

GRANGETOWN PRAIRIE AREA, FORMER STEELWORKS, REDCAR

Phase II Environmental Site Assessment - Addendum

South Tees Development Corporation

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CONTENTS

1	INTRODUCTION	1
1.1	Report Aims.....	1
1.2	Reliability / Limitations of Information	1
2	ADDITIONAL SITE CHARACTERISATION.....	2
2.1	Geology.....	2
2.2	Hydrogeology.....	3
2.2.2	Superficial Deposits.....	3
2.2.3	Bedrock.....	3
2.3	Slug Testing	4
2.4	Tidal Influence.....	4
2.5	Aquifer Salinity	5
2.6	Hydrology	6
3	ENVIRONMENTAL SITE CONDITION ASSESSMENT	7
3.1	Soil	7
3.1.2	Non-Aqueous Phase Liquid	7
3.1.3	Made Ground	7
3.2	Groundwater	7
3.2.2	Non-Aqueous Phase Liquid	7
3.2.3	Groundwater	7
3.3	Surface Water.....	8
3.4	Ground Gas Assessment.....	8
3.5	Slag Petrology.....	9
4	GENERIC QUANTITATIVE RISK ASSESSMENT	11
4.1	Human Health Soil Risk Assessment	11
4.1.2	Asbestos in Soil	11
4.2	Human Health Groundwater Risk Assessment	12
4.2.2	Groundwater Risk Assessment	12
4.3	Risks to Controlled Waters.....	12
4.3.2	Selection of GAC	12
4.3.3	Groundwater	12
4.3.4	Qualitative Risk Assessment for Substances in Groundwater without WQS	17
4.3.5	Surface Water	18

4.4 Discussion.....19

5 SUMMARY20

APPENDICES

APPENDIX A

Figures

APPENDIX B

Study Limitations

APPENDIX C

AEG Reports

APPENDIX D

Tidal Monitoring and Aquifer Permeability Testing

1 Introduction

This report forms an addendum to Arcadis report reference 10035117-AUK-XX-XX-RP-ZZ-0062-01-Prairie_ESA Grangetown Prairie Area, Former Steelworks, Redcar Phase 2 Environmental Site Assessment [Arcadis 2020a]. It contains additional site data not available at the time of issue of the above report due to restrictions pertaining to Covid-19 and should be read in conjunction with Arcadis 2020a. In addition to Arcadis 2020a, a Remediation Options Appraisal and Strategy report [Arcadis 2020b] has been completed for the site (10035117-AUK-XX-XX-RP-ZZ-0066-01-Prairie ROA and Strategy). This report was written based on the findings of Arcadis 2020a.

The Grangetown Prairie (Prairie) Area (the site) is a land parcel situated at the Former Redcar Steelworks. The site location is shown on Figure 1 in Appendix A.

The project background, contract details, and aims and objectives are discussed in Arcadis 2020a.

1.1 Report Aims

The overarching aim of the project is to deliver a sustainable ground remediation strategy for the contract site which is compliant with regulatory needs and has their improvement in principle.

The aim of this addendum to the Arcadis 2020a Environmental Site Assessment (ESA) report is to interpret additional data collected for the site in the context of the existing ESA.

1.2 Reliability / Limitations of Information

A complete list of Arcadis Study Limitations is presented in Appendix B.

It should be noted that ground conditions between exploratory holes may vary from those identified during this ground investigation; any design should take this into consideration. It should also be noted that groundwater levels may be subject to diurnal, tidal, seasonal, climatic variations and those recorded in this report are solely dependent on the time the ground investigation was carried out and the weather before and during the investigation.

2 Additional Site Characterisation

In addition to the reports, publicly available records, and AEG ground investigation data reported in Section 2 of Arcadis 2020a, the following additional data has been collected:

- 12no. trial pits excavated by a 20 tonne 360 excavator on behalf of Atkins to facilitate highways design;
- Soil sampling for in-field assessment and submission to Derwentside Environmental Testing Services (DETS), AEG in-house Geotechnical Laboratory and Thomas Research Services (TRS) laboratories for chemical and geotechnical testing;
- Two groundwater sampling events at all newly installed monitoring wells;
- Three ground gas monitoring events at all newly installed monitoring wells;
- Surface water sampling of Holme Beck;
- Aquifer permeability testing and,
- Tidal monitoring.

The data is reported in the following factual documents presented as Appendix C:

- 4251 - Prairie Site Ground Investigation Works (Final Report r01) [AEG 2020a]
- 4287 Eston Road Intrusive Works (Final Report) [AEG 2020b]
- TRS Report BG0E-F/AEG/PSR/TRS/07/20/PR2, dated 31st July 2020 [TRS2020]

2.1 Geology

A summary of the geology identified at the site is given in Arcadis 2020a. The findings of the additional trial pits were in line with previous findings and are briefly summarised below. The geology encountered is provided in on the trial pit log within Appendix C.

Unit	Minimum Basal Depth (m bgl)	Maximum Basal Depth (m bgl)	Comment
Made Ground	0.60	2.8	Identified in all trial pits, base of Made Ground not proven in two locations due to obstructions. Groundwater was identified within Made Ground in one trial pit.
Tidal Flat Deposits (Secondary A Aquifer)	1.0	3.5	Encountered in 9 trial pits. In line with previous observations generally comprised soft to firm sandy silty clays or sandy clayey silts with varying amounts of plant remains.
Glaciolacustrine Deposits (Unproductive Aquifer)	3.5	-	Recorded in 4 of the trial pits. In line with previous observations the Glaciolacustrine Deposits were noted to be below Tidal Flat Deposits Where identified the deposits were generally described as a soft to firm brown laminated clay often with sand or silt partings along laminations.
Glacial Till (Unproductive Aquifer)	1.0	-	Glacial Till was identified in 4 trial pits. In line with previous observations the Glacial Till was described as a firm to stiff red brown slightly sandy slightly gravelly clay, with gravel composed of mixed lithologies, including sandstone, limestone and rare coal.

The Mercia Mudstone which underlies the site was not encountered by the additional investigation.

2.2 Hydrogeology

A full summary of the hydrogeology at the site is given in Arcadis 2020a. Two additional rounds of groundwater gauging have been undertaken since the 6th May 2020 gauging event, which was reported in Arcadis 2020a. The first additional round of monitoring was undertaken on 15th June 2020 and the second on 30th June 2020. The range in groundwater elevations measured over the three rounds of monitoring are briefly summarised below.

2.2.2 Superficial Deposits

Borehole	Aquifer	6 May 2020 Groundwater Elevation (m AOD)	15 June 2020 Groundwater Elevation (m AOD)	30 June 2020 Groundwater Elevation (m AOD)	Range in Depth to Groundwater (m bgl)
Prairie_AUK_BH101S	GL	6.64	6.87	6.95	1.69 - 2.00
Prairie_AUK_BH101 D	GT	5.64	6.86	7.00	1.78 - 3.00
Prairie_AUK_BH102	Made Ground	7.11	7.38	7.31	0.83 - 1.1
Prairie_AUK_BH103	GL	5.43	5.97	5.76	1.71 - 2.25
Prairie_AUK_BH106	GT	4.77	5.98	5.43	2.73 - 3.94
Prairie_AUK_BH107	GT	7.00	6.95	7.04	3.16 – 3.21
Prairie_AUK_BH108S	GL	6.66	7.72	8.51	0.35 - 2.2

Over the three monitoring visits, groundwater flow direction within the superficial deposits has varied based on interpolation of the groundwater elevations to form groundwater elevation contours, and been towards the east (6th May 2020), the northeast (15th June 2020) and north-north-east (30th June 2020).

2.2.3 Bedrock

Borehole	Aquifer	6 May 2020 Groundwater Elevation (m AOD)	15 June 2020 Groundwater Elevation (m AOD)	30 June 2020 Groundwater Elevation (m AOD)	Range in Depth to Groundwater (m bgl)
Prairie_AUK_BH104	Mercia Mudstone	2.30	4.64	2.49	4.6 - 6.4
Prairie_AUK_BH105*	GT / Mercia Mudstone	3.66	3.77	3.75	4.49 - 4.6
Prairie_AUK_BH108D	Mercia Mudstone	3.86	3.95	4.05	4.81 – 5.00
Prairie_AUK_BH109	Redcar Mudstone Formation and Penarth Group	6.65	6.12	5.37	5.44 – 6.72
Prairie_AUK_BH110	Mercia Mudstone	3.8	3.96	3.93	3.84 - 4.00

*BH105 is screening a band of slightly clayey very sandy gravel at the base of the Glacial Till and directly above the Mercia Mudstone. Based on the consecutive groundwater elevations measured, the groundwater in BH105 is considered to be in continuity with the bedrock aquifer.

Over the three monitoring visits, the inferred groundwater flow direction within the bedrock has been towards the northeast (6th May 2020 and 30th June 2020) and towards the north (15th June 2020).

It should be noted the inferred flow directions within the bedrock and Superficial Deposits are based on elevations from just a limited number of monitoring wells given the size of the site and may be influenced by local ground conditions. The River Tees is located to the north of the site and runs eastwards towards the North Sea. As such, the groundwater flow direction inferred for groundwater in both the superficial deposits and the bedrock is considered to be in line with regional hydrogeology. An assessment of potential tidal influence is included in Section 2.4.

2.3 Slug Testing

Permeability testing of the aquifer was undertaken by AEG via instantaneous removal of a slug of water and monitoring groundwater recharge in four monitoring well locations in June and July 2020:

- BH101D – screening Glacial Till Deposits
- BH103 – screening Glaciolacustrine Deposits
- BH108D – screening Mercia Mudstone
- BH110 - screening Mercia Mudstone

Arcadis has used the raw data collected by AEG to estimate the hydraulic conductivity of the aquifer screened using the Bouwer and Rice 1976 method based on Thiem's equation.

The results of the testing undertaken in BH103 were disregarded as recharge into the well was rapid during the test and not considered to be representative of the cohesive geology screened, Arcadis consider this is likely an effect of the well-pack. Of the remaining three locations tested, six tests (three slug extractions and three slug insertions) were completed in BH108D and BH110 and four tests (two slug extractions and two slug insertions) were completed in BH101D.

The recovery data was used to estimate the hydraulic conductivity by using the Bouwer and Rice method for a partially penetrating well in an unconfined aquifer for BH101D, BH108D and BH110. The hydraulic conductivity estimated from the tests conducted in BH101D screening the Glacial Till indicated a range in conductivity from 0.0007 to 0.025 m/day. These values are broadly in line with literature values for a clay such as the US EPA 1988 who suggest 0.014m/day, Morris and Johnson 1967, who suggest 0.0002m/day and ConSim 2000, where a range in hydraulic conductivity of 8.6×10^{-7} to 0.00041 m/day is presented for a clay. As such the permeabilities are considered to be representative of the screened geology.

The hydraulic conductivity estimated from the tests conducted in BH108D and BH110 which screen the Mercia Mudstone were higher, between 0.3 and 0.61 m/day. In comparison to literature values for a mudstone, these permeabilities are more rapid than expected. For example, ConSim 2000 suggests between 8.64×10^{-9} to 0.00017 m/day for a shale, with similar values reported by Tindal 1998. The literature values presented are at least 3 orders of magnitude below the calculated permeabilities. The higher than expected permeabilities may be the result of drilling induced fracturing of the mudstone in close proximity of the well, where mudstone is described in some sections of the well screen as extremely weak and moderately weak. In addition they may also result from localised secondary porosity (fracture driven flow) which is known to be common in the Mercia Mudstone.

The permeability test data is presented in AEG 2020a. The methodology and calculations are presented in Appendix D.

2.4 Tidal Influence

Groundwater monitoring for potential tidal influence was undertaken by AEG in BH101D (located in the northwest of the site and screening the Glacial Till), BH103 (located in the north-east of the site and screening the Glaciolacustrine Deposits) and BH108D (located in the south-west of the site and screening the Mercia Mudstone) over a period of 36 days between 11th May and 16th June 2020.

Regular cyclical changes in the groundwater level were recorded in the monitoring wells. However, the peaks and troughs of the cycles were not in line with the approximately 6-hourly fluctuations expected in tidally influenced groundwater. The peaks and troughs were generally 8 hours apart and the change in water level was generally less than 4cm. While the cycles were regular in BH101D and BH103, the cycles observed in BH108D were interrupted by larger variations in groundwater elevation (in the order of 15cm and over a period of several days).

Whilst it is possible that the regular cycles measured during the tidal monitoring reflect changes in the tides, there is insufficient evidence to conclusively state that the groundwater is tidally influenced.

The results from the Tidal Monitoring are presented in AEG 2020a and are presented with amended Y axis in Appendix D.

2.5 Aquifer Salinity

The salinity of the aquifers underlying the site has been calculated using concentrations of chloride (Cl⁻) measured in the groundwater samples collected assuming all chloride resulted from NaCl. The concentration of sodium chloride, the most abundant salt in marine waters, was calculated using these concentrations and used to determine whether the groundwater underlying the site was likely to be saline, brackish or fresh.

Equation

At 1 litre mass = concentration

$$n_{(Cl^-)} = m_{(Cl^-)} / M_{(Cl^-)}$$

Assume all free chloride results from NaCl therefore: $n_{(NaCl)} = n_{(Cl^-)}$

$$\text{Therefore } m_{(NaCl)} = M_{(NaCl)} * n_{(NaCl)}$$

Where n = no. of moles

m = mass

M = Molecular weight

Molecular weight of sodium (Na) = 22.99

Molecular weight of chloride (Cl) = 35.5

The results of the calculation are presented in the table below:

Borehole	Aquifer	Concentration NaCl (mg/l) 5 -6 May 2020	Concentration NaCl (mg/l) 17-19 June 2020	Concentration NaCl (mg/l) 1-2 July 2020
Prairie_AUK_BH101S	GL	396	346.0	329.6
Prairie_AUK_BH101D	GT	379	428.5	346.1
Prairie_AUK_BH102	Made Ground	48	83.9	74.2
Prairie_AUK_BH103	GL	59	152.6	97.2
Prairie_AUK_BH104	Mercia Mudstone	140	62.6	110.4
Prairie_AUK_BH105	GT / Mercia Mudstone	84	164.8	159.9
Prairie_AUK_BH106	GT	49	89.0	97.2
Prairie_AUK_BH107	GT	214	214.2	146.7

Borehole	Aquifer	Concentration NaCl (mg/l) 5 -6 May 2020	Concentration NaCl (mg/l) 17-19 June 2020	Concentration NaCl (mg/l) 1-2 July 2020
Prairie_AUK_BH108S	GL	68	141.7	148.3
Prairie_AUK_BH108D	Mercia Mudstone	58	329.6	362.5
Prairie_AUK_BH109	Redcar Mudstone Formation and Penarth Group	140	2797.8	890.2
Prairie_AUK_BH110	Mercia Mudstone	134	1068.3	1235.9
Freshwater: <500 mg/l				
Brackish Water: 500 to 30,000 mg/l				
Saline Water: 30,000 – 50,000 mg/l				

2.6 Hydrology

There are three water courses that run through the site or cross onto the site as part of their route towards the River Tees. They are the Holme Beck, Knitting Wife Beck and the Cross Connector. Both the Knitting Wife Beck and Cross Connector are understood to be culverted for the duration of their route on the site. As such these culverts were not accessible at the time of writing.

The Holme Beck runs along the western boundary of the site, to the east of Eston Road. It enters the Prairie site in the southwestern corner and flows north above ground in an open slab lined channel for approximately 125m before entering a 1.2m diameter concrete culvert for the remainder of the course until it leaves site at the Holme Beck underpass and turns east to join the Cleveland Channel. Surface water from the Holme Beck was sampled at upstream and downstream locations in June 2020 and sent for laboratory analysis.

The location of the sampling points and results of the laboratory analysis of the samples are presented in full in AEG 2020a and are discussed in Section 3.3 of this report.

3 Environmental Site Condition Assessment

This section presents the results of the additional assessment only. This report should be read with Section 3 of Arcadis 2020a for full context.

Additional soil sampling has been undertaken by AEG on behalf of Atkins in the western area of the site. The results of the soil sampling in full are presented in AEG 2020 and briefly discussed in Section 3.1.

Two additional groundwater monitoring visits and one round of surface water monitoring have been undertaken by AEG since the Arcadis 2020a report was issued. The laboratory certificates are presented as part of the AEG factual report in Appendix C. The results of the groundwater monitoring are briefly discussed in section 3.2.

A total of 3 ground gas monitoring visits have been undertaken at the site. The results are presented in full in AEG 2020a and are discussed in Section 3.4.

3.1 Soil

3.1.2 Non-Aqueous Phase Liquid

No non-aqueous phase liquid (NAPL) was identified on soil in the twelve additional trial pits progressed.

3.1.3 Made Ground

Asbestos

Asbestos was identified in one soil sample (ATK_TP_001_0060) of the 12No. additional samples analysed from the trial pits progressed by AEG. The asbestos was noted to be small bundles of amosite.

Metals and Inorganics

Metals and inorganic compounds were measured at levels within the tested samples which were in line with those identified in Arcadis 2020 with the exception of arsenic in ATK_TP_011_0090 which was noted to be elevated compared to the wider dataset.

Polycyclic Aromatic Hydrocarbons and Total Petroleum Hydrocarbons

Concentrations of PAH were measured in 4 of the 5 samples analysed and concentrations of TPH were measured in 3 of the 5 soil samples and analysed. The measured concentrations were in line with Arcadis 2020a and did not indicate hotspots of contamination.

3.2 Groundwater

3.2.2 Non-Aqueous Phase Liquid

No non-aqueous phase liquid (NAPL) was identified on perched water encountered in the additional trial pits progressed.

3.2.3 Groundwater

Six wells are screened across the Superficial Deposits, and one additional well (BH105) is screened across the base of the Superficial Deposits but in continuity with groundwater in the bedrock. A further four wells screen the bedrock and one well is screened across the Made Ground. The results of all three groundwater monitoring visits undertaken on 5th to 6th May, 17th to 19th June and 1st and 2nd July 2020 are discussed in the following sections.

Metals and Inorganics

Metals were measured in all groundwater samples; barium, boron, calcium, manganese, sodium, and iron were measured at the highest concentrations. Metals concentrations generally remained within the same order of magnitude in individual wells across the three monitoring visits with the exception of aluminium which was generally lower in the latter two groundwater samples collected. Metals concentrations in the Superficial Deposits and Bedrock were generally noted to be within the same order of magnitude.

Elevated levels of sulphate and chloride were measured in all samples. The pH of the groundwater in wells screened across natural deposits was neutral to slightly basic with the majority of the samples showing a pH<8.5. Groundwater from monitoring well Prairie_AUK_BH102 screened across Made Ground measured strongly basic across all three monitoring visits (between pH12 and 13).

Free cyanide was generally measured coincidentally with total cyanide with the exception of Prairie_AUK_BH103, Prairie_AUK_BH104 and Prairie_AUK_BH107 where total cyanide only was measured in groundwater samples from at least one visit and free cyanide was less than MDL. Total cyanide was measured above MDL in the following monitoring wells:

- Prairie_AUK_BH101S (all visits)
- Prairie_AUK_BH101D (all visits)
- Prairie_AUK_BH103 (all visits)
- Prairie_AUK_BH104 (2nd visit)
- Prairie_AUK_BH107 (2nd and 3rd visit)
- Prairie_AUK_BH110 (2nd and 3rd visit)

Free cyanide was measured above MDL in the following groundwater samples:

- Prairie_AUK_BH101S (all visits)
- Prairie_AUK_BH101D (all visits)
- Prairie_AUK_BH103 (1st and 2nd visit)
- Prairie_AUK_BH110 (2nd and 3rd visit)

Concentrations of total cyanide in Prairie_AUK_BH101S/D and Prairie_AUK_BH110 were generally higher than elsewhere. The highest concentration of free cyanide was measured in Prairie_AUK_BH110.

Organics

Concentrations of TPH were measured in groundwater sampled from Prairie_AUK_BH109 on all three monitoring visits with concentrations decreasing over the period. Concentrations of TPH were also measured in the following wells on at least one occasion but at levels an order of magnitude below those measured in Prairie_AUK_BH109:

- Prairie_AUK_BH101S (1st and 3rd visit)
- Prairie_AUK_BH102 (2nd visit)
- Prairie_AUK_BH104 (1st visit)
- Prairie_AUK_BH107 (3rd visit)
- Prairie_AUK_BH108S (3rd visit)
- Prairie_AUK_BH108D (3rd visit)
- Prairie_AUK_BH109 (all visits)
- Prairie_AUK_BH110 (2nd visit)

Low levels of PAH were measured in the majority of samples with higher concentrations recorded in Prairie_AUK_BH109, levels in this well were noted to decrease across the monitoring period.

3.3 Surface Water

Concentrations of TPH, phenol, cyanide, hexavalent chromium, mercury and SVOC were measured below the laboratory MDL in both surface water samples collected from the site: SW1 (upstream) and SW2 (downstream). With the exception of toluene which was measured at 1µg/l (the same as the MDL), no VOC were measured in the surface water samples collected.

Where concentrations of CoC were measured above MDL, concentrations did not vary significantly between the upstream and the downstream sample.

3.4 Ground Gas Assessment

Ground gas monitoring was conducted on three occasions across a range of weather and atmospheric conditions. In all monitoring wells with the exception of PRAIRIE_AUK_BH108S groundwater was resting above the top of the well slotted section indicating the data recorded is not representative of the shallow sub

surface ground gas condition, this is expected as the monitoring well was designed to assess groundwater conditions within the superficial and bedrock deposits rather than made ground.

In PRAIRIE_AUK_BH108S which is screened across the Glaciolacustrine Deposits methane levels were recorded at 0.1% and 0.5% during the second and first monitoring visits respectively; during the third visit levels were below the detection limit of the instrument. Other locations generally recorded similar methane levels, with lower measurements recorded during the third monitoring visit which was conducted at lower atmospheric pressure.

Hydrogen sulphide and carbon monoxide were recorded on one and two occasions respectively in PRAIRIE_AUK_BH108S, and with similar frequency in the other monitoring wells, maximum recorded levels were 1ppm for hydrogen sulphide and 6ppm for carbon monoxide.

Flow rates in PRAIRIE_AUK_BH108S were observed to range between 0.0l/hr (visit 3) and -4.4l/hr (visit 1). Across the remaining wells flow rates ranged between 0.4 l/hr and -7.1l/hr with the largest negative flows generally recorded during the first monitoring visit conducted under high pressure atmospheric conditions.

Given the proposed remedial strategy for the site (10035117-AUK-XX-XX-RP-ZZ-0066-01-Prairie ROA and Strategy) comprising the excavation processing and replacement of a significant proportion of the made ground, further monitoring is recommended once this is complete based on the specific requirements of a particular redevelopment.

3.5 Slag Petrology

A total of 6 samples of slag recovered from trial pits were submitted for examination the results are presented in Appendix C and summarised below.

Sample	Depth	AEG Estimated % Slag
Prairie_AUK_TP109	1.0	75 - 100%
Prairie_AUK_TP116	1.0	50 – 75%
Prairie_AUK_TP117	1.0	75 - 100%
Prairie_AUK_TP121	1.8	75 - 100%
Prairie_AUK_TP131	1.5	75 - 100%
Prairie_AUK_TP132	1.0	50 – 75%

- The samples contained mixed slag deposits with blast furnace slag predominating in 3 samples and basic steel slags dominating in the remainder.
- Small amounts of basic refractory materials were noted in 4 slag samples, these materials are particularly susceptible to expansion.
- Samples containing medium or higher proportions of basic steel slag were tested for free calcium and magnesium oxides. Free calcium oxide compositions ranged from 1.5% to 5.2% and free magnesium oxides ranged between 0.3% and 3.3%.
- All samples were subject to 14 day expansion tests and showed expansions between 0.22% and 2.76% with slags high in basic steel slag showing the greater expansion.
- Samples containing medium or higher proportions of basic steel slag were subject to 28 day accelerated expansion tests. The results showed expansion ranging between 0.50 and 3.11%.

Grangetown Prairie Area; Former Steelworks, Redcar.
Environmental Site Assessment Addendum Report – 10035117

- Half the samples tested contained traces of Ettringite indicating expansion has occurred in the past, however this does not mean the expansion is necessarily complete.

4 Generic Quantitative Risk Assessment

The below assessment is a generic risk assessment in line with approach taken in Arcadis 2020a, within which screening criteria are presented.

4.1 Human Health Soil Risk Assessment

Contaminant concentrations in the additional soil samples have been compared with the soil assessment criteria using the following criteria (in order of priority):

- LQM/CIEH Suitable for Use Levels (S4UL) (LQM / CIEH, 2015),
- Department of Environment Food and Rural Affairs (DEFRA) Category 4 Screening Levels (C4SL) (DEFRA, 2012),
- Arcadis derived generic assessment criteria based on CLEA v1.07,
- United States Environmental Protection Agency (U.S. EPA) Regional Screening Levels (RSLs) (USEPA, 2018)

Of the additional soil samples collected concentrations of arsenic were identified above the applicable GAC. The remaining contaminants for which GAC are available were not identified in excess of the applicable GAC. Details of the arsenic contraction in excess are presented in the table below:

Contaminant	Unit	No. Samples Exceeding	GAC Exceeded		Sample (Geology)	Concentration (mg/kg)
Arsenic	mg/kg	1/5	S4UL	640	ATK_TP_011_0090	970

Contaminants for which no screening criteria were available were reviewed. Most contaminants were recorded below the method detection limit (MDL) in all additional soil samples.

Contaminants measured in soil at concentrations above MDL, for which no screening criteria were available were: total cyanide, sulphate, and sulphur. It is also noted that whilst there is a GAC available for assessing the direct contact pathway for free cyanide, there is not a GAC available that considers the vapour inhalation pathway. As such there is not considered to be an appropriate GAC for free cyanide.

Potential human health risks from these compounds were qualitatively assessed in Arcadis 2020a. Both sulphate and sulphur can be present naturally in soil. Their typically low toxicity is likely to mean these occurrences present a low risk of adverse harm following development, in particular if the ground is covered by buildings, hardstanding or permanent landscaping.

Total cyanide can be assessed using other GAC available for higher toxicity contaminants, such as the one for free cyanide for a conservative estimate of risk. Total cyanide measured in soil sampled from ATK_TP_009_0050 is in excess of the GAC for free cyanide and as such total cyanide requires further consideration. Free cyanide has been identified above the MDL in two of the additional soil samples collected and as such warrants further consideration.

Consideration of concentrations of arsenic, total cyanide and free cyanide will be given in Section 4.4.

4.1.2 Asbestos in Soil

A total of 5No. additional soils samples were screened by polarised light microscopy in accordance with HSG248 for the presence of asbestos (HSE, 2005). In 1No. samples asbestos was detected as bundles of fibres (amosite).

The presence of asbestos fibres is in line with previous findings for the site and is considered further in Arcadis 2020a. Asbestos in shallow soils in areas without buildings or hardstanding has the potential to become airborne and available for inhalation, particularly during construction, posing chronic risks to human health.

4.2 Human Health Groundwater Risk Assessment

4.2.2 Groundwater Risk Assessment

Concentrations of volatile contaminants in 36 groundwater and 2 surface water samples were screened against the inhalation GAC described above (where GAC have been derived).

None of the concentrations of volatile contaminants measured in groundwater were in excess of the inhalation GAC for on-site commercial workers where available. As such, the risk to human health from measured concentrations of CoC in groundwater is not considered to be significant.

Groundwater samples were not analysed for VOC in the latter two groundwater monitoring visits as such there is no data in addition to that included in Arcadis 2020a to consider here.

Groundwater samples were analysed for inorganics. Free cyanide has been detected at concentrations above MDL in the groundwater sampled over the three monitoring visits. Free cyanide can volatilise under certain conditions and form compounds including hydrogen cyanide, as such further consideration of concentrations of free cyanide is warranted.

4.3 Risks to Controlled Waters

4.3.2 Selection of GAC

Concentrations of leachable contaminants from soil leaching tests and groundwater samples have been compared to appropriate Water Quality Standards (WQS).

The WQS chosen are UK Drinking Water Standards (DWS) protective of aquifer water resources, and Environmental Quality Standards (EQS) considered protective of surface waterbody quality. The EQS are for saline waters protective of the Tees Estuary receptor. The WQS are listed in Arcadis 2020a.

4.3.3 Groundwater

Twelve groundwater samples were obtained from the monitoring wells on each of the three sampling visits and two surface water samples were collected from Holme Beck. The samples were analysed for a range of contaminants. The boreholes screen subsurface geology as shown in the table below.

Borehole	Aquifer
Prairie_AUK_BH101S	Glaciolacustrine Deposits (GL)
Prairie_AUK_BH101D	Glacial Till (GT)
Prairie_AUK_BH102	Made Ground
Prairie_AUK_BH103	GL
Prairie_AUK_BH105*	GT / Mercia Mudstone
Prairie_AUK_BH106	GT
Prairie_AUK_BH107	GT
Prairie_AUK_BH108S	GL
Prairie_AUK_BH104	Mercia Mudstone
Prairie_AUK_BH108D	Mercia Mudstone

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Environmental Site Assessment Addendum Report – 10035117

Borehole	Aquifer
Prairie_AUK_BH109	Redcar Mudstone Formation and Penarth Group
Prairie_AUK_BH110	Mercia Mudstone

*BH105 is screening a band of slightly clayey very sandy gravel at the base of the Glacial Till and directly above the Mercia Mudstone. Based on the consecutive groundwater elevations measured, the groundwater in BH105 is considered to be in continuity with the bedrock aquifer.

Contaminant concentrations were compared to the WQS and concentrations in excess of the WQS are summarised below.

Contaminant	Unit	No. Samples Exceeding	WQS Exceeded		Monitoring Point
Aluminium	µg/l	4/36	DWS	200	PRAIRIE_AUK_BH101S (1 st visit) PRAIRIE_AUK_BH105 (2 nd visit) PRAIRIE_AUK_BH106 (1 st visit) PRAIRIE_AUK_BH109 (1 st visit)
Barium**	µg/l	2/24	DWS	700	PRAIRIE_AUK_BH102 (1 st and 2 nd visit)
Cadmium	µg/l	9/36	EQS	0.2	PRAIRIE_AUK_BH110 (2 nd visit)
Chromium (total)	µg/l	3/36	DWS	50	PRAIRIE_AUK_BH106 (1 st visit) PRAIRIE_AUK_BH109 (1 st visit)
Copper	µg/l	3/36	EQS	3.76	PRAIRIE_AUK_BH103 (1 st visit) PRAIRIE_AUK_BH104 (2 nd visit) PRAIRIE_AUK_BH110 (2 nd visit)
Manganese**	µg/l	22/24	DWS	50	PRAIRIE_AUK_BH101S (1 st and 2 nd visits) PRAIRIE_AUK_BH101D (1 st and 2 nd visits) PRAIRIE_AUK_BH103 (1 st and 2 nd visits) PRAIRIE_AUK_BH104 (1 st and 2 nd visits) PRAIRIE_AUK_BH105 (1 st and 2 nd visits) PRAIRIE_AUK_BH106 (1 st and 2 nd visits) PRAIRIE_AUK_BH107 (1 st visit) PRAIRIE_AUK_BH108S (1 st and 2 nd visits) PRAIRIE_AUK_BH108D (1 st and 2 nd visits) PRAIRIE_AUK_BH109 (1 st visit) PRAIRIE_AUK_BH110 (1 st and 2 nd visits)
Mercury	µg/l	7/36	EQS	0.07	PRAIRIE_AUK_BH102 (3 rd visit) PRAIRIE_AUK_BH103 (1 st and 3 rd visit) PRAIRIE_AUK_BH104 (1 st visit)

Grangetown Prairie Area; Former Steelworks, Redcar.
 Environmental Site Assessment Addendum Report – 10035117

Contaminant	Unit	No. Samples Exceeding	WQS Exceeded		Monitoring Point
					PRAIRIE_AUK_BH106 (1 st and 3 rd visit) PRAIRIE_AUK_BH109 (1 st visit)
Zinc	µg/l	13/36	EQS	7.9	PRAIRIE_AUK_BH101S (3 rd visit) PRAIRIE_AUK_BH101D (3 rd visit) PRAIRIE_AUK_BH102 (1 st visit) PRAIRIE_AUK_BH104(1 st and 3 rd visit) PRAIRIE_AUK_BH105 (3 rd visit) PRAIRIE_AUK_BH107 (3 rd visit) PRAIRIE_AUK_BH108S (3 rd visit) PRAIRIE_AUK_BH109 (3 rd visit) PRAIRIE_AUK_BH110(1 st and 3 rd visit)
Total Cyanide	µg/l	15/36	EQS	1	PRAIRIE_AUK_BH101S (all visits) PRAIRIE_AUK_BH101D (all visits) PRAIRIE_AUK_BH103 (all visits) PRAIRIE_AUK_BH104 (2 nd visit) PRAIRIE_AUK_BH107 (2 nd and 3 rd visit) PRAIRIE_AUK_BH110 (2 nd and 3 rd visit)
		11/36	DWS	50	PRAIRIE_AUK_BH101S (2 nd and 3 rd visits) PRAIRIE_AUK_BH101D (2 nd and 3 rd visits) PRAIRIE_AUK_BH103 (all visits) PRAIRIE_AUK_BH107 (2 nd and 3 rd visit) PRAIRIE_AUK_BH110 (2 nd and 3 rd visit)
Ammoniacal Nitrogen*	µg/l	13/36	DWS	0.5	PRAIRIE_AUK_BH101S (all visits) PRAIRIE_AUK_BH101D (all visits) PRAIRIE_AUK_BH102 (all visits) PRAIRIE_AUK_BH106 (all visits) PRAIRIE_AUK_BH109 (2 nd visit)
Aromatic C5-C7	µg/l	1/36	EQS DWS	8 1	PRAIRIE_AUK_BH109 (1 st visit)
Xylenes**	µg/l	1/12	EQS	30	PRAIRIE_AUK_BH109 (1 st visit)
TPH	µg/l	9/36	DWS	10	PRAIRIE_AUK_BH101S (1 st and 3 rd visit) PRAIRIE_AUK_BH104 (1 st visit) PRAIRIE_AUK_BH107 (3 rd visit) PRAIRIE_AUK_BH108S (3 rd visit)

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 Environmental Site Assessment Addendum Report – 10035117

Contaminant	Unit	No. Samples Exceeding	WQS Exceeded		Monitoring Point
					PRAIRIE_AUK_BH108D (3 rd visit) PRAIRIE_AUK_BH109 (all visits)
		5/36	EQS	50	PRAIRIE_AUK_BH107 (3 rd visit) PRAIRIE_AUK_BH108S (3 rd visit) PRAIRIE_AUK_BH109 (all visits)
Naphthalene	µg/l	6/36	EQS DWS	2 2	PRAIRIE_AUK_BH101S (3 rd visit) PRAIRIE_AUK_BH102 (all visits) PRAIRIE_AUK_BH104 (1 st visit) PRAIRIE_AUK_BH109 (1 st and 2 nd visit)
Anthracene	µg/l	9/36	EQS	0.1	PRAIRIE_AUK_BH101S (1 st visit) PRAIRIE_AUK_BH101D (1 st visit) PRAIRIE_AUK_BH102 (all visits) PRAIRIE_AUK_BH104 (1 st visit) PRAIRIE_AUK_BH109 (all visits)
Fluoranthene	µg/l	33/36	EQS	0.0063	PRAIRIE_AUK_BH101S (all visits) PRAIRIE_AUK_BH101D (all visits) PRAIRIE_AUK_BH102 (all visits) PRAIRIE_AUK_BH103 (all visits) PRAIRIE_AUK_BH104 (1 st and 2 nd visit) PRAIRIE_AUK_BH105 (all visits) PRAIRIE_AUK_BH106 (all visits) PRAIRIE_AUK_BH107 (all visits) PRAIRIE_AUK_BH108S (all visits) PRAIRIE_AUK_BH108D (1 st and 3 rd visit) PRAIRIE_AUK_BH109 (all visits) PRAIRIE_AUK_BH110 (1 st and 3 rd visits)
Benzo(b)fluoranthene	µg/l	12/36	DWS	0.025	PRAIRIE_AUK_BH101S (1 st visit) PRAIRIE_AUK_BH101D (1 st and 3 rd visit) PRAIRIE_AUK_BH102 (1 st visit) PRAIRIE_AUK_BH103 (1 st and 3 rd visit) PRAIRIE_AUK_BH104 (1 st visit) PRAIRIE_AUK_BH106 (1 st visit) PRAIRIE_AUK_BH108S (2 nd visit) PRAIRIE_AUK_BH109 (all visits)

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 Environmental Site Assessment Addendum Report – 10035117

Contaminant	Unit	No. Samples Exceeding	WQS Exceeded		Monitoring Point
		14/36	EQS	0.017	PRAIRIE_AUK_BH101S (1 st visit) PRAIRIE_AUK_BH101D (1 st and 3 rd visit) PRAIRIE_AUK_BH102 (1 st visit) PRAIRIE_AUK_BH103 (all visits) PRAIRIE_AUK_BH104 (1 st visit) PRAIRIE_AUK_BH106 (1 st visit) PRAIRIE_AUK_BH108S (2 nd visit) PRAIRIE_AUK_BH108D (1 st visit) PRAIRIE_AUK_BH109 (all visits)
Benzo(k)fluoranthene	µg/l	5/36	DWS	0.025	PRAIRIE_AUK_BH103 (1 st visit) PRAIRIE_AUK_BH104 (1 st visit) PRAIRIE_AUK_BH109 (1 st and 2 nd visit)
		9/36	EQS	0.017	PRAIRIE_AUK_BH101S (1 st and 3 rd visits) PRAIRIE_AUK_BH103 (1 st and 3 rd visits) PRAIRIE_AUK_BH104 (1 st visit) PRAIRIE_AUK_BH106 (1 st visit) PRAIRIE_AUK_BH108S (2 nd visit) PRAIRIE_AUK_BH109 (1 st and 2 nd visit)
Benzo(a)pyrene	µg/l	12/36	DWS	0.01	PRAIRIE_AUK_BH101S (1 st visit) PRAIRIE_AUK_BH101D (1 st and 3 rd visits) PRAIRIE_AUK_BH102 (1 st visit) PRAIRIE_AUK_BH103 (1 st and 2 nd visits) PRAIRIE_AUK_BH104 (1 st visit) PRAIRIE_AUK_BH106 (1 st visit) PRAIRIE_AUK_BH108S (2 nd visit) PRAIRIE_AUK_BH109 (all visits)
		9/36	EQS	0.027	PRAIRIE_AUK_BH101S (1 st visit) PRAIRIE_AUK_BH103 (1 st and 2 nd visits) PRAIRIE_AUK_BH104 (1 st visit) PRAIRIE_AUK_BH106 (1 st visit) PRAIRIE_AUK_BH108S (2 nd visit) PRAIRIE_AUK_BH109 (all visits)
Indeno(1,2,3-c,d)pyrene	µg/l	8/36	DWS	0.025	PRAIRIE_AUK_BH101S (1 st visit) PRAIRIE_AUK_BH101D (1 st visit)

Contaminant	Unit	No. Samples Exceeding	WQS Exceeded		Monitoring Point
					PRAIRIE_AUK_BH103 (1 st and 3 rd visits) PRAIRIE_AUK_BH104 (1 st visit) PRAIRIE_AUK_BH106 (1 st visit) PRAIRIE_AUK_BH109 (1 st and 2 nd visit)
Benzo(g,h,i)perylene	µg/l	9/36	DWS	0.025	PRAIRIE_AUK_BH101S (1 st visit) PRAIRIE_AUK_BH101D (1 st visit) PRAIRIE_AUK_BH103 (1 st and 3 rd visits) PRAIRIE_AUK_BH104 (1 st visit) PRAIRIE_AUK_BH106 (1 st visit) PRAIRIE_AUK_BH108D (1 st visit) PRAIRIE_AUK_BH109 (1 st and 2 nd visit)
		15/36	EQS	0.00082	PRAIRIE_AUK_BH101S (1 st visit) PRAIRIE_AUK_BH101D (1 st and 3 rd visits) PRAIRIE_AUK_BH102 (1 st visit) PRAIRIE_AUK_BH103 (all visits) PRAIRIE_AUK_BH104 (1 st visit) PRAIRIE_AUK_BH106 (1 st and 3 rd visits) PRAIRIE_AUK_BH108S (2 nd visit) PRAIRIE_AUK_BH108D (1 st visit) PRAIRIE_AUK_BH109 (all visits)
1,2-dichloroethane**	µg/l	1/14	DWS	3	PRAIRIE_AUK_BH109 (1 st visit)

* DWS for Ammoniacal Nitrogen is for Ammonium as NH₄.

