stop-cock and isolate. • Make an attempt to contain any spillage by utilising the emergency spill kit from the vehicle or use other local absorbent material. (sand, rags etc) • Contact other emergency service(s) if the situation demands it.
Electricity	• Mark and clear the area of all personnel and equipment. • If it is possible, locate the local isolator and isolate the supply. • Damage to the site supply, contact the site management. • Damage to a main supply, contact the supply authority.
Water and Effluent systems	• Mark and clear the area of all personnel and equipment. • If it is possible, locate the local water stop-cock and isolate. • Damage to the site supply, contact the site management. • Damage to a main supply, contact the supply authority.
Communications	• Mark and clear the area of all personnel and equipment. • Contact the supply authority
Fire	• If possible and without risk, make one attempt to extinguish the fire using the appropriate fire extinguisher(s) from a local designated fire point or vehicle. If it is assessed that the fire is likely to become beyond control: • Telephone fire and rescue service • Record incident and report to client

IMMEDIATE ACTIONS

Service / Utility	• Discovery of service or utility. Stop works. Record type and location • within HASP on site log / risk assessment, mark on drawing. Inform Project Manager

UXO	 • Assume the object is dangerous • Do not touch or interfere with object • If the object remains in the excavation leave it undisturbed in place; if the object is identified within the soil stockpile do not move or disturb it. • If available refer to UXO briefing for site / object specific information. • Stop works & cordon area off and evacuate work area immediately. • Inform the site authority / PM immediately. • Telephone police (Only when instructed to do so).
First Aid & Accident Reporting	• First Aid kits carried in Remada vehicles • Trained First Aiders named in Section 10 and certificates appended • Accident reporting book in first aid kit and archive used pages at office

Asbestos	Work on brownfield sites carries a potential risk to site personnel from exposure to asbestos which may be present in the made ground and may become liberated through the intrusive works. The ground investigation works are categorised as Non-Licenced Works (NLW) in accordance with Control of Asbestos Regulations 2012, as the works involve soil sampling and ground investigation activities, and any exposure will be sporadic and low intensity (SALI) and are unlikely to exceed the Control Limit (0.1f/ml over 4 hours) based on the following factors: • Suspect Asbestos Containing Materials (ACMs) were not identified on the site during the site walkover. • The majority of the work methods are of low intensity disturbance (i.e. window sampling/CP drilling). • Soils are likely to be naturally damp/wet. • Dust suppression will be carried out if required (i.e. if dry, dusty conditions are encountered in the made ground). • Made ground is heterogenous and any asbestos is likely to be highly localised. • The majority of the site is covered in hardstanding. All Remada employees undertaking supervision of ground investigation works are trained in asbestos awareness and when required to undertake sampling, will hold Non-Licensable Work with Asbestos including Non-Notifiable Licenced Work (NNLW) certificate and be face fitted to an appropriate mask type. As general ground investigation works are assessed as non-licenced work, no specific PPE, RPE or decontamination facilities are required, however PPE and RPE will be made available on site should the risk assessment be revised. No asbestos contaminated waste will be removed from the site, if encountered. • If any visible suspect asbestos containing materials or soils (ACMs/ACS) are identified on-site then works in that location will cease and a dynamic risk assessment will be conducted and any necessary amendments to the risk assessment or plan of work will be recorded and implemented. The suspect ACM/ACS will be sampled if possible and the area will be demarcated/covered. Remada will not carry out any works deemed to be Licenced Work or Notifiable Non-Licenced Work and, in such instances, specialist contractors will need to be appointed.

6. GENERAL SITE SET UP

SITE DESCRIPTION & CONDITION (urban, rural, industrial, decommissioned, demolished, existing works etc)	*The site occupies an approximately rectangular plot in the north-eastern area of the Penmaen Industrial Estate, situated to the west of Penmaen Road and south of the B4254 road. At the time of writing, the site comprises a Stagecoach bus depot, with associated bus stabling and servicing facilities.*
CLIENT / REMADA SPECIFIC SITE SAFETY INFORMATION AND / OR RESTRICTIONS	None
SITE WELFARE ARRANGEMENTS TO BE:	*Remada Engineer and site personnel to use existing welfare facilities within Stagecoach's depot. These site welfare arrangements will be confirmed to all site personnel during their induction, prior to commencement of works.*
SITE RELATED CHEMICAL / ASBESTOS or OTHER SUBSTANCE INFORMATION (supported by relevant COSHH / risk assessment if applicable)	Not known

SITE PPE Requirements Indicate: Mandatory (M) Optional (O) Task specific (T)												
	Head Protection	M	Safety Boots	M	Ear Protection	M	HI - Visibility	M	Eye protection	T	Gloves (work)	M
	Overall	T	RPE / Dust	T	RPE Other	T	Fall Protection	T	Chemical Suit	T	Gloves (light)	M

7. THE LOCATION(S) / ROUTES OF KTNOWN SERVICES ARE TO BE VISIBLY MARKED.

Have the on-site services / utilities been surveyed?	**Qualify: Yes** or No
Has a Linesearchbeforeudig search been undertaken?	**Qualify: Yes** or No
Is the Linesearchbeforeudig search appended to this HASP?	**Qualify: Yes** or No
Has the client provided the most recent utility and services drawings?	**Qualify: Yes** or No
Are utility plans from the Utility provider appended to this HASP?	**Qualify: Yes** or No
Is a sub-surface survey appended to this HASP?	**Qualify: Yes** or No
Are client drawings / plans appended to this HASP?	**Qualify: Yes** or No
Do above ground services cross the site?	**Qualify:** Yes or **No**

Confirm Survey / Avoidance Measures to be Used on the day of site works

1	Electromagnetic (Cat & Genny)	**Qualify: Yes** or No
2	Ground Penetrating Radar	**Qualify:** Yes or **No**
3	Sonde Assisted	**Qualify:** Yes or **No**
4	Topographical Assisted	**Qualify:** Yes or **No**

5	Surveyed Area over Boundary	Qualify: Yes or No
6	Surveyed Area on Boundary and Site	Qualify: Yes or No
7	Vacuum Extraction	Qualify: Yes or No
8	Utility Company Attendance	Qualify: Yes or No
9	Client Provided	Qualify: Yes or No
10	On-site avoidance on day	Qualify: Yes or No

THE LOCATIONS OF SERVICES ARE TO BE VISIBLY MARKED

Is there a requirement for the Utility Company to attend site?	Qualify: Yes or No
Are individual site services & utilities sketches / plans available and attached?	Qualify: Yes or No
Have other works occurred on site since last visit?	N/A
Is main sewer / drain / pipe invert data required?	Qualify: Yes or No
Are utilities / services required to be positively avoided / located on the day of works?	Qualify: Yes or No
Have any known site survey restrictions / anomalies been identified?	Qualify: Yes or No
Is a UXO assessment required?	Qualify: Yes or No

Utility Survey Appended	Qualify: Yes or No

8. Risk Assessments & Method Statements

Activity	RAMS	Appended
Rotary Boreholes	Remada Risk Assessments Appended	**Qualify: Yes** or No
	Remada Method Statements Appended	**Qualify: Yes** or No
	Sub-contractor Risk Assessments Appended	**Qualify: Yes** or No
	Sub-contractor Method Statements Appended	**Qualify: Yes** or No

9. Toolbox Talks

Refer to attached sheet for specific toolbox talk given.

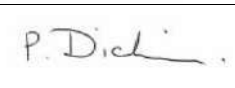
10. PROJECT H.A.S.P. SIGNING SHEET / ACKNOWLEDGEMENT OF RECEIPT OF INFORMATION AND / INSTRUCTION WITH RESPECT TO THE FOLLOWING PROJECT:

I have been given and have received information and instruction on the items listed below and within this HASP, and I have understood the documentation contained within this HASP and will abide by its requirements. ***(This instruction will apply equally to all contracted trades. Authorised visitors to the site will be made aware of specific site safety information)***

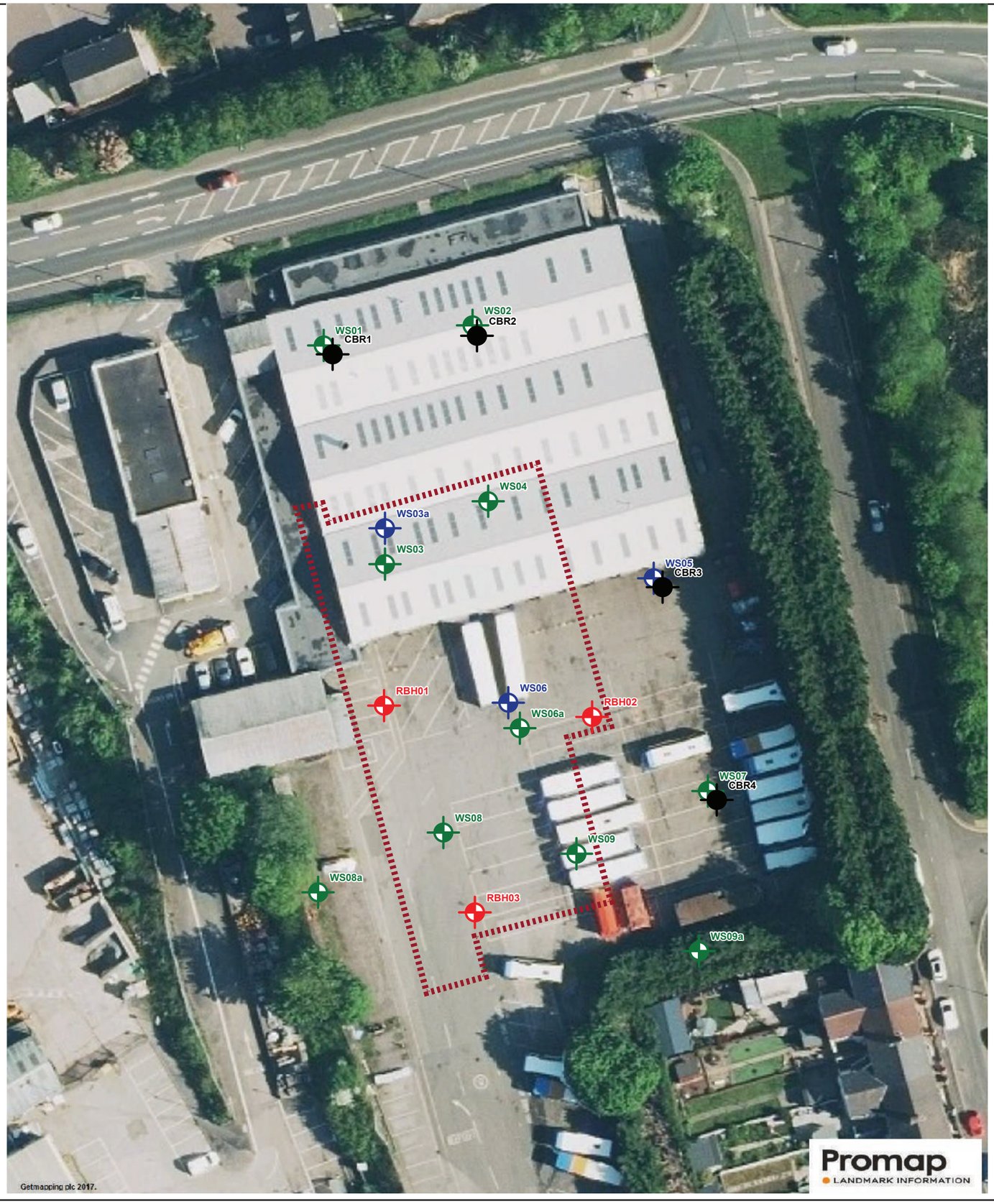
- Project details, site layout,
- Related drawings, utility / services plans and related avoidance measures
- Any general restrictions or restriction hours of work;
- Scope or method of work;
- Advising of changes to original scope or method of work;
- Special Site Welfare and/ /or Safety Rules;
- The Workplace Risk Assessment(s) and associated Safety Method Statement(s);
- COSHH assessment(s);
- Emergency procedure(s);
- Accident and all incidents reporting procedures;
- Communication to express H&S concerns.

Name	Company	Signature	Date	First Aider Yes / No
Peter Searing	Remada			Yes

The Scope of Work and contents of this HASP have been reviewed for accuracy.

