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nec°3 Engineering and Construction Short Contract A contract between THE COAL AUTHORITY Authority and SOIL ENGINEERING GEOSERVICES LTD Soil engineering for PROPOSED BOREHOLE DRILLLING AT WHORRAL BANK, MORPETH, NORTHUMBERLAND Contents Page Contract Forms Contract Data 2 The Contractor's Offer 4 The Employer's Acceptance 4 Price List 5 Works Information 6 Site Information 10 Conditions of Contract CC1 Notes about this contract are printed in boxes like this one. They are not part of the contract. 1

The Coal Authority

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Contract Dat	a		
	The Employer is		
Name	THE COAL AUTHORITY		
Address	200 LICHFIELD LANE, MANSFIELD, NOTTS, NG18 4RG		
Telephone	01623 637000 Fax 01623 622072		
E-mail address	@coal.gov.uk		
The works are	BOREHOLE DRILLING WORKS		
The site is	WHORRAL BANK, MORPETH		
The starting date is	TBC		
The completion date is	TBC		
The period for reply is	2	weeks.	
The defects date is	52	weeks after Completion.	
The defect correction period is	4 WEEKS	weeks.	
The delay damages are	NOT APPLICABLE	per day.	
The assessment day is the	28 TH DAY	of each month.	
The retention is	0	%.	
Does the United Kingdom Housir Regeneration Act (1996) apply?	ng Grants, Construction and	Yes / No (delete as appropriate)	
	The Adjudicator is		
Name			
Address			
Telephone	Fax		
E-mail address			



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Insert a rate only if a rate less	than 0.5% per week of delay has been agreed.
The <i>Employer</i> provides this	Only enter details here if the <i>Employer</i> is to provide insurance.
insurance	THE EMPLOYER PROVIDES NO INSURANCE
	for the third insurance stated in the $\pounds 5M$ IN RESPECT OF EACH CLAIM, WITHOUT LIMIT TO THE NUMBER OF CLAIMS
	for the fourth insurance stated in the ± 5 M IN RESPECT OF EACH CLAIM, WITHOUT LIMIT TO THE NUMBER OF CLAIMS
The Adjudicator nominating body is	THE INSTITUTION OF CIVIL ENGINEERS
The tribunal is	ADJUDICATION
If the <i>tribunal</i> is arbitration, the arbitration procedure is	ΝΑ
The conditions of contract are a	the NEC3 Engineering and Construction Short Contract April 2013 and the following



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Contract Data The Contractor's Offer The Contractor is tryinceringlickor vices Linited Name Address LSII SSK Telephone Fax. mg. Go.C Sal- Compres E-mail address The percentage for overheads and profit added to the Defined Cost for people is 42 %. The percentage for overheads and profit added to other Defined Cost is 22.5 %. The Contractor offers to Provide the Works in accordance with the conditions of contract for an amount to be determined in accordance with the conduct Forty Two Then Porends, Screnty Cherly Vinc The offered total of the Prices is tor ponce Enter the total of the Prices from the Price List. Signed on behalf of the Contractor Name Gruting continut Position ... Date .1/3/.16. Signature The Employer's Acceptance The Employer accepts the Contractor's Offer to Provide the Works Signed on behalf of the Employer Name PRINCIPAL TECHNIC Position . Date Signature 4



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Contract Data

Works Information

1 Description of the works

Borehole drilling works to facilitate water level monitoring in abandoned coal mine workings. Works to comprise drilling 1No. borehole, installation of piezometer pipe and lockable manhole cover. A Ground Investigation report detailing the field work and as built borehole and headworks construction is to be prepared with 1No.hard copy and an electronic copy in .pdf format provided within four weeks of completion. Drillers logs are to be handed to the Employer's project manager prior to work commencing the following day or at a time agreed with the regional project manager.

The expected geological succession is provided in "site information" section below. The expected design depth of the borehole is 84m, the depth of the Brockwell Seam.

The borehole should be completed with suitable headworks including a Newton lockable manhole cover (or similar) that is flush with the surrounding ground level. Standard design drawing attached.

Provision should be made for reinstatement of the compound area and access route through the field (not the access track from the roundabout). The requirements for these works are to be confirmed between the Coal Authority and the land owner.

There are recorded worked horizons (Bandy Seam) above the target depth and there is the risk of unrecorded workings encountered at variable horizons. Gas may be encountered in any unsaturated strata at or above the worked horizons or in fractured or permeable strata.