** Not tested for on all monitoring visits

4.3.4 Qualitative Risk Assessment for Substances in Groundwater without WQS

For several contaminants including some metals including beryllium, WQS are not readily available for comparison. Concentrations of beryllium were not measured above the laboratory MDL in any of the groundwater samples, where tested. As such, this compound is not considered to pose a significant risk to identified water resource receptors.

Analysis of groundwater for VOCs was undertaken on the first monitoring visit (May 2020) only so discussion of VOCs is presented in Arcadis 2020a and no additional data has been collected since this report was issued.

Five of the compounds: calcium, magnesium, sulphate, sulphur and chloride, are present naturally in groundwater. Considering the site setting (close to saline coastal environment) these compounds are not considered to pose a significant risk to water resources and will not be assessed further.

Given a number of PAHs do not have readily available WQS, assessment of the risk to water resources will be made using PAHs in groundwater that have available WQS. This is considered to be sufficiently protective of water resources.

4.3.5 Surface Water

A comparison of those compounds measured above MDL in one or both of the surface water samples is presented below:

Compound	Concentration upstream - SW1 (µg/l)	Concentration downstream – SW2 (µg/l)	Difference (µg/l)	Comparison to EQS where available (EQS saltwater µg/l)
Aluminium	15	35	+20	-
Antimony	0.33	0.42	+0.09	-
Arsenic	4.4	4.6	+0.2	Not in excess (25)
Barium	42	41	-1	-
Boron	260	270	+10	Not in excess (7000)
Total chromium	5.2	2.4	-2.8	-
Copper	2	2	0	Not in excess (3.76)
Iron	10	25	+15	Not in excess (1000)
Lead	0.13	<0.09	-0.04	Not in excess (1.3)
Magnesium	63000	65000	+2000	-
Manganese	70	52	-18	-
Molybdenum	1.9	2	+0.1	-
Nickel	1.9	3.6	+1.7	Not in excess (8.6)
Vanadium	1.5	2.5	+1	Not in excess (100)
Zinc	4.1	3.6	-0.5	Not in excess (7.9)
pH	7.8 pH units	8 pH units	+ 0.2 pH units	Not in excess (6 – 8.5)
Ammoniacal Nitrogen	0.11	<0.015	-0.095	-
Sulphate	680000	760000	+80000	-
Acenaphthylene	<0.01	0.02	+0.02	-
Acenaphthene	0.02	0.03	+0.01	-
Fluorine	0.01	<0.01	-0.01	-
Phenanthrene	0.04	<0.01	-0.03	-
Fluoranthene	0.05	0.02	-0.03	In excess (0.0063)
Pyrene	0.04	0.02	-0.02	-
Benzo(a)anthracene	0.01	<0.01	-0.01	-
Chrysene	0.01	<0.01	-0.01	-
Benzo(b)fluoranthene	0.01	<0.01	-0.01	Not in excess (0.017)
Benzo(g,h,i)perylene	0.01	<0.01	-0.01	In excess (0.00082)
Toluene	1	1	0	Not in excess (74)

When compared to EQS (estuaries and coastal), concentrations measured in both the upstream and downstream samples were below the EQS with the exception of fluoranthene and benzo(g,h,i)pyrene. Fluoranthene was measured in SW1 at concentrations of 0.05 µg/l and concentrations were 0.02 µg/l in SW2 when the surface water left the Prairie site. In both samples taken, the concentrations are marginally above the laboratory MDL (in the same order of magnitude). Concentrations of benzo(g,h,i)perylene were measured at the same concentration as the MDL (0.01 µg/l) in the upstream sample and below the MDL in the downstream sample. Whilst these concentrations are above the EQS, it is noted that concentrations have not increased as the Holme Beck travels through the site.

The surface water monitoring indicates that the quality of the surface water has not altered significantly as it passes through the site.

4.4 Discussion

Comparison of concentrations of CoC measured in the additional soil samples collected as part of the addendum ground investigation with GAC protective of human health indicate further consideration of concentrations of arsenic, total cyanide and free cyanide is warranted. Arsenic and total cyanide pose a potential risk to human health via the direct contact route and the risk via this pathway has been considered in the Remediation Options Appraisal (Arcadis 2020b) which suggests a clean cover system to break the pathway. Concentrations of free cyanide remain a potential risk via the vapour inhalation pathway and require further assessment. The Arcadis Detailed Conceptual Site Model and Risk Assessment report, currently *in press*, will further assess the risk to human health from concentrations of free cyanide measured in soil from chronic health effects.

The risk to human health from concentrations of CoC in groundwater from chronic exposure has been assessed as part of this report. Concentrations of CoC have not been identified in excess of the GAC where available, in any of the groundwater samples collected from the site. An appropriate GAC for free cyanide in groundwater has not been identified and as such the risk to human health from concentrations of free cyanide in groundwater cannot be ruled out. The Arcadis Detailed Conceptual Site Model and Risk Assessment report, currently *in press*, will further assess the risk to human health from concentrations of free cyanide measured in groundwater from chronic health effects.

Concentrations of multiple CoC in groundwater have been measured in excess of the WQS. In light of the additional data collected and presented in this report, refinement of the existing CSM for the site is considered warranted. A detailed CSM review using the additional information collected here will be undertaken as part of the Arcadis Detailed Conceptual Site Model and Risk Assessment report, currently *in press*.

5 Summary

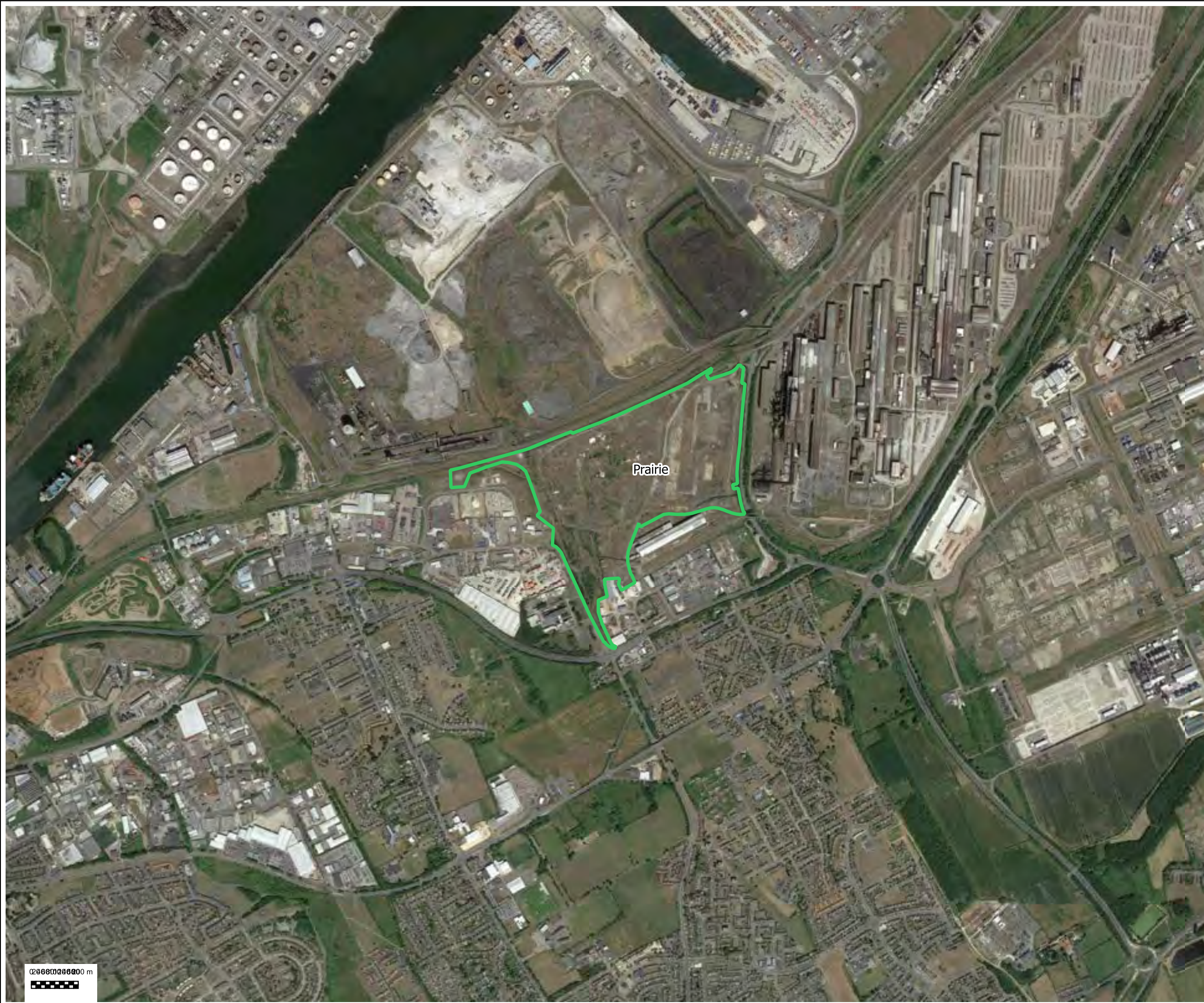
This addendum report presents additional data collected for the site after the issue of Arcadis 2020a. A GQRA has been undertaken for the additional data collected and the findings are in line with those of Arcadis 2020a. Concentrations of arsenic have been measured above the appropriate GAC protective of human health and concentrations of total cyanide have been identified as requiring further consideration. Arsenic and total cyanide poses a potential risk via the direct contact pathway and as such is addressed as part of the Arcadis Remedial Options Appraisal for the site (Arcadis 2020b). In line with Arcadis 2020a, the risk to human health from chronic health effects from concentrations of volatile compounds such as free cyanide will require further assessment, this is being undertaken as part of a detailed conceptual model review and risk assessment, currently *in press*.

In line with previous findings, a number of concentrations of CoC measured in groundwater have been identified above the WQS. A detailed conceptual site model review and risk assessment is being undertaken to further characterise pollutant linkages at the site using site-specific information. Further assessment will be undertaken as required, as part of that report.

The finding of this addendum report does not alter the conclusions of Arcadis' Remedial Options Appraisal and Strategy report (Arcadis 2020b). Other recommendations are in line with those given in Arcadis 2020a.

APPENDIX A

Figures



Legend

Site Boundary
Prairie

Notes:

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Title: **Prairie - Site Location Plan**

Site: **Redcar Steelworks (Prairie)**

Client:
South Tees Development Corporation

Project:
10035117

Figure 1

Date: 05/06/2020
Drawn By: JALM
DRG No: 10035117-AUK-XX-DR-ZZ-0063-01-Prairie_SLP

020000200000 m



APPENDIX B

Study Limitations

IMPORTANT: This section should be read before reliance is placed on any of the information, opinions, advice, recommendations or conclusions contained in this report.

1. This report has been prepared by Arcadis UK Ltd (Arcadis), with all reasonable skill, care and diligence within the terms of the Appointment and with the resources and manpower agreed with **STDC** (the 'Client'). Arcadis does not accept responsibility for any matters outside the agreed scope.
2. This report has been prepared for the sole benefit of the Client unless agreed otherwise in writing.
3. Unless stated otherwise, no consultations with authorities or funders or other interested third parties have been carried out. Arcadis are unable to give categorical assurance that the findings will be accepted by these third parties as such bodies may have unpublished, more stringent objectives. Further work may be required by these parties.
4. All work carried out in preparing this report has used, and is based on, Arcadis' professional knowledge and understanding of current relevant legislation. Changes in legislation or regulatory guidance may cause the opinion or advice contained in this report to become inappropriate or incorrect. In giving opinions and advice, pending changes in legislation, of which Arcadis is aware, have been considered. Following delivery of the report, Arcadis have no obligation to advise the Client or any other party of such changes or their repercussions.
5. This report is only valid when used in its entirety. Any information or advice included in the report should not be relied upon until considered in the context of the whole report.
6. Whilst this report and the opinions made are correct to the best of Arcadis' belief, Arcadis cannot guarantee the accuracy or completeness of any information provided by third parties.
7. This report has been prepared based on the information reasonably available during the project programme. All information relevant to the scope may not have been received.
8. This report refers, within the limitations stated, to the condition of the Site at the time of the inspections. No warranty is given as to the possibility of changes in the condition of the Site since the time of the investigation.
9. The content of this report represents the professional opinion of experienced environmental consultants. Arcadis does not provide specialist legal or other professional advice. The advice of other professionals may be required.
10. Where intrusive investigation techniques have been employed they have been designed to provide a reasonable level of assurance on the conditions. Given the discrete nature of sampling, no investigation technique is capable of identifying all conditions present in all areas. In some cases the investigation is further limited by site operations, underground obstructions and above ground structures. Unless otherwise stated, areas beyond the boundary of the site have not been investigated.
11. If below ground intrusive investigations have been conducted as part of the scope, service tracing for safe location of exploratory holes has been carried out. The location of underground services shown on any drawing in this report has been determined by visual observations and electromagnetic techniques. No guarantee can be given that all services have been identified. Additional services, structures or other below ground obstructions, not indicated on the drawing, may be present on Site.
12. Unless otherwise stated the report provides no comment on the nature of building materials,

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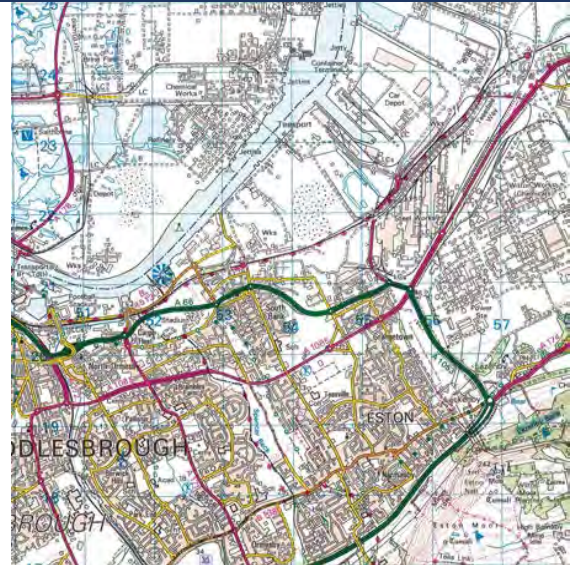
operational integrity of the facility or on any
regulatory compliance issue

Grangetown Prairie Area; Former Steelworks, Redcar.
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APPENDIX C

AEG Reports - 4251 Prairie Site Ground Investigation Works (Final Report r01) and 4287 Eston Road Intrusive Works (Final Report)

PRAIRIE SITE GROUND INVESTIGATION WORKS



Final Factual Report
(Rev.01)

**Allied
Exploration &
Geotechnics Ltd.**

Contract Number: 4251
Client: South Tees Development Corporation
Consulting Engineer: Arcadis

Date: November 2020

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REPORT CONTROL SHEET

Contract Details

Contract Title	Prairie Site Ground Investigation Works
Contract Number	4251
Location	Redcar Steelworks, TS6 7BJ
National Grid Reference	NZ 544 209

Report Details

Report Status	Final (Rev.01)		
Report Type	Factual		
Volume Number	1	of	1
Copy Number	PDF	of	PDF
Report Recipient	Jonathan Miles	Arcadis	

Client/Consultant Engineer Details

Client	Consultant Engineer
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Signed & Approved
On Behalf of Allied Exploration & Geotechnics Limited

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Technical Manager	Approved:	Date:
Kerry Wade BSc (Hons), MSc, FGS, MCMl		10/11/2020
Managing Director	Approved:	Date:
Nick Vater BSc (Hons), MSc, CGeol, EurGeol, FGS.		10/11/2020

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PRAIRIE SITE GROUND INVESTIGATION WORKS

Contents Page

1. INTRODUCTION.....3

1.1 Scope of Works3

2. THE SITE3

2.1 Location3

Figure 1: Site Location Plan.....4

2.2 Site Description and Topography.....5

3. SITE OPERATIONS.....5

3.1 General5

Table 1: British Standard Reference Code Number5

3.2 Health & Safety Considerations: Services6

3.3 Exploratory Holes: Boreholes6

3.4 Exploratory Holes: Mechanically Excavated Trial Pits6

3.5 Samples7

3.6 Groundwater7

3.7 Instrumentation & Monitoring.....7

3.8 Operative Observations: Potential Contamination.....8

3.9 Surveying8

4. IN-SITU TESTING.....8

4.1 General8

4.2 Standard Penetration Test Results8

4.3 Hand Shear Vane9

4.4 Photo Ionisation Detector (PID)9

4.5 Water Quality Parameter Testing9

4.6 Hydraulic Conductivity: Slug Tests.....9

5. LABORATORY TESTING10

5.1 General10

5.2 Geotechnical Testing10

Table 2: Geotechnical Testing10

5.3 Specialist Chemical Testing.....10

5.4 Laboratory Identified Asbestos10



FIELD DATA ENCLOSURES:

Key Sheets	0
Exploratory Hole Location Plan	1
Borehole Records	2
Trial Pit Records	3
Groundwater Observation Made at the Time of Site Works	4
Groundwater Monitoring Results	5
Gas Monitoring Results	6
Continuous Groundwater/Tidal Monitoring Results	7

IN-SITU TESTING ENCLOSURES:

Test Report Certificate	0
Standard Penetration Test Results	1
Hand Shear Vane Test Results	2
Photo-Ionisation Detector Test Results	3
<i>In-situ</i> Water Quality Parameter Test Results	4
Hydraulic Conductivity: Slug Test Results	5

LABORATORY ENCLOSURES:

Laboratory Report Certificate	0
Sample Description Sheets	1
Moisture Content/Plasticity Index and Moisture Content	2
Determination of Particle Density	3
Particle Size Distribution Sieving and Sedimentation	4
Determination of Calorific Value, Organic Matter Content, Sulphate and pH (Tested Externally)	5
Determination of Dry Density/Moisture Content Relationship	6
Determination of California Bearing Ratio	7
Determination of One Dimensional Consolidation Properties	8
Shear Strength by Hand Vane	9
Undrained Shear Strength in Triaxial Cell without Pore Water Pressure Measurement	10
Determination of Point Load Index	11
Determination of Unconfined Compressive Strength (Tested Externally)	12
Slay Analysis (Tested Externally)	13

APPENDICES:

Specialist Chemical Testing (Tested Externally)	Appendix I
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1. INTRODUCTION

The site work was commissioned in order to augment previous ground investigation work, and to determine the ground and groundwater conditions on site prior to the proposed remediation works.

Allied Exploration & Geotechnics Limited (AEG) were contracted by the South Tees Development Corporation with Arcadis acting in the capacity of Consulting Engineer to perform a ground investigation at this site in order to provide information on the subsurface ground and groundwater conditions as well as to obtain samples for geotechnical and specialist chemical testing.

1.1 Scope of Works

The investigation works consisted of the following main elements:

- Ten cable percussive boreholes, four of which were advanced using rotary coring techniques.
- One hundred and twenty two machine excavated inspection pits.
- Associated sampling.
- *In-situ* Standard Penetration, Hand Shear Vane, Photo-Ionisation Detector, *In-situ* Water Quality Parameter and Hydraulic Conductivity (Slug) Testing.
- Surface water sampling.
- Continuous groundwater/tidal monitoring.
- Installation of gas/groundwater monitoring instrumentation.
- Post site works gas/groundwater monitoring and groundwater sampling.

Site work was carried out between the 1st April and 5th May 2020 with subsequent post site work monitoring, laboratory testing and reporting thereafter. A factual report only was requested.

The comments and opinions expressed in this report are based on the ground conditions encountered during the site work and on the results of tests carried out in the field and in the laboratory. There may, however, be special conditions prevailing on the site which have not been disclosed by this investigation and which have not been taken into account by this report.

2. THE SITE

2.1 Location

The National Grid Reference of the approximate centre of the site is NZ 544 209. This can be found on Ordnance Survey 1:50,000 Sheet Number 93 (Middlesbrough, Darlington & Hartlepool). Part of this sheet is reproduced as Figure 1, the Site Location Plan.

The site is located approximately 5.00km East North East of Middlesbrough city centre, and 3.00km South of Teesport Docks.

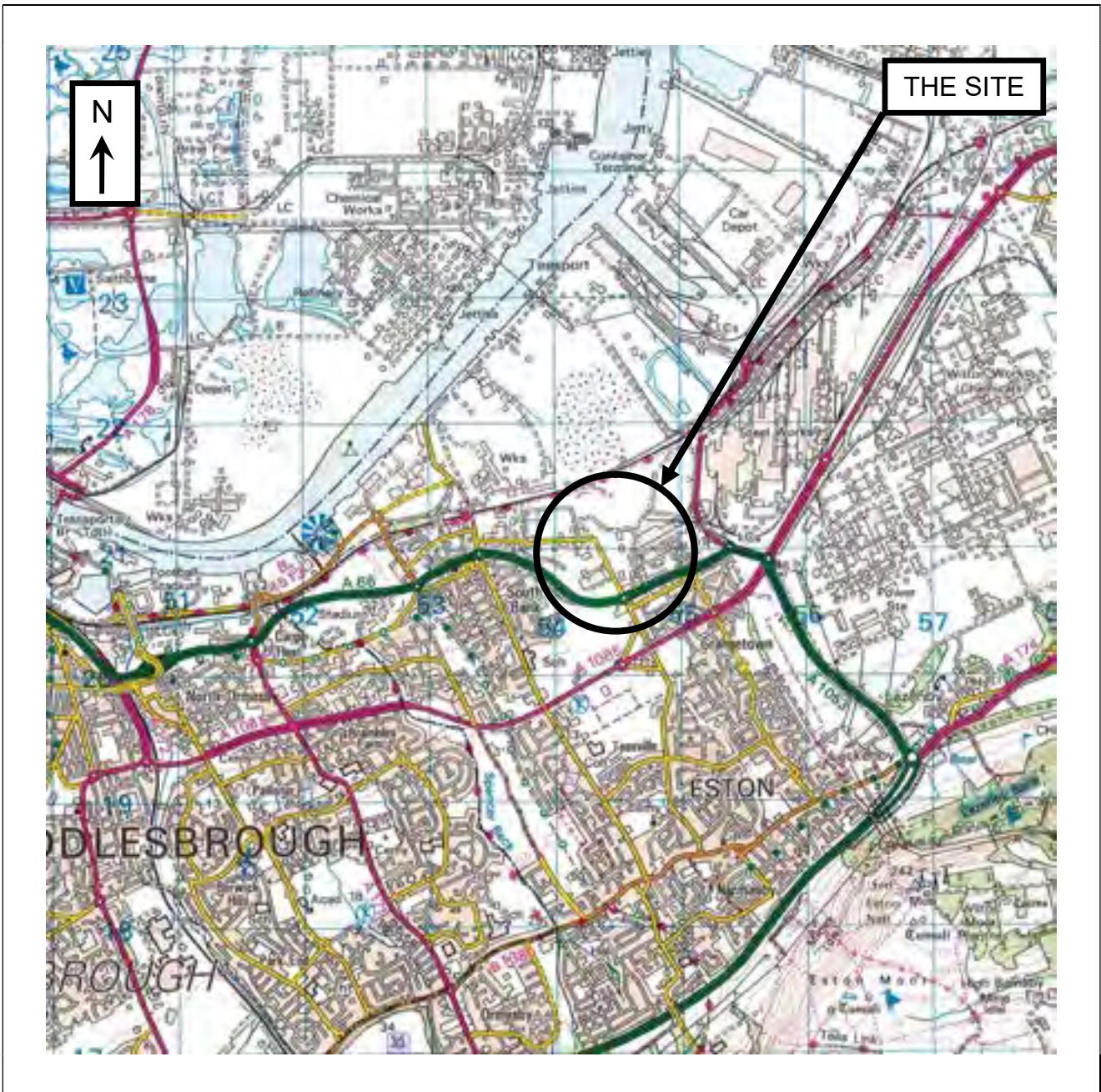


Figure 1: Site Location Plan

Reproduced from the Ordnance Survey 1:50,000 scale Landranger map by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office, Crown Copyright. All rights reserved. Licence number AL 100002282.

2.2 Site Description and Topography

The site is located off the A66 dual carriageway, and is bordered to the west by Eston Road and general industrial land uses on the outskirts of Middlesbrough. To the east, the site is bordered by Tees Dock Road, immediately beyond which is a British Steel Steelmaking Plant. To the south, there is an industrial estate, beyond which is the A66 and Grangetown, part of Middlesbrough's urban sprawl. The site is bounded to the north by the Darlington to Saltburn railway line, to the north of which lies more abandoned industrial land to the south of the River Tees.

The Prairie site can be accessed from Eston Road via the A66. The site previously comprised various heavy industrial uses and incorporated the former Cleveland South Steelworks, Coke Ovens and By-products plant. The infrastructure associated with these activities have all now been cleared to ground level, however significant foundations, infrastructure and base slabs are still in-situ; there areas that are anticipated to hold higher levels of contamination.

3. SITE OPERATIONS

3.1 General

All exploratory hole work, associated sampling, *in-situ* testing and logging was carried out in accordance with techniques outlined in Table 1, as appropriate; at positions as near as practicable to those supplied by the Consulting Engineer. These are shown on the Exploratory Hole Location Plan, Field Data Enclosure 1.

Reference Code Number	Title
BS 1377:1990	Methods of Test for Soils for Civil Engineering Purposes (where not in contravention or superseded by Eurocode references)
BS 5930:2015	Code of Practice for Ground Investigation (where not in contravention or superseded by Eurocode references)
BS EN ISO 14689-1:2003	Identification and Classification of Rock
BS EN ISO 14688-1:2002 & 14688-2:2004	Identification and Classification of Soil
BS 10175:2011+A2:2017	Investigation of Potentially Contaminated Sites
BS EN ISO 22476-3: 2005	Geotechnical investigation and testing - Field testing - Part 3 Standard Penetration Testing

Table 1: British Standard Reference Code Number

The depths of all exploratory holes, descriptions of the material encountered, details of any groundwater encountered, samples taken and *in-situ* testing carried out together with any other relevant information can be found on the Borehole and Trial Pit Records, Field Data Enclosures 2 and 3 respectively. A key to all symbols and abbreviations used throughout the report is included in the Key Sheets.

The primary purpose of ground investigation exploratory holes is to probe the stratified sequences of soil and/or rock. From the results of these probings no conclusion should be drawn concerning the presence of, size, lithological nature, and numbers per unit volume of ground cobbles and boulders in soil types such as glacial till (boulder clay). With respect to rotary coring, driller's records and observations of the recovered core

are used to determine any zones of no recovery (core loss). These zones are based on the interpretation of the logging engineer and are therefore subjective. Refer to the Key Sheets for further information.

3.2 Health & Safety Considerations: Services

Before the commencement of any exploratory hole a search for underground services was conducted as prescribed in HSE publication 'Avoiding Underground Services (HSG47)' and in accordance with in-house internal safety procedure AEG-14.

Service plans were provided by the Client and were consulted prior to using a service locating device (such as a Cable Avoidance Tool or C.A.T.) to scan a working area around the proposed exploratory hole location. Where no services were indicated a 'Permit-to-Work' form was issued by the investigation supervisor and, with the exception of trial pits/trenches, the position was commenced with a hand excavated inspection pit. The inspection pit was also scanned during the excavation procedure. It should be noted that the digging of an inspection pit only confirms or guards against the possible presence of underground public utility services within the excavated pit. Where no services were indicated by the scanning procedure or inspection pit the exploratory hole was commenced in accordance with the Contract Specification.

Services were encountered in many of the trial pits. Details of any services uncovered/located during this investigation are given in the relevant Trial Pit Records. If required, the position was relocated in agreement with the Consulting Engineer, otherwise the position was continued with care.

3.3 Exploratory Holes: Boreholes

Ten boreholes were sunk using a Dando 2000 drilling rig, utilising cable percussive (shell and clay cutter) techniques, to depths of between 6.80m (PRAIRIE_AUK_BH109) and 18.40m BGL (PRAIRIE_AUK_BH101). Four boreholes were further advanced using either a Boart Longyear DB540 or a Comacchio GEO 305, utilising rotary coring methods, to depths of between 11.80m (PRAIRIE_AUK_BH109) and 20.80m BGL (PRAIRIE_AUK_BH110).

Rotary coring employed a 'P' (121mm OD) barrel in combination with P.C.D. drill bit together with water flushing medium. This coring assembly was used to recover 92mm lined cylindrical specimens of rock core. The Borehole Records and a summery table of any relevant remarks are presented as Field Data Enclosure 2.

3.4 Exploratory Holes: Mechanically Excavated Trial Pits

One hundred and twenty two trial pits were mechanically excavated using a 360 tracked excavator to depths of between 0.10m (PRAIRIE_AUK_TP146A) and 5.20m BGL (PRAIRIE_AUK_TP199). The Trial Pit Records and a summery table of any relevant remarks are presented as Field Data Enclosure 3.

3.5 Samples

Representative samples of soil, water and rock were obtained from the exploratory holes and were taken to the laboratory for selected geotechnical and specialist chemical testing. Three surface water samples and one soil sample was taken from locations across the site. These are shown on the Exploratory Hole Location Plan, Field Data Enclosure 1.

Environmental samples were taken in accordance with the contract specification during the investigation using an approved selection of container types in order to suit the encountered material properties and designated laboratory analytical parameters. Full chain of custody procedures were in place post sampling and during the transportation stage to the nominated specialist chemical laboratory. Environmental samples were administered appropriately following the best practice guidance provided in the contract specification.

3.6 Groundwater

The comments on groundwater conditions are based on the observations made at the time of investigation. It should be noted that groundwater levels may vary due to seasonal and other effects. Furthermore, water was added during advancement of the boreholes in order to facilitate drilling operations. As a consequence there is a possibility that this could have masked the discrete ingress of natural groundwater into the boreholes, which subsequently may have been sealed as a result of progressing the casing.

Groundwater was encountered in the exploratory holes during the site works operation. Where groundwater observations were made details are given on the relevant Exploratory Hole Record and in greater detail (collectively in tabulated format) as Field Data Enclosure 4: Groundwater Observations Made at the Time of Site Works. Standing groundwater levels were recorded many exploratory holes at the beginning and/or end of each drilling shift. The water level is indicated on the applicable Exploratory Hole Record as part of the boring progress information.

3.7 Instrumentation & Monitoring

All ten boreholes (PRAIRIE_AUK_BH101 to PRAIRIE_AUK_BH110 inclusive) were installed with monitoring instrumentation in accordance with the requirements of the Consulting Engineer. Details of the installations are shown in the Borehole Summary Table within Field Data Enclosure 2.

Instruments were monitored for gas and groundwater on three occasions; one week after the completion of the site works, and two fortnightly thereafter in accordance with the Contract Specification. A record of the readings is presented as Field Data Enclosure 5 (Groundwater Monitoring Results) and Field Data Enclosure 6 (Gas Monitoring Results).

Continuous monitoring was undertaken using a mini diver instrument. The instrument was installed into PRAIRIE_AUK_BH101, PRAIRIE_AUK_BH103 and PRAIRIE_AUK_BH108 on 7th May 2020 in order to assess groundwater fluctuations over the period of a complete tidal cycle. The tidal cycle readings are presented as Field Data Enclosure 7.

3.8 Operative Observations: Potential Contamination

For the purposes of determining the condition of the site, with regard to human health and environmental issues, reference should specifically be made to any specialist chemical testing undertaken as part of the investigation scheme, as well as any supporting desk study and risk assessment documentation. The information given herein collates the observations made by the operatives involved in the investigation only and comments that have been indicated on the engineering records.

Where there was potential evidence of contamination, principally as a consequence of olfactory and visual identification, information is provided in the relevant Borehole and Trial Pit Records.

It should be stressed that the information provided herein is subjective, as it is based on the perceptions of individuals and not specialists routinely involved in the chemical determination of contaminated residues, liquors, vapours or solid contaminants.

3.9 Surveying

The investigation positions were surveyed after completion of site works using a Leica Smartrover (Model ATX 1230+ GNSS) GPS based instrument which provides corrected Ordnance Survey co-ordinates in real time to an accuracy of within ± 30 mm vertical and ± 30 mm horizontal. These positions have been subsequently plotted in AutoCAD® software and are shown on the Exploratory Hole Location Plan, Field Data Enclosure 1.

4. IN-SITU TESTING

4.1 General

In-situ testing as specified by the Consulting Engineer was carried out in selected boreholes in accordance with techniques outlined in the relevant British Standard and/or AEG Quality Procedure. The results are presented in the *In-situ* Testing Enclosures with a number of the test results summarised at the relevant depth on the Borehole Records.

4.2 Standard Penetration Test Results

Standard Penetration Testing (SPT) was carried out in the boreholes in accordance with techniques outlined in BS EN ISO 22476-3: 2005 in order to determine the relative density and consistency of the strata encountered. The 'N' value (number of blows per 300mm penetration) or the penetration per blow was recorded for each test. Uncorrected 'N' values or penetration per blow data are provided on the applicable Borehole Records. (Refer to page 6 of the key sheets for further details).

More detailed information concerning the standard penetration testing is given in *In-situ* Testing Enclosure 1 which includes the following;

- Initial exploratory hole conditions prior to the test procedure.

- Calibration and energy ratio (E_m) information for the SPT hammer device used to carry out the test.
- A breakdown of blows for each 75mm penetration interval.
- Rod length (C_R) and energy (C_E) correction ratios.
- Uncorrected 'N' value.
- Corrected 'N₆₀' value that applies the rod (C_R) and energy (C_E) corrections indicated.
- Pertinent remarks corresponding to the test procedure.

In addition to the above, a graph has been prepared for each exploratory hole which plots the uncorrected and corrected 'N' value results against depth. Calibration certificates for the SPT apparatus used during the testing procedure are also presented for reference within this *In-situ* Testing Enclosure.

4.3 Hand Shear Vane

Hand shear vane testing using calibrated Edeco Pilcon Hand Vane equipment was carried out in selected trial pits in accordance to the ground conditions encountered. The results are presented in detail within *In-situ* Testing Enclosure 2 with the average peak and residual shear strength values provided on the applicable Trial Pit Record.

4.4 Photo Ionisation Detector (PID)

Photo-ionisation detector (PID) screening for semi-volatile and volatile organic compounds was conducted on selected environmental samples taken during the investigation using a MiniRAE 2000. The results for the sample based PID tests are recorded in tabular format as *In-situ* Testing Enclosure 3 and, where applicable, on the Borehole and Trial Pit Records.

4.5 Water Quality Parameter Testing

Groundwater sampling was undertaken from all but one (BH102) of the installations during the second round of post site works monitoring in accordance with techniques outlined in the relevant British Standard and/or AEG Quality Procedure. Water Quality Parameters were recorded for the purged water prior to sampling. The parameters tested were pH, temperature, electrical conductivity, redox potential, total dissolved solids and dissolved oxygen. The results are presented in tabular format as *In-situ* Testing Enclosure 4.

4.6 Hydraulic Conductivity: Slug Tests

Hydraulic conductivity testing was carried out in four selected monitoring standpipes PRAIRIE_AUK_BH101, PRAIRIE_AUK_BH103, PRAIRIE_AUK_BH108 and PRAIRIE_AUK_BH110 using the Displacement (Slug) Test Method. A mini-diver was installed in the standpipes prior to inserting the slug in order to continuously log the groundwater level during the test. A mechanical slug was then used to perform variable head (rising and falling) permeability tests within the instrumentation. The Hydraulic Conductivity (Slug Tests) results are presented in graphical format showing the rising and falling conditions as *In-situ* Testing Enclosure 5.

5. LABORATORY TESTING

5.1 General

Laboratory testing as scheduled by the Consulting Engineer was carried out on selected samples in accordance with techniques outlined in BS 1377:1990, AEG Laboratory Quality Procedures or other appropriate standard as quoted.

5.2 Geotechnical Testing

The results are presented in the Laboratory Enclosures with an outline list of the procedures undertaken given in Table 2.

Test	Procedure
Moisture Content	BS 1377 Part 2 1990 (BS EN ISO 17892-1:2014)
Plasticity Index and Moisture Content	BS 1377 Part 2 1990 (BS EN ISO 17892-1:2014)
Determination of Particle Density	BS 1377 Part 2 1990
Particle Size Distribution Sieving	BS 1377 Part 2 1990
Particle Size Distribution Sedimentation	BS 1377 Part 2 1990
Determination of Calorific Value, Organic Matter Content, Sulphate and pH (Tested externally)	See External Laboratory Certificates
Determination of Dry Density/Moisture Content Relationship	BS 1377 Part 4 1990
Determination of California Bearing Ratio	BS 1377 Part 4 1990
Determination of One Dimensional Consolidation Properties	BS 1377 Part 5 1990
Shear Strength by Hand Vane	BS 1377 Part 7 1990
Undrained Shear Strength in Triaxial Cell without Pore Water Pressure Measurement	BS 1377 Part 7 1990
Determination of Point Load Index	ISRM 1985
Determination of Unconfined Compressive Strength (Tested externally)	ISRM 1985
Slag Analysis (Tested externally)	

Table 2: Geotechnical Testing

5.3 Specialist Chemical Testing

Selected samples have been submitted for chemical analysis as specified the Consulting Engineer, conducted under a subcontract arrangement with Derwentside Environmental Testing Services (DETS). The results of this testing are presented as Appendix I.