Title	Name	Signature	D a t e
Project Manager	Peter Searing		14.11.2024
HASP Authorised by Director / Principal	Peter Dickinson		14.11.2024

PROPOSED EXPLORATORY HOLE LOCATION PLAN



PROPOSED BOREHOLES

- WS01 — Window Sample & Installation
- WS02 — Window Sample
- CBR1 — CBR Test
- RBH01 — Rotary Borehole

Notes

Proposed store outline (dashed) reproduced from HTC Architects Ltd 'Proposed Site Plan - Option 11', drawing ref: F422, Revision A dated February 2024.

Revision	Approved	Date

Project Title
Stagecoach Depot, Penmaen Road, Blackwood

Drawing Title
Site Layout & Exploratory Hole Positions

Client
Lidl Great Britain Ltd

Scale	Drawn	Size
as shown	UK	A4
Date	**Job No.**	**Figure No.**
30.10.24	1271.03	00

REMADA GEO CONSULTANTS

COAL AUTHORITY PERMIT

The Coal Authority

Permit to Enter or Disturb Coal Authority Interests

Permit 29106

Name and Address of Permit Holder:

Lidl Great Britain Ltd
Waterton Industrial Estate
Off Cowbridge Road
Bridgend
CF31 3PH

Site Location:

Stagecoach Depot
Penmaen Road
Pontllanfraith
Blackwood
NP12 2DY

This certificate hereby grants the above named Permit Holder a Permit to carry out:-

Ground investigation by three boreholes to 30m to determine presence of shallow mine workings within the Authority's interests at the identified site location above as shown on the Grant Permit Boundary (overleaf) for the period of **12 months** from the granted date shown below. *The granting of this Permit does not constitute advice given by the Authority in relation to the proposed operations. It is the Permit Holder's responsibility to obtain appropriate health, safety, environmental, technical and legal advice.*

Conditions:

- *Manned entry (i.e.) into mine entries/workings) is strictly prohibited.*
- *Water flush*
- *Gas Monitoring CO, CH_4, CO_2, O_2, H_2S at borehole and rig*
- *Operators undertaking the work must be in possession of this certificate and the Permit boundary plan at the time of works*
- *Appropriate borehole sealing without delay and to withstand site level changes*

Signed: Jodie Dawson Granted Date: ***13.11.24***

For and on behalf of The Coal Authority

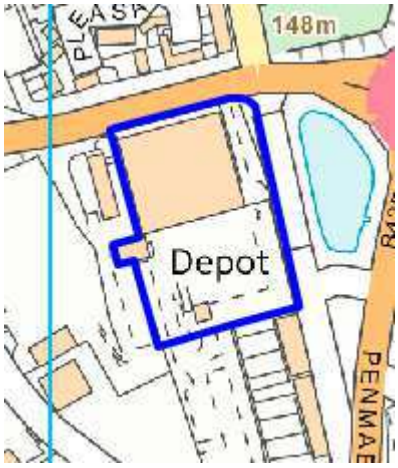
Nominated Representative: Jodie Dawson, Permitting Manager;
The Coal Authority, Permitting Office, 200 Lichfield Lane, Mansfield, Notts, NG18 4RG
Tel: 01623 637450; E-Mail: permissions@coal.gov.uk

The Coal Authority

Granted Permit Boundary

Permit Ref: 29106

Permit Boundary:



LINESEARCH (LSBUD) & UTILITY PLANS

Enquiry Confirmation

LSBUD Ref: 35019351

Date of enquiry: 10/10/2024
Time of enquiry: 16:25

Enquirer

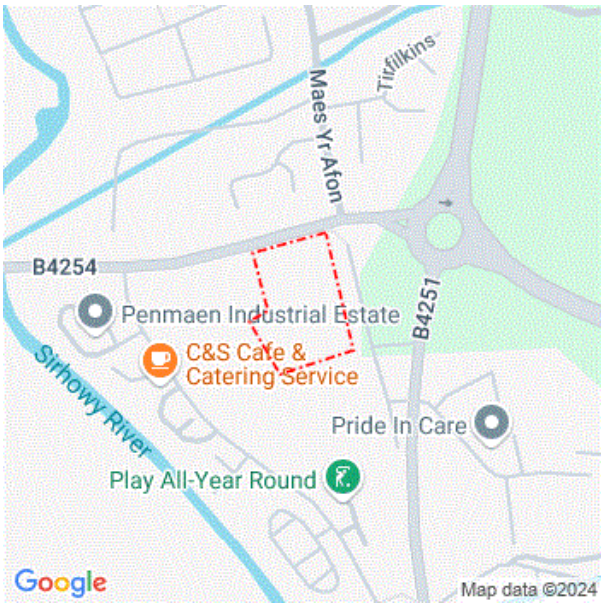
Name	Mr Peter Searing	Phone	07964152695
Company	Remada	Mobile	Not Supplied
Address	Remada Ltd 17 High Street Henley-in-Arden West Midlands B95 5AA		
Email	peter.searing@remada.co.uk		

Enquiry Details

Enquiry type	Planned Works
Work category	Excavations Non Utility
Work type	Multiple excavations site (deeper than 1.5m)
Work type buffer*	50 metres
Start date	23/10/2024
End date	25/10/2024
Scheme/Reference	1271 blackwood
Search location	NP122DY
Confirmed location	318047 196435
Site size	0 metres square
Site Contact Name	Peter Searing
Site Phone No.	07964152695
Description of Works	9 window sample holes to 7m bgl

* The WORK TYPE BUFFER is a distance added to your search area based on the Work type you have chosen.

Site Map



Please note that the above map only displays the location of the proposed work site and will not display any of the Members' pipes and cables. It is imperative that this area accurately reflects the proposed work site.

Affected LSBUD members

(LSBUD Members who have assets registered on LSBUD within the vicinity of your search area.)

Do not proceed until all Members listed below have confirmed that your works can continue.

Asset Owner	Phone/Email	Emergency Only	Status
National Grid Electricity Distribution	08000963080	08006783105	Await response
Spectrum Fibre Limited T/AS Ogi	07976936157	07976936157	Await response
Wales and West Utilities	02920278912	0800111999	Await response

Status explanation

Await Response means that the asset owner will contact you. This is typically by sending the plan response but they may ask for further information before being able to do so, particularly if any payments or authorisations are required.

Email Additional Info means that the asset owner needs further information about your works to assess your enquiry before providing a response. Please provide any details you have available including plans, method statements etc. if available.

Enquiry Confirmation
LSBUD Ref: 35019351

Date of enquiry: 10/10/2024
Time of enquiry: 16:25

Important notices

It is very important that you correctly understand what the service does and the procedures in order for you to work safely. Please refer to the LSBUD Support Page (www.lsbud.co.uk/linesearchbeforeudig-support) for further guidance. This information includes how to provide additional information to the LSBUD Members who request it to provide a response to your enquiry.

Validity and search criteria. The results of this enquiry are based on the confirmed information you entered and are valid only as at the date and time of the enquiry. It is your responsibility to ensure that the Enquiry Details are correct, and LinesearchbeforeUdig (LSBUD) accepts no responsibility for any errors or omissions in the Enquiry Details or any consequences thereof. LSBUD Members update their asset information on a regular basis so you are advised to consider this when undertaking any works. It is your responsibility to choose the period of time after which you need to resubmit any enquiry but the maximum time (after which your enquiry will no longer be dealt with by the LSBUD Helpdesk and LSBUD Members) is 28 days. If any details of the enquiry change, particularly including, but not limited to, the location of the work, then a further enquiry must be made.

Terms and Conditions. Please note that this enquiry is subject always to our standard terms and conditions available at www.lsbud.co.uk ("Terms of Use") and the disclaimer at the end of this document. Please note that in the event of any conflict or ambiguity between the terms of this Enquiry Confirmation and the Terms of Use, the Terms of Use shall take precedence.

List of not affected LSBUD members
(LSBUD Members who do not have assets registered on the LSBUD service within the vicinity of your search area.)

AllPoints Fibre	Angus Energy	AWE Pipeline
B & D Energy Limited	Balfour Beatty Investments Limited	BOC Limited (A Member of the Linde Group)
Box Broadband	BP Exploration Operating Company Limited	BPA
Cadent Gas	Cambridge Water	Cambridgeshire County Council Climate Change and Energy Services
CATS Pipeline c/o Wood Group PSN	Cemex	Centrica Storage Ltd
CNG Services Ltd	Concept Solutions People Ltd	ConocoPhillips (UK) Teesside Operator Ltd
D.S.Smith	Diamond Transmission Corporation	DIO (MOD Live Pipelines)
Drax Power Limited	EDF Energy Renewables Ltd	EET Fuels
EirGrid	Eleclink Limited	Electricity North West Limited
Energy Assets Networks	ENI & Himor c/o Penspen Ltd	EnQuest NNS Limited
EP Langage Limited	ESB CCGT Power station (Carrington Gas Pipeline)	ESP Utilities Group
Esso Petroleum Company Limited	euNetworks Fiber UK Ltd	EXA Infrastructure
Exolum Pipeline System	Fulcrum Electricity Assets Limited	Fulcrum Pipelines Limited
G.Network Communication Ltd c/o JSM Group Ltd	Gamma	Gas Networks Ireland (UK)
Gateshead Energy Company	Gigaclear Ltd	Greenlink Interconnector Ltd
Harbour Energy	Heathrow Airport LTD	Humbly Grove Energy
IGas Energy	INEOS FPS Pipelines	INEOS Manufacturing (Scotland and TSEP)
INOVYN ChlorVinyls Limited	INOVYN Enterprises Limited	Intergen (Coryton Energy or Spalding Energy)
Kensa Utilities	Last Mile	Mainline Pipelines Limited
Manchester Jetline Limited	Manx Cable Company	Marchwood Power Ltd (Gas Pipeline)
Melbourn Solar Limited	MUA Group Limited	National Gas Transmission
National Grid Electricity Transmission	National Grid Ventures	Neos Networks
Northern Gas Networks Limited	Northumbrian Water Group	NPower CHP Pipelines
NTT Global Data Centers EMEA UK Ltd	NYnet Ltd	Oikos Storage Limited
Ørsted	Palm Paper Ltd	Perenco UK Limited (Purbeck Southampton Pipeline)
Petroineos	Phillips 66	Portsmouth Water
Premier Transmission Ltd (SNIP)	Redundant Pipelines - LPDA	RWE - Great Yarmouth Pipeline (Bacton to Great Yarmouth Power Station)
RWEnpower (Little Barford and South Haven)	SABIC UK Petrochemicals	SAS Utility Services Ltd
Scottish and Southern Electricity Networks	Scottish Power Generation	Seabank Power Ltd
SES Water	SGN	Shell
Shell NOP	South Staffs Water	SP Energy Networks

