

Roxhill Developments Limited

M1 Junction 15 West, Northampton

Factual Ground Investigation Report

312598-02 (00)





RSK GENERAL NOTES

Project No.: 312598 – 02 (00)

Title: M1 Junction 15 West

Factual Ground Investigation Report

Client: Roxhill Developments Limited

Date: November 2014

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Status: Final

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Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK Environment Ltd.



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1 INTRODUCTION

1.1 Introduction

RSK Environment Limited (RSK) has been commissioned by Roxhill Developments Limited (the Client) to carry out a Factual Ground Investigation Report for the site of the proposed commercial development at M1 Junction 15 west.

This report is subject to the RSK service constraints given in Appendix A.

1.2 Terms of reference

This report comprises a factual report in general accordance with the requirements of:

- BS5930:1999+A2:2010 'Code of practice for site investigations':
- Environment Agency CLR 11 2004a 'Model Procedures for the Management of Land Contamination' (Contaminated Land Risk Assessment):
- Highways Agency HD22/08, 'Managing Geotechnical Risk' (Ground Investigation):
 and
- BS EN 1997-2:2007. Eurocode 7 Geotechnical design Part 2: Ground investigation and testing.

1.3 Proposed development

It is understood that the site is being considered for commercial development. The development area located within the north eastern area of the site includes two large distribution warehouses with associated loading bays, hard standing and access routes, as well as a two story office building. Site drainage including five drainage ponds located at either end of the distribution warehouses, a highway network joining to the A508 and soft landscaping with a landscape screening bund around the north, east and west of the proposed development.

In order to undertake the commercial development it is anticipated that a significant cut and fill earthworks exercise will be undertaken at the site with the aim of achieving a volume balance by utilising all site won materials, avoiding or minimising the need to import fill materials.

1.4 Objective

The subject of this report is the development area including the proposed Main Development Plateau for the construction of distribution warehouses, office block and associated hardstanding. In accordance with the Client's specific objectives, requirements and brief; the objective for the works was developed with the aim of providing sufficient preliminary data to:



- provide sufficient data to confirm the ground model
- obtain data to provide a chemical and geotechnical characterisation of each strata
- assist with master planning design
- · provide data to support planning applications

In line with Eurocode 7, BS5930, BS10175 and CLR 11 further phases of targeted investigation (post Planning Approval) may be required to provide specific data and information for detailed design of individual elements of the scheme as the design evolves.

1.5 Scope

The project has been carried out to an agreed brief as set out in RSK's proposal (ref. M1 Junction 15 West, Northampton; Geotechnical and Geo-environmental Services; Master Planning and EIA Support, dated 10th July 2014).

The ground investigation fieldwork carried out at the site was undertaken in accordance with a site specific specification developed by RSK for the clients scheme proposals. This site specific specification was in general accordance with the Site Investigation Steering Group's UK Specification for Ground Investigation 2nd edition (2012), BS 5930 and A2: 2010 'Code of practice for site investigations', BS EN ISO 14688-1:2002, BS EN ISO 14689 – 1:2003 and in general accordance with the recommendations made within BS10175:2011 'Investigation of Potentially Contaminated Sites – Code of Practice'.



2 SITE DETAILS

2.1 Site location

The whole site covers approximately 172 hectares, the centre of which is defined by the following National Grid co-ordinates: 474940 254715. The site is bound by the M1 motorway which runs roughly north west to south east along the north eastern boundary of the site and the A508 running north east to south west along the south eastern boundary of the site. An unnamed brook with fields beyond denotes the southern boundary of the site, and hedgerows with fields beyond denotes the western boundary. Collingtree Lane marks the northern boundary of the site.

The specific development area covers approximately 95 hectares and is predominantly located in the north east half of the site, where the main distribution warehouses and their associated infrastructure will be located. In addition, a strip of land along the western edge of the site is included within the development area, where a proposed bund is to be located.

The village of Blisworth is situated approximately 1km to the west of the overall site. The village of Milton Malsor is located approximately 0.5km north west of the overall site and the village of Collingtree is located some 100m east beyond the M1 Motorway.

2.2 Local topography, geography and geomorphology

The site sits within a formerly glaciated area. The land is gently undulating with a general rise from the southern extent to the north eastern corner.

The site generally slopes down from west to east, with the peak of the hill on which the site sits being located near to the centre of the western boundary of the site. The top of the hill forms a ridge which extends along the majority of the western boundary of the site. At its highest, the site elevation is approximately 102m AOD, located near to the centre of the western boundary, down to its lowest elevation of approximately 80m AOD along the sites eastern boundary, within a shallow valley associated with the unnamed brook flowing north east, along the sites south eastern boundary.

Ground elevations within the general vicinity of the site undulate up and down, with levels initially rising to the east and south, and dropping to the north and west. The M1 motorway is located in a deep cutting along the north western site boundary.

The geological sequence of the area is understood to be one of fossiliferous mudstone and siltstone, laminated and bituminous in part, with thin siltstone or silty mudstone beds and rare fine-grained calcareous sandstone beds deposited within sea conditions and eroded by periods of glaciations and later deposition of Oadby Member (Glacial Till) and Glaciofluvial Deposits.



2.3 Site description

The site is predominately utilised for arable farming and comprises fields with hedgerow field boundaries including a variety of immature to mature sized trees of various species. Two areas of mixed woodland are also located within the site. The woodlands are located near to the centre of the site, adjacent to the main access track trough the site. The majority of fields comprised stubble from recent harvesting, however the fields in the extreme south of the site comprised bean crops. The general elevation of the surrounding land undulates up and down, with the site elevations generally sloping down from north west to south east.

The main access to the site is via a rough compacted gravel track leading north from the southern end of the site off of the A508, towards the sites centre. In the centre of the site, just off the track is a stockpile of rubble consisting of brick tarmac and stone (presumed to be for improving farm track ways).

There are two buildings located on the site. Close to the centre of the site is a gun club with shooting range and clay pigeon shooting. Further to the south east there are a small number of derelict farm buildings . The derelict farm buildings are generally empty but appear to be utilised as a store for stone as well as containing two former fuel tanks, now partially filled with water

An overhead 1.1Kv power supply enters the north west of the site, travelling south east and south towards the derelict buildings on low level wooden poles..

The site also contains two telecoms masts, one is located in the south eastern corner, to which a concrete track leads, while the second mast is located towards the north east in a field boundary at the end of a grass track, adjacent to the site boundary.

At the south of the site is a brook which flows north east towards Northampton.

It was also noted from ecological plans supplied to RSK that the site has two badger sets which are located in the east of the site. One is located on the north east corner in coniferous woodland and the second is within a boundary hedge. The ecological plans supplied to RSK also indicate that there is a pond within the grounds of the gun club which may have contained great crested newts, as well as common lizard habitats and bat roosts. Supplied plans also indicated existing underground gas and water district mains in the east corner of the site though no markers were observed.

2.4 Published geology and expected ground conditions

The British geological Survey (BGS) plans and maps obtained have been reviewed to determine the anticipated geology beneath the site.

It is envisaged that the local geology beneath the site will be in line with the summary below detailed within Table 1.



Table 1: Expected geology

Geology	Comment
Surfacing and Buried Structures: (source: Envirocheck History Maps, Site Observation)	Hard standing was identified along tracks to the gun club, existing farm buildings in the east and to the telecoms masts.
Made Ground / Topsoil: (source: BGS Maps, Available Borehole Logs, Envirocheck Geology & History Maps, memoirs)	The entire Site is anticipated to be underlain by a cultivated plough layer which would really be a sub soil or growing medium rather than topsoil. Given its extensive use for arable crops it is anticipated that this layer could extend between 0.2 and 0.6m depth and is anticipated to be derived from the underlying Glacial Till so would be anticipated to be sand gravelly clay.
Drift Deposits: (source: BGS Maps, Available Borehole Logs, Envirocheck Geology & History Maps, memoirs)	The majority of the site appears to be underlain by a mantle of Oadby Member (Diamicton Till / Glacial Till) which is anticipated to be primarily sandy gravelly clay. It may also contain sandy gravel strings, lenses and pockets which may bare perched or trapped groundwater. In the north and east fingers of Glaciofluvial Deposits are anticipated to be present and are likely to take the form of sands and gravels.
Bedrock (source: BGS Maps, Available Borehole Logs, Envirocheck Geology & History Maps, memoirs)	The entirety of the Site is indicated to be underlain by Whitby Mudstone Formation likely to be weathered beneath the overlying superficial deposits to firm to stiff brown tending to blue grey clays, mudstones with subordinate siltstone and limestone bands. Calcareous shell and fossil fragments are common throughout these deposits.
Soil Chemistry (source: Envirocheck / BGS)	Available soil chemistry data suggests that the natural soils anticipated to be present across the site do not have any significantly elevated concentrations of contaminants that would be considered to represent a risk to Human Health for the elements tested for a commercial development.
Opencast Quarrying (source: Coal Authority web viewer, BGS Maps, Envirocheck History Maps)	Some noted within 400m of the site, although none expected on site.
Groundwater	Several perched groundwater tables maybe expected within the more permeable solid strata trapped between less permeable strata most probably in the superficial glacial deposits.

The constraints to investigations undertaken at the site are summarised below in Table 2;



Table 2: Constraints to investigation

Issue	Comment
Landowners Permissions	Entry into the shooting range and the woodland associated with the gun club was not permitted during the investigations, however, no investigations were proposed for this area as this was not part of the development area and therefore, there was no impact on the scope of the investigation.
Utilities & Services	Low level 11kv Overhead power lines are present on site, entering from the north west of the site, travelling south east and south across the site towards the derelict farm buildings, in the south east of the site. A gas main and a water main are present in the east corner of the site, near to the motorway junction, travelling north to south.
Farming & Crops	No investigation was feasible within two areas of fields in the south of the site as inclement weather had prevented the harvesting of crops in those areas. As such it was not possible to undertake TP18 in the south east of the site or WS17 and TP29 and TP30 in the south west of the site. Entry to these areas would have resulted in significant crop damage and where therefore avoided.
Ecological	Ecological surveys undertaken prior to the site investigation indicted a number of features on the site of ecological interest. These were two badger sets with 30m buffer zones around and two mature trees with moderate bat rooting potential within hedgerows at the site, Common lizard areas and a pond with potential to contain Great Crested Newts within the shooting club grounds, and a barn owl roost within the derelict barns, east of the centre of the site. Exploratory hole access routes and positions were therefore set up in coordination with the ecology team to ensure that no ecological receptors were compromised.
Archaeology	Archaeological assessments of the site were being undertaken by non intrusive geophysical methods at the time of the investigation. An archaeologist was in attendance during all trial pits undertaken at the site as part of a watching brief to identify any archaeological features that might be in advertently uncovered during the intrusive ground investigations.



3 GROUND INVESTIGATION

3.1 Introduction

RSK prepared a site specific Stage 2 Preliminary Ground Investigation Specification in accordance with the Site Investigation Steering Group's UK Specification for Ground Investigation 2nd edition (2012) and BS 5930 and A2: 2010 'Code of practice for site investigations', BS EN ISO 14688-1:2002 and BS EN ISO 14689-1:2003.

The specification for the works was developed with the aim of providing sufficient preliminary data to assist with master planning design of the development area taking account of the anticipated ground conditions detailed within the Preliminary Sources Study Report.

The site work for the investigation of the M1 Junction 15 site was undertaken between 18th August and 8th September 2014.

3.2 Investigation strategy and methodology

The techniques adopted for the intrusive investigation were appropriate to the expected geology and were also chosen to provide general preliminary non targeted arrangement covering both plan area and depth of strata sufficient to allow the ground model to be confirmed.

In addition specific exploratory holes were targeted in order to provide data for specific critical design elements. The investigation and sampling strategy was primarily focused on the assessment of the shallow soils and weathered bedrock.

The rationale for each planned exploratory hole location is detailed within the Stage 2 Preliminary Ground Investigation Specification and summarised within the Provisional Exploratory Hole Schedule included in Appendix B. This formed the basis for the works decision making as works progressed.

Following completion of fieldworks and upon preparation of exploratory hole logs a series of samples were scheduled for selection of geotechnical and chemical laboratory testing to help characterise the strata properties. Groundwater samples were also taken and analysed where it was viable.

An initial programme of four weekly soil gas and groundwater level monitoring visits were undertaken to establish the groundwater and ground gas conditions beneath the site. The results of the monitoring are provided within Appendix J.

3.2.1 Health and safety

Services data was obtained and overlaid upon plans to aid in the design and safe positioning of exploratory holes.

RSK liaised with Landowners to agree suitable and safe exploratory hole locations, access routes and to obtain all necessary permits and permissions.



RSK prepared site specific works H&S Plan, risk assessments and method statements for the undertaking of the works.

3.2.2 Location of exploratory hole positions and service clearance

RSK met with landowners and stakeholders to confirm suitable access routes and viable exploratory hole locations prior to finalising the ground investigation specification and commencing works.

Services data was obtained and overlaid upon plans to aid in the safe positioning of exploratory holes.

RSK SafeGround team used a number of non intrusive techniques and equipment to check all exploratory hole positions and the surrounding areas were free of buried services and utilities. SafeGround used the following equipment:

- CAT & Genny (Radiodetection RD8000),
- Ground Penetrating Radar (GPR) GSSI SIR-3000 console with the GSSI 400MHz antenna (standard frequency, used in high risk clearances)

Following issue of a permit to dig from the RSK Safeground team, hand excavated service avoidance inspection pits were excavated to depths of 1.2mbgl prior to commencing all boreholes. Boring was only commenced if no evidence of services was uncovered.

Upon completion of the works an as-built survey of the exploratory hole positions was commissioned and the coordinates and levels of each position were recorded using a Leica Viva GPS accurate to +/-5mm in horizontal positioning and +/-10mm in elevation. The coordinates and level data are recorded upon each exploratory hole log whilst the position of each exploratory hole is shown upon the exploratory hole location plan presented as Figure 4.

3.2.3 Investigation techniques

Trial pits

Machine excavated trial pits were utilised to provide coverage across the site and to provide data on the shallow near surface strata. Trial pits also allowed bulk disturbed samples to be taken for strata classification and earthworks testing. Trial pits also allowed assessments of diggability and stability to be made.

Specific trial pits were undertaken at defined locations to facilitate soakaway testing to provide infiltration data to aid drainage design.

The trial pit logs and photographs are presented in Appendix C.

Windowless sampler boreholes

Windowless sampler boreholes were utilised to penetrate shallow near surface drift strata. This technique was also used to provide in-situ strength and density testing (SPT), representative disturbed samples for laboratory testing and to facilitate installation of monitoring instrumentation within the shallow near surface deposits to facilitate long term soil gas and groundwater monitoring.



The windowless sampler borehole logs are presented in Appendix D.

Cable percussion boring

150mm diameter cable percussion boreholes were utilised to penetrate shallow near surface drift strata to full depth and to prove the top of rock head where possible. This technique was also used to provide in-situ strength and density testing (SPT), representative disturbed and undisturbed samples for laboratory testing and to facilitate installation of monitoring instrumentation within the deeper near surface deposits to facilitate long term soil gas and groundwater monitoring.

The cable percussion borehole logs are presented in Appendix E.

3.2.4 Development area investigation

The investigation undertaken at the site comprised the following:

- Setting out and service Clearance (RSK SafeGround).
- Excavation of twenty seven trial pits using an operated tracked excavator to depths of between 1.80m and 4.80m bgl.
- Carry out three soakaway tests in selected trial pits in general accordance with BRE 365.
- Sinking of sixteen window sample boreholes to depths of between 3m and 6m bgl using a windowless sampler drilling rig.
- Sinking of sixteen boreholes to depths of between 7.50m and 20.45m bgl using a standard cable percussive drilling rig.
- Installation of twenty four combined groundwater/gas monitoring wells and piezometers to varying depths including provision of flush lockable covers and 1.5m high wooden marker stakes (in fields).
- Four initial return visits to monitor groundwater levels/ground gas concentrations
- One groundwater sampling visit.
- Surveying in of as built exploratory hole positions using GPS surveying equipment.
- Removal of instrumentation covers and capping of instrumentation.
- Associated sampling and insitu testing.
- Soil and rock sample geotechnical laboratory testing.
- Soil sample chemical and contamination laboratory testing.
- Groundwater sample chemical and contamination laboratory testing.

3.2.5 Soil sampling, in-situ testing and laboratory analysis

Details of the soil samples obtained during the intrusive investigation are recorded on the exploratory hole logs presented within Appendices C, D and E.

In-situ SPTs were undertaken within the window sampler and cable percussion boreholes and are presented on the borehole logs included within Appendix D and E.

In-situ soakaway testing was undertaken in selected trial pit locations as denoted upon the exploratory hole plan presented as Figure 4. Preliminary soakaway tests were undertaken in unsupported shallow trial pits and were attempted in general accordance



with the recommendation of BRE 365. The three tests, undertaken within TPs 5, 15 and 20 did not soakaway sufficiently to allow calculation of infiltration rates. The strata in which these tests were undertaken were predominantly cohesive and not considered to be conducive to soakaways and the testing undertaken has confirmed this. The in-situ soakaway test results are presented in Appendix F and the results are summarised below within Table 3.

Table 3: Summary of soakaway test results

Hole	Test Zone (Depth m bgl)	Calculated Infiltration Rate m/s	Strata
TPS5	1.11 – 1.85	Insufficient soakage	Glaciofluvial Deposits – sandy clay
TPS15	0.93 – 1.85	Insufficient soakage	Oadby Member – gravelly clay over gravelly sand
TPS20	1.10 – 2.05	Insufficient soakage	Oadby Member – gravelly clay over sand and gravel

A programme of laboratory testing was scheduled by RSK to be carried out on selected suitable samples, in order to provide characteristic geotechnical strata properties.

The programme of geotechnical testing undertaken is summarised below within Table 4.

Table 4: Summary of geotechnical testing programme undertaken

Stratum	Analysis Undertaken	Number
	Moisture Content	1
	Classification tests (Atterberg Limits)	2
	Particle Size Distribution analysis	8
Glaciofluvial Deposits	Dry Density / Moisture Content Relationship Test (4.5kg Compaction)	3
	California Bearing Ratio (recompacted)	3
	Undrained shear strength measured by shear vane testing (kN/m²)	1
	Sulphate Characterisation (BRE SD1)	5
	Classification tests (natural moisture content)	11
	Classification tests (Atterberg Limits)	28
	Particle Size Distribution analysis	14
Oadby Member	Moisture condition value (Single Point)	5
	Moisture Condition Calibration	3
	Dry Density / Moisture Content Relationship Test (4.5kg Compaction)	13



Stratum	Analysis Undertaken	Number
	California Bearing Ratio (recompacted)	10
	Consolidation Testing	12
	Undrained shear strength measured by triaxial testing (kN/m²)	11
	Undrained shear strength measured by shear vane testing (kN/m²)	7
	Sulphate Characterisation (BRE SD1)	13
	Classification tests (Atterberg Limits)	3
	Consolidation Testing	3
	Coefficient of consolidation c _v (m ² /year)	3
Whitby Mudstone Formation	Undrained shear strength measured by triaxial testing (kN/m²)	3
	Undrained shear strength measured by shear vane testing (kN/m²)	4
	Sulphate Characterisation (BRE SD1)	2

The results of the geotechnical laboratory testing are presented in full within Appendix G.

In addition a programme of non targeted analytical chemical and contamination suites of tests were scheduled upon selected soil and groundwater samples obtained to confirm characteristic soil and groundwater chemistry and contamination potential.

The programme of analytical chemical and contamination suites of tests undertaken on soil samples is summarised below within Table 5.

Table 5: Summary of analytical chemical and contamination testing programme undertaken on soil samples

Stratum	Analysis Undertaken	Number
	pH, Arsenic, Cadmium, Copper, Chromium, Chromium (hexavalent), Lead, Mercury, Nickel, Selenium, Zinc	7
	Total Organic Carbon (TOC)	7
Agricultural Topsoil	Phenols (total)	7
	Pesticides and Triazine Herbicides	4
	Polycyclic Aromatic Hydrocarbons (PAHs)	7
	Total Petroleum Hydrocarbons Criteria Working Group (TPH CWG) + BTEX and MTBE	7



Stratum	Analysis Undertaken	Number
	pH, Arsenic, Cadmium, Copper, Chromium, Chromium (hexavalent), Lead, Mercury, Nickel, Selenium, Zinc	3
	Total Organic Carbon (TOC)	3
Subsoil	Phenols (total)	3
	Pesticides and Triazine Herbicides	1
	Polycyclic Aromatic Hydrocarbons (PAHs)	3
	Total Petroleum Hydrocarbons Criteria Working Group (TPH CWG) + BTEX and MTBE	3
	pH, Arsenic, Cadmium, Copper, Chromium, Chromium (hexavalent), Lead, Mercury, Nickel, Selenium, Zinc	5
	Total Organic Carbon (TOC)	5
Oadby Member	Phenols (total)	5
	Polycyclic Aromatic Hydrocarbons (PAHs)	5
	Total Petroleum Hydrocarbons Criteria Working Group (TPH CWG) + BTEX and MTBE	5
	Pesticides and Triazine Herbicides	3

The results of the analytical chemical and contamination suites of tests are presented in full within Appendix H.

The programme of analytical chemical and contamination suites of tests undertaken on groundwater samples is summarised below within Table 6.

Table 6: Summary of analytical chemical and contamination testing programme undertaken on groundwater samples

Sample	Analysis Undertaken	Number	
Groundwater	pH, Redox potential, Electrical conductivity, dissolved oxygen, hardness, ammonia, Phenols, Arsenic, Cadmium, Copper, Chromium, Chromium (hexavalent), Lead, Mercury, Nickel, Selenium, Zinc	10	
	Total Petroleum Hydrocarbons Criteria Working Group (TPH CWG) + BTEX and MTBE	10	

The results of the analytical chemical and contamination suites of tests for the groundwater samples are presented in full within Appendix I.



3.2.6 Instrumentation and monitoring

Long term monitoring of gas and groundwater levels was made possible by the installation of standpipes and standpipe piezometers as shown within Table 7:

Table 7: Monitoring well installation details

Hole	Borehole depth (m)	Standpipe Response zone (m)	Strata
WS2	3.45	1.00 – 3.00	GFD
WS3	6.45	3.00 - 6.00	GFD
WS4	5.45	2.00 – 5.00	GFD
WS6	6.45	3.00 - 6.00	ОМ
WS8	5.45	2.00 – 4.00	GFD
WS9	6.42	2.50 - 5.50	ОМ
WS11	4.45	2.00 – 4.00	OM/GFD/WMF
WS15	6.45	3.00 – 6.00	WMF
CP1	15.45	8.00 – 15.00	GFD
CP2	20.45	14.00 – 20.00	GFD
CP3	13.25	8.00 – 12.00	WMF
CP4	15.45	1.00 – 8.00	GFD
CP5	15.45	4.00 – 8.00	OM/GFD/WMF
CP6	14.45	6.00 - 8.00	OM and WMF
CP7	7.50	1.00 - 6.00	ОМ
CP8	9.10	2.00 - 5.00	ОМ
CP9	11.10	6.10 – 11.10	WMF
CP10	14.10	2.00 – 5.00	ОМ
CP11	11.10	7.00 – 10.00	WMF
CP12	12.45	1.00 – 5.00	ОМ
CP13	13.00	8.00 – 13.00	OM and WMF
CP14	7.95	1.00 – 5.00	OM and WMF
CP15	8.90	6.00 - 8.90	WMF
CP16	9.10	2.00 – 5.00	GFD

Totals. Of B. Gladonavia Deposits, Ow. Gadby McMbor, Will.

Instrumentation installed within the boreholes has been monitored by trained technicians from RSK.



Gas and Groundwater Monitoring was undertaken on four separate occasions over a four week period as follows;

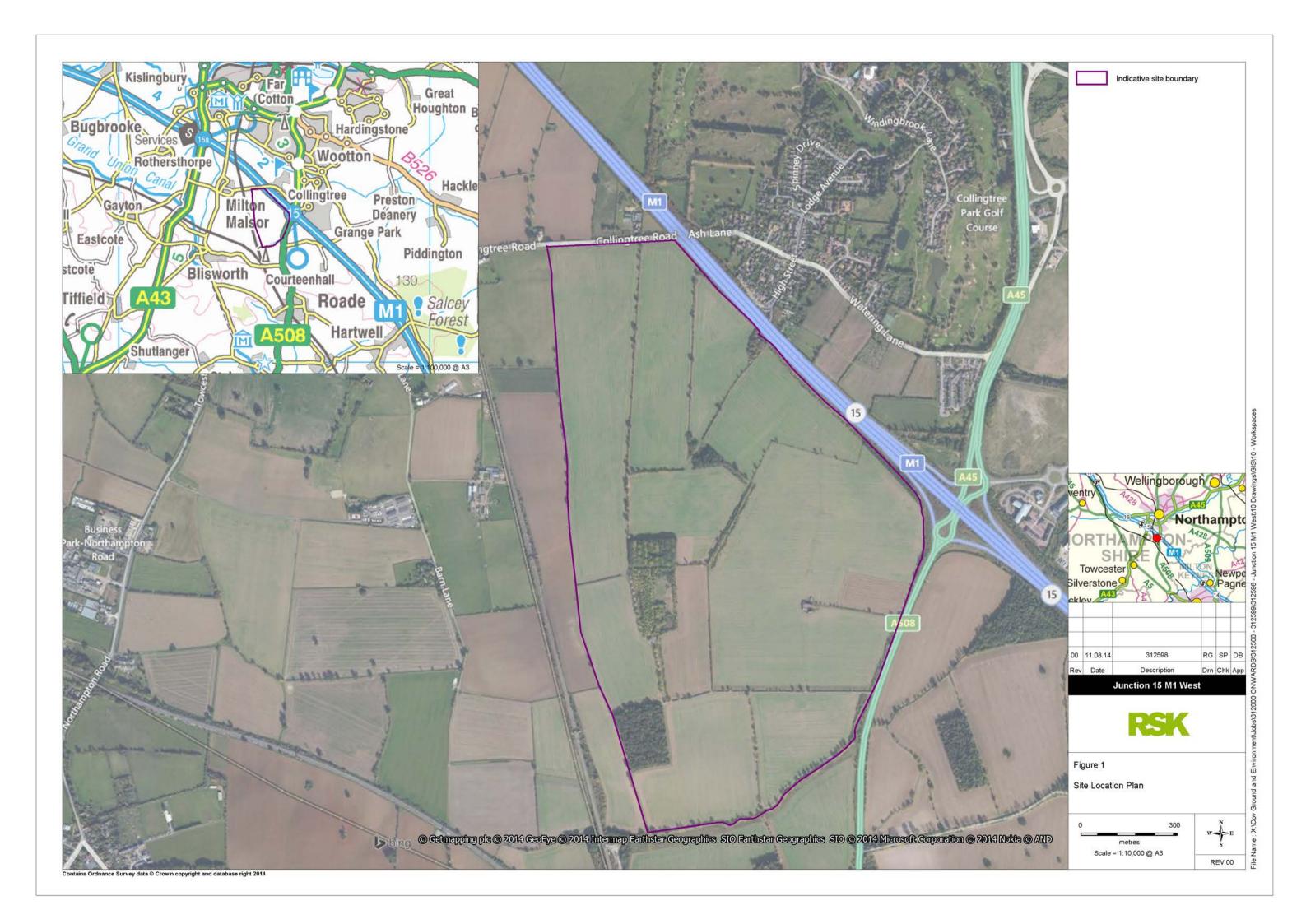
- 4th and 5th September 2014
- 9th September 2014
- 15th September 2014
- 24th September 2014

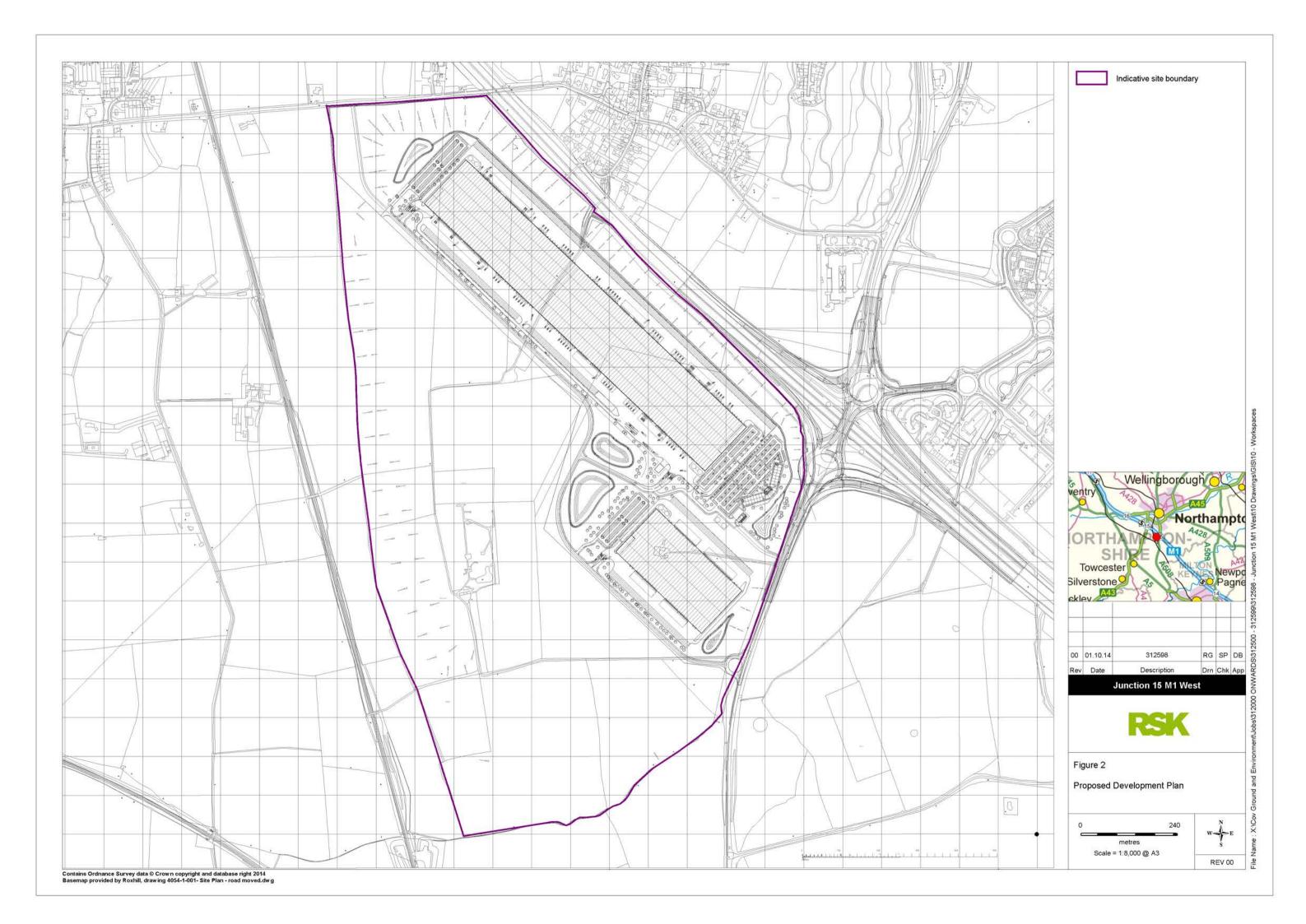
Groundwater sampling was undertaken from Borehole CP3, CP5, CP6, CP7, CP9, CP11, CP13, CP14, WS6 and WS8 on the 5th September 2014. Groundwater sampling was undertaken in accordance with RSK Procedure No; SHEQ MS TP210 Groundwater and Surface Water – sampling and routine in-situ testing. This has been formulated in accordance with current published guidance. Samples obtained were sent to Envirolab for testing and the results are presented within Appendix I. Details of the in-situ water quality results are presented within Appendix J.

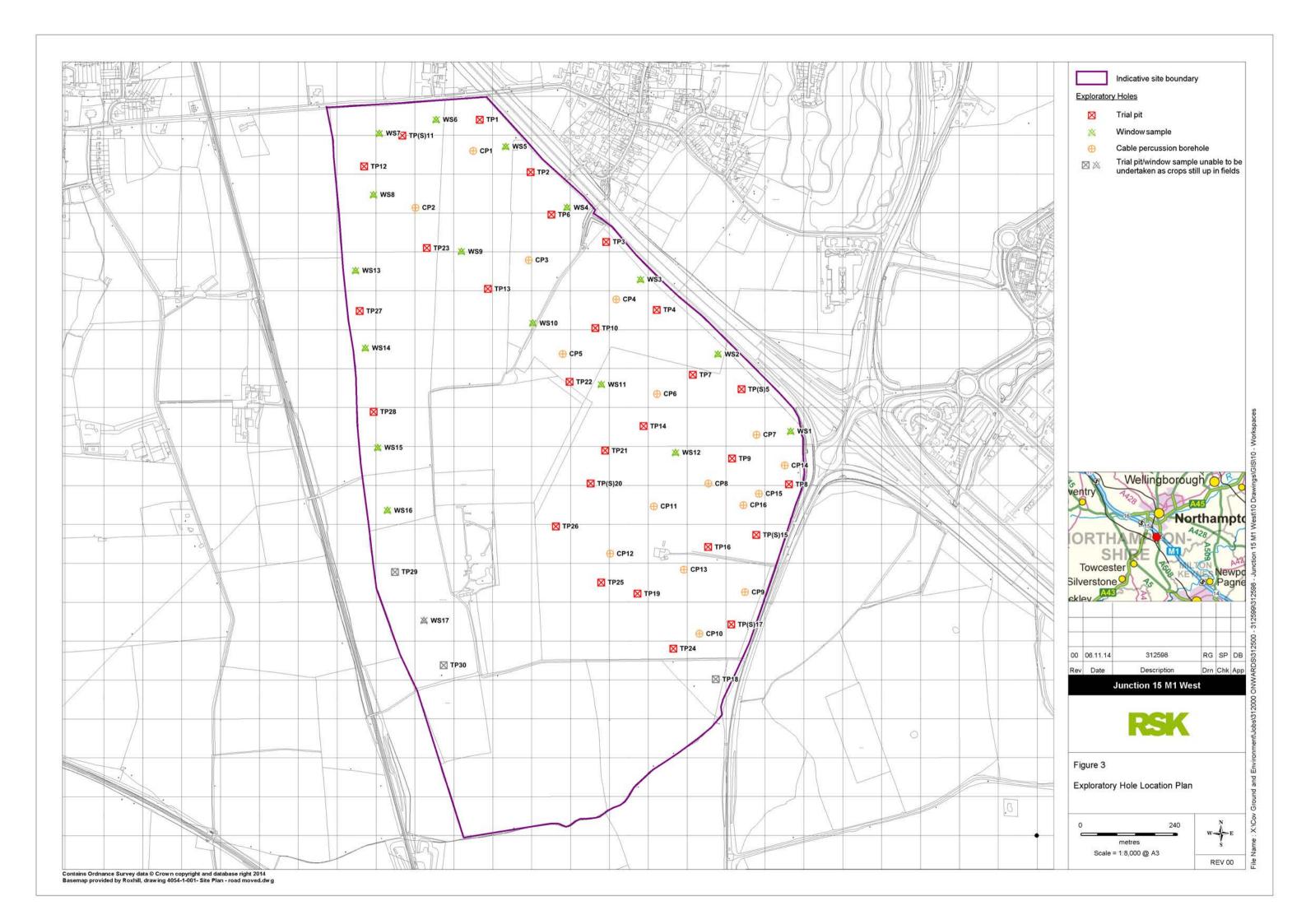
Gas and groundwater level monitoring was undertaken in accordance with RSK Group SHEQMS Technical Procedure TP211 Ground Gas (Permanent gases) Monitoring and Sampling. This has been formulated in accordance with current published guidance. Groundwater levels were established using a hand held dipmeter with levels recorded with reference to depth below ground level. Gas monitoring was carried out using a Geotechnical Instruments GA2000+ Infra red gas analyser and Gas Data GFM610 flow pod. Monitoring was carried out to check for Methane, Carbon Monoxide, Carbon dioxide, Hydrogen Sulphide, Oxygen, Barometric pressure and Flow rate. The detailed results of the gas and groundwater level monitoring are presented within Appendix J.



FIGURES









APPENDIX A SERVICE CONSTRAINTS

- 1. This report and the site investigation carried out in connection with the report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) for Roxhill Developments Limited in accordance with the terms of a contract between RSK and the "client", dated July 2014. The Services were performed by RSK with the skill and care ordinarily exercised by a reasonable environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the client.
- Other than that expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services.
- 3. Unless otherwise agreed the Services were performed by RSK exclusively for the purposes of the client. RSK is not aware of any interest of or reliance by any party other than the client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and RSK disclaims any liability to such parties. Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.
- 4. It is RSK's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without RSK 's review and advice shall be at the client's sole and own risk. Should RSK be requested to review the report after the date hereof, RSK shall be entitled to additional payment at the then existing rates or such other terms as agreed between RSK and the client.
- 5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the report in the future shall be at the client's own and sole risk. Should RSK be requested to review the report in the future, RSK shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between RSK and the client.
- 6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off the site of asbestos, electromagnetic fields, lead paint, heavy metals, radon gas or other radioactive or hazardous materials.
- 7. The Services are based upon RSK's observations of existing physical conditions at the Site gained from a walk-over survey of the site together with RSK's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The Services are also based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely. The Services clearly are limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the walk-over survey. Further RSK was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services. RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK and including the doing of any independent investigation of the information provided to RSK save as otherwise provided in the terms of the contract between the client and RSK.
- 8. The phase II or intrusive environmental site investigation aspects of the Services is a limited sampling of the site at pre-determined borehole and soil vapour locations based on the operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and RSK] [based on an understanding of the available operational and historical information,] and it should not be inferred that other chemical species are not present.
- 9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site.