If the required connectivity is achieved by intersecting the worked Bandy Seam horizon, the Engineer may require that the borehole be terminated at this horizon. The methodology for completing the borehole installation in this event should be agreed with the Engineer.

The borehole should be drilled in accordance with the following specification, using a water flush system. Measures for drilling into gas-filled environments will be required.

- 1. Drill a vertical hole through surface superficial deposits and install a temporary surface casing if required.
- 2. Continue drilling a vertical rock bit hole to a suitable (to be agreed by the Engineer) distance above the Bandy Seam horizon.
- 3. Install steel casing from the surface to the base of the hole.
- 4. Grout the steel casing into the borehole from the surface to its base and allow the grout to fully set.
- 5. Continue drilling a vertical rock bit hole through the grout plug and down to the Bandy Seam horizon.
- 6. If a good connection to the target horizon is achieved (to be agreed by the Engineer): Install a plastic piezometer pipe from the base of the borehole to the surface. The pipe is to be slotted throughout the open-hole section of the borehole.
- 7. If there is not a good connection at the Bandy Seam horizon: Continue drilling a vertical rock bit hole down to the Brockwell Seam.
- 8. If a good connection is proven before reaching the Brockwell Seam horizon, the borehole drilling can be completed at that point.
- 9. Install a plastic piezometer pipe from the base of the borehole to the surface. The pipe is to be slotted throughout the open-hole section of the borehole.

The minimum diameter of the piezometer pipe should be 75mm. The drilling contractor should ensure that open hole and casings, including any that are required should unrecorded workings (as described site information) be encountered, are sized accordingly in order that this can be achieved.

No sampling is required as part of these works, however it is the Contractor's responsibility to supply BGS with suitable drilling logs as required.

THE Contractor IS REQUIRED TO PROVIDE AND MAINTAIN ALL PEDESTRIAN & TRAFFIC MANAGEMENT



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MESAURES REQUIRED TO SAFELY COMPLETE THE WORKS AND TO PROTECT THE PUBLIC FROM HIS OPERTAIONS. THE Contractor IS TO PROVIDE A PLAN WITHIN HIS OFFER TO DETAILING THE EXTENTS OF ANY FOOTPATH AND CARRIAGEWAY CLOSURES TO COMPLETE HIS WORK ALONG WITH PROPOSED POSITIONS OF HIS WELFARE FACILITIES AND THE MATERIALS COMPOUND.

PUBLIC UTILITY INFORMATION HAS BEEN OBTAINED. CHECKS FOR UTILITIES SHALL BE MADE WITH A CABLE AVOIDANCE TOOL ALONG WITH HAND EXCAVATED INSPECTION/SERVICE CLEARANCE PITS AT THE BOREHOLE LOCATION.

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Contract Data

Works Information

THE Contractors SITE SUPERVISOR SHALL HAVE A DEGREE IN CIVIL ENGINEERING, ENGINEERING GEOLOGY OR GEOLOGY AND HAVE ADEQUATE KNOWLEDGE AND EXPERIENCE OF THE TECHNICAL DIRECTION AND OUTPUT REQUIRED FOR THE SITE OPERATIONS TO ACHIEVE THE ABOVE AND RUN SAFELY.

THE Contractor IS TO CONDUCT ALL ACTIVITIES IN PROVIDING THE WORKS WITH THE UTMOST CONSIDERATION TO ADJACENT USERS OF THE HIGHWAY AND ADJOINING PROPERTIES ESPECIALLY IN RESPECT TO ENSURING THEIR SAFETY FROM OPERATIONS IN CONNECTION WITH THE WORKS AND LIMITING DISRUPTIONS, NOISE, DUST AND CONSTRUCTION DEBRIS. ALL DRILLERS SHALL HAVE NVQ LEVEL 2 LEAD LAND DRILLER AND BE BDA AUDITED. NO SUB-CONTRACTORS SHALL BE USED WITHOUT PRIOR APPROVAL/AGREEMENT WITH THE Employer.

2 Drawings		
Drawing number	Revision	Title
Figure 1	N/A	Site location plan
MPBH-01	1	Lease Plan (Borehole location plan)
Figure 3	N/A	Worked Seams Plan
Figure 4	N/A	Generic Manhole Chamber to house data
		logger at head of borehole upon completion

3 Specifications

Title	Date or revision	Tick if publicly available
'UK SPECIFICATION FOR GROUND INVESTIGATION', PUBLISHED BY ICE PUBLISHING.	2nd EDITION	✓

COAL AUTHORITY AMENDMENTS AND ADDITIONS TO CLAUSES 3.5 (MANAGEMENT, SUPERINTENDENCE AND PROFESSIONAL ATTENDANCE), 3.8 (GENERAL SAFETY REQUIREMENTS), 3.16 (WORKING AREAS) AND 9 (GEOPHYSICAL TESTING), OF THE ABOVE DOCUMENT.