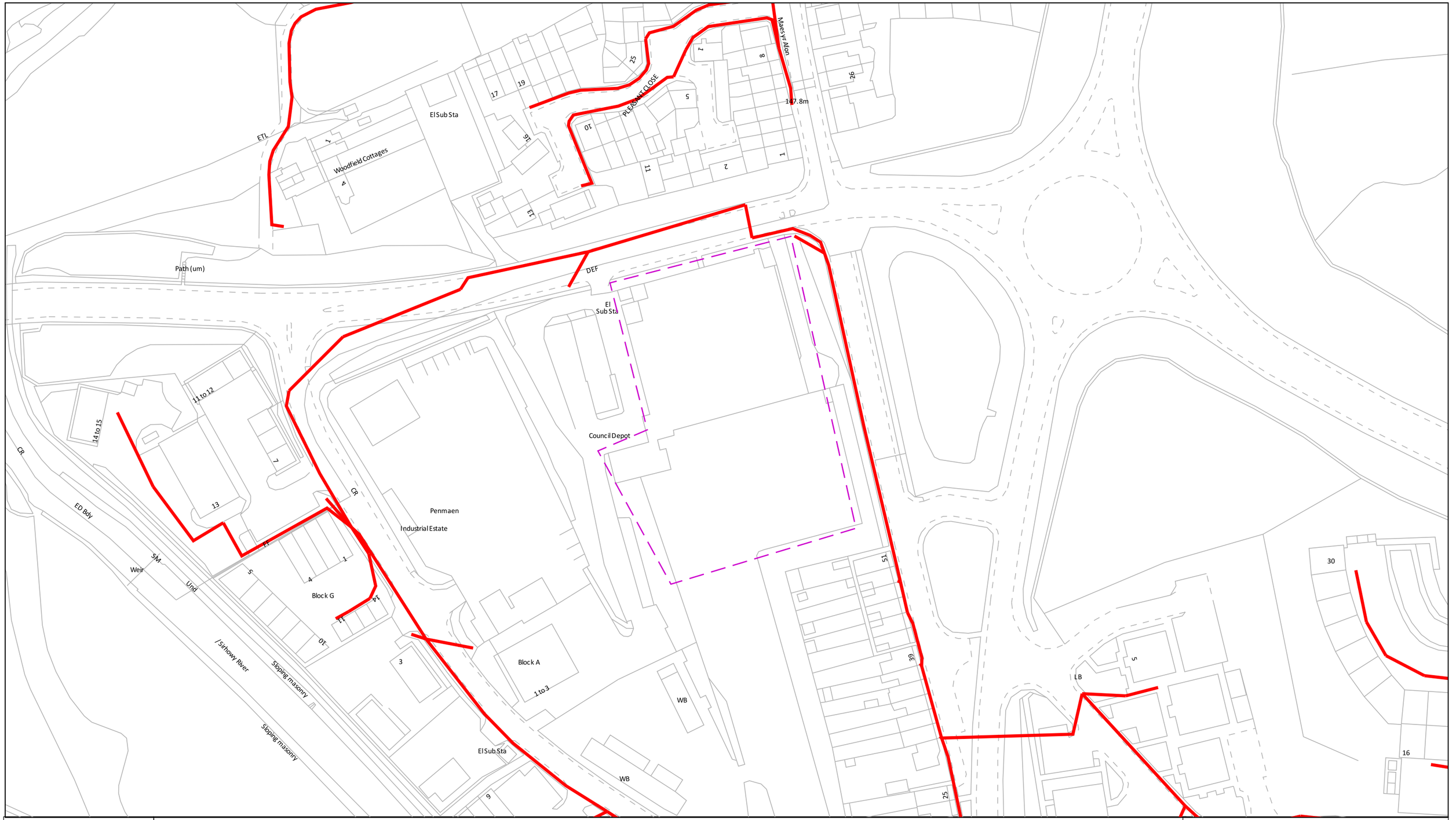
Enquiry Confirmation
LSBUD Ref: 35019351

Date of enquiry: 10/10/2024
Time of enquiry: 16:25

Spring Fibre Limited	Squire Energy Networks	SSE Generation Ltd
SSE Transmission	SSE Utility Solutions Limited	Storengy
Tata Communications (c/o JSM Construction Ltd)	TfL – London Underground HV Cables (Road Side Cables)	toob Limited
Total (Colnbrook) c/o Penspen	Total Finaline Pipelines	Transmission Capital
Trojan Energy Limited	UK Power Networks	Uniper UK Ltd
University of Cambridge Granta Backbone Network	Vattenfall	Veolia ES SELCHP Limited
Veolia ES Sheffield Ltd	Voneus Limited	VPI Power Limited
Welsh Power	West of Duddon Sands Transmission Ltd	West Sussex OpenNetwork (Cooperative National Infrastructure)
Westminster City Council	Winnington CHP Ltd	Zayo Group UK Ltd c/o JSM Group Ltd

Non-LSBUD members (Asset owners not registered on LSBUD)
(The following Non-LSBUD Members may have assets in your search area. It is YOUR RESPONSIBILITY to contact them before proceeding.
Please be aware this list is not exhaustive and it is your responsibility to identify and contact all asset owners within your search area.)

Asset Owner	Preferred contact method	Phone	Status
Bring Energy	nrswa@bringenergy.com	0800 130 3600	Not Notified
BT	https://www.swns.bt.com/pls/mbe/welcome.home	08000232023	Not Notified
Caerphilly Council	parhab@caerphilly.gov.uk	01495235372	Not Notified
CityFibre	asset.team@cityfibre.com	033 3150 7282	Not Notified
Colt	plantenquiries@catelecomuk.com	01227768427	Not Notified
Dwr Cymru Welsh Water	https://contact.dwrcymru.com/en	0800 917 2652	Not Notified
GTC	https://pe.gtc-uk.co.uk/PlantEnqMembership	01359240363	Not Notified
Lumen Technologies	plantenquiries@ocugroup.com	02087314613	Not Notified
Mobile Broadband Network Limited	mbnl.plant.enquiries@turntown.com	01212 621 100	Not Notified
Sota	sota.plantenquiries@ocugroup.com		Not Notified
Utility assets Ltd	assetrecords@utilityassets.co.uk		Not Notified
Verizon Business	osp-team@uk.verizonbusiness.com	01293611736	Not Notified
Virgin Media	http://www.digdat.co.uk	08708883116	Not Notified
Vodafone	osm.enquiries@atkinsglobal.com	01454662881	Not Notified



Contact Us
Email: plantenquiries@ogi.wales

100m

Dig Sites Line: Area:

Date Requested: 10/10/2024
Job Reference: 35019351
Site Location: 318029 196380
Requested by: Mr Peter Searing
Your Scheme/Reference: 1271 blackwood

Scale: 1:1250 (When plotted at A3)

KEY

Route

IMPORTANT WARNING

The information supplied is given in good faith as a guide to locating underground apparatus. Its accuracy cannot be guaranteed, nor does it include comprehensive information about the existence or location of service pipes or cables to individual premises. The responsibility for locating and avoiding damage to apparatus on site shall be that of the persons proposing to excavate in the street shall be liable to the apparatus owner and any third party who may be affected in any way for any loss or damage caused by their failure to do so.

IF IN DOUBT PLEASE ASK! PHONE: In Hours – 02920 022 303
Emergency out of hours: 01291 435 801

ogi

Telephone: 02920 022 303
Email: plantenquiries@ogi.wales

TOPOGRAPHIC & UTILITY SURVEY DRAWING

EMP Drainage Ltd

Company details:

Address - 25 High Street, Sproughton, Ipswich. IP8 3AF

Email- info@empdrainage.co.uk or gina@empdrainage.co.uk

Contact No - 01473 748 704 or 07376 866 884

Original Drawing Size: A0

NOTES:-

The accuracy and content of this drawing are dependent on the original specification and EMP should be consulted before use at other scales.

Where underground services are shown, all reasonable care has been taken within the original specification and requirement. Before use of this information the user should satisfy themselves of the completeness and accuracy of such detail and consult EMP before undertaking any works. Due to the nature of this work and limitations imposed by ground conditions and the detection equipment, no guarantee can be given that all services have been recorded. PAS128 Type A Trial holes/excavations should be dug at critical locations.

Our aim is to produce the best possible results for our clients, within the agreed specification and cost constraints. All reasonable care has been taken in the survey detail represented on this drawing. Any discrepancies must be reported immediately to EMP and any other comments are most welcome.

Levels shown at kerbs are channel level unless stated.

Control: All levels and co-ordinates are related to the datums described.

The horizontal and vertical control of this survey is based on the Ordnance Survey National Grid and level datum via Network RTK GPS.

We have applied no reverse scale factor to this survey.

LEGEND

Features:

- ACO Drainage Channel
- AV Air Valve
- AB Air Brick
- BH Borehole
- BM Benchmark
- BO Bollard
- BS Bus Stop
- BT British Telecom Cover
- CL Cover Level
- COL Column
- CTV Cable TV Cover
- DIS Disused
- DK Drop Kerb
- DPC Damp proof Course
- EIC Electricity IC
- ER Earth Rod
- FH Fire Hydrant
- GV Gas Valve
- GY Gully
- IC Inspection Cover
- IL Invert Level
- JBX Junction Box
- KO Kerb Outlet

Sheet Layout:

1028/T&U/01-02

1028/T&U/02-02

Utilities Notes:

Electro-magnetic Locators (EML) trace metallic pipes and cables, they cannot trace pipes or cables which are non-metallic unless buried with a tracer wire. Ground penetrating radar (GPR) shows the presence of pipes, cables, underground voids, disturbed ground and trenches but this can be impacted by ground conditions, obstructions (parked vehicles, tall crops, scrub/veg) and accessibility (GPR is trolley based). Whilst every effort has been made, no current detection system can guarantee to locate all utilities on a site.

Please see diagram, right, to explain the accuracy of utilities traced.

B4 is a utility that is believed to exist or is shown on the statutory survey plans but was not located on site.

Station Schedule

No	Easting	Northing	Height	Mkr Desc.
ST1	318011.393	196481.933	142.982	Hilti Nail
ST2	318026.024	196485.705	143.263	Hilti Nail
ST3	318042.942	196490.278	143.854	Hilti Nail
ST4	318094.557	196503.758	146.067	Hilti Nail
ST5	318106.421	196456.610	144.002	Hilti Nail
ST6	318101.737	196437.103	144.069	Hilti Nail
ST7	318068.365	196412.580	143.223	Hilti Nail
ST8	318061.311	196389.910	141.377	Hilti Nail
ST9	318070.322	196357.636	139.302	Hilti Nail
ST10	318093.869	196316.549	136.292	Hilti Nail
ST11	318088.963	196268.533	134.629	Hilti Nail
ST5A	318127.166	196459.426	145.620	Hilti Nail
ST8A	318070.322	196406.413	143.807	Hilti Nail

Job No.	Surveyor	Checked	Date	Scale
1028	T.Cosgrove	M.Wood	Jul '22	1:200

Drawing No. 1028/T&U/01-02

Revision -

Rev.	Job No.	Date	Revision Detail	Surveyor	Checked

EMP Surveys Ltd

CLIENT DETAILS

Lidl GB Ltd
Waterton Indsutrial Estate,
off Cowbridge Road,
Bridgend.
CF31 3PH

PROJECT DETAILS

Topographic & Buried Utilities Survey
Stagecoach Depot,
41 Penmaen Road,
Pontllanfraith, Blackwood.
NP12 2DL

EMP Drainage Ltd

Company details:

Address - 25 High Street, Sproughton, Ipswich. IP8 3AF

Email- info@empdrainage.co.uk or gina@empdrainage.co.uk

Contact No - 01473 748 704 or 07376 866 884

CHAS

Original Drawing Size: A0

NOTES:-

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LEGEND

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ACO Drainage Channel
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AB Air Brick
BH Borehole
BM Benchmark
BO Bollard
BS Bus Stop
BT British Telecom Cover
CL Cover Level
COL Column
CTV Cable TV Cover
DIS Disused
DK Drop Kerb
DPC Damp proof Course
EIC Electricity IC
ER Earth Rod
FH Fire Hydrant
GV Gas Valve
GY Gully
IC Inspection Cover
IL Invert Level
JBX Junction Box
KO Kerb Outlet
LP Lamp Post
MP Marker Post
OHL Overhead Line
PM Parking Meter
PO Post
PP Power Pole
RE Rodding Eye
RNP Road Name Plate
RS Road Sign
RWP Rain Water Pipe
SD Service Duct
SV Stop Valve
TCB Telephone Call Box
TP Telegraph Pole
TS Traffic Signal
UTL Unable to lift
V Vent
VP Vent Pipe
WM Water Meter
WO Wash Out
WP Waste Pipe

Surfaces & Finishes:

B Brick
BB Breeze Block
C Concrete
CLT Ceiling Tiles
CPS Concrete Paving Slabs
CPT Carpet
FT Floor Tiles
LINO Linoleum
PAV Brick Paviors
REN Render
S Steel work
T Tarmac
TSP Textured Safety Paving

Building Level Details:

D Door
EL Eave Level
FFL Floor Level
FRL Flat Roof Level
HL Head Level
PPL Parapet Level
RL Ridge Level
SL Sill Level
SP Springer of Arch
TA Top of Arch
W Window
12.34 Ceiling/Beam Soffit

Boundary Types:

BW Barbed Wire
CB Close Boarded
CH Chainlink
CI Corrugated Iron
CP Chestnut Paling
IR Iron Railing
LL Larch Lap
PAL Palisade
PR Post & Rail
PW Post & Wire
TKR Timber Knee Rail
RTW Retaining Wall
VSF Vehicle Safety Fence
WMF Wire Mesh Fence

Services:

CATV CATV cables
Combined Sewer
DATA Data cables
ELEC Electric cables
Foul water
GAS Gas pipes
Heating duct
SD Service ducts
Storm water
TELE Telecom cab.
UNI Unidentified
WAT Water pipes
150ø Pipe Diameter/Flow
Overhead Lines

Survey Station
Fence
Gate
Painted Road Markings
Edge of Vegetation
Kerb/Drop Kerb
Tree
Top
Bottom
Banks
Building
Overhead Building Detail
Wall

Sheet Layout:

1028/T&U/01-02

1028/T&U/02-02

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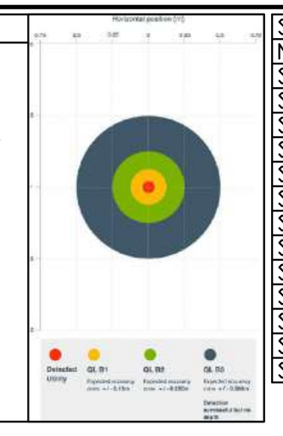

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ST8A	318070.322	196406.413	143.807	Hilti Nail

Job No.	Surveyor	Checked	Date	Scale
1028	T.Cosgrove	M.Wood	Jul '22	1:200

Drawing No. 1028/T&U/02-02 — Revision -

Rev.	Job No.	Date	Revision Detail	Surveyor	Checked

EMP Surveys Ltd

CLIENT DETAILS

Lidl GB Ltd
Waterton Indsutrial Estate,
off Cowbridge Road,
Bridgend.
CF31 3PH

PROJECT DETAILS

Topographic & Buried Utilities Survey
Stagecoach Depot,
41 Penmaen Road,
Pontllanfraith, Blackwood.
NP12 2DL

ZETICA UXO RISK MAPPING

UNEXPLODED BOMB RISK MAP

SITE LOCATION

Location: NP12 2DY,
Map Centre: 318008,196353

This map principally indicates a hazard from Unexploded Bombs (UXB) due to WWII bombardment. Other sources of Unexploded Ordnance (UXO) may be present. It should be noted that this map does not represent UXO risk and should not be reported as such when reproduced.