APPENDIX B PROVISIONAL EXPLORATORY HOLE SCHEDULE

							Position			Design Ground Level	Diff in lev
lole	Hole Type	Provisional Depth m bgl	Provisional Instrumentation	Current Use/surfacing	Purposed end use	Special insitu testing / sampling /Likely Lab Testing Requirements	E	N	mAOD	mAOD	m
P 1	CP	15	50mm dia HDPE s/pipe slotted 8-15mbgl	Cable	Percussion Borenoles	1	474650	255462	2 90	_	1
2	CP	15	50mm dia HDPE s/pipe slotted 14-20mbgl	†			474502	255316	90		+
- 3	CP	15	50mm dia HDPE s/pipe slotted 8- 12mbgl	†			474793	255181	90	1	1
9 4	CP	15	50mm dia HDPE s/pipe slotted 1 -8mbgl]	Unit 1 RDC Warehouse Cut at northern end (CP1 end) up		475018	255080	80		
P 5	CP	15	50mm dia HDPE s/pipe slotted 4 -8mbgl]	to 8m, fill at southern end (CP8 end) up to 4m.	SPT 1m c/c, U100	474880	254940	90		1
-	CP	15	50mm dia HDPE s/pipe slotted 6 -8mbgl	4		samples where possible in	475123	254837	80	1	_
9 7 9 8	CP CP	15 15	50mm dia HDPE s/pipe slotted 1- 6mbgl 50mm dia HDPE s/pipe slotted 2-5mbgl	4		CP holes, std geotech and	475379	254732	80		+
9	CP	15	50mm dia HDPE s/pipe slotted 2-51110gl	Cropped Fields		env samples.	475255 475349	254607 254328	80		+
P 10	CP	15	50mm dia HDPE s/pipe slotted 2-5mbgl	†		Water strikes to be	475232	254221	80		+
211	CP	15	50mm dia HDPE s/pipe slotted 7-10mbgl	1	Unit 1 RDC Warehouse	carefully recorded with	475125	254548	90		1
P 12	CP	15	50mm dia HDPE s/pipe slotted 1-5mbgl]		casing recorded.	475002	254427	90		
P 13	CP	15	50mm dia HDPE s/pipe slotted 8-13mbgl]			475192	254386	90		1
P 14	CP	15	50mm dia HDPE s/pipe slotted 1-5mbgl	_			475451	254653	80		
P 15	CP	15	50mm dia HDPE s/pipe slotted 6-9mbgl	4	New three storey Offices note probable fill of 2-4m beneath.		475385	254581	80		₩
P 16	CP	15	50mm dia HDPE s/pipe slotted 2-5mbgl		Twist Dite		475345	254552	2 80		
1	TP	6	NB	T	Trial Pits	ī	474667	255542	2 90		
	TP	6	NR NR	-	Cutting Works Cutting Works/Embankment		474667	255542	90		+
	TP	6	NR	1	Cutting Works/Embankment Cutting Works/Embankment		474798 474992	255228	80		+-
	TP	6	NR	1	Cutting Works/Embankment		474992	255053	80 80		+-
25	TP & Soakaway	3	NR	1	Cutting Works/Soakaways		475122	254849	80		†
	TP	6	NR	1	Cutting Works		474851	255298	90	1	
P 7	TP	6	NR	1	Fill /Loading bays		475215	254886	80		1
P 8	TP	6	NR		Drainage	Hand Vanes and general	475462	254605	80		
P 9	TP	6	NR	_	Fill & Car Park	soils samples for	475316	254671	80		
P 10	TP	6	NR	1	Cutting Works	classification testing from	474964	255006	90		
211	TP & Soakaway	3	NR	4	Cutting Works/Pond	all pits.	474468	255501	90		
P 12	TP TP	6	NR	4	Cutting Works	1 1100	474370	255422	90		-
P 13	TD	6	NR NR	4	Cutting Works/Road Fill /Loading Bays	In addition;	474688 475088	255107 254754	90	1	+
	TP & Soakaway	3	NR	1	Pond	Where in roads, car parks	475066	254475	80		+
P 16	TP	6	NR	Cropped Fields	Fill/Loading Bays	and loading bays bulks for	475254	254444	80		+
	TP & Soakaway	3	NR	1	Pond	recompacted CBR tests	475314	254245	80		1
P 18	TP	6	NR	1	Road/junction	needed.	475274	254104	80		
P 19	TP	6	NR		Fill Loading Bays		475073	254324	90		
P 20	TP & Soakaway	3	NR		Pond	Where cuttings, ponds	474952	254607	90		
P 21	TP	6	NR	_	Pond	and soakaways obtain	474989	254691	90		
	TP	6	NR	1	Cutting Works/Road	Large Bulks to 6m for	474896	254866	90		_
P 23	TP TP	6	NR	4	Cutting Works/Road	earthwork suites.	474531	255212	90		+
P 24 P 25	TP	6	NR NR	1	Road Road		475165 474979	254183 254353	90	1	+
	TP	6	NR	+	Road		474863	254497			+
	TP	6	NR	†	Embankment		474358	255050	95		+
28	TP	6	NR	1	Embankment		474394	254791	95		1
29	TP	6	NR	1	Embankment		474449	254380	100		1
30	TP	6	NR		Embankment		474574	254140	95		
				Wind	ow Sampler Boreholes						
	WS	6	Backfill with arisings		Cutting and Embankments		475467	254741	80		1
	WS	6	50mm dia HDPE s/pipe slotted 1-3mbgl	4	Cutting and Embankments		475280	254939	80	1	₩
	WS	6	50mm dia HDPE s/pipe slotted 3-6mbgl	4	Cutting and Embankments	SPT/GW and general soil	475081	255131	80		₩
	WS	6	50mm dia HDPE s/pipe slotted 2-5mbgl	-	Cutting and Embankments	sampling	474892	255316	90		+
	WS WS	6	Backfill with arisings 50mm dia HDPE s/pipe slotted 3-6mbgl	-	Cutting and Embankments		474734 474555	255473 255542	90		+-
	WS	6	Backfill with arisings	1	Cutting and Embankments Cutting and Embankments	Possible probing to depth	474555	255542	90	1	+-
	WS	6	50mm dia HDPE s/pipe slotted 2-4mbgl	1	Cutting and Embankments	and possible U38 sampling	474394	255349	90	1	t
	ws	6	50mm dia HDPE s/pipe slotted 2.5-5.5mbgl	Cropped Fields	Unit 1	if requested or unusual	474620	255203	90	1	1
	WS	6	Backfill with arisings	1	Unit 1	strata encountered.	474804	255019	90		
	ws	6	50mm dia HDPE s/pipe slotted 2-4mbgl		Unit 1	Water Table monitoring is	474980	254861	90		
	WS	6	Backfill with arisings	_	Unit 1	important so water strikes	475171	254686	80	1	ullet
S 13	WS	6	Backfill with arisings	4	Embankments	should be recorded with	474348	255154	95		1
	WS	6	Backfill with arisings	4	Embankments	rise.	474373	254955	95		₩
'S 14		6	50mm dia HDPE s/pipe slotted 3-6mbgl	4	Embankments Embankments		474405	254699	95		+
'S 14 'S 15	WS	_					474430	254538	100	All Control of the Co	1
S 14 S 15 S 16	WS	6	Backfill with arisings	4				254055	100		_
6 14 6 15 6 16		6	Backfill with arisings Backfill with arisings	1	Embankments		474524	254255	100		

Estimated

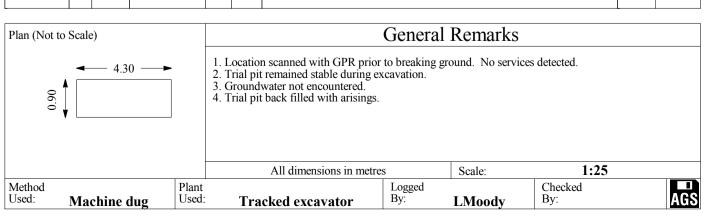


APPENDIX C TRIAL PIT LOGS AND PHOTOGRAPHS



Contract:				Client:	Trial Pit	:			
M1 Junction 15, N	orth	ampton		Roxhi				ГР1	
Contract Ref:	Start:	28.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	28.08.14		88.81	E:474667.0 N:255542.0		1	of	1

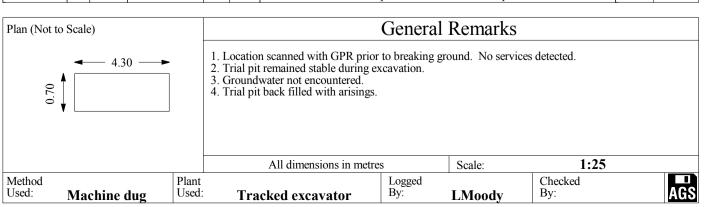
	312:	598	End:	28.08.14	88.81 E:474667.0 N:255542.0	1	of 1
Sam Depth	ples a		itu Tests Results	Water Backfill	Description of Strata	Depth (Thick ness)	Material Graphic Legend
0.30	1	ES	JJV		Dark brown slightly gravelly slightly sandy CLAY. Gravel is subangular to rounded fine to medium quartzite, flint with rootlets. (AGRICULTURAL TOPSOIL) (TOPSOIL) Firm becoming stiff grey mottled brown slightly gravelly CLAY with	(0.50)	
1.20	2	D V	c _u =60/60/60		rim becoming stiff grey mottled brown slightly gravelly CLAY with rootlets. (OADBY MEMBER) 1.30m bgl, no gravel and no roots.	-	
2.30 - 2.30	3	D V	c _u =72/82/75			(3.70)	
3.50	4	D V	c _u =110/120/>120			4.20	
-					Trial pit terminated at 4.20m depth.	7.20	
-						+	





Contract:				Client:				it:			
M1 Junction 15, Northampton					Roxhill Developments Ltd					T	P2
Contract Ref:	Start:	28.08	3.14	Groun	d Level (m AOD):	N	National Grid Co-ordinate:	Sheet:			
312598	End:	28.08	8.14		89.77		E:474798.0 N:255407.1		1	of	1
Samples and In-situ Tests		5	Ξ						Depth	Ma	aterial

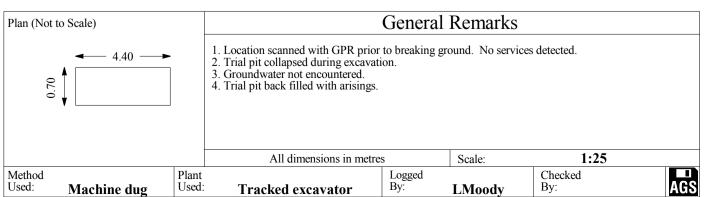
312598 End:			28.08.1	14	89.77 E:474798.0 N:255407.1	1	of 1	
Sam	oles a	nd In-si	tu Tests	er	=		Depth	Material
Depth	No		Results	Water	Backfill	Description of Strata	(Thick ness)	Graphic Legend
-						Dark brown slightly gravelly slightly sandy CLAY. Gravel is subangular to rounded fine to medium quartzite and flint. (AGRICULTURAL TOPSOIL) (TOPSOIL)	(0.30)	0 0
0.40	1	ES	JJV			Firm orange brown slightly gravelly slightly sandy CLAY. Gravel is subangular to rounded quartzite and flint. (OADBY MEMBER)	(0.30)	
0.70		V	c ₁₁ =60/60/65			Firm orange brown slightly gravelly slightly sandy silty CLAY. Gravel is subangular to subrounded fine to coarse quartzite.	0.00	
0.80	2	D				(OADBÝ MEMBER)	- -	
1.20	3	В					(1.10)	
1.70	4	D				First of Control of the control of t	1.70	
1.70 - 1.70	4	D V	$c_u = 70/75/75$			Firm to stiff grey blue mottled brown slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk with occasional quartzite. (OADBY MEMBER)	1.90	
-						Stiff grey blue mottled brown silty CLAY with occasional selenite crystals. (OADBY MEMBER)	- - -	
2.80	5	В				2.80m bgl, silty pockets.	- - -	
3.40	6	D					(2.50)	
3.40			u=>120/>120/>1:	20			-	
-							- - -	
4.40	7	В				Trial pit terminated at 4.40m depth.	4.40	
4.40	_ /	В				i riai pit terminated at 4.40m deptn.	L	





Contract:				Client:	Trial Pit	:			
M1 Junction 15, N	North	ampton		Roxhil	ll Developments Ltd			1	ГР3
Contract Ref:	Start:	28.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	28.08.14		81.70	E:474992.0 N:255227.9		1	of	1

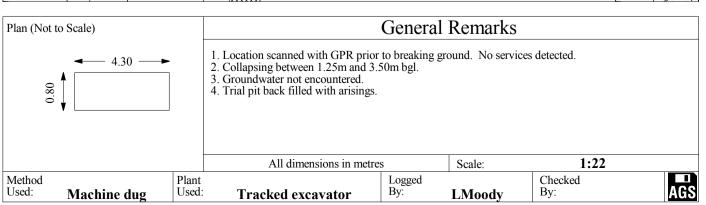
Į	312376 End. 20.00.17		7.17	01.70 E.474)/2.0 N.253227.9		01 1			
	Samples and In-situ Tests Depth No Type Results			Water	Backfill	Description of Strata	Depth (Thick	Material Graphic	
	Depth	No	Type	Results	≽	Ва	•	ness)	Legend
	0.20	1	ES	JJV			Dark brown slightly gravelly slightly sandy CLAY. Gravel is subangular fine to medium quartzite. (AGRICULTURAL TOPSOIL) (TOPSOIL) Orange brown slightly gravelly slightly sandy CLAY. Gravel is gravely slightly sandy CLAY.	(0.30) 0.30 0.40	
	- - -						subangular fine to medium quartzite. (SUBSOIL) Orange brown slightly clayey fine to coarse SAND. (GLACIOFLUVIAL DEPOSITS)	- - -	
	- - -							(1.30)	
	1.30	2	D					1.70	
	1.80	3	D				Grey mottled orange clayey fine to coarse SAND. (GLACIOFLUVIAL DEPOSITS)	1.90	
	3.00	4	D				Orange brown fine to coarse SAND. (GLACIOFLUVIAL DEPOSITS) 2.00m bgl, becoming damp.	-(1.20)	
							Trial pit terminated at 3.10m depth due to collapsing.	-	
								- - - - - - -	





Contract:				Client:			it:		
M1 Junction 15, N	Vort	nampton		Roxhi	ll Developments Ltd			T	P4
Contract Ref:	Start:	28.08.14	Groun	nd Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	28.08.14		84.85	E:475122.0 N:255053.0		1	of	2
Samples and In-situ Tests		ater kfill			Description of Strata		Depth	Ma Gr	ateria

•	<i>)</i> 1 <i>L</i> .	370	Ena:	20.0	0.14	04.03	E:4/3122.0 IN:233033	.U	1	oi 4
	1	1	tu Tests	Water	Backfill		Description of Strata		Depth (Thick	Graphic
Depth	No	Type	Results	>	Ř				ness)	Legend
-						Dark brown slightly s subangular to rounded fir (AGRICULTURAL TOP (TOPSOIL)	andy slightly gravelly CLAY. e to medium quartzite. SOIL)	Gravel is	(0.30)	
0.40	1 2	ES D					ntly sandy slightly gravelly CLAY e to medium quartzite.	Gravel is	(0.45)	
-							Title II CLAY		0.75	
0.90 -0.90	3 4	D B				Firm to stiff orange brosubangular to subrounded (OADBY MEMBER)	wn slightly gravelly sandy CLAY. fine to medium quartzite and flint.	Gravel is	(0.55)	
1.30	5	D				Oranga brown gravally s	lightly clayey fine to coarse SAND	Graval is	1.30	
-		Б				subangular to subrounded (GLACIOFLUVIAL DE	fine to coarse quartzite, flint and m	udstone.	-	
_									- -	
-									_	
-									-	
-									-	
2.70	6	D							(3.20)	
-									- - -	
3.50	7	D				3.40m bgl, clay pock	ets.		-	
						3.70m bgl, becoming	less gravelly.		-	<u>p</u>





TDIAL

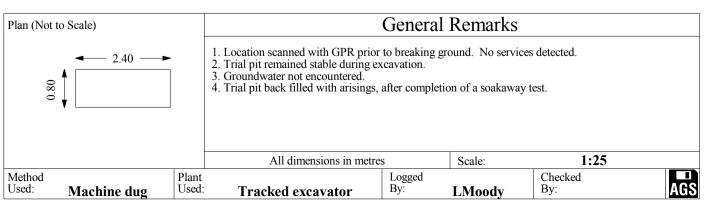
										ALPI		UG
Contract:							Client:			Trial P	it:	
M1	Jur	iction	15, No	orth	amj	oton	R	Roxhil	Developments Ltd			TP4
Contract Ref	f:		5	Start:	28.0	8.14	Ground Level (m A	OD):	National Grid Co-ordinate:	Sheet:		
3	3125	598]	End:	28.0	8.14	84.85		E:475122.0 N:2550	53.0	2	of 2
Sam	ples a	ınd In-si	tu Tests		er	III				<u> </u>	Depth	Material
Depth	No	1	Resu	lts	Water	Backfill]	Description of Strata		(Thick ness)	Graphic Legend
Бериг	110	Турс	resu	110			Orange brown or	avelly sl	ightly clavey fine to coarse SA	ND Gravel is	11055)	:
_							subangular to sub	rounded	ightly clayey fine to coarse SA fine to coarse quartzite, flint an	d mudstone.	_	
_							(GLACIOFLUVI (stratum copied fi	AL DEP rom 1.30	(OSIIS) m from previous sheet)		_	
4.30	8	D					(** ***** * * * * * * * * * * * * * * *		.,		-	
											4.50	
								Trial pi	t terminated at 4.50m depth.			
_											_	
_											-	
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	~ .								San anal Danaanlaa			

Plan (Not to Scale) General Remarks 4.30 -1:22 All dimensions in metres Scale: Plant Used: Logged By: Checked Method Used: By: Machine dug **Tracked excavator LMoody**



Contract:				Client:	Trial Pit:				
M1 Junction 15, N	North	ampton		Roxhil		1	P5	(S)	
Contract Ref:	Start:	26.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	26.08.14		82.39	E:475340.0 N:254849.0		1	of	1

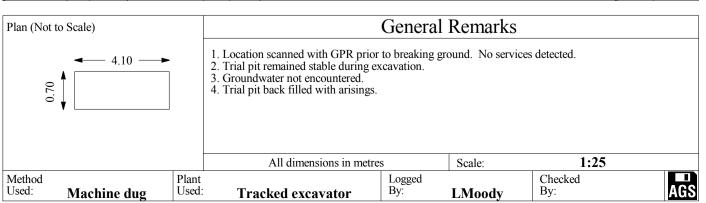
•)14.	370	Ena:	20.0	0.14	02.39	E:473340.0 11:234649.0	1	01 1
	Samples and In-situ Tests Depth No Type Results			Water	Backfill	I	Description of Strata	Depth (Thick	Graphic
	No 1	Type	Results	 	Ä W		thtly gravelly fine to coarse SAND. Gravel is fine to coarse flint and quartzite.	(0.30)	Legend
0.10	1	ES				(AGRICULTURAL TOPS (TOPSOIL)	SOIL)	0.30	#- · · · · ·
						Orange brown fine to coars (GLACIOFLUVIAL DEP	OSITS)	(0.70)	
						Soft to firm light brown m (GLACIOFLUVIAL DEP	ottled grey sandy CLAY. OSITS)	1.00	
1.50	2	В						2.00	
					*****	Trial pit terminated at 2.00	Om depth to allow soakaway to be undertaken.	2.00	
								-	
								-	
								-	
								-	
								-	





Contract:					Client:		Trial P	it:		
M1 Junction 15, N	orth	amp	oton		Roxhil	l Developments Ltd			TP	6
Contract Ref:	Start:	28.0	8.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	28.0	8.14		84.96	E:474851.0 N:255298.0		1	of 1	
Samples and In-situ Tests		e e	III					Depth	Mater	ial

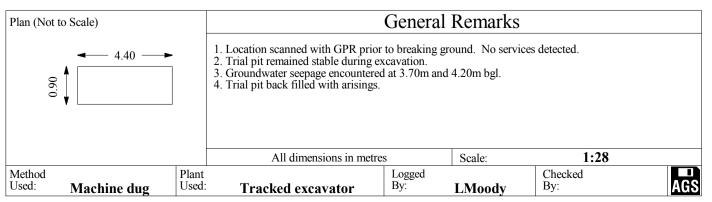
•	<u> </u>	370	Ena:	20.00	.14	04.90	E:474051.0 N:255290.0	1	01 1
	^		tu Tests	Water	Backfill		Description of Strata	Depth (Thick	Graphic
Depth	No	Type	Results	M	Ba		sandy CLAY. Gravel is subangular to quartzite flint and rare brick.	(0.50)	Legend
0.50	1	ES				Firm to stiff fissured ligh Fissures are indistinctly of (OADBY MEMBER)	t brown mottled orange and grey silty CLAY. rientated.	0.50	X X
0.90	2	D V	c _u =70/65/75/70					1.50	X X X
1.70	3	D				Soft to firm orangish brow (OADBY MEMBER)		(0.40)	X X X X X X X X X X X X X X X X X X X
2.60	4	В				rounded fine to medium q (GLACIOFLUVIAL DEI	POSITS)	-(1.20)	
						тнагр	it terminated at 3.10m depth.	-	





Contract:					Client:		Trial Pi	it:		
M	1 Junction 15, N	North	nampton		Roxhil]	ГР7	
Contract F	Ref:	Start:	27.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
	312598	End:	27.08.14		83.01	E:475215.0 N:254886.1		1	of	1

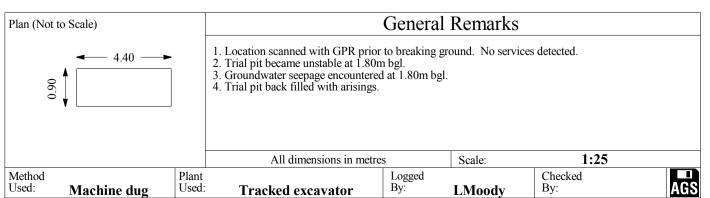
	114.	,,,	Eliu.	47.0	0.17	05.01		01 1
Samples and In-situ Tests		Water	Backfill	Description of Strata		Material Graphic		
Depth	No	Type	Results	×	Вас	•	(Thick ness)	Legend
0.20	1 2	ES D				Soft dark brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to medium quartzite and flint. (AGRICULTURAL TOPSOIL) \(\text{TOPSOIL}\) Firm to stiff orange brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to medium quartzite.	(0.30)	
0.60	3	D				(OADBY MEMBER)	0.75	
1.20	4	D				Compact light orange brown mottled grey slightly gravelly slightly sandy silty CLAY/ sandy very clayey SILT. Gravel is subrounded fine to medium quartzite. (OADBY MEMBER)	(0.75)	× × × × × × × × × × × × × × × × × × ×
1.20	5	В				1.30m bgl, becoming gravelley with depth.	1.50	× · ×
2.60-2.80	6	В				Orange brown slightly silty sandy GRAVEL. Gravel is rounded to subrounded fine to coarse quartzite, flint and chalk. (GLACIOFLUVIAL DEPOSITS)	1.50	
						Cliff to a stiff to a	2.80	· · · · · · · · · · · · · · · · · · ·
3.00	7	D				Stiff to very stiff blue grey slightly gravelly very silty fissured CLAY with silt pockets. Gravel is subangular fine to coarse chalk. (GLACIOFLUVIAL DEPOSITS)	(0.40)	X X X
3.70	8	В		*		Buff orange brown gravelly fine to coarse SAND. Gravel is subangular to rounded fine to coarse quartzite and chalk. (GLACIOFLUVIAL DEPOSITS)	-(1.00)	
_				₩			4.20	
-						Stiff blue grey slightly gravelly silty CLAY. Gravel is subangular to rounded chalk. \((GLACIOFLUVIAL DEPOSITS)\)	4.40	XOX
-						Trial pit terminated at 4.40m depth.	-	
-							-	





Contract:			Client:		Trial Pit	:		
M1 Junction 15,	Northampton	1	Roxhil			1	ГР8	
Contract Ref:	Start: 27.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End: 27.08.14		80.54	E:475462.0 N:254605.0		1	of	1
		_						

312.	370	Ena:	27.0	0.14	00.54 E:475402.0 N:254005.0	1	01 1
Samples a	nd In-sit	tu Tests	Water	Backfill	Description of Strata	Depth (Thick	Material Graphic
Depth No	Type	Results	W	Вас	Description of Strata	ness)	Legend
- 0.35-0.60 1 0.35-0.60 2 0.35-0.60 3	ES D B				Dark brown slightly clayey fine to medium SAND. Gravel is subangular to rounded fine to medium quartzite. (AGRICULTURAL TOPSOIL) (TOPSOIL) Firm orange brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to coarse chalk, flint and quartzite. (OADBY MEMBER)	(0.30)	
1.50	V	c _u =45/44/42			Firm orange brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is subangular to rounded fine to medium chalk and quartzite.	1.45	
-			↓		(OADBY MEMBER) Orange brown slightly gravely slightly silty fine to medium SAND.	-	X
1.80 4 5	D B		=		Gravel is subangular to subrounded fine to medium chalk and quartzite. (GLACIOFLUVIAL DEPOSITS)	(0.50)	× × × × × × × × × × × × × × × × × × ×
-					Trial pit terminated at 2.10m depth due to collapsing.	2.10	× · · · · ×
						- - - - - - - - - - - - - -	
-						-	

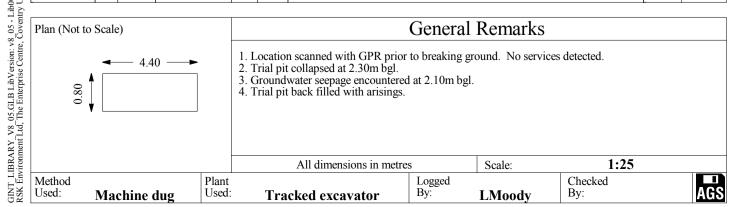




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											TRIAL	Pl'	T L	OG	
Contract:								Client:					Trial Pit:		
M1	Jun	ction	15, ľ	North	amp	oton	l	Roxhill Developments Ltd					TP9		
Contract Re	Contract Ref: Start:					8.14	Groun	nd Level (m A	OD):	National Grid Co-ord	dinate:	Sheet:			
3	312598 End:					8.14		81.31		E:475315.9 N	N:254671.0		1 of 1		
Sam	Samples and In-situ Tests					cfill				D : 1: CG1 1			Depth		
Depth No Type Res			sults	Water	Backfill				Description of Strata			(Thick ness)	Legend		
_	Dark brown slightly gravelly sandy CLAY. Gravel is subang rounded fine to medium quartzite, flint with roots and rootlets. (AGRICULTURAL TOPSOIL) (TOPSOIL)								ular to	(0.40)					
							<u> </u>								
-							🛭 subr	nge brown sli ounded fine to DBY MEMB	o coarse	avelly sandy CLAY. chalk, flint and quartz	Gravel is subang zite.	ular to	(0.30)		
_							XL`				T A 37		0.70	0	
0.80 0.80	1 2	ES D					X (OA	DBY MEMB	ER)	mottled grey sandy C ed old limestone slabs			(0.50)		
1.10	3 4	D B											1.20	<u>-</u>	
-		ь					Med (GL	lium dense ora ACIOFLUVI	ange bro AL DEI	own slightly silty fine t POSITS)	o medium SAND.		-	× · · · ×	
1.50	5	D											(0.70)	× · · ×	
_													-	× ×	

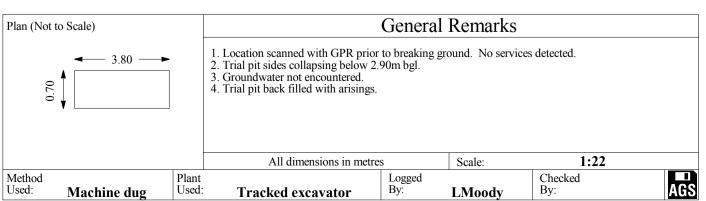
GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 PijVersion: v8_05 - Core+Logs 0003 | Log TRIAL PIT LOG | 312598 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13.28 | LM. RSK Environment_Ltd_The Enterprise Centre, Coventry University Technology Park, Coventry, CV1 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk. Orange brown fine to coarse SAND and GRAVEL. Gr subangular to subrounded fine to coarse chalk, flint and quartzite. (GLACIOFLUVIAL DEPOSITS) Gravel is (0.40)2.30 2.30 2.30 D B Trial pit terminated at 2.30m depth due to collapsing.





Contract:				Client:		Trial Pit:	:		
M1 Junction 15, N	North	nampton		Roxhil	ll Developments Ltd			\mathbf{T}	P10
Contract Ref:	Start:	27.08.14	Groun	nd Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	27.08.14		86.20	E:474964.0 N:255006.1		1	of	2

•	312:	598	End:	27.08.	14	86.20	E:4/4964.0 N:255006.1		1	of 2
	<u> </u>	nd In-si	tu Tests Results	Water	Backfill	I	Description of Strata		(Thick	Material Graphic
Depth	No	Type	Results		m V	Dark brown slightly grav rounded fine to medium q (AGRICULTURAL TOP (TOPSOIL)	relly sandy CLAY. Gravel is subangulartzite, flint. SOIL)	ar to	(0.50)	Legend
0.60	1	ES	ΊΙΛ			Orange gravelly CLAY. coarse chalk and quartzite (OADBY MEMBER)	Gravel is subangular to subrounded fi	ne to	-(0.40)	
1.00 - 1.00 1.00	2 3	D B V	c _u =62/55/52			Firm to stiff grey mottled CLAY. Gravel is subarquartzite. (OADBY MEMBER)	d orange slightly sandy slightly gravelly ngular to subrounded fine to medium o	silty chalk,		
-						1.90m bgl, becommin	g more blue and less gravelly.		(1.50)	
2.40 - 2.40 2.40	4 5	D B V	c _u =80/85/85			Stiff grey mottled dark bro (OADBY MEMBER)	own silty CLAY.		(0.50)	
3.10 - 3.10	6 7	D B				Medium dense orange b occasional cobbles sized to coarse quartzite and flir (GLACIOFLUVIAL DEF	rown gravelly fine to coarse SAND. clint. Gravel is subangular to subrounded it. OSITS)	With I fine	-(1.60)	





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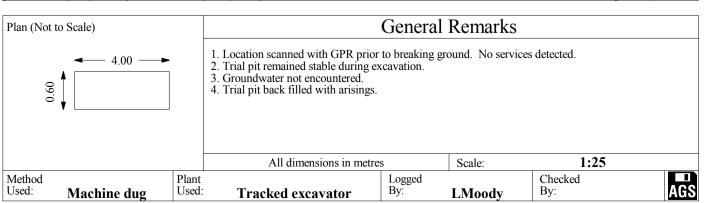
								IRIAL	. [! L	.UG
Contract:							Client:		Trial P	it:	
M1	Jun	ction	15, N	orth	amp	oton	Roxhil	l Developments Ltd			TP10
Contract Re	:			Start:	27.0	8.14	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:		
3	3125	598]	End:	27.0	8.14	86.20	E:474964.0 N:255006.1		2	of 2
	_		tu Tests	1.	Water	Backfill		Description of Strata		(Thick	Material Graphic
Depth	No	Туре	Resu	lts		m ××××××		-		ness)	Legend
4.30	8	D					to coarse quartzite and flii (GLACIOFLUVIAL DEI (stratum copied from 2.90	POSITS)	ded fine	4.50	
_										-	
-											
-										-	
_										-	
-										-	
-										-	
-										-	
_										-	
-										-	
-										-	
-										-	
_										-	
- -										-	
Plan (Not to	Scale	e)						General Remarks			

Plan (Not to	o Scale)			Genera	l Remarks		
0.70	3.80						
			All dimensions in metr	es	Scale:	1:22	
Method Used:	Machine dug	Plant Used:	Tracked excavator	Logged By:	LMoody	Checked By:	AGS



Contract:				Client:		Trial Pit:			
M1 Junction 15, N	North	nampton		Roxhil			Tl	P11	
Contract Ref:	Start:	29.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	29.08.14		89.07	E:474468.0 N:255501.0		1	of	1

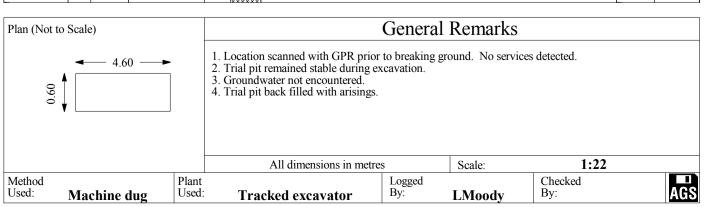
		12.	<i>)</i>	Ellu.	47.0	0.17	07.07		01 1
	Samp	oles a	nd In-si	tu Tests	Water	Backfill	Description of Strata	Depth (Thick	Material Graphic
	Depth	No	Type	Results	×	Вас		ness)	Legend
	0.40	1	ES	IJV			Dark brown slightly gravelly slightly sandy CLAY. Gravel is subangular to subrounded fine to medium quartzite and flint. (AGRICULTURAL TOPSOIL) (TOPSOIL) Firm to stiff grey mottled light brown slightly gravelly CLAY. Gravel is subangular fine to medium chalk. (OADBY MEMBER)	(0.30)	
	1.20 - 1.20	2 3	D B				Orange brown mottled grey clayey SILT/ silty CLAY. (OADBY MEMBER)	1.10	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
	- - - -						Firm to stiff dark grey blue mottled brown silty CLAY. (OADBY MEMBER)	-	
ZIA. 161. 024/0 Z30610, Fax. 024/0 Z30014, Web. WWW.15K.CO.UK.	2.50 - 2.50	4	D V	c _u =90/82/97				-(3.00)	
tistly recuired by rain, covering, c v r z r.z. ret. 02-	3.50	5	В					- - - - - -	
ersity recilin	4.30	6	D				Trial pit terminated at 4.30m depth.	4.30	





Contract:			Client:		Trial Pit:			
M1 Junction 15, N	Northampton	1	Roxhil	l Developments Ltd			\mathbf{T}	P12
Contract Ref:	Start: 29.08.14	Groun	nd Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End: 29.08.14		92.33	E:474369.9 N:255422.0		1	of	2

	312:	598	End:	29.08.14	92.33	E:474369.9 N:255422.0	1	of 2
	_	1	tu Tests	Water Backfill	D	Description of Strata	Depth (Thick	Material Graphic
Depth	No	Type	Results	Ba W		volumen of Strain	ness)	Legend
0.20	1	ES	IJV		(AGRICULTURAL TOPS (TOPSOIL)	,	0.40	
- - -					Firm orangish brown sli subangular to subrounded f (OADBY MEMBER)	ightly gravelly sandy CLAY. gravel in ine to medium quartzite and flint.	(0.60)	
0.90	2	D			Firm to stiff grey mottled	brown CLAY with occasional gravel size	1.00	
1.30	3	В			chalk and fine to coarse san (OADBY MEMBER)	d pockets.	-	
1.30	3	V	c _u =79/83/92				-	
2.20	4	D					-	
2.20		V	c _u =90/90/100				-(2.60)	
3.40		V	c _u =115/110/100				-	
3.60	5	D			Grey silty CLAY and claye (OADBY MEMBER)	ry SILT with iron staining.	3.60	





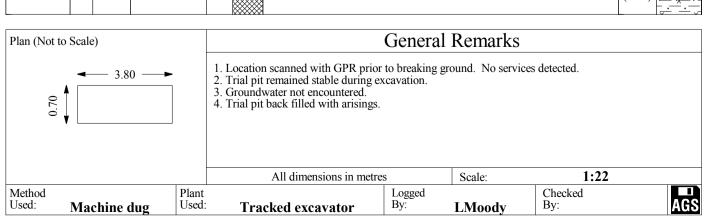
Contract:								Client:			Trial Pi	it:	
M1	Jun	ction	15, No	orth	amp	oton		Rox	khil	l Developments Ltd			TP12
Contract Ref	:		5	Start:	29.0	8.14	Groun	d Level (m AOI)):	National Grid Co-ordinate:	Sheet:		
3	125	598	I	End:	29.0	8.14		92.33		E:474369.9 N:255422.0		2	of 2
Sam _j Depth	oles a		tu Tests Resu	140	Water	Backfill				Description of Strata		Depth (Thick	Materia Graphic
Берш	110	Турс	Resu	1115	+	_ ЖЖЖ	Grav	cilty CLAV and	d olox	you SII T with iron staining		(0.90)	Legend
-							(OAI (strai	DBY MEMBER	1 Clay 1) 1 3.60	yey SILT with iron staining. Om from previous sheet)		_(0.90) - -	X
4.50	6	D						Tı	rial p	it terminated at 4.50m depth.		4.50	
-												-	
-												- - -	
-												-	
-												-	
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Dlon (Not 4)	Cocl.	`				I	1			General Remarks			1
Plan (Not to	ocale)								JUHUTAI NUHAIKS			

Plan (Not to Scale)		General Re	emarks		
090					
	All dimensions in metre	s So	scale:	1:22	
Method Used: Machine dug Plan		Logged By: LN	Moody	Checked By:	AGS



Contract:				Client:		Trial Pit:			
M1 Junction 15, N	North	nampton		Roxhil	l Developments Ltd			Tl	P13
Contract Ref:	Start:	27.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	27.08.14		87.26	E:474688.0 N:255107.0		1	of	2

	312:	598	End:	27.08.1 4	87.26 E:474688.0 N:255107.0	1	of 2
Sam	ples a		tu Tests Results	Water Backfill	Description of Strata	Depth (Thick ness)	Material Graphic Legend
0.20	1	ES	JJV		Dark brown slightly gravelly CLAY. Gravel is subangular to roun fine to coarse quartzite and flint. With roots and rootlets. (AGRICULTURAL TOPSOIL) (TOPSOIL) Orange brown slightly gravelly CLAY. Gravel is subangular to roun	ded (0.30) 0.30	
-					fine to coarse quartzite and flint. With roots and rootlets. (SUBSOIL)	-(0.40)	
0.80	2	D			Firm to stiff grey brown slightly gravelly silty CLAY. Grave subangular to subrounded fine to medium quartzite. (OADBY MEMBER)	1 is (-(0.60)	
1.00	3	V B	c _u =75/72/70			1.30	
-					Stiff firm grey mottled brown silty CLAY with sand veins. (OADBY MEMBER)	-	
2.10	4 5	B D				- - - -	
2.10		V	c _u =90/100/90			-(2.40)	
3.20	6	B V	c _u =95/92/97			- - - - -	
3.80	7	D			Orange brown slightly fine sandy silty CLAY/clayey SILT. (OADBY MEMBER)	3.70	× · · ×





												NIA		ı L	.UG
Contract:								Client:					Trial P	it:	
M1	Jun	ction	15, N							l Develop					TP13
Contract Ref							Groun	nd Level (m		National Gri			Sheet:		
3	3125	598		End:	27.0	8.14		87.26	<u> </u>	E:4746	88.0 N:2	55107. 0)	2	of 2
Sam	ples a	nd In-si	tu Tests		Water	cfill				D	CG.			Depth	Material
Depth	No	Type	Res	sults	Wa	Backfill				Description o	or Strata			(Thick ness)	Graphic Legend
														4.10	×x
4.40				Med suba (GL.	lium dense ingular to s ACIOFLU		brown grave I fine to mediu POSITS)			Gravel is	(0.50)	0 6 0 0			
									Trial p	it terminated a	t 4.60m dept	h.			