5.4 Laboratory Identified Asbestos

Selected samples were analysed for asbestos content as specified by the Consulting Engineer. A number of tested samples were found to contain asbestos the details of which are presented in within the specialist chemical testing results report (see Appendix I for further details).

Key Sheets





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Key Sheets



INTRODUCTION

The following explanatory notes define the terminologies, abbreviations and symbols pertaining to each individual column or section of the Exploratory Hole records. 'Exploratory Hole' is used as a general term in this report to comprise borehole, drillhole, and trial pit. All exploratory hole records have been produced using 'gINT®', which is an integrated software environment for the storage and manipulation of subsurface data.

The primary purpose of ground investigation exploratory holes is to probe the stratified sequences of soil and/or rock. From the results of these probings no conclusion should be drawn concerning the presence of, size, lithological nature, and numbers per unit volume of ground cobbles and boulders in soil types such as glacial till (boulder clay). With respect to rotary coring, driller's records and observations of the recovered core are used to determine any zones of no recovery (core loss). These zones are based on the interpretation of the logging engineer and are therefore potentially subjective. In addition, where relevant, every effort is made to highlight material/zones that may relate to suspected old workings. However, it should be noted that this is not straightforward (especially without detailed information regarding anticipated subsurface conditions) and therefore no guarantee can be made with regards to the accuracy of the interpretation of the recovered core.

INFORMATION COMMON TO ALL EXPLORATORY HOLE RECORDS

Status Box

The status box in the top right hand corner of each exploratory hole record gives the status of each individual record i.e. PRELIM1, PRELIM2, PRELIM3 FINAL etc. The date shown relates to the last instance the data was revised. This information is for AEG Quality Assurance only.

Exploratory Hole No

The identity number used throughout the report.

Project

The ground investigation project name. Occasionally the project name may be shortened or abbreviated due to string length restraints imposed by the gINT® computer programme.

Client

Client's name responsible for funding the ground investigation project. The Client's name may be shortened or abbreviated due to string length restraints imposed by the gINT® computer programme.

Location

The exploratory hole position given as either national grid co-ordinates, local grid if specified, or a reference name normally pertaining to the area of investigation.

Method (Equipment)

Represents the drilling, excavation or boring method(s) or equipment used.

Ground Level (m(AOD))

The precise ground level in metres above Ordnance Datum at the exploratory hole location from which the reduced level for each stratigraphic boundary is calculated.

Date

The date relating to the start of the exploratory hole excavation.

Sheet

The sheet number and total number of sheets for the particular record.

Checked By

Printed signature of the person who has carried out the technical quality check on the log.

Logged By

The name of the engineer who has carried out the logging of the exploratory hole.

Contract No.

The Allied Exploration & Geotechnics Limited reference number for the project.



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Key Sheets






INFORMATION RELEVANT TO BOREHOLE AND WINDOW/WINDOWLESS SAMPLE HOLE RECORDS

Sample & Tests Columns

Depth	The depth over which a sample or test is taken is shown in depth column of the exploratory hole record in a "from...to" format.
Type No	Indicates the type of sample/test and number given by the driller.
Test Result	Result of the test given in the applicable units.

Water Column

Water Strike	Level of groundwater strike within an exploratory hole. The symbol  denotes a water strike and is suffixed with a number, which indicates the strike order. The corresponding unfilled symbol  is the depth the strike rose to.
Seepage	Groundwater seepage within an exploratory hole is denoted by the  symbol.

Strata Columns

Reduced Level	The corresponding reduced level of each soil or rock boundary in metres Ordnance Datum.
Legend	A graphical representation of the materials encountered using BS 5930:1999 Amendment No.2 (Aug 2010) recommended symbols for soil and rock.
Depth (Thickness)	The depth below ground level of each soil or rock boundary in metres and the thickness of each individual stratigraphic unit (given in brackets).
Description	Engineering description of each individual soil or rock type follows recommendations outlined in Section 6 of BS 5930:1999 Amendment No.2 (Aug 2010) with the following implementation: <ol style="list-style-type: none"> The amendment of section 6 incorporates the guidance indicated in BS EN ISO 14688-1:2002, BS EN ISO 14688-2:2004 and BS EN ISO 14689-1:2003 European Standard with particular emphasis on current UK practice. Supplementary laboratory or in-situ assessed measurements of undrained strength are provided where applicable information is available in parenthesis in accordance with clause 41.3.2 BS 5930:1999 Amendment No.2 (Aug 2010) after the field strength determined consistency. The description based measurement table indicating the quantitative undrained strength classification divisions is provided in Key Sheets Table 1.

Term based on measurement	Undrained strength classification definition cu, in kPa (from BS EN ISO 14688-2:2004, 5.3, Table 5)
Extremely low	<10
Very low	10-20
Low	20-40
Medium	40-75
High	75-150
Very High	150-300
Extremely High	300-600

KEY SHEETS TABLE 1

- Cobble and boulder content is expressed in accordance with the terms provided in EN ISO 14688-2: 2004 where visually identified in trial pit excavations, or inferred/recovered during the drilling operations. The assessment of frequency and spatial occurrence of coarse and very coarse rock material should not be considered as precise, but only an indicator or estimate of the potential conditions. It should be noted that the recovery of coarse or very coarse particles in boreholes is dependent on the limitations imposed by the casing diameter. The terminology used is outlined in Key Sheets Table 2.



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Key Sheets



Fraction	Percent by Mass	Term
Boulders	<5	Low boulder content
	5 to 20	Medium boulder content
	>20	High boulder content
Cobbles	<10	Low cobble content
	10 to 20	Medium cobble content
	>20	High cobble content

KEY SHEETS TABLE 2

- 4 Rock Strength based on assessed field or measured unconfined compressive strength follows the classification scheme given in clause 44.2.1 BS5930:1999 Amendment No.2 (Aug 2010) as outlined in Key Sheets Table 3.

Term for use in field or based on measurement	Definition for field use	Definition on basis of Unconfined Compressive Strength measurement (MPa)	Old Classification of rock strength: Terminology (Strength Range MPa)	Old Classification of rock strength: Determination Method
Extremely weak	Can be indented by thumbnail. Gravel sized lumps crush between finger and thumb.	0.6-1.0	Very Weak (<1.25)	Lumps can be crushed between fingers
Very weak	Crumbles under firm blows with point of geological hammer. Can be peeled by a pocket knife.	1-5	Weak (1.25 – 5)	Lumps can be broken with heavy hand pressure
Weak	Can be peeled by a pocket knife with difficulty. Shallow indentations made by firm blow with the point of geological hammer.	5-25	Moderately Weak (5-12.50)	This slab can be broken with heavy pressure
Medium Strong	Cannot be scraped with pocket knife. Can be fractured with a single firm blow of geological hammer.	25-50	Moderately Strong (12.50-50)	Rock can be broken in the hand with a hammer
Strong	Requires more than one blow of geological hammer to fracture.	50-100	Strong (50-100)	Rock can be broken on a flat surface using a hammer
Very Strong	Requires many blows of geological hammer to fracture.	100-250	Very Strong (100-200)	Rock chipped by blows with a hammer
Extremely strong	Can only be chipped with geological hammer.	>250	Extremely Strong (>200)	Rock rings when hit with a hammer
Based on BS EN ISO 14689-1:2003 4.2.7, Table 5			BS5930: 1999 – Section 6 (Superseded Version)	

KEY SHEETS TABLE 3

- 5 Where 'rock weathering classification' can be applied it is 'Approach 4' which will be used. If any other approach is used the factual text of the report will provide details of the applicable specific approach. (Ref.: Figure 19, p143, BS 5930:1999 Amendment No.2 (Aug 2010)). An outline of the 'Approach 4' rock weathering classification scheme is provided as Key Sheets Table 4.

APPROACH 4 CLASSIFICATION INCORPORATING MATERIAL AND MASS FEATURES		
Class	Classifier	Typical characteristics
A	Unweathered	Original strength, colour, fracture spacing
B	Partially weathered	Slightly reduced strength, slightly closer fracture spacing, weathering penetrating in from fractures, brown oxidation
C	Distinctly weathered	Further weathered, much closer fracture spacing grey reduction
D	Destructured	Greatly weakened, mottled, ordered lithorelics in matrix becoming weakened and disordered, bedding disturbed.
E	Residual or reworked	Matrix with occasional altered random or 'apparent' lithorelics, bedding destroyed. Classed as reworked when foreign inclusions are present as a result of transportation.

KEY SHEETS TABLE 4



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Key Sheets



Instrument/Backfill Column

A graphical representation of backfill material or instrumentation detail using graphic legends. Its placement in the column is relative to depth in metres and corresponds to the exploratory hole in scale.

Boring Progress and Water Observations Columns

This section provides information on each day's production as a daily log.

Date	Date of shift.
Depth	Depth of hole at the start of the shift.
Casing	Casing's depth at the start of the shift.
Casing Dia	Casing's diameter at the start of the shift.
Water Depth	Water level within the borehole at the start and end of shift.

Chiselling Columns

Indicates where hard strata occurred in the borehole and breaking out was carried out to advance the borehole.

From	The depth commenced.
To	The depth finished.
Hours	The time spent for breaking out.

Water Added Columns

Indicates the depth range where water was added to the borehole to facilitate boring or to prevent stress relief disturbance "blowing/boiling" in granular soils.

From	Depth in metres from where water was added.
To	Depth in metres to where water was added.

General Remarks

Any remarks believed to be relevant to the exploratory hole.

INFORMATION RELEVANT TO PIT/TRENCH RECORDS

The pit/trench records follow the same format as the borehole and window/windowless sample hole records for the Samples & Tests, Water and Strata columns. However, in addition to these there are the following:

Plan

A schematic plan view of the pit showing its excavated dimensions together with its orientation, given as a compass bearing to magnetic north.

Groundwater

Notes on water bearing horizons.

Stability

The engineer's comments outlining the stability of the sides during pit excavation.

General Remarks

The engineer's comments of any other information relevant to construction of the pit.

Additional Information

An indication if a sketch and/or photographs accompany the record.



Allied Exploration and Geotechnics Limited

Key Sheets



Underground Services

Depth	Depth service was encountered.
Orientation	Orientation given as a compass bearing to magnetic north.
Type	Type of service encountered.
Diameter	Diameter of service encountered.
Condition	Condition the service encountered was noticed in.

INFORMATION RELEVANT TO DRILLHOLE RECORDS AND ROTARY CONTINUATION

Run Details Columns

Depth	Each drill run is highlighted by a horizontal line with the top and bottom depths shown in metres. Core diameter (C Dia) is presented also within each run.
TCR (SCR) RQD	Information provided on the total core recovery, solid core recovery and rock quality designation. Refer to Abbreviations for further details.
Fracture Index	Information given relating to the fracture index of the rock.

Strata Columns

As the strata columns for borehole and window/windowless sample hole records except for description which is as follows:

Discontinuities Detail	Information on core discontinuities, localised variations in weathering, lithology, strength and structure follows recommendations outlined in Section 6 BS 5930:1999 Amendment No.2 (Aug 2010): Clause 44.
Main	Engineering description of each individual soil or rock type follows recommendations outlined in Section 6 of BS 5930:1999 Amendment No.2 (Aug 2010).

Instrument/Backfill Column

A graphical representation of backfill material or instrumentation detail using graphic legends. Its placement in the column is relative to depth in metres and corresponds to the exploratory hole in scale.

Drilling Progress and Water Observations Columns

Date	Date of shift.
Depth	Depth of hole at the start of the shift.
Casing	Casing's depth at the start of the shift.
Water Strike	Depth at which water was encountered.
Water Standing	Depth at which water in the hole levelled off.
Water Remarks	Any remarks believed to be relevant to the water e.g. Artesian.

Standard Penetration Test

Depth	The depth commenced.
Type	Type of standard penetration test (SPT).
Result	Result of SPT.

Flush

From	The depth commenced.
To	The depth finished.
Type	Details of the type of flush used. A = Air, F = Foam, W = Water and Pol = Polymer.
Returns	An indication of the percentage of the returned flush material.

General Remarks

Any remarks believed to be relevant to the exploratory hole.



Allied Exploration and Geotechnics Limited

Key Sheets



SAMPLES

B	Bulk disturbed sample.
ES	Environmental soil sample.
EW	Environmental water sample.
G	Gas sample.
J	Small disturbed sample.
LB	Large bulk disturbed sample.
P	Piston sample.
P*	An attempted but failed undisturbed piston sample.
U	Undisturbed sample.
U*	An attempted but failed general purpose undisturbed sample.
U _(ss)	Sample has been subsampled.
ES _(U)	Brackets following a sample denotes a subsample. The sample information within the brackets is the origin of the subsample.
W	Water sample.

IN-SITU TESTS

CBR	California Bearing Ratio mould sample or test.
HSV	In-situ hand shear vane.
HSV*	An attempted but failed in-situ hand shear vane.
HSV result of e.g 80(20)kPa	Denotes average HSV peak result followed by average HSV residual result (in brackets).
HP	Hand penetrometer test.
K (F)	Falling head permeability test.
K (R)	Rising head permeability test.
K (C)	Constant head permeability test.
K (P)	Packer permeability test.
PT	Pressuremeter test.
PID	Photo ionisation detector test.
FID	Flame ionisation detector test.
S	Standard Penetration Test (SPT) using the split barrel sampler (shoe). The corresponding uncorrected 'N' value is given in the test result column with more detailed information provided in the In-Situ Testing Enclosures where applicable. Testing has been conducted in accordance with BS EN ISO 22476-3: 2005.
C	Denotes SPT test using a solid cone in preference to the split barrel sampler (usually in coarse granular soil) with all other reporting requirements as outlined above for the split barrel sampler.
S/C result of e.g. 1/2.94	Denotes where full penetration has not been achieved during the SPT test. In such cases the penetration (mm) per blow is recorded in the test result column e.g. 1/2.94 is 2.94mm of penetration per single blow.
SV	In-situ down-the-hole shear vane test. The remoulded shear strength is given in brackets.

ROCK QUALITY AND CORE RECOVERY

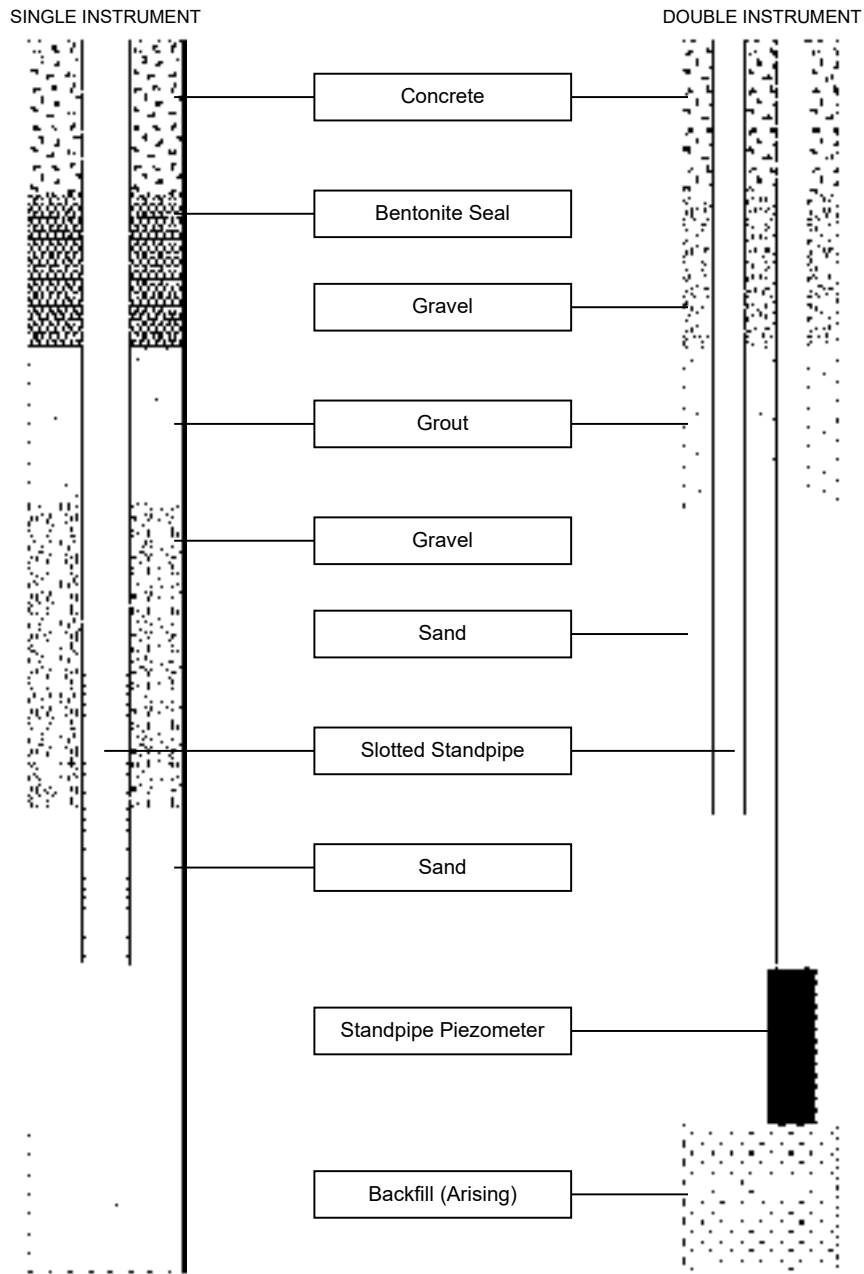
TCR	Total Core Recovery - the length of the recovered core expressed as a percentage of the length of core run.
SCR	Solid Core Recovery - the sum length of all core pieces that are recovered with at least one full diameter, expressed as a percentage of the length of core run.
RQD	Rock Quality Designation - The sum length of all core pieces that are 100mm or longer (measured along the centre of the core), expressed as a percentage of the length of core run.
FI	Fracture Index - The number of fractures per 1000mm length of solid core.
NI	Non-intact - The material recovered in a non-intact state.
NR	No recovery from the core run. These zones are based on the interpretation of the logging engineer and are therefore potentially subjective.



Allied Exploration and Geotechnics Limited Key Sheets



Symbols and Abbreviations: Explanation of Instrumentation Legends Used

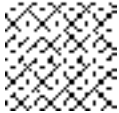

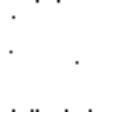


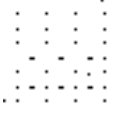
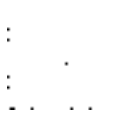
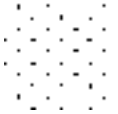


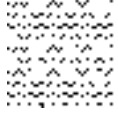


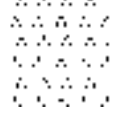
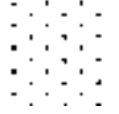


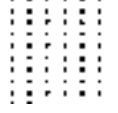
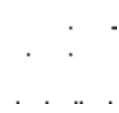
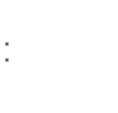
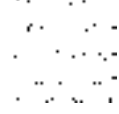









Allied Exploration and Geotechnics Limited Key Sheets



Symbols and Abbreviations: Explanation of Legends Used

Soils	Rocks		
	<i>Sedimentary</i>	<i>Metamorphic</i>	<i>Igneous</i>
 Made Ground	 Chalk	 Coarse Grained	 Coarse Grained
 Cobbles and Boulders	 Limestone	 Medium Grained	 Medium Grained
 Gravel	 Conglomerate	 Fine Grained	 Fine Grained
 Sand	 Breccia		
 Silt	 Sandstone		
 Clay	 Siltstone		
 Peat	 Mudstone		
 Topsoil	 Shale		
 Silty Sand	 Coal		
	 Pyroclastic (Volcanic Ash)		
	 Gypsum		

Note: Composite soil types will be signified by combined symbols e.g.




Exploratory Hole Location Plan

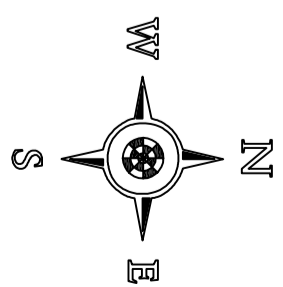




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KEY:

-  BOREHOLE
-  TRIAL PIT
-  SURFACE WATER SAMPLE



Base Plan Supplied by Consulting Engineer

Drawing Title:
ENC 01 : Exploratory Hole Location Plan

Drawing No.:
AEG/4251/01

Contract Title:
Prairie Site Ground Investigation Works

Client:
Teess Valley Combined Authority
Teesside Management Office, Trunk Road,
Redcar, TS10 5QW

Consultant:
Arcadis
1 Whitehall Riverside
Leeds, LS1 4BN

Contract No.:
4251

Scale:
1:2500 @ A3

Date:
05/11/2020

Borehole Records



Borehole Summary Table

Exploratory Hole Number	Drilling Method	Completion Depth (m BGL)	Depth of installation (m BGL)	Diameter/Type of instrumentation	Instrumentation Response zone (m BGL)	Remarks
PRAIRIE_A UK_BH101	CP	18.40	10.00	19mm diameter standpipe piezometer	4.00-10.00	Advanced through PRAIRIE_AUK_TP127A. Advanced to required depth.
			16.50	50mm diameter slotted standpipe	14.50-16.50	
PRAIRIE_A UK_BH102	CP	8.00	7.20	50mm diameter slotted standpipe	2.00-7.20	Advanced through PRAIRIE_AUK_TP121. Advanced to required depth.
PRAIRIE_A UK_BH103	CP	13.80	8.50	50mm diameter slotted standpipe	3.00-8.50	Advanced through PRAIRIE_AUK_TP107. Advanced to required depth.
PRAIRIE_A UK_BH104	CP+RC	18.50	18.50	50mm diameter slotted standpipe	14.50-18.50	Advanced through PRAIRIE_AUK_TP105. Continued by rotary coring from 13.50m BGL. Advanced to required depth.
PRAIRIE_A UK_BH105	CP	12.00	11.00	50mm diameter slotted standpipe	8.00-11.00	Advanced through PRAIRIE_AUK_TP135. Advanced to required depth.
PRAIRIE_A UK_BH106	CP	10.80	10.00	50mm diameter slotted standpipe	4.00-10.00	Advanced through PRAIRIE_AUK_TP131. Advanced to required depth.
PRAIRIE_A UK_BH107	CP	9.50	9.50	50mm diameter slotted standpipe	4.00-8.00	Advanced through PRAIRIE_AUK_TP181. Advanced to required depth.
PRAIRIE_A UK_BH108	CP+RC	14.00	6.00	19mm diameter standpipe piezometer	3.00-6.00	Advanced through PRAIRIE_AUK_TP156A. Continued by rotary coring from 9.50m BGL. Advanced to required depth.
			14.00	50mm diameter slotted standpipe	10.00-14.00	
PRAIRIE_A UK_BH109	CP+RC	11.80	11.80	50mm diameter slotted standpipe	7.80-11.80	Advanced adjacent to PRAIRIE_AUK_TP175. Continued by rotary coring from 6.80m BGL. Advanced to required depth.
PRAIRIE_A UK_BH110	CP+RC	20.80	20.80	50mm diameter slotted standpipe	16.80-20.80	Advanced through PRAIRIE_AUK_TP149. Continued by rotary coring from 15.80m BGL. Advanced to required depth.
Any relevant photographs are presented after the applicable Borehole Record CP = Cable Percussion, RC = Rotary Coring						



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BOREHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH101	
Client: South Tees Development Corporation	Location: E:454312.599 N:521393.254		Sheet: 1 of 3
Method (Equipment): Cable Percussion (Dando 2000)	Ground Level (m): 8.644	Start Date: 27/04/2020	

SAMPLES & TESTS			STRATA					Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	
				8.24	(0.40)	0.40	MADE GROUND (Brown grey sand and gravel. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded and includes slag, concrete, macadam and roadstone. Slag content is 0-25%. Slag is vesicular grey green white).	
				6.74	(1.50)	1.90	MADE GROUND (Red brown sandy gravel with medium cobble content and fragments of metal. Gravel is fine to coarse subangular and includes red brick, concrete, slag and refractory brick. Slag content is 0-25%. Slag is vesicular grey green white).	
				5.64	(1.10)	3.00	Firm yellow brown mottled grey sandy CLAY. (Possible Made Ground).	
3.00 3.00-3.45 3.00 3.45	ES1 U2 PID J3	(45) 0.2ppm	↓				Soft to firm thinly laminated brown slightly sandy slightly gravelly silty CLAY with fine yellow brown sand on the laminae. at c.3.00m BGL ... low strength. Clay is of intermediate plasticity.	
4.00-4.45 4.00-4.45	B5 SJ4	N13					at c.4.00m BGL ... slightly sandy silty clay.	
4.50	J6							
5.00-5.45	U7	(60)					at c.5.00m BGL ... low strength. Clay is of intermediate plasticity.	
5.45	J8							
6.00-6.45 6.00-6.45	B10 SJ9	N17						
7.50	J11					(7.60)		

Boring Progress and Water Observations					Chiselling		Water Added	General Remarks
Date	Depth	Casing	Casing Dia (mm)	Water Standing	From - To	Duration (hh:mm)	From - To	
27/04/2020	0.00	0.00	200					(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP127A. Descriptions between 0.00-3.00m BGL derived from PRAIRIE_AUK_TP127A. (3) Water strikes at 3.00 and 14.80m - water level rose to 2.58 and 12.36m BGL (20mins) respectively. (4) Double installation: 1No. 19mm diameter standpipe piezometer and 1No. 50mm diameter slotted standpipe installed between 4.00-10.00m and between 14.50-16.50m BGL respectively.

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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BOREHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH101	
Client: South Tees Development Corporation		Location: E:454312.599 N:521393.254	
Method (Equipment): Cable Percussion (Dando 2000)	Ground Level (m): 8.644	Start Date: 27/04/2020	Sheet: 2 of 3

SAMPLES & TESTS			STRATA					Instrument/ Backfill	
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description		
8.00-8.45	U12	(65)					Soft to firm thinly laminated brown slightly sandy slightly gravelly silty CLAY with fine yellow brown sand on the laminae. <i>(continued)</i> at c.8.00m BGL ... medium strength.		
8.45	J13								
9.00	J14								
9.50-9.95	B16	N18							
9.50-9.95	SJ15								
10.50	J17			-1.96	10.60				Firm to stiff red brown slightly sandy gravelly CLAY. Gravel is fine to coarse subangular and includes sandstone, mudstone, siltstone and coal. at c.11.00m BGL ... high strength. Clay is of low plasticity.
11.00-11.45	U18	(100)				(1.70)			
11.45	J19								
12.00	J20			-3.66	12.30				Stiff to very stiff brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse subangular to subrounded and includes sandstone, mudstone and siltstone. at c.12.50m BGL ... with cobbles noted.
12.50-12.95	B22	100/285mm				(2.50)			
12.50-12.95	SJ21								
13.50	J23								
14.00-14.45	B25	100/285mm			(1.40)				
14.00-14.45	SJ24								
15.00	J26		-6.16	14.80			Firm to stiff dark brown very sandy slightly gravelly CLAY. Gravel is fine to coarse subangular and includes sandstone, mudstone and siltstone.		
15.50-15.95	B28	100/245mm			(1.40)				
15.50-15.95	SJ27								

Boring Progress and Water Observations					Chiselling		Water Added	General Remarks
Date	Depth	Casing	Casing Dia (mm)	Water Standing	From - To	Duration (hh:mm)	From - To	
27/04/2020	10.50	10.03	200	Dry				(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP127A. Descriptions between 0.00-3.00m BGL derived from PRAIRIE_AUK_TP127A. (3) Water strikes at 3.00 and 14.80m - water level rose to 2.58 and 12.36m BGL (20mins) respectively. (4) Double installation: 1No. 19mm diameter standpipe piezometer and 1No. 50mm diameter slotted standpipe installed between 4.00-10.00m and between 14.50-16.50m BGL respectively.
28/04/2020	10.50	10.03	200	9.82				

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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BOREHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation		PRAIRIE_AUK_BH101	
Method (Equipment): Cable Percussion (Dando 2000)		Ground Level (m): 8.644	Start Date: 27/04/2020
		Sheet: 3 of 3	
Location: E:454312.599 N:521393.254			

SAMPLES & TESTS			STRATA					Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	
16.50	J29			-7.56		16.20	Stiff to very stiff dark brown slightly sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded and includes sandstone, mudstone and siltstone. (Driller notes sand interbeds).	
17.00-17.45 17.00-17.45	B31 SJ30	N55				(1.50)		
18.00 18.00 18.00 18.40	J32 B34 SJ33 SJ35	100/25mm 100/20mm		-9.06		17.70	Weak red brown MUDSTONE with gypsum interbeds.	
				-9.76		18.40	Complete at 18.40m BGL.	

Boring Progress and Water Observations					Chiselling		Water Added	General Remarks
Date	Depth	Casing	Casing Dia (mm)	Water Standing	From - To	Duration (hh:mm)	From - To	
28/04/2020	17.50	16.80	200	12.06	16.20 - 17.00	3:30		(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP127A. Descriptions between 0.00-3.00m BGL derived from PRAIRIE_AUK_TP127A. (3) Water strikes at 3.00 and 14.80m - water level rose to 2.58 and 12.36m BGL (20mins) respectively. (4) Double installation: 1No. 19mm diameter standpipe piezometer and 1No. 50mm diameter slotted standpipe installed between 4.00-10.00m and between 14.50-16.50m BGL respectively.
29/04/2020	17.50	16.80	200	10.47	17.70 - 18.00	1:00		
29/04/2020	18.40	18.20	200	11.02				

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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BOREHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH102	
Client: South Tees Development Corporation		Location: E:454597.680 N:521503.836	
Method (Equipment): Cable Percussion (Dando 2000)		Ground Level (m): 8.213	Start Date: 09/04/2020
		Sheet: 1 of 1	

SAMPLES & TESTS			STRATA					Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	
6.00-7.00	B1			7.31		0.90	MADE GROUND (Brown slightly gravelly sand. Sand is fine to coarse. Gravel is fine to coarse subangular and includes brick and slag).	
7.00-8.00	B2			0.21		8.00	MADE GROUND (Blue grey sandy gravel. Gravel is fine to coarse subangular to subrounded and includes slag. Slag content is 75-100%. Slag is vesicular. Slight hydrocarbon odour noted). at c.7.00-8.00m BGL ... driller notes 'large crushed metal'.	

Complete at 8.00m BGL.

Boring Progress and Water Observations					Chiselling		Water Added	General Remarks
Date	Depth	Casing	Casing Dia (mm)	Water Standing	From - To	Duration (hh:mm)	From - To	
09/04/2020	0.00	0.00	200		6.00 - 8.00	6:00		(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP121. Descriptions between 0.00-4.50m BGL derived from PRAIRIE_AUK_TP121. (3) 50mm diameter slotted standpipe installed to 7.20m BGL. (4) Borehole collapsed back from 8.00-7.20m BGL.
09/04/2020	6.00	6.00	200	1.00				
14/04/2020	6.00	6.00	200	1.06				
14/04/2020	8.00	7.20	200	0.96				

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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BOREHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH103	
Client: South Tees Development Corporation		Location: E:454800.537 N:521660.804	
Method (Equipment): Cable Percussion (Dando 2000)		Ground Level (m): 7.683	Start Date: 07/04/2020
		Sheet: 1 of 2	

SAMPLES & TESTS			STRATA					Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	
				7.58		0.10	MADE GROUND (Brown sandy gravelly topsoil. Sand is fine to coarse. Gravel is fine to coarse subangular and includes concrete, red brick and roadstone).	
						(1.50)	MADE GROUND (Firm yellow brown mottled grey sandy slightly gravelly clay with medium cobble content and fragments of wood and metal. Gravel is fine to coarse subangular to subrounded and includes red brick and sandstone. Cobbles are subangular and include red brick).	
				6.08		1.60		
						(0.50)	MADE GROUND (Black gravelly sand with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular and includes ash, macadam, coke and slag. Slag content is 25-50%. Slag is iron rich in places (rust). Cobbles are subangular and include fused coke).	
				5.58		2.10		
2.50	ES1					(0.70)	Firm to stiff grey brown slightly sandy CLAY.	
2.50-2.95	U2	(30)		4.88		2.80	at c.2.50m BGL ... medium strength.	
2.50	PID	<0.1ppm						
2.95	J3						Firm laminated grey dark brown sandy silty CLAY with occasional sand lenses. Sand is fine to medium.	
							at c.2.95m BGL ... medium strength.	
3.50	J4							
3.50-3.95	B6	N20						
3.50-3.95	SJ5							
							at c.4.50m BGL ... medium strength.	
4.50	J7							
4.50-4.95	U8	(25)						
4.95	J9							
5.50	J10					(5.50)		
5.50-5.95	B12	N21						
5.50-5.95	SJ11							
							at c.7.00m BGL ... medium strength.	
6.50	J13							
7.00-7.45	U14	(25)						
7.00-7.50	B16							
7.45	J15							

Boring Progress and Water Observations					Chiselling		Water Added	General Remarks
Date	Depth	Casing	Casing Dia (mm)	Water Standing	From - To	Duration (hh:mm)	From - To	
08/04/2020	0.00	0.00	200					(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP107. Descriptions between 0.00-2.50m BGL derived from PRAIRIE_AUK_TP107. (3) 50mm diameter slotted standpipe installed between 3.00-8.50m BGL.

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: J. Myall	Contract No. 4251
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BOREHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH103	
Client: South Tees Development Corporation		Location: E:454800.537 N:521660.804	
Method (Equipment): Cable Percussion (Dando 2000)		Ground Level (m): 7.683	Start Date: 07/04/2020
		Sheet: 2 of 2	

SAMPLES & TESTS			STRATA					Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	
8.00	J17			-0.62	X X X X	8.30	Firm to stiff brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to medium subrounded and includes sandstone, mudstone and limestone. at c.8.50m BGL ... clay is of low plasticity.	
8.50-8.95 8.50-8.95	B19 SJ18	N37				(2.40)	at c.10.00m BGL ... high strength.	
9.50	J20							
10.00-10.45	U21	(75)						
10.45	J22			-3.02		10.70	Stiff to very stiff grey brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse subrounded and includes sandstone, mudstone and limestone.	
11.00	J23					(2.00)		
11.50-11.95 11.50-11.95	B25 SJ24	N80						
12.50	J26			-5.02		12.70	Extremely weak thinly laminated red sandy MUDSTONE residual. at c.13.00m BGL ... clay fines are low plasticity.	
13.00-13.45 13.00	B28 SJ27	100/200mm				(1.10)		
13.50 13.50	J29 SJ30	100/130mm		-6.12		13.80	Complete at 13.80m BGL.	

Boring Progress and Water Observations					Chiselling		Water Added	General Remarks
Date	Depth	Casing	Casing Dia (mm)	Water Standing	From - To	Duration (hh:mm)	From - To	
08/04/2020	11.00	10.80	200	Dry	13.20 - 13.50	1:00		(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP107. Descriptions between 0.00-2.50m BGL derived from PRAIRIE_AUK_TP107. (3) 50mm diameter slotted standpipe installed between 3.00-8.50m BGL.
09/04/2020	11.00	10.80	200	Dry				
09/04/2020	13.80	10.80	200	Dry				

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: J. Myall	Contract No. 4251
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BOREHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH104	
Client: South Tees Development Corporation		Location: E:455006.172 N:521693.493	
Method (Equipment): Percussion/Rotary (Dando 2000/Boart Longyear DB540)		Ground Level (m): 8.696	Start Date: 03/04/2020
		Sheet: 1 of 2	

SAMPLES & TESTS			STRATA					Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	
				8.65		0.05	MADE GROUND (Brown sandy topsoil. Sand is fine to coarse).	
						(0.55)	MADE GROUND (Strong grey concrete).	
				8.10		0.60		
						(0.90)	MADE GROUND (Grey brown sandy gravel with medium cobble content. Gravel is fine to coarse subangular to subrounded and includes slag and concrete. Slag content is 50-75%. Slag is vesicular green grey. Cobbles are subangular and include slag).	
				7.20		1.50		
						(2.70)	MADE GROUND (Firm brown slightly sandy slightly gravelly clay with low cobble content. Gravel is fine to coarse subangular and includes sandstone, mudstone, slag and red brick. Cobbles are subangular and include red brick and slag. Slag content is 0-25%. Slag is vesicular grey green white).	
				4.50		4.20		
				4.30		4.40	MADE GROUND (Firm grey brown slightly sandy slightly gravelly clay with some partially decomposed plant remains. Gravel is fine to coarse subangular and include slag and red brick. Slag content is 0-25%. Slag is vesicular grey green white. Organic odour noted).	
						(1.10)	(1) Stiff red brown slightly sandy slightly gravelly CLAY.	
				3.20		5.50	Stiff brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse subrounded and includes sandstone, mudstone, coal and limestone.	
5.50	ES1							
5.50-5.95	U2							
5.50	PID	(100)						
5.95	J3	0.2ppm						
6.50	J4							
7.00-7.45	B6							
7.00-7.45	SJ5	N32						

Boring Progress and Water Observations					Chiselling		Water Added	General Remarks
Date	Depth	Casing	Casing Dia (mm)	Water Standing	From - To	Duration (hh:mm)	From - To	
03/04/2020	0.00	0.00	200					(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP105. Descriptions between 0.00-5.50m BGL derived from PRAIRIE_AUK_TP105. (3) 50mm diameter slotted standpipe installed between 14.50-18.50m BGL.

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: J. Myall	Contract No. 4251
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BOREHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH104	
Client: South Tees Development Corporation		Location: E:455006.172 N:521693.493	
Method (Equipment): Percussion/Rotary (Dando 2000/Boart Longyear DB540)		Ground Level (m): 8.696	Start Date: 03/04/2020
		Sheet: 2 of 2	

SAMPLES & TESTS			STRATA					Instrument/ Backfill	
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description		
8.00	J7					(5.40)	Stiff brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse subrounded and includes sandstone, mudstone, coal and limestone. <i>(continued)</i> at c.8.50m BGL ... high strength.		
8.50-8.95	U8	(100)							
8.95	J9								
9.50	J10								
10.00-10.45	B12	N36							
10.00-10.45	SJ11								
11.00	J13	(100)				10.90	Extremely weak thinly laminated sandy red brown MUDSTONE residual. at c.11.00m BGL ... clay fines are of low plasticity.		
11.00-11.50	B14								
11.50	U*15								
12.00-12.45	B17	100/270mm				(2.60)			
12.00-12.45	SJ16								
13.00-13.45	SJ18	100/225mm							
							-4.81	13.50	
Boring complete at 13.50m BGL - continued by rotary drilling.									