LEGEND

- **High:** Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.
- **Moderate:** Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.
- **Low:** Areas indicated as having 15 bombs per 1000acre or less.

Miltary | **Industry** | **UXO find** | **Other**
Transport | **Docks** | **Luftwaffe targets**
Utilities | **Bombing decoy** | **Airfields**

How to use your Unexploded Bomb (UXB) risk map?

This map indicates the potential for UXBs to be present because of World War Two (WWII) bombing. It can be incorporated into a technical report, such as a Phase 1 Desk Study, or similar document as an indication of the potential for UXO encounter on a Site. Other sources of UXO may also be indicated, although note that these are not comprehensive and more detailed research is required to confirm their presence.

What if my Site is in a moderate or high density area?

We typically recommend that a detailed UXO desk study and risk assessment is undertaken for sites in an area with a moderate or high bombing density.
Additionally, if your site is in close proximity to a strategic target, military establishment, airfield or bombing decoy, then additional detailed research is recommended.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirm that there is a low potential for UXO to be present on your site, then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

If you are unsure whether other sources of UXO may be present, you can request one of our pre-desk study assessments (PDSA) by emailing a site boundary and location to pdsa@zetica.com.

You should never plan site work or undertake a risk assessment using these maps alone. More detail is required, to include an assessment of the likelihood of a source of UXO hazard from other military activity not reflected on these maps.

If I have any questions, who do I contact?

tel: +44 (0) 1993 886682 **email:** uxo@zetica.com **web:** www.zeticauxo.com

The information in this UXB risk map is derived from a range of sources and should be used with the accompanying notes on our website.

ACTIVITY SPECIFIC METHOD STATEMENTS & RISK ASSESSMENTS

Method Statement for Rotary Drilling

Rotary drilling of soils and/or made ground for the purposes of identifying coal mine workings.

Section A Training, Site Access & Inductions

A1 Inductions

Site inductions will be carried out by:

a) Remada where there is no Principal Contractor; or as appropriate by

b) the Main Contractor;

Prior to commencement of the project and the Remada site manager will give toolbox talks as necessary.

All further training deemed necessary in order to carry out the safe conclusion of the works will be given.

Specialist training courses e.g. MEWP, abrasive wheels, will be carried out to suit the project requirements if appropriate.

All operatives shall receive an induction prior to commencement of the works and shall be briefed on the contents of this, and any other appropriate method statement.

A2. Operatives and Training

All operatives to be employed on site will hold the appropriate CPCS/CSCS cards for the level of plant/trade appropriate for their employment.

A3 COSHH and Risk Assessments

All work covered by this method statement will be undertaken with due regard for the Control of Substances Hazardous to Health Regulations. Remada has prepared COSHH Assessments to cover substances to be used or potentially encountered during the works and these typically are fuel/oils/solvents.

Additional assessment will be prepared for any residual materials contained within the soils/waters encountered during the works.

Risk Assessments have been carried out as required by the Management of Health & Safety at Work Regulations 1999 to document all perceived risks in respect of operations carried out on site. These risks will be conveyed to all operatives during site induction and made available for the duration of the works. Further assessments will be carried out as the works progress and the necessary controls implemented.

A4 Welfare Arrangements

Welfare may be provided by the client, principal contractor or Remada. Where projects have a duration of one or two days on site and welfare is not provided by the client or Principal Contractor, Remada will use local facilities such as fast food restaurants or supermarkets.

Where the client or Principal Contractor provides facilities they must as a minimum provide:

- sufficient space and seating arrangements for the number of personnel on site, to allow them to take meal breaks with the facility for hot water and food warming.
- washing facilities with a sufficient supply of hot water for the number of operatives employed, including a supply of soap and towels.

www.remada.co.uk

0333 123 5222

Remada Ltd

Forward House
17 High Street
Henley in Arden
B95 5AA

Registered in England & Wales
08302458

- Suitable and sufficient toilet facilities to suit the number of person in the site team.

Arrangements will be made for all toilets and welfare facilities to be cleaned and restocked on a regular basis.

A5 Access

Access to the working area shall be restricted to those operatives/personnel directly involved in the works.

A6 Site Set Up

Liaise with Client personnel to ensure that all parties effected with the works are aware of the works commencing.

Ensure that all licences are in place for the works.

Ensure that appropriate H&S signage is erected/in place and maintained ensuring all parties are aware of the works and the requirements of each individual.

Section B Utilities Clearance/Permit to Dig

B1 Obtain Ground Penetrating Radar survey drawing of utilities, services and underground storage tanks from Client or Principal Contractor.

B2 Obtain a permit to dig from the Principal Contractor (where a Principal Contractor is appointed).

B3 Set out exploratory positions to avoid identified services and utilities.

B4 In any event, CAT scans will be carried out by a trained operative in advance of any excavation works being carried out and further visual inspections prior to works being carried out. Services discovered during this scan will be clearly marked.

Section C Scope of Works

This scope of works covers the following:

C1 Drilling to identify the presence of absence of any shallow coal mine workings to a depth of 30m bgl.

Section D Possible Hazards

D1 The hazards associated with this operation are:

1. Unknown materials, liquids which may be contaminated.
2. Exposure to hazardous materials including contaminated soils, liquids and vapours.
3. Vehicle movements.
4. Construction processes.
5. Thoroughfare routes
6. Plant & machinery.
7. Existing services-pipes/cables/drainage or old services.
8. Weils Disease from water contaminated by rats.
9. Fires on site and flammable materials.

The above list is not exhaustive and therefore operatives must remain vigilant at all times and

exercise constant care when any operations are carried out.

Section E Personal Protective Equipment (PPE) & Respiratory Protective Equipment (RPE)

E1 PPE will be:

- Safety glasses where necessary (as risk assessment)
- Gloves where necessary (as risk assessment)
- Eye Protection where necessary (as risk assessment)
- Hard hat, safety boots and hi-vis jacket at all times
- Overalls where necessary
- RPE will be selected after specific risk assessments have been carried out for gases, vapours, dusts, asbestos etc.

Section F: Protection of the Public

F1 Work area(s) to be roped off by cones and barrier tape or with potable barriers as per risk-assessment.

F2 Warning signs to be placed (e.g,. No smoking, no entry, petroleum spirit, fire risk).

Section G: Cable Tool Boring

G1 Equipment

Casagrande C6 type drilling rig with associated air compressor.

G2 Support Equipment

Vivaro van or similar.

G3 Operatives

Two- man crew - Driller Foreman and Assistant Driller.

G4 Supervision

The GI Contractor will oversee all aspects of a technical and safety nature. Rigs will be operated by a British Drillers Association (BDA) accredited rotary driller. The GI Contractor will provide safety instruction as appropriate on a site to site basis.

G5 Method of Operation

- The rig will be tracked to the hole position along the agreed access routes. It will be erected in the manner appropriate to the particular machine and the machine made stable.
- Existing grassland vegetation in the form of turves, will be cut, removed and stored on geotextile matting. Boring operations will be carried out until the required depth is achieved. Typically, boreholes will be approximately 30m in depth and 50mm in diameter.
- The borehole will be backfilled. When the hole is backfilled, the turves will be replaced last, in reverse order. Care will be taken to replace the turves level with the surrounding surface.

- The rig will be lowered in the appropriate manner and moved to the next hole position. The hole and working area will be left in a tidy and workmanlike condition. Any remains of consumables, waste and excess materials associated with the borehole operations will be bagged and will be disposed of.

Project Details			
Project No	1271.04	Prepared By:	Peter Dickinson
Dates on Site:	18th – 20th November 2024	Remada Supervisor:	Peter Searing
Site Location:	Penmaen Road, Blackwood	Remada Technician:	N/A
Person at Risk:	Remada personnel/subcontractors/visitors/public		

Minimum PPE Requirements	Coveralls, Reflective/High Viz Vests, Anti-static safety footwear (steel midsole and toe cap), Safety Helmet, Safety gloves, eye protection
	      
Operational Information	Always follow site rules. Mobile phones only to be used in designated areas or offsite. Always perform a SPSA (Safe Performance Self Assessment)/LMRA (Last Minute Risk Assessment) throughout all activities.

Supporting Documents
Method Statements / COSHH Assessment / Material Safety Data Sheets

Evaluation of Risk			
Rating	**Likelihood**	**Severity**	
0	No Likelihood	No severity	
1	Probably not occur	No injury or minor, resulting in < 1 day lost work time	
2	Unlikely to occur, though conceivable	Moderate injury / illness, resulting in ≤ 3 days lost work time	

3	Likely to occur	Injury resulting > 3 days lost work time
4	Occurrence not surprising	Serious injury
5	Occurrence inevitable, may occur many times	Fatality

Risk Assessment								
Task	**Potential Hazards**	**Likeli-hood**	**Sever-ity**	**Initial Risk**	**Measures & Precautions to Remove, Reduce or Control Risk**	**Residual Likeli-hood**	**Sever-ity**	**Residual Risk**
Unloading Rig from Transport Vehicle	General Machinery Hazards *(traps, impact, contact, entanglement, ejection, failure or rig components)*	2	2	4	• Rig to be tracked out of from transport vehicle and tracked to proposed drilling location only by fully trained and competent operatives. Rig inspection checklist to have been completed prior to commencing rig movement • Rig to be driven using the remote control panel or unit at a safe distance from the machine. • Second operative to act as a banksman	1	4	4
	Moving Machinery and/or site vehicles	3	4	12	• Park in suitable location as agreed with supervising engineer • Ensure sufficient room behind transport vehicle for rig to be exited	1	4	4

					safely • Conduct site walkover to check for safe route to borehole location before unloading • Use banksman to warn of potential oncoming vehicles			
	Powered Industrial Vehicle Hazards *(overturning, collision, operator error etc.)*	3	5	15	• Ensure transport vehicle is on level firm ground and that handbrake is on • Operator to use remote control panel and stand at safe distance from rig during exiting from vehicle	1	5	5
	Noise Hazard	2	2	4	• Ear defenders to be worn when rig engine is running	1	2	2
Tracking of Rig to Proposed Drilling Location or back to transport vehicle/storage area	General Machinery Hazards *(traps, impact, contact, entanglement, ejection, failure or rig components)*	3	4	12	• Rig to be driven using the remote control panel (if available) or unit at a safe distance from the machine. • The route of drill rig to the borehole location should be checked prior to moving. Consideration should be made of ground conditions, potential obstructions and of other site users and vehicles. • Sufficient time should be taken to perform this task – staff should not place themselves or be placed under time constraints, whether perceived or actual that could affect decision making processes. There is always	2	4	8

					time to do the task safely.			
	Moving Machinery and/or site vehicles	3	3	12	• Only track rig to drilling location when a clear path, free from tools, site obstructions and pedestrian or other site workers is visible. • Second operative to act as a banksman • If driving in through an area of general traffic movements, use arms/hand signals to indicate to other road users. All left or right movements are to be made slowly to allow • Smooth turning of the rig. • Use barriers/cones to cordon off safe tracking route when necessary	1	3	3
	Heavy lifting Hazard	3	3	9	• Ensure all heavy equipment (hollow stem augers etc.) and tools are handled using correct lifting techniques (lift through knees, don't twist while lifting etc.) to avoid injury. Assess loads prior to lifting • Heavy items to be carried by two operatives • Distances over which tools need to be carried are to be kept to a minimum by parking • Tooling storage vehicle or trailer as close as possible to work area.	3	1	3