GINT LIBRARY V8 05.GLB LibVersion: v8 05 - Lib0004 PijVersion: v8 05 - Core+Logs 0003 | Log TRIAL PIT LOG | 312598 - MI JUNCTION 15.GPJ - v8 05 | 06/11/14 - 13:28 | LM. RSK Environment Ltd. The Enterprise Centre, Coventry University Technology Park, Coventry, CV1 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk.

Used: Machine dug Plant Used:

Tracked excavator

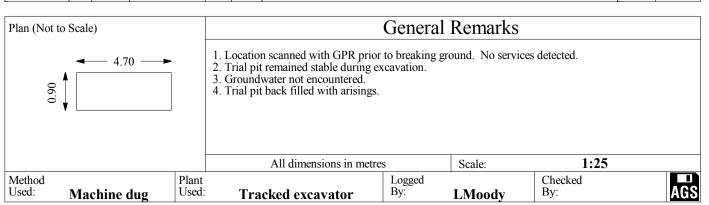
Logged By:

By:



Contract:					Client:			Trial P	it:		
M1 Junction 15, N	North	amp	oton		Rox			Tl	P14		
Contract Ref:	Start:	27.0	8.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	27.0	8.14		85.14		E:475088.0 N:254754.0		1	of	1_
									_ ·	1.4	otorio1

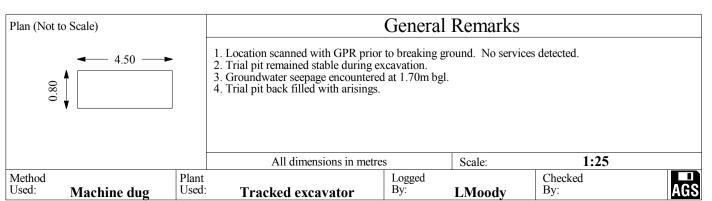
Į	3	123	598	End:	27.0	8.14	85.14 E:4/5088.0 N:254/54.0	1	of I
	_			tu Tests	Water	Backfill	Description of Strata	Depth (Thick	Graphic
	Depth	No	Type	Results	 	B.	Dark brown slightly gravelly CLAY. Gravel is subangular to rounded fine to medium quartzite and flint. (AGRICULTURAL TOPSOIL) (TOPSOIL)	ness) (0.35) - 0.35	Legend
-							Stiff friable orange brown mottled grey gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk, quartzite and flint. (OADBY MEMBER)		
-	0.90 -0.90 - 0.90	1 2 3	D B ES	JJV				-	
	1.50	4	D					(2.65)	
	2.80	5	D				2.30m bgl, becoming grey.	3.00	
							Stiff light blue grey laminated very silty CLAY and very clayey SILT interlaminated. (Weathering Grade C) (WHITBY MUDSTONE FORMATION)	-(1.20)	
	3.80	6	D				Trial pit terminated at 4.20m depth.	4.20	
							. r	_	





Contract:				Client:		Trial Pit	:			
M1 Junction 15, N	North	ampton		Roxhi	Roxhill Developments Ltd					
Contract Ref:	Start:	26.08.14	Groun	nd Level (m AOD):	National Grid Co-ordinate:	Sheet:				
312598	End:	26.08.14		81.31	E:475378.0 N:254474.9		1	of	1	

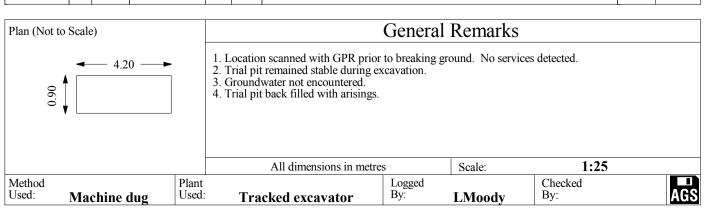
•	Samples and In-situ Tests 5 5			20.0	0.17	01.51 E.475576.0 11.254474.2		01 1
	Samples and In-situ Tests Depth No Type Results Samples and In-situ Tests Depth No Type Results			/ater	Backfill	Description of Strata	(Thick	Material Graphic
Depth - 0.30	No 1	Type	Results		B.	Grass over brown slightly clayey slightly gravelly fine to medium SAND. Gravel is subangular to subrounded fine to medium flint and quartzite. (AGRICULTURAL TOPSOIL)	ness) -(0.40) - 0.40	Legend O O
1.30	4	D				(TOPSOIL) Firm buff orange mottled grey slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium chalk. (OADBY MEMBER)	-(1.00)	
1.60	2 3	B D		*		Medium dense orange brown fine to medium slightly gravelly SAND. Gravel is subangular to subrounded fine to medium quartzite. (GLACIOFLUVIAL DEPOSITS)	(0.40)	. O
- 1.00		D				Tid "id " id 1 d 1 00 v 1 v 4	1.80	
-						Trial pit terminated at 1.80m depth.	-	
-							-	
							-	
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Contract:				Client:	Trial Pit:					
M1 Junction 15, N	North	nampton		Roxhil			T	P16	ĺ	
Contract Ref:	Start:	27.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:				
312598	End:	27.08.14		82.78	E:475254.0 N:254444.0		1	of	1	

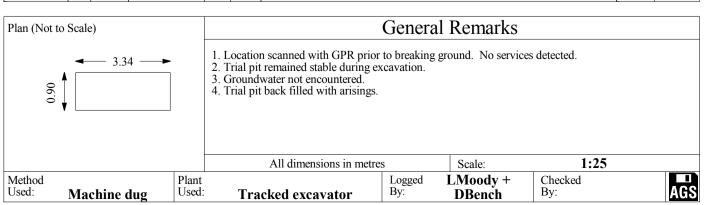
•)14,	370	Eng:	27.00	0.14	04.70	E:4/3234.0 N:234444.0	1	01 1
	1	1	tu Tests	Water	Backfill		Description of Strata	Depth (Thick	Material Graphic
Depth	No	Type	Results	≥	Ba		F	ness)	Legend
0.10	1 2	ES D	JJV			Grass over dark brown sli rounded fine to medium q (AGRICULTURAL TOP (TOPSOIL)	ghtly gravelly CLAY. Gravel is subrounded to uartzite and occasional chalk. SOIL)	(0.30)	
- - -						Firm orange brown sligh rounded fine to medium q (SUBSOIL) Stiff orange mottled gre	v gravelly CLAY. gravel is subangular to	0.40	0 0
- - -						rounded fine to coarse cha (OADBY MEMBER)	ilk and quartzite and flint.	-	
1.10 1.10 1.20	3 4	D B V	c _u =>120					-	
- - -								(2.70)	
2.00 2.00 2.20	5 6	D B	c _u =96/94/100			2.00m bgl, becoming	grey and fine selenite crystals.	- - -	
-		v	C _u -90/94/100					-	
-								-	
3.20	7	D				Stiff grey clayey SILT w staining. (OADBY MEMBER)	ith occasional rare gravel sized chalk and iron	3.10	× × × × × × × × × × × × × × × × × × ×
- -								(1.00)	× × × × × × × × × × × × × × × × × × ×
4.00	8 9	D B						4.10	× × × × × × × × × × × × × × × × × × ×
- 4.00	"	В				Trial p	it terminated at 4.10m depth.	-	
-								-	





Contract:				Client:	Trial Pit:				
M1 Junction 15, N	North	nampton		Roxhil			T	P17	
Contract Ref:	Start:	27.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	27.08.14		82.76	E:475314.0 N:254245.0		1	of	1

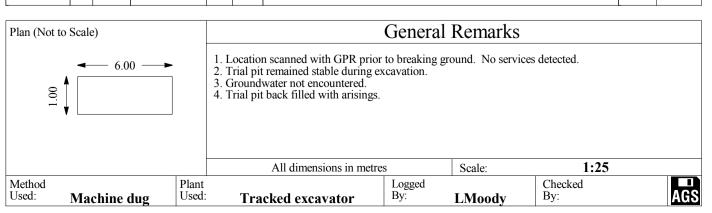
	114,	<i>37</i> 0	Eliu.	<u>~ / . U</u>	0.17	02.70		01 1
Sam	ples a	ınd In-si	tu Tests	Water	Backfill	Description of Strata	Depth (Thick	Material Graphic
Depth	No	Туре	Results	×	Вас	·	ness)	Legend
0.20	1 2	ES D	JJV			Dark brown slightly gravelly clayey SAND. Gravel is subangular to subrounded fine to medium quartzite and flint. With rootlets. (AGRICULTURAL TOPSOIL) (TOPSOIL) Light brown slightly gravelly clayey CLAY. Gravel is subangular to subrounded fine to medium quartzite and flint. (SUBSOIL)	0.30	
0.60 0.60 0.60	3 4	D B V	c _u =60/72/60			Firm to stiff light brown orange mottled grey gravelly CLAY. Gravel is subangular to subrounded fine to medium chalk and quartzite. (OADBY MEMBER)	0.70	
1.00 - 1.00 - 1.10	5 6	D B V	c _u =82/105/75			Stiff grey mottled brown slightly sandy very silty CLAY/ very clayey SILT. Gravel is subangular to subrounded fine to medium chalk. (OADBY MEMBER)	-	
2.00	7	D					(1.90)	
2.90	8	D				Stiff grey mottled brown slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium chalk. (OADBY MEMBER)	2.60	
3.40	9	D					-(1.00)	
3.40	1.0	V	$c_u = 110/120/120$			Till in a control of the control of	3.60	
3.60	10	D				Trial pit terminated at 3.60m depth due to lifting machine.	- - - - -	





Contract:				Client:	Trial P	it:	t:		
M1 Junction 15, N	North	ampton		Roxhil			T	P19	
Contract Ref:	Start:	26.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	26.08.14		86.25	E:475073.0 N:254324.0		1	of	1
							_		K - 4 : -

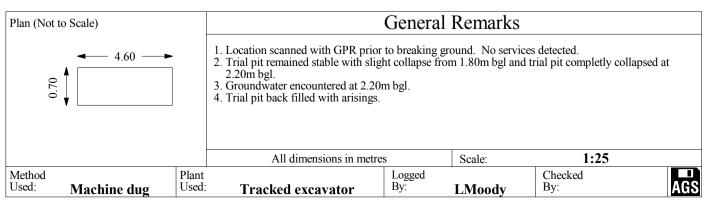
•	<i>)</i> 1 <i>L</i> .	370	Eng:	20.0	0.14	00.23	E:4/30/3.0 N:234324.0	1	01 1
	1	1	tu Tests	Water	Backfill		Description of Strata	Depth (Thick	Graphic
Depth	No	Type	Results		Ba		•	ness)	Legend
0.10	1	ES	JJV			Dark brown slightly g subangular to subrounded (AGRICULTURAL TOF (TOPSOIL)	gravelly slightly sandy CLAY. Gravel if fine to medium quartzite, flint. With rootlets. PSOIL)	(0.30) 0.30	
0.40	2	D					ntly gravelly CLAY. Gravel is subangular t	0.50	
- - - -							y CLAY. Gravel is subangular to rounded fin rtzite.	e - -	
- - -								(1.40)	
1.50	3	D							
2.00	4	D				Stiff to firm blue grey Gravel is fine to coarse crystals. (OADBY MEMBER)	mottled orange brown gravelly silty CLAY coccasional cobbles sized chalk and selenit	1.90	00 00 00 × 00 00 × 00 00 × 00
-								(1.90)	0 × 00 × 0 × 0 × 00 × 0 × 0 × 0 × 0 × 0 ×
-								- · · · · · · · · · · · · · · · · · · ·	
3.50	5	D				Trial r	oit terminated at 3.80m depth.	3.80	×00× 0,00
- - - -						Trial p	a stoom depui.	- - - -	





Contract:				Client:		Trial Pi	t:		
M1 Junction 15, I	North	nampton		Roxhil		Tl	P20	(S)	
Contract Ref:	Start:	26.08.14	Ground	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	26.08.14		87.54	E:474952.0 N:254607.0		1	of	1
G 1 11 '- T -							D(. M	atorio

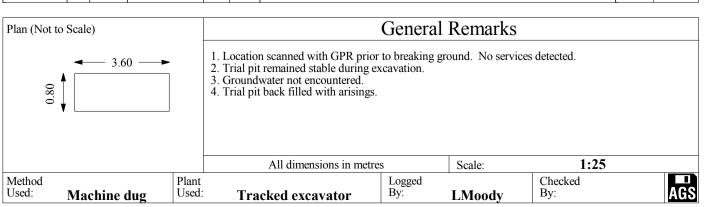
	123	<u> </u>	End:	26.0	8.14	87.54 E:4/4952.0 N:254607.0	1	of I
Sam	_	nd In-si	tu Tests Results	Water	Backfill	Description of Strata	(Thick	Material Graphic
0.10	No 1	Type ES	JJV		B	Brown slightly gravelly slightly clayey fine to medium SAND. Gravel is subangular to subrounded fine to medium quartzite and flint. With rootlets. (AGRICULTURAL TOPSOIL) (TOPSOIL)	ness) -(0.40) -0.40	Legend .o
0.80	2	D				Light orange brown slightly clayey slightly gravelly fine to medium SAND. gravel is subangular to subrounded fine to medium quartzite. (SUBSOIL)	(0.50)	# A
						Firm buff orange slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium chalk and quartzite. (OADBY MEMBER) 0.90m bgl, becoming clayey.	(0.90)	
1.50	3	D					1.80	
2.00	4	D		1		Light brown slightly clayey fine to coarse SAND and GRAVEL. Gravel is subangular to subrounded fine to coarse quartzite. (GLACIOFLUVIAL DEPOSITS)	(0.40)	
-				₹		Trial pit terminated at 2.20m depth due to water entering.	2.20	
						That pit terminated at 2.20th depth due to water entering.	- - - - - - - - - - -	
- - -							-	





Contract:				Client:		Trial Pit	:		
M1 Junction 15, N	North	nampton		Roxhil	l Developments Ltd			\mathbf{T}	P21
Contract Ref:	Start:	27.08.14	Groun	nd Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	27.08.14		86.97	E:474989.1 N:254691.0		1	of	1

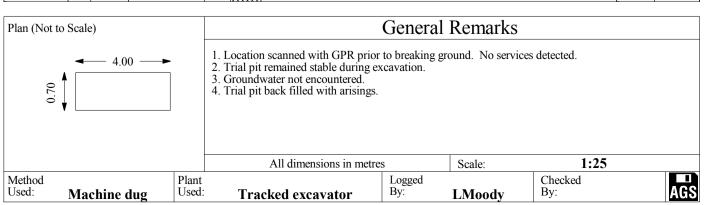
L		12,	<i>37</i> 0	Ellu.	27.0	0.17	00.77		01 1
	Samp	oles a	nd In-si	tu Tests	Water	Backfill	Description of Strata	Depth (Thick	Material Graphic
	Depth	No	Type	Results	W	Вас	•	ness)	Legend
-	0.20	1	ES	JJV			Dark brown slightly gravelly slightly sandy CLAY. Gravel is subangular to rounded fine to medium quartzite, flint, roots and rootlets. (AGRICULTURAL TOPSOIL) (TOPSOIL) Stiff to very stiff brown mottled grey slightly sandy gravelly CLAY.	(0.35)	\(\frac{1}{2}\frac{1}{
-	0.50 0.50-1.00 0.50	2 3	D B V	c _u =80			Gravel is angular to subangular fine to coarse chalk, quartzite and occasional flint. With occasional cobbles of flint. (OADBY MEMBER)	-	000 000
-	1.30		V	c _u =120/100/60				-(2.55)	
-	2.30 2.30	4 5	D B				2.30m bgl, becoming more blue grey and less gravelly.	- - - - - -	
-	3.00	6	D				Stiff light grey laminated SILT/CLAY with occasional chalk fragments. (OADBY MEMBER)	2.90	\$ - x - x - x - x - x - x - x - x - x -
							Trial pit terminated at 4.10m depth.	4.10	





Contract:				Client:		Trial Pit:			
M1 Junction 15, N	Northan	npton		Roxhil	l Developments Ltd			\mathbf{T}	P22
Contract Ref:	Start: 28	3.08.14	Ground	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End: 28	3.08.14		88.83	E:474897.6 N:254867.7		1	of	2

	312;	598	End:	28.08	8.14 88.83 E:4/489/.6 N:25486/./			1	of Z
Sam Depth	ples a		tu Tests Results	Water	Backfill	Description of Strata		Depth (Thick ness)	Material Graphic Legend
0.20	1	ES	JJV			Dark brown slightly gravelly slightly sandy CLAY. Graves subangular to rounded fine to medium quartzite, flint, roots and roots (AGRICULTURAL TOPSOIL) (TOPSOIL)	el is lets.	(0.40)	
0.60	2	D				Firm to stiff orange brown mottled grey gravelly slightly sandy CI Gravel is subangular to subrounded fine to coarse quartzite, flint chalk. (SUBSOIL)	and	(0.50)	
1.00 - 1.00 - 1.00	3 4	D B V	c _u =87/97/90			Firm to stiff grey blue mottled orange brown slightly gravelly very CLAY/ very clayey SILT. Gravel is subangular to subrounded fit coarse chalk and quartzite. (OADBY MEMBER)	silty ne to	0.90	
1.80 -1.80 -1.80	5 6	D B V	c _u =94/87/80				-	(2.00)	
2.50 2.50	7	D V	c _u =80/79/80				-	2.90	
3.00	8	D				Firm to stiff light brown slightly gravelly CLAY. Gravel is subanto subrounded fine to medium ironstone and quartzite. (OADBY MEMBER)		(0.30)	
3.30	10 9	B D				Orange brown gravelly fine to medium SAND. Gravel is subangul subrounded quartzite and ironstone. (GLACIOFLUVIAL DEPOSITS)		(0.50)	
4.00	11	D V	c _u =120/115/>120			Stiff blue grey mottled dark grey CLAY with occasional fossils. (Weathering Grade E) (WHITBY MUDSTONE FORMATION)	-	3.70	



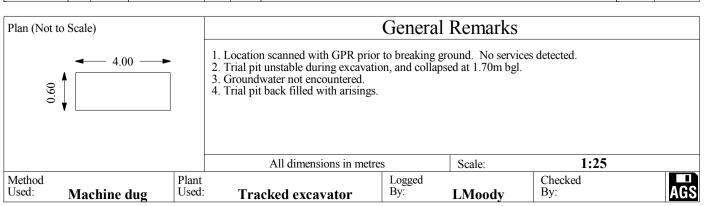


								TRIAL	. Pl	ΤL	.OG
Contract:							Client:		Trial P	it:	
M1	Jur	iction	15, ľ	North	amp	oton	Roxhi	ll Developments Ltd			TP22
Contract Re	ef:			Start:	28.0	8.14	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:		
	312	598		End:	28.0	8.14	88.83	E:474897.6 N:254867.7		2	of 2
San	nples a	ınd In-si	tu Tests		ter	:£ill		D : :: 00: :		Depth	Materia
Depth	No	Туре	Res	sults	Water	Backfill		Description of Strata		(Thick ness)	Graphic Legend
							Stiff blue grey mottled da	ark grey CLAY with occasional fossils.			===
_							(Weathering Grade E) (WHITBY MUDSTONI	E FORMATION)		4.00	
4.80	12	D				XXXX	(stratum copied from 3.7	Om from previous sheet) oit terminated at 4.80m depth.	/	4.80	+
4.80	13	В					Titat j	on terminated at 4.80m deptir.			
_										-	
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Contract:								Client:				Trial Pi	t:		
M1 Junction 15, Northampton						oton		Roxhill Developments Ltd						TP	23
Contract Ref: Start: 29.08.14 Grou					Groun	d Level (m AOD):	Nat	ional Grid Co-ordinate:		Sheet:					
312598 End: 29.08.14						8.14		94.31	E	:474531.0 N:25521	2.0		1	of	1
Samp	ples an	nd In-sit	u Tests		ater	kfill			D				Depth	~	erial
Samples and In-situ Tests Depth No Type Results Samples and In-situ Tests			Description of Strata (Thick ness) Caph												

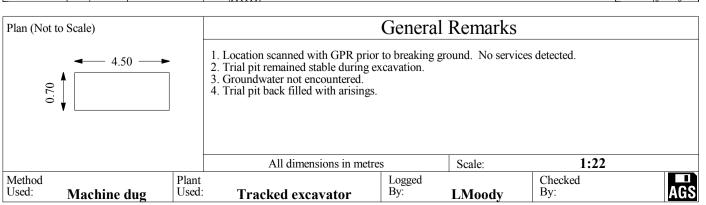
		2.14.			2011 100 100 1 (1200 21210		
Samples a	and In-sit	tu Tests	Water	Backfill	Description of Strata	Depth	Materia Graphi
Depth No	Type	Results	Wa	Bac	_	ness)	Legeno
					Dark brown slightly sandy slightly gravelly CLAY. Gravel is subangular to rounded fine to medium quartzite and flint. With roots. (AGRICULTURAL TOPSOIL) (TOPSOIL)	-(0.40)	
0.40	ES	JJV			Brown slightly clayey medium SAND. With pockets of clay. (GLACIOFLUVIAL DEPOSITS)	-	
0.90 2	D					(1.50)	
1.50 3	В				1.40m bgl, becoming lighter.	-	
					Trial pit terminated at 1.90m depth due to collapse.	1.90	: <u>:</u> ::
						- - - - - - - -	
						-	
						-	
						-	





Contract:				Client:		Trial Pi	it:		
M1 Junction 15, N	North	ampton		Roxhill Developments Ltd				Tl	P24
Contract Ref:	Start:	26.08.14	Groun	nd Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	26.08.14		84.62	E:475165.0 N:254183.0		1	of	2
			T						

	3	125	598	End:	26.0	8.14	84.62 E:475165.0 N:254183.0	1	of 2
	Samp Depth	oles a	nd In-sit	tu Tests Results	Water	Backfill	Description of Strata	Depth (Thick ness)	Material Graphic Legend
							Dark brown slightly gravelly sandy CLAY. Gravel is subangular to rounded fine to medium quartzite and flint. (AGRICULTURAL TOPSOIL) (TOPSOIL)	(0.30)	- · · · · · · · · · · · · · · · · · · ·
							Orange brown slightly gravelly sandy CLAY. Gravel is subangular to rounded fine to medium quartzite and flint. (SUBSOIL)	0.50	
							Firm orange brown gravelly CLAY. Gravel is subangular to subrounded fine to medium chalk and quartzite. (OADBY MEMBER)	=	
	0.70 0.70	1	ES V	JJV c _u =90/95/97			(OADBY MEMBER)	(0.50)	
	1.00	2	D				Firm grey mottled orange gravely CLAY. Gravel is subangular to	1.00	
	-						rounded fine to coarse chalk. (OADBY MEMBER)	=	
	-							=	
	-							-	
-								=	
	_							(2.10)	
								-	
	2.40	3	D					-	
								-	
	-							3.10	
	3.20	4	D				Grey brown clayey GRAVEL. Gravel is subangular to subrounded fine to medium chalk, quartzite and mudstone. (OADBY MEMBER)	-	2
								(0.70)	
;	3.50	5	D					-	
٠			Б.				Description on next sheet	3.80	× × × × ×
Į	3.90	6	D						× × ° ×





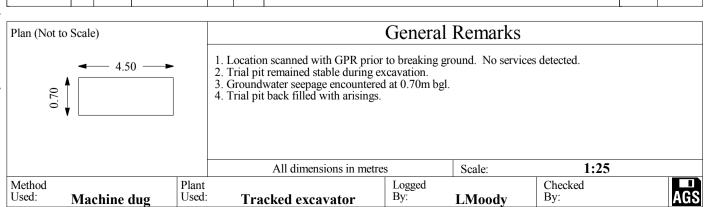
DRAFT

Contract:	Jun	etion	15, N	Jorth	ıamı	nton		Client:	ill Developme	nts Ltd	Trial Pi	it:	TP24
Contract Re		iction	13,1					d Level (m AOD):	National Grid Co-		Sheet:		1147
	312	598		End:	26.0			84.62	E:475165.0	N:254183.0		2	of 2
San	nples a	ınd In-si	tu Tests		Water	Backfill			Description of Stra	ata		Depth (Thick	Materia Graphic
Depth	No	Туре	Res	sults	×	Вас			_			ness)	Legend
							X (OAI	OBY MEMBER) um copied from 3.8	gravelly SILT. Grav al coarse chalk and r 80m from previous si	neet)	rounded	(0.70)	× × × × × × × × × × × × × × × × × × ×
4.50	7	D						Trial	pit terminated at 4.50	Om depth.		=	
												- - -	
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												-	
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Plan (Not to Scale)		General Remarks	
4.50 → 0.0000000000000000000000000000000000			
	All dimensions in metres	Scale:	1:22
	lant Jsed: Tracked excavator	Logged By: LMoody	Checked By: AGS



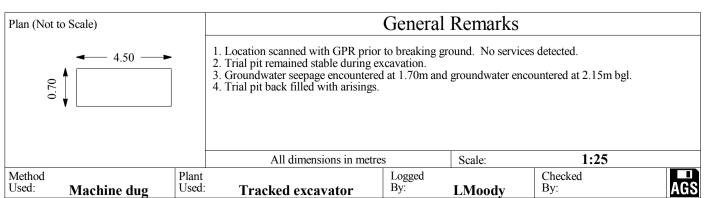
			_				INAL	. FI	ıL	.UG
Contract:						Client:		Trial P	it:	
M1	Jun	iction	15, Nort	hampto	n	Roxhi	ll Developments Ltd			TP25
Contract Re	ef:		Start	26.08.14	Groun	nd Level (m AOD):	National Grid Co-ordinate:	Sheet:		
	3125	598	End:	26.08.14	1	86.91	E:474979.0 N:254353.0		1	of 1
	ì		tu Tests	Water Backfill			Description of Strata		(Thick	
Depth	No	Туре	Results	j m					ness)	Legend
-					⊗ suba ≪ (AG	t brown slightly s ingular to rounded find PRICULTURAL TOI PSOIL)	ne to medium quartzite flint. With rootle	avel is	(0.40)	
0.40	1	D			₩\ suba	nt orange brown slig angular to rounded qu BSOIL)	htly sandy slightly gravelly CLAY. Guartzite and flint.	ravel is	0.50	0 0
_					Firm is su	n to stiff orange brow	n mottled grey slightly gravelly CLAY. fine to medium chalk and quartzite.	Gravel	- - -	- <u> </u>
1.00	2	D V	c _u =97/108/110)					(1.20)	
-									-	
1.70		V	c _u =>120/75		suba crys	grey orange brown and gular to rounded for tals and cobbles sized. DBY MEMBER)	mottled grey slightly gravelly CLAY. Gine to coarse chalk and coal. Gravel clickly.	ravel is ontains	1.70	0-00
2.10	3	D							-	0 00
-									(2.10)	0-00
3.00	4	D							_	
-									-	0 00



Trial pit terminated at 3.80m depth.



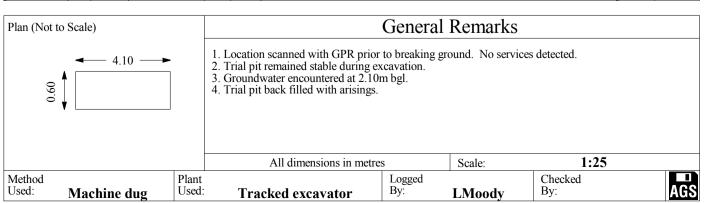
Contract:							Client:		Trial F	it:	
M 1	1 Jur	iction	15, Nortl	hamp	oton		Roxhi	ll Developments Ltd			TP26
Contract R	ef:		Start:	26.0	8.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:		
	312	598	End:	26.0	8.14		89.51	E:474863.0 N:254497.0		1	of 1
	<u> </u>		tu Tests	Water	Backfill			Description of Strata		Depth (Thick	Graphic
Depth	No	Type	Results	=	m			-		ness)	Legend
- - -						suba (AG (TOI	ngular to rounded fir RICULTURAL TOI PSOIL)		ravel is	(0.40)	
-							ige brown clayey find BSOIL)	e to coarse SAND.	,	0.50	
-						Oran	ige brown fine to me ACIOFLUVIAL DE	dium SAND. POSITS)		-	
- -										(0.60)	
1.00	1	D								1.10	
1.60	2	D				to su	t orange brown grav brounded fine to me ACIOFLUVIAL DE	elly fine to coarse SAND. Gravel is sub dium quartzite, flint and chalk. POSITS)	angular	-(1.20)	
- - -				2						2.30	0 D
2.40	3	D				(Wea	to stiff dark grey blu athering Grade E) IITBY MUDSTONE			(0.30)	
2.60	4	D			******		Trial p	oit terminated at 2.60m depth.		2.00	
-											
										-	
_										-	





Contract:				Client:		Trial P	it:		
M1 Junction 15, N	Vorth	ampton		Roxhil	l Developments Ltd			TI	27
Contract Ref:	Start:	29.08.14	Ground	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	29.08.14		95.99	E:474357.9 N:255050.0		1	of	1
Samples and In-situ Tests		et et					Depth	Ma	ateria

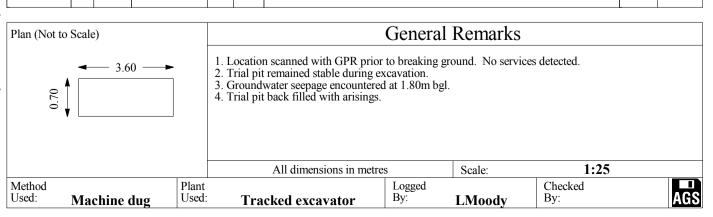
	3	123	<u> </u>	End:	29.0	8.14	95.99 E:4/435/.9 N:255050.0	1	of I
	Samp Depth	oles a	nd In-sit	tu Tests Results	Water	Backfill	Description of Strata	Depth (Thick ness)	Material Graphic Legend
	0.30	1	ES	JJV		I	Dark brown slightly gravelly slightly sandy CLAY. Gravel subangular to subrounded fine to medium quartzite and flint. (AGRICULTURAL TOPSOIL) (TOPSOIL)		
	-						Orange brown slightly gravelly CLAY. Gravel is subangular subrounded fine to medium quartzite and flint. With fine to coars SAND and pockets. (SUBSOIL)	se (0.30) 0.70	
	0.80	2	D				Stiff dark grey brown gravelly CLAY. Gravel is subangular subrounded fine to coarse chalk and quartzite. (OADBY MEMBER)	(0.70)	
	-						Firm to stiff orange brown slightly sandy gravelly CLAY/claye	1.40	
	1.50 - 1.50	3 4	D B				GRAVEL. Gravel is subangular to subrounded fine to coarse quartzi and flint. (OADBY MEMBER)	(0.30) 1.70	
	1.80	5	D		1		Orange brown slightly silty gravelly fine to coarse SAND. Gravel subangular to subrounded fine to coarse quartzite. (GLACIOFLUVIAL DEPOSITS) 1.70m bgl, becoming damp.	(0.50)	. O o.
	2.10	6	D		<u></u>		2.00m bgl, becoming damp with depth. Trial pit terminated at 2.20m depth due to collapsing.	2.20	0
,	-							-	
	-							-	
,	- - -							- - -	
	-							-	
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,	-							- -	
6	- - -							-	
	-							ŀ	





Contract:				Client:		Trial Pit:			
M1 Junction 15, N	North	nampton		Roxhil	l Developments Ltd			T	P28
Contract Ref:	Start:	29.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	29.08.14		97.93	E:474394.0 N:254791.0		1	of	1

		123	548	End:	29.08	.14	97.93	E:4/4394.0 N:254/91.0		1	of I
)e	Samj epth		nd In-si Type	tu Tests Results	Water	Backfill		Description of Strata		Depth (Thick ness)	Material Graphic Legend
)		1	ES	JJV			Dark brown slightly g subangular to rounded fin (AGRICULTURAL TOP (TOPSOIL)	e to coarse quartzite and flint.	ravel is	(0.40)	0
							Gravel is subangular to s With occasional sand poc (OADBY MEMBER)		CLAY. quartzite.	(0.30)	0 0
)		2	D				Stiff to firm grey mottled (Weathering Grade E) (OADBY MEMBER) 0.80m and 1.80m bgl			- -	
)		3	В							- - - -	
)		4	D V	c _u =70/72/75						(3.30)	
)		5	B V	c _u =120/110						-	
)		6	D				3.50m bgl, crystals of	`selenite.		4.00	
)		7	D		2	*****	Trial p	it terminated at 4.00m depth.		4.00	
)))		5	V B V								(3.30)





PHOTOGRAPHIC LOG – Trial pits – M1 Junction 15

Photo No. Date:

1 28.8.14

Direction Photo Taken:

N/A

Description:

TP1



Photo No. Date:

28.8.14

Direction Photo Taken:

N/A

Description:





Photo No.

Date:

3

28.8.14

Direction Taken:

Photo

N/A

Description:

TP3



Photo No. Date:

4

28.8.14

Direction Photo Taken:

N/A

Description:





Photo No. Date:

5 27.8.14

Direction Photo Taken:

N/A

Description:

TP7



Photo No. Date:

6 27.8.14

Direction Photo Taken:

N/A

Description:





Photo No. Da

Date:

7

28.8.14

Direction Taken:

Photo

N/A

Description:

TP10



Photo No. Date:

8

29.8.14

Direction Taken:

Photo

N/A

Description:





Photo No. Date:

9

29.8.14

Direction Photo Taken:

N/A

Description:

TP12



Photo No. Date:

10

27.8.14

Direction Taken:

Photo

N/A

Description:





Photo No.

Date:

11

27.8.14

Direction Taken:

Photo

N/A

Description:

TP16



Photo No.

Date:

12

27.8.14

Direction Taken:

Photo

N/A

Description:





Photo No.

No. Date:

13

27.8.14

Direction Taken:

Photo

N/A

Description:

TP21



Photo No. Date:

14

29.8.14

Direction Taken:

Photo

ianc

N/A

Description:





Photo No. D

Date:

15

29.8.14

Direction Taken:

Photo

N/A

Description:

TP27



Photo No.

Date:

16

29.8.14

Direction Taken:

Photo

N/A

Description:





APPENDIX D WINDOW SAMPLER BOREHOLE LOGS



PRELIMINARY WINDOW SAMPLE LOG

Contract:				Client:		Window	Sam	ple:		
M1 Junction 15, N	North	nampton		Roxhil	ll Developments Ltd			V	VS	1
Contract Ref:	Start:	21.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:				
312598	End:	21.08.14		80.70	E:475467.0 N:254741.0		1	of	_1	l

31	4370		Ena:	21.00.14		ou.	70 E.4/5407.0 IN.254741.0	1	01 1
Progress		1	ples / T		Water	Backfill	Description of Strata	Depth (Thick	Material Graphic
Window Run	Depth	No	Type	Results	W	Ba Ba	•	ness)	Legend
-	0.30	1	ES	JJV			Dark brown sandy slightly gravelly CLAY. Gravel is subrounded to rounded fine to medium quartzite and mudstone. (AGRICULTURAL TOPSOIL) (TOPSOIL)	(0.40)	
-	0.50	2	D				Soft orangish brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded quartzite. (SUBSOIL)	(0.30)	
	0.80	3	D				Orangish brown fine to medium SAND. (OADBY MEMBER)	(0.30)	
	1.20-1.65	4	D SPT	N=11			Firm light orangish brown gravelly CLAY. Gravel is subrounded to rounded fine to medium chalk. \(\cap(OADBY MEMBER)\)	1.20	
↑	1.20-1.03	1	SFI	N-11			Firm to stiff grey mottled orangish brown gravelly CLAY. Gravel is subrounded to rounded fine to coarse chalk and quartzite.	-	
1.20 - 2.00 (99mm dia) - 100% rec	1.50	5	D				(OADBY MEMBER) 1.30m and 1.40m bgl, sand band 1.60m and 1.65m bgl, gravel band of subangular fine to coarse ironstone.	(0.70)	
	2.00-2.45	2	SPT	N=19			Firm to stiff grey slightly gravelly silty CLAY. Gravel is subrounded to rounded fine to coarse chalk, flint and mudstone. (OADBY MEMBER)	1.90	x x
2.00 - 3.00 (85mm dia) 100% rec	2.80	6	D					-	x x x x x x x x x x x x x x x x x x x
	3.00-3.45	3	SPT	N=32				(2.10)	X X X X X X X X X X X X X X X X X X X
3.00 - 4.00 (75mm dia) - 100% rec	3.60	7	D		1			-	
- \	4.00-4.43	4	SPT	N=55*	<u>_</u>		Window sample hole terminated at 4.00 m depth.	4.00	<u></u>
	<u> </u>							<u> </u>	

	Drilling Pi		Water Ob	servations				Con	oro1 1	Domortza		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	2. Hand 3. Grou	dug pit ir ndwater e		rior to big to 1.20	Om bgľ. 1.	No services detect	ed.
						A	All dimens	sions in metres		Scale:	1:25	
lethod sed:		d windov	V Plan Used		Archway ompetito		Drilled By:	Dynamic Sampling UK	Logged By:	d LMoody	Checked By:	AGS

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 PŋVersion: v8_05 - Core-Logs 0003 | Log WINDOW SAMPLE LOG | 312598 - MJ JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:26 | LM. RSK EnvironmentLtd, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1_2TX. Tel: 02476_236816, Fax: 02476_236014, Web: www.rsk.co.uk.