Contract Data

Works Information

4 Constraints on how the Contractor Provides the Works

4,1 - WORKING HOURS ARE TO BE MONDAY TO FRIDAY 0800HRS TO 1800HRS

4.2 - ONLY WATER FLUSH IS TO BE USED FOR ROTARY DRILLING OPERATIONS

5 Requirements for the programme

5.1 - Starting date TO BE CONFIRMED AND CONSTRUCTION PHASE PLAN TO HAVE BEEN ACCEPTED BY THE EMPLOYER NO SOONER THAN 5 DAYS PRIOR TO COMMENCING.

6 Services and other things provided by the Employer

Date by which it will be provided

Item NONE

7 Completion

7.1 - AS CLAUSE 11.2(1).

7.2 - THE Contractor IS REQUIRED TO PROVIDE THE Employer WITH INFORMATION ON MATERIALS, QUANTITIES AND SUPPLIERS USED IN COMPLETING THE works FOR INCLUSION WITHIN THE HEALTH & SAFETY FILE.

8 Management of the works

8.1 - THE COAL AUTHORITY WILL BE *Employer* AND IS THE APPOINTED PRINCIPAL DESIGNER; THE Contractor WILL BE RESPONSIBLE FOR THE MANAGEMENT OF HEALTH & SAFETY IN DELIVERY OF THE *works* THROUGHOUT THE CONSTRUCTION PHASE AND SHALL UNDERTAKE THE ROLE OF PRINCIPAL CONTRACTOR. RISK ASSESSMENTS, METHOD STATEMENTS AND THE CONSTRUCTION PHASE PLAN ARE TO BE SUBMITTED TO THE *Employer* FOR THEIR ACCEPTANCE IN ADVANCE THE *starting date*.

8.2 - NEC3:ECSC STANDARD COMMUNICATION FORMS PREPARED BY NEC3 ARE TO BE USED FOR ALL COMMUNICATIONS.

9 Working with the Employer and Others

9.1 – THE Contractor WILL PROVIDE ALL NECESSARY WELFARE, OFFICES AND SECURE STORAGE FACILITIES REQUIRED TO UNDERTAKE THE works AND THESE WILL BE IN PLACE FOR THE starting date AND REMAIN UNTIL



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THE completion date, THIS INCLUDES TEMPORARY SECURITY BOUNDARY FENCING AROUND THE WORKING AREAS AND LOCKABLE GATES.

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Contract Data

Works Information

10 Health & safety

10.1 - THE CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS 2015 APPLY TO THE *works*. THE CLIENT AND PRINCIPAL DESIGNER IS THE COAL AUTHORITY OF MANSFIELD.

10.2 - LIFTING OF PLANT AND MATERIALS IS ENVISAGED, THEREFORE LIFT PLANS WILL BE REQUIRED TO BE SUBMITTED TO THE *Employer* FOR APPROVAL AND COMMENT AT LEAST TWO WORKING DAYS IN ADVANCE OF THE LIFT TAKING PLACE. ANY TEMPORARY PLATFORMS REQUIRED FOR CRANES ARE TO BE DESIGNED AND CONSTRUCTED BY THE *Contractor*.

10.3 - TEMPORARY WORKS – THE *Contractor* IS TO PRODUCE A TEMPORARY WORKS REGISTER AND EACH TEMPORARY WORKS ELEMENT IS TO BE CERTIFIED FOR CONSTRUCTION BY A PROFESSIONALLY QUALIFIED TEMPORARY WORKS DESIGNER REPRESENTING THE *Contractor*. THE TEMPORARY WORKS DESIGNER IS TO PROVIDE A SIGNED CERTIFICATE FOR EACH ELEMENT IDENTIFIED ON THE REGISTER AND THIS IS TO BE SUBMITTED TO THE *Employer* PRIOR TO INSTALLATION, USE AND / OR ENTRY.