					• Break down loads into smaller units where possible			
	Trip Hazard	3	3	9	• Setting up of equipment at a drilling location is to be carried out in a manner which minimises the potential for drillers or other site personnel to trip over equipment. • Only essential drilling tools and equipment to be offloaded from storage vehicle or trailer • Hand tools to be stored in bucket or tool box located adjacent to the rig	3	1	1
Utilities / Services	Drilling / Pitting at incorrect location	5	5	25	• Obtain Ground penetrating radar survey from client • If survey not available, conduct GPR survey and mark out safe positions • If no utilities/services are reported for the site, check each exploratory position with CAT	3	1	3
Fire	• Loss of life / serious injury • Loss or damage to • properties and materials • Emergency services not able to access site • Site operatives	1	4	1	• Emergency procedures are communicated to all personnel • Personnel must be trained to use fire fighting equipment • Emergency services have good access to site • A fire safety plan is set up and relayed to all personnel • Fire-fighting equipment is available	1	1	1

	trapped • Panic				around the work area			
Slips trips & falls	• Poor visibility • Poorly conditioned ground • Oil spills • Obstructions • Poor footwear	3	2	6	• No works to be undertaken at elevated heights • Ensure lighting (ensure lights are working replaced, repaired or clean) • Put up warning signs for any trip hazards • Ensure safety boots are worn and in good condition • Ensure footpaths are firm & level, stoned up, and gritted if icy • Keeping work areas as clear as possible of unnecessary materials/waste • Storing materials safely, whether in the site compound or around the site • Report any suspected problems to site management	3	1	3
Working on Contaminated Land	• Poisoning by inhalation Absorption through skin or contact through broken skin. • Damage to body/nervous	5	3	15	• Set up washing facilities on site. • Monitor all test results and take necessary precautions. (If any different results are reported) Ensure all relevant information is given to operatives and all operatives inducted. • Set up and restrict entry to contaminated area. • Set up clean areas with instructions	5	2	10

					where to wash and change clothing.			
Identification of contaminated soils/water		4	3	12	• Ensure all relevant information is given to operatives and all operatives inducted • No soil, groundwater, waste or other material will be brought above ground level from the injection • Method Statement developed to deal with unidentified waste that may be encountered	4	2	8
Manual Handling		5	3	15	• Manual handling will be avoided where possible –Manual handling training has been given	5	1	5

METHOD STATEMENT AND RISK ASSESSMENT 2023

ROTARY DRILLING

Project No:

Ser	Name of client (a)	Site contact telephone number (b)	Key dates: Start/Finish (c)
1			

Information required from client prior to start of project

Known site specific hazards	Control measures to be implemented
Known health and safety information	
Client site specific rules	
Client site specific PPE / additional PPE	
Party responsible for service clearance	
BDA Classification Reason for the classification: E.g. Asbestos / UXO / Hydrocarbons	*(Tick where necessary)* Red Amber Green Known substance:
Client specific access requirements covering approved routes, soft ground, restricted access areas: E.g. Livestock	

Front cover prepared by (a)	Signature (b)	Date (c)

Regional Drilling Ltd
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07/01/2023

METHOD STATEMENT AND RISK ASSESSMENT

ROTARY DRILLING

OBJECTIVE

Rotary drilling and dynamic sampling drilling techniques are used to form boreholes through soil and rock. Drilling methods include rotary coring, rotary percussive (‘open hole’) drilling, flight auger and dynamic sampling. Standpipes or other monitoring instrumentation may be installed in boreholes upon completion.

PLANT AND EQUIPMENT

Model:	**Beretta T44**		
Mass:	4400 kg		
Mast height:	~5.5m		
Tracking height:	~2.6m		
Tracks:	Rubber		
Usual Delivery Method:	Delivered on Low loader/Lorry		

METHOD STATEMENT AND RISK ASSESSMENT 2023

ROTARY DRILLING

GLOSSARY OF TERMS

	Drill tool used in rotary open holing. Rotary action only.
Tri-cone Rock Bit:	Form of rotary open holing using a Down The Hole hammer unit with a tungsten carbide "button" bit on end. Forms a hole by percussive and rotary action.
DTH Hammer:	
Drag Bit:	Drill tool which comprises tungsten carbide or hardened steel teeth, used to form an open hole in soil and weaker rock formations.
Hollow Stem Auger:	Hollow central section with continuous flights around outside. Lead length is fitted with a crown or pilot bit.
Dynamic Sample Barrel:	Used for sampling soils with a hollow steel tube and liner system driven percussively into the soil to obtain soil samples.
Double Tube Core Barrel:	Used for rotary coring. Comprises an inner and outer barrel. Rotation from the drill string only acts on outer barrel as inner barrel connected to barrel head via bearing assembly. Core bit is attached to base of outer barrel. Core lifter spring attached via catcher box, to inner barrel. Liner system used to affect a triple tube system.
Liner:	A clear perspex tube which is inserted into the inner barrel/dynamic sample barrel before each core run. Retains sample for logging and sub sampling.
Core Bit:	Used to cut core. Comprises annular face with either diamonds or tungsten carbide inserts or combination of both.
Casing:	Provides temporary support to borehole sides. Either tungsten carbide or diamond shoe at base to allow reaming.
Drill Rod:	1.5m steel rod which thread together transmitting rotary or percussive motion from the drill and drive head assembly to the drilling tools.
Wireline Core Drilling:	In wireline drilling the borehole casing is installed over the full depth of the borehole and serves as the wireline drill rods. A core barrel is rotated and the hole drilled using the drill rods.
POWRA	Point of Work Risk Assessment

ROTARY DRILLING

DRILLERS AND OPERATIVES

The Lead Driller must always work with a Drilling Assistant who must be present at the rig whilst it is in operation. Mobile phones are not to be used by the Lead Driller or Drilling Assistant whilst the cage is open, or the driller is operating the rig controls.

Only trained and competent personnel may operate rotary drilling rigs. Trained and Competent may be determined in a number of ways:

- NVQ/SVQ level 2 Land Drilling Operations
- BDA audited and approved (Lead Drillers)
- Internal competency signed off by Drilling Manager as an interim measure prior to assessment by one of the above external accreditors.

All operatives will have undergone health and safety training such as one or more of the following:

- CSCS Card
- CCNSG Qualification
- IOSH Working safely course
- SSSTS or SMSTS

Other forms of accredited health and safety training may also be accepted.

Where subcontractors are used proof of competence must be obtained prior to procuring their services. Copies of training and competence records and cards shall be held on file.

PERSONAL PROTECTIVE EQUIPMENT

The following items are deemed as minimum PPE requirements to be worn at all times:

- Safety footwear to BS EN ISO 20345: Lace up safety boots or wellingtons with steel toe caps and steel insole.
- Protective gloves to BS EN 388 (Abrasion L3, Blade L1, Tear L3, Puncture L2)
- High visibility clothing with reflective strips to BS EN ISO 20471 (long sleeve top and trousers).
- Eye protection* to BS EN 166 (safety glasses or goggles).
- Ear defenders to BS EN 352.
- Hard Hat with chin strap engaged.

Supplementary items that might be required due to site specific conditions/ rules:

- Respiratory protective equipment (RPE), minimum requirement PP3.
- Disposable or Flame resistant and/or anti-static overalls and clothing

METHOD STATEMENT AND RISK ASSESSMENT 2023

ROTARY DRILLING

Note: Eye protection to be worn as standard unless a POWRA identifies that the use of such protection creates a greater hazard than it protects against (for example, impairment of vision in wet weather).

DRILLING OPERATIONS

Step 1 – Mobilisation to site

1. All drillers and operatives are to sign-in to site and complete a site induction and/or a COSS briefing (NWR only) prior to commencing works. The drilling rig is delivered to site using either a trailer, HGV, LGV or low loader. The ancillary support equipment will be delivered within a second vehicle, either a panel van or open back flatbed truck.

2. Prior to drilling activities, a Point of Work Risk Assessment (POWRA) is completed by the lead driller or site supervisor. Should hazards, that are not adequately controlled by the existing risk assessment be identified, then appropriate controls must be implemented and reported to the site supervisor or project manager. Work shall not proceed until controls are implemented to mitigate the hazard accordingly.

3. All hazardous plant or vehicle movements on site, include all reversing, and all maneuvering of the drilling rig shall be undertaken by competent persons and directed by the Lead Driller with additional supervision from the Assistant Drilling as required.

4. The rig should be unloaded to flat ground with adequate space where possible. Where present radio or remote controls must be used to undertake unloading operations. All non-essential personnel to stand clear of unloading operations, where required unloading areas to be demarcated using barriers.

5. The rig is unloaded by tracking the rig down the HGV / LGV, trailer or low loader ramps. Where fitted the rig should be connected to a hydraulic winch as an extra safety precaution to assist the rig down the ramp(s). Prior to being used, all ramps must be visually inspected

for damage and checked for SWL and recorded on the daily check sheet. All portable equipment will be unloaded by hand following appropriate manual handling procedures. The rig daily inspection sheet should then be completed prior to operation.

Step 2 - Access the borehole & set up drilling rig.

The Lead Driller will assess the safest, authorised route to the borehole location, considering any hazards identified in the POWRA such as ground conditions, gradient, obstacles, and other hazards and track the rig to the location.

1. The Lead Driller will now track the drilling rig to the borehole location, with the Driller's Assistant acting as a guide if necessary. All operatives will be positioned outside of the danger zone in the unlikely event of the rig overturning.
2. Ensure that the drilling location is clear of overhead obstructions and services.
3. At the borehole location the Lead Driller lowers the hydraulic legs of the drilling rig, ensuring that adequate timbers or footplates are placed under the legs. The Lead Driller will now ensure the drilling rig is vertical. The rig is fitted with bubble level for this purpose. A portable level may also be used.
4. The mast of the drilling rig is then raised in accordance with the manufacturer's guidance. Some variations of the Fraste PLG and Comacchio 300 series rigs are fitted with a mast locking pin; in this case the pin should be used to secure the mast in the vertical position.
5. The lead driller is to ensure the rig and drilling equipment is in good working order and that the rig inspection sheets are completed in accordance with the Provision and Use of Work Equipment Regulations 1998 (PUWER) and also ensure that the rig and lifting accessories (winch, wire winch rope, hooks and shackles have a current, valid inspection certificate as required by the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER).
6 The drilling flush system should now be set up. This may be a water, air mist or air flush system. This will involve either towing a compressor and bowser to the vicinity of the borehole location, and setting up the drill returns control system. See Flush Systems below.
7. Where necessary an exclusion zone will be formed around the drilling work area, usually using Heras type fencing or pedestrian barriers, ensuring sufficient space is available for the operations to be carried out safely and providing a physical barrier around the working area. Where no physical barrier is erected, a watching brief for third parties approaching the working area will be in place.
8. Good levels of housekeeping will be maintained within the exclusion zone to reduce the risk of slip, trips and falls.

Step 3 – Drilling of Borehole

A Permit to Disturb ground / dig must be in place for all sites where intrusive works are to be carried out. Clearance of services is to be completed in accordance with TP004 – Detecting and avoiding underground services. Permits to commence works will be provided by the supervising engineer.

avoiding underground services. Permits to commence works will be provided by the supervising engineer.

1. The lead driller will, prior to normal operation of the rig, undertake an inspection of the rig, equipment and tooling, recording any defects which are to be subsequently reported to the drilling supervisor, operations manager and fitter. These inspections include assessing the functionality the hydraulic rams, winch drum and its guard, the wire rope and shackles as a minimum.
2. The borehole and drilling operations are undertaken in accordance with the British Drilling Association (BDA) *Health & Safety Manual For Land Drilling: A Code of Safe Drilling Practice* (2015), the specification, drillers instruction sheet and site supervisors instruction. Specific details of site requirements are held in the site-specific risk assessment for the works.

Step 4 – Removal of core liner from core barrel

On completion of a rotary coring drill run, the core barrel is removed from the borehole and carefully laid horizontally onto the drilling trestles.