PRELIMINARY WINDOW SAMPLE LOG

Contract:				Client:		Window	Sam	ple:	
M1 Junction 15, N	North	nampton		Roxhil	l Developments Ltd			V	VS2
Contract Ref:	Start:	21.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	21.08.14		82.99	E:475280.0 N:254939.0		1	of	1

J1.	2370		Liiu.	21.00.17	02.			01 1
Progress		Sam	ples / T	Tests	er III & u- tion		Depth	Material
Window Run	Depth	No	Туре	Results	Water Backfill & Instrumentation	Description of Strata	(Thick ness)	Graphic Legend
-	0.20	1	D			Dark brown slightly gravelly slightly sandy CLAY. Gravel is subrounded to rounded fine to medium quartzite and mudstone. With frequent rootlets. (AGRICULTURAL TOPSOIL) (TOPSOIL)	(0.40)	17 · 24·14 · 34 14 17 · 24·14 · 34 14 -3 · 15 · 3 · 15 · 3 17 · 34 17 · 34 17
-	0.50	2	ES	JJV		Light brown fine to medium SAND with rare subrounded, fine to medium grained quartzite. (GLACIOFLUVIAL DEPOSITS)	(0.80)	
-	0.90	3	D		* * • • • • • • • • • • • • • • • • • •			
	1.20-1.65	1	SPT	N=12		Medium dense orangish brown fine to coarse SAND and GRAVEL. Gravel is subrounded to rounded fine to coarse	(0.30)	0. 0. C
	1.40	4	D			chalk, quartzite, flint, mudstone and ironstone. (GLACIOFLUVIAL DEPOSITS)	1.50	
1.20 - 2.00 (99mm dia)	1.50	5	D			Light orangish brown fine to medium SAND.	1.60	b
100% rec	1.80	6 2	D SPT	N=36	\$ 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	\(\(\)(GLACIOFLUVIAL DEPOSITS\) Dense orangish brown SAND and GRAVEL. Gravel is subrounded fine to coarse chalk, quartzite, mudstone and flint. (GLACIOFLUVIAL DEPOSITS)	(0.90)	
2.00 - 3.00 (85mm dia) 100% rec	2.60-2.70	7	D			Dense orangish brown fine to coarse SAND. (GLACIOFLUVIAL DEPOSITS)	2.50	
- - - V	2.80	8	D			Stiff dark grey slightly gravelly SILT. Gravel is subrounded to rounded fine to medium chalk. (OADBY MEMBER)	3.00	× × × × × ×
	3.00-3.44	3	SPT	N=53*		Window sample hole terminated at 3.00 m depth.	-	
-	- - -						-	

	Drilling P	rogress and	Water Ob	servations				Gon	orol l	Domorka		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	2. Hand 3. Grou	dug pit in ndwater n	ed with GPR propertion pit du ot encountered.	rior to big to 1.20	Om bgľ.	No services detect	ted.
Method Used:		d windov	w Plant		Archway	l	All dimens Drilled By:	sions in metres Dynamic Sampling UK	Logged By:		1:25 Checked By:	AGS
Oscu.	san	npling	Usec	· C(ompetito	r	Dy.	Ltd Ltd	Бу.	LMoody	Dy.	AUD



PRELIMINARY WINDOW SAMPLE LOG

Contract:			Client:	Window Sample:					
M1 Junction 15, N	North	nampton		Roxhil	ll Developments Ltd			V	VS3
Contract Ref:	Start:	21.08.14	Groun	nd Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	21.08.14		84.55	E:475081.0 N:255131.1		1	of	2

	31	2590		Ena:	21.08.14	04.	55 E:4/5001.0 N:255151.1	1	of Z
	Progress		Sam	ples / T	Tests	er II & u- tion			Material
	Window Run	Depth	No	Туре	Results	Water Backfill & Instru- mentation	Description of Strata	(Thick ness)	Graphic Legend
	- - -	0.40	1	ES	JJV		Dark brown sandy CLAY. (AGRICULTURAL TOPSOIL) (TOPSOIL)	(0.50)	\(\frac{\lambda}{1}\fra
	- - -	-			JJV		Orangish brown slightly sandy CLAY. With occasion gravel of subrounded fine to coarse quartzite. (OADBY MEMBER)	0.50 nal (0.70)	
	- - -	0.80	2	D				1.20	
	1.20 - 2.00	1.20-1.65	1 3	SPT D	N=10		Firm grey mottled brownish orange slightly grave CLAY. Gravel is subrounded to rounded fine to medicinonstone. (OADBY MEMBER)	(0.30) 1.50	
	(99mm dia) - 100% rec	1.70	4	D			Medium dense orangish brown slightly gravelly fine coarse SAND. Gravel is subrounded fine to media quartzite and ironstone. (GLACIOFLUVIAL DEPOSITS)	to - im -	0 6
,		2.00-2.45	2	SPT	N=28			-	0.00
,	2.00 - 3.00 (85mm dia) - 100% rec	-					2.50m and 2.60m bgl, becomes gravelly.	(2.10)	0 0 0 0
		2.90 3.00-3.45 3.30	5 3	D SPT D	N=11		3.00m bgl, becoming loose. (Possible drilling related)	° 0 . 5.
	3.00 - 4.00 (75mm dia) 100% rec	-	0	D			Firm light grey mottled orange sandy CLAY.	3.60	0. 0. 0.
,	- - -	3.70	7	D			(GLACIOFLUVIAL DEPOSITS) Medium dense orangish brown fine to coarse SAND. (GLACIOFLUVIAL DEPOSITS)	3.80	
	- 4.00 - 5.00 (65mm dia) 100% rec	4.00-4.45	4	SPT	N=20			-	

	Drilling P	rogress and	l Water Ob	servations		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	
						1

General Remarks

- Location scanned with GPR prior to breaking ground. No services detected.
 Hand dug pit inspection pit dug to 1.20m bgl.
 Groundwater not encountered.

- 4. Gas and water monitoring well installed to 6.00m bgl upon completion.

			All dimens	sions in metres		Scale:	1:25
** 1	d window ipling	Plant Used		Dynamic Sampling UK	Logged By:	d LMoody	Checked By:



PRELIMINARY WINDOW SAMPLE LOG

Contract:			Client:	Window Sample:					
M1 Junction 15, N	North	nampton		Roxhil	l Developments Ltd			V	VS3
Contract Ref:	Start:	21.08.14	Groun	nd Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	21.08.14		84.55	E:475081.0 N:255131.1		2	of	2

	2370		Liiu.	21.00.17	UT.			01 2
Progress		Sam	ples / T	Tests	ion ion		Depth	Material
Window Run	Depth	No		Results	Water Backfill & Instrumentation	Description of Strata	(Thick ness)	Graphic Legend
4.00 - 5.00 (65mm dia) 100% rec	5.00-5.45	5	D SPT	N=20		Medium dense orangish brown fine to coarse SAND. (GLACIOFLUVIAL DEPOSITS) (stratum copied from 3.80m from previous sheet)	(2.20)	
5.00 - 6.00 (55mm dia) 100% rec	5.80	9	D					
-	6.00-6.45	6	SPT	N=27	<u>, ° , □ ° ,</u>	6.00m bgl, becoming more dense. Window sample hole terminated at 6.00 m depth.	6.00	1
-	-						-	
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			Borehole	Casing	servations Borehole	Water	General Remarks
Da	te 1	Гіте	Depth (m)	Depth (m)	Diameter (mm)	Depth (m)	
			ì	` ′	` ′	` ′	
							All dimensions in metres Scale: 1:25
Meth			l windov			Archway	
Used	:	sam	pling	Used	: C	ompetito	By: Sampling UK By: LMoody By:



Contract:				Client:		Window	Sam	ple:	
M1 Junction 15, N	North	nampton		Roxhil	ll Developments Ltd			V	VS4
Contract Ref:	Start:	19.08.14	Groun	nd Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	19.08.14		85.10	E:474892.0 N:255316.1		1	of	2

31	2598		End:	19.08.14	85.		1 (of Z
Progress		Samı	oles / T	ests	er ill & ru- rtion	D		Material
Window Run	Depth	No	Туре	Results	Water Backfill & Instru- mentation	Description of Strata	(Thick ness)	Legend
-	-					Brown slightly gravelly sandy CLAY. Gravel is subrounded to rounded fine to medium quartzite and mudstone. With occasional rootlets. (AGRICULTURAL TOPSOIL) (TOPSOIL) Firm stiff orangish brown slightly sandy CLAY.	0.40	\$\frac{1}{2}\cdot \cdot
-	0.50	1	ES	JJV		(OADBY MEMBER)	(1.00)	
	1.20-1.65	1 2	SPT D	N=15		Malinu duna annaid hanna annalla Garata	1.40	
1.20 - 2.00 (99mm dia) - 100% rec	1.70	3	D			Medium dense orangish brown gravelly fine to coarse SAND. Gravel is subrounded fine to coarse quartzite and mudstone. (GLACIOFLUVIAL DEPOSITS)	- - -	
	2.00-2.45	2	SPT	N=19			(1.80)	
2.00 - 3.00 (85mm dia) 100% rec	2.60	4	D				- - - -	0 0 0 Q
	3.00-3.45	3	SPT	N=22		Medium dense orangish brown fine to coarse SAND.	3.20	0
3.00 - 4.00 (75mm dia) 100% rec	-					(GLACIOFLUVIAĽ DEPOSITS)	-	
	3.80	5	D				- -	
- 4.00 - 5.00 (65mm dia)	4.00-4.45	4	SPT	N=38		At 4.00m bgl becominbg dense with depth.	(1.80)	
100% rec	4.40-4.60	6	D				-	

	Drilling P	rogress and	Water O	bservations				Con	oro1 1	Damarlia		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	2. Hand 3. Grou	dug pit in ndwater n	ed with GPR pr spection pit du ot encountered.	rior to br	Remarks reaking ground. Nom bgl. d to 5.00m bgl up	No services detected poor completion.	d.
							All dimens	ions in metres		Scale:	1:25	
Method Used:		d windov pling	w Plar Use		Archway ompetito	I	Drilled By:	Dynamic Sampling UK	Logged By:		Checked By:	AGS

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 PŋVersion: v8_05 - Core-Logs 0003 | Log WINDOW SAMPLE LOG | 312598 - MJ JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:26 | LM. RSK Environment_Ld, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1_2TX. Tel: 02476_236816, Fax: 02476_236014, Web: www.rsk.co.uk.

Sampling UK
Ltd LMoody By: Competitor Used: Used: By: sampling



Contract:		C	Client:		Window	ple:		
M1 Junction 15, N	Northampton	l	Roxhil	l Developments Ltd			V	VS4
Contract Ref:	Start: 19.08.14	Ground	Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End: 19.08.14		85.10	E:474892.0 N:255316.1		2	of	2

			Liid.	17100111					<u> </u>
Progress		Sam	ples /]	Γests	ter	Backfill & Instrumentation	Description of Starts	Depth	Material Graphic
Window Run	Depth	No	Туре	Results	Water	Back Inst ment	Description of Strata	ness)	Legend
- 4.00 - 5.00 (65mm dia) 100% rec	-						Medium dense orangish brown fine to coarse SAND. (GLACIOFLUVIAL DEPOSITS) (stratum copied from 3.20m from previous sheet)	-	
	5.00-5.44	5	SPT	N=53*		l::H:::	Window sample hole terminated at 5.00 m depth.	5.00	
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	Drilling P	rogress and				General Remarks
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth	General Remarks
		(III)	(111)	(11111)	(m)	
						All dimensions in metres Scale: 1:25
Method	Tracke	d windov			Archway	
Used:	san	npling	Used	l: Co	ompetito	r By: Sampling UK By: LMoody By: AG

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 PŋVersion: v8_05 - Core-Logs 0003 | Log WINDOW SAMPLE LOG | 312598 - MJ JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:26 | LM. RSK Environment_Ld, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1_2TX. Tel: 02476_236816, Fax: 02476_236014, Web: www.rsk.co.uk.



Contract:				Client:		Window	Sam	ple:		
M1 Junction 15, N	North	nampton		Roxhil	l Developments Ltd			V	VS:	5
Contract Ref:	Start:	19.08.14	Groun	nd Level (m AOD):	National Grid Co-ordinate:	Sheet:				
312598	End:	19.08.14		89.64	E:474734.0 N:255473.0		1	of	2	

Progress		Sam	ples / T	Pests			1	D. 4	Material
Window Run	Depth	T	Type	Results	Water	Backfill	Description of Strata	Depth (Thick ness)	
-	0.30	1 2	ES	JJV			Dark brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to medium quartzite, mudstone and brick. With frequent rootlets. (AGRICULTURAL TOPSOIL) (TOPSOIL) Soft orangish brown mottled grey slightly gravelly CLAY. Gravel is subrounded to rounded fine to medium quartzite,	(0.40)	1/2 - 3/4 - 1/2 - 3/4 - 1/2 - 3/4 - 1/2 - 3/4 - 1/2 - 3/4 - 1/2 - 3/4 - 1/2 - 3/4 - 1/2 - 3/4 - 1/2 - 3/4 - 1/2 - 3/4 - 1/2 - 3/4 - 1/2 - 3/4 - 1/2 - 3/4 - 1/2 - 3/4 - 1/2 - 3/4 -
-	0.60	3	D				mudstone and rare brick. (SUBSOIL)	0.40)	\(\frac{1}{2}\); \(\frac{1}\); \(\frac{1}{2}\); \(\frac{1}{2}\); \(1
	1.20-1.65	1	SPT	N=8			Firm orangish brown slightly gravelly sandy CLAY. Gravel is subrounded to rounded fine to coarse quartzite, mudstone and rare ironstone. (OADBY MEMBER)	(1.20)	
1.20 - 2.00 (99mm dia) - 40% rec	1.70	4	D					200	
	2.00-2.45	2	SPT	N=13			Firm to stiff dark bluish grey CLAY. With occasional selenite. (OADBY MEMBER)	2.00	
2.00 - 3.00 (85mm dia) 100% rec	2.50	5	D					-	
	3.00-3.45	3	SPT	N=15			3.00m bgl, becoming stiff with depth.	- - -	
3.00 - 4.00 (75mm dia) 100% rec	3.70	6	D SPT	N=19				(4.00)	
4.00 - 5.00 (65mm dia) 100% rec	- - -							- -	

		Drilling P		Water Ob	servations				Con	orol i	Remarks		
,	Date	Time	Borehole Depth	Casing Depth	Borehole Diameter	Water Depth			Gen	erar .	Remarks		
nem raw, the rawipass of			(m)	(m)	(mm)	(m)	2. Hand 3. Grou	dug pit i ndwater r	ned with GPR pinspection pit du not encountered. filled with arisin	g to 1.20		No services dete	ected.
							I	All dimen	sions in metres		Scale:	1:25	
1	Method Used:		d windov pling	w Plan Used		Archway Ompetito		Drilled By:	Dynamic Sampling UK	Logged By:	d LMoody	Checked By:	

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 PŋVersion: v8_05 - Core-Logs 0003 | Log WINDOW SAMPLE LOG | 312598 - MJ JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:26 | LM. RSK Environment_Ld, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1_2TX. Tel: 02476_236816, Fax: 02476_236014, Web: www.rsk.co.uk.



Contract:				Client:		Window	Sam	ple:	
M1 Junction 15, N	North	nampton		Roxhi	l Developments Ltd			V	VS5
Contract Ref:	Start:	19.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	19.08.14		89.64	E:474734.0 N:255473.0		2	of	2

			Ziid.	17.00.11		<u> </u>	211717011011020017010		<u> </u>
Progress		Sam	ples / 7	Tests	<u>.</u>	=		Denth	Material
Window Run	Depth	т	Туре		Water	Backfill	Description of Strata	(Thick ness)	Graphic Legend
4.00 - 5.00 (65mm dia) 100% rec 5.00 - 6.00 (55mm dia) 100% rec	4.80	7 5	D SPT	N=26			Firm to stiff dark bluish grey CLAY. With occasional selenite. (OADBY MEMBER) (stratum copied from 2.00m from previous sheet)	-	
- 100/61ec	6.00-6.34	6	SPT	N=79*			Window sample hole terminated at 6.00 m depth.	6.00	
-	-							- - - -	
- - - - -	-							- - - -	
- - - - -	-							- - - - -	
-	-							-	

Date	Drilling Pr	ogress and Borehole Depth	Water Ob Casing Depth	Servations Borehole Diameter	Water Depth	General Remarks
Date	Time	(m)	(m)	(mm)	(m)	
.						
						All dimensions in metres Scale: 1:25
Method	Tracke	d windov		. A	Archway	Drilled Dynamic By: LMoody Checked By: LMoody
Used:	san	pling	Used		ompetito	r By: Sampling UK By: LMoody By:

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 PŋVersion: v8_05 - Core-Logs 0003 | Log WINDOW SAMPLE LOG | 312598 - MJ JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:26 | LM. RSK Environment_Ld, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1_2TX. Tel: 02476_236816, Fax: 02476_236014, Web: www.rsk.co.uk.



Contract: M1 Junction 15, Northampton				Client:	Window	Sam	ple:		
M1 Junction 15, N	North	nampton		Roxhil	l Developments Ltd			V	VS6
Contract Ref:	Start:	20.08.14	Groun	nd Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	20.08.14		90.76	E:474555.0 N:255542.0		1	of	2

31	2598		End:	20.08.14	90.	/6	E:4/4555.0 N:255542.0	1	of 2
Progress		Sam	ples /]	Γests	ୂ ଷ ୍ଷ			Denth	Material
Window Run	Depth	· ·	Туре		Water Backfill & Instrumentation		Description of Strata	(Thick ness)	Graphic Legend
-	0.20	1	ES			Dark brown Gravel is sequartzite, moderate (AGRICUL' (TOPSOIL)		(0.40)	2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2
-	0.70	2	D			Orange bro subrounded and chalk. (OADBY M	own CLAY with occasional gravel of to rounded fine to medium quartzite mudstone IEMBER)	(0.80)	
	1.20-1.65	1	SPT	N=11		Firm grey subrounded (OADBY M	mottled orange CLAY with occasional to rounded chalk, quartzite and ironstone. IEMBER)	1.20	
1.20 - 2.00 (115mm dia) 100% rec	1.70	3	D		× ×			-	
-	2.00-2.45	2	SPT	N=11				(2.10)	
2.00 - 3.00 (99mm dia) 90% rec	2.60	4	D					-	
	3.00-3.45	3	SPT	N=15				-	
3.00 - 4.00 (85mm dia) 100% rec	- - - -					Stiff grey mo (OADBY M	ottled brown CLAY with occasional selenite. IEMBER)	3.30	
4.00 - 5.00 (75mm dia) 100% rec	3.90 4.00-4.45	5 4	D SPT	N=19				(1.70)	

	Drilling P	rogress and Borehole			Water			Gen	eral l	Remarks		
Date	Time	Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Depth (m)	2. Hand 3. Grou	dug pit ir ndwater n	ed with GPR particles of the section pit du ot encountered.	rior to big to 1.20	reaking ground. I	No services detector pon completion.	ed.
						I	All dimens	sions in metres		Scale:	1:25	
 Method Used:		d windov ipling	V Plant Used		Archway ompetito		Drilled By:	Dynamic Sampling UK	Logged By:	d LMoody	Checked By:	AGS

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 PŋVersion: v8_05 - Core-Logs 0003 | Log WINDOW SAMPLE LOG | 312598 - MJ JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:26 | LM. RSK Environment_Ld, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1_2TX. Tel: 02476_236816, Fax: 02476_236014, Web: www.rsk.co.uk.



Contract:				Client:		Window	Sam	ple:	
M1 Junction 15, N	North	ampton		Roxhil	l Developments Ltd			V	VS6
Contract Ref:	Start:	20.08.14	Groun	nd Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	20.08.14		90.76	E:474555.0 N:255542.0		2	of	2

	2370		Dila.	20.00.17		70.			01 2
Progress		Sam	ples / T	Tests	er	ill &	D	Depth	Material Graphic
Window Run	Depth	No	Туре	Results	Wat	Backfill & Instru- mentation	Description of Strata	(Thick ness)	Legend
- 4.00 - 5.00 (75mm dia) 100% rec	4.80	6	D				Stiff grey mottled brown CLAY with occasional selenite. (OADBY MEMBER) (stratum copied from 3.30m from previous sheet)	5.00	
5.00 - 6.00	5.00-5.45	5	SPT	N=23			Stiff grey CLAY. (OADBY MEMBER)	- - -	
65mm dia) 50% rec	5.50	7	D					(1.00)	
Y	6.00-6.45	6	SPT	N=35		░∄░	Window sample hole terminated at 6.00 m depth.	6.00	
	6.00-6.45	6	SPT	N=35			Window sample hole terminated at 6.00 m depth.		
· · · · · · · · · · · · · · ·	- - - - -							-	

	Drilling P	rogress and				General Remarks	
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	General Remarks	_
		(III)	(111)	(IIIII)	(III)		
`							
						All Econolisis and a 1.25	
						All dimensions in metres Scale: 1:25	
Method	Tracke	d windov		t A	Archway	Drilled Dynamic Logged Checked	
Used:	san	npling	Used		ompetito	r By: Sampling UK By: LMoody By: A	GS

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 priVersion: v8_05 - Core+Logs 0003 | Log WINDOW SAMPLE LOG | 312598 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:26 | LM. RSK Environment Ltd, The Enterprise Centre, Coventry University Technology Park, Coventry, CVI 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk.



Contract:		Client:	Client:			
M1 Junction 15, N	Northampton	Rox	hill Developments Ltd		WS7	
Contract Ref:	Start: 20.08.14	Ground Level (m AOD): National Grid Co-ordinate:	Sheet:		
312598	End: 20.08.14	87.79	E:474409.0 N:255507.0	1	1 of 2	

3	12598		End:	20.08.14		8/.	/9 E:4/4409.0 N:25550/.0	<u> 1</u>	of Z
Progress		Sam	ples / T	Tests	L L	=		Denth	Material
Window Ru	n Depth		Туре	Results	Water	Backfill	Description of Strata	(Thick ness)	Graphic Legend
-	0.20	1	D				Dark brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to medium quartzite with frequent rootlets. (AGRICULTURAL TOPSOIL)	0.30	70.710.710.7 17.74.14.74.7
-	0.40	2	ES				(TOPSOIL) Soft orange brown slightly sandy CLAY with occasional gravel of subangular to subrounded fine to Medium quartzite. (OADBY MEMBER)	- - - -(0.90)	
- - -	1.00	3	D					1.20	
	1.20-1.65	1	SPT	N=8			Firm orange mottled grey CLAY. (OADBY MEMBER)	-	
1.20 - 2.00 (115mm dia) - 70% rec	1.60	4	D					- (1.10) -	
	2.00-2.45	2	SPT	N=11				2.30	
2.00 - 3.00 (99mm dia) - 100% rec	-						Firm grey mottled brown CLAY. (OADBY MEMBER)	-	
	2.70	5	D		4		2.70m bgl, selenite.	-	
	3.00-3.45	3	SPT	N=14	<u></u>			- (1.70) -	
3.00 - 4.00 (85mm dia) 100% rec								-	
	3.80	6	D				3.80m bgl, shell fragments.	4.00	
4.00 - 4.50	4.00-4.45	4	SPT	N=22			Stiff orange brown CLAY with occasional ironstone. (OADBY MEMBER)	(0.30)	
(75mm dia) 100% rec	4.30 4.40-4.50	7 8	D D				Dense orange gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to medium quartzite.	4.30	

	Drilling P	rogress and	l Water Ob	servations	
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 PrjVersion: v8_05 - Core+Logs 0003 | Log WINDOW SAMPLE LOG | 312598 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:26 | LM. RSK Environment_Ld, The Enterprise Centre, Coventry University Technology Park, Coventry, CVI 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk.

General Remarks

Location scanned with GPR prior to breaking ground. No services detected.
 Hand dug pit inspection pit dug to 1.20m bgl.
 Groundwater encountered at 3.10m bgl.

- 4. Borehole backfilled with arising upon completion.

 Checked By:



Contract:				Client:	Window Sample:				
M1 Junction 15, N	lorth	ampton		Roxhil	l Developments Ltd			V	VS7
Contract Ref:	Start:	20.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	20.08.14		87.79	E:474409.0 N:255507.0		2	of	2

<u> </u>	2370		Liiu.	20.00.17		07.	17 177707.0 11.233307.0		01 2
Progress		Sam	ples / T	Tests	Water	Backfill	Description of Strata	Depth	Material Graphic Legend
Window Run	Depth		Type		Wa	Bac		ness)	Legend
-	4.50-4.93	5	SPT	N=55*			(GLACIOFLUVIAL DEPOSITS) 4.40m bgl, gravel band of quartzite.	-	
	-						Window sample hole terminated at 4.50 m depth.	-	
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		Drilling Pi	rogress and	Water Ob	servations		Canaral Damarka
cours,	Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	General Remarks
activity to				` ,		. ,	
,							
1							AU 1:
á							All dimensions in metres Scale: 1:25
1	Method	Tracke	d windov			Archway	
1	Used:	sam	pling	Usec	l: C (ompetito	r By: Sampling UK By: LMoody By:

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 PŋVersion: v8_05 - Core-Logs 0003 | Log WINDOW SAMPLE LOG | 312598 - MJ JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:26 | LM. RSK Environment_Ld, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1_2TX. Tel: 02476_236816, Fax: 02476_236014, Web: www.rsk.co.uk.



Sampling UK Ltd

Contract:				Client:		Window	Sam	ple:	
M1 Junction 15, N	North	nampton		Roxhil	ll Developments Ltd			V	VS8
Contract Ref:	Start:	20.08.14	Groun	nd Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	20.08.14		94.28	E:474394.0 N:255349.0		1	of	2

	31	2390		Ena:	20.08.14		74.4	20 E:4/4394.0 N:233349.0	1 (01 2
Prog	gress		Sam	ples / T	Tests	_ ~	- on		Denth	Material
Windo	w Run	Depth	No	Туре	Results	Water Backfill a	Instru- mentation	Description of Strata	(Thick ness)	Graphic Legend
-		0.20	1	ES				Dark brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to medium quartzite and mudstone with frequent rootlets. (AGRICULTURAL TOPSOIL) (TOPSOIL)	(0.40)	17 - 24 19 - 34 19 - 34 19 - 34 19 - 34 19 - 34 19 - 34 19 - 34 19
-		0.60	2	D				Orange brown sandy CLAY with occasional gravel of subrounded to rounded fine to medium chalk and quartzite. (SUBSOIL) Soft grey mottled orange CLAY.	0.50	
		1.10 1.20-1.65 1.30	3 1 4	D SPT D	N=7			(OADBY MEMBER)	(1.90)	
1.20 - (115m - 100%	m dia)	1.70	5	D					-	
		2.00-2.45	2	SPT	N=7	• • • • • • • • • • • • • • • • • • •			- - -	
2.00 - (99mr - 100%	n dia)	-				0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Loose to medium dense orange mottled grey clayey fine to medium SAND. (GLACIOFLUVIAL DEPOSITS)	2.40	
`	<u></u>	2.80	6	D SPT	N=15	⋣			(0.90)	
		- - - -	3	SPI	N=15	•		Stiff grey CLAY.	3.30	
3.00 - (85mr 90%	n dia)	-				*		(GLACIOFLUVIAL DEPOSITS)	(0.70)	
4.00 - (75mr 0%	n dia)	3.90 4.00-4.45	7 4	D SPT	N=23	000000000000000000000000000000000000000		Medium dense light brown fine to medium SAND. Running sand. (GLACIOFLUVIAL DEPOSITS)	4.00	
									(1.00)	

Centre, Coven	Date	Drilling Pr		Vater Ob Casing Depth	Borehole Diameter	Water Depth			Gen	eral I	Remarks		
ment Ltd, The Enterprise Cer			(m)	(m)	(mm)	(m)	2. Hand 3. Grou	dug pit in ndwater e	nspection pit dug ncountered at 2.	g to 1.20 .90m bgl	m bgl.	To services detected on completion.	ed.
/Iron							l A	All dimen	sions in metres		Scale:	1:25	
KSK Env	Method Used:		d window ipling	Plant		Archway Ompetito		Drilled By:	Dynamic Sampling UK	Logged By:	LMoody	Checked By:	

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 pilVersion: v8_05 - Core+Logs 0003 | Log WINDOW SAMPLE LOG | 312598 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:26 | LM. RSK Environment_Ltd, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1_2TX. Tel: 02476_236816, Fax: 02476_236014, Web: www.rsk.co.uk.



Contract:			Client:	Window	Sam	ple:				
M1 Junction 15, N	nampton	:	Roxhill Developments Ltd					V	VS8	
Contract Ref:	Start:	20.08.14	Ground	l Level (m AOD):	National	l Grid Co-ordinate:	Sheet:			
312598	End:	20.08.14		94.28	E:47	74394.0 N:255349.0		2	of	2

			 .	20.00.1			20 2017 107 110 1 (12000 1710		<u> </u>
Progress Window Run	Progress Samples / Tests indow Run Depth No Type Results			Vater	Backfill & Instru-	Description of Strata	(Thick	Material Graphic Legend	
- 4.00 - 5.00 (75mm dia) 0% rec	- - -	INU	Type	Results	Λ		Medium dense light brown fine to medium SAND. Running sand. (GLACIOFLUVIAL DEPOSITS) (stratum copied from 4.00m from previous sheet)	ness)	Legend
V	- -					*****	Window sample hole terminated at 5.00 m depth.	5.00	
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	Drilling P	rogress and			Water	General Remarks
Date	Time	Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Depth (m)	Goneral Terrains
						All dimensions in metres Scale: 1:25
Method		d windov			Archway	
Used:	san	npling	Used	l: C (ompetito	r By: Sampling UK By: LMoody By: AG

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 priVersion: v8_05 - Core+Logs 0003 | Log WINDOW SAMPLE LOG | 312598 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:26 | LM. RSK Environment Ltd, The Enterprise Centre, Coventry University Technology Park, Coventry, CVI 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk.



Contract:				Client:		Window	Sam	ple:	
M1 Junction 15, N	North	nampton		Roxhil	l Developments Ltd			V	VS9
Contract Ref:	Start:	19.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	19.08.14		91.05	E:474620.0 N:255203.1		1	of	2

L	J1 .	2390		Elia.	19.08.14	91.	J5 E:4/4020.0 IN:255205.1	1	01 2
	Progress Samples / Tests Window Run Depth No Type Results		ests	7 % 7 E		Depth	Material		
	Window Run	Depth		1	Results	Water Backfill & Instrumentation	Description of Strata	(Thick ness)	
-		- 0.40	1	ES	JJV		Dark brown slightly gravelly slightly clayey SAND. Gravel is subrounded to rounded fine to medium quartzite, mudstone and rare flint. With frequent rootlets. (AGRICULTURAL TOPSOIL) (TOPSOIL)	0.40	\$\frac{1}{2} \cdot \frac{1}{2}
-		- - - -	1	Lo	33 V		Orangish brown slightly gravelly clayey fine to coarse SAND. Gravel is subrounded to rounded fine to coarse quartzite and mudstone. (GLACIOFLUVIAL DEPOSITS)	(0.80)	
-	-	0.90	2	D				1.20	
-		1.20-1.65	1	SPT	N=8		Soft orangish brown sandy CLAY. (OADBY MEMBER)	-	
-	1.20 - 2.00 (99mm dia) 100% rec	1.70	3	D				1.90	
-	- V		2	SPT	N=11		Firm dark bluish grey CLAY. With occasional selenite. (OADBY MEMBER)	-	
-	2.00 - 3.00 (85mm dia) 100% rec	- - - -						- - - -	
` -		2.90	4 3	D SPT	N=15		From 3.00m bgl becoming form to stiff with depth.	- - - -	
-	3.00 - 4.00 (75mm dia) 100% rec	3.70	5	D				- - - -	
-	4.00 - 5.00 (65mm dia) 100% rec	4.00-4.45	4	SPT	N=20			(4.10)	

entre, Coven	Date	Drilling Pr		/ater Ob Casing Depth	servations Borehole Diameter	Water Depth			Gen	eral]	Remarks		
nent Ltd, The Enterprise Cer			(m)	(m)	(mm)	(m̂)	2. Hand 3. Grou	dug pit in ndwater n	nspection pit du ot encountered.	g to 1.20	reaking ground. N Om bgl. d to 5.50m bgl u	No services detection completion.	ted.
/Iron							A	All dimen	sions in metres		Scale:	1:25	
KSK En	Method Used:		d window pling	Plant Used		Archway Ompetito		Drilled By:	Dynamic Sampling UK	Logged By:	l LMoody	Checked By:	

sampling

Sampling UK Ltd

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 pilVersion: v8_05 - Core+Logs 0003 | Log WINDOW SAMPLE LOG | 312598 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:26 | LM. RSK Environment_Ltd, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1_2TX. Tel: 02476_236816, Fax: 02476_236014, Web: www.rsk.co.uk.



Contract:	M1 Junction 15, Northampton ntract Ref: Start: 19.08.14				Client:				-
M1 Junction 15, N	North	nampton		Roxhil	l Developments Ltd			V	VS9
Contract Ref:	Start:	19.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	19.08.14		91.05	E:474620.0 N:255203.1		2	of	2

Progress		Sam	ples / T	Tests	er III &	tion		Depth	Material
Window Run	Depth	No	Туре	Results	Water Backfill & Instru-	menta	Description of Strata	(Thick ness)	Graphic Legend
- 4.00 - 5.00 (65mm dia) 100% rec	4.60	6	D				Firm dark bluish grey CLAY. With occasional selenite. (OADBY MEMBER) (stratum copied from 1.90m from previous sheet)	-	
-	5.00-5.45	5	SPT	N=24				-	
5.00 - 6.00 (55mm dia) - 30% rec	5.40	7	D					- - -	
	6.00-6.42	6	SPT	N=57*	0000	••••	Window sample hole terminated at 6.00 m depth.	6.00	
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	Drilling P	rogress and			Water	General Remarks
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Depth (m)	General Remarks
						All dimensions in metres Scale: 1:25
Method		d windov			Archway	
Used:	san	npling	Used	l: C (ompetito	r By: Sampling UK By: LMoody By: AG

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 PŋVersion: v8_05 - Core-Logs 0003 | Log WINDOW SAMPLE LOG | 312598 - MJ JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:26 | LM. RSK Environment_Ld, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1_2TX. Tel: 02476_236816, Fax: 02476_236014, Web: www.rsk.co.uk.



Contract:				Client:	Window Samp					
M1 Junction 15, Northampton				Roxhil			W	S1	0	
Contract Ref:	Start:	19.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:				
312598	End:	19.08.14		85.67	E:474804.0 N:255019.0		1	of	1	l

312370 End. 17.00.14						05.	07 17,77007,011,233017,0	1	01 1
Progress	Progress Samples / Tests			13	III		Depth	Material	
Window Run	Depth	No	Туре	Results	Water	Backfill	Description of Strata	(Thick ness)	Graphic Legend
-	0.20-0.20	1	ES	JJV			Brown slightly gravelly clayey fine to medium SAND. Gravel is subrounded fine quartzite and brick. (AGRICULTURAL TOPSOIL) (TOPSOIL)	(0.40)	1/2 - 2 1/2 -
- -	-						Orangish brown slightly gravelly sandy CLAY. Gravel is subrounded to rounded fine to coarse quartzite and mudstone. (SUBSOIL)	0.60	
-	- - -						Stiff dark bluish grey CLAY. (OADBY MEMBER)	-	
	1.20-1.65	1	SPT	N=8				-	
1.20 - 2.00 (99mm dia) - 100% rec	1.50-1.50	2	D					(1.80)	
<u> </u>	2.00-2.45	2	SPT	N=11			2.00m bgl, becoming firm more sandy.	- - -	
2.00 - 3.00	-						Orangish brown slightly clayey gravelly fine to coarse	2.40	
(85mm dia) - 100% rec	-						SAND. Gravel is subrounded to rounded fine to medium quartzite. (GLACIOFLUVIAL DEPOSITS)	(0.40)	
	2.80-2.80	3	D				Orangish brown slightly clayey fine to coarse SAND. (GLACIOFLUVIAL DEPOSITS)	3.00	
-	3.00-3.16	3	SPT	N=250*			Window sample hole terminated at 3.00 m depth.	-	
-	-							_	
-	-							-	
-	-							-	
-	- -							-	
-	- -							-	

	Drilling P	rogress and				General Remarks						
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	2. Hand 3. Grou	dug pit in ndwater n		rior to br	reaking ground. I	No services detect	red.
						I	All dimens	sions in metres		Scale:	1:25	
Method Used:					Archway ompetito		Drilled By:	Dynamic Sampling UK	Logged By:	LMoody	Checked By:	AGS

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 PŋVersion: v8_05 - Core-Logs 0003 | Log WINDOW SAMPLE LOG | 312598 - MJ JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:26 | LM. RSK Environment_Ld, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1_2TX. Tel: 02476_236816, Fax: 02476_236014, Web: www.rsk.co.uk.