10.4 - PERSONAL GAS ALARMS ARE TO BE PROVIDED BY THE *Contractor* FOR HIS PERSONNEL AND WORN AT ALL TIMES WHILST ACTIVITIES ARE BEING UNDERTAKEN. THE PERSONAL GAS ALARMS SHOULD BE MSA ALTAIR 4X OR SIMILAR APPROVED AND AS A MINIMUM SHOULD BE CAPABLE OF ALARMING WHEN THERE IS AN EXCESS OR A DEFICIENCY IN THE FOLLOWING GASES: OXYGEN, HYDROGEN SULPHIDE, CARBON MONOXIDE AND EXPLOSIVITY/COMBUSTION/L.E.L. GAS READINGS WITHIN EACH WORKING AREA ARE TO BE RECORDED EVERY 2HRS AFTER ENTRY HAS BEEN PERMITTED, AND AT THE END OF EACH WORKING DAY. RECORDS ARE TO BE AVAILABLE FOR THE *Employer* TO INSPECT AT ALL TIMES THROUGHOUT THE *WORKS* AND BE COLLATED AND SUBMITTED TO THE *Employer* ON COMPLETION.

10.5 - WELFARE PROVISION - TO COMPLY WITH CDM 2015 AND PREFERABLY SILENT IF TO BE USED FOR OUT-OF-HOURS SECURITY WELFARE DUE TO THE RESIDENTIAL AREA. CONSIDERATION TO BE GIVEN TO REMOTE AND / OR MOBILE OUT-OF-HOURS SECURITY PROVISION IF DEEMED NECESSARY.



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Site Information

The proposed borehole site is located to the west of the A197 Whorral Bank northeast of Morpeth (see Figure MPBH-01). The site is within a privately owned field. The approximate National Grid Reference for the location of the proposed borehole is 421010m E, 586990m N. The estimated surface level at the site is 61m AOD.

Access to the borehole site is off the Whorral Bank Roundabout some 350m to the north and via a 6m (approximately) wide access which runs along the eastern boundary of the field (see Figure MPBH-01). The drilling contractor should create a secure temporary site compound and the provision of site security for non-working periods is recommended. A provision for trackway (or similar) for the compound and the route from the access track to the borehole compound.

The geological sequence has been estimated from Morpeth Moor Colliery No1 Shaft Section and Abandonment Plan 6741. The borehole is likely to encounter superficial deposits (thickness derived from BGS borehole data) before encountering Coal Measures strata comprising mainly sandstones (some annotated 'hard' on Morpeth Moor Shaft Section) together with fireclays, coal bands and workable coal seams. The estimated geological succession is summarised below. Estimated depths are to the base of named horizons.

	Estimated Thickness	Estimated Depth below surface (m)
Current level environ 64 m AOD	(m)	
Surface level approx. 61m AOD.	2.9 (actimated)	3.8 (estimated)
Drift deposits	3.8 (estimated) 1.0	3.8 (estimated) 4.8
Sandstone		
Coal	0.4	5.2
Fireclay	1.7	6.9
Sandstone	2.1	9.0
Coal	0.3	9.3
Fireclay	0.9	10.2
Sandstone	1.9	12,1
Coal	0.3	12.4
Fireclay	1.5	13.9
Sandstone	9.1	23.0
Fireclay	0.7	23.7
Coal	0.9	24.6
Fireclay	1.8	26.4
Sandstone	3.6	30.0
Thin coal band	0.2	30.2
Sandstone	6.7	36.9
Old Man's Seam	0.9	37.8
Fireclay	1.5	39.3
Sandstone	1.5	40.8
Little Seam	0.6	41,4
Fireclay	1.7	43.1
Sandstone	11.6	54,7
Thin coal band	0.1	54.8
Sandstone	8.3	63.1

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Bandy Seam (worked)	0.9	64.0	
Sandstone	19.3	83,3	
Brockwell Seam (worked) estimated 23.0m BOD	0.7	84.0	

The strata dip to the northeast at approximately 1 in 14 (4 $^{\circ}$). There are geological faults recorded in the Bandy and Brockwell seams trending north to south and down-throwing to the east approximately 120m to the west of the proposed borehole.

The strata above the worked horizons may be water-saturated and, if so, the risk of encountering concentrations of mine gases is low. However, gas may be encountered in any unsaturated strata at or above worked horizons, or in fractured or permeable strata. It is unlikely that any gas present will be under pressure. A gas risk assessment has been undertaken and is included in this works package.

The proposed borehole is designed to intersect workings (recorded as totally extracted on Abandonment Plan 6741 4 of 5) in the Brockwell Seam. There are workings recorded in the Bandy Seam, which lies above the target horizon, and the borehole is likely to intercept these workings, or broken/fractured ground associated with them. The borehole location is on the boundary between areas of pillar and stall and total extraction workings in the Bandy Seam. In addition, there is a risk of unrecorded workings being encountered at workable horizons above the Bandy Seam.