1. The cutting shoe, lifter case and lifter spring are removed, and using a pair of locking pliers (mole grips) and the plastic liner is clamped and withdrawn by hand from the barrel horizontally.
2. In the event that the liner becomes lodged inside the barrel and cannot be removed by hand, the following procedure will apply which should be carried out in the order stated.
3. Whilst the barrel is still laid out on the trestles, the back end of the barrel will be removed, by hand if possible, to expose both ends. Hand tools may be used to assist in this operation by using a chain wrench to grip the barrel end. With the back end of the barrel removed, further attempts to withdraw the liner will be made.
4. If unsuccessful, the inner core barrel is to be removed in its entirety from the core barrel assembly then further attempts will be made to remove the lodged liner whilst the inner barrel remains on the trestles. Gentle hammering can be undertaken on the outside of the inner barrel but care must be taken not to cause damage. If this fails the inner barrel can be manoeuvred into the vertical position by hand and repeatedly lifted and dropped on to a piece of wood in an attempt to free the liner.
5. Where these steps fail it may be possible to use the drilling rig to force the stuck core from the barrel. The open borehole is first covered by an upturned bucket or similar. The inner barrel is then carefully clamped into the rig jaws, applying minimal pressure. A drill rod is attached to the drill head and placed in the back end of the inner barrel. Force is then applied to the core and liner in controlled fashion using downward pressure from the drill head (no rotation). It should be noted this method should only be used as a last resort as inner barrel can be easily be damaged beyond repair by the force of the rig jaws.
6. In the event that this step is also unsuccessful the inner barrel with the liner lodged inside should be returned to Regional Drilling premises where the inner barrel can be cut open in a controlled environment and the liner and core retrieved.

Step 5 - Install instrumentation or backfill

1. When the specified depth is achieved the Lead Driller will inform the relevant site engineer or Supervisor.
2. On completion of the borehole, the lead driller should contact the supervising engineer to determine whether the borehole is to be installed with ground monitoring equipment or backfilled (with grout or other materials). A protective cover is normally fitted to the top of instrument; this may either be flush with ground level, or upstanding above ground level and where specified surrounded a stockproof timber fence may also be installed around the latter.
3. A standpipe consists of a pipe which is slotted over a certain depth, inserted into the borehole and surrounded with sand or gravel to act as a filter medium. The monitoring well may be used for groundwater sampling or ground gas monitoring. The tube can be of any suitable diameter, more commonly from 50 mm to 150 mm internal diameter.
4. A piezometer is similar to a standpipe but consisting of porous tip usually surrounded by sand and connected to a tube which extends to the ground surface. The sand filter is sealed above and below by a bentonite plug such that the water pressure (pore pressure) is measured specifically over the filter depth.

Step 6 – De-rig, clean and clear position, and move location

1. Once the borehole has been safely backfilled and installed all of the drilling rods, barrels, tools and ancillary support equipment will be returned to the support vehicle.
2. The mast of the drilling rig will be lowered to the horizontal position such that the rig can either be tracked directly to the next drilling location or reloaded for demobilisation.
3. The work area will now be cleared of any debris associated with the drilling activity – this may include but is not limited to: off cuts of liner, empty bags and gravel and bentonite and excess unused core boxes. Any spoil generated as a result of the drilling will either be bagged such that it can be collected and disposed of offsite or transported directly to an onsite skip.
4. Only once the Lead Driller is satisfied that the position is safe and has been reinstated to a satisfactory standard may he move on to the next position.

Step 7 – De-mobilise from site

1. Once all drilling work on site has been completed the drilling rig will be reloaded onto the Low Loader, HGV or LGV wagon in the reverse of the unloading operations.
2. Sign-out of site.

Making Rig Safe when not in use / for repair – "Locking Out the rig"

Whilst rig is unattended or repairs are required, extra precautions are taken to ensure rig cannot be accidently or maliciously started

Step 1. Remove ignition key and using a separate padlock, lock the controls outer cover so allowing no access to ignition. The key is to remain with the lead driller or operative undertaking repairs until they have completed or the rig is turned back on.

Step 2. The key is to remain with the lead driller or operative undertaking repairs until they have completed or the rig is turned back on.

Step 3. Turn on battery isolator to isolate battery.

Step 4. Once the rig has been isolated following the above steps any repairs can be undertaken with the key remaining with lead driller or fitter who is undertaking repairs until the rig is to be turned on.

FLUSH SYSTEMS

Rotary rigs are able to utilise one of three flush systems – Water, Air or Air Mist. The nature of the pumping system and equipment required will depend upon the depth of borehole to be drilled.

Water and Mud Flush

Water will be supplied to the drilling position by either a road towable bowser, trailer or vehicle mounted 1 m^3 water tank, or pumped into static 1 m^3 water tank from a water tanker.

For boreholes in the depth range of 10 m to 60 m a multi-chamber stator pump (mono pump) is used to lift arising from the base of the borehole. These are often permanently mounted to the rear / side of the drilling rig, but may also be free standing. These pumps are powered by the drilling rig's internal hydraulic system. The multi chamber stator pump may be transferred by hand by several people over short distances and even ground following correct manual handling procedures.

For boreholes in the depth range of 60 m to 100 m a triplex positive-displacement reciprocating pump is used to lift arising from the base of the borehole. These are free standing pumps which are diesel powered. The triplex pump will be mounted on the back of the rotary support vehicle such that it can be transported between drilling positions, it may be trailer mounted or have built in wheels such that it can be towed between positions, or they may be free standing. Free standing units will require onsite support to move between drilling positions. The operation of the Triplex Pump with built in onsite plant will be covered by the site specific method health and safety documentation.

ROTARY DRILLING

Additives or Polymers may be mixed with the drilling water to produce a *Mud Flush*. The purpose of the Mud Flush is to increase the stability of the uncased borehole sidewalls and increase the ease of which arisings are brought to the surface. Any additives or polymers should be used in accordance with British Drilling Association (BDA) *Health & Safety Manual For Land Drilling: A Code of Safe Drilling Practice* (2015).

Drilling flush returned to the surface may be either re-circulated or pumped into storage tanks for collection and off-site disposal.

Air

Compressed air may be used to bring drill cuttings to the ground surface. A free-standing road towable large tool 400/170 compressor is the most common type of air compressor used. The compressor is connected to the drilling rig using 50 mm threaded flexible air hose. Both ends of each hose must be fitted with a whip restraint – which must be connected between either the rig or compressor and hose connected, or between hoses where more than one length of hose is required.

Air Mist

Air Mist is a mixture of compressed air and water. Water is fed into the drilling rig utilising either a multi camber stator pump or a multi chamber gamma plunger pump; compressed air is fed into the drilling rig from a compressor detailed above. The mix ratio and pressures is determined and controlled by the Driller.

All plant and equipment used as part of the chosen flush system is subject to the PUWER regulations and must be checked on a daily basis prior to use. Prior to the commencement of drilling the Lead Driller must be satisfied that adequate provision has been made for the containment and disposal of any arising which will be generated. If adequate provision has not been made drilling should not commence until such time that provision has been made.

AVOIDANCE OF DAMAGE TO BURIED SERVICES

A safe system of work to detect and avoid buried services must be in place for all sites where intrusive works are to be carried out.

The procedures define best practice for detecting and preventing damage to buried services.

As a minimum a cable avoidance (CAT and genny) scan must be undertaken at each intrusive location by a trained and competent ‘Responsible Person’, making reference to service drawings where such drawings exist. Inspection pits will be hand excavated to a minimum 1.2 m depth prior to the commencement of other intrusive activities unless stated otherwise in the site-specific health and safety documentation.

METHOD STATEMENT AND RISK ASSESSMENT

ROTARY DRILLING

A Permit to Dig will be completed by the Responsible Person, detailing the control measures applied, and confirming that the person(s) undertaking the intrusive work have been briefed and that work may proceed. The Permit will be held by the Responsible Person where they remain present and

directly supervise work, else accepted and retained by the supervisor of that work (the 'Responsible Deputy').

For sites where other parties are responsible for the location and avoidance of buried services, Regional Drilling will operate under that party's own safe system of work (and Permit to Dig system where used). In all cases the works supervisor will require confirmation from that party's Responsible Person that appropriate service avoidance procedures, including a cable avoidance scan have been completed, that no services have been detected, and that intrusive works may proceed. Written confirmation should be provided wherever possible.

CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH (COSHH)

The following are the most common COSHH substances which may be employed during drilling operations. The list is not exhaustive and COSHH risk assessments and material safety data sheets (MSDS) for all relevant substances will be held on site; all substances to be stored and handled in accordance with the relevant risk assessment.

- Diesel fuel (in rig, compressor, standalone pumps).
- Hydraulic oil (in rig, associated plant).
- EPD Grease Tool Joint Thread Compound (grease-based lubricant for threads on drilling tools and casing).
- Polymer (liquid or powder, sometimes added to water drilling flush to aid drilling).
- Foam (liquid sometime added to water drilling flush to aid drilling).
- Bentonite (pellets, granules, powder – for installation of instrumentation in boreholes).
- Cement (for installation of instrumentation in boreholes).

ADDITIONAL PRECAUTIONS

The following items will be maintained at the drilling location at all times.

First Aid Kit, Spill Kit, Fire Extinguisher, Mobile Phone.

- Drip Trays beneath all static plant
- Drip trays and funnels must be used during all refuelling.

SITE SPECIFIC PRECAUTIONS

There are numerous sites whereby additional precautions must be taken and licenses may be required. It is the Lead Driller's responsibility to confirm with the site manager if any such

ROTARY DRILLING

precautions are required, and if required they are in place. Such sites may include, but are not limited to:

Drilling in coal or coal workings

A Coal Authority Licence is required for the drilling of boreholes into intact coal or coal workings. Additional precautions such as the use of personal gas alarms and a specific drilling flush (commonly water) may be required. A supplementary safe system of work will be used on such sites. In the event that coal or coal workings are encountered unexpectedly in a borehole, and no Coal Authority Licence is in place, stop work and seek advice.

Drilling in landfills or contaminated land

A supplementary safe system of work will be used on sites where boreholes are to be drilled through landfill or other contaminated ground. This will be based on the guidance contained in the British Drilling Association *Guidance for Safe Activities on Contaminated or Potentially Contaminated Land* (2008). Additional precautions such as the use of personal gas alarms, additional PPE/RPE, decontamination provisions and a specific drilling flush may be required.

In the event that landfill or contaminated ground or groundwater is encountered unexpectedly in a borehole, and no safe system of work is in place, stop work and seek advice.

Drilling on, near or over rivers and river / sea flood defences

A license and consent must be obtained from the Environment Agency if works are occurring on over, under or near a main river, flood or sea defence or if the works make changes to any structure that helps control floods. For work on or near all other watercourses that aren't main rivers, permission must be obtained from the local flood authority or the Internal Drainage Board (IDB).

Notice to mariners

If works are due to take place on navigable waterways be, they in land or coastal a notice to mariners must be issued through the relevant harbour master.

Activity: Rotary Drilling (including Wireline Drilling and Dynamic Sampling)								Activity Risks
Person's at Risk: Drilling Team, Site Supervisors, Members of the Public.								
Operator + Crew; other site staff; members of public exposed to working area	**Without Control Measures**			**Control Measures**	**With Control Measures**			**Residual Risk Acceptable (Y/N)**
Hazard Identification:	**S**	**L**	**R**		**S**	**L**	**R**	
Mobilisation of Rig & Plant.								
Crushing injuries during loading and unloading from HGV / LGV wagon.	4	3	12	Conduct a site walkover in advance to ensure suitable access and space is available for the vehicles and loading/unloading operations. Complete POWRA. Full PPE should be worn by all personnel involved: Hard hat with chin strap engaged, high-visibility clothing, overalls, steel toe cap boots, light eye protection (UNLESS a point of work risk assessment identifies that the use of eye protection creates a greater hazard (e.g. impairment of vision in wet weather)) and gloves (CUT 5 grade or equivalent). Access to the loading/unloading area should be restricted to essential personnel only. Physical barriers may be used if deemed necessary via the point of work risk assessment or client requirements.	4	1	4	Yes
Transportation of Plant, Rig and Equipment to site. (Road Traffic Accidents)	5	3	15	Tracking of rig onto LGV / HGV flatbed or plant trailer is to be conducted by competent, trained staff only. Once in place on the HGV / LGV or plant trailer ensure that the drilling rig is mounted in a stable position and strapped down securely. No lose equipment to be transported. Ancillary equipment to be transported on the HGV / LGV should be arranged and laid out in an appropriately secure fashion and secured appropriately. All vehicle drivers must be appropriately trained and licensed. Tachographs to be utilised where appropriate to manage fatigue and driving hours.	5	1	5	Yes, risk of crush injury remains, likelihood reduced to remote. Category remains amber.