Contract:		Client:	Client:						
M1 Junction 15, N	Northampton	Roxl	Roxhill Developments Ltd						
Contract Ref:	Start: 21.08.14	Ground Level (m AOD)	: National Grid Co-ordinate:	Sheet:					
312598	End: 21.08.14	87.13	E:474980.0 N:254861.0		1	of	1		

U 1.	2370		Liiu.	21.00.17	07.			01 1				
Progress Samples / Tests				ests	er II & u- ion	III &						
Window Run	Depth	No	Туре	Results	Water Backfill & Instrument Inst	Description of Strata	(Thick ness)	Material Graphic Legend				
-	0.20	1	ES			Gravel is subrounded to rounded fine to medium quartzite and mudstone. (AGRICULTURAL TOPSOIL) (TOPSOIL)	(0.40)	17 - 3 - 17				
-	0.80	2	D			Soft to firm orange brown slightly gravelly fine to medium SAND. Gravel is subangular to subrounded fine to coarse quartzite, flint and mudstone. (OADBY MEMBER)	(0.80)	0 b				
	1.20-1.65	1 3	SPT D	N=9		Firm orange brown gravelly CLAY. Gravel is subangular to rounded fine to medium quartzite, chalk and flint. (OADBY MEMBER)	(0.40)					
1.20 - 2.00 (115mm dia) - 100% rec	-					Firm orange brown gravelly sandy CLAY. Gravel is subangular to rounded quartzite chalk and flint.	1.60					
	1.80 2.00-2.45	2	D SPT	N=13	*.*	(OADBY MEMBER)	(0.90)	- 0 7				
2.00 - 3.00 (99mm dia) - 90% rec	2.40	5	D			Medium dense orange brown fine to coarse SAND. (GLACIOFLUVIAL DEPOSITS)	2.50					
-	2.80	6	D				(0.70)					
- 1	3.00-3.45	3	SPT	N=16			3.20					
3.00 - 4.00	3.20	7	D			Stiff to firm grey mottled brown CLAY. (Weathering grade E) (WHITBY MUDSTONE FORMATION)	(0.40)					
(85mm dia) - 90% rec	3.60	8	D			Stiff to firm grey silty CLAY (WHITBY MUDSTONE FORMATION)	(0.40)	X X				
- 🔻	3.90 4.00-4.44	9	D SPT	N=53*		Window sample hole terminated at 4.00 m depth.	4.00	xx				
-	_						_					

	Drilling P	rogress and	Water Ob	servations	Com	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter	Water Depth	Gen
		(m)	(m)	(mm)	(m)	Location scanned with GPR pr Hand dug pit inspection pit dug Groundwater not encountered. Gas and water monitoring well
						All dimensions in metres

General Remarks

- canned with GPR prior to breaking ground. No services detected bit inspection pit dug to 1.20m bgl.
- er not encountered.
- ater monitoring well installed to 4.00m bgl upon completion.

			A	ll dimen:	sions in metres		Scale:	1:25
Method Used:	Tracked window sampling	Plant Used		Drilled By:	Dynamic Sampling UK	Logged By:	d LMoody	Checked By:
			 •		Litu			

GINT LIBRARY V8 05 GLB LibVersion: v8 05 - Lib0004 PijVersion: v8 05 - Core+Logs 0003 | Log WINDOW SAMPLE LOG | 312588 - MI JUNCTION 15. GPI - v8 05 | 06/11/14 - 13:27 | LM. RSK Environment Ltd. The Enterprise Centre, Coventry University Technology Park, Coventry, CVI 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk.



WINDOW SAMPLE LOG

Contract:		Client:	Client:					
M1 Junction 15, N	Northampton	Roxhil	Roxhill Developments Ltd					
Contract Ref:	Start: 21.08.14	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:				
312598	End: 21.08.14	83.30	E:475171.0 N:254686.1	1	of 1			

312390 End: 21.08.14						05	50 E:4/51/1.0 N:254060.1	1 (01 1
			amples / Tests		Water Backfill		Description of Strata	Depth (Thick	Material Graphic
Window Run	Depth	No	Type	Results	Wa	Bac	•	ness)	Legend
-	- -						Dark brown slightly gravelly slightly CLAY. Gravel is subrounded to rounded fine to medium quartzite and mudstone. (AGRICULTURAL TOPSOIL) (TOPSOIL)	0.30	\(\frac{\fir}{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac}\fir}{\fir}{\firi}}}}{\frac{\frac{\frac{\frac{\frac{\frac{
-	0.40	1 2	D ES				Orange brown slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium quartzite. (SUBSOIL)	0.50	
-	-	2	LS				Light orange brown gravelly CLAY. Gravel is subrounded to rounded fine to medium chalk, flint, quartzite. (OADBY MEMBER)	(0.70)	
	1.10 1.20-1.65	3	D SPT	N=12			Firm grev mottled grange gravelly CLAV Gravel is	1.20	
1.20 - 2.00 (115mm dia)	1.40	4	D	1 12			Firm grey mottled orange gravelly CLAY. Gravel is subangular to subrounded fine to medium occasionally coarse chalk, quartzite, ironstone and occasionally coal. (OADBY MEMBER)	- - -	
- 100% rec	2.00-2.45	2	SPT	N=18			2.00m bgl becoming firm to stiff.	(1.10)	
	-	2		17 10				2.30	
2.00 - 3.00 (99mm dia) - 100% rec	2.40	5	D				Stiff grey mottled orange CLAY. (OADBY MEMBER)	(0.40)	
	2.80	6	D				Stiff grey clayey SILT. (OADBY MEMBER)	2.70	× × × × ×
-	3.00-3.45	3	SPT	N=22			2.90m bgl, becoming laminated.	- - -	^ \
3.00 - 4.00 (85mm dia) 100% rec	- - - -						3.30m and 3.60m bgl, becoming damp.	(1.30)	× × × × × × × × × × × × × × × × × × ×
- - -	3.90 4.00-4.42	7 4	D SPT	N=57*	<u></u>		Window sample hole terminated at 4.00 m depth.	4.00	X X X X X X X X X X X X X X X X X X X
-	- - -						•	-	

	Drilling P	rogress and	Water Ob	servations		General Remarks						
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	2. Hand 3. Grou	dug pit ir ndwater e		rior to br g to 1.20)m bgl.	reaking ground. I	No services detec	ted.
						A	All dimens	sions in metres		Scale:	1:25	
Method Used:			Archway ompetito		Drilled By:	Dynamic Sampling UK	Logged By:	l LMoody	Checked By:	AGS		
	3411	ipiing			Jinpento	1	,	Ltd		Liviouy	1 -	

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 PŋVersion: v8_05 - Core-Logs 0003 | Log WINDOW SAMPLE LOG | 312588 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:27 | LM. RSK Environment_Ld, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1_2TX. Tel: 02476_236816, Fax: 02476_236014, Web: www.rsk.co.uk.



Contract:				Client:	Window				
M1 Junction 15, N	North	ampton		Roxhil			W	S13	
Contract Ref:	Start:	20.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	312598 End: 20.08.14			96.02		1	of	2	

J1	2370		Liiu.	20.00.17		70.	02 17.77570.0 11.255157.0	1	01 2
Progress		Sam	ples / T	Tests	H	<u> </u>		Depth	Material
Window Run	Depth	No	Туре	Results	Water	Backfill	Description of Strata	(Thick ness)	Graphic Legend
-	0.20	1	ES				Dark brown slightly gravelly slightly sandy CLAY. Gravel is subrounded to rounded fine to medium quartzite, chalk and mudstone. (AGRICULTURAL TOPSOIL)	(0.30)	3 1/2 3 1/2 3 1/2 3 1/2 3 1/2 3 1/2 3 1/2 3
-	0.40	2	D				(TOPSOIL) Orange brown slightly grayelly CLAY Grayel is	(0.30)	
-	-						Orange brown slightly gravelly CLAY. Gravel is subangular to rounded fine to medium quartzite and occasional chalk. (SUBSOIL)	0.60	
-	-						Brown gravelly CLAY. Gravel is subrounded to rounded chalk. (OADBY MEMBER)	(0.60)	
-	1.00	3	D					1.20	
A	1.20-1.65	1	SPT	N=11			Firm dark grey mottled orange gravelly CLAY. Gravel is subangular to subrounded fine to medium occasionally	-	
1.20 - 2.00 (115mm dia)	1.40	4	D				coarse chalk, quartzite. (OADBY MEMBER)	-	
- 100% rec	1.80	5	D				1.70m bgl, gravel becomes fine to medium.	(1.40)	
	2.00-2.45	2	SPT	N=10					
-	- -							_	
2.00 - 3.00 (99mm dia) 70% rec	- - -							2.60	
	2.70	6	D				Firm to stiff dark grey mottled brown CLAY. (OADBY MEMBER)	_	
- *	3.00-3.45	3	SPT	N=12			3.00m and 3.20m bgl, clay was softer.		
3.00 - 4.00	- - -							(1.60)	
(85mm dia) - 5% rec	_							_	
	3.90	7	D					_	
4.00 5.00	4.00-4.45	4	SPT	N=18			4.00m bgl becoming stiff.	4.20	
4.00 - 5.00 (75mm dia) 100% rec	4.20	8	D				Description on next sheet	-	
						\bowtie			

	Drilling P	rogress and	l Water Ob	servations		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	
		(iii)	(III)	(IIIII)	(iii)	1. Location scar 2. Hand dug pit 3. Groundwater 4. Borehole bac 5. No recovery
						All dime

General Remarks

- anned with GPR prior to breaking ground. No services detected it inspection pit dug to 1.20m bgl.
- er not encountered.
- ckfilled with arising upon completion.

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 pilVersion: v8_05 - Core+Logs 0003 | Log WINDOW SAMPLE LOG | 312598 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:27 | LM. RSK Environment_Ltd, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1_2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk.

Method

Used:

1:25 nensions in metres Scale: Logged By: **Tracked window** Plant **Archway** Drilled Checked Dynamic Sampling UK Ltd By: Used: By: Competitor **LMoody** sampling



Contract:				Client:		Window	Sam	ple:	
M1 Junction 15, N	M1 Junction 15, Northampton ntract Ref: Start: 20.08.14			Roxhill Developments Ltd				W	S13
Contract Ref:	Start:	20.08.14	Groun	nd Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	20.08.14		96.02	E:474348.0 N:255154.0		2	of	2

Progress		Sam	ples / T	Tests	er	llij		Depth	Material
Window Run	Depth	No	Туре	Results	Water	Backfill	Description of Strata	Depth (Thick ness)	Material Graphic Legend
4.00 - 5.00 (75mm dia) 100% rec	4.80	9 5	D SPT	N=21			Stiff dark grey CLAY. (Weathering Grade D) (WHITBY MUDSTONE FORMATION) (stratum copied from 4.20m from previous sheet)	(1.80)	
- - - - - - -	6.00-6.45	6	SPT	N=31			Window sample hole terminated at 6.00 m depth.	6.00	
- - - - -	- - - - - -							-	
- - - - - -	- - - - -							-	
- - - - -	- - - - - -							-	

	Drilling P	rogress and	Water Ob	servations				Con	orol l	Remarks		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)			Gen	erar	Kemarks		
						All	dimens	sions in metres		Scale:	1:25	
Method Used:		d windov	w Plan Used		Archway ompetito		rilled y:	Dynamic Sampling UK	Logged By:	l LMoody	Checked By:	AGS

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 pilVersion: v8_05 - Core+Logs 0003 | Log WINDOW SAMPLE LOG | 312598 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:27 | LM. RSK Environment_Ltd, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1_2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk.



Contract:				Client:		Window	San	ple:	
M1 Junction 15, N	M1 Junction 15, Northampton htract Ref: Start: 20.08.14			Roxhil			W	S14	
Contract Ref:	Start:	20.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	20.08.14		96.32	E:474373.0 N:254955.1		1	of	2

31	2598		End:	20.08.14		96.	32	E:4/43/3.0 N:254955.1	1	of Z
Progress		Sam	ples / T	ests		=			Donth	Material
Window Run	Depth		Туре	Results	Water	Backfill		Description of Strata	(Thick ness)	Graphic Legend
-	-						Gravel is su	n slightly gravelly slightly sandy CLA abrounded to rounded fine to medium quartzi TURAL TOPSOIL)	Y. (0.40) 0.40	
-	0.60	1	ES	JJV			Orangish b Gravel is quartzite. (OADBY M	rown slightly sandy slightly gravelly CLA subrounded to rounded medium to coa ###################################	Y.	
- -	1.00	2	D						1.20	
	1.20-1.65	1	SPT	N=10			Firm grey n (OADBY N	nottled orangish brown CLAY. ИЕМВЕR)		
1.20 - 2.00 (99mm dia) - 100% rec	1.60	3	D						(0.80)	
	2.00-2.45	2	SPT	N=10			Firm to stiff (OADBY N	f grey mottled brown CLAY.	2.00	
2.00 - 3.00 (85mm dia) 100% rec	- - - -								(1.30)	
<u> </u>	2.70	4	D						-	
	3.00-3.45	3	SPT	N=12					3.30	
3.00 - 4.00 (75mm dia)	3.50	5	D				Firm grey n (OADBY N	nottled orangish brown sandy CLAY. MEMBER)	(0.30)	
90% rec	3.80	6	D				(Weathering (WHITBY	f dark grey mottled dark brown CLAY. g Grade E) MUDSTONE FORMATION) bgl, laminated.	-	
- *	4.00-4.45	4	SPT	N=12	≈			to 5.00m bgl, no recovery	-	
- 4.00 - 5.00 (65mm dia) 0% rec	-								(1.40)	

Date	Drilling Pr	rogress and Borehole Depth	Water Ob Casing Depth	Borehole Diameter	Water Depth			Gen	eral I	Remarks		
		(m)	(m)	(mm)	(m)	2. Hand 3. Grou 4. Bore	d dug pit in Indwater s Shole backt	nspection pit du eepage encount filled with arisin	g to 1.20 ered at 4. g upon c	m bgl. 00m bgl. completion.	No services detectors andwater ingress.	ed.
							All dimens	sions in metres	;	Scale:	1:25	
Method Used:		d windov ipling	V Plan Used		Archway ompetito	r	Drilled By:	Dynamic Sampling UK	Logged By:	LMoody	Checked By:	AG

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 PŋVersion: v8_05 - Core-Logs 0003 | Log WINDOW SAMPLE LOG | 312588 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:27 | LM. RSK Environment_Ld, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1_2TX. Tel: 02476_236816, Fax: 02476_236014, Web: www.rsk.co.uk.



Contract:			Clie	ent:		Windo	w Sam	ple:	
M1 Junction	15, Nor	thampton		Roxhil	l Developments Ltd			WS	S14
Contract Ref:	Sta	rt: 20.08.14	Ground Lev	vel (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	Enc	l: 20.08.14	90	6.32	E:474373.0 N:254955.1		2	of	2

• •				20.00.1			211710701011120170011		O1 _
Progress		Sam	ples / T	Tests	7	III.		Depth	Material
Window Run	Depth	No	Туре	Results	Water	Backfill	Description of Strata	(Thick ness)	Material Graphic Legend
- 4.00 - 5.00 (65mm dia) 0% rec	-						Firm to stiff dark grey mottled dark brown CLAY. (Weathering Grade E) (WHITBY MUDSTONE FORMATION) (stratum copied from 3.60m from previous sheet)	5.00	
- 	5.00-5.45	5	SPT	N=27		*****	Window sample hole terminated at 5.00 m depth.	3.00	
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-	_							-	
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	Drilling P	rogress and Borehole	Water Ob	servations Borehole	Water	General Remarks
Date	Time	Depth (m)	Depth (m)	Diameter (mm)	Depth (m)	
						All dimensions in metres Scale: 1:25
Method	Tracke	d windov		: A	Archway	Drilled Dynamic Logged Checked By: LMoody Sampling UK AG
Used:	san	pling	Used	: Co	ompetito	By: Sampling UK By: LMoody By: AG

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 PŋVersion: v8_05 - Core-Logs 0003 | Log WINDOW SAMPLE LOG | 312588 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:27 | LM. RSK Environment_Ld, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1_2TX. Tel: 02476_236816, Fax: 02476_236014, Web: www.rsk.co.uk.



GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 pilVersion: v8_05 - Core+Logs 0003 | Log WINDOW SAMPLE LOG | 312598 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:27 | LM. RSK Environment_Ltd, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1_2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk.

PRELIMINARY WINDOW SAMPLE LOG

Contract:				Client:		Window	Sam	ple:	
M1 Junction 15, N	North	nampton		Roxhil	l Developments Ltd			W	S15
Contract Ref:	Start:	19.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	19.08.14		98.55	E:474405.0 N:254699.0		1	of	2

	2370		Liiu.	17.00.17	70	D. T.		01 2
Progress		Sam	ples / T	ests	17 11 & 12 - 13 ion		Depth	Material
Window Run	Depth	No	Туре	Results	Water Sackfill & Instrumentation	Description of Strata	(Thick ness)	Graphic Legend
- - -	0.10	1	ES	JJV		Dark brown slightly clayey very sandy CLAY. Gravel is subrounded to rounded fine to medium quartzite and mudstone. With frequent rootlets. (AGRICULTURAL TOPSOIL) (TOPSOIL)	(0.40)	1/2 3 1/2 3 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2
- - -	0.50	2	D			Orangish brown slightly clayey very sandy CLAY. Gravel is subrounded to rounded fine to medium quartzite and mudstone. With frequent rootlets.	0.60	
- - -	0.70	3	D			(SUBSOIL) Loose light brown gravelly fine to coarse SAND. Gravel is subangular to rounded fine to coarse quartzite, flint and chalk.	(0.60)	0. e
-	1.20-1.65	1	SPT	N=18		(OADBY MEMBER) Stiff orangish brown slightly sandy gravelly CLAY.	1.20	0.: <u>0</u>
1.20 - 2.00	1.20	4	D	1, 10		Gravel is subangular to rounded fine to coarse quartzite, chalk and mudstone. (OADBY MEMBER)	1.40	
(99mm dia) - 100% rec	1.60	5	D			Firm dark greyish brown mottled brown slightly gravelly CLAY. Gravel is subrounded fine to medium chalk. (OADBY MEMBER)	(0.70)	
	2.00-2.45	2	SPT	N=12		Firm dark brownish grey slightly sandy CLAY. With rare	2.10	
2.00 - 3.00	-					fine selenite crystals. (OADBY MEMBER)	(0.00)	
(85mm dia) 100% rec	-						(0.90)	
<u> </u>	2.80	6	D		· • •		3.00	
	3.00-3.45	3	SPT	N=12		Firm dark grey CLAY. (Weathering Grade E) (WHITBY MUDSTONE FORMATION)	-	
3.00 - 4.00 (75mm dia) 100% rec	-						-	
	3.70	7	D				-	
4.00 - 5.00 (65mm dia)	4.00-4.45	4	SPT	N=14			-	
100% rec	-						(3.00)	

	Drilling P	rogress and		Com		
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter	Water Depth	Gen
		(m)	(m)	(mm)	(m)	1. Location scanned with GPR pr
						Hand dug pit inspection pit du Groundwater not encountered. Gas and water monitoring well
						All dimensions in metres

Tracked window

sampling

Method Used:

General Remarks

- ned with GPR prior to breaking ground. No services detected. inspection pit dug to 1.20m bgl.
- not encountered.
- monitoring well installed to 6.00m bgl upon completion.

Scale:

1:25

Plant Used	_	Archway ompetito	Drilled By:	Dynamic Sampling UK Ltd	Logged By:	LMoody	Checked By:
				Liu		-	



Contract:				Client:	Client:				
M1 Junction 15, N	North	ampton		Roxhil			W	S15	
Contract Ref:	Start: 19.08.14 Groun			d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	19.08.14		98.55	E:474405.0 N:254699.0		2	of	2

	2370		Lilu.	17.00.17		0			01 2
Progress		Sam	ples / T	Tests	12 3 1 28 1	ion		Depth	Material Graphic
Window Run	Depth	No	Туре	Results	Water Backfill & Instru-	mentat		(Thick ness)	Graphic Legend
4.00 - 5.00 (65mm dia) 100% rec	4.90	8 5	D SPT	N=20	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Firm dark grey CLAY. (Weathering Grade E) (WHITBY MUDSTONE FORMATION) (stratum copied from 3.00m from previous sheet) 5.00m bgl, becoming stiff.	- - - -	
5.00 - 6.00 (55mm dia) - 100% rec	5.60	9	D		\$ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			- - - -	
- V	6.00-6.44	6	SPT	N=53*	<u>:∙:</u> ∃	•:•	Window sample hole terminated at 6.00 m depth.	6.00	
_	-							_	
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	T	rogress and	Casing	Borehole	Water	General Remarks
Date	Time	Depth (m)	Depth (m)	Diameter (mm)	Depth (m)	
					1	
1						
						107
						All dimensions in metres Scale: 1:25
Method	Tracke	d windov			Archway	
Used:	san	npling	Usec	l: C (ompetito	or By: Sampling UK By: LMoody By: AGS

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 PŋVersion: v8_05 - Core-Logs 0003 | Log WINDOW SAMPLE LOG | 312588 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:27 | LM. RSK Environment_Ld, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1_2TX. Tel: 02476_236816, Fax: 02476_236014, Web: www.rsk.co.uk.



Contract:			Client:	Window Sample:				
M1 Junction 15, N	Northampton	l	Roxhil			W	S16	
Contract Ref:	Start: 20.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End: 20.08.14		97.64	E:474430.6 N:254538.2		1	of	2

	31.	2598		End:	20.08.14	97.64 E:474430.6 N:254538.2				1	of 2	
]	Progress		Sam	oles / T	ests	ter	cfill		D : .:			Material
Wi	ndow Run	Depth	No	Type	Results	Water	Backfill		Description of Strata		(Thick ness)	Legend
-		0.30	1 2	ES D	JJV			Gravel is su With numer (AGRICUL (TOPSOIL) Orangish b	brown slightly gravelly CLAY. Grounded fine to medium quartzite.	CLAY. uartzite. ravel is	(0.30) 0.30 (0.50)	1/ 24/ 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/
Į											0.80	
-	_	1.10	3	D SPT	N=15			brown sligh	f to firm light greyish brown mottled outly gravelly CLAY. Gravel is subroute to coarse chalk, quartzite and rare iron (IEMBER)	nded to	- (1.50)	
(9	.20 - 2.00 9mm dia) .00% rec	1.70	4	D							(1.50)	
-		2.00-2.45	2	SPT	N=21			2.00m ł	ogl becoming stiff		2 20	
(8	.00 - 3.00 5mm dia) 00% rec	2.80 3.00-3.45 3.80	5 3	D SPT	N=25	1		Gravel is su	grey slightly sandy slightly gravelly brounded to rounded fine and coarse q nd mudstone. With occasional shell fra IEMBER)	uartzite,	(1.70)	
(6	.00 - 5.00 .5mm dia) 40% rec	4.00-4.45	4 7	SPT D	N=17	<u></u>		Medium der (GLACIOF	nse dark brown fine to medium SAND. LUVIAL DEPOSITS)		(0.90)	

Da	ng Progress an Borehole Depth		servations Borehole Diameter	Water Depth			Gen	eral]	Remarks		
Da	me (m)	(m)	(mm)	(m)	2. Hand 3. Groui	dug pit ir idwater e	ed with GPR prospection pit du necountered at 3 illed with arisin	g to 1.20 .70m bg)m bgľ. l.	No services detect	ted.
					Α	All dimens	sions in metres		Scale:	1:25	
Meth Used	cked windo sampling	Plant Used		chway npetito	r	Drilled By:	Dynamic Sampling UK	Logged By:	d LMoody	Checked By:	AGS

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 PŋVersion: v8_05 - Core-Logs 0003 | Log WINDOW SAMPLE LOG | 312588 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:27 | LM. RSK Environment_Ld, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1_2TX. Tel: 02476_236816, Fax: 02476_236014, Web: www.rsk.co.uk.



Contract:				Client:	Client:				
M1 Junction 15, N	North	ampton		Roxhil			W	S16	
Contract Ref:	Start:	20.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	20.08.14		97.64	E:474430.6 N:254538.2		2	of	2

J1	2370		Lilu.	20.00.17		71.	UT 177750.0 11.257550.2		01 2
Progress	Progress Samples / Tests		Γests	L	=		Denth	Material	
Window Run	Depth	T	Туре		Water	Backfill	Description of Strata	(Thick ness)	Graphic Legend
4.00 - 5.00 (65mm dia) 40% rec	-						Medium dense dark brown fine to medium SAND. (GLACIOFLUVIAL DEPOSITS) (stratum copied from 4.00m from previous sheet)	4.90	
	4.90 5.00-5.45	8 5	D SPT	N=20			Stiff dark grey CLAY. (Weathering Grade E) (WHITBY MUDSTONE FORMATION)	- - -	
5.00 - 6.00 (55mm dia) 10% rec	-							(1.10)	
- - -	5.90	9	D					6.00	
-	6.00-6.45	6	SPT	N=34		XXXXXX	Window sample hole terminated at 6.00 m depth.	-	
-	-							-	
-								-	
_	_								
-	-							-	
_	_							-	
-	_							-	
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-	_							-	
		1	1	1		1			

	Drilling P	rogress and	Water C	Observations				Con	oro1 1	Remarks		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)			Gen	Ciai i	Kemarks		
						A	ll dimens	sions in metres		Scale:	1:25	
Method	Tracke	d window		nt 1	Archway		Drilled	Dynamic	Logged	l	Checked	
Used:	san	npling	Use		ompetito		By:	Sampling UK	By:	LMoody	By:	AGS

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 PŋVersion: v8_05 - Core-Logs 0003 | Log WINDOW SAMPLE LOG | 312588 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:27 | LM. RSK Environment_Ld, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1_2TX. Tel: 02476_236816, Fax: 02476_236014, Web: www.rsk.co.uk.

Used:

Competitor

Sampling UK
Ltd

By:

LMoody | By:



APPENDIX E CABLE PERCUSSION BOREHOLE LOGS



8.60

				Client: Borehole:							
Contract:	_		4 = = = .	_				Boreho	ole:	~=.	
M1	Jun	ction	15, Nort				l Developments Ltd			CP1	
Contract Ref	:		Start	18.08.1	4 Gro	ound Level (m AOD):	National Grid Co-ordinate:	Sheet:			
3	3125	598	End:	19.08.1	4	90.77	E:474650.0 N:255462.0)	1	of 2	
Sam	ples a	nd In-sit	tu Tests	Water	ation		D : .:		Depth		
Depth	No	Type	Results	Wa Backf	mentation		Description of Strata		(Thick ness)	Graphic Legend	
0.00-0.30	1 2	B ES			Bi fin	rown slightly gravelly ne to medium quartzite a GRICULTURAL TOP OPSOIL)	slightly clayey SAND. Gravel is su and rare brick. With frequent roots. SOIL)	ibrounded	0.30	1/2\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
0.80-1.20	3	В			su	rm light brown slight brounded fine to coarse UBSOIL)	y sandy slightly gravelly CLAY. quartzite. With rare rootlets.	Gravel is	0.75	- · · · · · · · · · · · · · · · · · · ·	
1.20-1.65 1.20-1.65	4 5	B SPT	N=10		fis ch	rm becoming stiff with sured slightly gravelly talk. Fissures are indist DADBY MEMBER)	depth greyish brown mottled orang CLAY. Gravel is subrounded fine tinctly orientated.	ish brown o medium	(1.85)		
2.00-2.45 2.00-2.45	5 7	B SPT	N=12			Becoming orangish b	rown from 2.00m bgl.				
2.60	6	D			St (C	iff dark brownish grey so DADBY MEMBER)	slightly sandy slightly silty CLAY.		2.60	× · · ×	
3.00-3.45 3.00-3.45	7 10	B SPT	N=22						(1.40)	× · · × · · · × · · · × · · · × · · · ·	
4 00 4 45	0	D			C	:cc 1: 1.1 Tr Ct	437		4.00	xx	
4.00-4.45	8 12	B SPT	N=20			iff grey slightly silty CI DADBY MEMBER)	AY.		- - - - -		
- 5.00-5.45 5.00-5.45	9 14	B SPT	N=24			from 5.00m bgl, with	occasional light grey silty partings.		(2.80)		
6.00	10	D							-		
6.50-6.95 6.50-6.95	11 17	B SPT	N=30						6.80		
-					Fi (C	rm orangish brown sand OADBY MEMBER)	dy silty CLAY.		(0.70)	× · · × · · · × · · · · · · · · · · · ·	
7.50	12 13	D D			¬ su	rangish brown slightly brounded fine to mediu GLACIOFLUVIAL DE	m subrounded mudstone.	Gravel is	7.50	× ×	
- 8.00-8.45 - 8.00-8.45	14 21	B SPT	N=34	• • • • • • • • • • • • • • • • • • •		ense orangish brown fir			(0.80)		

	Boring P	rogress and	Water O	bservations		Chisell	ing / Slo	w Progress	General Remarks			
Date	Time	Borehole	Casing	Diameter	Water	From	То	Duration (hh;mm)	General	Kemarks		
	Depth Depth Depth (mm) Dej					7.0		(IIII.IIIIII)	Location scanned with ground. No services d Hand dug inspection p Borehole advanced to Groundwater not enco Gas and groundwater i to 15.00m bgl.	etected. it to 1.20m bgl. 15.45m bgl. untered.		
									All dimensions in metres	Scale: 1:50		
Method Used:	Cable r	ercussio	n Plan	1	ando 15		Drilled By:	P.B. Drilling Lt	Logged By: MLawson	Checked By: AGS		

Description on next sheet

GINT LIBRARY V8 05.GLB LibVersion: v8 05 - Lib0004 PijVersion: v8 05 - Care+Logs 0003 | Log CABLE PERCUSSION LOG | 312598 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:30 | LM. RSK EnvironmentLtd, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk.

8.60

15

D



Contract:				Client:		Boreho	le:			
M1 Junction 15, N	North	nampton		Roxhill Developments Ltd				(CP:	1
Contract Ref:	Start:	18.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:				
312598	End:	19.08.14		90.77	E:474650.0 N:255462.0		2	of	2	
			_							_

•	114.	<i></i>	Enu.	17.00.		70.77		01 2
	Samples and In-situ Tests pth No Type Results				Instru- mentation	Description of Strata	Depth (Thick	Material Graphic
Depth	No	Type	Results	W	Ins	2000 phon of Suum	ness)	Legend
9.50-9.95 9.50-9.95	16 24	D SPT	N=36			Dense orangish brown medium SAND. (GLACIOFLUVIAL DEPOSITS) (stratum copied from 8.60m from previous sheet)	-	
10.50	17	D					- - -	
- 11.00-11.45 - 11.00-11.45	18 27	B SPT	N=35				- - - - - - -	
- 12.00	19	D					(6.85)	
- 12.50-12.95 - 12.50-12.95	20 30	B SPT	N=33				- - - - - - -	
- 13.50	21	D					-	
- 14.00-14.45 - 14.00-14.45	22 33	B SPT	N=35	000000000000000000000000000000000000000			- - - - - -	
- - 15.00-15.45	35	SPT	N=35				15.45	
-				• • •	. ` . ` . `	Borehole terminated at 15.45m depth.	- 13.43	

		Boring Pr	ogress and	Water Ob	servations		Chisel	ling / Slo	w Progress	General Remarks			
	Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration (hh:mm)	General	Remarks		
Ĺ	Dute	11110	Depth	Depth	(mm)	Depth	110111	10	(nn.mm)	6 Water added to aggist a	brilling batwaan 8 50m to		
										Water added to assist drilling between 8.50m to 10.00m bgl.			
										All dimensions in metres	Scale: 1:50		
	Method			Plan				Drilled	P.B.	Logged	Checked		
L	Used:	Cable p	ercussio	n Used	d: D	ando 15	0	By:]	Drilling Lt	d By: MLawson	By: AGS		

GINT LIBRARY V8 05.GLB LibVersion: v8 05 - Lib0004 PifVersion: v8 05 - Core+Logs 0003 | Log CABLE PERCUSSION LOG | 312598 - MI JUNCTION 15.GPJ - v8 05 | 06/11/14 - 13:30 | LM. RSK Environment Ltd. The Enterprise Centre, Coventry University Technology Park, Coventry, CV1 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk.



Contract:			Client:		Borehol	e:		
M1 Junction 15, N	orthampton	l	Roxhil			(CP2	
Contract Ref:	Start: 27.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End: 27.08.14		95.89	E:474502.0 N:255316.0		1	of	3

	3125	<u> </u>	End:	27.0	8.14	95.89 E:474502.0 N:255316.0		of 3
Sam	ples a	nd In-si	tu Tests	Water	Backfill & Instru-	Description of Strata	Depth (Thick	Material Graphic
Depth	No	Type	Results	≥	Back Ins	Description of Strate	ness)	Legend
0.00-0.40	1 2	В				Brown slightly gravelly slightly clayey SAND. Gravel is subrounded fine to medium quartzite and rare brick. With frequent roots. (AGRICULTURAL TOPSOIL)	0.40	17.31.1, 31.1, 0 0
0.50	3 4	ES B				Light brown mottled orangish brown slightly sandy slightly gravelly CLAY. Gravel is subrounded fine and coarse quartzite.	0.80	
1.20-1.70	5	U	27 blows			(SUBSOIL) Firm becoming stiff with depth light greyish brown fissured slightly gravelly CLAY. Gravel is subrounded fine to medium chalk. Fissures are indistinctly orientated. (OADBY MEMBER)	1.20	
- 1.70 - 1.80 - 2.00-2.45 - 2.00-2.45	6 7 1 8	D D SPT B	N=11	<u></u>		Soft to firm brown mottled grey sandy CLAY. Sand is fine. (OADBY MEMBER) from 2.00m bgl, becoming orangish brown.	(1.70)	
- - -							2.90	
-2.90 3.00-3.45 3.00-3.45	9 2 10	D SPT B	N=13			Firm dark grey mottled orangish brown silty CLAY with rare fine selenite. (OADBY MEMBER)	(0.70)	X X
- - -						Firm to stiff dark grey CLAY with rare fine selenite.	3.60	<u> </u>
- 3.80 - 4.00-4.45 - 4.00-4.45	11 3 12	D SPT B	N=20			(OADBY MEMBER)	-	
- 4.80 - 5.00-5.45 - 5.00-5.45	13 4 14	D SPT B	N=21				-	
- 6.00 - 6.50-6.95	15	D SPT	N=22				-	
6.50-6.95	16	В					(8.10)	
7.50	17	D					(0.10)	
8.00-8.50 8.00	18	U V	36 blows c _u =260			From 8.00m bgl, becoming stiff to very stiff with depth.		
8.50	19	D					- - - - -	

Covent		Boring Pr	ogress and	Water Ob	servations		Chisell	ing / Slow	Progress	General Remarks				
Centre, C	Date	Time	Borehole	0	Borehole Diameter	Water	From	То	Duration (hh:mm)	General	Remarks			
3			Depth	Depth	(mm)	Depth			(1111.111111)	1 Location conned with	GDD prior to brooking			
use	27/08/14	10:00	2.30	2.00	150	2.30				1. Location scanned with GPR prior to breaking ground. No services detected.				
terp terp	27/08/14	10:20	2.30	2.00	150	2.10				2. Hand dug inspection p				
H	27/08/14	17:30	15.00	15.00	150	Dry				3. Borehole advanced to 20.45m bgl.				
ĭ	28/08/14	10:00	15.00	15.00	150	13.20				4. Groundwater encountered at 2.30m bgl.				
Ľď,	28/08/14	17:00	20.45	20.00	150	18.70				5. Gas and groundwater r	nonitoring well installed			
in s										to 20.00m bgl.				
Ě														
710										All dimensions in metres	Scale: 1:50			
ij	Method			Plan	ıt			Drilled	P.B.	Logged	Checked			
Ϋ́	Used:	Cable p	ercussio	n Use	d: D	ando 15	0	By: D	rilling Lt		By: AGS			

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Contract:				Client:		Boreho	ole:		
M1 Junction 15, N	lorth	ampton		Roxhil	l Developments Ltd			(CP2
Contract Ref:	Start:	27.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	27.08.14		95.89	E:474502.0 N:255316.0		2	of	3
Samples and In-situ Tests		Eer II &					Depth	Ma	ateria

	_		tu Tests	Water ackfill &	Instru- mentation	Description of Strata	Depth (Thick	Material Graphic
Depth	No	Туре	Results	Back	nen men	Description of State	ness)	Legend
9.00	20	D U	71 blows			Firm to stiff dark grey CLAY with rare fine selenite. (OADBY MEMBER) (stratum copied from 3.60m from previous sheet)	-	
10.00	22	D					- - - - -	
10.50	23	D					- - - -	
- 11.00-11.45 - 11.00-11.45	6 24	SPT B	N=30				11.70	
11.80	25	D				Dense orange brown slightly gravelly clayey medium SAND. Gravel is subangular fine to medium quartzite. (GLACIOFLUVIAL DEPOSITS)	11.70	
- 12.50-12.95 - 12.50-12.95	7 26	SPT B	N=21				- - - - - - -	0. 0 0. 0
13.50	27	D					- - - - -	
- 14.00-14.45 - 14.00-14.45	8 28	SPT B	N=31					0.0
- - 15.00	29	D					- - - -	· 0. ·
- 15.50-15.95 - 15.50-15.95	9 30	SPT B	N=63	•		From 15.50m bgl, becoming dense to very dense with depth.	(8.75)	0. O.
- 16.50	31	D		°°°			- - - - -	0.0.
- 17.00-17.45 - 17.00-17.45 - 17.00-17.45	10 32	SPT B	N=62				-	0 A
-							-	.0

	Boring Pr	rogress and				Chisel	ling / Slo	w Progress	General Remarks			
Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration (hh;mm)	- General	Keman		
		Depth	Depth	(mm)	Depth				6. Water added to assist drilling between 15.00m to 20.00m bgl.			
									to 20.00m ogi.			
									All dimensions in metres	Scale:	1:50	
Method Used:	Cable p	ercussio	n Plan Used	•	ando 150	0	Drilled By:]	P.B. Drilling Lto	Logged By: MLawson	Checked By:		AGS

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 Pŋ'Version: v8_05 - Core+Logs 0003 | Log CABLE PERCUSSION LOG | 312598 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:30 | LM. RSK Environment Ltd, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk.



Contract:			Client:		Borehol	e:			
M1 Junction 15,	Northamptor	1	Roxhil	Roxhill Developments Ltd					
Contract Ref:	Start: 27.08.14	Groun	nd Level (m AOD):	National Grid Co-ordinate:	Sheet:				
312598	End: 27.08.14		95.89	E:474502.0 N:255316.0		3	of	3	

			Dita.			2010 2010 1012 2001 1012		01 0
Sam	ples a	nd In-si	tu Tests	Water	Backfill & Instru- mentation	Description of Strata	Depth	Material Graphic
Depth	No	Type	Results	M	Back Ins ment		ness)	Legend
- 18.50-18.95 - 18.50-18.95	33 11 34	D SPT B	N=65			Dense orange brown slightly gravelly clayey medium SAND. Gravel is subangular fine to medium quartzite. (GLACIOFLUVIAL DEPOSITS) (stratum copied from 11.70m from previous sheet)	- - - - - - - - - -	0 0 0 0 0 0
19.50	35	D					- - - -	
20.00-20.45	12	SPT	N=54		°°H°.		20.45	
-						Borehole terminated at 20.45m bgl.	-	
							- - - - - - - - - - - - - - - - - - -	

	Boring Pr	rogress and	Water Ob	servations		Chiselling / Slow Progress			General Remarks			
Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration (hh:mm)	General	Kemark	72	
		Depth	Depth	(mm)	Depth			(1111.111111)				
4												
									All dimensions in metres	Scale:	1:50	
Method	1ethod			Plant			Drilled	P.B.	Logged	Checked		
Used:	Cable p	ercussio		Used: Dando 150				Orilling Lt	d By: MLawson	By:		AGS

GINT LIBRARY V8 05.GLB LibVersion: v8 05 - Lib0004 PifVersion: v8 05 - Core+Logs 0003 | Log CABLE PERCUSSION LOG | 312598 - MI JUNCTION 15.GPJ - v8 05 | 06/11/14 - 13:30 | LM. RSK Environment Ltd. The Enterprise Centre, Coventry University Technology Park, Coventry, CV1 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk.