Boring Progress and Water Observations					Chiselling		Water Added	General Remarks
Date	Depth	Casing	Casing Dia (mm)	Water Standing	From - To	Duration (hh:mm)	From - To	
03/04/2020	13.00	12.30	200	Dry	11.70 - 12.00	0:00		(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP105. Descriptions between 0.00-5.50m BGL derived from PRAIRIE_AUK_TP105. (3) 50mm diameter slotted standpipe installed between 14.50-18.50m BGL.
06/04/2020	13.00	12.30	200	Dry				
06/04/2020	13.50	12.80	200	Dry				

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: J. Myall	Contract No. 4251
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DRILLHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No. PRAIRIE_AUK_BH104		
Client: South Tees Development Corporation		Location: E:455006.172 N:521693.493		Sheet: 2 of 3	
Method (Equipment): Percussion/Rotary (Dando 2000/Boart Longyear DB540)		Ground Level (m): 8.696	Start Date: 03/04/2020		

RUN DETAILS			STRATA					Instrument/ Backfill	
Depth & (Core Ø)	TCR (SCR) RQD	Fracture Index	Water	Reduced Level	Legend	Depth (Thickness)	Description		
							Discontinuity Detail		Main
(92mm)	100 (0) 0	NI		-9.80		17.50-18.50m ... non-intact.	18.50	at c. 17.50m ... clay fines are of low plasticity. Extremely weak thinly and thickly laminated sandy red brown MUDSTONE residual. (Recovered as firm red brown slightly sandy gravelly clay. Sand is fine to coarse. Gravel is fine to medium angular and includes mudstone). (continued)	
								Complete at 18.50m BGL.	

Drilling Progress and Water Observations				Standard Penetration Test			Flush			General Remarks
Date	Depth	Casing	Water Standing	Depth	Type	Result	From - To	Type	Returns (%)	
07/04/2020	18.50	13.50	7.23							(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP105. Descriptions between 0.00-5.50m BGL derived from PRAIRIE_AUK_TP105. (3) 50mm diameter slotted standpipe installed between 14.50-18.50m BGL.

All dimensions in metres Scale 1:25	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: J. Myall	Contract No. 4251
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DRILLHOLE RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:455006.172 N:521693.493		PRAIRIE_AUK_BH104
Method (Equipment): Percussion/Rotary (Dando 2000/Boart Longyear DB540)	Ground Level (m): 8.696	Start Date: 03/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_BH104.1
13.50-15.50m BGL



Figure PRAIRIE_AUK_BH104.2
15.50-18.50m BGL





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BOREHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH105	
Client: South Tees Development Corporation		Location: E:454599.377 N:521402.034	
Method (Equipment): Cable Percussion (Dando 2000)	Ground Level (m): 8.257	Start Date: 16/04/2020	Sheet: 1 of 2

SAMPLES & TESTS			STRATA					Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	
				8.16		0.10	MADE GROUND (Brown sandy topsoil).	
						(1.00)	MADE GROUND (Black brown slightly clayey very sandy gravel with medium cobble content and fragments of wood and metal. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded and includes red brick, concrete and slag. Cobbles are subangular and include red brick and concrete. Slag content is 0-25%. Slag is vesicular grey green white).	
				7.16		1.10	MADE GROUND (Black sandy gravel with high cobble content and fragments of wood, paper, tile, glass and metal. Gravel is fine to coarse subangular to subrounded and includes brick, concrete, slag and ash. Cobbles are subangular and include coal and slag. Slag content is 0-25%. Slag is vesicular grey green white).	
				6.66		1.60	Firm light orange brown sandy CLAY.	
				5.76		2.50	Firm to stiff grey brown slightly sandy CLAY.	
				5.26		3.00	Firm laminated grey brown sandy silty CLAY.	
3.00 3.00 3.00 3.45	ES1 U2 PID J3	(80) <0.1ppm	↓					
4.00-4.45 4.00-4.45	B5 SJ4	N13	↓			(3.70)	at c.5.50m BGL ... medium strength.	
5.00-5.45	U6	(80)					at c.5.95m BGL ... clay is of intermediate plasticity.	
5.45	J7							
6.00	J8							
6.50-6.95 6.50-6.95	SJ9 B10	N19		1.56		6.70	Firm to stiff red brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse subrounded and includes sandstone, mudstone, coal and limestone.	
7.50	J11					(1.90)		

Boring Progress and Water Observations					Chiselling		Water Added	General Remarks
Date	Depth	Casing	Casing Dia (mm)	Water Standing	From - To	Duration (hh:mm)	From - To	
16/04/2020	0.00	0.00	200					(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP135. Descriptions between 0.00-3.00m BGL derived from PRAIRIE_AUK_TP135. (3) 50mm diameter slotted standpipe installed between 8.00-11.00m BGL. (4) Water strikes at 3.00m and 8.60m BGL - water level rose to 2.88m and 4.32m BGL respectively (20 mins).

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: J. Myall	Contract No. 4251
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BOREHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH105	
Client: South Tees Development Corporation		Location: E:454599.377 N:521402.034	
Method (Equipment): Cable Percussion (Dando 2000)	Ground Level (m): 8.257	Start Date: 16/04/2020	Sheet: 2 of 2

SAMPLES & TESTS			STRATA					Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	
8.00-8.45	U12	(90)					Firm to stiff red brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse subrounded and includes sandstone, mudstone, coal and limestone. (continued)	
8.45	J13			-0.34		8.60	Very dense grey brown slightly clayey very sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded and includes sandstone, mudstone and limestone.	
9.00 9.00-9.50	J14 B15							
9.50 9.50-9.95	SJ16 B17	100/185mm				(2.40)		
10.50	J18					11.00	Extremely weak dark red MUDSTONE residual with some gypsum interbeds. (Recovered as gravelly sand).	
11.00 11.00-11.20 11.20	SJ19 B20 SJ21	100/70mm 100/55mm			(1.00)			
						12.00	Complete at 12.00m BGL.	

Boring Progress and Water Observations					Chiselling		Water Added	General Remarks
Date	Depth	Casing	Casing Dia (mm)	Water Standing	From - To	Duration (hh:mm)	From - To	
16/04/2020	11.00	10.80	200	5.09	11.00 - 11.20	1:00		(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP135. Descriptions between 0.00-3.00m BGL derived from PRAIRIE_AUK_TP135. (3) 50mm diameter slotted standpipe installed between 8.00-11.00m BGL. (4) Water strikes at 3.00m and 8.60m BGL - water level rose to 2.88m and 4.32m BGL respectively (20 mins).
17/04/2020	11.00	10.80	200	7.36				
17/04/2020	11.40	11.00	200	7.89				
20/04/2020	11.40	11.00	200	7.82				
20/04/2020	12.00	11.80	200	7.92				

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: J. Myall	Contract No. 4251
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BOREHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH106	
Client: South Tees Development Corporation		Location: E:454999.256 N:521391.908	
Method (Equipment): Cable Percussion (Dando 2000)		Ground Level (m): 8.711	Start Date: 06/04/2020
		Sheet: 1 of 2	

SAMPLES & TESTS			STRATA					
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	Instrument/ Backfill
5.50	ES1	(100) <0.1ppm		8.21		0.50	MADE GROUND (Grass over brown sandy gravelly topsoil. Gravel is fine to coarse subangular and includes brick, slag and concrete).	
5.50-5.95	U2			6.21		2.50	MADE GROUND (Black grey sandy gravel with medium cobble content. Gravel is fine to coarse subangular to subrounded and includes slag, red brick and ash. Slag content is 75-100%. Slag is vesicular grey green white. Cobbles are subangular and include brick and cemented slag).	
5.50	PID			5.21		3.50	MADE GROUND (Firm grey mottled orange brown slightly sandy clay). (Possibly Natural Ground).	
5.95	J3	4.21		4.50		Firm indistinctly laminated grey mottled orange brown slightly sandy CLAY.		
6.50	J4	3.21		5.50		(1) Firm to stiff red brown slightly sandy gravelly CLAY.		
7.00-7.45	SJ5	N27		3.21		5.50	Firm to stiff grey brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse subrounded and includes sandstone, limestone, mudstone and coal.	
7.00-7.45	B6			(3.40)				

Boring Progress and Water Observations					Chiselling		Water Added	General Remarks
Date	Depth	Casing	Casing Dia (mm)	Water Standing	From - To	Duration (hh:mm)	From - To	
06/04/2020	0.00	0.00	200					(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP131. Descriptions between 0.00-4.50m BGL derived from PRAIRIE_AUK_TP131. (3) 50mm diameter slotted standpipe installed to 4.00-10.00m BGL.

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: J. Myall	Contract No. 4251
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BOREHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH106	
Client: South Tees Development Corporation		Location: E:454999.256 N:521391.908	
Method (Equipment): Cable Percussion (Dando 2000)		Ground Level (m): 8.711	Start Date: 06/04/2020
		Sheet: 2 of 2	

SAMPLES & TESTS			STRATA					Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	
8.00	J7						Firm to stiff grey brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse subrounded and includes sandstone, limestone, mudstone and coal. (continued) at c.8.50m BGL ... very high strength.	
8.50-8.95	U8	(100)		-0.19		8.90		
8.95	J9						Extremely weak thinly to thickly laminated dark grey slightly sandy MUDSTONE residual.	
9.50	J10					(1.90)	at c.9.50m BGL ... clay fines are of low plasticity.	
10.00-10.45 10.00-10.45	B12 SJ11	N52						
10.50 10.50	J13	100/40mm		-2.09		10.80	at c.10.50-10.80m BGL ... blue light grey in colour.	
Complete at 10.80m BGL.								

Boring Progress and Water Observations					Chiselling		Water Added	General Remarks
Date	Depth	Casing	Casing Dia (mm)	Water Standing	From - To	Duration (hh:mm)	From - To	
06/04/2020	10.80	10.30	200	Dry	10.20 - 10.50	1:00		(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP131. Descriptions between 0.00-4.50m BGL derived from PRAIRIE_AUK_TP131. (3) 50mm diameter slotted standpipe installed to 4.00-10.00m BGL.

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: J. Myall	Contract No. 4251
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BOREHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH107	
Client: South Tees Development Corporation		Location: E:454402.534 N:521065.535	
Method (Equipment): Cable Percussion (Dando 2000)		Ground Level (m): 10.158	Start Date: 24/04/2020
		Sheet: 1 of 2	

SAMPLES & TESTS			STRATA				Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	
				10.06		0.10	MADE GROUND (Brown clayey sand with many rootlets. Sand is fine to coarse and includes ash).
				(0.70)			MADE GROUND (Brown very sandy gravel. Sand is fine to coarse and includes ash. Gravel is fine to coarse subangular and includes red brick, concrete, ash, clinker and slag. Slag content is 0-25%).
				9.36		0.80	
				(0.90)			MADE GROUND (Grey cobbles and boulders. Cobbles are subangular and includes slag. Boulders are subangular and includes slag. Slag content is 100%. Slag is vesicular green grey).
				8.46		1.70	
				(1.30)			Firm becoming stiff brown red grey CLAY with occasional sand lenses and interlaminated silt and clay laminae.
3.00	ES1			7.16		3.00	
3.00-3.45	U2	(60)					Firm to stiff fissured brown slightly sandy slightly gravelly CLAY. Gravel is fine to medium subangular and includes sandstone. at c.3.00m BGL ... low strength. Clay is of intermediate plasticity.
3.00	PID	0.1ppm					
3.45	J3						
4.00-4.45	B5						
4.00-4.45	SJ4	N17					
4.50	J6						
5.00-5.45	U7	(65)				(4.10)	at c.5.00m BGL ... medium strength.
5.45	J8						
6.00	J9						
6.50-6.95	SJ10	N17					
6.50-6.95	B11						
				3.06		7.10	
7.50	J12						Firm to stiff red brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse subangular and includes sandstone, mudstone and siltstone. at c.7.50m BGL ... clay is of low plasticity.
7.50-8.00	B13					(1.60)	

Boring Progress and Water Observations					Chiselling		Water Added	General Remarks
Date	Depth	Casing	Casing Dia (mm)	Water Standing	From - To	Duration (hh:mm)	From - To	
24/04/2020	0.00	0.00	200					(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP181. Descriptions between 0.00-3.00m BGL derived from PRAIRIE_AUK_TP181. (3) 50mm diameter slotted standpipe installed to 4.00-8.00m BGL.

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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BOREHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH107	
Client: South Tees Development Corporation		Location: E:454402.534 N:521065.535	
Method (Equipment): Cable Percussion (Dando 2000)		Ground Level (m): 10.158	Start Date: 24/04/2020
		Sheet: 2 of 2	

SAMPLES & TESTS			STRATA					Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	
8.00-8.45	U14	(100)					Firm to stiff red brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse subangular and includes sandstone, mudstone and siltstone. (continued)	
8.45	J15			1.46		8.70	Very weak red brown MUDSTONE with bands of white gypsum.	
9.00-9.45 9.00-9.45	SJ16 B17	100/40mm				(0.80) 9.50	Complete at 9.50m BGL.	

Boring Progress and Water Observations					Chiselling		Water Added	General Remarks
Date	Depth	Casing	Casing Dia (mm)	Water Standing	From - To	Duration (hh:mm)	From - To	
24/04/2020	9.50	8.80	200	Dry	8.70 - 9.00	1:00		(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP181. Descriptions between 0.00-3.00m BGL derived from PRAIRIE_AUK_TP181. (3) 50mm diameter slotted standpipe installed to 4.00-8.00m BGL.

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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BOREHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH108	
Client: South Tees Development Corporation		Location: E:454619.192 N:521200.662	
Method (Equipment): Percussion/Rotary (Dando 2000/Comacchio Geo 305)		Ground Level (m): 8.863	Start Date: 15/04/2020
		Sheet: 1 of 2	

SAMPLES & TESTS			STRATA					Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	
2.50	ES1					0.60	MADE GROUND (Black gravelly sand. Sand is fine to coarse. Gravel is fine to coarse subangular and includes ash, macadam, concrete).	
2.50-2.95	U2			8.26		0.60	MADE GROUND (Strong dark grey fine grained concrete or slag). Firm orange brown mottled grey slightly sandy CLAY.	
2.50	PID	<0.1ppm		8.06		0.80		
2.95	J3					1.70		
3.50-3.95	SJ4	N13				2.50	Firm laminated red dark brown slightly sandy silty CLAY with silt dustings on the laminae. Sand is fine to medium. at c.2.50m BGL ... high strength. Clay is of intermediate plasticity. at c.2.95m BGL ... clay is of high plasticity.	
3.50-3.95	B5					2.30		
4.00	J6					4.80	at c.4.50m BGL ... medium to high strength.	
4.50-4.95	U7	(90)		4.06		4.80	Firm laminated red dark brown sandy slightly gravelly silty CLAY. Sand is fine to medium. Gravel is fine to medium subrounded and includes sandstone, mudstone and limestone. at c.5.00m BGL ... clay is of low plasticity.	
4.95	J8					1.00		
5.00	J9					5.80	Stiff to very stiff dark brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse subangular and includes sandstone, mudstone and limestone. at c.6.50m BGL ... clay is of low plasticity.	
5.50-5.95	B11	N49		3.06		1.90		
5.50-5.95	SJ10					7.70		
6.50	J12					1.16		
7.00-7.45	SJ13	N76						
7.00-7.45	B14							

Boring Progress and Water Observations					Chiselling		Water Added	General Remarks
Date	Depth	Casing	Casing Dia (mm)	Water Standing	From - To	Duration (hh:mm)	From - To	
15/04/2020	0.00	0.00	200					(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP156A. Descriptions between 0.00-4.50m BGL derived from PRAIRIE_AUK_TP156A. (3) 1No. 19mm diameter standpipe piezometer and 1No. 50mm diameter slotted standpipe installed to 6.00m and 10.00-14.00m BGL respectively.

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: J. Myall	Contract No. 4251
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BOREHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH108	
Client: South Tees Development Corporation		Location: E:454619.192 N:521200.662	
Method (Equipment): Percussion/Rotary (Dando 2000/Comacchio Geo 305)		Ground Level (m): 8.863	Start Date: 15/04/2020
		Sheet: 2 of 2	

SAMPLES & TESTS			STRATA					Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	
8.00	J15						Extremely weak thinly laminated grey MUDSTONE destructured with many interlamination of extremely weak gypsum. (Recovered as clayey slightly sandy gravel). (continued) at c.8.00m BGL ... clay fines are of low plasticity.	
8.50-8.95 8.50-8.95	SJ16 B17	100/55mm				(1.80)		
9.00 9.00-9.45	SJ18 B19	100/40mm						
				-0.64		9.50	Boring complete at 9.50m BGL - continued by rotary drilling.	

Boring Progress and Water Observations					Chiselling		Water Added	General Remarks
Date	Depth	Casing	Casing Dia (mm)	Water Standing	From - To	Duration (hh:mm)	From - To	
15/04/2020	9.50	8.80	200	Dry	8.70 - 9.00	1:00		(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP156A. Descriptions between 0.00-4.50m BGL derived from PRAIRIE_AUK_TP156A. (3) 1No. 19mm diameter standpipe piezometer and 1No. 50mm diameter slotted standpipe installed to 6.00m and 10.00-14.00m BGL respectively.

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: J. Myall	Contract No. 4251
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DRILLHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH108	
Client: South Tees Development Corporation		Location: E:454619.192 N:521200.662	
Method (Equipment): Percussion/Rotary (Dando 2000/Comacchio Geo 305)		Ground Level (m): 8.863	Start Date: 15/04/2020
		Sheet: 1 of 3	

RUN DETAILS			STRATA					Instrument/ Backfill	
Depth & (Core Ø)	TCR (SCR) RQD	Fracture Index	Water	Reduced Level	Legend	Depth (Thickness)	Description		
							Discontinuity Detail		Main
9.50 (92mm)	0 (0) 0	NR		-0.64		9.50	9.50-11.00m ... no recovery.	(1) Red MUDSTONE. (Driller describes as 'very weak' and broken down).	
10.00 (92mm)	0 (0) 0					(1.50)			
10.50 (92mm)	0 (0) 0								
11.00				-2.14		11.00	11.00-11.45m ... non-intact.	Extremely weak red brown MUDSTONE residual. (Recovered as sandy clay).	
	80 (35) 18	NI				(0.45)			
		12		-2.59		11.45	11.45-11.80m ... horizontal to subhorizontal (0-10 degrees) closely to very closely spaced undulating rough stained (brown) discontinuities.	Medium strong to strong red brown MUDSTONE partially weathered to unweathered with many interbeds of gypsum.	
		NR					11.80-12.00m ... no recovery.		
12.00							12.00-12.30m ... horizontal to subhorizontal (0-10 degrees) closely to very closely spaced undulating rough stained (brown) discontinuities.		
	100 (55) 44	12							
		NI				(2.15)	12.30-12.86m ... non-intact.		
		12					12.86-13.60m ... horizontal to subhorizontal (0-10 degrees) closely to very closely spaced undulating rough stained (brown) discontinuities.		
13.00	52 (52) 52								

Drilling Progress and Water Observations				Standard Penetration Test			Flush			General Remarks
Date	Depth	Casing	Water Standing	Depth	Type	Result	From - To	Type	Returns (%)	
04/05/2020	9.50	9.00	Dry				9.50 - 10.00	W	50	(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP156A. Descriptions between 0.00-4.50m BGL derived from PRAIRIE_AUK_TP156A. (3) 1No. 19mm diameter standpipe piezometer and 1No. 50mm diameter slotted standpipe installed to 6.00m and 10.00-14.00m BGL respectively.
							10.00 - 10.50	W	50	
							10.50 - 11.00	W	50	
							11.00 - 12.00	W	50	
							12.00 - 13.00	W	50	
							13.00 - 14.00	W	100	

All dimensions in metres Scale 1:25	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: J. Myall	Contract No. 4251
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DRILLHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH108	
Client: South Tees Development Corporation		Location: E:454619.192 N:521200.662	
Method (Equipment): Percussion/Rotary (Dando 2000/Comacchio Geo 305)		Ground Level (m): 8.863	Start Date: 15/04/2020
		Sheet: 2 of 3	

RUN DETAILS				STRATA				Instrument/ Backfill	
Depth & (Core Ø)	TCR (SCR) RQD	Fracture Index	Water	Reduced Level	Legend	Depth (Thickness)	Description		
							Discontinuity Detail		Main
(92mm)		NR		-4.74		13.60	13.60-14.00m ... no recovery.	(1) Red MARL/SANDSTONE with gypsum.	
						(0.40)			
				-5.14		14.00	Complete at 14.00m BGL.		

Drilling Progress and Water Observations				Standard Penetration Test			Flush			General Remarks
Date	Depth	Casing	Water Standing	Depth	Type	Result	From - To	Type	Returns (%)	
04/05/2020	14.00	11.00	10.86							(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP156A. Descriptions between 0.00-4.50m BGL derived from PRAIRIE_AUK_TP156A. (3) 1No. 19mm diameter standpipe piezometer and 1No. 50mm diameter slotted standpipe installed to 6.00m and 10.00-14.00m BGL respectively.

All dimensions in metres Scale 1:25	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: J. Myall	Contract No. 4251
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DRILLHOLE RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454619.192 N:521200.662		PRAIRIE_AUK_BH108
Method (Equipment): Percussion/Rotary (Dando 2000/Comacchio Geo 305)	Ground Level (m): 8.863	Start Date: 15/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_BH108.1
9.00-13.00m BGL



Figure PRAIRIE_AUK_BH108.2
13.00-14.00m BGL





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BOREHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454511.473 N:520862.590	PRAIRIE_AUK_BH109
Method (Equipment): Percussion/Rotary (Dando 2000/Boart Longyear DB540)	Ground Level (m): 12.085	Start Date: 23/04/2020
		Sheet: 1 of 1

SAMPLES & TESTS			STRATA					Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	
0.30	J1			11.69		(0.40) 0.40	MADE GROUND (Dark brown sandy topsoil with some rootlets).	
0.50	ES2					(0.80)	MADE GROUND (Firm to stiff orange brown mottled grey and black slightly sandy clay. Strong hydrocarbon odour noted). (Possibly Natural Ground).	
0.50	J3	2.9ppm				(0.80)	at c.0.50m BGL ... clay is of intermediate plasticity.	
0.50-1.00	PID					(0.80)		
1.00	B4					(0.80)		
1.00	ES5	12.8ppm		10.89		1.20		
1.20-1.65	PID	(75)				1.20		
1.20-1.65	U6					1.20		
1.65	J7					(1.10)	Firm indistinctly laminated grey brown slightly sandy slightly gravelly CLAY. Gravel is firm to coarse subangular to subrounded and includes sandstone. Strong hydrocarbon odour noted.	
1.70	ES8	27.6ppm				(1.10)	at c.1.20m BGL ... clay is of intermediate plasticity.	
1.70	PID	N15				(1.10)	at c.1.65m BGL ... clay is of intermediate plasticity.	
2.00-2.45	SJ9			9.79		2.30		
2.00-2.45	B10					2.30		
2.50	ES11					(2.50)	Firm thinly laminated brown slightly sandy CLAY with fine yellow brown sandy on the laminae.	
2.50	J12	10.8ppm				(2.50)		
2.50	PID					(2.50)		
3.00-3.45	U13	(60)				(2.50)	at c.3.00m BGL ... medium strength.	
3.45	J14					(2.50)		
3.50	ES15	26.1ppm				(2.50)	at c.3.45m BGL ... clay is of intermediate plasticity.	
3.50	PID					(2.50)		
4.00-4.45	SJ16	N21				(2.50)		
4.00-4.45	B17					(2.50)		
4.50	J18			7.29		4.80		
5.00-5.45	U19	(90)				(0.50)	(1) Firm to stiff laminated red brown silty CLAY. at c.5.00m BGL ... medium to high strength.	
5.45	J20			6.79		5.30		
5.50-5.80	B21					(0.50)	Stiff red brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse subangular to subrounded and includes sandstone, mudstone and siltstone.	
5.50-5.80	SJ22	100/110mm				(0.50)		
5.50-5.80	B23					(0.50)		
6.00-6.45	SJ24	100/45mm				(1.00)	Very weak dark blue grey MUDSTONE.	
6.00-6.45	B23					(1.00)		
6.50	SJ24	100/45mm		5.28		6.80		
Boring complete at 6.80m BGL - continued by rotary drilling.								

Boring Progress and Water Observations					Chiselling		Water Added	General Remarks
Date	Depth	Casing	Casing Dia (mm)	Water Standing	From - To	Duration (hh:mm)	From - To	
23/04/2020	0.00	0.00	200		6.20 - 6.50	1:00		(1) Description derived from drillers daily report. (2) Advanced adjacent to trial pit PRAIRIE_AUK_TP175. (3) 50mm diameter slotted standpipe installed between 7.80-11.80m BGL.
23/04/2020	6.80	5.80	200	Dry				

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W.</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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DRILLHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH109
Client: South Tees Development Corporation	Location: E:454511.473 N:520862.590	
Method (Equipment): Percussion/Rotary (Dando 2000/Boart Longyear DB540)	Ground Level (m): 12.085	Start Date: 23/04/2020
		Sheet: 1 of 3

RUN DETAILS			STRATA					Instrument/ Backfill	
Depth & (Core Ø)	TCR (SCR) RQD	Fracture Index	Water	Reduced Level	Legend	Depth (Thickness)	Description		
							Discontinuity Detail		Main
6.80 (140mm)	0 (0) 0	NR		5.28		6.80	6.80-7.30m ... no recovery.	Weak locally very weak dark blue grey MUDSTONE distinctly weathered locally destructured.	
7.30 (140mm)	100 (10) 0	15					7.30-7.55m ... non-intact. 7.30-8.70m ... horizontal to subhorizontal (0-10 degrees) closely to very closely spaced planar to undulating smooth locally stained (grey) discontinuities.		
7.80 (140mm)	100 (50) 10					(1.90)	7.64-7.68m ... non-intact. 7.70-7.85m ... non-intact.		
8.80 (140mm)	73 (54) 34	7		3.39		8.70	7.95-8.22m ... 1No. vertical (85 degrees) undulating smooth stained (grey) discontinuity. 8.22-8.35m ... non-intact. 8.35-8.42m ... 1No. subvertical (80 degrees) planar smooth stained (grey) discontinuity. 8.52-8.65m ... 2No. subvertical (80 degrees) extremely closely spaced planar smooth discontinuities.	Moderately weak to medium strong light grey SILTSTONE unweathered locally partially weathered.	
10.30 (140mm)	0 (0) 0	NR				(3.10)	8.70-8.90m ... 1No. vertical (85 degrees) planar locally undulating rough stained (grey) discontinuity. 8.70-9.90m ... horizontal to subhorizontal (0-10 degrees) medium locally closely spaced planar locally undulating rough locally smeared (clay) and stained (grey) discontinuities. 9.38-9.54m ... 1No. vertical (85 degrees) planar rough open stained (grey) discontinuity. 9.83-9.90m ... 1No. subvertical (80 degrees) planar rough stained (red brown) discontinuity. 9.90-10.80m ... no recovery.		
10.80 (140mm)	0 (0) 0								

Drilling Progress and Water Observations				Standard Penetration Test			Flush			General Remarks
Date	Depth	Casing	Water Standing	Depth	Type	Result	From - To	Type	Returns (%)	
30/04/2020	6.80	6.80	Dry				6.80 - 7.30	Water	80	(1) Description derived from drillers daily report. (2) Advanced adjacent to trial pit PRAIRIE_AUK_TP175. (3) 50mm diameter slotted standpipe installed between 7.80-11.80m BGL.
							7.30 - 7.80	Water	80	
							7.80 - 8.80	Water	80	
							8.80 - 10.30	Water	80	
							10.30 - 10.80	Water	80	
							10.80 - 11.80	Water	80	

All dimensions in metres Scale 1:25	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W.</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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DRILLHOLE RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454511.473 N:520862.590		PRAIRIE_AUK_BH109
Method (Equipment): Percussion/Rotary (Dando 2000/Boart Longyear DB540)	Ground Level (m): 12.085	Start Date: 23/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_BH109.1
6.80-8.80m BGL



Figure PRAIRIE_AUK_BH109.2
8.80-11.80m BGL





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BOREHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH110	
Client: South Tees Development Corporation		Location: E:454320.946 N:521308.856	
Method (Equipment): Percussion/Rotary (Dando 2000/Comacchio Geo 305)		Ground Level (m): 7.798	Start Date: 20/04/2020
		Sheet: 1 of 2	

SAMPLES & TESTS			STRATA				Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	
3.00 3.00-3.45 3.00 3.45	ES1 U2 PID J3	(35) <0.1ppm		6.30		1.50	MADE GROUND (Black clayey very sandy gravel with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular and includes slag, coal, coke, sinter and clinker. Cobbles are subangular and include concrete, slag and red brick. Slag content is 0-25%. Slag is vesicular grey green. Slight diesel odour noted).
				4.80		3.00	Firm indistinctly laminated orange brown mottled grey slightly sandy CLAY.
4.00 4.00-4.45	J4 B5			2.80		5.00	Firm thinly laminated brown slightly sandy CLAY with fine yellow brown sand on the laminae. at c.3.00m BGL ... low strength. Clay is of intermediate plasticity. at c.4.00m BGL ... slightly sandy slightly gravelly clay.
5.00-5.45 5.45	U6 J7	(45)		0.50		7.30	Soft to firm thinly laminated dark brown slightly sandy CLAY with fine yellow brown sand on the laminae. at c.5.00m BGL ... medium strength. Clay is of intermediate plasticity.
6.00 6.50-6.95 6.50-6.95	J8 SJ9 B10	N13					Firm to stiff red brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse subangular and includes sandstone, mudstone, siltstone and coal.
7.50	J11						

Boring Progress and Water Observations					Chiselling		Water Added	General Remarks
Date	Depth	Casing	Casing Dia (mm)	Water Standing	From - To	Duration (hh:mm)	From - To	
20/04/2020	0.00	0.00	200					(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP149. Descriptions between 0.00-3.00m BGL derived from PRAIRIE_AUK_TP149. (3) Water strike at 10.30m - water level rose to 8.47m BGL (20 mins). (4) 50mm diameter standpipe installed between 16.80-20.80m BGL.
20/04/2020	5.00	4.80	200	Dry				
21/04/2020	5.00	4.80	200	4.36				

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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BOREHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH110	
Client: South Tees Development Corporation		Location: E:454320.946 N:521308.856	
Method (Equipment): Percussion/Rotary (Dando 2000/Comacchio Geo 305)		Ground Level (m): 7.798	Start Date: 20/04/2020
		Sheet: 2 of 2	

SAMPLES & TESTS			STRATA				Instrument/ Backfill		
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)		Description	
8.00-8.45	U12	(75)				(2.00)	Firm to stiff red brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse subangular and includes sandstone, mudstone, siltstone and coal. (continued) at c.8.00m BGL ... medium strength.		
8.45	J13								
9.00	J14								
9.50-9.95	SJ15	N59			-1.50		9.30		Stiff to very stiff (friable) red brown sandy slightly gravelly CLAY. Gravel is fine to coarse subangular to subrounded and includes sandstone, mudstone, siltstone and coal. at c.9.50m BGL ... clay is of low plasticity.
9.50-9.95	B16								
10.50	J17						(2.90)		
11.00-11.45	U18	(100)							at c.11.00m BGL ... extremely high strength.
11.45	J19								
12.00	J20								
12.50-12.95	SJ21	N98			-4.40		12.20		Stiff to very stiff dark red brown sandy gravelly CLAY. Gravel is fine to coarse subangular and includes sandstone, mudstone, and siltstone.
12.50-12.95	B22						(0.80)		
13.50	J23						(1.40)		Stiff (friable) dark red brown sandy slightly gravelly CLAY with cobbles noted. Gravel is fine to coarse subangular and includes sandstone, mudstone and siltstone. Cobbles are subangular and includes sandstone and mudstone. at c.13.50m BGL ... clay is of low plasticity.
14.00-14.45	B25	100/220mm							
14.00	SJ24				-6.60		14.40		Very weak red brown MUDSTONE destructured with interbeds of gypsum.
14.50	J26								
15.00-15.45	B28	100/70mm				(1.40)			
15.00	SJ27								
15.50	SJ29	100/50mm							
15.80-16.30	C30					-8.00	15.80	Boring complete at 15.80m BGL - continued by rotary drilling.	

Boring Progress and Water Observations					Chiselling		Water Added	General Remarks
Date	Depth	Casing	Casing Dia (mm)	Water Standing	From - To	Duration (hh:mm)	From - To	
21/04/2020	13.00	12.80	200	Dry	13.00 - 15.50	6:00		(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP149. Descriptions between 0.00-3.00m BGL derived from PRAIRIE_AUK_TP149. (3) Water strike at 10.30m - water level rose to 8.47m BGL (20 mins). (4) 50mm diameter standpipe installed between 16.80-20.80m BGL.
22/04/2020	13.00	12.80	200	6.74				
22/04/2020	15.80	15.30	200	7.39				

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W.</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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DRILLHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH110	
Client: South Tees Development Corporation		Location: E:454320.946 N:521308.856	
Method (Equipment): Percussion/Rotary (Dando 2000/Comacchio Geo 305)		Ground Level (m): 7.798	Start Date: 20/04/2020
		Sheet: 1 of 3	

RUN DETAILS			STRATA				Instrument/ Backfill		
Depth & (Core Ø)	TCR (SCR) RQD	Fracture Index	Water	Reduced Level	Legend	Depth (Thickness)		Description	
							Discontinuity Detail	Main	
15.80 (92mm)	0 (0) 0	NR		-8.00		15.80	15.80-17.00m ... no recovery.	(1) Red MUDSTONE/SANDSTONE. (Driller describes as 'very weak').	
16.30 (92mm)	0 (0) 0					(1.20)			
16.80 (92mm)	80 (32) 21	10		-9.20		17.00	17.00-17.07m ... non-intact. 17.00-17.60m ... horizontal to subhorizontal (0-10 degrees) closely to very closely spaced undulating rough stained (red brown) discontinuities. 17.07-17.20m ... 1No. subvertical (80 degrees) undulating rough stained (red brown) discontinuity. 17.20-17.35m ... non-intact.	Moderately weak to strong red brown MUDSTONE partially weathered, locally destructured, with many interbeds of gypsum.	
17.80 (92mm)	100 (37) 23	10					17.60-17.90m ... non-intact. 17.90-18.40m ... horizontal to subhorizontal (0-10 degrees) closely to very closely spaced undulating rough stained (red brown) discontinuities. 17.96-18.07m ... non-intact. 18.14-18.30m ... 1No. subvertical (80 degrees) planar smooth closed stained (red brown) discontinuity.		
18.80 (92mm)		10				(3.80)	18.40-18.70m ... non-intact. 18.70-18.80m ... 1No. subvertical (80 degrees) planar smooth open stained (red brown) discontinuity. 18.70-19.30m ... horizontal to subhorizontal (0-10 degrees) closely to very closely spaced undulating rough stained (red brown) discontinuities. 18.80-18.95m ... non-intact.		
19.30	67 (35) 27	NR					19.30-19.80m ... no recovery.		

Drilling Progress and Water Observations				Standard Penetration Test			Flush			General Remarks
Date	Depth	Casing	Water Standing	Depth	Type	Result	From - To	Type	Returns (%)	
01/05/2020	15.80	15.80	14.28				15.80 - 16.30	W	100	(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP149. Descriptions between 0.00-3.00m BGL derived from PRAIRIE_AUK_TP149. (3) Water strike at 10.30m - water level rose to 8.47m BGL (20 mins). (4) 50mm diameter standpipe installed between 16.80-20.80m BGL.
01/05/2020	19.30	15.80	12.37				16.30 - 16.80	W	100	
04/05/2020	19.30	15.80					16.80 - 17.80	W	100	
							17.80 - 19.30	W	100	
							19.30 - 20.80	W	100	

All dimensions in metres Scale 1:25	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W.</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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DRILLHOLE RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_BH110	
Client: South Tees Development Corporation		Location: E:454320.946 N:521308.856	
Method (Equipment): Percussion/Rotary (Dando 2000/Comacchio Geo 305)		Ground Level (m): 7.798	Start Date: 20/04/2020
		Sheet: 2 of 3	

RUN DETAILS			STRATA					Instrument/ Backfill	
Depth & (Core Ø)	TCR (SCR) RQD	Fracture Index	Water	Reduced Level	Legend	Depth (Thickness)	Description		
							Discontinuity Detail		Main
(92mm)		10		-13.00		20.80	19.80-20.06m ... non-intact. 19.80-20.80m ... horizontal to subhorizontal (0-10 degrees) closely to very closely spaced undulating rough stained (red brown) discontinuities.	Moderately weak to strong red brown MUDSTONE partially weathered, locally destructured, with many interbeds of gypsum. (continued)	
							20.13-20.20m ... 1No. oblique (30 degrees) undulating rough open stained (red brown) discontinuity.		
							20.62-20.72m ... non-intact.		
							Complete at 20.80m BGL.		

Drilling Progress and Water Observations				Standard Penetration Test			Flush			General Remarks
Date	Depth	Casing	Water Standing	Depth	Type	Result	From - To	Type	Returns (%)	
04/05/2020	20.80	15.80	15.20							(1) Description derived from drillers daily report. (2) Advanced through trial pit PRAIRIE_AUK_TP149. Descriptions between 0.00-3.00m BGL derived from PRAIRIE_AUK_TP149. (3) Water strike at 10.30m - water level rose to 8.47m BGL (20 mins). (4) 50mm diameter standpipe installed between 16.80-20.80m BGL.