				Primary risk of RTC from other drivers: DRIVE DEFENSIVELY Vehicle checks are to be completed on a daily and weekly basis and issued to the transport manager at the end of the week.				
Movement of Rig on Site.								
Crushing injuries	5	3	15	Only fully trained or authorised personnel are permitted to manoeuvre rigs into position. This will generally be the Lead Driller, or trainee lead driller under the supervision of the lead driller. Where present and available all rigs and equipment should be moved utilising radio controls or an umbilical connection. Where rigs are to be moved using the rig controls only then this should be done under further caution by a trained person only. The Assistant driller will act as a guide identifying and communicating the presence of obstacles and hazards, maintaining a safe distance from the rig at all times.	5	1	5	Yes – overturn and crush injuries by towed plant carries a severity risk of fatality with a remote likelihood. Category remains amber.
Collision with obstacles/property damage	3	3	9	Access to the drilling location should be assessed in advance of movement paying particular attention to overhead obstructions and electric cables.	3	1	3	Yes
Overturning (steep slopes or uneven ground)	5	3	15	The route to the setup location should be assessed for suitability prior to tracking the rig to the location. Stability and topography of the site and route must be taken into account. Tracking sideways across inclines should be avoided. Avoid waterlogged or rutted ground. POWRA to be completed to identify particular hazards. The Lead Driller should ensure that the route of travel is clear of obstacles and pedestrian walkways are isolated or delineated If in doubt – the angle of the slope must be checked and approved before commencing works – benching of the slope may be required to create a stable surface.	5	2	10	Yes – overturn by plant carries a severity risk of fatality with a remote likelihood. Category remains amber.

Overturning/toppling of the rig (on steep slopes or uneven ground)				Maximum operational incline should be kept to less than 20º from horizontal wherever possible. Do not cross an incline of greater than 10º side on. The rig should strictly not be used to transport or tow additional equipment other than what it is designed for.				Yes – severity remains fatality – with a remote likelihood – category remains amber.
Overturning/toppling of the rig (on steep slopes or uneven ground)	5	3	15	Once in position ensure the rig is level and stabilised. A support plate should be placed under each stabiliser if required. Disable or isolate the track controls to prevent further movement of the rig. Establish a 5m exclusion zone around the rig for non-essential personnel.	5	1	5	Yes – severity remains fatality – with a remote likelihood – category remains amber.
Operation of drilling rig.								
Manual handling: repeated movement of rods, casing, SPT trip hammers etc. may cause muscular injury.	4	4	16	Where possible use lifting/mechanical equipment when moving heavy loads. Use correct manual handling techniques. Assess the lift and use adequate personnel. Minimise lift frequency and distance through good housekeeping and planned working. Gloves (CUT 5 grade or equivalent), Safety Boots and light eye protection should be worn	4	1	4	Yes
Buried Services: Risk of cable strike	5	3	15	All works to be completed in accordance with HSG47 and / or PAS128 guidance. A CAT & Genny scan should be carried out by trained personnel A permit to dig must be excavated prior to breaking ground. Full-service drawings must be available in advance of works and be in-date (<6months old) with a copy available on site for reference. Perform site walkover to identify any surface trace indicative of the presence of buried services (i.e. trench scarring, manhole covers, cable tails, drainage covers etc.). Lift any identifiable covers to ascertain direction of run of services. Complete and comply with permit to dig or equivalent procedure, including careful excavation techqniques.	5	1	5	Yes. All strikes of live electric, gas and product services carry a severity risk of fatality – with a remote likelihood. Category remains amber.

ROTARY DRILLING

Entanglement: rotating and moving parts risk of entanglement injury.	5	3	15	Only to be operated by trained, competent personnel. Carry out pre start checks before use. Conduct routine maintenance in accordance with manufacturers' guidelines and in-house schedule based Minimum PPE consisting of overalls, hard hat with chin strap engaged, safety boots, gloves (CUT 5 grade or equivalent), light eye protection and ear protection must be worn	5	1	5	Yes entanglement severity risk is fatality with a remote likelihood – category remains amber.
Entrapment: activities including raising or lowering the mast, contact with obstructions or entrapment of hoses / winch.	5	3	15	Ensure the hydraulic hoses are clear of all moving parts. Ensure that the winch cable is free running and not entangled. Ensure that there are no overhead obstructions in the line of movement of the mast. The mast should be kept at least 2m laterally clear of any overhead hazards. Ensure that third parties are clear of setup operations. Emergency spill kits to be available on site in case of damage to hoses.	5	1	5	Yes entanglement severity risk is fatality with a remote likelihood – category remains amber.
Entrapment: activities including raising or lowering the mast, contact with obstructions or entrapment of hoses / winch.	5	3	15	Ensure the hydraulic hoses are clear of all moving parts.	5	1	5	Yes entanglement severity risk is fatality with a remote likelihood – category remains amber.
Stability during drilling – loss of stability, toppling of rig and associated injuries.	5	3	15	Align the mast and set to vertical. During normal operation the mast must be maintained in the vertical position for the duration of the drilling process. On rigs where a lock pin or other mechanism is available it must be engaged to this effect. Ensure that the foot of the mast is in firm contact with the ground surface before commencing operation. Check the stabilisers are correctly engaged with the ground. Stop rotation and drive and adjust to level if necessary.	5	1	5	Yes – severity risk of fatality from a crush injury – with a remote likelihood. Category remains amber.
Overturning/toppling of the rig (on steep slopes or uneven ground)	5	3	15	Once in position ensure the rig is level and stabilised. A support plate should be placed under each stabiliser if required.	5	1	5	Yes – severity remains fatality – with a remote

Contact or entrapment with moving parts of drilling rig or drilling equipment	5	4	20	Maintain distance from the drilling head whilst in operation. When removing casing from the drill string, the Driller's Assistant should not open the gate on the safety cage until the length of casing has reached a stable position. The guard MUST BE KEPT SHUT during rotation to prevent access. It should not be opened except for loading/maintenance. A sufficient period of time should be allowed for the casing to lose momentum from being unscrewed, and the Drilling Assistant should observe the casing position and potential for fall before opening the gate. Maintain distance from the drilling head whilst in operation. In the event of any irregularity ACTIVATE THE EMERGENCY STOP or switch off ignition key Ensure that the engine is switched off and the key removed before attempting any repairs or adjustments The Lead Driller should always work with a Drilling Assistant present at the rig whilst it is in operation. No lone working is allowed.	5	1	5	Yes – severity risk of fatality from an entanglement injury – with a remote likelihood. Category remains amber.
SPT Testing: Risk of crush injuries	4	4	16	Avoid lifting the SPT unit unnecessarily. Always use the winch where practicable (refer to manual handling, above). Stay clear of the drop weight during operation, always close the gate prior to operation. Free snags using the winch. Do not attempt to free the climber by hand. Always replace the lock pin when the unit is not being used for a test run	4	2	8	Yes
Removing stuck core liner from core barrel – potential for crush/pinch injuries.	3	3	9	Core barrel to be laid out horizontally on trestles and hand tools (mole grips, chain wrench etc) used to disassemble core barrel and remove core liner. If unsuccessful inner core barrel and liner to be secured vertically in drilling rig hydraulic jaws and drive mast	3	2	6	Yes

				fitted with rod to be used to apply vertical downward force onto stuck core, with cover (bucket or similar) to be placed over top of borehole during this operation. If unsuccessful inner core barrel to be returned to Regional Drilling premises for core liner and sample to be cut from core barrel in a controlled fashion.				
LIVE site work: risk to non-essential personnel, public and privately-owned vehicles/property	5	4	20	Access to the drilling area should be restricted. Drilling equipment should be approached from the front, in view of the operator. Area of investigation will be fenced off from the public with adequate distance between the equipment and the public Surrounding spaces will be kept free to maintain a clear vantage where possible. Free snags using the winch. Do not attempt to free the climber by hand. Always replace the lock pin when the unit is not being used for a test run. Plastic sheeting and bunding can be placed on the ground to contain excess water. Safety signs will be deployed to indicate risks i.e. excess noise and machinery at work	5	1	5	Yes severity risk of fatality from an injury – with a remote likelihood. Category remains amber.
Potential for combustion of coal strata, release of noxious gases, explosion and long term fire – underground.	4	2	8	All coal drilling requires a valid Coal Authority Permit. Drilling of rock stratum to be undertaken with rock roller/core bit using air mist or water flush only. Compressed air only to be used if agreed in Coal Authority Permit. Personal gas alarms to be worn by drilling personnel and others at works location. Personal gas alarms must be calibrated and be checked daily by the personnel using them.	4	1	4	Yes
Drilling induced movement of ground gas into soils, rocks, above or below ground structures.	4	2	8	Where this risk is present drilling in rock formation to be undertaken without the use of compressed air.	4	1	4	Yes
Residual pathway left allowing migration of ground gas after completion of drilling.	4	4	16	Grout/cement to be available to enable boreholes to be filled and sealed on completion.	4	1	4	Yes
Drilling on the location of a suspected mine shaft or very shallow workings, risk of collapse and subsequent injury –	5	5	25	Drilling plant and crew should be supported by a defined scaffold platform or metal grid to span suspected shaft or very shallow workings where these risks are suspected -	5	1	5	Yes risk of ground collapse carries fatality risk but likelihood

from equipment topple, fall or suffocation				this must be designed by a temporary works supervisor on an intrusive location basis following assessment of ground instability risk.				reduced to remote, category remains amber.
Danger of explosion, poisoning or asphyxiation from ground gases.	5	5	25	Personal gas alarms to be worn by drilling personnel and others at works location. Personal gas alarms must be calibrated and be checked daily by the personnel using them.	5	1	5	Yes - severity risk of fatality from explosion, poisoning or asphyxiation with a remote likelihood. Category remains amber

Environment Risk Assessment	S	L	R		S	L	R	
Driving to and from site: Fuel and exhaust emissions present a contribution to environmental pollution.	4	5	20	Obey speed limits and general road laws.	2	2	4	Yes
				Allow appropriate time to get to/from site.				
				Vehicle movements to be minimised and multiple occupant journeys to be encouraged				
				Avoid driving during peak traffic times.				
				Use low emission fuels where practicable				
				Switch off vehicles and rigs when not in use.				
				Conduct routine vehicle maintenance in accordance with manufacturers guidelines and schedule.				
				Enhance awareness of employees in fuel efficiency and fuel				
Transportation of Equipment Deployment, mobilisation, and transportation of equipment to site (rigs, vehicles). Hazards could include, Blocking public and private access routes/rights of way. Traffic delays Noise and disruption to local community and environment.	4	3	12	Considerate parking and driving. Ensure that parking spaces are pre-planned where possible, considering large vehicle sizes. Ensure access routes are considered for suitability for large or long vehicles.	2	2	4	Yes
				All loads are to be secured prior to moving.				
				Rig's travel distance to be minimised, and rigs to be tracked by competent and trained persons.				
				Examine ground conditions for hidden obstructions (e.g. Tree roots, ground hollows) to prevent overturning/toppling of rigs				
				Where possible ensure private landowners and neighbours are notified prior to works beginning. Plan work around busy times of the day.				
				Wheel washes and cleaning down of vehicles and rigs in designated wash bays, and prior to any journey.				