Contract:			Client:	Borehol	e:				
M1 Junction 15, N	Northampton	l	Roxhil			(CP3	;	
Contract Ref:	Start: 28.08.14	Ground	d Level (m AOD):	National Grid Co-ordinate:	Sheet:				
312598	End: 29.08.14		84.07	E:474793.0 N:255181.0		1	of	2	
		_							_

				29.08.14	84.07 E:4/4/93.0 N:255181	.0	<u> </u>	of Z
Sam	ples a	nd In-si	tu Tests Results	Water Backfill & Instrumentation	Description of Strata	Depth (Thick	Graphic	
- 0.00-0.35 - 0.35-1.20	1 2	B B	Results	Ba Ba	Brown slightly clayey slightly gravelly SAND. Gravel is fine to coarse quartzite, flint and rare brick. With frequent roc (AGRICULTURAL TOPSOIL) (TOPSOIL)	ots.	ness) - 0.30 - (0.90)	Legend
1.00	3	ES			Soft to firm light brown mottled grey slightly gravelly CLAY subrounded fine to coarse chalk. (OADBY MEMBER)		1.20	θ-
1.20-1.65 1.20-1.65	1 4	SPT B	N=20		Stiff orangish brown gravelly CLAY. Gravel is subsubrounded fine to coarse flint chalk and ironstone. (OADBY MEMBER)	angular to	(0.60)	
- 1.80 - 2.00-2.45 - 2.00-2.45	5 2 6	D SPT B	N=26		Medium dense gravelly fine to medium SAND. Gravel is su subrounded fine to medium ironstone. (GLACIOFLUVIAL DEPOSITS)	bangular to	-	0 0 0 0
- 2.80 - 3.00-3.45 - 3.00-3.45	7 3 8	D SPT B	N=25				- - - - - - - - -	0 0 0 0
- 3.80 - 4.00-4.45 - 4.00-4.45	9 4 10	D SPT B	N=19				(5.40)	0 O
- 4.80 - 5.00-5.45 - 5.00-5.45	11 5 12	D SPT B	N=20				-	0 0 0 0
6.00	13	D					-	0. 0. 0.
6.50-6.95 6.50-6.95	6 14	SPT B	N=17				-	0.0.
7.20	15	D			Firm becoming stiff to very stiff dark blueish grey CLAY.		7.20	<u>n</u>
7.50-8.00	16	U	74 blows		(Weathering Grade E) (WHITBY MUDSTONE FORMATION)		 - -	
8.00	14	D					- - - - -	
8.50	18	D						

2000		Boring Pr	ogress and	Water Ob	ter Observations			ling / Slow	Progress	General Remarks		
Cenne, c	Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration	General	Kemarks	
5	Dute	Time	Depth	Depth	(mm)	Depth	110111	10	(hh:mm)	1 Logotian conned with	GDP prior to brooking	
vironment Ltd, The Enterprise							12.20	12.80	00:30	Location scanned with ground. No services de Hand dug inspection p Borehole advanced to Groundwater not encoud Gas and groundwater represented to 12.80m bgl.	etected. it to 1.20m bgl. 13.25m bgl. untered.	
71101										All dimensions in metres	Scale: 1:50	
KSN EIN	Method Used:	Cable p	ercussio	n Plan Use		ando 15	0	Drilled By: D 1	P.B. rilling Lt	Logged By: MLawson	Checked By: AGS	

GINT LIBRARY V8 05.GLB LibVersion: v8 05 - Lib0004 PijVersion: v8 05 - Care+Logs 0003 | Log CABLE PERCUSSION LOG | 312598 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:30 | LM. RSK EnvironmentLtd, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk.



Contract			Climt		Danaha	1		
Contract:			Client:		Boreho	ne.		
M1 Junction 15, N	North	nampton	Roxhi	ll Developments Ltd			C	P3
Contract Ref:	Start:	28.08.14	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	29.08.14	84.07	E:474793.0 N:255181.0		2	of	2
Samples and In-situ Tests		/ater kfill & stru-		Description of Strata		Depth (Thick	Ma Gra	aterial aphic

			Dita.			211717701011120210110		01 _
Sam	ples a	nd In-si	tu Tests	Water	Backfill & Instru- mentation	Description of Strata	Depth (Thick	Material Graphic
Depth	No	Type	Results	*	Back Ins ment	Description of Strata	ness)	Legend
9.00-9.50	19	U	60 blows			Firm becoming stiff to very stiff dark blueish grey CLAY. (Weathering Grade E) (WHITBY MUDSTONE FORMATION) (stratum copied from 7.20m from previous sheet)	(4.70)	
9.50	20	D				(stratum copied from 7.20m from previous sheet)	(4.70)	
10.00	21	D					- - - -	
10.50-11.00	22	U	80 blows				- - - -	
11.00	23	D					- - - -	
11.50	24	D					11.90	
12.00-12.19 12.00-12.45	7 25	SPT B	N=217*		=	Moderately strong dark grey MUDSTONE. (Weathering Grade C) (WHITBY MUDSTONE FORMATION)	-(1.35)	
12.80-13.04	8	SPT	N=107*				- - - -	
-						Borehole terminated at 13.25m bgl due to hard strata.	13.25	
-							-	
-							-	
-							Ė	
E							ŧ	
-							-	
-							-	
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<u> </u>							Ł	

	Boring l	Progress and	Water Ob	servations		Chiselling / Slow Progress			General Remarks			
Dat	e Time	Borehole Depth	Casing Depth	Borehole Diameter	Water Depth	From	То	Duration (hh:mm)	General	Kemai	KS	
		Depui	Depui	(mm)	Depui							
·												
									All dimensions in metres	Scale:	1:50	
Metho			Plan				Drilled	P.B.	Logged	Checked		AGS
Used:	Cable	percussio	n Used	l: D	ando 15	0	By: I	Orilling Lt	d By: MLawson	By:		AGS

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 PijVersion: v8_05 - Core+Logs 0003 | Log CABLE PERCUSSION LOG | 312598 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:30 | LM. RSK Environment_Ltd_The Enterprise Centre, Coventry University Technology Park, Coventry, CV1 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk.



DRAFT BOREHOLE LOG

Contract:			Client:	Client:					
M1 Junction 15, N	Northam	npton	Roxhi	Roxhill Developments Ltd					
Contract Ref:	Start: 02.	.09.14 Gi	round Level (m AOD):	National Grid Co-ordinate:	Sheet:				
312598	End: 02.	.09.14	84.94	E:475018.1 N:255080.1		1	of	2	

312598 End: 02.09.1					84.94	E:475018.1 N:255080.1	1	of 2
Samp epth			tu Tests Results	Water Backfill & Instru- mentation	Des	scription of Strata	Depth (Thick ness)	
1.00	1	В		<u>4</u>	Soft brown slightly gravelly subrounded fine to medium fl (AGRICULTURAL TOPSOL(TOPSOIL) Firm light brown mottled subrounded fine to coarse cha	lint, quartzite and rare chalk. IL) grey slightly gravelly CLAY. Gravel is	0.40	
1.70	2	U V	60 blows c _u =16		Medium dense orangish brow	wn slightly gravelly fine to coarse SAND.	1.30	
2.45 2.45	3 4 1 5	D D SPT B	N=21		(GLACIOFLUVIAL DEPOS	SITS)	- - - - - - -	0 O
3.45 3.45	6 2 7	D SPT B	N=16	1			(4.45)	ο
4.45 4.45	8 3 9	D SPT B	N=18				- - - - - - -	0 0 0 0
5.45 5.45	10 4 11	D SPT B	N=18					0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	12	D			fine to medium GRAVEL of	quartzite.	5./5	
6.95 6.95	5 13	SPT B	N=21				(2.15)	000
8.45 8.45	14 6 15	D SPT B	N=38		(Weathering Grade E) (WHITBY MUDSTONE FO	RMATION)	7.90	
	Sampeth 1.00 1.70 2.45 2.45 3.45 3.45 3.45 3.45 3.45 3.45 3.45	Samples a pth No 1.00 1 1.70 2 2.45 1 2.45 5 3.45 2 3.45 7 4.45 3 4.45 9 5.45 11 12 5.95 5 6.95 13	Samples and In-sight No Type	Samples and In-situ Tests Ppth No Type Results 1.70 2 U 60 blows Cu = 16 1.70 3 D D 2.45 1 SPT N=21 3.45 2 SPT B N=16 3.45 3 SPT B N=18 3.45 4 SPT B N=18 3.45 5 5 SPT N=18 3.45 10 D D D 3.45 4 SPT B N=18 3.45 5 5 SPT B N=21 3.45 6 SPT N=38 3.45 3 SPT SPT SPT SPT 3.45 3 SPT	Samples and In-situ Tests pth No Type Results 1.70 2 U 60 blows	Samples and In-situ Tests	Samples and In-situ Tests pth No Type Results Soft brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to medium firit, quartzite and rare chalk. (ACRICULTURAL TOPSOIL) Top	Samples and In-situ Tests Description of Strata Depth (Thick ness)

oven		Boring Pr	rogress and	Water O	bservations		Chiselling / Slow Progress			Canaral	Domonles				
ntre, c	Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration (hh:mm)	General	Remarks				
3			Depth	Depth	(mm)	Depth			(IIII.IIIII)	1 Location scanned with	GDD prior to breaking				
prise	02/09/14	10:00	3.40	3.00	150	3.40				 Location scanned with GPR prior to breaking ground. No services detected. 					
lfer]	02/09/14	10:20	3.40	3.00	150	3.30				2. Hand dug inspection p	it to 1.20m bgl.				
ıt Ltd, 1he En	02/09/14	16:00	15.00	15.00	15.00	15.00	15.00	12.50	150	Dry				3. Borehole advanced to 4. Groundwater encounte 5. Gas and groundwater i to 8.00m bgl.	15.45m bgl. ered at 3.40m bgl.
ıronmeı										All dimensions in metres	Scale: 1:50				
SK Env	Method Used:	Cable r	ercussio	n Plan	1	ando 15		Drilled By: D i	P.B.	Logged	Checked By: AGS				

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DRAFT

15.45

F							BOREH	OLE	ΞL	.OG
Contract:						Client:		Boreho	le:	
M1	Jur	iction	ı 15, North	ampto	n	Roxhi	ll Developments Ltd			CP4
Contract Ref	:		Start:	02.09.1	4 Grou	nd Level (m AOD):	National Grid Co-ordinate:	Sheet:		
3	3125	598	End:	02.09.1	4	84.94	E:475018.1 N:255080.1		2	of 2
Sam	ples a	ınd In-si	itu Tests	Water ackfill & Instru-	ation		D : .:		Depth	Material
Depth	No	Туре	Results	Wa Backf	menta		Description of Strata		(Thick ness)	Graphic Legend
9.50-9.95 9.50-9.95	.50-9.95 7 SPT N=41 .50-9.95 17 B				Stif (We (WI	f to very stiff dark gre cathering Grade E) HITBY MUDSTONE atum copied from 7.9			X _ X X X X X X X X X X X _ X X _ X X _ X X _	
- 11.00-11.45 11.00-11.45	8 19	SPT B	N=53						(7.55)	
12.00	20	D							- - -	x
12.50-12.95 12.50-12.95	9 21	SPT B	N=59						- - - -	× × ×

-										-
	Boring P	rogress and	Water Ob	servations		Chisel	ling / Slow	Progress	Canaral	Domontes
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	То	Duration (hh:mm)		Remarks
			•	, ,	•				6. Water added to assist 8.00m bgl.	drilling between 1.30m to
									All dimensions in metres	
Method Used:	Cable j	percussio	n Plan Used		ando 150	0	Drilled By: D	P.B. rilling Lt	td Logged MLawson	Checked By: AGS

Borehole terminated at 15.45m bgl.

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13.50

14.00-14.45 14.00-14.45

15.00-15.45

22

10 23

11

D

SPT B

SPT

N=63

N=59



DRAFT BOREHOLE LOG

Contract:								Client:					Borel	nole:	
	Jun	ction	15, N	North	amp	oton			Roxhi	ll Devel	opment	s Ltd			CP5
Contract Ref					01.0			d Level (1			Grid Co-ord		Sheet		
3	3125	598		End:	01.0	9.14		88.2	2	E:474	4880.0 N	1:254940	0.0	1	of 2
Samı	oles a	nd In-si	tu Tests		er	% -1 :5								Depth	Material
Depth	No	Туре		sults	Water	Backfill & Instru-				Description	n of Strata			(Thick ness)	
-						五 五	subro (AG) (TO)	ounded fii RICULTU PSOIL)	ne to coarse URAL TOP	e flint and q PSOIL)	uartzite.		subangular to	0.40	
- - -							sand	i lightiy b y CLAY. BSOIL)	Gravel is s	ubrounded	fine to coars	siigntiy grav se chalk.	velly slightly	1.20	· · · · ·
- 1.20-1.70 - 1.20	1	U V		olows 122			Stiff	orangish	l is subrour	tled grey banded fine to	rown slightl medium ch	y gravelly s alk.	lightly sandy	7 -	
- 1.70 - 1.80 - 2.00-2.50 - 2.00	2 3 4	D D U V		olows =84			(011		BEIG					(1.45)	
2.50	5	D					77.					-		2.65	·- ·
- 2.80 - 3.00-3.50	6 7	D U	43 t	olows				i to stiff gi DBY ME		nottled dark	k grey CLAY	Υ.		-	
3.50	8	D												- - -	
- 3.80 - 4.00-4.50 - 4.00	9 10	D U V	52 t c _u =	olows 195				4.00m bgl	becoming	stiff.				(2.75)	
4.50	11	D												-	
4.80 - 5.00-5.50	12 13	D U	54 t	olows										5.40	
5.50	14	D					Med Grav (GL	el is suba	e Light ora ngular to st JVIAL DE	ibrounded f	vn slightly of the slightly of	clayey sand um quartzite	y GRAVEL e.		
- 6.00-6.45 - 6.00-6.45	1 15	SPT B	N=	=15										6.60	
- 6.80 - 7.00-7.50 - 7.00	16 17	D U V		olows 268			Very (Wer (WH	athering C	rade E)	ly silty CL					X X X
7.50	18	D												-	× ×
7.80 - 8.00-8.45 - 8.00-8.45	19 2 20	D SPT B	N=	=37										- - - - -	xx
- - -								8.50m bgl	, becoming	stiffer with	depth.			-	x

200		Boring Pr	rogress and	Water O	bservations		Chisel	ling / Slow	Progress	Canaral	Remarks
anne, c	Date	Time	Borehole	U	Diameter	Water	From	То	Duration (hh:mm)	General	Kemarks
iment Ltd, the Euretprise Co			Depth	Depth	(mm)	Depth				Location scanned with ground. No services d Hand dug inspection p Borehole advanced to Groundwater not enco Gas and groundwater i to 8.00m bgl.	etected. it to 1.20m bgl. 15.45m bgl. untered.
NII O										All dimensions in metres	Scale: 1:50
io ve	Method Used:	Cable r	ercussio	n Pla Use	1	ando 150		Drilled By: D	P.B. rilling Lt	Logged d By: MLawson	Checked By: AGS

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DRAFT BOREHOLE LOG

Contract:				Client:		Borehole	e:		
M1 Junction 15, N	North	ampton		Roxhil	l Developments Ltd			(CP5
Contract Ref:	Start:	01.09.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	01.09.14		88.22	E:474880.0 N:254940.0		2	of	2

3	125	598	End:	01.09.14	88.22	E:474880.0 N:254940.0	2	of 2
			tu Tests	Water Backfill & Instrumentation		Description of Strata	Depth (Thick	Material Graphic
Depth	No	Type	Results	M W In Incr		•	ness)	Legend
9.50-9.95 9.50-9.95	21 3 22	D SPT B	N=42		Very stiff dark grey slight (Weathering Grade E) (WHITBY MUDSTONE (stratum copied from 6.60	ly silty CLAY. FORMATION) Im from previous sheet)	-	X X
10.50	23	D					(8.85)	xx
11.00-11.45	4 24	SPT B	N=49					X X
12.00	25	D					-	xx
- 12.50-12.95 - 12.50-12.95	5 26	SPT B	N=53				- - - - - - - -	X X
13.50	27	D					- - - -	xx
14.00-14.45 14.00-14.45	6 28	SPT B	N=50				- - - - - - - - -	X X
15.00-15.45	7	SPT	N=60				15.45	xx
-					Boreho	ole terminated at 15.45m bgl.	ļ	
							- - - - - - - - - - - - - - - - - - -	

	Boring Pr	rogress and	Water Ob	servations		Chisel	ling / Slow	v Progress	Conoral	Domortza			
Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration	General Remarks				
Dute	Time	Depth	Depth	(mm)	Depth	110111	10	(hh:mm)	6. Water added to assist drilling between 5.40m t				
									6.60m bgl.	inning between 3.40m to			
`													
									All dimensions in metres	Scale: 1:50			
Method			Plan				Drilled	P.B.	Logged	Checked By: AGS			
Used:	Cable p	percussio	n Used	l: D	ando 15	0	By: D	rilling Lt	d By: MLawson	By: AGS			

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DRAFT BOREHOLE LOG

Contract:			Client:		Borehole:			
M1 Junction 15,	North	ampton	Roxhi	ll Developments Ltd			\mathbf{C}	P6
Contract Ref:	Start:	03.09.14	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	03.09.14	84.31	E:475123.0 N:254837.0		1	of	2
G 1 17 17 T		_ & =					Mo	torio1

312598 End: 03.09.14 84.31 E:475123.0 N:254							N:254837.0	1	of 2
San	nples a	nd In-si	tu Tests	er	ion - R	<u> </u>		Depth	Material
Depth	No	I	Results	Water	Dackinii & Instru- mentation	Description of Strata		(Thick ness)	
0.50-1.00	1	В				Brown slightly gravelly sandy CLAY. Gsubrounded fine to coarse flint, quartzite, rare by (AGRICULTURAL TOPSOIL) (TOPSOIL) Firm light brown sandy very silty CLAY/ very (OADBY MEMBER)	rick and pottery.	0.30	× × × × × × × × × × × × × × × × × × ×
1.20-1.70	2	U	51 blows					(2.10)	* · · * · * · * · * · * · * · * · * · *
1.70	3	D						-	× × ×
2.00-2.50	4	U	0% recovery			2.00m - 2.45m bgl, no recovery.		2.40	× · × · ×
2.50	5	D				Soft grey SILT. (OADBY MEMBER)		2.70	× × × ×
2.80-3.00 3.00-3.50 3.00	6 7	B U V	36 blows c _u =50			Firm light brown slightly gravelly slightly subrounded fine to coarse chalk. (OADBY MEMBER) 3.10m bgl, becoming gravelly.	sandy CLAY. Gravel is		
3.50	8	D						(2.00)	°
3.80 4.00-4.45 4.00-4.45	9 1 10	D SPT B	N=18					- - - - - -	
• • •								4.70	• • • •
4.80 - 5.00-5.45 - 5.00-5.45	11 2 12	D SPT B	N=9			Soft grey slightly sandy slightly clayey SILT. (OADBY MEMBER)		(1.50)	× × × × × × × × × × × × × × × × × × ×
- - - -				*	: B:::			6.20	× · × × × × × × × × × × × × × × × × × ×
6.20	13	D SPT	N=25	•		Stiff dark grey slightly gravelly CLAY. Grav coarse chalk. (OADBY MEMBER)	rel is subrounded fine to	(0.80)	
6.50-6.95	14	В	1, 23		唱::	(OADBT MEMBER)		7.00	
7.50	15	D		000000000000000000000000000000000000000		Firm to stiff grey silty CLAY. (Weathering Grade E) (WHITBY MUDSTONE FORMATION)		7.00	X X X X X X X X X X X X X X X X X X X
8.00-8.45	4	SPT	N=23	<u></u>				- - - -	xx
8.00-8.45	16	В						- - - -	x _ x - x _ x - x _ x
								-	<u>× </u>

OVEILL		Boring Pr	ogress and	Water Ob	servations		Chisel	ling / Slow	Progress	Conoral	D amorts
cinic,	Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	То	Duration (hh:mm)	General	
nment Ltd., the Eliciphise o	03/09/14 03/09/14 03/09/14 03/09/14	08:00 08:20 12:10 17:00	7.90 7.90 12.10 13.60	7.50 - - 12.00	150 150 150 150	7.90 7.10 11.40 12.10	13.50	14.00	00:30	 Location scanned with ground. No services de Hand dug inspection p Borehole advanced to Groundwater encounted bgl. Gas and groundwater results 	etected. it to 1.20m bgl. 14.45m bgl. red at 7.90m and 12.10m nonitoring well installed
Kor Enviro	Method Used:	Cable p	ercussio	Plan Useo	•	ando 150	0	Drilled By: D 1	P.B. rilling Lt	All dimensions in metres Logged By: MLawson	Scale: 1:50 Checked By: AGS

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Contract:					Client:			Borehol	e:		
M1 Jun	ction 15, N	North	nampton		Roxhil	l Developments Ltd				(P6
Contract Ref:		Start:	03.09.14	Groun	d Level (m AOD):	National Grid Co-ordinate:		Sheet:			
3125	98	End:	03.09.14		84.31	E:475123.0 N:2548	37.0		2	of	2

•	114	370	Enu.			04.51		01 2
			tu Tests	Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick	Material Graphic
Depth	No		Results	≱	Back Ins	Description of Strata	ness)	Legend
- 9.00 - 9.50-9.95 - 9.50-9.95	17 5 18	D SPT B	N=44			Firm to stiff grey silty CLAY. (Weathering Grade E) (WHITBY MUDSTONE FORMATION) (stratum copied from 7.00m from previous sheet)	(6.10)	X X X
10.50 - 11.00-11.45 - 11.00-11.45	19 6 20	D SPT B	N=44				- - - - - - - -	X X
12.50-12.94 12.50-12.95	7 21	SPT B	N=84*	2			-13.10	X X
14.00-14.21 14.00-14.45	8 22	SPT(c) B	N=100*			Moderately strong grey MUDSTONE. (Weathering Grade B) (WHITBY MUDSTONE FORMATION) Borehole terminated at 14.45m bgl due to hard strata.	(1.35)	
- - - - - - - - - -							- - - - - - - - - -	
- - - - - - - - - -							- - - - - - - - -	
							- - - - - -	

		Boring Pr	ogress and	Water Ob	servations		Chisel	ling / Slo	w Progress	General	Domortza	
`	Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration (hh:mm)	General	Kemai KS	
·			Depth	Depth	(mm)	Depth			(1111.111111)	to 8.00m bgl.		
1										6. Water added to assist d 4.70m bgl.	Irilling between 3.10m to	
				I						All dimensions in metres	Scale: 1:50	
	Method Used: Cable percussion					ando 150	0	Drilled By:	P.B. Drilling Lt	Ltd By: MLawson Checked By: AGS		



Contract:						Client:		Boreho	ole:	
M1	Jur	iction	15, Nort	hamp	ton	Roxhi	ll Developments Ltd			CP7
Contract Ref			Start:	03.0	9.14	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:		
3	312	598	End:	03.0	9.14	80.72	E:475379.0 N:254732.0		1	of 1
	ples a	ind In-si		Water	Backfill & Instru-		Description of Strata		Depth (Thick	Material Graphic
Depth	1	Type B	Results	+	Ba L	Coft heavy alightly good	er alightly gravally CLAV Croyal is sub-	- m on 10 m	ness)	Legend
0.00-0.20 0.20-1.20 - 1.20-1.65 - 1.20-1.65	1 2	B B SPT B	N=8			to subrounded fine to coa (AGRICULTURAL TOI (TOPSOIL) Soft to firm light brow subangular to rounded fit (OADBY MEMBER) Loose to medium dense	y slightly gravelly CLAY. Gravel is sub- arse flint, quartzite, chalk, rare metal and le PSOIL) on slightly gravelly sandy CLAY. Grave to coarse flint and chalk. c light brown slightly gravelly coarse abrounded fine to coarse flint and chalk.	avel is	(1.00)	
2.00-2.45	2	SPT	N=22						2.10	<i>b</i>
2.00-2.45 2.00-2.45 - 3.00-3.45 3.00-3.45 - 4.00-4.45 4.00-4.45 - 5.00-5.45	3 5 5 6 6 6 7	SPT B SPT B	N=27 N=27 N=27			Stiff dark grey slightly g to coarse chalk. (OADBY MEMBER)	ravelly silty CLAY. Gravel is subround	ed fine	(3.50)	
5.60 - 6.00-6.36 - 6.00-6.45	8 6 9	D SPT B	N=73*			Stiff to very stiff dark gree (Weathering Grade E) (WHITBY MUDSTONE			(1.20)	X
7.00-7.07	7 10	SPT(c)	N=500*			Moderately strong grey S (Weathering Grade B) (WHITBY MUDSTONE Stiff dark grey CLAY.			- 6.80 - 7.10 - 7.30	X
7.50	11	D				(Weathering Grade E) (WHITBY MUDSTONE	FORMATION)		7.50	

	Boring Pr	rogress and	Water Ob	servations		Chisell	ling / Slow l	Progress	Canaral	Damarla
Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration	General	Remarks
Bute	Time	Depth	Depth	(mm)	Depth	110111	10	(hh:mm)	1. Location scanned with	CDP prior to broaking
						6.80	6.90	00:15	ground. No services de	
						7.30	7.50	01:00	2. Hand dug inspection p	
									3. Borehole advanced to	
									Groundwater not encor	untered.
									5. Gas and groundwater r to 6.00m bgl.	nonitoring well installed
									All dimensions in metres	Scale: 1:50
Method			Plan	t			Drilled	P.B.	Logged	Checked By: AGS
Used:	Cable p	percussio	n Used	l: D	ando 150	0	By: D r	illing Lt	d By: MLawson	By: AGS

Moderately strong grey Mudstone. (Weathering Grade B) (WHITBY MUDSTONE FORMATION)

Borehole terminated at 7.50m blg due to hard strata.

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 PijVersion: v8_05 - Core+Logs 0003 | Log CABLE PERCUSSION LOG | 312598 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:30 | LM. RSK Environment_Ltd_The Enterprise Centre, Coventry University Technology Park, Coventry, CV1 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk.



PRELIMINARY BOREHOLE LOG

Contract:		Client:		Borehole:		
M1 Junction 15, N	orthampton	Roxhi	ll Developments Ltd		Cl	P8
Contract Ref:	Start: 20.08.14	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:		
312598	End: 21.08.14	81.70	E:475255.0 N:254607.0		1 of 2	2

	114.		Eliu.	21.0	0.1	01.70 E.T/3233.0 1\.23T007.0		01 =
Sami	nles a	nd In-si	tu Tests	Ħ	% _ uo		Depth	Material
	· ·			Water	Backfill & Instru- mentation	Description of Strata	(Thick	
Depth	No	Type	Results		3ac In ner	T. T	ness)	Legend
- 0.00-0.25	1	В			W P	TOPSOIL: brown slightly gravelly slightly clayey SAND. Gravel is	- 0.0.5	74 18. 77 18. 7
0.20	2	ES	Jx2+V			subrounded fine to medium quartzite, flint and rare plastic. With	0.25	
0.25-0.60	3	B	JAZIV			frequent roots.	-	
	١,	D				(AĜRICULTURAL TOPSOIL)	0.70	
0.60-1.20	4	В				\(\(\text{TOPSOIL}\)		· · · · · · ·
_						Light brown slightly gravelly clayey SAND. Gravel is subangular to	[(0.50)]	:
Ē						subrounded fine to coarse quartzite and flint. With rare rootlets.	1.20	F
1.20-1.65	1	SPT	N=7			(SUBSOIL)	-	×···×
1.20-1.65	11	В				Greyish brown mottled orangish brown slightly gravelly slightly clayey	-	· · · · · ·
						SAND. Gravel is subangular to subrounded fine to medium chalk and		× · · · × · · ×
						flint. (OADBY MEMBER)	Ŀ	×····×
2.00-2.45	2	SPT	N=3		· . · H . · .	Loose orangish brown silty SAND.	(1.80)	×
2.00-2.45	12	B	N-3			(OADBY MEMBER)	F` ´	×···×
2.00 2.10		2			₿₿₿	(OADDI MEMBER)	-	::::*:::
-					ŀ:·F::		-	[××.
-							-	× · · · · ×
-					l∵H∴		3.00	×
3.00-3.38	3	SPT	N=28		₿₿₿₽	Stiff grey sandy CLAY with a low cobble content. Cobbles are	-	:
3.00-3.45	13	В			k::H:::	subrounded chalk.	-	
					₽:#:::	(OADBY MEMBER)	(1.00)	
-						between 3.10m and 3.80m bgl, pushed cobble with minimal, sandy	-	- <u></u>
F					₿₿₿₿	recovery.	F	
F	١.	GDT ()	37.20		Ŀ÷ ∃ ÷:		4.00	
- 4.00-4.45 - 4.00-4.45	4 14	SPT(c)	N=29		P. H.	Stiff to very stiff dark grey slightly sandy slightly gravelly CLAY.	-	<u> </u>
4.00-4.43	14	ь				Gravel is subrounded fine to coarse chalk. (OADBY MEMBER)	<u> </u>	
t					₿₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽	(OADDI MEMBER)	Ł	<u> </u>
-					₽₽₽₽₽		-	
-					Ŀ÷₽∷		(2.00)	
5.00-5.45	5	U	130 blows		• • •		[[]	
-			65% recovery				-	
5.00		V	c _u =296			between 5.30m and 5.50m bgl, water bearing sandy band	Ŀ	<u></u>
- 5.50	6	D				encountered	-	
-							-	
F	۱ ـ	ane:	37.40				6.00	
- 6.00-6.45 - 6.00-6.45	5	SPT(c) B	N=40			Very stiff grey slightly silty CLAY. With occasional selenite.	F	$\vdash = \exists$
0.00-0.43	13	ם				(Weathering Grade D) (WHITBY MUDSTONE FORMATION)	(0.70)	<u></u>
Ł				1		(WILLD I MODSTONE PORMATION)	- 70	
6 70 6 90	7	D		1		Madions strong and MIDCTONE with for any forcity	6.70	x -x
- 6.70-6.80 - 6.80-6.89	7 6	B SPT(c)	N=333*	_		Medium strong grey MUDSTONE, with frequent fossils. (Weathering Grade B)	7.00	
6.80-7.00	8	B	1, 555			(Weathering Grade B) (WHITBY MUDSTONE FORMATION)	F	<u>x _ x</u>
7.10	9	D				Very stiff grey slightly silty CLAY. With occasional selenite.	ţ	<u>×</u>
Ł						(Weathering Grade D)	(1.00)	FX
7.50-7.95	7	SPT(c)	N=40			(WHITBY MUDSTONE FORMATION)	F	ţ_^]
7.50-7.95	16	В				- 9	F	
L							8.00	x -x
Ė						Medium to weak dark grey MUDSTONE.	8.10~	<u>x x</u>
Ł						(Weathering Grade D)	Ł	
0.50	10	D				(WHITBY MUDSTONE FORMATION)	(0.90)	xx
8.50	10	D				Very stiff dark grey slightly silty CLAY. With occasional selenite.	ļ.	<u></u>
						(WHITBY MUDSTONE FORMATION)	9.00	<u>* </u>
	L	<u> </u>		1			_ ⊅.00	

Covenu		Boring Pr	ogress and	Water Ob	servations		Chisel	ling / Slow	Progress	Canaral	Damarlea
Centre, C	Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	То	Duration (hh:mm)	General	
nvironment Ltd, The Enterprise C	20/08/14 20/08/14	10:00 10:20	6.80 6.80	6.00 6.00	150 150	6.80 3.90	3.00 6.70 6.80 9.00	3.50 6.80 7.00 9.10	01:30 00:30 00:30 00:45	Location scanned with ground. No services do Hand dug inspection p Borehole advanced to 9 Groundwater encounte Gas and groundwater r to 9.10m bgl.	etected. it to 1.20m bgl. 9.10m bgl. red at 6.80m bgl. nonitoring well installed
KSK Envir	Method Used:	Har	nd dug	Plan Used		ando 150	0	Drilled By: Dr	P.B. rilling Lt	All dimensions in metres Logged By: MLawson	Scale: 1:50 Checked By: AGS



PRELIMINARY BOREHOLE LOG

											BO	KEH			UG
Contract:								Client:					Borehol	e:	
M1	312598 Samples and In-situ Tests				amp	oton			Roxhil		pments I				CP8
Contract Re	f:			Start:	20.0	8.14	Groun	d Level (m	n AOD):	National Gr	id Co-ordina	te:	Sheet:		
3	312	598		End:	21.0	8.14		81.70)	E:4752	255.0 N:2	254607.0		2	of 2
	T	I			Water	Backfill & Instru-				Description	of Strata			Depth (Thick	Material Graphic
Depth - 9.00-9.10	8	SPT(c)		sults 273*	_	Ba I me	Mad	inn strong	thinly bod	dad darlı bra	wnish grey S	II TOTONE		ness)	Legend
9.00-9.10	17	В					(WH	ITBY MŬ	DSTÔNE	FORMATIC	ON)			9.10/	
9.10-9.19	9	SPT(c)	N=.	300*				Bore	chole termi	nated at 9.10i	m bgl due to	hard strata.			
-														- · · ·	

	Boring Pr	ogress and	Water Ob			Chisell	ing / Slow	Progress	General	Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	То	Duration (hh:mm)	General	IXCIIIai KS	
									All dimensions in metres	Scale: 1:5	0
Method Used:	Har	nd dug	Plan Used		ando 150		Drilled By: D	P.B. rilling Lt	d Logged By: MLawson	Checked By:	AGS



(5.50)

Contract:						Client:		Boreho	le:	
M1 -	Jun	ıction	15, Nortl	hampton	l	Roxhil	l Developments Ltd			CP9
Contract Ref	:		Start:	28.08.14	Grour	nd Level (m AOD):	National Grid Co-ordinate:	Sheet:		
3	125	598	End:	28.08.14		82.09	E:475349.0 N:254328.0		1	of 2
Samp	oles a	ınd In-si	tu Tests	Water Backfill & Instru-	ation		Description of Streets		Depth	
Depth	No	Type	Results	Wa Back Inst			Description of Strata		(Thick ness)	Legend
0.20-1.20	1	В			subr (AG (TO Firm Grav	ounded fine to coarse RICULTURAL TOP PSOIL)	SOIL) mottled brown slightly gravelly silty (0.20	
1.20-1.65	2	U	110 blows 70% recovery		(011	DDT MEMBERY			(2.80)	XOXCXCXXXX
1.70 - 2.00-2.45 - 2.00-2.45	3 1 4	D SPT B	N=19						- - - - - - -	X
3.00-3.45	5	U D	125 blows 90% recovery		Grav	dark grey occasion vel is subrounded fine DBY MEMBER)	ally mottled brown slightly gravelly to coarse chalk.	CLAY.	3.00	
- 4.00-4.45 - 4.00-4.45	2 7	SPT B	N=17		subr	ium dense brown slig ounded fine to mediu DBY MEMBER)	ghtly gravelly fine to medium SAND. G m chalk.	ravel is	4.00	
5.00-5.45 - 5.00 - 5.50	8	U V D	125 blows 100% recovery c _u =158	7	Stiff	dark gray slightly	gravelly slightly sandy silty CLAY. Gr	raval is	5.50	<i>O O</i>
- 6.00-6.45 - 6.00-6.48	3 10	SPT B	N=30		subr (We	dark grey siigntly gounded fine to mediu athering Grade E)	m chalk.	avei is	- - - - - - - - -	
7.50-7.95	11	D	120 blows		•				- - - - - -	

oven		Boring Pr	ogress and	Water O	bservations		Chisel	ling / Slow	Progress	Canaral	Domortza
Centre, C	Date	Time	Borehole	Casing	Diameter	Water	From	То	Duration (hh:mm)	General	Remarks
ment Ltd, The Enterprise Ce			Depth	Depth	(mm)	Depth	11.00	11.10	01:00	Location scanned with ground. No services deground. No services deground a Borehole advanced to 4. Groundwater not encored to 11.10m bgl.	etected. it to 1.20m bgl. 11.10m bgl. untered.
viron										All dimensions in metres	Scale: 1:50
SK En	Method Used:	Cable r	ercussio	n Plan	1	ando 15	0	Drilled By: D	P.B. rilling Lt	Logged d By: MLawson	Checked By: AGS

GINT LIBRARY V8 05.GLB LibVersion: v8 05 - Lib0004 PijVersion: v8 05 - Care+Logs 0003 | Log CABLE PERCUSSION LOG | 312598 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:30 | LM. RSK EnvironmentLtd, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk.