All dimensions in metres Scale 1:25	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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DRILLHOLE RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454320.946 N:521308.856		PRAIRIE_AUK_BH110
Method (Equipment): Percussion/Rotary (Dando 2000/Comacchio Geo 305)	Ground Level (m): 7.798	Start Date: 20/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_BH110.1
15.80-19.30m BGL



Figure PRAIRIE_AUK_BH110.2
19.30-20.80m BGL



Trial Pit Records



Trial Pit Summary Table

Exploratory Hole Number	Excavation Method	Completion Depth (m BGL)	Remarks
PRAIRIE_AUK_TP101	Machine excavated	4.50	Advanced to required depth.
PRAIRIE_AUK_TP102	Machine excavated	4.30	Advanced to required depth
PRAIRIE_AUK_TP103	Machine excavated	1.70	Terminated due to close proximity to sewer.
PRAIRIE_AUK_TP104	Machine excavated	4.00	Advanced to required depth.
PRAIRIE_AUK_TP105	Machine excavated	4.40	Continued as PRAIRIE_AUK_BH104. Terminated due to slow progress.
PRAIRIE_AUK_TP106	Machine excavated	3.50	Advanced to required depth.
PRAIRIE_AUK_TP107	Machine excavated	3.00	Continued as PRAIRIE_AUK_BH103. Advanced to required depth.
PRAIRIE_AUK_TP108	Machine excavated	4.00	Terminated due to possible concrete.
PRAIRIE_AUK_TP109	Machine excavated	3.10	Advanced to required depth.
PRAIRIE_AUK_TP110	Machine excavated	4.50	Advanced to required depth.
PRAIRIE_AUK_TP111	Machine excavated	3.20	Advanced to required depth.
PRAIRIE_AUK_TP112	Machine excavated	3.40	Advanced to required depth.
PRAIRIE_AUK_TP113	Machine excavated	3.80	Terminated due to concrete plinth and groundwater ingress.
PRAIRIE_AUK_TP114	Machine excavated	2.00	Terminated due to water ingress and instability.
PRAIRIE_AUK_TP115	Machine excavated	3.10	Terminated due to water ingress.
PRAIRIE_AUK_TP116	Machine excavated	3.90	Advanced to required depth.
PRAIRIE_AUK_TP117	Machine excavated	3.30	Terminated due to instability.
PRAIRIE_AUK_TP118	Machine excavated	3.00	Advanced to required depth.
PRAIRIE_AUK_TP119	Machine excavated	3.20	Advanced to required depth.
PRAIRIE_AUK_TP120	Machine excavated	1.50	Terminated due to concrete obstruction.
PRAIRIE_AUK_TP120A	Machine excavated	2.90	Advanced to required depth.
PRAIRIE_AUK_TP121	Machine excavated	4.50	Continued as PRAIRIE_AUK_BH102. Advanced to required depth.
PRAIRIE_AUK_TP122	Machine excavated	1.20	Terminated due to fast water ingress.
PRAIRIE_AUK_TP123	Machine excavated	2.80	Terminated due to brick structure.
PRAIRIE_AUK_TP124	Machine excavated	3.00	Advanced to required depth.
PRAIRIE_AUK_TP125	Machine excavated	0.20	Terminated due to concrete obstruction.
PRAIRIE_AUK_TP125A	Machine excavated	1.20	Terminated due to concrete base.
PRAIRIE_AUK_TP126	Machine excavated	2.70	Terminated due to concrete base.
PRAIRIE_AUK_TP127	Machine excavated	1.70	Terminated due to concrete base.
PRAIRIE_AUK_TP127A	Machine excavated	3.00	Continued as PRAIRIE_AUK_BH101. Advanced to required depth.
PRAIRIE_AUK_TP128	Machine excavated	1.10	Terminated due to services.

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Exploratory Hole Number	Excavation Method	Completion Depth (m BGL)	Remarks
PRAIRIE_AUK_TP129	Machine excavated	2.30	Advanced to required depth.
PRAIRIE_AUK_TP130	Machine excavated	2.40	Advanced to required depth.
PRAIRIE_AUK_TP131	Machine excavated	4.50	Continued as PRAIRIE_AUK_BH106. Advanced to required depth.
PRAIRIE_AUK_TP132	Machine excavated	2.30	Terminated due to concrete channel.
PRAIRIE_AUK_TP132A	Machine excavated	1.60	Terminated due to concrete structure and metal cables.
PRAIRIE_AUK_TP133	Machine excavated	2.00	Advanced to required depth.
PRAIRIE_AUK_TP134	Machine excavated	2.60	Advanced to required depth.
PRAIRIE_AUK_TP135	Machine excavated	3.00	Continued as PRAIRIE_AUK_BH105. Advanced to required depth.
PRAIRIE_AUK_TP136	Machine excavated	3.10	Advanced to required depth.
PRAIRIE_AUK_TP137	Machine excavated	2.90	Advanced to required depth.
PRAIRIE_AUK_TP138	Machine excavated	2.60	Terminated due to instability.
PRAIRIE_AUK_TP139	Machine excavated	1.20	Terminated due to concrete obstruction.
PRAIRIE_AUK_TP139A	Machine excavated	0.30	Terminated due to concrete obstruction.
PRAIRIE_AUK_TP139B	Machine excavated	4.00	Advanced to required depth.
PRAIRIE_AUK_TP140	Machine excavated	2.60	Advanced to required depth.
PRAIRIE_AUK_TP141	Machine excavated	3.00	Terminated due to concrete base.
PRAIRIE_AUK_TP142	Machine excavated	1.70	Terminated due to concrete base.
PRAIRIE_AUK_TP143	Machine excavated	1.80	Terminated due to water ingress.
PRAIRIE_AUK_TP144	Machine excavated	1.20	Terminated due to concrete base.
PRAIRIE_AUK_TP145	Machine excavated	3.50	Advanced to required depth.
PRAIRIE_AUK_TP146	Machine excavated	0.30	Terminated due to concrete base.
PRAIRIE_AUK_TP146A	Machine excavated	0.10	Terminated due to concrete base.
PRAIRIE_AUK_TP146B	Machine excavated	0.60	Terminated due to concrete base.
PRAIRIE_AUK_TP146C	Machine excavated	3.00	Advanced to required depth.
PRAIRIE_AUK_TP147	Machine excavated	1.80	Terminated due to concrete base.
PRAIRIE_AUK_TP148	Machine excavated	1.20	Terminated due to concrete base.
PRAIRIE_AUK_TP148A	Machine excavated	2.00	Terminated due to concrete/slag base.
PRAIRIE_AUK_TP149	Machine excavated	3.00	Continued as PRAIRIE_AUK_BH110. Advanced to required depth.
PRAIRIE_AUK_TP150	Machine excavated	2.20	Terminated due to service.
PRAIRIE_AUK_TP151	Machine excavated	4.20	Advanced to required depth.
PRAIRIE_AUK_TP152	Machine excavated	2.10	Advanced to required depth.
PRAIRIE_AUK_TP153	Machine excavated	2.40	Advanced to required depth.



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Exploratory Hole Number	Excavation Method	Completion Depth (m BGL)	Remarks
PRAIRIE_AUK_TP154	Machine excavated	3.10	Advanced to required depth.
PRAIRIE_AUK_TP155	Machine excavated	2.20	Advanced to required depth.
PRAIRIE_AUK_TP156	Machine excavated	0.60	Terminated due to concrete base.
PRAIRIE_AUK_TP156A	Machine excavated	2.50	Continued as PRAIRIE_AUK_BH108. Advanced to required depth.
PRAIRIE_AUK_TP157	Machine excavated	1.10	Terminated due to concrete base.
PRAIRIE_AUK_TP157A	Machine excavated	1.30	Terminated due to concrete base.
PRAIRIE_AUK_TP157B	Machine excavated	3.50	Terminated due to concrete boulders.
PRAIRIE_AUK_TP158	Machine excavated	3.20	Advanced to required depth.
PRAIRIE_AUK_TP159	Machine excavated	2.50	Advanced to required depth.
PRAIRIE_AUK_TP160	Machine excavated	2.10	Terminated due to service.
PRAIRIE_AUK_TP161	Machine excavated	2.70	Advanced to required depth.
PRAIRIE_AUK_TP162	Machine excavated	4.00	Advanced to required depth.
PRAIRIE_AUK_TP163	Machine excavated	2.40	Advanced to required depth.
PRAIRIE_AUK_TP164	Machine excavated	3.80	Advanced to required depth.
PRAIRIE_AUK_TP165	Machine excavated	3.30	Terminated due to concrete base.
PRAIRIE_AUK_TP166	Machine excavated	1.50	Advanced to required depth.
PRAIRIE_AUK_TP167	Machine excavated	2.60	Terminated due to concrete base.
PRAIRIE_AUK_TP168	Machine excavated	2.10	Advanced to required depth.
PRAIRIE_AUK_TP169	Machine excavated	2.20	Terminated due to concrete base.
PRAIRIE_AUK_TP170	Machine excavated	1.80	Advanced to required depth.
PRAIRIE_AUK_TP171	Machine excavated	2.10	Advanced to required depth.
PRAIRIE_AUK_TP172	Machine excavated	2.10	Terminated due to instability and concrete obstruction.
PRAIRIE_AUK_TP173	Machine excavated	2.70	Advanced to required depth.
PRAIRIE_AUK_TP174	Machine excavated	2.60	Advanced to required depth.
PRAIRIE_AUK_TP175	Machine excavated	4.50	Continued as PRAIRIE_AUK_BH109. Advanced to required depth.
PRAIRIE_AUK_TP176	Machine excavated	2.00	Advanced to required depth.
PRAIRIE_AUK_TP177	Machine excavated	2.30	Terminated due to instability and proximity to services.
PRAIRIE_AUK_TP178	Machine excavated	4.50	Advanced to required depth.
PRAIRIE_AUK_TP179	Machine excavated	2.00	Advanced to required depth.
PRAIRIE_AUK_TP180	Machine excavated	0.40	Terminated due to concrete base.
PRAIRIE_AUK_TP181	Machine excavated	2.70	Advanced to required depth.
PRAIRIE_AUK_TP182	Machine excavated	2.70	Continued as PRAIRIE_AUK_BH107. Advanced to required depth.



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Exploratory Hole Number	Excavation Method	Completion Depth (m BGL)	Remarks
PRAIRIE_AUK_TP183	Machine excavated	4.10	Terminated due to concrete slab.
PRAIRIE_AUK_TP184	Machine excavated	1.10	Terminated due to concrete obstruction.
PRAIRIE_AUK_TP185	Machine excavated	4.50	Advanced to required depth.
PRAIRIE_AUK_TP186	Machine excavated	1.80	Terminated due to concrete slab.
PRAIRIE_AUK_TP187	Machine excavated	1.80	Advanced to required depth.
PRAIRIE_AUK_TP188	Machine excavated	2.10	Terminated due to concrete obstruction.
PRAIRIE_AUK_TP189	Machine excavated	3.00	Advanced to required depth.
PRAIRIE_AUK_TP190	Machine excavated	1.00	Terminated due to possible service.
PRAIRIE_AUK_TP190A	Machine excavated	3.00	Advanced to required depth.
PRAIRIE_AUK_TP191	Machine excavated	2.10	Advanced to required depth.
PRAIRIE_AUK_TP192	Machine excavated	2.10	Advanced to required depth.
PRAIRIE_AUK_TP193	Machine excavated	1.00	Advanced to required depth.
PRAIRIE_AUK_TP193A	Machine excavated	4.60	Advanced to required depth.
PRAIRIE_AUK_TP194A	Machine excavated	2.20	Advanced to required depth.
PRAIRIE_AUK_TP194B	Machine excavated	2.80	Terminated due to concrete obstruction.
PRAIRIE_AUK_TP194C	Machine excavated	1.20	Terminated due to concrete obstruction.
PRAIRIE_AUK_TP194D	Machine excavated	1.70	Terminated due to concrete obstruction.
PRAIRIE_AUK_TP194E	Machine excavated	1.20	Terminated due to concrete obstruction.
PRAIRIE_AUK_TP195	Machine excavated	2.10	Terminated due to concrete obstruction.
PRAIRIE_AUK_TP196A	Machine excavated	2.00	Advanced to required depth.
PRAIRIE_AUK_TP196B	Machine excavated	2.90	Terminated due to concrete obstruction.
PRAIRIE_AUK_TP197	Machine excavated	2.80	Terminated due to concrete obstruction.
PRAIRIE_AUK_TP198	Machine excavated	2.60	Terminated due to concrete obstruction.
PRAIRIE_AUK_TP199	Machine excavated	5.20	Advanced to required depth.
PRAIRIE_AUK_TP200A	Machine excavated	2.80	Advanced to required depth.
PRAIRIE_AUK_TP200B	Machine excavated	3.50	Terminated due to concrete/brick base.
PRAIRIE_AUK_TP201	Machine excavated	4.40	Advanced to required depth.



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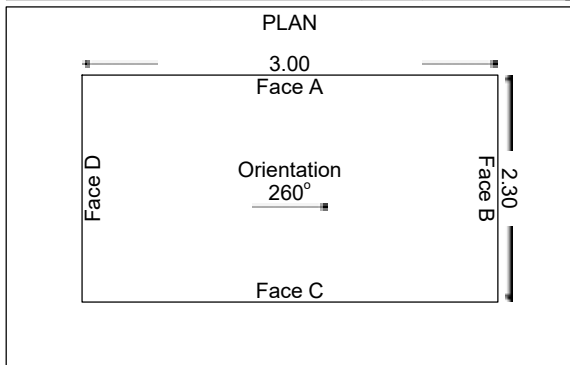
TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:455044.456 N:521777.057	PRAIRIE_AUK_TP101
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.864	Start Date: 01/04/2020
		Sheet: 1 of 3

SAMPLES & TESTS			STRATA					
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	
0.10 0.20	J1 B2		Water	8.56	[Cross-hatch pattern]	0.30	MADE GROUND (Black sandy gravel. Gravel is fine to coarse subangular to subrounded and includes roadstone and concrete).	
0.60	J3							MADE GROUND (Black gravelly sand with low cobble content and fragments of tile. Sand is fine to coarse. Gravel is fine to coarse subangular and includes slag, red brick and ash. Cobbles are subangular and include slag. Slag content is 50-75%. Slag is vesicular grey green).
0.90 1.00 1.00	B4 PID ES5	<0.1ppm					(1.50)	
1.80 1.80 1.80 2.10 2.20 2.20 2.50	HSV J6 B7 J8 PID ES9 J10	68 (32)kPa <0.1ppm		Water	7.06	[Cross-hatch pattern]	1.80	MADE GROUND (Firm grey mottled brown slightly sandy clay).
					6.86			2.00
2.80 3.00	HSV B11	53 (22)kPa			6.56	[Horizontal line pattern]	2.30	Firm grey mottled brown slightly sandy CLAY. at c.2.50m BGL ... clay is of high plasticity.
3.50	J12						(2.00)	
4.00	B13							
4.40 4.40 4.50	HSV J14 B15	47 (18)kPa			4.56 4.36	[Dotted pattern]	4.30 4.50	Grey black slightly organic slightly sandy slightly gravelly SILT with many partially decomposed plant remains. Organic odour noted. <i>Complete at 4.50m BGL.</i>



GROUNDWATER
Groundwater seepage at 2.00m BGL.

STABILITY
Pit sides stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS
n/a

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:455044.456 N:521777.057		PRAIRIE_AUK_TP101
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.864	Start Date: 01/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP101.1
PRAIRIE_AUK_TP101



Figure PRAIRIE_AUK_TP101.2
PRAIRIE_AUK_TP101





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TRIAL PIT RECORD

Status:-

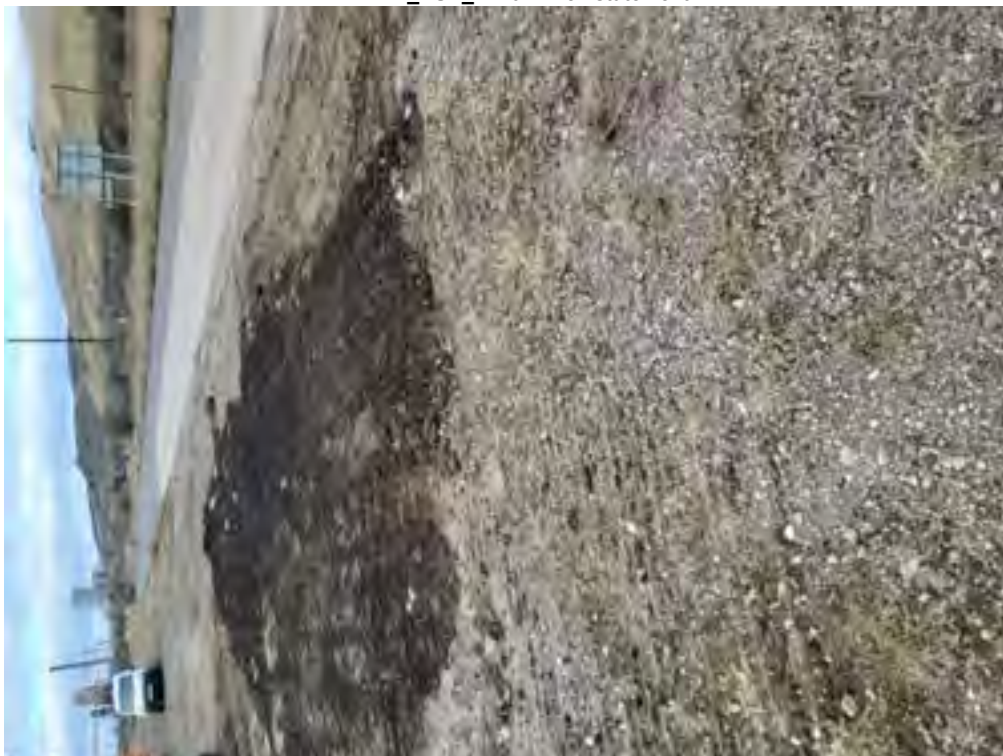
FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:455044.456 N:521777.057		PRAIRIE_AUK_TP101
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.864	Start Date: 01/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP101.3
PRAIRIE_AUK_TP101 - Spoil



Figure PRAIRIE_AUK_TP101.4
PRAIRIE_AUK_TP101 - Reinstatement





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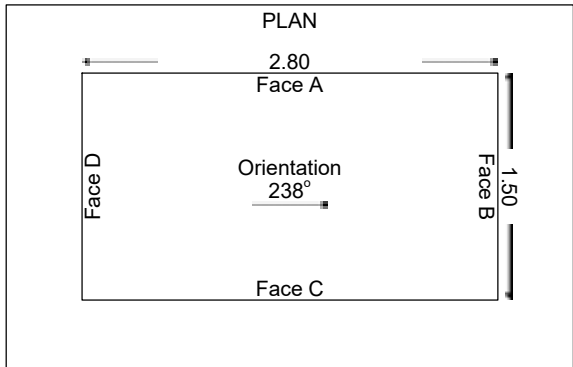
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:455025.690 N:521795.056	PRAIRIE_AUK_TP102
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.634	Start Date: 21/04/2020
		Sheet: 1 of 3

SAMPLES & TESTS			Water	STRATA		
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)
0.10 0.20	J1 B2				0.30	MADE GROUND (Grass over topsoil).
0.50 0.50	J3 PID	<0.1ppm			(1.00)	MADE GROUND (Grey black sandy gravel with low cobble and boulder content. Gravel is fine to coarse subangular and includes ash and slag. Slag content is 75-100%. Slag is vesicular green white. Cobbles and boulders are angular and include slag).
1.00 1.00 1.00	ES4 B5 PID	<0.1ppm			1.30	MADE GROUND (Firm, locally thinly laminated, orange red brown mottled grey slightly sandy slightly gravelly clay with fragments of wood. Gravel is fine to coarse subangular and includes mudstone, cement and slag).
1.50 1.50	J6 PID	0.1ppm				at c.1.50m BGL ... clay is of low plasticity.
2.00 2.00 2.00	ES7 B8 PID	0.1ppm				
2.50 2.50	J9 PID	0.2ppm			(3.00)	between c. 2.50-3.50m BGL ... wet clay with rancid stale water odour noted.
3.00 3.00 3.00	B10 ES11 PID	0.4ppm				
3.50 3.50	J12 PID	0.7ppm				
4.00	B13				4.30	at c.4.00m BGL ... whole glass bottle.
Complete at 4.30m BGL.						



GROUNDWATER
 No groundwater inflow observed.

STABILITY
 Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:455025.690 N:521795.056		PRAIRIE_AUK_TP102
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.634	Start Date: 21/04/2020	

Figure PRAIRIE_AUK_TP102.1
PRAIRIE_AUK_TP102



Figure PRAIRIE_AUK_TP102.2
PRAIRIE_AUK_TP102





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:455025.690 N:521795.056		PRAIRIE_AUK_TP102
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.634	Start Date: 21/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP102.3
PRAIRIE_AUK_TP102 - Spoil





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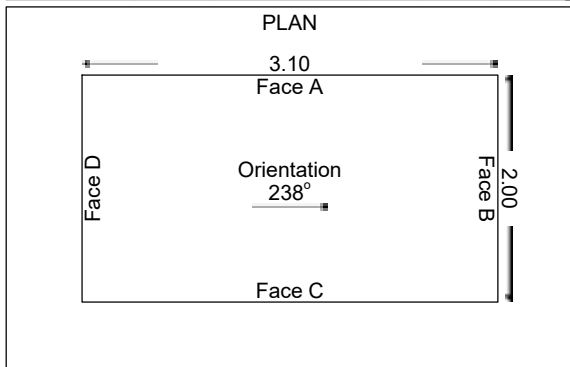
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_TP103
Client: South Tees Development Corporation	Location: E:454951.742 N:521784.855	
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.692	Start Date: 21/04/2020
		Sheet: 1 of 4

SAMPLES & TESTS			STRATA			
Depth	Type No	Test Result	Water	Reduced Level	Legend	Description
0.50 0.50 0.80 1.00 1.00	J1 PID B2 ES3 PID	<0.1ppm <0.1ppm				MADE GROUND (Black brown sandy gravel with high cobble and medium boulder content. Gravel is fine to coarse subangular to subrounded and includes ash, macadam, concrete, slag, coal and coke. Slag content is 25-50%. Slag is vesicular grey green white with rust (iron) particles. Cobbles and boulders are subangular and include concrete, macadam and slag).
1.50 1.50 1.70	J4 PID J5	<0.1ppm		5.99	1.70	at c.1.70m BGL ... yellow brown sand. <i>Terminated at 1.70m BGL - due to close proximity to sewer.</i>



GROUNDWATER
 No groundwater inflow observed.

STABILITY
 Face C unstable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:454951.742 N:521784.855		PRAIRIE_AUK_TP103
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.692	Start Date: 21/04/2020	

Figure PRAIRIE_AUK_TP103.1
PRAIRIE_AUK_TP103



Figure PRAIRIE_AUK_TP103.2
PRAIRIE_AUK_TP103





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:454951.742 N:521784.855		PRAIRIE_AUK_TP103
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.692	Start Date: 21/04/2020	

Figure PRAIRIE_AUK_TP103.3
PRAIRIE_AUK_TP103



Figure PRAIRIE_AUK_TP103.4
PRAIRIE_AUK_TP103 - Spoil





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TRIAL PIT RECORD

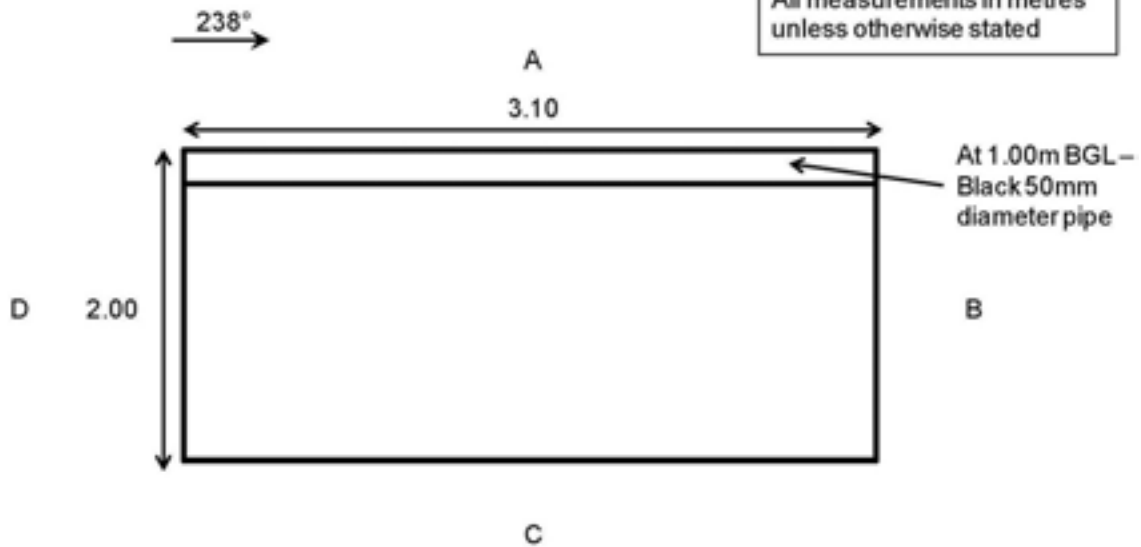
Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454951.742 N:521784.855		PRAIRIE_AUK_TP103
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.692	Start Date: 21/04/2020	Sheet: 4 of 4

Figure PRAIRIE_AUK_TP103.5
PRAIRIE_AUK_TP103 Sketch

PLAN VIEW





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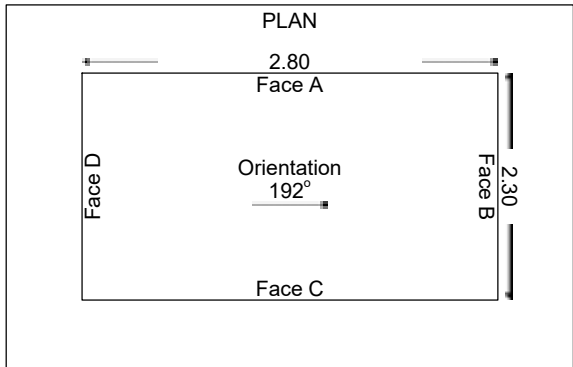
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_TP104	
Client: South Tees Development Corporation		Location: E:455113.453 N:521688.905	
Method (Equipment): Machine Excavated (360 Tracked Excavator)		Ground Level (m): 9.251	Start Date: 01/04/2020
		Sheet: 1 of 3	

SAMPLES & TESTS			STRATA			
Depth	Type No	Test Result	Water	Reduced Level	Legend	Description
0.00-4.00 0.00-4.00 0.20 0.30	B14 B15 J1 B2			8.85	(0.40)	MADE GROUND (Brown sandy gravelly topsoil. Sand is fine to coarse. Gravel is fine to coarse subangular and includes concrete and slag).
0.80 1.00	J3 B4				(1.20)	MADE GROUND (Grey brown sandy gravel with low cobble content. Gravel is fine to coarse subangular to subrounded and includes slag, concrete, dolomite, red brick and ash. Cobbles are subangular and include red brick and cemented slag. Slag content is 50-75%. Slag is vesicular grey and green, iron rich in places (rust)).
1.50 1.50 1.65 1.65 2.00	PID ES5 J6 B7 J8	<0.1ppm		7.65 7.55	1.60 1.70	from c. 1.30m BGL ... high cobble content. Cobbles are subangular and include red and yellow brick and concrete.
2.50	B9			6.45	(1.10)	MADE GROUND (Firm fissured brown mottled grey slightly sandy clay). MADE GROUND (Firm grey brown slightly sandy clay with some partially decomposed plant remains. Organic odour noted). (Possibly Natural Ground). at c.2.00m BGL ... clay is of intermediate plasticity.
3.00 3.00	HSV J10	87 (22)kPa			(0.90)	Firm to stiff blue grey mottled brown slightly sandy CLAY.
3.50	B11			5.55	3.70	
3.80 3.90 4.00	J12 HSV B13	86 (32)kPa		5.25	4.00	Firm to stiff indistinctly laminated red brown slightly sandy slightly gravelly CLAY with thin laminations of fine yellow sand. Gravel is fine to coarse subangular and includes sandstone, mudstone and siltstone. <i>Complete at 4.00m BGL.</i>



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS
(1) Samples B14 and B15 taken within spoil by client.

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:455113.453 N:521688.905		PRAIRIE_AUK_TP104
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 9.251	Start Date: 01/04/2020	

Figure PRAIRIE_AUK_TP104.1
PRAIRIE_AUK_TP104



Figure PRAIRIE_AUK_TP104.2
PRAIRIE_AUK_TP104





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:455113.453 N:521688.905		PRAIRIE_AUK_TP104
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 9.251	Start Date: 01/04/2020	

Figure PRAIRIE_AUK_TP104.3
PRAIRIE_AUK_TP104 - Spoil



Figure PRAIRIE_AUK_TP104.4
PRAIRIE_AUK_TP104 - Reinstatement





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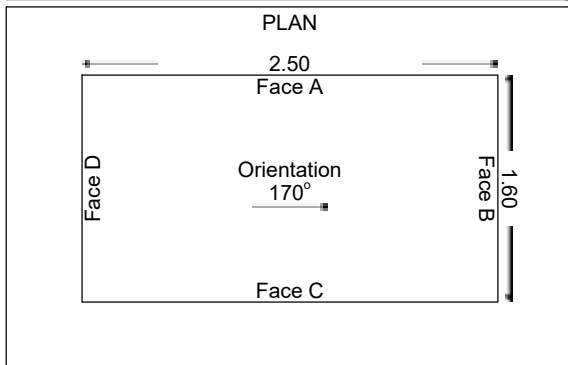
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_TP105
Client: South Tees Development Corporation	Location: E:455006.172 N:521693.493	
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.696	Start Date: 01/04/2020
		Sheet: 1 of 3

SAMPLES & TESTS			STRATA				
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description
0.80	J1			8.65		0.05	MADE GROUND (Brown sandy topsoil. Sand is fine to coarse).
1.00	B2			(0.55)		MADE GROUND (Strong grey concrete).	
1.20	PID	<0.1ppm		8.10		0.60	MADE GROUND (Grey brown sandy gravel with medium cobble content. Gravel is fine to coarse subangular to subrounded and includes slag and concrete. Slag content is 50-75%. Slag is vesicular green grey. Cobbles are subangular and include slag).
1.20	ES3						
1.80	J4						
2.00	HSV	60 (20)kPa					
2.00	B5						
2.50	PID	<0.1ppm					
2.50	ES11						
2.80	ES6			7.20		1.50	MADE GROUND (Firm brown slightly sandy slightly gravelly clay with low cobble content. Gravel is fine to coarse subangular and includes sandstone, mudstone, slag and red brick. Cobbles are subangular and include red brick and slag. Slag content is 0-25%. Slag is vesicular grey green white). at c.1.80m BGL ... clay is of high plasticity. at c.2.00m BGL ... engineer notes red brick dust coating on clay.
3.00	HSV	64 (24)kPa					
3.00	B7						
3.80	J8						from c.3.50m BGL ... becoming yellow brown gravelly.
4.20	J9			4.50	4.20		
4.20	B10			4.30	4.40		MADE GROUND (Firm grey brown slightly sandy slightly gravelly clay with some partially decomposed plant remains. Gravel is fine to coarse subangular and include slag and red brick. Slag content is 0-25%. Slag is vesicular grey green white. Organic odour noted). Terminated at 4.40m BGL - due to slow progress.



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:455006.172 N:521693.493		PRAIRIE_AUK_TP105
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.696	Start Date: 01/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP105.1
PRAIRIE_AUK_TP105



Figure PRAIRIE_AUK_TP105.2
PRAIRIE_AUK_TP105





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:455006.172 N:521693.493		PRAIRIE_AUK_TP105
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.696	Start Date: 01/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP105.3
PRAIRIE_AUK_TP105 - Spoil



Figure PRAIRIE_AUK_TP105.4
PRAIRIE_AUK_TP105 - Reinstatement





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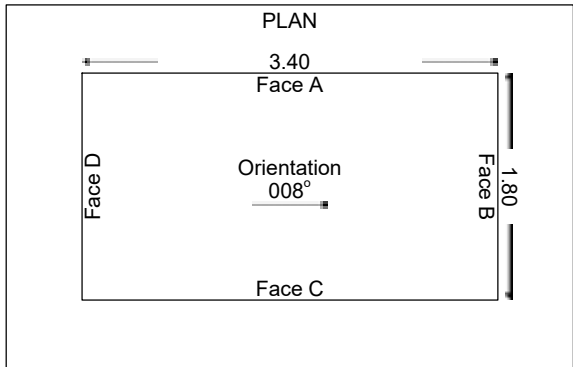
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation		Location: E:454906.605 N:521692.903	
Method (Equipment): Machine Excavated (360 Tracked Excavator)		Ground Level (m): 7.889	Start Date: 23/04/2020
		Sheet: 1 of 3	

SAMPLES & TESTS			STRATA			
Depth	Type No	Test Result	Water	Reduced Level	Legend	Description
0.50 0.50	J1 PID	<0.1ppm	Water			MADE GROUND (Brown clayey sandy gravel with high cobble and boulder content and fragments of metal, wire, wood, metal spanner and plastic. Gravel is fine to coarse subangular and includes concrete, refractory brick, red brick and slag. Cobbles are subangular and include red brick and concrete. Boulders are subangular and include concrete. Slag content is 0-25%. Slag is vesicular grey green white).
1.00 1.00	B2 ES3 PID	<0.1ppm		(1.80)		
1.50 1.50	J4 PID	<0.1ppm		6.09	1.80	
2.00 2.00	B5 HSV	70 (26)kPa		(1.00)	Firm and stiff yellow brown mottled grey slightly sandy CLAY.	
2.50 2.50	J6 PID	<0.1ppm		5.09	2.80	at c.2.50m BGL ... clay is of high plasticity.
3.00 3.00	B7 HSV	130 kPa		(0.70)	Stiff to very stiff orange slightly sandy slightly gravelly CLAY. Gravel is fine to coarse subangular and includes sandstone, mudstone, coal and siltstone.	
3.50 3.50	J8 PID	<0.1ppm		4.39	3.50	at c.3.50m BGL ... clay is of intermediate plasticity. <i>Complete at 3.50m BGL.</i>



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base unstable between 0.00-1.80m BGL..

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454906.605 N:521692.903		PRAIRIE_AUK_TP106
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.889	Start Date: 23/04/2020	

Figure PRAIRIE_AUK_TP106.1
PRAIRIE_AUK_TP106



Figure PRAIRIE_AUK_TP106.2
PRAIRIE_AUK_TP106





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:454906.605 N:521692.903		PRAIRIE_AUK_TP106
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.889	Start Date: 23/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP106.3
PRAIRIE_AUK_TP106 - Spoil





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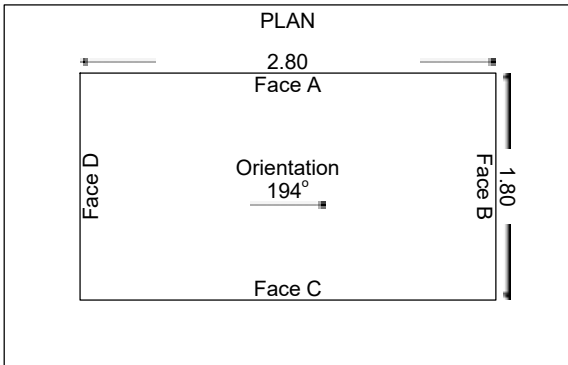
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_TP107	
Client: South Tees Development Corporation		Location: E:454800.537 N:521660.804	
Method (Equipment): Machine Excavated (360 Tracked Excavator)		Ground Level (m): 7.683	Start Date: 06/04/2020
		Sheet: 1 of 3	

SAMPLES & TESTS			STRATA				
Depth	Type No	Test Result	Water	Reduced Level	Legend	Description	
0.05	J1			7.58		0.10	
0.05	B2			0.10			MADE GROUND (Brown sandy gravelly topsoil. Sand is fine to coarse. Gravel is fine to coarse subangular and includes concrete, red brick and roadstone).
0.50	J3			1.50			MADE GROUND (Firm yellow brown mottled grey sandy slightly gravelly clay with medium cobble content and fragments of wood and metal. Gravel is fine to coarse subangular to subrounded and includes red brick and sandstone. Cobbles are subangular and include red brick). at c.0.50m BGL ... clay is of intermediate plasticity.
0.80	PID	<0.1ppm		1.60			
0.80	ES11			1.60			
1.00	HSV	72 (34)kPa		1.60			
1.00	B4			1.60			
1.70	J5			2.10			MADE GROUND (Black gravelly sand with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular and includes ash, macadam, coke and slag. Slag content is 25-50%. Slag is iron rich in places (rust). Cobbles are subangular and include fused coke).
1.80	PID	<0.1ppm		2.10			
1.80	ES6			2.10			
2.00	B7		2.10				
2.30	J8		2.90		Firm to stiff grey brown slightly sandy CLAY. at c.2.30m BGL ... clay if of high plasticity.		
2.50	HSV	67 (34)kPa	2.90				
2.50	B9		2.90				
2.80	PID	<0.1ppm	3.00				
2.80	ES10		3.00		Complete at 3.00m BGL.		



GROUNDWATER
 Water strike at 2.00m BGL.

STABILITY
 Pit sides slightly unstable between 1.60-2.10m BGL.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W.</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:454800.537 N:521660.804		PRAIRIE_AUK_TP107
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.683	Start Date: 06/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP107.1
PRAIRIE_AUK_TP107



Figure PRAIRIE_AUK_TP107.2
PRAIRIE_AUK_TP107





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454800.537 N:521660.804		PRAIRIE_AUK_TP107
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.683	Start Date: 06/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP107.3
PRAIRIE_AUK_TP107 - Spoil





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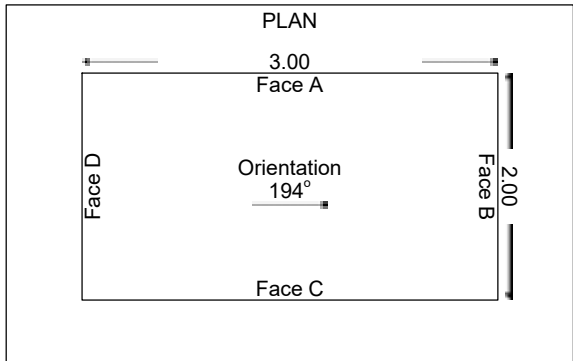
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454733.443 N:521630.866	PRAIRIE_AUK_TP108
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.991	Start Date: 06/04/2020
		Sheet: 1 of 3

SAMPLES & TESTS			STRATA			
Depth	Type No	Test Result	Water	Reduced Level	Legend	Description
0.30	J1					MADE GROUND (Grey sandy gravel. Gravel is fine to coarse subangular and includes roadstone).
0.50	B2			7.39		
0.80	J3					
0.90	B4					
1.00	PID	<0.1ppm		6.79		
1.00	ES5					
1.80	J6					
1.90	B7	1.7ppm				
2.00	PID					
2.00	ES8					
2.80	J9					
2.90	B10	0.6ppm				
3.00	PID					
3.00	ES11					
				3.99		at c.4.00m BGL ... engineer notes possible concrete. Terminated at 4.00m BGL - due to possible concrete.