Contamination of surfaces, highways, roads, and tracks. Fuel consumption & exhaust emissions.				Use low emission fuels where possible and only use the equipment for as long as required. Switch off all engines when not in use. Conduct routine vehicle and rig maintenance in line with the manufacturer's instructions and schedule.				
Access to and from the site. Transportation of invasive species, contaminated soil, and diseases. This can be from contaminated clothing, footwear, vehicles, tools and equipment.	4	5	20	Drillers to receive site induction. Where invasive species or harmful land has been identified the PC/site controller shall inform the drillers of the presence and controls in place. Ensure all footwear, tools and equipment is free from debris, mud, and plant matter prior to leaving the site. Park on hard standing, tracks or designated access routes where possible. Avoid off-road driving where possible Driving through fields with crops is strictly forbidden Do not enter fields where cattle, livestock or birds are being kept. Guidance to be followed at all times Invasive species toolbox talks to be given, with periodic refreshment. Employees to stop work at the first sign of biohazards and report to management/site controller.	4	2	8	Yes
All site activities Risk of contact with livestock, cattle or pets.	3	3	9	Landowner/farmer to be contacted prior to arrival to check for position of livestock. All gates to be closed and kept shut when passed through. Do not approach or handle livestock. Remain vigilant to bulls, stags or other animals that may be territorial and become aggressive. Do not enter fields without prior permission from the site controller/ landowner. Do not enter fields where new-born livestock are present.	3	1	3	Yes

Operation of vehicles plant and equipment. Risk of fuel, oil or grease run off and leaks into surrounding area. Potential disturbance to groundwater	3	3	9	Conduct routine maintenance in line with manufacturers recommendations and schedule.	1	3	3	Yes
				Conduct pre-use checks on all equipment to ensure nay leaks are spotted prior to works beginning.				
				Operators of equipment to remain vigilant for leaks during normal operation.				
				Spill kits to be kept with rigs, vehicles and equipment at all times.				
				Any deficiencies are to be reported immediately.				
				Risk of fire to surrounding area due to use of combustion engine and exhausts from rigs.				
				Fire extinguishers should be made available at the worksite in the event of a fire event.				
				Rigs to be switched off when not in use, this is to reduce the emissions from combustion engines.				
				Generators/diesel engine (where required) to be located in a well ventilated and safe area				
				Operators to be briefed/trained on correct use of spill kits				
				Groundwater / drilling flush / arisings to be contained and shall not be allowed to enter drains, watercourses or similar				
				Refuelling to be carried out using a funnel or similar, and drip tray/plant nappy to be utilised				
Operation of drilling rigs and ground disturbance activities. Risk of service disruption to local services (electrical, water, fuel) Escape of water and possible subsidence & flooding. Wastewater supply pipe resulting in pollution to local environment. Fuel supply line disturbance resulting in severe pollution to surrounding area.	4	5	20	G5.15 guidance to be followed at all times.	4	2	8	Yes
				All locations subject to PAS128 walkover prior to intrusive works (i.e. scanned with CAT & Genny prior to works beginning).				
				Perform site walkover to identify any surface trace indicative of the presence of buried services.				
				Complete and comply with clients PTW/ permit-to-dig system.				
				Inspection pit to always be hand dug prior to commencement of drilling.				
				All staff to be trained and competent in works to be carried out.				

Operation of drilling rig Contamination of chemicals used within the drilling process.	3	3	9	Spill kits to be carried with all vehicles, rigs and plant equipment.	2	2	4	Yes
				Plant nappies to be used and placed at all times.				
				Minimal amounts of clean water to be added to the drilling process, only to be added when required.				
				Good standard of housekeeping to be maintained at all times.				
				Boreholes either installed with groundwater monitoring pipework and sealed or backfilled with bentonite (impermeable and inert) clay and also inert granular materials as specified by the Investigation Supervisor.				
				Clean drilling techniques to be employed.				
				Tools, equipment, and plant to be cleaned down after use				
				Vegetable oil to be used as lubricant and grease where possible.				

METHOD STATEMENT AND RISK ASSESSMENT

ROTARY DRILLING

For a Safe System of Work – also see as a minimum the documentation below, referenced in the RAMS		
COSHH	Hydraulic oil Diesel fuel (in rig and during refuelling operations) EP2 Grease Drilling polymer or foam – to match brand in use Bentonite (pellets, granules, powder – for installation of instrumentation in boreholes). Cement (for installation of instrumentation in boreholes).	
PUWER & LOLER	Rig and equipment inspection sheet LOLER daily Inspection Vehicle check sheet Trailer check sheet (if trailer used) Compressor checks (if compressor used) Generator checks (if generator used)	
Manual Handling Assessments	Various to match operations	
PAT Testing	If required for lighting, compressors, generators and other electrical plant (if used)	
Environmental Risk Assessments	Where required: Use of biodegradable drilling fluid, biodegradable grease Spill containment, bunding, anti-siltation measures, Fume and noise control	
Document Prepared by: Christopher King - Director	**Signature:**	**Date:** 07/01/2023
Document Approved by:	**Signature:**	**Date:**

METHOD STATEMENT AND RISK ASSESSMENT

ROTARY DRILLING

RISK ASSESMENT AND METHOD STATEMENT SIGN OFF

RAMS Reference:

Name	Signature	Date

RAMS Ref	Details	Date	Briefing By

METHOD STATEMENT AND RISK ASSESSMENT

ROTARY DRILLING

Please sign above to confirm you have received and understand the risk assessment and method statement.

COSHH ASSESSMENTS

Date	05.09.2022	COSHH ASSESSMENT	REMADA GEO CONSULTANTS
Authorised	GSJ		Page 1 of 3

Project Details			
Project No	1271.04	Page No:	1 of 3
Dates on Site:	18th – 20th November 2024	Prepared By:	Peter Searing
Site Location:	Penmaen Road, Blackwood	Remada Supervisor:	Peter Searing
Person at Risk:	Remada personnel / subcontractors / visitors / public	Remada Technician:	

Activity Description: Diesel for Rotary (Commachio GEO205) Rig			
Overview of Work:	Refueling rotary rig		
Description of Procedures:			
Activity Location:	External Work Area	Internal Work Area	~~Confined Space~~

Substance Description: Diesel (generic road fuel)							
Classification:	Key Health Risks	Workplace Exposure Limits (EH40)					
		Substance	Type	LT (8hr)		ST (15mins)	
				ppm	mg/m^3	ppm	mg/m^3
Carc Cat 3; R40 Xn; R65 R66 N; R51/53	Carcinogenic (limited) Harmful: may cause lung damage Skin dryness or cracking	Diesel	N/A	N/A	N/A	N/A	N/A

Classification								
								
Explosive	Flammable	Oxidising	Corrosive	Acute Toxicity	Hazardous to Environment	Health Hazard	Serious Health Hazard	Gas Under Pressure

Minimum PPE Requirements	Coveralls, Reflective/High Viz Vests, Anti-static safety footwear (steel midsole and toe cap), Safety Helmet, Safety gloves, eye protection
	     
Operational Information	Always follow site rules. Mobile phones only to be used in designated areas or offsite. Always perform a SPSA (Safe Performance Self Assessment)/LMRA (Last Minute Risk Assessment) throughout all activities. Impervious gloves to be worn

Evaluation of Risk			
Rating	**Likelihood**	**Severity**	
0	No Likelihood	No severity	
1	Probably not occur	No injury or minor, resulting in < 1 day lost work time	

2	Unlikely to occur, though conceivable	Moderate injury / illness, resulting in ≤ 3 days lost work time	
3	Likely to occur	Injury resulting > 3 days lost work time	
4	Occurrence not surprising	Serious injury	
5	Occurrence inevitable, May occur many times	Fatality	

Exposure Route	Cause	Effect	L	S	Risk	First Aid Measures
Skin Contact	Splash / spray and incorrect use of PPE	Skin irritation/can lead to dermatitis with prolonged exposure	1	1	1	Wash with plenty of soap and water / get medical advice if irritation continues
Ingestion	Poor hygiene/incorrect use of PPE	Headache, nausea, vomiting, sickness	1	1	1	Do not induce vomiting / go to hospital immediately
Inhalation	Vapours during refuelling	Irritant to nose/ throat Headache, nausea, vomiting, sickness	2	1	2	Move to fresh air / seek medical assistance if effects persist
Eye Contact	Splash / spray during refuelling	Eye irritation	1	1	1	Wash with water for 15 minutes. Seek medical advice if effects persist

Product Substitution			
Could a less hazardous substance be used instead?	~~Yes~~	No	Detail: No adequate substitute

Additional Controls:		
Control Type	Controls	
Engineering Controls:	Tasks to take place outside, distal from any watercourses / drains.	
Process / Procedure Controls:	No eating / drinking / smoking – wear PPE	
PPE:	Goggles	Yes
	Respirator	No
	Coveralls	Yes
	Gloves	Yes
	Footwear	Yes
Maintenance / Testing:	Daily Supervision	
Additional Controls:	None	
Health Surveillance:	Method Statements and Inductions	

Fire Procedures:	Do not use water / smother or call emergency services for chemical flame retardant
Emergency Procedures:	Eyewash station / route to hospital, trained first aider on site

Storage & Disposal	
Storage	Store in labelled jerry can.
Disposal	If not used dispose as hazardous waste in jerry can.

Related Documentation	
Read in conjunction with MSDS	Generic Road Fuel Diesel MSDS e.g, Esso / BP / Shell

Assessor /Signed / Date	Peter Dickinson	P. Dick.	14.11.2024

Date	05.09.2022	COSHH ASSESSMENT	REMADA GEO CONSULTANTS
Authorised	GJ		Page 1 of 2

Project Details			
Project No	1271.04	Page No:	1 of 2
Dates on Site:	18th – 20th November 2024	Prepared By:	Peter Searing
Site Location:	Penmaen Road, Blackwood	Remada Supervisor:	Peter Searing
Person at Risk:	Remada personnel / subcontractors / visitors / public	Remada Technician:	

Activity Description: Bentonite for backfilling rotary boreholes			
Overview of Work:	Backfilling of boreholes		
Description of Procedures:			
Activity Location:	External Work Area	Internal Work Area	~~Confined Space~~

Substance Description: Bentonite							
Classification:	Key Health Risks	Workplace Exposure Limits (EH40)					
Low acute toxicity	Respiratory effect: possible slight irritation from dust. May aggravate pre-existing difficult respiratory conditions.	Substance	Type	LT (8hr)		ST (15mins)	
				ppm	mg/m^3	ppm	mg/m^3
		Bentonite	N/A	N/A	N/A	N/A	N/A

Classification								
								
Explosive	Flammable	Oxidising	Corrosive	Acute Toxicity	Hazardous to Environment	Health Hazard	Serious Health Hazard	Gas Under Pressure

Minimum PPE Requirements	Coveralls, Reflective/High Viz Vests, Anti-static safety footwear (steel midsole and toe cap), Safety Helmet, Safety gloves, eye protection
	     
Operational Information	Always follow site rules. Always perform a SPSA (Safe Performance Self-Assessment)/LMRA (Last Minute Risk Assessment) throughout all activities. Impervious gloves to be worn

Evaluation of Risk			
Rating	**Likelihood**	**Severity**	
0	No Likelihood	No severity	
1	Probably not occur	No injury or minor, resulting in < 1 day lost work time	HIGH RISK RATING >10
2	Unlikely to occur, though conceivable	Moderate injury / illness, resulting in ≤ 3 days lost work time	MEDIUM RISK RATING 6-10
3	Likely to occur	Injury resulting > 3 days lost work time	LOW RISK RATING 0-5

4	Occurrence not surprising	Serious injury	
5	Occurrence inevitable, May occur many times	Fatality	

Exposure Route	Cause	Effect	L	S	Risk	First Aid Measures
Skin Contact	Incorrect use of PPE	Skin irritation/can lead to dermatitis with prolonged exposure	1	1	1	Wash skin thoroughly with plenty of soap and water / get medical advice if irritation continues.
Ingestion	Poor hygiene/incorrect use of PPE	Headache, nausea, vomiting, sickness	1	1	1	Wash mouth out with water. Do not induce vomiting / go to hospital immediately.
Eye Contact	Incorrect use of PPE	Eye irritation	1	1	1	Wash with water thoroughly. Seek medical advice if effects persist.

Product Substitution			
Could a less hazardous substance be used instead?	~~Yes~~	No	Detail: No adequate substitute

Additional Controls:		
Control Type	Controls	
Engineering Controls:	Material to be kept dry (bentonite becomes very slippery when wet)	
Process / Procedure Controls:	No eating / drinking / smoking – wear PPE	
PPE:	Goggles	Yes
	Respirator	No
	Coveralls	Yes
	Gloves	Yes
	Footwear	Yes
Maintenance / Testing:	Daily Supervision	
Additional Controls:	None	
Health Surveillance:	Method Statements and Inductions	
Fire Procedures:	Not explosive. Product will not burn.	
Emergency Procedures:	Eyewash station / route to hospital, trained first aider on site	

Storage & Disposal	
Storage	Store in a sealed dry location. Stack in stable and safe manner.
Disposal	Any waste product must be disposed of to a licenced waste carrier – waste transfer tickets to be retained.

Related Documentation	
Read in conjunction with MSDS	

Assessor /Signed / Date	Peter Dickinson	P. Dick	14/11/2024