8.00

8.50

13

14

D

D

90% recovery



PODEHOLE I

											D	JNL	_	JLI	_ L	UG
Contract:								Client:						Boreho	le:	
M1	Jun	ction	15, N	North	amp	oton			Roxhi	ll Develo _l	pments	Ltd				CP9
Contract Ref	:			Start:	28.0	8.14	Groun	d Level (n	n AOD):	National Gr	id Co-ordi	nate:		Sheet:		
3	125	598		End:	28.0	8.14		82.09)	E:4753	49.0 N	:25432	28.0		2	of 2
Samp	oles a	nd In-si	tu Tests		Water	fill & ru- ation				Diti	- C C44-					Material Graphic
Depth	No	Туре	Res	sults	_ ⊗	Backfill & Instru-				Description					(Thick ness)	Legend
- 9.00-9.45 - 9.00-9.45 - 10.00 - 10.50-10.95 - 11.00 - 11.00-11.10	16 17 18 19	SPT B D U D D	N=	blows ecovery		89	Stiff subro (Wea (WH (stra	ounded fin thering G ITBY MU tum copied erately strathering G ITBY MU	e to mediu rade E) JDSTONE d from 5.50 ong grey S rade D) JDSTONE	gravelly sligh m chalk. FORMATIO Om from previous process of the chalk is a second control of the chalk in the challength of the challeng	ON) ious sheet)			avel is	ness)	
- - - - -															- - - -	

Date Time Borehole Depth	ai KS
Sopul Sopul (mm) Sopul	
All dimensions in metres Scale:	1:50
Method Used: Cable percussion Plant Used: Dando 150 Drilled P.B. Logged By: MLawson By: MLawson By: MLawson Check By: MLawson By: MLawson By: MLawson Mathematical Properties Plant	ed AGS

GINT LIBRARY V8 05.GLB LibVersion: v8 05 - Lib0004 PifVersion: v8 05 - Care+Logs 0003 | Log CABLE PERCUSSION LOG | 312598 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:30 | LM. RSK Environment.Ld., The Enterprise Centre, Coventry University Technology Park, Coventry, CV1 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk.



Contract:				Client:		Boreh	ole:		
M1 Junction 15, N	Vort	nampton		Roxhi	ll Developments Ltd			Cl	P10
Contract Ref:	Start:	29.08.14	Ground	l Level (m AOD):	National Grid Co-ordinate:	Sheet			
312598	End:	01.09.14		83.56	E:475232.0 N:254221.	0	1	of	2
Samples and In-situ Tests		tter			D : :: CG: :		Deptl		ateria

	12.	,,,	Eliu.	01.07	.17	05.50		01 2
Samp	les a	nd In-si	tu Tests	Water	Backfull & Instru-mentation	Description of Strata	Depth (Thick	Material Graphic
Depth	No	Type	Results			Description of Strata	ness)	Legend
0.20-1.20	1	В		27		subangular to subrounded fine to coarse flint, quartzite and rare chalk. (AGRICULTURAL TOPSOIL) (TOPSOIL) Soft to firm brown mottled grey and rarely orangish brown slightly	0.20	oo
- - 1.20-1.65	2	U	110 blows 70% recovery			gravelly CLAY. Gravel is subrounded fine to coarse chalk. (OADBY MEMBER)	(1.80)	
1.70	3	D					2.00	
- 2.00-2.45 - 2.00-2.45	1 4	SPT B	N=17	• • • • •		Firm to stiff dark brown mottled grey slightly gravelly CLAY. Gravel is subrounded fine to coarse chalk. (OADBY MEMBER)	-	
3.00-3.45	5	U	125 blows 90% recovery	。 。			(2.00)	
3.50	6	D		•			4.00	
4.00-4.45 4.00-4.45	2 7	SPT B	N=29	•		Stiff to very stiff dark grey mottled brownish grey slightly gravelly CLAY. Gravel is subrounded fine to coarse chalk. (OADBY MEMBER) 4.50m bgl, occasional silty band.	-	
5.00-5.45	8	U	125 blows 100% recovery	۰	*.□*.:	5.00m bgl, becoming stiffer with depth.		
5.50	9	D					-	
- 6.00-6.45 - 6.00-6.45	3 10	SPT B	N=31				- - - - - -	
7.00	11	D					(7.00)	
7.50-7.95	12	U	120 blows 90% recovery				(7.00)	
- 8.00	13	D					-	 - - - -
8.50	14	D					- - - -	

0.00		Boring Pr	rogress and	Water (Observations		Chisel	ling / Slow	Progress	Canaral	Domortza
anne,	Date	Time	Borehole	•	Diameter	Water	From	То	Duration (hh:mm)	General	Remarks
nent Lta, me Emerpuse ee			Depth	Depth	n (mm)	Depth	14.00	14.10	01:00	Location scanned with ground. No services d Hand dug inspection p Borehole advanced to Groundwater not enco Gas and groundwater r to 5.00m bgl.	etected. it to 1.20m bgl. 12.00m bgl. untered.
VIIOII										All dimensions in metres	Scale: 1:50
ON DIE	Method Used:	Cable r	ercussio		ant sed: r) Dando 15	0	Drilled By: D	P.B. crilling La	Logged By: MLawson	Checked By: AGS



Contract:						Client:			Boreho	e:	
M1	Jun	ction	15, North	ampton	1	Roxhi	l Developments Lt	:d			CP10
Contract Ref			Start:	29.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:		Sheet:		
3	125	598	End:	01.09.14		83.56	E:475232.0 N:25	4221.0		2	of 2
Samp	oles a	nd In-si	tu Tests	ter III & Iu-	1011					Depth	
Depth	No	Туре	Results	Water Backfill & Instru-			Description of Strata			(Thick ness)	Legend
- 9.00-9.45 - 9.00-9.45	4 15	SPT B	N=30		CLA (OA)	Y. Gravel is subrour DBY MEMBER)	grey mottled brownish gred ded fine to coarse chalk. Om from previous sheet)	y slightly g	ravelly		
10.00	16	D								- • •	
10.50	17	U	130 blows 90% recovery								
- 11.00	18	D			(Wea (WH Very Grav	el is subrounded fine	FORMATION) ttled brownish grey slightl	y gravelly (CLAY.	11.00	
12.00-12.45 12.00 12.00-12.45	5 19 20	SPT D B	N=37		(Wea (WH	nthering Grade E) ITBY MUDSTONE	FORMATION)			(2.90)	
13.00	21	D								-	
13.50-13.95	22	U	130 blows 70% recovery							14.00	
14.00 14.10-14.16 14.10	23 6 24	D SPT(c) D	N=600*		(Wea	erately strong dark g tthering Grade B) ITBY MUDSTONE Borehole termin		ard strata.		14.00	X X X X

	Boring Pr	rogress and	Water Ob	servations		Chisel	ling / Slo	ow Progress		General	Damar	Iza	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	То	Duratio (hh:mm		General	Keman	KS	
		2 op in	2 op in	(11111)	2 op in								
									A	All dimensions in metres	Scale:	1:50	
Method Used:	Cable p	ercussio	n Plan Used		ando 150	0	Drilled By:	P.B. Drilling	Ltd	Logged By: MLawson	Checked By:		AGS



Contract:			Client:			Borehole	:		
M1 Junction 15, N	orthan	npton	Rox	hill Developments L	td			\mathbf{C}	P11
Contract Ref:	Start: 02	2.09.14	Ground Level (m AOD)	: National Grid Co-ordinate	e:	Sheet:			
312598	End: 02	2.09.14	83.38	E:475114.9 N:2	54548.4		1	of	2

	ა	123	98	End:	02.09.14	ŀ	85.38 E:4/5114.9 N:254548.4	1	of 2
	Samr	iles a	nd In-sit	tu Tests	고 왕 .	on		Depth	Material
	Depth	No	Type	Results	Water Backfill & Instru-	nentati	Description of Strata	(Thick ness)	
	- 0.00-0.30	1	В			ī Ā	Brown slightly clayey slightly gravelly fine to coarse SAND. Gravel is		
	- 0.30-1.20	2	В			7	subangular fine to coarse flint and quartzite.	0.30	
	- 0.30-1.20	2	ь				(AGRÏCULTURAL TOPSOIL) (TOPSOIL)	[
	-						Soft to firm light brown mottled grey sandy CLAY.	-	
	-						(OADBY MEMBER)	(1.70)	=
	1.20-1.65	1	SPT	N=9				(1.70)	
	1.20-1.65	3	B	IN-9				E	=
	- 1.20-1.65	4	В					-	
	-							2.00	=
	2.00-2.45	2	SPT	N=10			Firm brown slightly gravelly slightly sandy CLAY. Gravel is	(0.50)	·
	2.00-2.45 - 2.00-2.45	5 6	B B				subrounded fine to medium chalk and flint.	F `	
	- 2.50	7	D			ı	(OADBY MEMBER) Orangish brown clayey fine SAND.	2.50	
	2.70	8	D				\(\(\text{OADBY MEMBER}\)\(\)	2.70	<u></u>
	- - 3.00-3.45	9	T.T	125 hl			Firm grey slightly sandy gravelly CLAY. Gravel is subrounded fine to	(0.80)	
	- 3.00-3.43	9	U	125 blows 95% recovery			coarse chalk. (OADBY MEMBER)	-	·
				j			,	3.50	
	- 3.50	10	D				Stiff grey gravelly silty CLAY. Gravel is subangular to subrounded fine to coarse sandstone and chalk. Includes cobbles of sandstone.	-	0 × 0 × 0
	- -						(OADBY MEMBER)	-	× 0.0 ×
	4.00-4.45	3	SPT(c)	N=31				-	<u>oo</u>
	4.00-4.45	11	В					E	
								_	0 × 0
,	-							-	$\times 0 \xrightarrow{\times}$
100	5 00 5 45	,	CDT(.)	NI 45			A. 7.00 1.11	(3.10)	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
	- 5.00-5.45 - 5.00-5.45	4 12	SPT(c) B	N=45			At 5.00m bgl, becoming very stiff with depth.	F	0.00
								[<u>∞_0</u> 0 x
	-							-	ᢗᢆᠼ᠐ᡬ
,,,	-							-	
	6.00-6.45	5	SPT	N=33				F	0 300
	6.00-6.45	13	В					E	$\frac{1}{2}$
	-							6.60	
	- 6.60	14	D				Very stiff grey CLAY. (Weathering Grade E)	-	
	7.00	1.5	D		°. ° □.	. • .	(WHITBY MUDSTONE FORMATION)	Ė	
, ,	7.00	15	D					F	
						• • •		[
,	- 7.50-7.95	16	U	130 blows 80% recovery		。 。。		(2.20)	
	-			80% lecovery		°°°		-	
(9)	- 8.00	17	D			• • •		-	
	-				<u> </u>	 		Ē	
	- 8.50	18	D					<u> </u>	
					•••••••••••••••••••••••••••••••••••••••			8.80	
	- 8.80-9.00	19	В			°°°	Description on next sheet	9.00	\times \times \times \times

oven		Boring Pr	rogress and	Water O	bservations		Chisel	ling / Slow	Progress	Canaral	D amortza
ntre, c	Date	Time	Borehole	U	Borehole Diameter	Water	From	То	Duration (hh:mm)	General	Remarks
nent Ltd, The Enterprise Ce	02/09/14 02/09/14	10:00 10:20	Depth 8.80 8.80	7.50 7.50	(mm)	8.80 5.10	8.80 10.80	9.00 11.00	00:30 01:00	Location scanned with ground. No services de 2. Hand dug inspection p Borehole advanced to 4. Groundwater encounte 5. Gas and groundwater r to 10.00m bgl.	etected. it to 1.20m bgl. 11.10m bgl. ered at 8.80m bgl.
/Iron										All dimensions in metres	Scale: 1:50
SK En	Method Used:	Cable r	ercussio	n Pla Use	1	ando 15	0	Drilled By: D ı	P.B.	Logged d By: MLawson	Checked By: AGS



C							CI:t		D1	1	
Contract:	Inr	ection	15, No	rthai	mntan		Client:	ll Developments Ltd	Boreho		CP11
Contract Ref		iction			_		d Level (m AOD):	National Grid Co-ordinate:	Sheet:		CIII
		598			2.09.14	oroun.	83.38	E:475114.9 N:254548.4		2	of 2
		ınd In-si				<u> </u>		200000000000000000000000000000000000000		Depth	I
	No		Results	0	Water Backfill & Instru-			Description of Strata		(Thick	Graphic
Depth - 9.00-9.37	6	Type SPT	N=67*		L BE I	Mod	erately weak grey S	II TSTONE		ness)	Legend
9.00-9.45	20	В	11-07			(Wea	thering Grade B)			-	
						(WH Stiff	ITBY MUDSTÓNI grey CLAY.	E FORMATION)			
_						(Wea	thering Grade E)	E FORMATIONS		(1.80)	
10.00	21	D			•;•H;•	(WH	ITBY MUDSTÓNI	E FORMATION)		-	
											===
10.50-10.85	7	SPT	N=77*							10.00	
10.50-10.95	22	В				Mod	erately strong light g	grey SILTSTONE.		10.80	× × × × × × × × × × × × × × × × ×
- - 11.00-11.07 - 11.00-11.10	8 23	SPT(c)	N=600*	k		_ (Wea	nthering Grade B) ITBY MUDSTONI		/	-11.10	$\hat{\times} \hat{\times} \hat{\times} \hat{\times}$
- 11.00-11.10	23	Б				((111		inated at 11.10m blg due to hard strata.		-	
-										-	
_											
-										-	
-										-	
										-	
-										-	
- - -										-	
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_											

	Boring Pr	ogress and	Water Ob			Chisel	ling / Slov	v Progress	General	Damarka	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	То	Duration (hh:mm)	General	IXCIIIAI KS	
					•						
									All dimensions in metres	Scale: 1:5	0
Method Used:	Cable p	ercussio	n Plan Used		ando 150)	Drilled By: I	P.B. Orilling Lt	d By: MLawson	Checked By:	AGS



(7.45)

Contract:						Client:		Boreho	ole:	
M1 -	Jur	iction	15, Nort	hampto	1	Roxhi	ll Developments Ltd			CP12
Contract Ref	:		Star	: 01.09.14	Grou	nd Level (m AOD):	National Grid Co-ordinate:	Sheet:		
3	12:	598	End	02.09.14	ļ.	85.83	E:475002.0 N:254427.0		1	of 2
Samp	oles a	ınd In-si	tu Tests	Water ackfill &	ation		D		Depth	
Depth	No	Туре	Results	Water Backfill & Instru-	ment		Description of Strata		(Thick ness)	Graphic Legend
0.20 0.25-1.20	1 2	D B			Sub (AC (TC Sof sub	rounded fine to coarse GRICULTURAL TOF DPSOIL) It to firm light brown s rounded fine to coarse	slightly gravelly slightly sandy CLAY. C		0.25	
1.20	3	U	35 blows 90% recover	y	(OA	ADBY MEMBER)			1.70	- · · · ·
1.70	4	D			Ora	ngish brown slightly	clayey fine to medium SAND.		2.00	
- 2.00-2.45 2.00-2.45	1 5	SPT B	N=5	y	Sof is si	ADBY MEMBER) It to firm light orangis ubangular to subround ADBY MEMBER)	h brown slightly gravelly sandy CLAY ded fine ironstone and chalk.	. Gravel	-(1.70)	
3.00-3.45	2 6	SPT(c)	N=9	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$					3.70	
- 4.00-4.45 - 4.00-4.45	3 7	SPT B	N=21		to c	n to stiff grey slightly oarse chalk. ADBY MEMBER)	gravelly silty CLAY. Gravel is subroun	ded fine	(1.30)	x x x x x x x x x x x x x x x x x x x
5.00-5.45 5.00 5.50	8 9	U V D	130 blows 60% recover c _u =234		(We	y stiff grey silty CLA eathering Grade E) HITBY MUDSTONE			5.00	X X X
- 6.00-6.45 6.00-6.45	4 10	SPT B	N=45						- - - - - - -	X X X
7.00 - 7.50-7.95	11	D U	130 blows						- - - - -	X
ţ			80% recover	у					t	x

		Boring Pr	ogress and	Water Ob	servations		Chisel	ling / Slov	v Progress	Canaral	Domortza
	Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration	General	Remarks
	Date	Tille	Depth	Depth	(mm)	Depth	TIOIII	10	(hh:mm)	Location scanned with	GPR prior to breaking
Tolling were, were recorded										ground. No services de 2. Hand dug inspection p 3. Borehole advanced to 4. Groundwater not encot 5. Gas and groundwater r to 5.00m bgl. All dimensions in metres	etected. it to 1.20m bgl. 12.45m bgl. untered.
	Method			Plan	•	,		Drilled	P.B.	Logged	Checked By: AGS
L	Used:	Cable p	ercussio	n Used	1: D	ando 15	0	By: I	Orilling Lt	d By: MLawson	By: AGS

GINT LIBRARY V8 05.GLB LibVersion: v8 05 - Lib0004 PijVersion: v8 05 - Core+Logs 0003 | Log CABLE PERCUSSION LOG | 312598 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:31 | LM. RSK Environment Ltd, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk.

8.00

8.50

13

14

D

D



Contract	:								Client:			Boreho	le:		
N.	11 J	un	ction	15, N	North	ıam	pton		Roxhi	l Developn	nents Ltd			CP.	12
Contract	Ref:				Start:	01.	09.14	Groun	d Level (m AOD):	National Grid	Co-ordinate:	Sheet:			
	31	125	598		End:	02.	09.14		85.83	E:475002	2.0 N:254427.0		2	of	2_
S	Sample	es aı	nd In-si	tu Tests		ater	fill & tru-			Description of S	Strata		Depth (Thick	Mat	
Depth	Depth No Type Results						3ack Ins			Description of a	Suaia		ness)	Leg	

	Samp	Samples and In-situ Tests Depth No Type Result		tu Tests	Water	ill & ru- ation	D : .:	Depth	Material
	Depth	No	Type	Results	Wa	Backfill & Instru- mentation	Description of Strata	(Thick ness)	Material Graphic Legend
	9.00-9.38 9.00-9.45	5 15	SPT B	N=67*			Very stiff grey silty CLAY. (Weathering Grade E) (WHITBY MUDSTONE FORMATION) (stratum copied from 5.00m from previous sheet)	-	X X X X X X X X X X X X X X X X X X X
	_ - 10.00	16	D					- - - -	
	- 10.50-10.85 - 10.50-10.95	6 17	SPT B	N=75*				- - - - - - -	xx xx xx xx
	- 11.50	18	D					- - - -	xx
	12.00-12.33	7	SPT	N=79*				12.45	
CHINNESS I AIR, COVEHLY, CVI 21A: 1CI: 02+70 250610, IAA: 02+70 25001+, WCO: WWW.ISR.CO.IR.							Borehole terminated at 12.45m bgl.		
iversity iv	- - -							- - - -	

	Boring Pr	rogress and	Water Ob	servations		Chisel	ling / Slo	w Progress	General	Damarl	lza	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	То	Duration (hh:mm)	General	Keman	<u> </u>	
		Septin	2 optii	()	2 opui							
									All dimensions in metres	Scale:	1:50	
Method Used:	Calda		Plan Used	•		0	Drilled By:	P.B.	Logged By:	Checked By:		AGS
Osea.	Cable p	percussio	n Usec	1. D	ando 15	U	By:	Drilling Lt	d By: MLawson	Бу.		AGO



8.50

Contract:							Client:			Boreho	ole:	
M1	Jur	ection	15, North	amı	oton		Roxhi	ll Developments Lt	td			CP13
Contract Re	ef:		Start:	27.0	8.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	:	Sheet:		
	312	598	End:	27.0	8.14		83.99	E:475192.0 N:25	54386.0		1	of 2
San	nples a	and In-si	itu Tests	Water	11 & i.e.						Depth	
Depth	No	Туре	Results	Ma Wa	Backfill & Instru-			Description of Strata			(Thick ness)	Graphic Legend
0.10-1.20	1 2	B ES	Jx2+v			Soft suba (AG) (TO)	ngular to subroundec RICULTURAL TOF PSOIL)	,	flint.		0.10	x _ >
1.20-1.65	3	U	130 blows 85% recovery			subre	to stiff brown mottl ounded fine to mediu DBY MEMBER)	ed grey slightly gravelly silt m chalk.	ty CLAY. Gi	ravel is	- - - - - -	x
1.70	4	D									(3.40)	× _ >
2.00-2.45	1 5	SPT B	N=14								- - - - -	X
3.00-3.45	6	U	120 blows 100% recovery			1	From 3.00m bgl, bec	oming stiff with depth.			3.50	
- 4.00-4.45 - 4.00-4.45	7 2 8	D SPT B	N=24			Grav	grey rarely mottled rel is subrounded find DBY MEMBER)	brown slightly gravelly sl coccasionally medium chalk	ightly silty (CLAY.	-	
5.00-5.45	9	U D	125 blows 100% recovery								(3.50)	
- 6.00-6.45 - 6.00-6.45	3 11	SPT B	N=24								- - - - - - -	
7.00	12	D				Dens (OA	se grey silty fine SAN DBY MEMBER)	ND.			7.00	× · · · · · · ·
7.50-7.95 7.50-7.95	4 13	SPT B	N=51*			subre	. from 7.50m bgl ounded fine chalk.	, becoming slightly gravel	lly with gra	evel of	(1.50)	×···×

oven		Boring Pr	ogress and	Water Ol	oservations		Chisel	ling / Slo	w Progress	Conoral	Domortza
ntre, c	Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration (hh;mm)	General	Remarks
3			Depth	Depth	(mm)	Depth			(IIII.IIIII)	Location scanned with ground. No services depends on the services depends	
t Ltd, The Enterprise										2. Hand dug inspection p 3. Borehole advanced to 4. Groundwater not encount 5. Gas and groundwater r to 13.00m bgl.	it to 1.20m bgl. 13.00m bgl. untered.
vironmen									_	All dimensions in metres	Scale: 1:50
SK En	Method Used:	Cable r	ercussio	n Plan Use	1	ando 15	0	Drilled By:	P.B. Drilling Ltd	Logged By: MLawson	Checked By: AGS

Dense light grey SILT. (OADBY MEMBER)

GINT_LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 PijVersion: v8_05 - Core+Logs 0003 | Log CABLE PERCUSSION LOG | 312598 - MI JUNCTION 15.GPJ - v8_05 | 06/11/14 - 13:31 | LM. RSK Environment_Ltd_The Enterprise Centre, Coventry University Technology Park, Coventry, CV1 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk.

8.50

14

D



Contract:								Client:						Boreho	le:	
		ction	15, N							l Develo	_					CP13
Contract Ref				Start:	27.0	8.14	Ground	d Level (n		National G				Sheet:		
3	3125	598		End:	27.0	8.14		83.99	9	E:475	192.0 N	:25438	86.0		2	of 2
	_	nd In-si			Water	Backfill & Instru- mentation				Description	of Strata				Depth (Thick	Material Graphic
Depth	No	Type		sults	 					P					ness)	Legend
- 9.00-9.43 - 9.00-9.45	5 15	SPT B	N=	55*			Dense (OAI	e light gre DBY MEN um copied	MBER)	Im from pre	vious sheet)				(1.50)	× × × × × × × × × × × × × × × × × × ×
10.00	16	D					mediu	dark grey um chalk. DBY MEN		gravelly CL.	AY. Grave	l is subro	unded	fine to	(1.00)	
- 10.50-10.95	17	U		olows ecovery											11.00	
- 11.00 - - 11.50	18	D D					(Wear	dark grey thering G ITBY MU	rade E)	FORMATI	ON)				- - - -	
- 12.00-12.40 - 12.00-12.45	6 20	SPT B	N=	61*			• • • •								(1.90)	
-12.90-12.97 12.90-13.00	7 21	SPT(c) D	N=€	600*			coarse (Wear	e gravel. thering G ITBY MU	rade B) JDSTONE	FORMATION TO THE STATE OF THE S	ON)			fine to	12.90	
- - - - - - - - -															- - - - - - - - - -	
- - - - - - - -															- - - - - - -	
- - - - - -															- - - - - -	

		Boring Pr	ogress and	Water Ob	servations		Chisel	ling / Slo	w Progress	General	Domorl	7.0	
June,	Date	Time	Borehole Depth	U	Borehole Diameter	Water Depth	From	То	Duration (hh:mm)	General	Keman	<u> </u>	
: ⊢			Deptii	Depth	(mm)	Depui							
[
1													
j													
1													
i L										All dimensions in metres	Scale:	1:50	
i	Method			Plan	t			Drilled	P.B.	Logged	Checked		
į U	Jsed:	Cable p	ercussio	n Used	d: D	ando 15	0	By:	Drilling Lt	d By: MLawson	By:		AGS



Contract:				Client:		Boreho	ole:		
M1 Junction 15, N	North	nampton		Roxhi	l Developments Ltd			Cl	P14
Contract Ref:	Start:	26.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End:	26.08.14		79.92	E:475451.0 N:254653.1		1	of	1
Samples and In-situ Tests		ater fill & tru-			Description of Strate		Dept	Mar Gr	ateria

3	123	<u> </u>	End:	26.0	8.14	/9.92 E:4/5451.0 N:254053.1	1	of I
Samp Depth	les a	nd In-si	tu Tests Results	Water	Backfill & Instru-	Description of Strata	Depth (Thick ness)	
- 0.50-1.00	1	В	results	1		Soft brown slightly gravelly sandy silty CLAY. Gravel is subangular to subrounded fine to coarse quartzite, flint and rare brick with occasional rootlets. (AGRICULTURAL TOPSOIL) (TOPSOIL) Soft brown mottled grey slightly gravelly sandy CLAY. Gravel is subrounded fine to medium quartzite, flint and chalk.	0.30	
1.10 1.20-1.70 1.20	2 3	D U V	35 blows c _u =96	<u>_</u>		(OADBY MEMBER) Firm to stiff dark grey mottled dark brown slightly gravelly silty CLAY. Gravel is subrounded fine to medium chalk with pockets of grey silt.		O X O X X X X X X X
- 1.70 - 1.80 - 2.00-2.50	4 5 6	D D U	61 blows			(OADBY MEMBER)	(1.80)	x _ x
2.50	7	D					2.90	<u> </u>
2.80 3.00-3.45 3.00-3.45	8 1 9	D SPT B	N=34			Stiff/ dense grey mottled brown slightly sandy SILT. (OADBY MEMBER)	(1.00)	* · × · × · × · × · × · × · × · × · × ·
- 3.80 - 4.00-4.45 - 4.00-4.45	10 2 11	D SPT B	N=46			Stiff to very stiff dark grey CLAY. (Weathering Grade E) (WHITBY MUDSTONE FORMATION)	3.90	× × ×
- 4.80 - 5.00-5.30 - 5.00-5.45	12 3 13	D SPT(c) B	N=103*			Moderately strong dark grey MUDSTONE recovered as subangular fine to coarse gravel. (Weathering Grade C) (WHITBY MUDSTONE FORMATION)	4.80	
5.60	14	D					(2.20)	
6.00-6.30	4 15	SPT(c) B	N=97*				- - - - -	
7.00 - 7.50-7.67	16	D SPT	N=284*			Weak horizontal bedded dark grey slightly silty MUDSTONE. (Weathering Grade C) (WHITBY MUDSTONE FORMATION)	7.00	
-						Borehole termianted at 7.95m bgl.	7.95	

oven		Boring Pr	rogress and	Water	Obse	ervations		Chisel	ling / Slow	Progress	Canaral	D amortza
intre, c	Date	Time	Borehole	Casii	ng	Borehole Diameter	Water	From	То	Duration (hh;mm)	General	Remarks
3			Depth	Dep	_	(mm)	Depth			` ′	1. Location scanned with	GPR prior to breaking
rise	26/08/14	10:00	1.20	1.20	0	150	1.20	5.30	5.70	00:45	ground. No services de	
terp	26/08/14	10:20	1.20	1.20	0	150	1.20	6.80	7.50	01:00	2. Hand dug inspection p	
H H											3. Borehole advanced to	
The											4. Groundwater encounte	
ţġ,											Gas and groundwater r	nonitoring well installed
int I											to 5.00m bgl.	
Ĕ												
217											All dimensions in metres	Scale: 1:50
H H	Method			F	Plant				Drilled	P.B.	Logged	Checked
X	Used:	Cable r	ercussio	n I	Used:	D	ando 150	0	By: Dr	illing Lt	500	Checked By: AGS



PRELIMINARY BOREHOLE LOG

Contract:				Client:		Borehole	e:		
M1 Junction 15, N	Vortha	ampton		Roxhil	l Developments Ltd			\mathbf{C}	P15
Contract Ref:	Start: 2	22.08.14	Groun	d Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End: 2	26.08.14		80.89	E:475385.0 N:254581.0		1	of	2

	125	598	End:	26.0	8.14	80.89	E:4/5385.0 N:254581.0		1	of Z
Samp	oles a	nd In-si	tu Tests	Water	Backfill & Instru-mentation		Description of Strata		Depth (Thick	
Depth	No	Type	Results	≥	Back Ing men		2 compared of cumu		ness)	Legend
0.00-0.30	1 2 3	B ES B	Jx2+v			fine to medium quartzite a (AGRICULTURAL TOP (TOPSOIL)	slightly clayey SAND. Gravel is subround flint. With frequent roots. SOIL) gravelly sandy CLAY. Gravel is subrou		0.30	\$\frac{1}{2}\frac{1}{2
-						(OADBY MEMBER)		-	1.20	
1.20-1.65	1 4	SPT B	N=6			Soft to firm brownish ora subrounded fine to mediu (OADBY MEMBER)	ange slightly gravelly sandy CLAY. Gram chalk.	vel is	(0.80)	00
_									2.00	
2.00-2.45	5	SPT B	N=17			Firm to stiff dark grey r Gravel is subrounded fine (OADBY MEMBER)	nottled brown slightly gravelly sandy Control to coarse chalk.	LAY.	(1.50)	
- 3.00-3.45 - 3.00-3.45	3 6	SPT B	N=21	1					- ` ´ ´ ´ ´ ´ · · · · · · · · · · · · · ·	
		CDT	V 57*	<u>_</u>		Dense brown slightly gramedium chalk and flint. (GLACIOFLUVIAL DEI	velly fine SAND. Gravel is subrounded f	ine to	3.50	
- 4.00-4.42 - 4.00-4.45	7	SPT B	N=57*						(1.70)	0 8
5.00-5.41	5	SPT	N=58*					-	5.20	0
- - - -						Stiff dark grey slightly a coarse chalk. (GLACIOFLUVIAL DEI	gravelly CLAY. Gravel is subrounded fi POSITS)	ne to	(0.80)	
_									6.00	
6.00-6.45	8	U	130 blows 80% recovery			subrounded fine to coarse		el is	(0.50) 6.50	
6.50-6.70 6.50	9 10	B D				Moderately weak grey MI	UDSTONE. With frequent fossils.		-	
6.75	11	D				(Weathering Grade C) (WHITBY MUDSTONE	FORMATION)	-	(1.00)	
7.00	12	D					•		- · / -	
7.50.7.02		CDT(-)	Nr. 45			Mr. James 1	CH TOTONE		7.50	x x x x
7.50-7.93 7.50-7.95	13	SPT(c) B	N=45			Moderately strong dark gr (Weathering Grade C) (WHITBY MUDSTONE	•		- <u>/.0U</u> /- - -	
-						Stiff dark blueish grey CL (Weathering Grade E)	,		(1.20)	
0.50	1.4	ъ				(WHITBY MUDSTONE	FORMATION)		-	
8.50	14	D							8.80	
- 8.80-8.90	7	SPT(c)	N=300*		ŀH	Description on next sheet		Т	8.90	\times \times \times

Covent		Boring Pr	ogress and	Water Ol	servations		Chisel	ling / Slow	Progress	Canaral	D amortza
Centre, C	Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	То	Duration (hh:mm)	General	
ironment Ltd, The Enterprise C	22/08/14 10:00 3.50 3.00 150 3.					3.50 1.60	6.50 7.50 8.80	6.70 7.60 8.90	00:30 00:30 01:00	Location scanned with ground. No services de Hand dug inspection p Borehole advanced to 8 Groundwater encounte Gas and groundwater r to 8.90m bgl.	etected. it to 1.20m bgl. 8.90m bgl. ered 3.50m bgl.
KSK Environ	Method Used:				nt d: D	ando 15		Drilled By: D r	P.B. rilling Lt	All dimensions in metres Logged By: MLawson	Scale: 1:50 Checked By: AGS



PRELIMINARY

												DC		ПС	, L L		.UG
Contract: M1 Junction 15, Northampton Contract Ref: Start: 22.08.14								Client:						В	Borehol	le:	
M1	Jun	ction	15, N	orth	amı	oton			Roxh	ill	Develop	ments	Ltd				CP15
								d Level (National Grid			S	heet:		
	3125	598		End:	26.0	8.14		80.8	39		E:47538	35.0 N:	254581	0. l		2	of 2
Sam	ples a	nd In-si	tu Tests		ter	11 & u- tion										Depth	Material
Depth	No	Туре	I	sults	Water	Backfill & Instru-				D	Description of	f Strata				(Thick ness)	Graphic Legend
-							Stron	athering (ITBY M	rey SILTS Grade D) IUDSTON	VE F	FORMATION	1)				-	
								Во	orehole terr	mina	ated at 8.90m	bgl due to	hard strata	a.		· - -	
- - -																- -	
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	Boring Pr	rogress and	Water Ob	servations		Chisell	ing / Slo	w Progress	General	D amarl	7.0
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	То	Duration (hh:mm)	General	Kemark	722
			vp	()	vp						
									All dimensions in metres	Scale:	1:50
Method Used:	Cable p	ercussio	n Plan Used		ando 150		Drilled By:	P.B. Drilling Lt	d By: MLawson	Checked By:	AGS



PRELIMINARY BOREHOLE LOG

Contract:			Client:		Borehole):		
M1 Junction 15	, Northam	npton	Roxhi	ll Developments Ltd			Cl	P16
Contract Ref:	Start: 21.	.08.14 Groun	nd Level (m AOD):	National Grid Co-ordinate:	Sheet:			
312598	End: 22.	.08.14	81.34	E:475345.0 N:254552.1		1	of	2
		<i>⇔</i> −						

	114		Eliu.			01.5T E.T/55T5.0 1(.25T552.1		01 2
Sam	oles a	nd In-si	tu Tests	er	Backfill & Instru-mentation		Depth	Material
				Water	kfil nstru ntat	Description of Strata	(Thick	
Depth	No	Type	Results	>	Bac		ness)	Legend
- 0.00-0.25	1	В					0.25	7, 1/2 . 7, 1/2 . 7
0.25-0.90	2	В				fine to medium quartzite and flint. With frequent roots.	- 0.23	· <u>·</u> ····
-						(AGRICULTURAL TOPSOIL) (TOPSOIL)	(0.65)	
-						Brownish orange slightly clayey slightly gravelly SAND. Gravel is	-	- - - - - - - - - - - - - -
0.00.1.20	,	D				subrounded fine to coarse flint.	0.90	
-0.90-1.20	3	В				(GLACIOFLUVIAL DEPOSITS)	F	-::-::
1.20-1.65	1	SPT	N=12			Medium dense llght orangish brown slightly clayey fine to coarse	F	$+$ \top \div \Box
1.20	4	В				SAND. Gravel is subangular to subrounded fine to coarse flint. (GLACIOFLUVIAL DEPOSITS)	-	
-						(GLACIOFLO VIAL DEPOSITS)	-	
Ē							(2.10)	
2.00-2.35	2	SPT	N=5		∷ ∃ ∴		F	$[\ \ \cdots \ \ \ \ \ \ \]$
2.00	5	В					-	
F							-	
-							-	
-							3.00	— :]
3.00-3.45	3	SPT	N=51*		l::H::	Stiff to very stiff dark grey slightly gravelly CLAY. Gravel is	-	
3.00	6	В				subrounded fine to coarse chalk.	3.35	
-						\(\(\text{GLACIOFLUVIAL DEPOSITS}\)	(0.65)	
-						Dense brownish grey fine to coarse SAND. (GLACIOFLUVIAL DEPOSITS)	(0.65)	
-						(OLACIOFLO VIAL DEFOSITS)	4.00	
4.00-4.43	4	SPT	N=55*			Very stiff dark grey slightly sandy silty CLAY.	-	××
4.00	7	В				(GLACIOFLUVIÁL ĎEPOSITŠ)	4.40	
-						Dense brown clayey SAND and GRAVEL. Gravel is subangular to	F	
-						subrounded fine to medium mudstone, chalk and rare coal fragments.	(0.60)	
-						(GLACIOFLUVIAL DEPOSITS)	5.00	
5.00-5.45	5	SPT	N=51*	_	V V V	Dense brown slightly gravelly fine to coarse SAND. Gravel is subrounded fine to medium chalk and occasional quartzite.	-	· • · · · · ·
5.00	8	В				subrounded fine to medium chalk and occasional quartzite.	(0.70)	::0: :0
-						(GLACIOFLUVIAL DEPOSITS)		0
5.70		ъ				D I'ld II I' C	5.70	
5.70	9	D				Dense grey slightly gravelly silty fine to coarse SAND. Gravel is subrounded fine to coarse chalk.	6.00	[***::::::::::::::::::::::::::::::::::
6.00-6.45	6	SPT	N=51*			(GLACIOFLUVIAL DEPOSITS)	-	<u> </u>
6.00	10	В				Stiff dark grey slightly gravelly CLAY. Gravel is subrounded fine to	6.40	
F						coarse chalk.	-	
6 70 7 00	11	D				(GLACIOFLUVIAL DEPOSITS)	6.70	
6.70-7.00	11	В				Dense brownish grey fine to coarse SAND. (GLACIOFLUVIAL DEPOSITS)	7.00	
7.00	12	D				Grey MUDSTONE. With frequent fossils.	F	<u>xx</u>
F						(Weathering Grade C)	(1.00)	
7.50-7.95	13	U	130 blows			(WHITBY MUDSTONE FORMATION)	(1.00)	
[1.30-1.93	13	U	70% recovery			Stiff to very stiff grey slightly silty CLAY. With occasional selenite.	F	<u> </u>
7.50		V	c _u =302			(Weathering Grade É) \(WHITBY MUDSTONE FORMATION)	8.00	
8.00	14	D				Dark grey MUDSTONE.	8.10	X - X
E						(Weathering Grade C)	E	
8.50	15	D				(WHITBY MUDSTONE FORMATION)	(0.90)	xx
[0.30	13	ע				Stiff to very stiff dark grey slightly silty CLAY. With occasional	E	
<u> </u>						selenite.	9.00	

Oveni		Boring Pr	rogress and	Water Ob	servations		Chisel	ling / Slow	Progress	General	Domortza
Centre, C	Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	То	Duration (hh:mm)		
nvironment Ltd, The Enterprise C	21/08/14 21/08/14	10:00 10:20	5.00 5.00	4.50 4.50	150 150	5.00 3.00	6.70 9.00	7.00 9.10	00:45 01:00	Location scanned with ground. No services de Hand dug inspection p Borehole advanced to 9 Groundwater encounte Gas and groundwater r to 5.00m bgl.	etected. it to 1.20m bgl. 9.10m bgl. ered at 5.00m bgl.
KSK Enviror	Method Used:				Plant Used: Dando 15			Drilled By: D 1	P.B. rilling Lt	All dimensions in metres Logged By: MLawson	Scale: 1:50 Checked By: AGS