GROUNDWATER
 Water strike at 2.30m BGL.

STABILITY
 Pit sides stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454733.443 N:521630.866		PRAIRIE_AUK_TP108
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.991	Start Date: 06/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP108.1
PRAIRIE_AUK_TP108



Figure PRAIRIE_AUK_TP108.2
PRAIRIE_AUK_TP108





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454733.443 N:521630.866		PRAIRIE_AUK_TP108
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.991	Start Date: 06/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP108.3
PRAIRIE_AUK_TP108 - Spoil



Figure PRAIRIE_AUK_TP108.4
PRAIRIE_AUK_TP108 - Reinstatement





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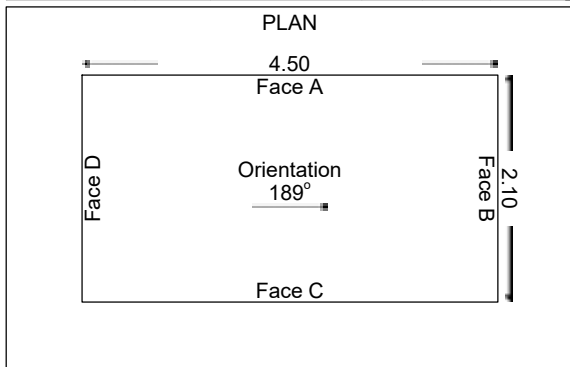
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:455108.905 N:521613.046	PRAIRIE_AUK_TP109
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 9.164	Start Date: 21/04/2020
		Sheet: 1 of 3

SAMPLES & TESTS			STRATA			
Depth	Type No	Test Result	Water	Reduced Level	Legend	Description
0.50 0.50	J1 PID	<0.1ppm			[Cross-hatched pattern]	MADE GROUND (Grey brown sandy gravel with high cobble content. Gravel is fine to coarse subangular to subrounded and includes slag, red brick, concrete and ash. Slag content is 75-100%. Slag is vesicular grey green white. Cobbles are subangular and include slag, red brick and refractory bricks). (1.80)
1.00 1.00	B2 ES3 PID	0.1ppm				
1.50 1.50 1.70	J4 PID B5	0.1ppm		7.36	[Horizontal line pattern]	Firm to stiff indistinctly laminated orange brown mottled grey slightly sandy CLAY. between c.1.80-1.85m BGL ... possible relict topsoil (plant material). (1.30)
2.00 2.00 2.00	J6 HSV PID	82 (40)kPa <0.1ppm				
2.70	B7					
3.00 3.00 3.00	J8 HSV PID	103 (40)kPa <0.1ppm		6.06		Complete at 3.10m BGL.



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base moderately stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:455108.905 N:521613.046		PRAIRIE_AUK_TP109
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 9.164	Start Date: 21/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP109.1
PRAIRIE_AUK_TP109



Figure PRAIRIE_AUK_TP109.2
PRAIRIE_AUK_TP109





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TRIAL PIT RECORD

Status:-

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Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:455108.905 N:521613.046		PRAIRIE_AUK_TP109
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 9.164	Start Date: 21/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP109.3
PRAIRIE_AUK_TP109 - Spoil





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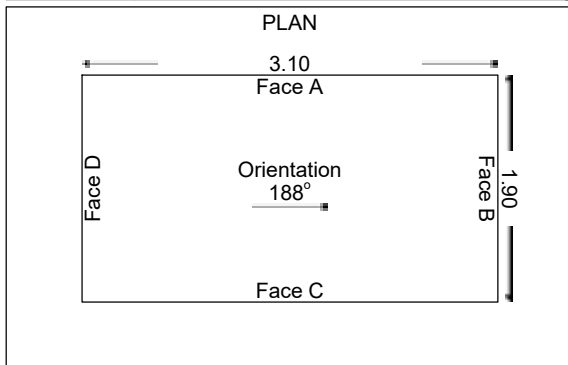
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:455001.878 N:521603.274	PRAIRIE_AUK_TP110
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.856	Start Date: 21/04/2020
		Sheet: 1 of 3

SAMPLES & TESTS			STRATA					
Depth	Type No	Test Result	Water	Reduced Level	Legend	Description		
0.50 0.50	J1 PID	<0.1ppm	Water		Legend	MADE GROUND (Grey brown sandy gravel with high cobble content. Gravel is fine to coarse subangular and includes red brick, slag and concrete. Slag content is 50-75%. Slag is vesicular green grey white with occasional rust (iron) particles. Cobbles are subangular and include concrete and cemented slag).		
1.00 1.00	B2 ES3 PID	<0.1ppm		(2.10)		at c.1.00m BGL ... clayey/silty very sandy gravel with medium cobble content.		
1.50 1.50	J4 PID	<0.1ppm				from c.1.50m BGL ... slightly sandy.		
2.00	B5			6.76		2.10		
2.50 2.50	J6 PID	0.3ppm					MADE GROUND (Soft to firm orange brown mottled grey slightly sandy slightly gravelly clay with fragments of pottery, metal and wood. Gravel is fine to coarse subangular and includes mudstone, coal, slag, coke and red bricks). at c.2.50m BGL ... clay is of high plasticity.	
2.80	ES7							
3.00 3.00	B8 HSV PID	59 (18)kPa 0.2ppm				(2.40)		
3.50 3.50	J9 PID	<0.1ppm						
4.00 4.00	B10 ES11 HSV PID	49 (12)kPa <0.1ppm				4.36	4.50	
4.50 4.50	J12 PID	0.1ppm					Complete at 4.50m BGL.	



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

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Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:455001.878 N:521603.274		PRAIRIE_AUK_TP110
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.856	Start Date: 21/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP110.1
PRAIRIE_AUK_TP110



Figure PRAIRIE_AUK_TP110.2
PRAIRIE_AUK_TP110





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Status:-

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Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:455001.878 N:521603.274		PRAIRIE_AUK_TP110
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.856	Start Date: 21/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP110.3
PRAIRIE_AUK_TP110 - Spoil





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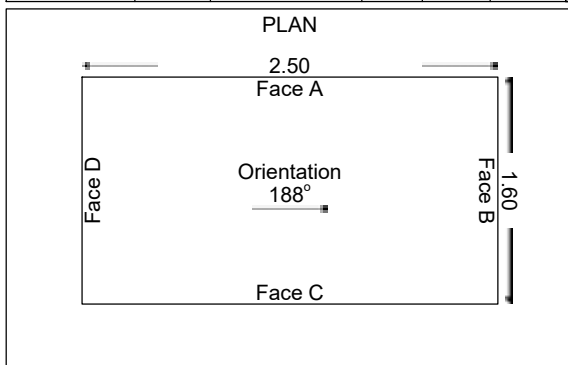
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454901.611 N:521593.473	PRAIRIE_AUK_TP111
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.252	Start Date: 22/04/2020
		Sheet: 1 of 3

SAMPLES & TESTS			Water	STRATA		
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)
0.40 0.40 0.60	J1 PID B2	<0.1ppm			(0.80)	MADE GROUND (Grass over light brown gravelly sand. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded and includes red brick, concrete and slag. Slag content is 0-25%. Slag is vesicular grey green white).
1.00 1.00	J3 PID	0.1ppm			(1.20)	MADE GROUND (Black clayey sandy gravel with medium cobble content and fragments of wood, nails and metal. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded and includes ash, macadam, red brick, concrete, coke and slag. Cobbles are subangular and include red brick, macadam and concrete. Slag content is 0-25%. Slag is vesicular grey green white).
1.50 1.50 1.60	ES4 PID B5	0.2ppm			(2.00)	
2.00 2.00	J6 PID	<0.1ppm			(1.20)	Firm to stiff orange brown mottled grey slightly sandy CLAY. at c.2.00m BGL ... clay if of intermediate plasticity.
2.50 2.60	HSV B7	70 (30)kPa			(1.20)	
3.00 3.00 3.00	J8 HSV PID	101 (32)kPa <0.1ppm			(1.20)	Complete at 3.20m BGL.



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:454901.611 N:521593.473		PRAIRIE_AUK_TP111
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.252	Start Date: 22/04/2020	

Figure PRAIRIE_AUK_TP111.1
PRAIRIE_AUK_TP111



Figure PRAIRIE_AUK_TP111.2
PRAIRIE_AUK_TP111





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454901.611 N:521593.473		PRAIRIE_AUK_TP111
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.252	Start Date: 22/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP111.3
PRAIRIE_AUK_TP111 - Spoil





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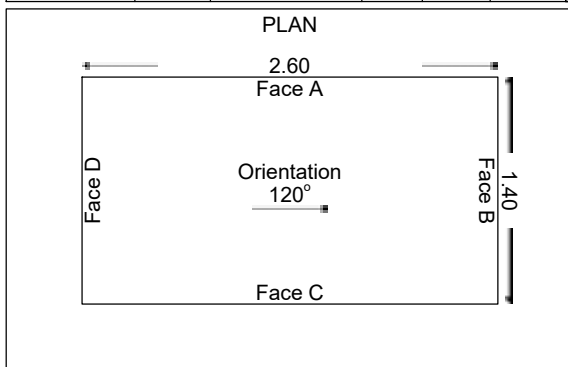
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_TP112	
Client: South Tees Development Corporation		Location: E:454830.544 N:521581.112	
Method (Equipment): Machine Excavated (360 Tracked Excavator)		Ground Level (m): 8.900	Start Date: 22/04/2020
		Sheet: 1 of 3	

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
0.50 0.50 0.70	J1 PID B2	<0.1ppm	↓	8.10	[Cross-hatch pattern]	0.80	MADE GROUND (Brown sandy gravel with medium cobble content and fragments of metal, plastic, tin cans and nails. Gravel is fine to coarse subangular and includes red brick, concrete, slag and refractory bricks. Cobbles are subangular and include concrete and yellow brick. Slag content is 0-25%. Slag is vesicular grey green white).
1.00 1.00	J3 PID	<0.1ppm		7.00	[Cross-hatch pattern]	1.90	MADE GROUND (Black clayey/silty very sandy gravel with fragments of metal, nails, plastic and ceramic. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded and includes ash, red brick, concrete, refractory brick and slag. Slag content is 0-25%. Slag is vesicular grey green white).
1.50 1.50 1.70	ES4 PID B5	<0.1ppm		6.50	[Cross-hatch pattern]	2.40	MADE GROUND (Black gravelly sand. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded and includes ash and macadam. Hydrocarbon/oily odour noted).
2.00 2.00	J6 PID	0.5ppm		6.20	[Horizontal dashes]	2.70	Firm orange brown mottled grey slightly sandy CLAY.
2.10 2.10 2.30	ES7 PID B8	0.9ppm		5.50	[X marks]	3.40	Soft to firm orange mottled brown slightly sandy silty CLAY. at c.2.70m BGL ... clay is of high plasticity. at c.3.00m BGL ... clay/silt is of intermediate plasticity.
2.30 2.50 2.70	HSV J9 PID	76 (38)kPa <0.1ppm					
2.70 3.00 3.00 3.10 3.20	J10 PID HSV B11	<0.1ppm 56 (24)kPa					
Complete at 3.40m BGL.							



GROUNDWATER
 Water strike at 2.40m BGL.

STABILITY
 Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454830.544 N:521581.112		PRAIRIE_AUK_TP112
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.900	Start Date: 22/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP112.1
PRAIRIE_AUK_TP112



Figure PRAIRIE_AUK_TP112.2
PRAIRIE_AUK_TP112





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454830.544 N:521581.112		PRAIRIE_AUK_TP112
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.900	Start Date: 22/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP112.3
PRAIRIE_AUK_TP112 - Spoil





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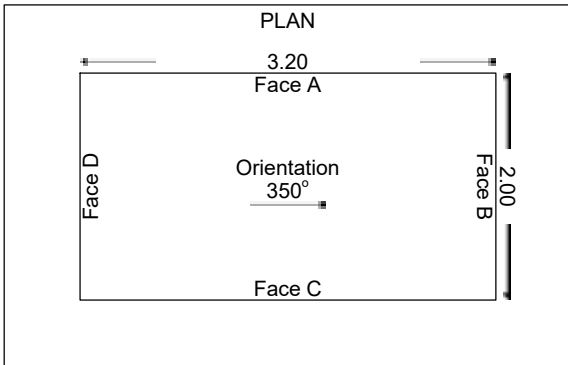
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation		Location: E:454694.546 N:521566.242	
Method (Equipment): Machine Excavated (360 Tracked Excavator)		Ground Level (m): 8.160	Start Date: 06/04/2020
		Sheet: 1 of 4	

SAMPLES & TESTS			STRATA				
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description
0.05	J1			8.06		0.10	MADE GROUND (Grass over brown sandy topsoil).
0.05	B2			(2.20)		MADE GROUND (Dark brown gravelly sand with low cobble content. Fragments of metal. Sand is fine to coarse and includes ash. Gravel is fine to coarse subangular and include sandstone, ash, red brick, concrete and slag. Slag content is 0-25%. Cobbles are subangular and include red brick, concrete and slag).	
0.80	J3						
1.10	B4						
1.30	PID	<0.1ppm					
1.30	ES5						
1.80	B6						
2.50	J7			5.86		2.30	MADE GROUND (Firm orange brown slightly sandy slightly gravelly clay). (Possibly Natural Ground).
2.80	B8			5.16		3.00	at c.2.50m BGL ... clay is of intermediate plasticity. from c.2.90m BGL ... Face A: slag or concrete plinth/ledge.
3.50	HSV	54 (20)kPa					(0.80)
3.50	J9		4.36	3.80			
3.80	B10					Terminated at 3.80m BGL - due to concrete plinth and groundwater ingress.	



GROUNDWATER
Water strike at 1.70m BGL.

STABILITY
Pit sides stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:454694.546 N:521566.242		PRAIRIE_AUK_TP113
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.160	Start Date: 06/04/2020	Sheet: 2 of 4

Figure PRAIRIE_AUK_TP113.1
PRAIRIE_AUK_TP113



Figure PRAIRIE_AUK_TP113.2
PRAIRIE_AUK_TP113





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:454694.546 N:521566.242		PRAIRIE_AUK_TP113
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.160	Start Date: 06/04/2020	Sheet: 3 of 4

Figure PRAIRIE_AUK_TP113.3
PRAIRIE_AUK_TP113 - Spoil



Figure PRAIRIE_AUK_TP113.4
PRAIRIE_AUK_TP113 - Reinstatement





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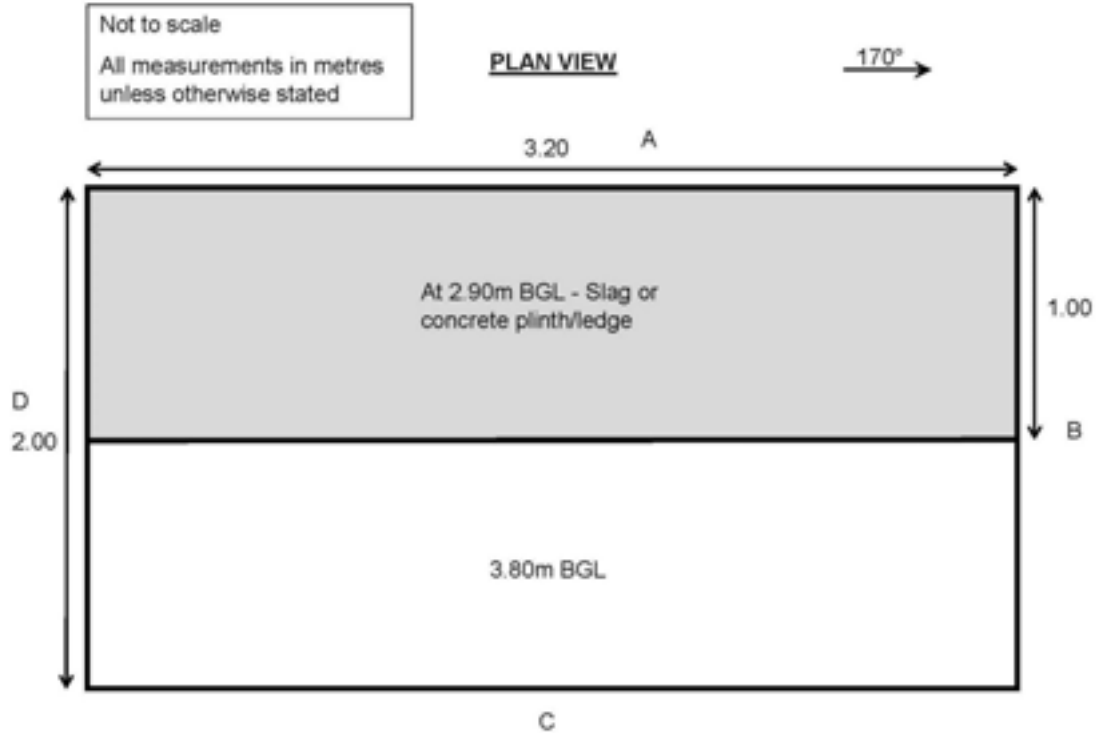
TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454694.546 N:521566.242		PRAIRIE_AUK_TP113
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.160	Start Date: 06/04/2020	Sheet: 4 of 4

Figure PRAIRIE_AUK_TP113.5
PRAIRIE_AUK_TP113 Sketch





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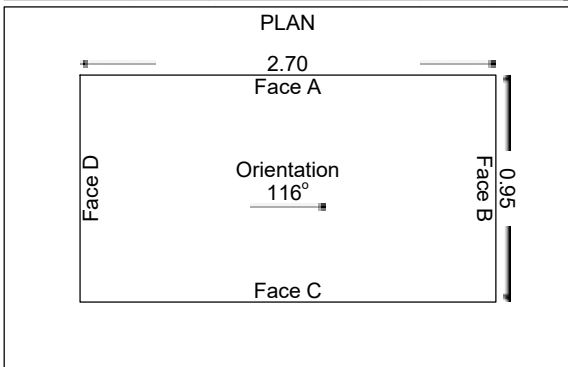
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_TP114	
Client: South Tees Development Corporation		Location: E:454611.674 N:521563.937	
Method (Equipment): Machine Excavated (360 Tracked Excavator)		Ground Level (m): 7.756	Start Date: 07/04/2020
		Sheet: 1 of 4	

SAMPLES & TESTS			STRATA					
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	
0.10	J1			7.61		0.15	MADE GROUND (Grass over brown sandy topsoil).	
0.10	B2							MADE GROUND (Black clayey very sandy gravel with fragments glass, metal and tiles. Sand is fine to coarse. Gravel is fine to coarse subangular and includes red brick, refractory brick, ash and concrete).
0.30	J3							
0.40	B4							
0.50	ES5							
0.50	PID	7.2ppm						
0.90	ES6							at c.0.90m BGL ... clay pipe running from Faces C to A, 300mm diameter. Black tar with hydrocarbon odour noted probably from within the pipe.
0.90	PID	130.0ppm						
1.30	J7							
1.40	B8							
				5.76		2.00	Terminated at 2.00m BGL - due to water ingress and instability.	



GROUNDWATER
 Groundwater seepage at 0.50m BGL. Water flowing out of the damaged pipe during excavation.

STABILITY
 Face A unstable from 1.20m BGL.

ADDITIONAL INFORMATION		
Sketch Diagram:	Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454611.674 N:521563.937		PRAIRIE_AUK_TP114
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.756	Start Date: 07/04/2020	Sheet: 2 of 4

Figure PRAIRIE_AUK_TP114.1
PRAIRIE_AUK_TP114



Figure PRAIRIE_AUK_TP114.2
PRAIRIE_AUK_TP114





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454611.674 N:521563.937		PRAIRIE_AUK_TP114
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.756	Start Date: 07/04/2020	Sheet: 3 of 4

Figure PRAIRIE_AUK_TP114.3
PRAIRIE_AUK_TP114 - Spoil



Figure PRAIRIE_AUK_TP114.4
PRAIRIE_AUK_TP114 - Reinstatement





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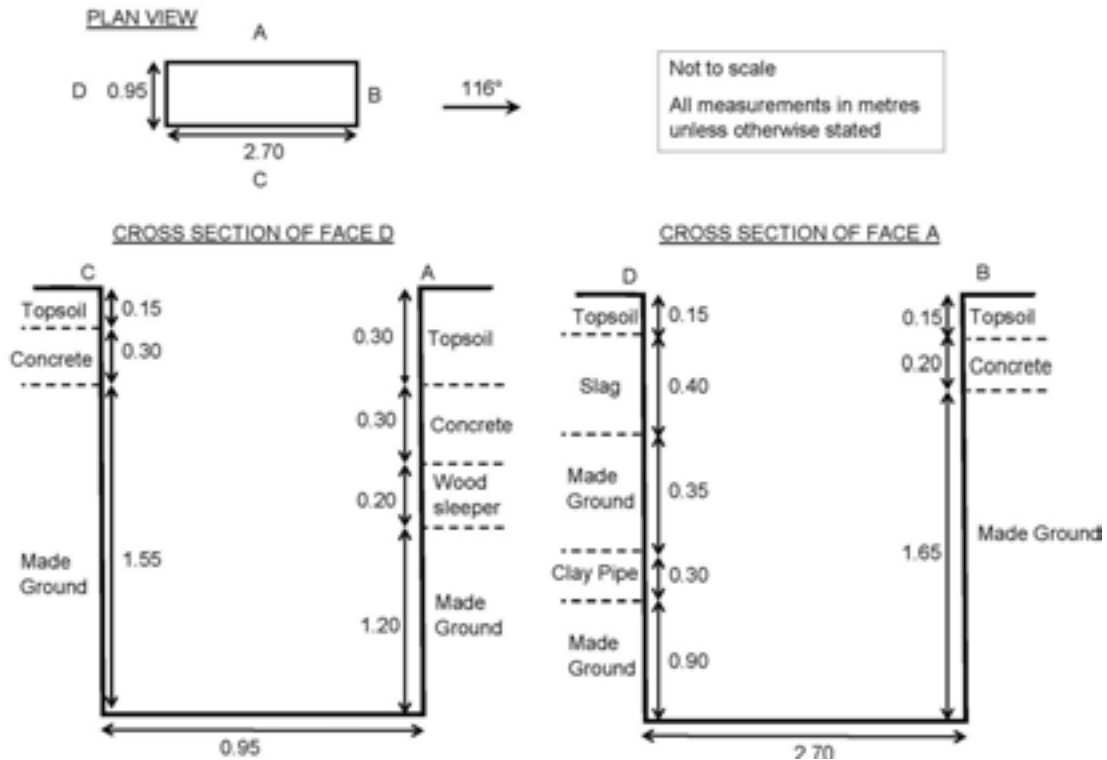
TRIAL PIT RECORD

Status:-

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Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454611.674 N:521563.937		PRAIRIE_AUK_TP114
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.756	Start Date: 07/04/2020	Sheet: 4 of 4

Figure PRAIRIE_AUK_TP114.5
PRAIRIE_AUK_TP114 Sketch





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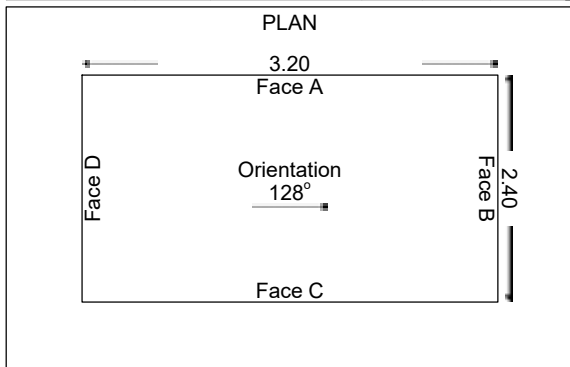
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No. PRAIRIE_AUK_TP115	
Client: South Tees Development Corporation		Location: E:454493.054 N:521548.834		Sheet: 1 of 5
Method (Equipment): Machine Excavated (360 Tracked Excavator)		Ground Level (m): 7.843	Start Date: 08/04/2020	

SAMPLES & TESTS			STRATA					
Depth	Type No	Test Result	Water	Reduced Level	Legend	Description		
0.30	J1		↓ Water	7.44	[Cross-hatched pattern]	MADE GROUND (Dark brown sandy topsoil).		
0.30	B2					(0.40)		
0.50	W9					(0.80)	MADE GROUND (Yellow grey refractory bricks). from c.0.40m BGL ... Face D: concrete wall.	
0.80	B3					6.64	1.20	
1.40	J4							MADE GROUND (Grey slightly clayey very sandy gravel. Gravel is fine to coarse subangular to subrounded and includes ash, red brick and slag. Slag content is 50-75%. Slag is vesicular grey green).
1.70	B5							between 1.20-3.10m BGL ... Face B: firm indistinctly laminated grey sandy silt/clay.
1.90	PID	<0.1ppm						(1.90)
1.90	ES6							
2.00	HSV	25 (8)kPa						
2.40	J7							
2.70	B8			4.74		3.10		
Terminated at 3.10m BGL - due to water ingress.								



GROUNDWATER
 Water strike at 0.30m BGL.

STABILITY
 Side A unstable from c.0.40m BGL.

ADDITIONAL INFORMATION		
Sketch Diagram:	Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS
 (1) Descriptions represent Face C. Refer to following sketches for further details.

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:454493.054 N:521548.834		PRAIRIE_AUK_TP115
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.843	Start Date: 08/04/2020	Sheet: 2 of 5

Figure PRAIRIE_AUK_TP115.1
PRAIRIE_AUK_TP115



Figure PRAIRIE_AUK_TP115.2
PRAIRIE_AUK_TP115





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TRIAL PIT RECORD

Status:-

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Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454493.054 N:521548.834		PRAIRIE_AUK_TP115
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.843	Start Date: 08/04/2020	Sheet: 3 of 5

Figure PRAIRIE_AUK_TP115.3
PRAIRIE_AUK_TP115 - Spoil



Figure PRAIRIE_AUK_TP115.4
PRAIRIE_AUK_TP115 - Reinstatement





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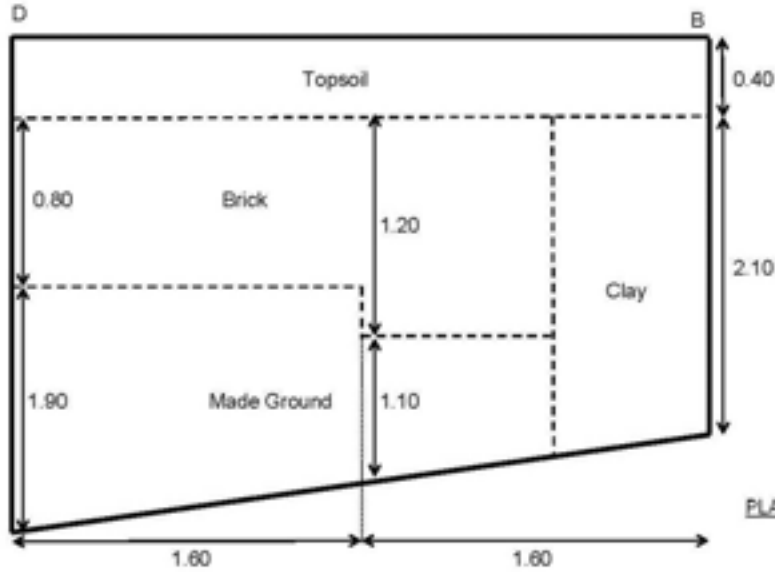
TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454493.054 N:521548.834		PRAIRIE_AUK_TP115
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.843	Start Date: 08/04/2020	Sheet: 4 of 5

Figure PRAIRIE_AUK_TP115.5
 PRAIRIE_AUK_TP115 Sketch

CROSS SECTION OF FACE A



Not to scale
 All measurements in metres
 unless otherwise stated

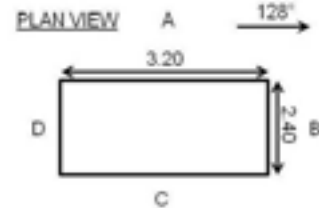
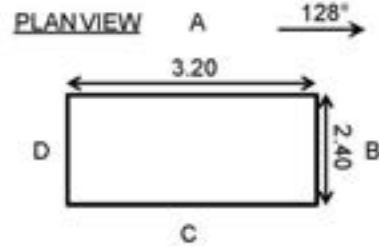
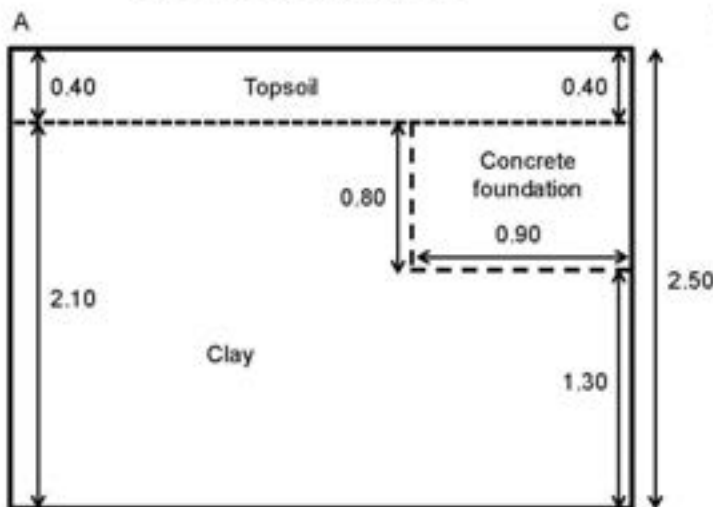


Figure PRAIRIE_AUK_TP115.6
 PRAIRIE_AUK_TP115 Sketch

CROSS SECTION OF FACE B



Not to scale
 All measurements in metres
 unless otherwise stated



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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454493.054 N:521548.834		PRAIRIE_AUK_TP115
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.843	Start Date: 08/04/2020	Sheet: 5 of 5

Figure PRAIRIE_AUK_TP115.7
PRAIRIE_AUK_TP115 Sketch

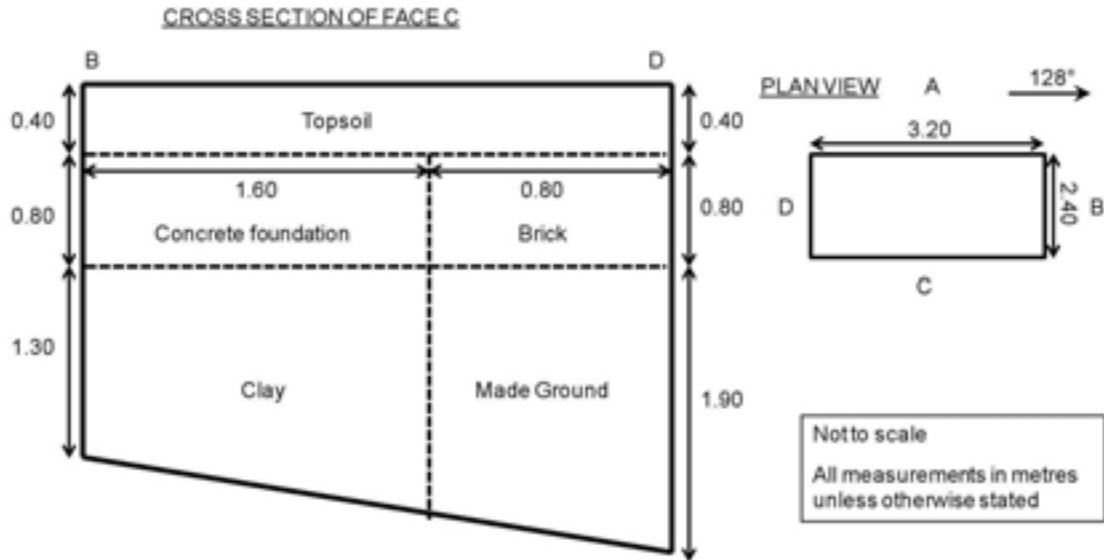
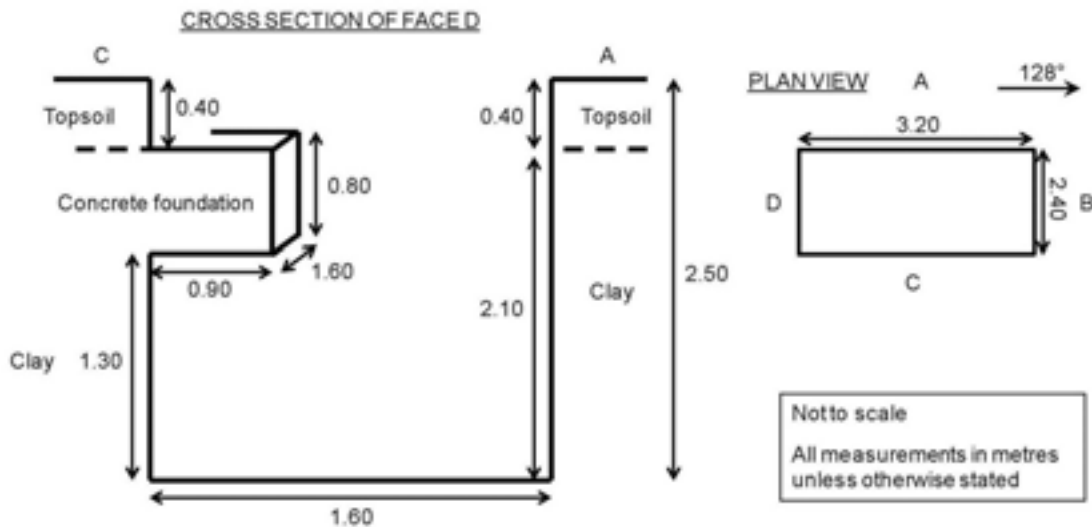


Figure PRAIRIE_AUK_TP115.8
PRAIRIE_AUK_TP115 Sketch





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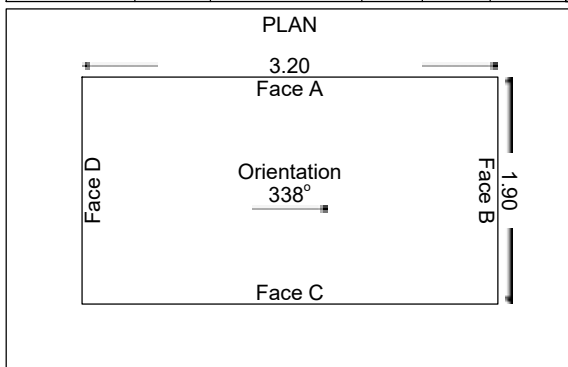
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:455046.603 N:521489.508	PRAIRIE_AUK_TP116
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.842	Start Date: 23/04/2020
		Sheet: 1 of 3

SAMPLES & TESTS			STRATA			
Depth	Type No	Test Result	Water	Reduced Level	Legend	Description
0.50 0.50	J1 PID	5.4ppm				MADE GROUND (Grey brown sandy gravel with medium cobble content. Gravel is fine to coarse subangular to subrounded and includes slag, concrete, red brick and refractory brick. Cobbles are subangular and include slag. Slag content is 50-75%. Slag is vesicular grey green white).
1.00	B2					
1.30 1.30	ES3 PID	7.1ppm		7.24		
1.50	J4					
1.60	J5			7.04		
1.60 1.70	PID B6	8.8ppm				MADE GROUND (Black brown slightly sandy clayey silt. Organic odour noted). at c.1.60m BGL ... silt is of intermediate plasticity.
2.00	J7					
2.00 2.00	HSV PID	100 (68)kPa <0.1ppm				Firm to stiff orange brown mottled grey slightly sandy CLAY. at c.2.00m BGL ... clay is of high plasticity.
2.50	B8					
				5.94		
3.00 3.00 3.00	J9 HSV PID	130 kPa <0.1ppm				Stiff to very stiff orange slightly sandy slightly gravelly CLAY with coarse gravel sized pockets of orange sand. Gravel is fine to coarse subangular and includes sandstone, coal, mudstone and siltstone. from c.3.00m BGL ... fissured with grey veins. Clay is of intermediate plasticity.
3.50	B10					
				4.94		
3.90	J11					Complete at 3.90m BGL.



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:455046.603 N:521489.508		PRAIRIE_AUK_TP116
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.842	Start Date: 23/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP116.1
PRAIRIE_AUK_TP116



Figure PRAIRIE_AUK_TP116.2
PRAIRIE_AUK_TP116





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:455046.603 N:521489.508		PRAIRIE_AUK_TP116
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.842	Start Date: 23/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP116.3
PRAIRIE_AUK_TP116 - Spoil





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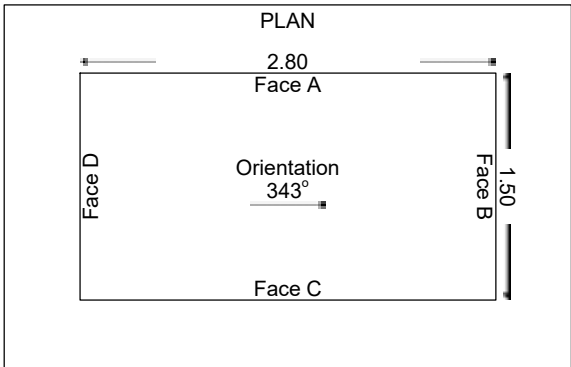
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_TP117	
Client: South Tees Development Corporation		Location: E:455003.534 N:521496.122	
Method (Equipment): Machine Excavated (360 Tracked Excavator)		Ground Level (m): 8.653	Start Date: 23/04/2020
		Sheet: 1 of 3	

SAMPLES & TESTS			STRATA			
Depth	Type No	Test Result	Water	Reduced Level	Legend	Description
0.50 0.50	J1 PID	9.1ppm				MADE GROUND (Black grey slightly clayey sandy gravel with medium cobble content. Gravel is fine to coarse subangular to subrounded and includes ash, concrete, slag, roadstone, macadam and refractory brick. Cobbles are subangular and include refractory brick, macadam, concrete and cemented slag. Slag content is 75-100%. Slag is vesicular grey green. Sulphurous odour noted).
1.00 1.20 1.20	B2 ES3 PID	10.4ppm		(2.60)		
1.50	J4					
2.00 2.00	B5 PID	9.6ppm				
2.50	J6			6.05		
2.80	J7			(0.70)		
3.00 3.00 3.20	ES8 PID B9	11.1ppm		5.35		
				3.30		



GROUNDWATER
 Groundwater seepage at 2.60m BGL.

STABILITY
 From 1.60m BGL all faces unstable (undermining).

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:455003.534 N:521496.122		PRAIRIE_AUK_TP117
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.653	Start Date: 23/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP117.1
PRAIRIE_AUK_TP117



Figure PRAIRIE_AUK_TP117.2
PRAIRIE_AUK_TP117





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:455003.534 N:521496.122		PRAIRIE_AUK_TP117
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.653	Start Date: 23/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP117.3
PRAIRIE_AUK_TP117 - Spoil





ALLIED EXPLORATION & GEOTECHNICS LIMITED

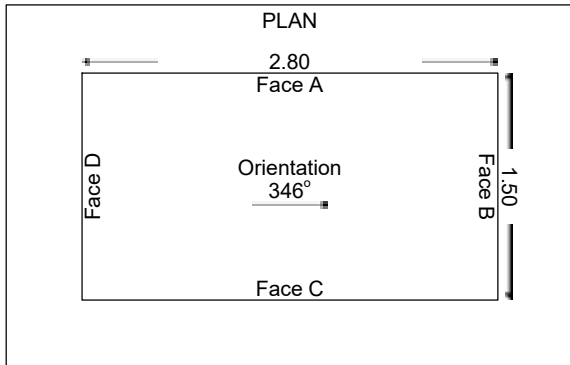
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_TP118
Client: South Tees Development Corporation	Location: E:454893.854 N:521502.578	
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.581	Start Date: 23/04/2020
		Sheet: 1 of 3

SAMPLES & TESTS			STRATA					
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	
0.50	J1			8.48		0.10	MADE GROUND (Grass over topsoil).	
0.50	PID	0.2ppm				(1.30)	MADE GROUND (Brown clayey/silty very sandy gravel with low cobble content and fragments of metal. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded and includes red brick, concrete, ash, slag and refractory brick. Cobbles are subangular and include red and yellow brick and concrete. Slag content is 0-25%. Slag is vesicular grey green white).	
1.00	B2				7.18		1.40	Firm black brown slightly sandy slightly gravelly CLAY/SILT. Gravel is fine to coarse subangular and includes mudstone. Organic odour noted.
1.20	ES3	<0.1ppm			6.88		1.70	(Possible Made Ground). at c.1.50m BGL ... clay/silt if of intermediate plasticity.
1.50	J4						(1.30)	Firm orange brown mottled grey slightly sandy CLAY. at c.2.20m BGL ... clay is of high plasticity.
1.60	B5							
1.60	HSV	68 (42)kPa						
1.60	PID	<0.1ppm						
2.20	J6						3.00	Complete at 3.00m BGL.
2.20	PID	<0.1ppm						
2.50	B7							
2.60	HSV	82 (40)kPa						



GROUNDWATER
Groundwater seepage at 1.40m BGL.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454893.854 N:521502.578		PRAIRIE_AUK_TP118
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.581	Start Date: 23/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP118.1
PRAIRIE_AUK_TP118



Figure PRAIRIE_AUK_TP118.2
PRAIRIE_AUK_TP118





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:454893.854 N:521502.578		PRAIRIE_AUK_TP118
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.581	Start Date: 23/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP118.3
PRAIRIE_AUK_TP118 - Spoil





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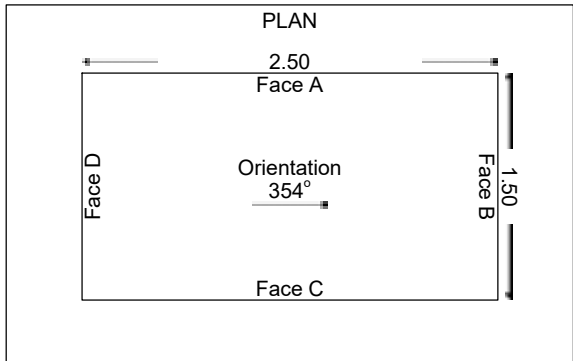
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_TP119	
Client: South Tees Development Corporation		Location: E:454801.846 N:521499.669	
Method (Equipment): Machine Excavated (360 Tracked Excavator)		Ground Level (m): 8.925	Start Date: 22/04/2020
		Sheet: 1 of 3	

SAMPLES & TESTS			STRATA			
Depth	Type No	Test Result	Water	Reduced Level	Legend	Description
0.50	J1			8.83		0.10
0.50	PID	<0.1ppm		0.10		MADE GROUND (Black macadam).
1.00	B2			2.10		MADE GROUND (Black slightly clayey/silty sandy gravel with low cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded and includes macadam, ash and slag. Cobbles are subangular and include slag. Slag content is 50-75%. Slag is vesicular grey green white).
1.00	PID	<0.1ppm		2.10		
1.50	ES3			2.20		from c.1.50m BGL ... gravelly sand.
1.50	J4			2.20		at c.2.00m BGL ... slightly clayey/silty very sandy gravel.
1.50	PID	<0.1ppm		2.20		Firm orange brown mottled grey slightly sandy CLAY.
2.00	B5			2.20		at c.2.50m BGL ... clay is of high plasticity.
2.00	PID	<0.1ppm		2.20		
2.50	J6			5.73		Complete at 3.20m BGL.
2.50	ES7					
2.50	HSV	47 (20)kPa				
2.50	PID	<0.1ppm				
3.00	B8					
3.00	HSV	65 (22)kPa				



GROUNDWATER
 Water strike at 2.20m BGL

STABILITY
 Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454801.846 N:521499.669		PRAIRIE_AUK_TP119
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.925	Start Date: 22/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP119.1
PRAIRIE_AUK_TP119



Figure PRAIRIE_AUK_TP119.2
PRAIRIE_AUK_TP119





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:454801.846 N:521499.669		PRAIRIE_AUK_TP119
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.925	Start Date: 22/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP119.3
PRAIRIE_AUK_TP119 - Spoil





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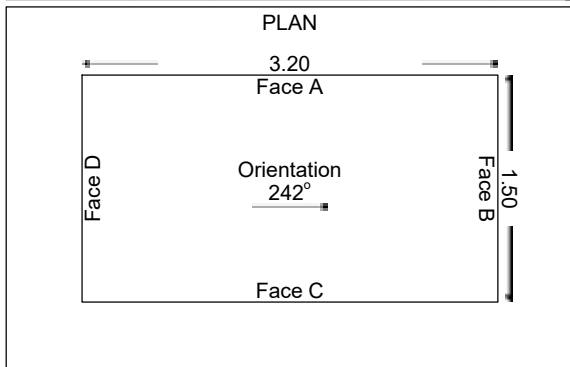
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454697.497 N:521508.611	PRAIRIE_AUK_TP120
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.995	Start Date: 20/04/2020
		Sheet: 1 of 3

SAMPLES & TESTS			STRATA			
Depth	Type No	Test Result	Water	Reduced Level	Legend	Description
0.50 0.50 0.80 1.00 1.00 1.50 1.50	J1 PID B2 ES3 PID J4 PID	<0.1ppm <0.1ppm		6.50		MADE GROUND (Black gravelly sand with low cobble content and fragments of metal. Sand is fine to coarse. Gravel is fine to coarse subangular and includes red brick, ash, concrete and slag. Cobbles are subangular and include concrete. Slag content is 0-25%. Slag is vesicular grey green white). at c.1.50m BGL ... concrete. <i>Terminated at 1.50m BGL - due to concrete obstruction.</i>



GROUNDWATER
 Groundwater seepage at 1.50m BGL.

STABILITY
 Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454697.497 N:521508.611		PRAIRIE_AUK_TP120
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.995	Start Date: 20/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP120.1
PRAIRIE_AUK_TP120



Figure PRAIRIE_AUK_TP120.2
PRAIRIE_AUK_TP120





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454697.497 N:521508.611		PRAIRIE_AUK_TP120
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.995	Start Date: 20/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP120.3
PRAIRIE_AUK_TP120 - Spoil





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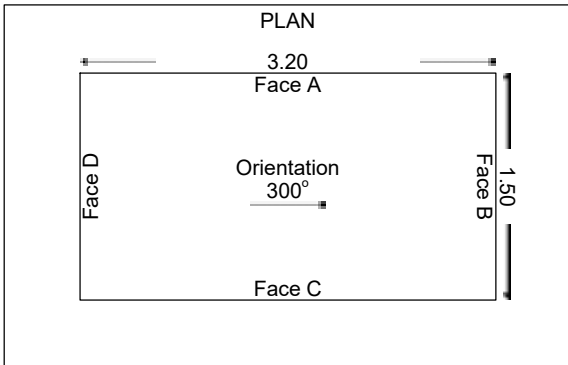
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TRIAL PIT RECORD

Status:-
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Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation		Location: E:454697.765 N:521513.778	
Method (Equipment): Machine Excavated (360 Tracked Excavator)		Ground Level (m): 7.878	Start Date: 20/04/2020
		Sheet: 1 of 3	

SAMPLES & TESTS			STRATA			
Depth	Type No	Test Result	Water	Reduced Level	Legend	Description
0.50 0.50 0.80 1.00 1.00	J1 PID B2 ES3 PID	<0.1ppm	↓	6.58	(1.30)	MADE GROUND (Black clayey very sandy gravel with fragments of metal. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded and includes red brick, concrete, ash and slag. Slag content is 0-25%. Slag is vesicular grey green white).
1.50 1.50 1.50 1.80	J4 HSV PID B5	62 (22)kPa <0.1ppm		5.88	(0.70)	Soft to firm yellow brown mottled grey sandy CLAY.
2.50 2.50 2.50 2.80	J6 HSV PID B7	74 (18)kPa <0.1ppm		4.98	(0.90)	Firm to stiff thinly laminated orange brown mottled grey slightly sandy CLAY with fine yellow brown sand on the laminae.
Complete at 2.90m BGL.						



GROUNDWATER
Water strike at 1.30m BGL

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454697.765 N:521513.778		PRAIRIE_AUK_TP120A
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.878	Start Date: 20/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP120A.1
PRAIRIE_AUK_TP120A



Figure PRAIRIE_AUK_TP120A.2
PRAIRIE_AUK_TP120A





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:454697.765 N:521513.778		PRAIRIE_AUK_TP120A
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.878	Start Date: 20/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP120A.3
PRAIRIE_AUK_TP120A - Spoil





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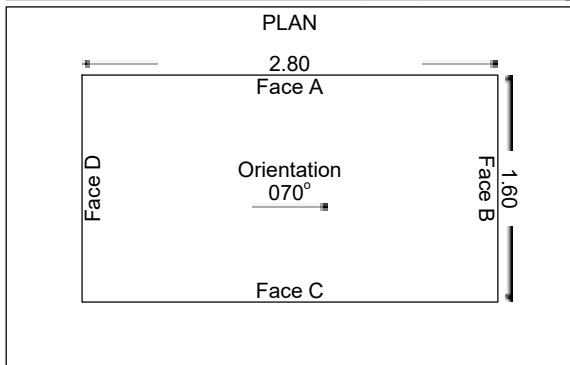
TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No. PRAIRIE_AUK_TP121	
Client: South Tees Development Corporation		Location: E:454597.680 N:521503.836		Sheet: 1 of 3
Method (Equipment): Machine Excavated (360 Tracked Excavator)		Ground Level (m): 8.213	Start Date: 09/04/2020	

SAMPLES & TESTS			STRATA				
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description
0.40	J1		↓ Water		[Cross-hatch pattern]	0.90	MADE GROUND (Brown clayey very sandy gravel. Sand is fine to coarse. Gravel is fine to coarse subangular and includes red brick and slag. Slag content is 0-25%. Slag is vesicular grey green white).
0.80	B2			7.31		0.90	MADE GROUND (Blue grey sandy gravel. Gravel is fine to coarse subangular to subrounded and includes slag. Slag content is 75-100%. Slag is vesicular. Slight hydrocarbon odour noted). from c.1.20m BGL ... low cobble content. Cobbles are subangular and include slag.
1.20	J3					[Cross-hatch pattern]	
1.50	PID	<0.1ppm					
1.50	ES4						
1.80	B5						
2.20	J6						
2.80	B7						
3.20	J8						
3.80	B9						
4.20	J10						
4.50	B11			3.71	4.50	Complete at 4.50m BGL.	



GROUNDWATER
Water strike at 0.90m BGL.

STABILITY
Pit sides stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:454597.680 N:521503.836		PRAIRIE_AUK_TP121
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.213	Start Date: 09/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP121.1
PRAIRIE_AUK_TP121

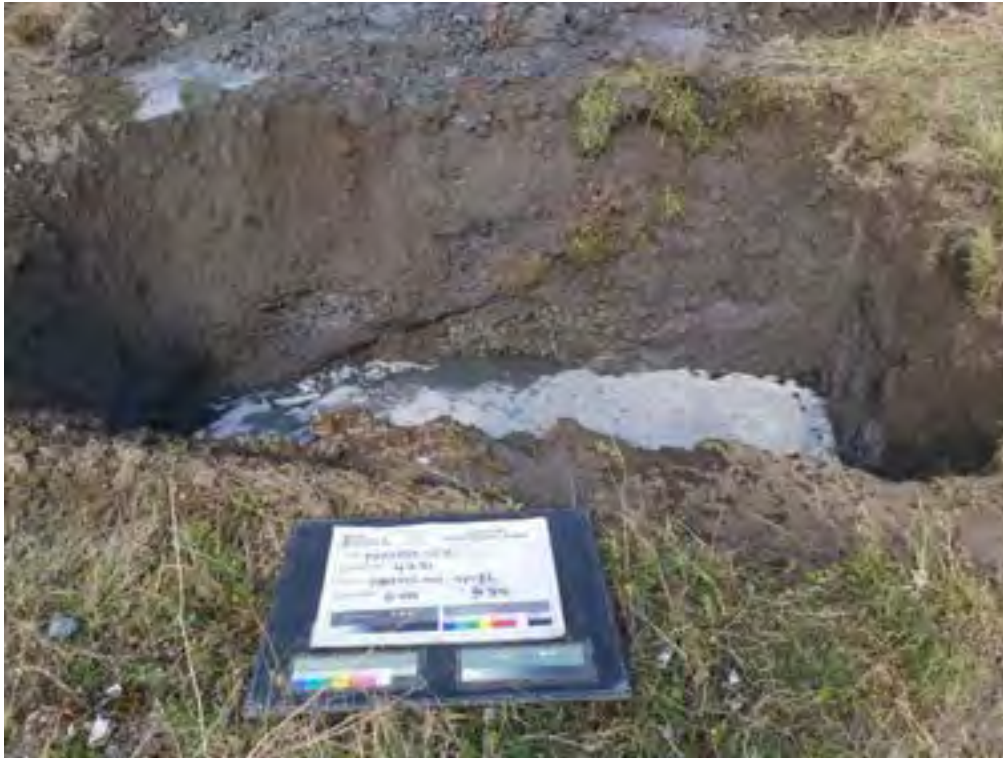


Figure PRAIRIE_AUK_TP121.2
PRAIRIE_AUK_TP121





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454597.680 N:521503.836		PRAIRIE_AUK_TP121
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.213	Start Date: 09/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP121.3
PRAIRIE_AUK_TP121 - Spoil





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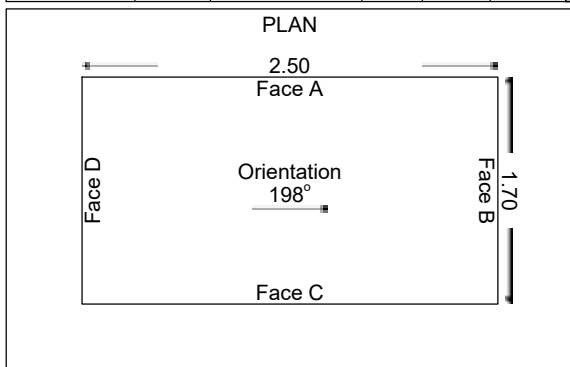
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.	
Client: South Tees Development Corporation		Location: E:454506.312 N:521498.464		PRAIRIE_AUK_TP122
Method (Equipment): Machine Excavated (360 Tracked Excavator)		Ground Level (m): 7.802	Start Date: 08/04/2020	Sheet: 1 of 3

SAMPLES & TESTS			STRATA			
Depth	Type No	Test Result	Water	Reduced Level	Legend	Description
0.40	J1		↓ Water		[Cross-hatch pattern]	MADE GROUND (Black sandy gravel with high cobble content and fragments of wood and metal, pipes and wood sleeper. Gravel is fine to coarse subangular to subrounded and includes red brick, refractory brick, slag and concrete. Slag content is 0-25%. Slag is vesicular grey green white. Slight hydrocarbon odour noted).
0.80	B2					(1.20)
1.00	PID	<0.1ppm		6.60		1.20
1.00	ES3					



GROUNDWATER
 Water strike at 0.30m BGL (Heavy inflow).

STABILITY
 Pit sides stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:454506.312 N:521498.464		PRAIRIE_AUK_TP122
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.802	Start Date: 08/04/2020	

Figure PRAIRIE_AUK_TP122.1
PRAIRIE_AUK_TP122



Figure PRAIRIE_AUK_TP122.2
PRAIRIE_AUK_TP122





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TRIAL PIT RECORD

Status:-

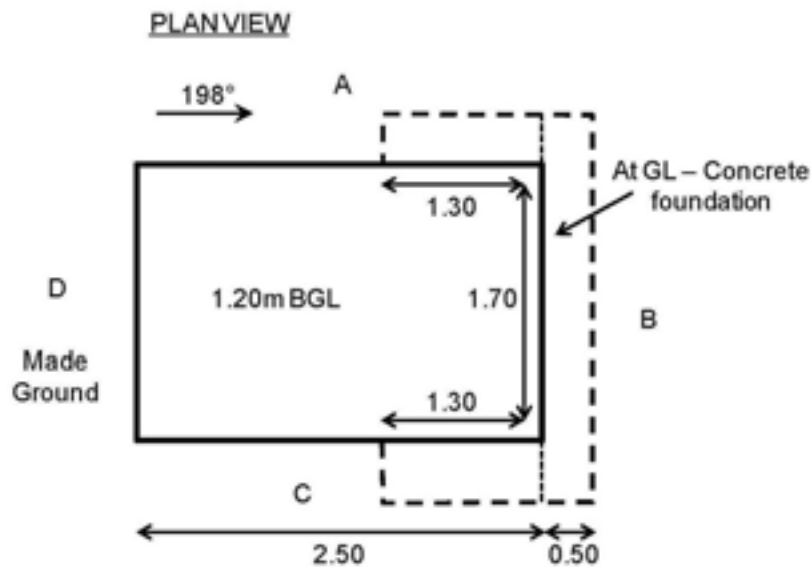
FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454506.312 N:521498.464		PRAIRIE_AUK_TP122
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 7.802	Start Date: 08/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP122.3
PRAIRIE_AUK_TP122 - Spoil



Figure PRAIRIE_AUK_TP122.4
PRAIRIE_AUK_TP122 Sketch



Notto scale

All measurements in metres
unless otherwise stated



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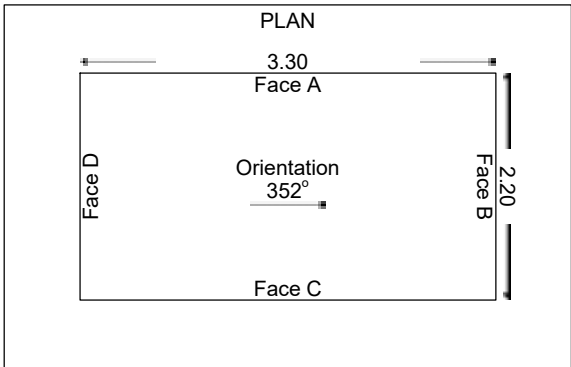
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.		
Client: South Tees Development Corporation		Location: E:454400.354 N:521497.995		PRAIRIE_AUK_TP123	
Method (Equipment): Machine Excavated (360 Tracked Excavator)		Ground Level (m): 8.155	Start Date: 08/04/2020	Sheet: 1 of 3	

SAMPLES & TESTS			STRATA			
Depth	Type No	Test Result	Water	Reduced Level	Legend	Description
0.30 0.50 0.60 0.60	J1 B2 PID ES3	<0.1ppm	↓	7.36		MADE GROUND (Brown sandy gravel with high cobble content. Gravel is fine to coarse subangular and includes slag, concrete, macadam and red and yellow brick. Slag content is 0-25%. Slag is vesicular grey green white. Cobbles include bricks). Depth (Thickness): (0.80)
1.50	B4			5.36		MADE GROUND (Red and yellow refractory bricks). (Engineer notes bricks are stacked - possible structure). Depth (Thickness): (2.00)
Terminated at 2.80m BGL - due to brick structure.						



GROUNDWATER
Water strike at 0.60m BGL.

STABILITY
Pit sides stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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Tel: 01772 735 300 Fax: 01772 735 999

TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454400.354 N:521497.995		PRAIRIE_AUK_TP123
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.155	Start Date: 08/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP123.1
PRAIRIE_AUK_TP123



Figure PRAIRIE_AUK_TP123.2
PRAIRIE_AUK_TP123





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454400.354 N:521497.995		PRAIRIE_AUK_TP123
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.155	Start Date: 08/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP123.3
PRAIRIE_AUK_TP123 - Spoil





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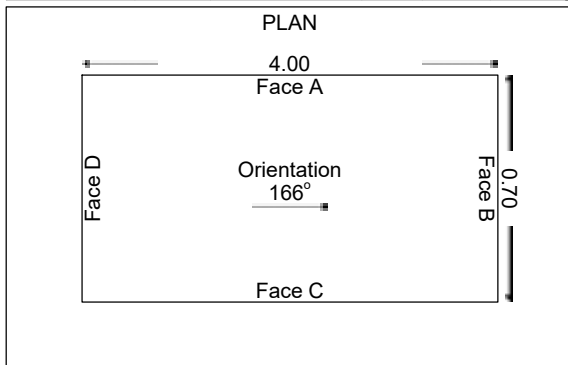
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454306.625 N:521454.373	PRAIRIE_AUK_TP124
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.269	Start Date: 08/04/2020
		Sheet: 1 of 4

SAMPLES & TESTS			STRATA				
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description
0.10 0.20	J1 B2			7.97	[Cross-hatch pattern]	0.30	MADE GROUND (Black sandy topsoil).
1.00	J3				[Cross-hatch pattern]	(1.40)	MADE GROUND (Grey black clayey very gravelly sand with fragments of metal and plastic. Sand is fine to coarse. Gravel is fine to coarse subangular and includes red brick, concrete, ash and sandstone).
1.50 1.50 1.50	PID B4 ES5	<0.1ppm		6.57	[Cross-hatch pattern]	1.70	
2.00 2.20	J6 HSV	32 (20)kPa			[Horizontal line pattern]	(1.30)	Firm indistinctly laminated orange brown mottled grey slightly sandy CLAY. at c.2.00m BGL ... clay is of high plasticity.
2.50 2.50 2.50	PID B7 ES8	<0.1ppm		5.27	[Horizontal line pattern]	3.00	
							Complete at 3.00m BGL.



GROUNDWATER
 No groundwater inflow observed.

STABILITY
 Pit sides stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454306.625 N:521454.373		PRAIRIE_AUK_TP124
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.269	Start Date: 08/04/2020	Sheet: 2 of 4

Figure PRAIRIE_AUK_TP124.1
PRAIRIE_AUK_TP124



Figure PRAIRIE_AUK_TP124.2
PRAIRIE_AUK_TP124





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454306.625 N:521454.373		PRAIRIE_AUK_TP124
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.269	Start Date: 08/04/2020	Sheet: 3 of 4

Figure PRAIRIE_AUK_TP124.3
PRAIRIE_AUK_TP124 - Spoil



Figure PRAIRIE_AUK_TP124.4
PRAIRIE_AUK_TP124 - Spoil





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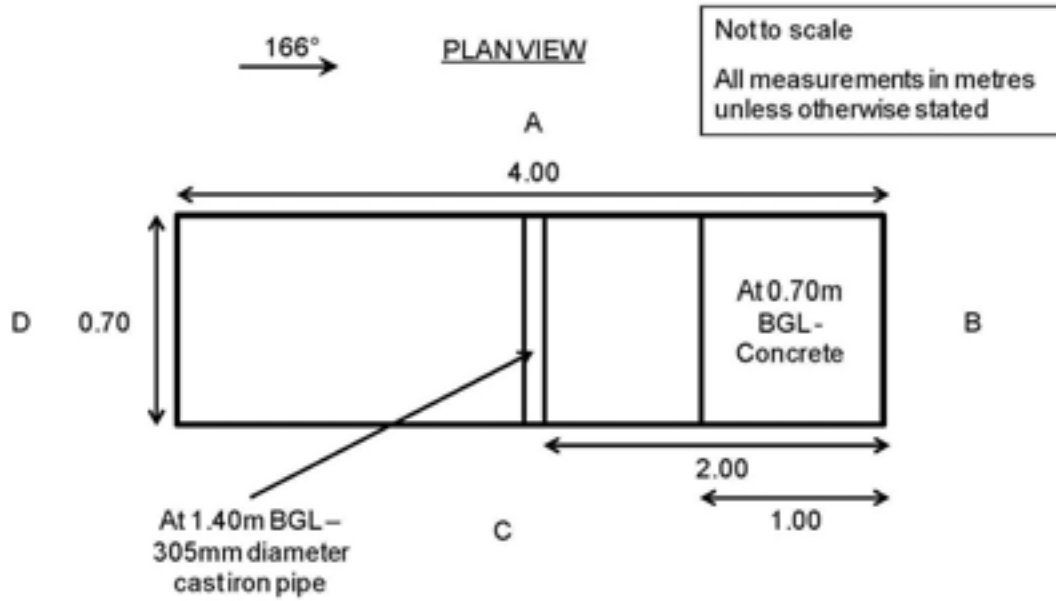
TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454306.625 N:521454.373		PRAIRIE_AUK_TP124
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.269	Start Date: 08/04/2020	Sheet: 4 of 4

Figure PRAIRIE_AUK_TP124.5
PRAIRIE_AUK_TP124 Sketch





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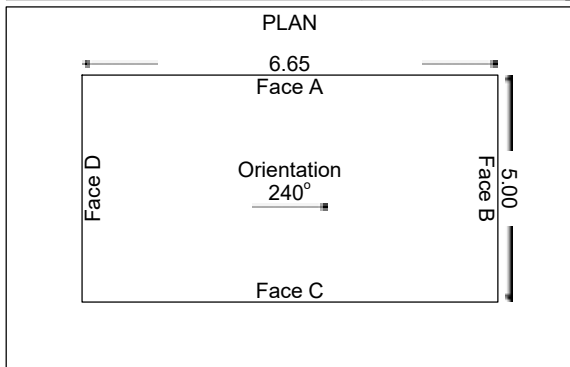
Tel: 0191 387 4700 Fax: 0191 387 4710
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.	
Client: South Tees Development Corporation		Location: E:454246.923 N:521423.879		PRAIRIE_AUK_TP125
Method (Equipment): Machine Excavated (360 Tracked Excavator)		Ground Level (m): 8.473	Start Date: 09/04/2020	Sheet: 1 of 2

SAMPLES & TESTS			Water	STRATA			
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
				8.27		0.20	MADE GROUND (Strong grey concrete). <i>Terminated at 0.20m BGL - due to concrete obstruction.</i>



GROUNDWATER
 No groundwater inflow observed.

STABILITY
 Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS
 (1) No samples taken.

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

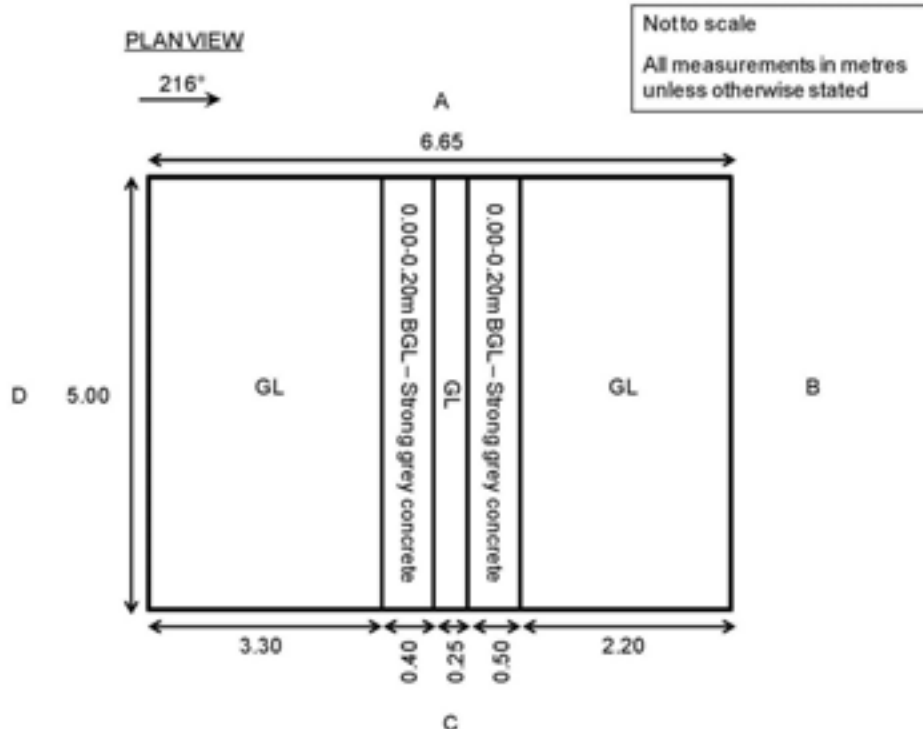
FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454246.923 N:521423.879		PRAIRIE_AUK_TP125
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.473	Start Date: 09/04/2020	Sheet: 2 of 2

Figure PRAIRIE_AUK_TP125.1
PRAIRIE_AUK_TP125



Figure PRAIRIE_AUK_TP125.2
PRAIRIE_AUK_TP125 Sketch





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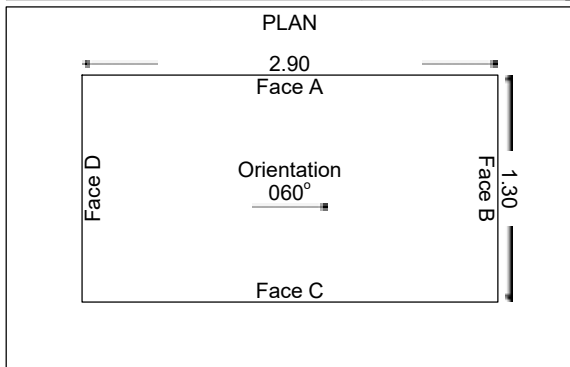
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_TP125A
Client: South Tees Development Corporation	Location: E:454257.923 N:521427.282	
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.619	Start Date: 09/04/2020
		Sheet: 1 of 3

SAMPLES & TESTS			STRATA				
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description
0.10 0.20	J1 B2			8.22		0.40	MADE GROUND (Brown gravelly sand. Sand is fine to coarse. Gravel is fine to coarse subangular and includes red brick, concrete, macadam and ash).
				7.42		1.20	MADE GROUND (Concrete structure infilled with gravel (20mm)). at c.1.20m BGL ... concrete base. Terminated at 1.20m BGL - due to concrete base.



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454257.923 N:521427.282		PRAIRIE_AUK_TP125A
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.619	Start Date: 09/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP125A.1
PRAIRIE_AUK_TP125a



Figure PRAIRIE_AUK_TP125A.2
PRAIRIE_AUK_TP125a





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Status:-

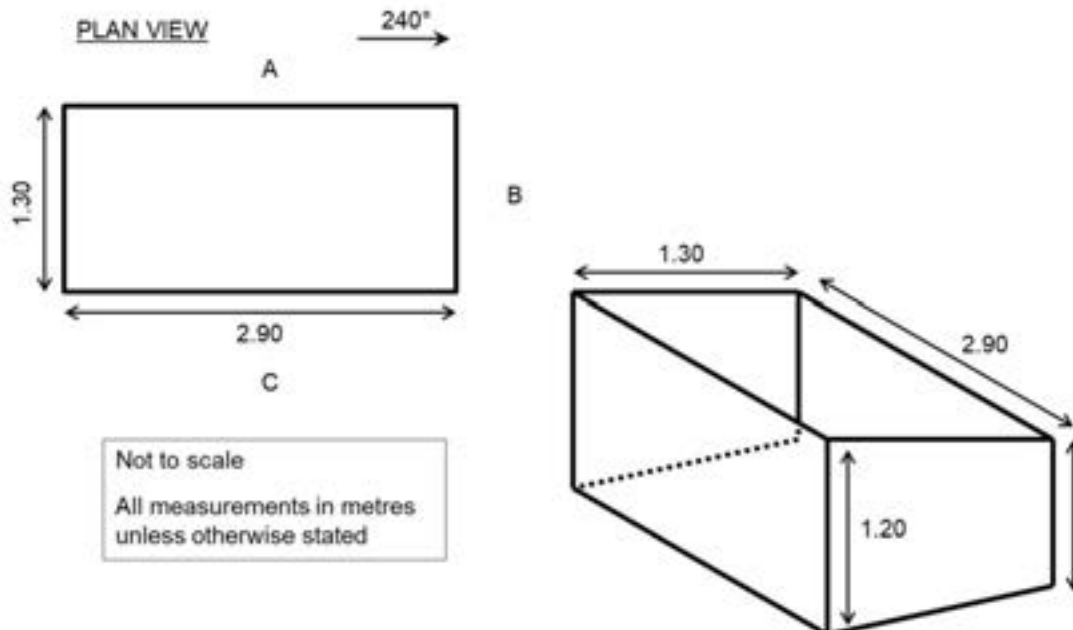
FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454257.923 N:521427.282		PRAIRIE_AUK_TP125A
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.619	Start Date: 09/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP125A.3
PRAIRIE_AUK_TP125A - Spoil



Figure PRAIRIE_AUK_TP125A.4
PRAIRIE_AUK_TP125A Sketch





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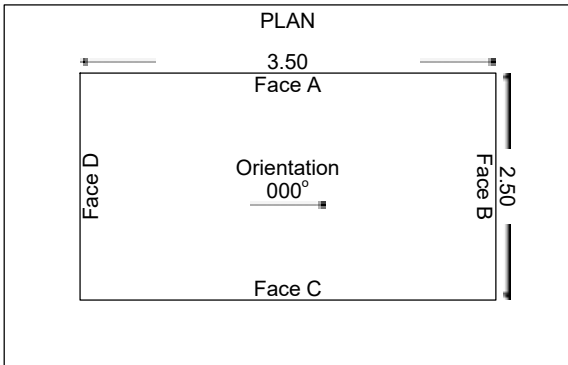
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_TP126	
Client: South Tees Development Corporation		Location: E:454177.949 N:521411.231	
Method (Equipment): Machine Excavated (360 Tracked Excavator)		Ground Level (m): 8.749	Start Date: 17/04/2020
		Sheet: 1 of 3	

SAMPLES & TESTS			STRATA				
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description
0.20 0.40	J1 B2			8.25		(0.50) 0.50	MADE GROUND (Brown black red sandy gravel with fragments of wood and metal. Sand is fine to coarse. Gravel is fine to coarse subangular and includes ash, clinker and slag. Slag content is 0-25%). at c.0.50m BGL ... top of concrete obstruction. Possible walls of subsurface structure.
1.40 1.80	J3 B4					(2.20)	MADE GROUND (Brown black red and yellow gravel, cobbles and boulders with fragments of metal. Gravel is fine to coarse angular to subangular and includes slag and red and yellow brick. Slag content is 0-25%. Slag is vesicular grey green. Cobbles are angular and include 50-75% vesicular grey green slag. Boulders are angular and include 50-75% vesicular grey green slag). between c.0.50-2.70m BGL ... concrete structure surrounds the north and east faces of pit.
2.60 2.60	ES5 PID	0.2ppm		6.05		2.70	at c.2.70m BGL ... concrete obstruction - pit extended west. <i>Terminated at 2.70m BGL - due to concrete obstruction.</i>



GROUNDWATER
 Slight groundwater seepage (water perched on concrete base) at 2.70m BGL.

STABILITY
 Pit sides and base unstable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS
 (1) Trial pit extended west by 2.00m due to concrete obstruction at 0.50m BGL.

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: D. Portsmouth	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:454177.949 N:521411.231		PRAIRIE_AUK_TP126
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.749	Start Date: 17/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP126.1
PRAIRIE_AUK_TP126



Figure PRAIRIE_AUK_TP126.2
PRAIRIE_AUK_TP126





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TRIAL PIT RECORD

Status:-

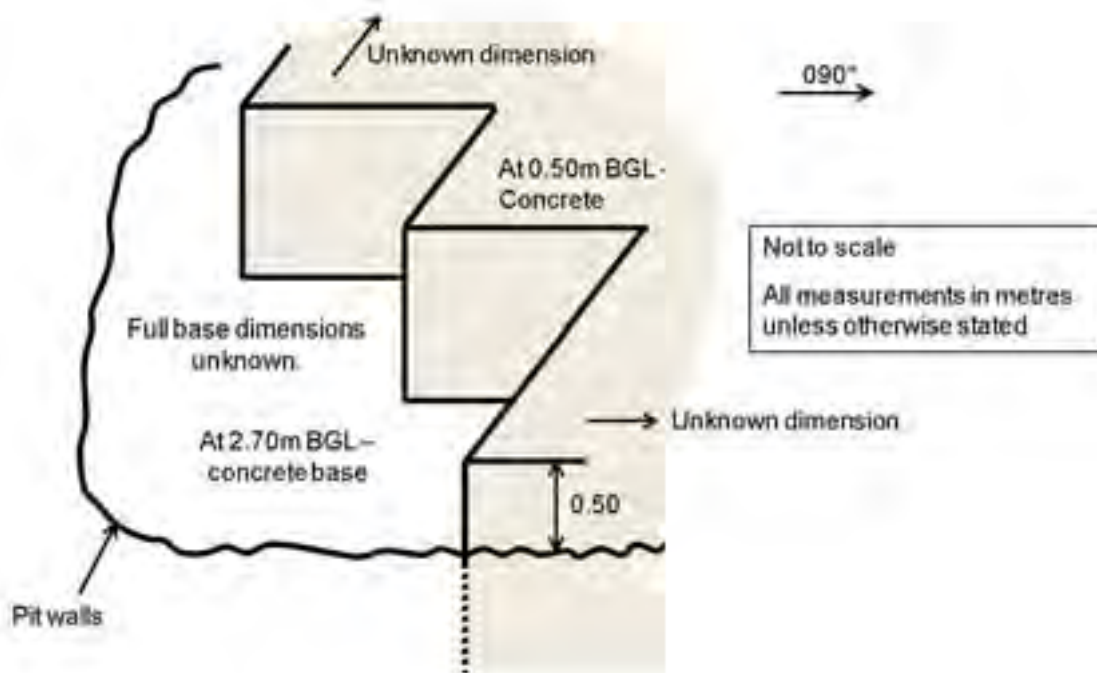
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Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454177.949 N:521411.231		PRAIRIE_AUK_TP126
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.749	Start Date: 17/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP126.3
PRAIRIE_AUK_TP126 - Spoil



Figure PRAIRIE_AUK_TP126.4
PRAIRIE_AUK_TP126 Sketch





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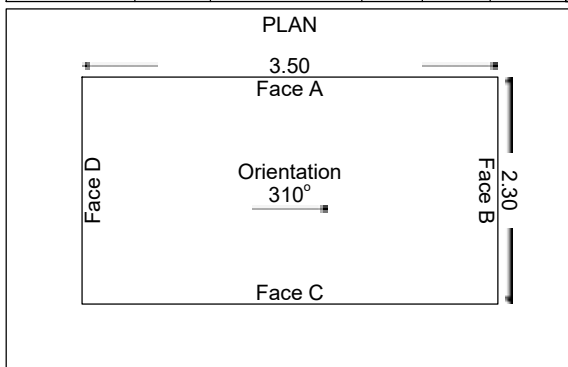
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_TP127	
Client: South Tees Development Corporation		Location: E:454315.017 N:521396.533	
Method (Equipment): Machine Excavated (360 Tracked Excavator)		Ground Level (m): 8.483	Start Date: 23/04/2020
		Sheet: 1 of 3	

SAMPLES & TESTS			STRATA				
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description
0.10 0.20 0.30 0.30 0.60	J1 B2 ES3 PID J4	<0.1ppm	↓	8.08	[Cross-hatched pattern]	(0.40) 0.40	MADE GROUND (Brown grey sand and gravel. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded and includes slag, concrete, macadam and roadstone. Slag content is 0-25%. Slag is vesicular grey green white).
				7.58		(0.50) 0.90	MADE GROUND (Red brown sandy gravel with medium cobble content and fragments of metal. Gravel is fine to coarse subangular and includes slag, red brick and concrete. Cobbles are subangular and include concrete and red brick. Slag content is 0-25%. Slag is vesicular grey green white).
				7.38		1.10	MADE GROUND (Strong grey green concrete or slag).
1.40 1.40 1.60	J5 PID B6	<0.1ppm		6.78		1.70	MADE GROUND (Red brown sandy gravel with medium cobble content. Gravel is fine to coarse subangular to subrounded and includes red brick, concrete, slag and sandstone. Cobbles are subangular and include concrete, red brick and sandstone. Slag content is 0-25%. Slag is vesicular grey green white). at c.1.70m BGL ... concrete. <i>Terminated at 1.70m BGL - due to concrete base.</i>



GROUNDWATER
 Water strike at 1.70m BGL

STABILITY
 Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS
 (1) Relocated to PRAIRIE_AUK_TP127A.

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454315.017 N:521396.533		PRAIRIE_AUK_TP127
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.483	Start Date: 23/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP127.1
PRAIRIE_AUK_TP127



Figure PRAIRIE_AUK_TP127.2
PRAIRIE_AUK_TP127





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TRIAL PIT RECORD

Status:-

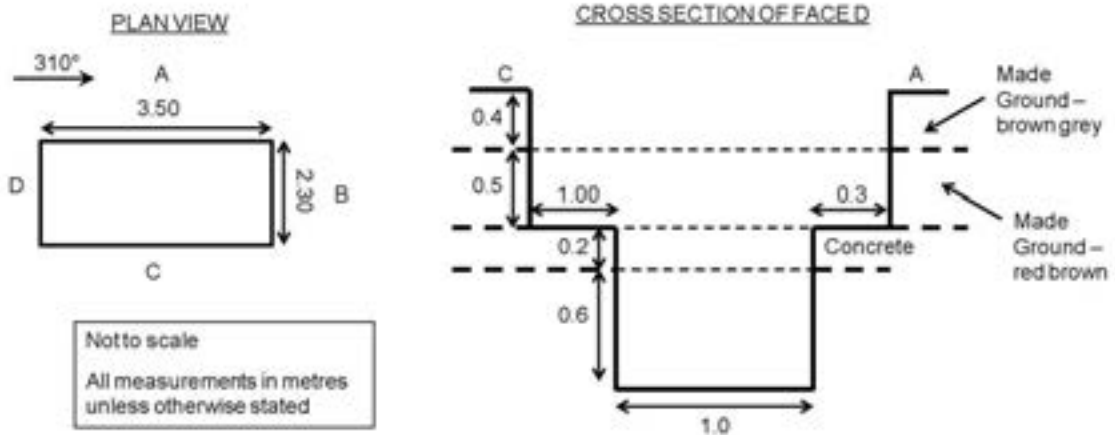
FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454315.017 N:521396.533		PRAIRIE_AUK_TP127
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.483	Start Date: 23/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP127.3
PRAIRIE_AUK_TP127 - Spoil



Figure PRAIRIE_AUK_TP127.4
PRAIRIE_AUK_TP127 Sketch





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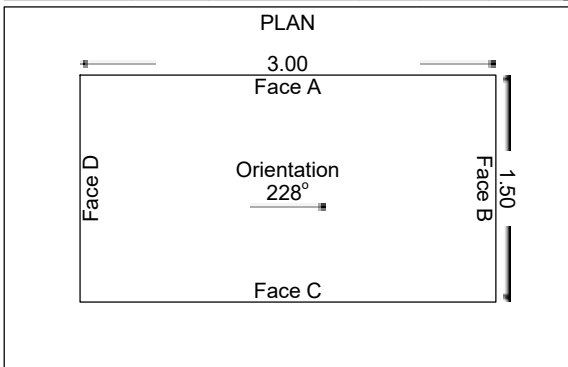
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_TP127A	
Client: South Tees Development Corporation		Location: E:454312.599 N:521393.254	
Method (Equipment): Machine Excavated (360 Tracked Excavator)		Ground Level (m): 8.644	Start Date: 23/04/2020
		Sheet: 1 of 3	

SAMPLES & TESTS			STRATA				
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description
2.20	J1			8.24	(0.40)	0.40	MADE GROUND (Brown grey sand and gravel. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded and includes slag, concrete, macadam and roadstone. Slag content is 0-25%. Slag is vesicular grey green white).
2.50	B2	70 (34)kPa		6.74	(1.50)	1.90	MADE GROUND (Red brown sandy gravel with medium cobble content and fragments of metal. Gravel is fine to coarse subangular and includes red brick, concrete, slag and refractory brick. Slag content is 0-25%. Slag is vesicular grey green white). between c.0.90-3.00m BGL ... Face D: Strong grey concrete wall/foundation.
2.50	HSV				(1.10)		Firm yellow brown mottled grey sandy CLAY. (Possible Made Ground).
2.80	ES3	<0.1ppm		5.64		3.00	Complete at 3.00m BGL.
2.80	PID						



GROUNDWATER
 No groundwater inflow observed.

STABILITY
 Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS
 (1) Relocated from PRAIRIE_AUK_TP127.

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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Tel: 01772 735 300 Fax: 01772 735 999

TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454312.599 N:521393.254		PRAIRIE_AUK_TP127A
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.644	Start Date: 23/04/2020	

Figure PRAIRIE_AUK_TP127A.1
PRAIRIE_AUK_TP127A



Figure PRAIRIE_AUK_TP127A.2
PRAIRIE_AUK_TP127A





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454312.599 N:521393.254		PRAIRIE_AUK_TP127A
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.644	Start Date: 23/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP127A.3
PRAIRIE_AUK_TP127A - Spoil





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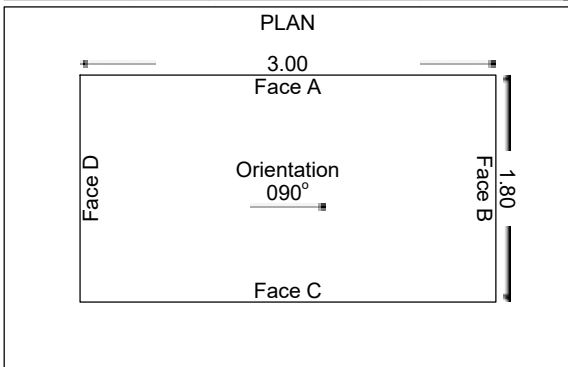
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454012.262 N:521429.533	PRAIRIE_AUK_TP128
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.117	Start Date: 17/04/2020
		Sheet: 1 of 3

SAMPLES & TESTS			STRATA				
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description
0.50	J1			7.87		0.25	MADE GROUND (Brown sandy gravel with many rootlets. Sand is fine to coarse and includes predominantly ash. Gravel is fine to medium subangular and includes coke, sandstone, concrete and clinker).
0.80	B2					(0.75)	MADE GROUND (Brown black sandy gravel with occasional pockets/lenses of soft to firm brown clay. Sand is fine to coarse. Gravel is fine to coarse subangular and includes red and yellow brick, coke, ash, clinker and slag. Slag content is 0-25%).
0.90	ES3	0.9ppm		7.12		1.00	at 1.00m BGL ... pocket of grey fine to coarse angular gravel in west of pit. Gravel is fine to coarse angular and includes mudstone/shale with strong hydrocarbon/creosote odour.
0.90	PID			7.02		1.10	MADE GROUND (Firm brown mottled orange clay). between c.1.00-1.10m BGL ... 100mm diameter cast iron pipe running 90 degrees. Engineer notes pipe probably runs through trenched section of reworked ground. <i>Terminated at 1.10m BGL - due to services.</i>



GROUNDWATER
 Saturated strata (slight inflow) at 1.00m BGL. Engineer notes contaminated water seeping from contaminated mudstone pocket into clay.

STABILITY
 Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: D. Portsmouth	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454012.262 N:521429.533		PRAIRIE_AUK_TP128
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.117	Start Date: 17/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP128.1
PRAIRIE_AUK_TP128



Figure PRAIRIE_AUK_TP128.2
PRAIRIE_AUK_TP128





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454012.262 N:521429.533		PRAIRIE_AUK_TP128
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.117	Start Date: 17/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP128.3
PRAIRIE_AUK_TP128 - Spoil



Figure PRAIRIE_AUK_TP128.4
PRAIRIE_AUK_TP128 - Spoil





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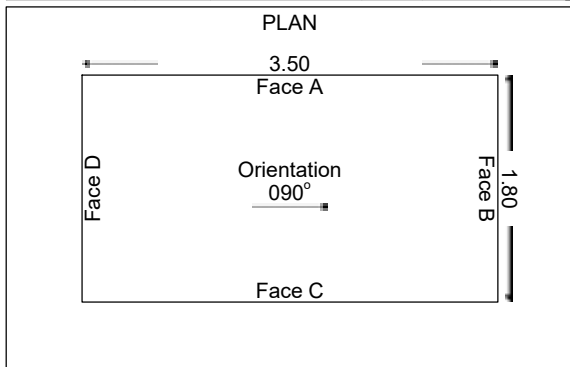
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation		Location: E:453904.211 N:521332.918	
Method (Equipment): Machine Excavated (360 Tracked Excavator)		Ground Level (m): 9.593	Start Date: 17/04/2020
		Sheet: 1 of 3	

SAMPLES & TESTS			STRATA				
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description
0.60	J1	<0.1ppm	Water	9.39	[Cross-hatch pattern]	0.20	MADE GROUND (Brown sandy gravel with many rootlets. Sand is fine to coarse and includes predominantly ash. Gravel is fine to medium subangular and includes coke, sandstone, concrete and clinker).
0.80	B2			9.14		0.45	
				8.59	(0.55)	MADE GROUND (Concrete. Engineer notes possible old foundation/footing to the bricks exposed adjacent).	
1.40	J3			8.29	1.00	MADE GROUND (Grey brown sandy gravel with medium cobble content. Sand is fine to coarse and includes predominantly ash. Gravel is fine to coarse subangular and includes concrete, slag, red brick, ash and clinker. Slag content is 50-75%. Slag is vesicular grey green).	
1.80	B4			(1.00)	1.30	Soft to firm and friable brown grey mottled black CLAY.	
2.10	PID			7.29	2.30	Firm and friable brown very sandy interlaminated SILT and CLAY with silty sand lenses.	
2.10	ES4A					Complete at 2.30m BGL.	



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: D. Portsmouth	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:453904.211 N:521332.918		PRAIRIE_AUK_TP129
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 9.593	Start Date: 17/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP129.1
PRAIRIE_AUK_TP129



Figure PRAIRIE_AUK_TP129.2
PRAIRIE_AUK_TP129





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation		Location: E:453904.211 N:521332.918	PRAIRIE_AUK_TP129
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 9.593	Start Date: 17/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP129.3
PRAIRIE_AUK_TP129 - Spoil





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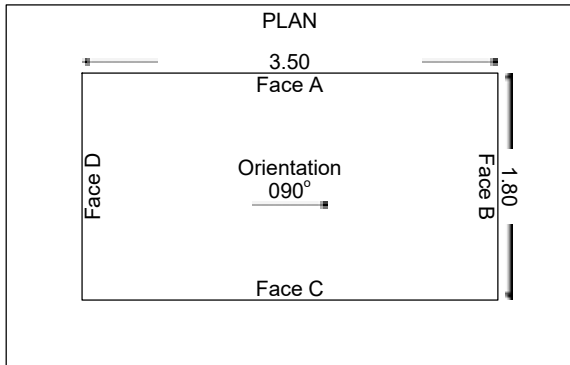
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:453879.368 N:521335.549	PRAIRIE_AUK_TP130
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 9.144	Start Date: 17/04/2020
		Sheet: 1 of 3

SAMPLES & TESTS			STRATA				
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description
0.20	J1			9.04	[Cross-hatched pattern]	0.10	MADE GROUND (Brown sandy gravel with many rootlets. Sand is fine to coarse and includes predominantly ash. Gravel is fine to coarse subangular and includes coke, sandstone, concrete and clinker).
0.30	B2			8.74		0.40	
0.80	J3	1.0ppm			[X-pattern]	(0.60)	MADE GROUND (Grey brown sandy gravel with medium cobble content. Sand is fine to coarse and includes predominantly ash. Gravel is fine to coarse subangular and includes slag, concrete, red brick, ash and clinker. Cobbles are angular and include slag. Slag content is 50-75%. Slag is vesicular grey green).
0.90	B4			8.14		1.00	
1.00	ES4A						
1.00	PID						
1.40	J5				[X-pattern]	(1.40)	MADE GROUND (Brown black sandy gravel. Sand is fine to coarse and includes predominantly ash. Gravel is fine to coarse subangular and includes ash, clinker, coke and slag. Slag content is 25-50%. Slag is vesicular grey green).
1.80	B6						
				6.74		2.40	Firm and friable brown sandy interlaminated SILT and CLAY with silty sand lenses. Complete at 2.40m BGL.



GROUNDWATER
 No groundwater inflow observed.

STABILITY
 Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: D. Portsmouth	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:453879.368 N:521335.549		PRAIRIE_AUK_TP130
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 9.144	Start Date: 17/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP130.1
PRAIRIE_AUK_TP130



Figure PRAIRIE_AUK_TP130.2
PRAIRIE_AUK_TP130





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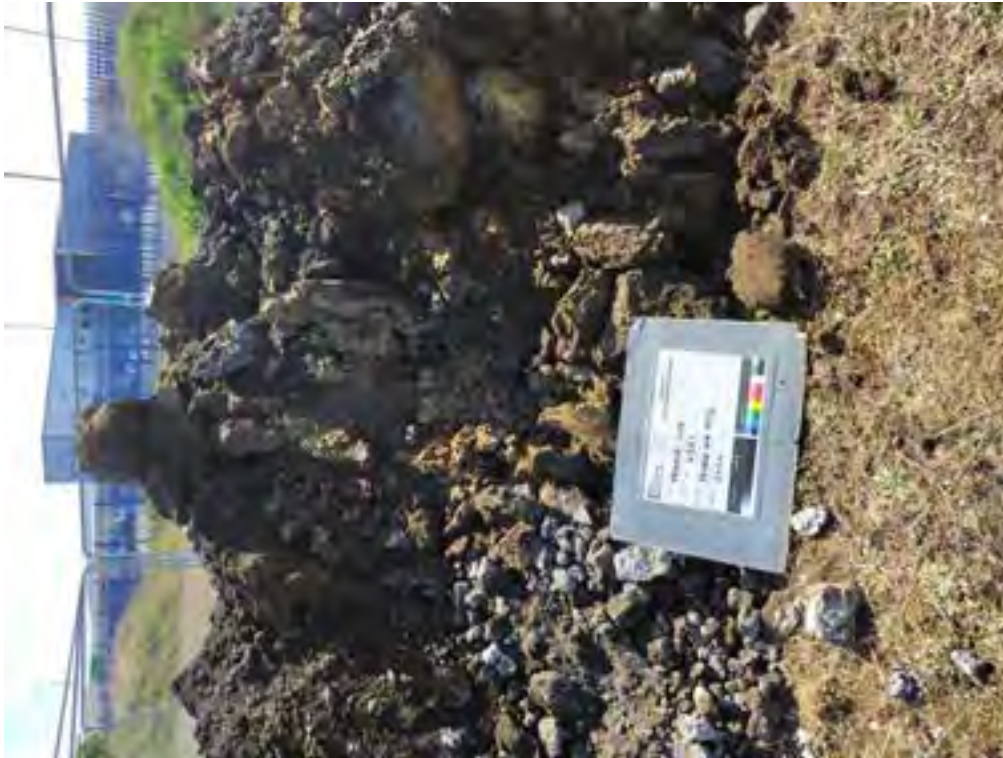
TRIAL PIT RECORD

Status:-

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Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:453879.368 N:521335.549		PRAIRIE_AUK_TP130
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 9.144	Start Date: 17/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP130.3
PRAIRIE_AUK_TP130 - Spoil





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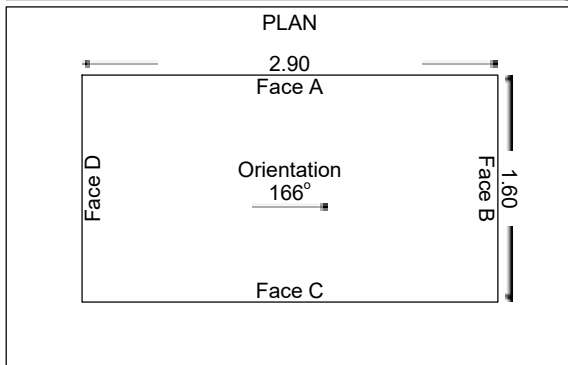
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454999.256 N:521391.908	PRAIRIE_AUK_TP131
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.711	Start Date: 02/04/2020
		Sheet: 1 of 3

SAMPLES & TESTS			STRATA					
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	
0.20	J1		Water	8.21		0.50	MADE GROUND (Grass over brown sandy gravelly topsoil. Gravel is fine to coarse subangular and includes brick, slag and concrete).	
0.40	B2					0.50	MADE GROUND (Black grey sandy gravel with medium cobble content. Gravel is fine to coarse subangular to subrounded and includes slag, red brick and ash. Slag content is 75-100%. Slag is vesicular grey green white. Cobbles are subangular and include brick and cemented slag). from c.0.50-1.20m BGL ... partially cemented slag fill material.	
1.00	J3					2.00		
1.50	B4					2.50		
1.80	ES5	<0.1ppm				2.50		
1.80	PID							
2.00	J6							
2.60	J7	45 (20)kPa				3.50		MADE GROUND (Firm grey mottled orange brown slightly sandy clay). (Possibly Natural Ground). at c.2.60m BGL ... clay is of high plasticity.
2.80	HSV							
2.80	B8					4.50		Firm indistinctly laminated grey mottled orange brown slightly sandy CLAY. at c.3.60m BGL ... clay is of intermediate plasticity.
3.60	J9	59 (34)kPa	4.50		Complete at 4.50m BGL.			
3.80	HSV							
3.80	B10							



GROUNDWATER
No groundwater inflow observed.

STABILITY
Faces A and C unstable from 1.20m BGL.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454999.256 N:521391.908		PRAIRIE_AUK_TP131
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.711	Start Date: 02/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP131.1
PRAIRIE_AUK_TP131



Figure PRAIRIE_AUK_TP131.2
PRAIRIE_AUK_TP131





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454999.256 N:521391.908		PRAIRIE_AUK_TP131
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.711	Start Date: 02/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP131.3
PRAIRIE_AUK_TP131 - Spoil





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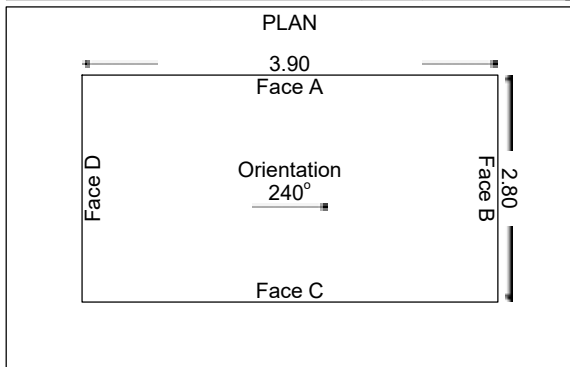
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_TP132	
Client: South Tees Development Corporation		Location: E:454904.695 N:521395.723	
Method (Equipment): Machine Excavated (360 Tracked Excavator)		Ground Level (m): 8.713	Start Date: 02/04/2020
		Sheet: 1 of 4	

SAMPLES & TESTS			STRATA			
Depth	Type No	Test Result	Water	Reduced Level	Legend	Description
0.05	J1			8.66		MADE GROUND (Grass over brown sandy topsoil).
				8.50		0.05 0.15
0.50	J2					MADE GROUND (Grey sandy gravel with medium cobble content and fragments of wood, metal, plastic and wire. Gravel is fine to coarse subangular to subrounded and includes brick, concrete, slag and ash. Slag content is 50-75%. Slag is vesicular green grey. Cobbles are subangular and include brick and slag). at c.0.90m BGL ... engineer notes girder on side C.
1.00	B3					at c.1.80m BGL ... concrete boulder with rebar, 80mmx80mmx50mm.
1.30	PID	<0.1ppm				
1.30	ES4					
1.50	J5					
2.00	B6			6.41		at c.2.30m BGL ... concrete channel. <i>Terminated at 2.30m BGL - due to concrete channel.</i>



GROUNDWATER
 Water strike at 1.90m BGL.

STABILITY
 Face A unstable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454904.695 N:521395.723		PRAIRIE_AUK_TP132
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.713	Start Date: 02/04/2020	Sheet: 2 of 4

Figure PRAIRIE_AUK_TP132.1
PRAIRIE_AUK_TP132



Figure PRAIRIE_AUK_TP132.2
PRAIRIE_AUK_TP132





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation	Location: E:454904.695 N:521395.723		PRAIRIE_AUK_TP132
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.713	Start Date: 02/04/2020	

Figure PRAIRIE_AUK_TP132.3
PRAIRIE_AUK_TP132 - Spoil



Figure PRAIRIE_AUK_TP132.4
PRAIRIE_AUK_TP132 - Reinstatement





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454904.695 N:521395.723		PRAIRIE_AUK_TP132
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.713	Start Date: 02/04/2020	Sheet: 4 of 4

Figure PRAIRIE_AUK_TP132.5
PRAIRIE_AUK_TP132 Sketch



Not to scale

All measurements in metres
unless otherwise stated



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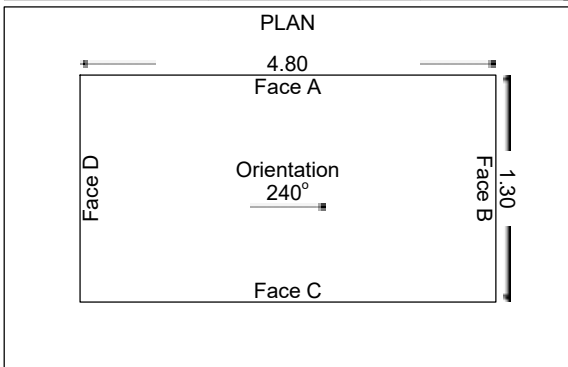
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.		
Client: South Tees Development Corporation		Location: E:454897.504 N:521394.100		PRAIRIE_AUK_TP132A	
Method (Equipment): Machine Excavated (360 Tracked Excavator)		Ground Level (m): 8.542	Start Date: 02/04/2020	Sheet: 1 of 4	

SAMPLES & TESTS			STRATA				
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description
				8.49		0.05	MADE GROUND (Grass over brown sandy topsoil).
				8.39		0.15	MADE GROUND (Weak grey concrete).
						(1.35)	MADE GROUND (Grey sandy gravel with medium cobble content and fragments of metal and wire. Gravel is fine to coarse subangular to subrounded and includes brick, concrete, slag and ash. Slag content is 50-75%. Slag is vesicular green grey. Cobbles are subangular and include red brick, concrete and slag). at c.0.50m BGL ... corroded metal cable. at c.0.90m BGL ... corroded metal cable.
				7.04		1.50	
				6.94		1.60	MADE GROUND (Firm brown mottled black slightly sandy slightly gravelly clay. Gravel is fine to coarse subangular and includes coal). <i>Terminated at 1.60m BGL - due to concrete structure and metal cables.</i>



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS
 (1) No samples taken.
 (2) Concrete structures in pit - refer to sketch/photos for further information..

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454897.504 N:521394.100		PRAIRIE_AUK_TP132A
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.542	Start Date: 02/04/2020	Sheet: 2 of 4

Figure PRAIRIE_AUK_TP132A.1
PRAIRIE_AUK_TP132A



Figure PRAIRIE_AUK_TP132A.2
PRAIRIE_AUK_TP132A





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454897.504 N:521394.100		PRAIRIE_AUK_TP132A
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.542	Start Date: 02/04/2020	Sheet: 3 of 4

Figure PRAIRIE_AUK_TP132A.3
PRAIRIE_AUK_TP132A



Figure PRAIRIE_AUK_TP132A.4
PRAIRIE_AUK_TP132A - Spoil





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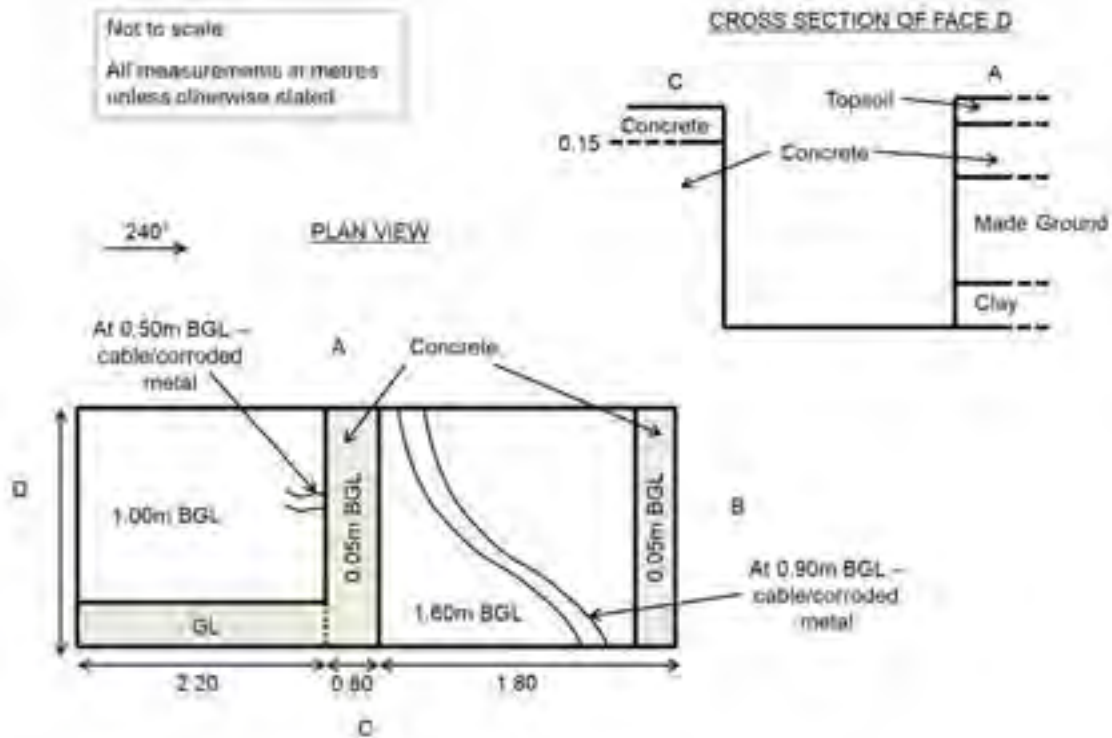
TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454897.504 N:521394.100		PRAIRIE_AUK_TP132A
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.542	Start Date: 02/04/2020	Sheet: 4 of 4

Figure PRAIRIE_AUK_TP132A.5
PRAIRIE_AUK_TP132A Sketch





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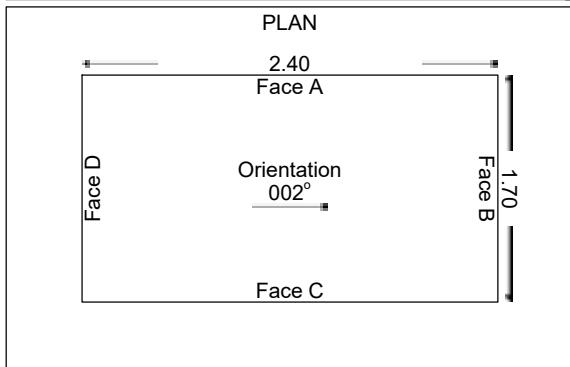
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No. PRAIRIE_AUK_TP133
Client: South Tees Development Corporation	Location: E:454796.469 N:521395.958	
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.893	Start Date: 22/04/2020
		Sheet: 1 of 3

SAMPLES & TESTS			STRATA			
Depth	Type No	Test Result	Water	Reduced Level	Legend	Description
0.20	J1			8.79		MADE GROUND (Grass over topsoil).
0.20	PID	<0.1ppm				MADE GROUND (Dark brown clayey gravelly sand with fragments of metal. Sand is fine to coarse. Gravel is fine to coarse subangular and includes red brick, concrete, ash, slag, macadam and refractory brick. Slag content is 0-25%. Slag is vesicular grey green white).
0.50	ES2					
0.50	PID	<0.1ppm		8.09		
0.70	B3					at c.0.10m BGL ... 4 No. subangular concrete boulders.
0.90	J4					
0.90	PID	<0.1ppm		7.69		Soft to firm dark brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is fine to coarse subangular and includes mudstone. Slight organic odour noted.
1.00	B5					
1.00	HSV	41 (22)kPa				
1.50	J6					Firm orange brown mottled grey slightly sandy CLAY.
1.50	HSV	71 (18)kPa				
1.50	PID	<0.1ppm		6.89		
2.00	B7					Complete at 2.00m BGL.



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454796.469 N:521395.958		PRAIRIE_AUK_TP133
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.893	Start Date: 22/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP133.1
PRAIRIE_AUK_TP133



Figure PRAIRIE_AUK_TP133.2
PRAIRIE_AUK_TP133





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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454796.469 N:521395.958		PRAIRIE_AUK_TP133
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.893	Start Date: 22/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP133.3
PRAIRIE_AUK_TP133 - Spoil





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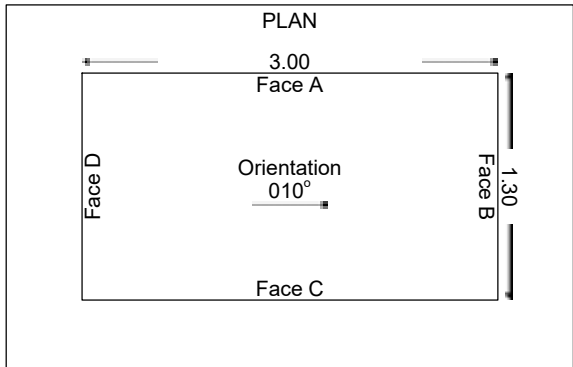
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.	
Client: South Tees Development Corporation		Location: E:454702.950 N:521396.264	
Method (Equipment): Machine Excavated (360 Tracked Excavator)		Ground Level (m): 8.709	Start Date: 20/04/2020
		Sheet: 1 of 3	

SAMPLES & TESTS			STRATA			
Depth	Type No	Test Result	Water	Reduced Level	Legend	Description
0.50 0.50 0.80 1.00 1.00	J1 PID B2 ES3 PID	<0.1ppm <0.1ppm				MADE GROUND (Black brown clayey very sandy gravel with medium cobble and boulder content and fragments of wood and metal. Gravel is fine to coarse subangular to subrounded and includes red brick, concrete, ash and refractory bricks. Cobbles and boulders are subangular and include concrete and red and yellow brick). between 0.70-1.30m BGL ... concrete slab in west of pit. possibly an old floor.
1.50 1.50 1.50 1.80 2.00 2.00	J4 HSV PID B5 ES6 PID	69 (18)kPa <0.1ppm <0.1ppm			Firm to stiff thinly laminated orange brown mottled grey slightly sandy CLAY/SILT with fine yellow brown sand dusting on the laminae. at c.1.50m BGL ... clay/silt is of intermediate plasticity.	
2.50 2.50 2.50	J9 HSV PID	84 (28)kPa <0.1ppm				Complete at 2.60m BGL.



GROUNDWATER
No groundwater inflow observed.

STABILITY
Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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TRIAL PIT RECORD

Status:-

FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454702.950 N:521396.264		PRAIRIE_AUK_TP134
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.709	Start Date: 20/04/2020	Sheet: 2 of 3

Figure PRAIRIE_AUK_TP134.1
PRAIRIE_AUK_TP134



Figure PRAIRIE_AUK_TP134.2
PRAIRIE_AUK_TP134



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TRIAL PIT RECORD

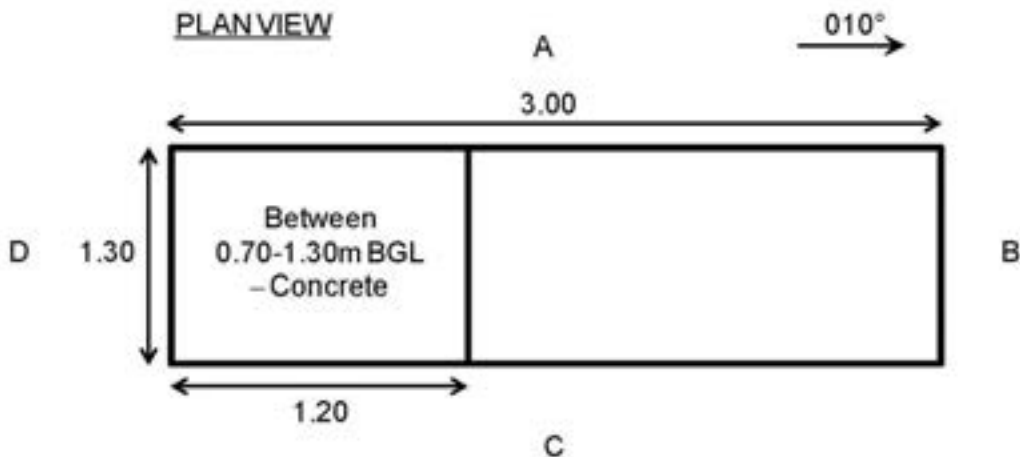
Status:-
FINAL

Project: Prairie Site Ground Investigation Works			Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454702.950 N:521396.264		PRAIRIE_AUK_TP134
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.709	Start Date: 20/04/2020	Sheet: 3 of 3

Figure PRAIRIE_AUK_TP134.3
 PRAIRIE_AUK_TP134 - Spoil



Figure PRAIRIE_AUK_TP134.4
 PRAIRIE_AUK_TP134 Sketch



Notto scale
 All measurements in metres
 unless otherwise stated



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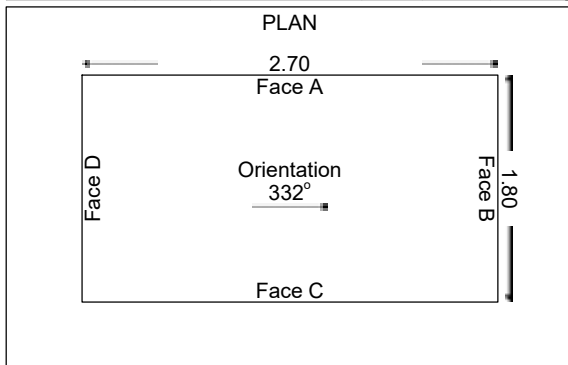
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TRIAL PIT RECORD

Status:-
FINAL

Project: Prairie Site Ground Investigation Works		Exploratory Hole No.
Client: South Tees Development Corporation	Location: E:454599.377 N:521402.034	PRAIRIE_AUK_TP135
Method (Equipment): Machine Excavated (360 Tracked Excavator)	Ground Level (m): 8.257	Start Date: 15/04/2020
		Sheet: 1 of 3

SAMPLES & TESTS			Water	STRATA		
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)
0.05	J1		8.16	[Cross-hatched pattern]	0.10	MADE GROUND (Brown sandy topsoil).
0.50	J2				(1.00)	MADE GROUND (Black brown slightly clayey very sandy gravel with medium cobble content and fragments of wood and metal. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded and includes red brick, concrete and slag. Cobbles are subangular and include red brick and concrete. Slag content is 0-25%. Slag is vesicular grey green white).
1.00	B3		7.16	[Cross-hatched pattern]	1.10	MADE GROUND (Black sandy gravel with high cobble content and fragments of wood, paper, tile, glass and metal. Gravel is fine to coarse subangular to subrounded and includes brick, concrete, slag and ash. Cobbles are subangular and include coal and slag. Slag content is 0-25%. Slag is vesicular grey green white).
1.20	J4				(0.50)	
1.30	ES5			[Cross-hatched pattern]	1.60	
1.50	PID	<0.1ppm	6.66		1.60	
1.80	B6			[Horizontal line pattern]	(0.90)	
2.00	HSV	70 (22)kPa			2.50	Firm light orange brown sandy CLAY. at c.2.00m BGL clay is of intermediate plasticity.
2.30	J7			[Horizontal line pattern]	(0.50)	
2.70	B8				3.00	Firm to stiff grey brown slightly sandy CLAY. at c.2.70m BGL ... clay is of high plasticity.
2.80	J9					
2.90	HSV B10	70 (20)kPa	5.26			Complete at 3.00m BGL.



GROUNDWATER
 Water strike at 1.10m BGL

STABILITY
 Pit sides and base stable throughout excavation.

ADDITIONAL INFORMATION		
Sketch Diagram:	No Sketch Taken	
Photographs:	Yes	See additional sheets.

GENERAL REMARKS

All dimensions in metres Scale 1:50	For explanation of symbols and abbreviations see Key Sheets	Checked by: <i>K.W</i>	Logged by: K. Russell-Clamp	Contract No. 4251
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