PRELIMINARY BORFHOLF LOG

											DUKE		.C L	JUG
Contract:								Client:				Bore	hole:	
M1	Jur	ction	15, N	North	amp	oton			Roxh	ill]	Developments Ltd			CP16
Contract Re	f:			Start:	21.0	8.14	Groun	d Level	(m AOD):		National Grid Co-ordinate:	Shee	t:	
,	312	598		End:	22.0	8.14		81	34		E:475345.0 N:254552	2.1	2	of 2
	1	nd In-sit			Water	Backfill & Instru-				De	escription of Strata		Depth (Thick	Graphic
Depth	No	Туре		sults	>	Bac In	1				•		ness)	Legend
9.00-9.06	7 8	SPT(c) SPT(c)	N= N=	750* 600*			(Wea (WH Med (Wea	IITBY Mium stro athering IITBY M	ng thinly b Grade C) IUDSTON	edde IE F0	ORMATION) ed dark brownish grey SILTSTO ORMATION) ted at 9.10m bgl due to hard stra		9.10	XXXX

	Boring Pr	rogress and	Water Ob	servations		Chisel	ling / Slo	ow Progre	ess	General	Domor	120	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	То	Dura (hh:r		General	Keman	KS	
									-	All dimensions in metres	Scale:	1:50	
Method Used:						0	Drilled By:	P.E Drilling		Logged By: MLawson	Checked By:	1100	AGS



APPENDIX F IN-SITU SOAKAWAY TEST RESULTS



STRUCTURAL SOILS LTD

an		INSITU TESTING	REPORT		
Report No.	744983R.01(00)				
Date	02-September-2014	Contract M1, Junctio	on 15		
Client Address	RSK Environment Limited Abbey Park Humber Road Coventry CV3 4AQ				
For the Atten	tion of Darren Ber	nch			
Order receive Testing Starte Testing Com	ed	18-August-2014 26-August-2014 26-August-2014	Client Reference Client Order No. Instruction Type	312598 P0243168 Written	
Test(s) under	taken (Not UKAS Accredited)			
	pakaway tests carried out at loo	cations specified by client.			
Environment	al conditions (if relevant)				
The results re	epresent the ground conditions	s at the specified locations a	nd depths at the time of	testing.	
Test were unde	emaining samples will be retained ertaken on samples 'as received' un nterpretations expressed in this re	nless otherwise stated.			
	•	•		Page 1 of 4	

Structural Soils Ltd 1a Princess Street Bedminster Bristol BS3 4AG Tel.0117 9471000 Fax.0117 9471004 e-mail justin.barrett@soils.co.uk

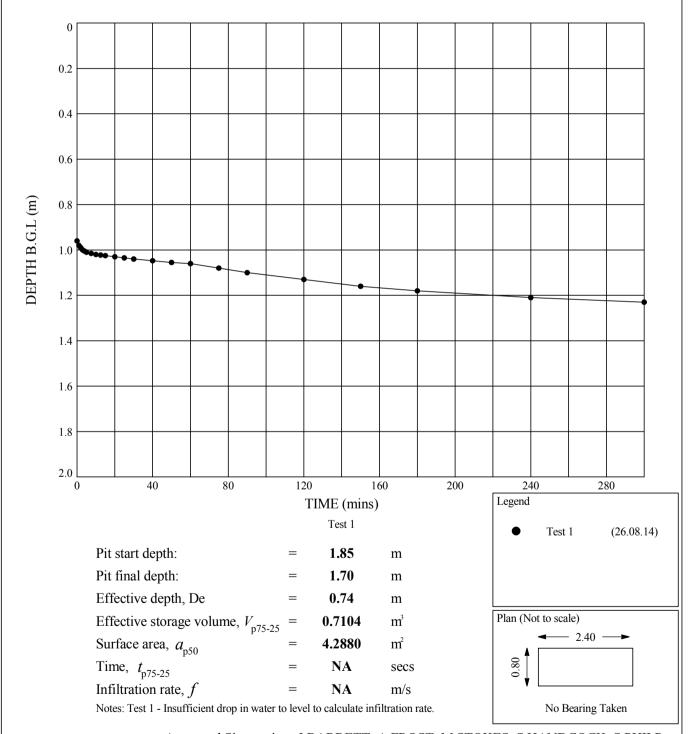
GINT LIBRARY V8 05. GLB LibVersion: v8 05 - Lib0004 PrjVersion: v8 05 - Core+In Situ Testing - 0003 | Graph I - TP SOAKAWAY - 2 - FINAL REPORT | 744983. GPJ - v8 05 | 01/09/14 - 11:36 | EN

FULL SCALE SOAKAWAY TEST

Non standard test

Soakaway Test - Position ID: TPS5

PLOT OF DEPTH OF WATER BELOW GROUND LEVEL AGAINST TIME



Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP



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1a Princess Street
Bedminster
Bristol
BS3 4AG

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	Compiled By	Date	Checked By	Date
	e.100	01/09/14	SHA	01/09/14
	Contract		Contract Ref:	
	M1, Junction 15		744983	

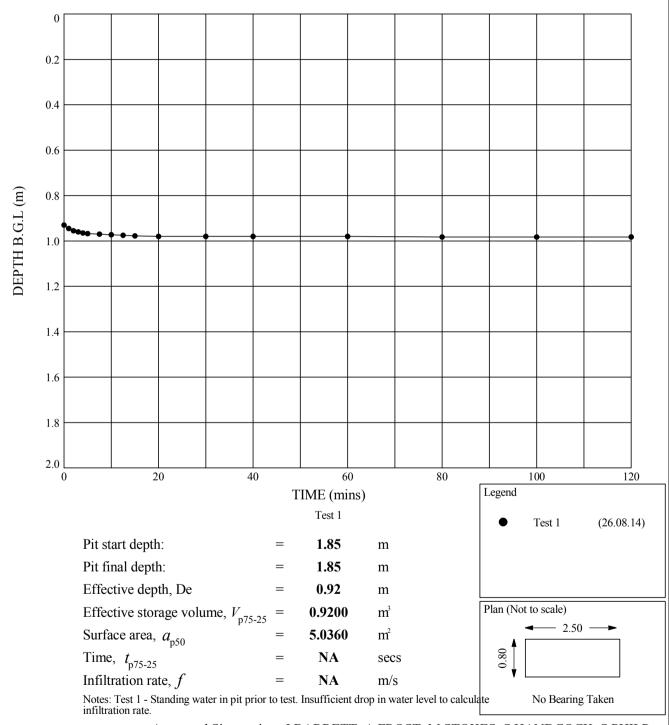
GINT LIBRARY V8 05. GLB LibVersion: v8 05 - Lib0004 PrjVersion: v8 05 - Core+In Situ Testing - 0003 | Graph I - TP SOAKAWAY - 2 - FINAL REPORT | 744983. GPJ - v8 05 | 01/09/14 - 11:37 | EN

FULL SCALE SOAKAWAY TEST

Non standard test

Soakaway Test - Position ID: TPS15

PLOT OF DEPTH OF WATER BELOW GROUND LEVEL AGAINST TIME



Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP



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Bristol
BS3 4AG

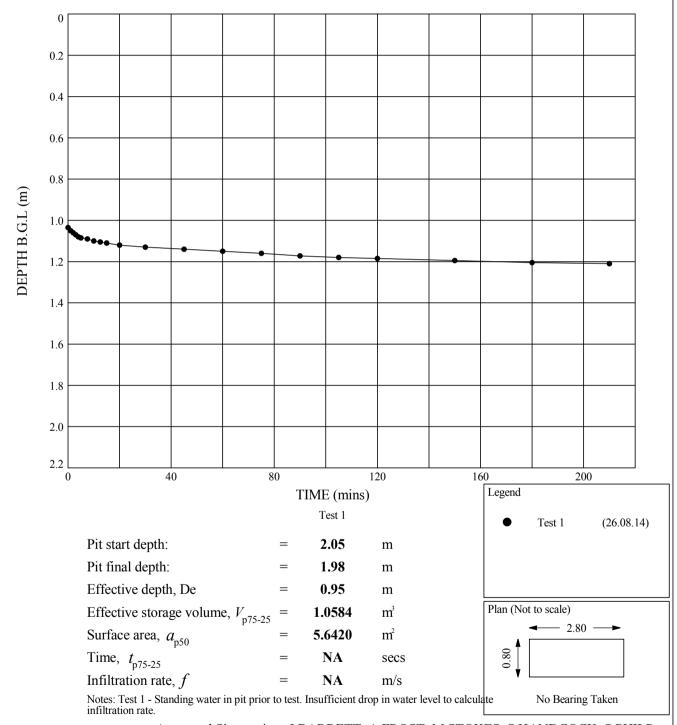
	M1, Junction 15		744983						
	Contract		Contract Ref:						
	e.100	01/09/14	SHOW	01/09/14					
	Compiled By	Date	Checked By	Date					
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FULL SCALE SOAKAWAY TEST

Non standard test

Soakaway Test - Position ID: TPS20

PLOT OF DEPTH OF WATER BELOW GROUND LEVEL AGAINST TIME



Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP



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Bedminster
Bristol
BS3 4AG

Contract M1, Junction 15		Contract Ref: 744983				
e.100	01/09/14		01/09/14			
Compiled By	Date	Checked By	Date			
 wiles. V.Britter I hartest has rolled state because the						



APPENDIX G GEOTECHNICAL LABORATORY TESTING RESULTS



FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 14/04815

Issue Number: 1 **Date:** 22 September, 2014

Client: RSK Environment Ltd Coventry

Humber Road, Abbey Park

Coventry

UK

CV3 4AQ

Project Manager: Darren Bench

Project Name: Junction 15 M1 West

Project Ref: 312598 Order No: N/A

Date Samples Received:09/09/14Date Instructions Received:09/09/14Date Analysis Completed:22/09/14

Prepared by: Approved by:

Gill Scott Iain Haslock

Laboratory Manager Analytical Consultant



Envirolab Job Number: 14/04815 Client Project Name: Junction 15 M1 West

Client Project Ref: 312598

					-					
Lab Sample ID	14/04815/1	14/04815/2	14/04815/3	14/04815/4	14/04815/5	14/04815/6	14/04815/7	14/04815/8		
Client Sample No	9	16	23	29						
Client Sample ID	BH1	BH1	BH1	BH1	BH2	BH2	BH2	BH2		
Depth to Top	2.60	6.00	8.60	12.00	1.80	3.80	7.50	10.50		
Depth To Bottom										
Date Sampled										Į.
Sample Type	Soil - D		Method ref							
MCERTS Sample Matrix Code	6	6	1	1	5	5	5	5	Units	Meth
% Stones >10mm _A #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	% w/w	A-T-044
pH BRE _D M#	7.83	7.90	9.01	8.78	8.45	7.99	8.03	8.23	pН	A-T-031s
Sulphate BRE (water sol 2:1) _D ^{M#}	1610	575	41	11	59	344	345	200	mg/l	A-T-026s
Sulphate BRE (acid sol) _D ^{M#}	2.49	0.24	<0.02	<0.02	0.07	0.23	0.21	0.05	% w/w	A-T-028s
Sulphur BRE (total) _D	0.97	0.40	<0.01	<0.01	0.04	0.56	0.53	0.03	% w/w	A-T-024s



Envirolab Job Number: 14/04815 Client Project Name: Junction 15 M1 West

Client Project Ref: 312598

Lab Sample ID	14/04815/9	14/04815/10	14/04815/11	14/04815/12	14/04815/13	14/04815/14	14/04815/15	14/04815/16		
Client Sample No										
Client Sample ID	BH2	ВН3	ВН3	ВН8	ВН9	ВН9	BH13	BH13		
Depth to Top	13.50	2.80	4.80	8.50	1.70	7.00	1.70	7.50		
Depth To Bottom										
Date Sampled										¥.
Sample Type	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D		Method ref
MCERTS Sample Matrix Code	4A	1A	1A	5	5A	5	5A	5	Units	Meth
% Stones >10mm _A #	6.5	9.1	4.8	<0.1	<0.1	<0.1	<0.1	<0.1	% w/w	A-T-044
pH BRE _D ^{M#}	8.49	7.78	7.92	7.55	8.25	8.09	8.42	7.97	рН	A-T-031s
Sulphate BRE (water sol 2:1) _D ^{M#}	89	<10	<10	578	149	290	72	821	mg/l	A-T-026s
Sulphate BRE (acid sol) _D ^{M#}	0.05	<0.02	<0.02	0.24	0.06	0.14	0.04	0.24	% w/w	A-T-028s
Sulphur BRE (total) _D	0.03	<0.01	<0.01	0.89	0.05	0.26	0.02	0.80	% w/w	A-T-024s



Envirolab Job Number: 14/04815 Client Project Name: Junction 15 M1 West

Client Project Ref: 312598

	1	1	1	1	1	1	1	1		1
Lab Sample ID	14/04815/17	14/04815/18	14/04815/19	14/04815/20						
Client Sample No										
Client Sample ID	BH13	BH14	BH14	TP14						
Depth to Top	11.50	1.70	2.80	1.50						
Depth To Bottom										
Date Sampled				27-Aug-14						-
Sample Type	Soil - D	Soil - D	Soil - D	Soil - D					,	Method ref
MCERTS Sample Matrix Code	5	6A	5	5					Units	Meth
% Stones >10mm _A #	<0.1	<0.1	<0.1	<0.1					% w/w	A-T-044
pH BRE _D ^{M#}	7.80	8.01	7.93	8.42					pН	A-T-031s
Sulphate BRE (water sol 2:1) _D ^{M#}	628	219	327	83					mg/l	A-T-026s
Sulphate BRE (acid sol) _D ^{M#}	0.22	0.14	0.17	0.05					% w/w	A-T-028s
Sulphur BRE (total) _D	1.04	0.71	0.69	0.03					% w/w	A-T-024s



REPORT NOTES

Notes - Soil chemical analysis

All results are reported as dry weight (<40 °C).
For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General

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

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts.

Superscript "M" indicates method accredited to MCERTS

If results are in italic font they are associated with an AQC failure and are not accredited. The results may be unreliable. A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

TPH analysis of water by method A-T-007

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos in soil

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if present as discrete fibres/fragments. Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified a being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

1 = SAND. 2 = LOAM. 3 = CLAY. 4 = LOAM/SAND. 5 = SAND/CLAY. 6 = CLAY/LOAM. 7 = OTHER.

Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.



STRUCTURAL SOILS LTD

TEST REPORT



Report No. 745045R.01(00) 1774

Date 15-October-2014 Contract Junction 15 M1 West

Client RSK Environment Limited

Address Abbey Park

Humber Road Coventry CV3 4AQ

For the Attention of Darren Bench

Samples submitted by client	15-September-2014	Client Reference	312598
Testing Started	19-September-2014	Client Order No.	None
Testing Completed	12-October-2014	Instruction Type	Written

Tests marked 'Not UKAS Accredited' in this report are not included in the UKAS Accreditation Schedule for our Laboratory.

UKAS Accredited Tests

1.01	Moisture Content (oven drying method) BS1377:Part 2:1990:clause 3.2
1.03	Liquid Limit (one point method) & Plastic Limit BS1377:Part 2:1990,clause 4.4/5.3
1.10	Particle Size Distribution wet sieve method BS1377:Part 2:1990,clause 9.2
3.02	Dry density/moisture content relationship 4.5kg rammer method BS1377:Part 4:1990
	clause 3.5
3.06	Moisture condition value natural moisture content BS1377:Part 4:1990,clause 5.4
3.07	Moisture condition value/moisture content relationship BS1377:Part 4:1990,clause 5.5
3.10	California Bearing Ratio BS1377:Part 4:1990,clause 7.4
5.05	Undrained shear strength triaxial compression without pore pressure measurement
	(multistage loading) BS1377:Part 7:1990,clause 9.4

Not UKAS Acredited Tests

1.13	Particle Size Distribution sedimentation hydrometer method BS1377:Part 2:
	1990,clause 9.5
4.01	One-dimensional consolidation BS1377:Part 5:1990,clause 3.5
P97	Hand Vane

Please Note: Remaining samples will be retained for a period of one month from today and will then be disposed of .

Test were undertaken on samples 'as received' unless otherwise stated.

Opinions and interpretations expressed in this report are outside the scope of accreditation for this laboratory.

Page 1 of 102

Structural Soils Ltd 1a Princess Street Bedminster Bristol BS3 4AG Tel.0117 9471000 Fax.0117 9471004 e-mail just.barrett@soils.co.uk

GINT_LIBRARY V8_05.GLB LibVersion: v8_05 - Lib0004 PijVersion: v8_05 - Core+Logs+Geotech Lab-Bristol - 0003 | GrfcText L - LAB VERIFICATION REPORT | 745045.GPJ - v8_05 | 15/10/14 - 07:14 | JB. Structural Soils Ltd. Branch Office - Bristol Lab: 1a Princess Street, BedminsTer, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk.

TESTING VERIFICATION CERTIFICATE



1774

The test results included in this report are certified as:-

ISSUE STATUS: FINAL

In accordance with Structural Soils Ltd Laboratory Quality Assurance Manual, Issue 6, January 2010 all results sheets and summaries of results issued by the laboratory are checked by an approved signatory. This check will also involve checking of at least 10% of calculations for each test type to ensure that data has been correctly entered into the computer and calculated. The integrity of the test data and results are ensured by control of the computer system employed by the laboratory as part of the Software Verification Program as detailed in the Laboratory Quality Assurance Manual.

This testing verification certificate covers all testing compiled on or before the following datetime: 15/10/2014 07:13:08.

Testing reported after this date is not covered by this Verification Certificate.

3802 H

Approved Signatory **Justin Barrett (Laboratory Manager)**



STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Contract:

Junction 15 M1 West

Job No:



GINT_LIBRARY Vg 05.GLB LibVersion: v8 05 - Lib0004 PijVersion: v8 05 - Core+Logs+Geotech Lab-Bristol - 0003 | GrfcTbl L - SUMMARY OF STANDALONE MC - A4P | 745045.GPJ - v8 05 | 11/10/14 - 07:52 | AF. Structural Soils Lid, Branch Office - Bristol Lab Fincess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk.

SUMMARY OF MOISTURE CONTENT TESTS In accordance with clause 3.2 of BS1377:Part 2

Exploratory Position ID	Sample Ref	Depth (m)	Sample Type	Moisture Content (%)
BH1	10	3.00	DSPT	25
BH1	12	4.00	DSPT	21
BH1	14	5.00	DSPT	25
BH1	17	6.50	DSPT	27
BH2		3.00	DSPT	24
BH2		4.00	DSPT	32
BH2		5.00	DSPT	21
BH2		6.50	DSPT	22
TP6		2.60	В	8.7
TP11		3.50	В	26
TP13	2	2.10	LB	28

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS



Compiled By

ALAN FROST

Contract Ref:

11/10/14

Date

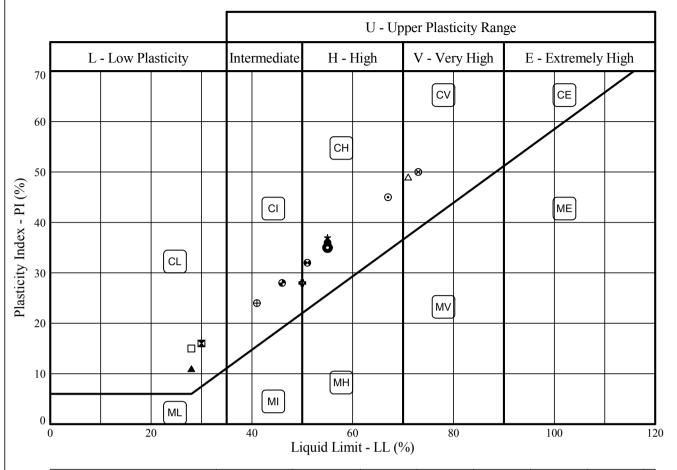
Contract:

Junction 15 M1 West

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PLASTICITY CHART - PI Vs LL
In accordance with clause 42.3 of BS5930:1999
Testing in accordance with BS1377-2:1990



	Sample Identification		BS Test Preparation	MC	LL	PL	PI	<425um			
	Exploratory Position ID	Sample	Depth (m)	Method #	Method +	%	%	%	%	%	
	BH1	7DSPT	2.00	3.2/4.4/5.3/5.4	4.2.3	24	55	19	36	100	٦
	BH1	19D	7.50	3.2/4.4/5.3/5.4	4.2.4	19	30	14	16	88	٦
	BH2	DSPT	2.00	3.2/4.4/5.3/5.4	4.2.3	24	28	17	11	87	
*	BH2	D	4.80	3.2/4.4/5.3/5.4	4.2.3	22	55	18	37	100	
0	BH2	U	8.19	3.2/4.4/5.3/5.4	4.2.3	22	67	22	45	100	
O	BH3	U	7.79	3.2/4.4/5.3/5.4	4.2.3	19	50	22	28	100	
0	BH5	U	1.20	3.2/4.4/5.3/5.4	4.2.3	30	55	20	35	100	
Δ	BH5	U	3.00	3.2/4.4/5.3/5.4	4.2.3	28	71	22	49	100	
\otimes	BH5	U	5.15	3.2/4.4/5.3/5.4	4.2.3	29	73	23	50	100	
Ф	BH6	U	1.45	3.2/4.4/5.3/5.4	4.2.3	25	41	17	24	98	
	BH8	12U	5.00	3.2/4.4/5.3/5.4	4.2.3	13	28	13	15	92	
8	BH9	2U	1.24	3.2/4.4/5.3/5.4	4.2.3	14	51	19	32	100	
•	BH10	2U	1.25	3.2/4.4/5.3/5.4	4.2.3	23	46	18	28	99	

Tested in accordance with the following clauses of BS1377-2:1990.

- 3.2 Moisture Content4.3 Cone Penetrometer Method4.4 One Point Cone Penetrometer Method
- 4.6 One Point Casagrande Method
- 5.3 Plastic Limit Method 5.4 Plasticity Index

+ Tested in accordance with the following clauses of BS1377-2:1990.

4.2.3 - Natural State 4.2.4 - Wet Sieved

Key: * = Non standard test, NP = Non plastic.

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS



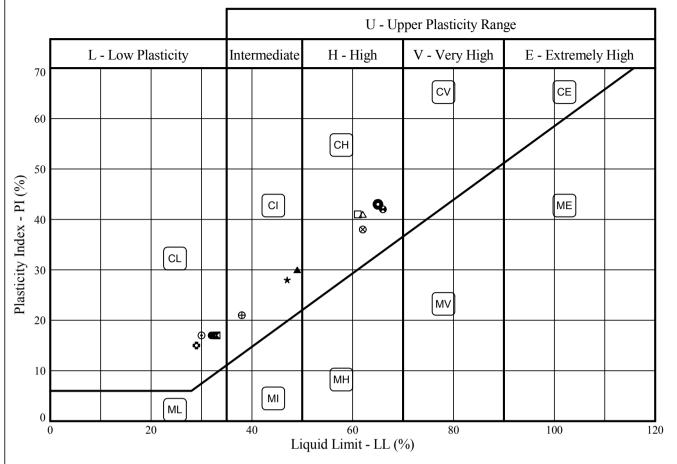
STRUCTURAL SOILS 1a Princess Street Bedminster **Bristol** BS3 4AG

	Compiled By						
	A.S. fre	ALAN FROST	11/10/14				
	Contract	Contract Ref:	•				

Junction 15 M1 West



PLASTICITY CHART - PI Vs LL
In accordance with clause 42.3 of BS5930:1999
Testing in accordance with BS1377-2:1990



	Sample Identification		ion	BS Test Preparation	MC	LL	PL	PI	<425um		
	Exploratory Position ID	Sample	Depth (m)	Method #	Method +	%	%	%	%	%	
	BH11	9U	3.03	3.2/4.4/5.3/5.4	4.2.3	15	32	15	17	91	٦
	BH12	3U	1.30	3.2/4.4/5.3/5.4	4.2.3	10	33	16	17	100	٦
	BH13	3U	1.44	3.2/4.4/5.3/5.4	4.2.3	20	49	19	30	99	٦
*	BH13	7U	3.00	3.2/4.4/5.3/5.4	4.2.3	22	47	19	28	99	
0	BH14	U	2.35	3.2/4.4/5.3/5.4	4.2.3	14	30	13	17	86	
0	BH15	14U	6.18	3.2/4.4/5.3/5.4	4.2.3	12	29	14	15	95	
0	TP2	1LB	1.20	3.2/4.4/5.3/5.4	4.2.3	25	65	22	43	99	
Δ	TP2	2LB	2.80	3.2/4.4/5.3/5.4	4.2.3	26	62	21	41	100	
8	TP2	В	4.40	3.2/4.4/5.3/5.4	4.2.3	30	62	24	38	100	
Ф	TP7	В	1.20	3.2/4.4/5.3/5.4	4.2.4	18	38	17	21	56	
	TP10	1LB	1.00	3.2/4.4/5.3/5.4	4.2.3	24	61	20	41	94	
8	TP10	2LB	2.40	3.2/4.4/5.3/5.4	4.2.3	27	66	24	42	99	
	TP10	3LB	3.10	3.2/4.4/5.3/5.4	4.2.4	8.9	NP	NP	NP	46	

Tested in accordance with the following clauses of BS1377-2:1990.

- 3.2 Moisture Content4.3 Cone Penetrometer Method4.4 One Point Cone Penetrometer Method
- 4.6 One Point Casagrande Method
- 5.3 Plastic Limit Method 5.4 Plasticity Index

+ Tested in accordance with the following clauses of BS1377-2:1990.

4.2.3 - Natural State 4.2.4 - Wet Sieved

Key: * = Non standard test, NP = Non plastic.

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STRUCTURAL SOILS 1a Princess Street Bedminster **Bristol** BS3 4AG

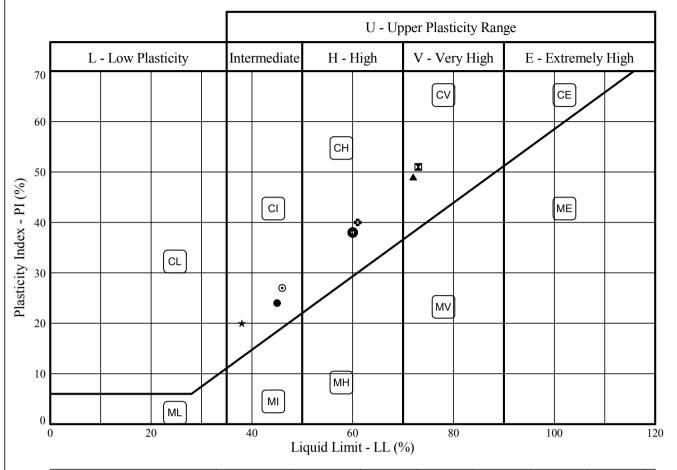
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Contract	Contract Ref:			

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PLASTICITY CHART - PI Vs LL
In accordance with clause 42.3 of BS5930:1999
Testing in accordance with BS1377-2:1990



	Sample Identification			BS Test Preparation	MC	LL	PL	PI	<425um	
	Exploratory Position ID	Sample	Depth (m)	Method #	S Test Preparation Method +	%	%	%	%	%
•	TP11	В	1.20	3.2/4.4/5.3/5.4	4.2.3	28	45	21	24	99
\blacksquare	TP13	1LB	1.20	3.2/4.4/5.3/5.4	4.2.3	30	73	22	51	99
▲	TP13	3LB	3.20	3.2/4.4/5.3/5.4	4.2.3	29	72	23	49	100
*	TP14	D	3.80	3.2/4.4/5.3/5.4	4.2.3	23	38	18	20	100
0	TP17	В	1.00	3.2/4.4/5.3/5.4	4.2.3	22	46	19	27	99
0	TP22	В	1.00	3.2/4.4/5.3/5.4	4.2.3	21	61	21	40	98
0	TP22	В	1.80	3.2/4.4/5.3/5.4	4.2.3	27	60	22	38	100

Tested in accordance with the following clauses of BS1377-2:1990.

- 3.2 Moisture Content4.3 Cone Penetrometer Method4.4 One Point Cone Penetrometer Method
- 4.6 One Point Casagrande Method
- 5.3 Plastic Limit Method 5.4 Plasticity Index

+ Tested in accordance with the following clauses of BS1377-2:1990.

4.2.3 - Natural State 4.2.4 - Wet Sieved

Key: * = Non standard test, NP = Non plastic.

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A.S. fre		ALAN FROST		11/10/14
Contract		Contract Ref:		

Junction 15 M1 West



In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index %	% <425um	MCV (%)	% retained on 20 mm sieve	Description of Sample
ВН1	7	DSPT	2.00	24	55	19	36	100			Dark brown CLAY
BH1	10	DSPT	3.00	25							Dark brown CLAY
BH1	12	DSPT	4.00	21							Dark grey CLAY
BH1	14	DSPT	5.00	25							Dark grey CLAY
BH1	17	DSPT	6.50	27							Dark grey mottled orange CLAY
BH1	19	D	7.50	19	30	14	16	88			Orangish brown slightly sandy slightly gravelly CLAY
BH2		DSPT	2.00	24	28	17	11	87			Orange mottled grey slightly gravelly sandy CLAY
ВН2		DSPT	3.00	24							Dark brown CLAY

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Contract: Contract Ref:

Junction 15 M1 West



In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index %	% <425um	MCV (%)	% retained on 20 mm sieve	Description of Sample
ВН2		DSPT	4.00	32							Grey mottled brown CLAY
BH2		D	4.80	22	55	18	37	100			Dark grey CLAY
BH2		DSPT	5.00	21							Dark brown CLAY
BH2		DSPT	6.50	22							Dark grey CLAY
BH2		U	8.19	22	67	22	45	100			Dark grey CLAY
ВН3		U	7.79	19	50	22	28	100			Grey slightly sandy CLAY
BH5		U	1.20	30	55	20	35	100			Brown mottled grey CLAY
BH5		U	3.00	28	71	22	49	100			Brown mottled grey CLAY

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Contract: Contract Ref:

Junction 15 M1 West



In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index %	% <425um	MCV (%)	% retained on 20 mm sieve	Description of Sample
ВН5		U	5.15	29	73	23	50	100			Brown mottled grey CLAY
ВН6		U	1.45	25	41	17	24	98			Light brown mottled dark brown slightly gravelly CLAY
BH8	12	U	5.00	13	28	13	15	92			Grey mottled brown slightly gravelly slightly sandy CLAY
ВН9	2	U	1.24	14	51	19	32	100			Brown mottled grey slightly gravelly CLAY
BH10	2	U	1.25	23	46	18	28	99			Grey mottled orangish brown mottled grey slightly gravelly CLAY
BH11	9	U	3.03	15	32	15	17	91			Grey mottled orangish brown slightly gravelly slightly sandy CLAY
BH12	3	U	1.30	10	33	16	17	100			Orangish brown mottled grey sandy CLAY
BH13	3	U	1.44	20	49	19	30	99			Orangish brown mottled grey slightly gravelly CLAY

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Contract: Contract Ref:

Junction 15 M1 West



In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index %	% <425um	MCV (%)	% retained on 20 mm sieve	Description of Sample
BH13	7	U	3.00	22	47	19	28	99			Brownish grey mottled orange slightly gravelly CLAY
BH14		U	2.35	14	30	13	17	86			Greyish brown slightly sandy slightly gravelly CLAY
BH15	14	U	6.18	12	29	14	15	95			Grey slightly gravelly slightly sandy CLAY
TP2	1	LB	1.20	25	65	22	43	99			Light brown slightly gravelly slightly sandy CLAY
TP2	2	LB	2.80	26	62	21	41	100	10.9	0	Grey slightly sandy CLAY
TP2		В	4.40	30	62	24	38	100			Dark brown slightly sandy CLAY
TP6		В	2.60	8.7							Reddish brown very gravelly SAND
TP7		В	1.20	18	38	17	21	56			Yellowish brown slightly gravelly slightly sandy silty CLAY



Contract: Contract Ref:

Junction 15 M1 West



In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index %	% <425um	MCV (%)	% retained on 20 mm sieve	Description of Sample
TP10	1	LB	1.00	24	61	20	41	94	10.7	0	Dark brown slightly gravelly slightly sandy CLAY
TP10	2	LB	2.40	27	66	24	42	99			Brown mottled grey slightly sandy CLAY
TP10	3	LB	3.10	8.9	NP	NP	NP	46			Orangish brown very gravelly SAND
TP11		В	1.20	28	45	21	24	99			Light brown slightly gravelly slightly sandy silty CLAY
TP11		В	3.50	26							Grey CLAY
TP13	1	LB	1.20	30	73	22	51	99	10.8	0	Dark brown slightly gravelly slightly sandy CLAY
TP13	2	LB	2.10	28					12.2	0	Dark brown slightly sandy CLAY
TP13	3	LB	3.20	29	72	23	49	100	12.6	0	Light brown slightly sandy CLAY

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Contract: Contract Ref:

Junction 15 M1 West



In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index %	% <425um	MCV (%)	% retained on 20 mm sieve	Description of Sample
TP14		D	3.80	23	38	18	20	100			Dark grey CLAY
TP17		В	1.00	22	46	19	27	99			Brown mottled grey slightly gravelly slightly sandy CLAY
TP22		В	1.00	21	61	21	40	98			Dark brown mottled grey slightly sandy slightly gravelly CLAY
TP22		В	1.80	27	60	22	38	100			Brown mottled grey slightly gravelly slightly sandy CLAY

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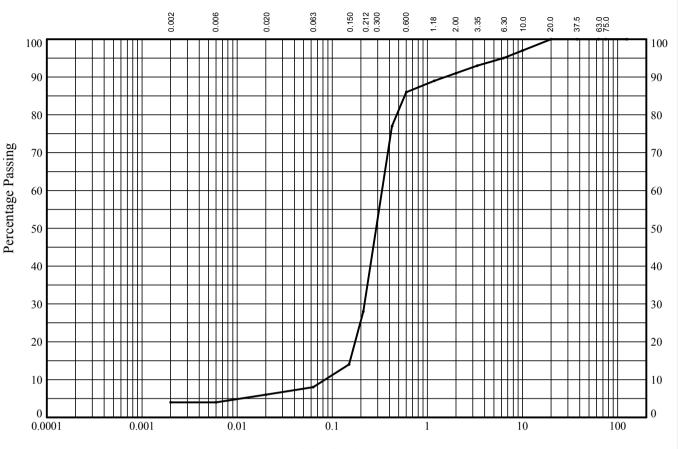
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Junction 15 M1 West



In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Borehole: BH1 Sample Ref: 25 Sample Type: 9.50 B Depth (m):



Particle Size (mm)

CLAV	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
CLAT		SILT			SAND		(GRAVEI		COBBLES

BS Test	Percentage
Sieve (mm)	Passing
125.0 75.0 63.0 37.5 20.0 10.0 6.30 3.35 2.00 1.18 0.600 0.425 0.212 0.150 0.063	100 100 100 100 100 97 95 93 91 89 86 77 28 14

Particle	Percentage
Diameter	Passing
0.02	6
0.006	4
0.002	4

Soil	Sieve
Fraction	Percentage
GRAVEL	9
SAND	83
SILT	4
CLAY	4

Soil Description:

Brown slightly clayey gravelly SAND

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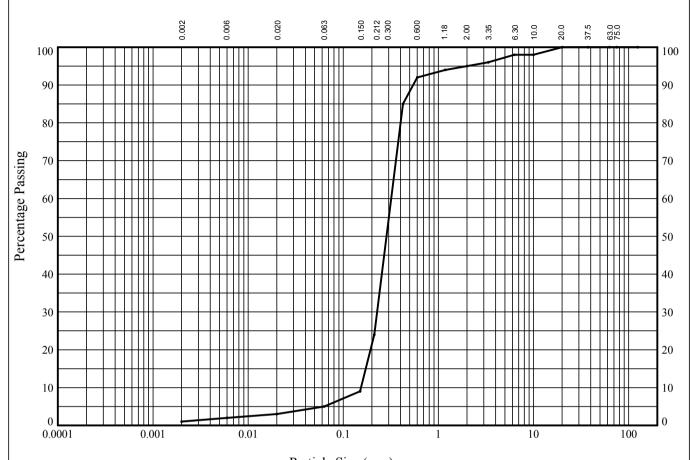
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In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Sample Type: Borehole: BH1 34 B Sample Ref: Depth (m): 14.00



Particle Size (mm)	
--------------------	--

CLAV	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
CLAT		SILT			SAND		(GRAVEI		COBBLES

BS Test	Percentage
Sieve (mm)	Passing
125.0 75.0 63.0 37.5 20.0 10.0 6.30 3.35 2.00 1.18 0.600 0.425 0.212 0.150 0.063	100 100 100 100 100 100 98 98 96 95 94 92 85 24 9
	-

Particle	Percentage	Soil
Diameter	Passing	Fraction
0.02 0.006 0.002	3 2 1	GRAVEL SAND SILT CLAY

Soil Description:

Brown slightly silty slightly gravelly SAND

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Sieve Percentage

5

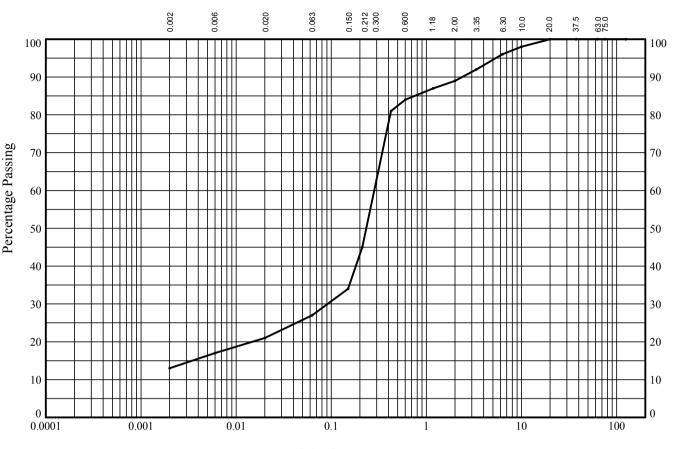
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In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Sample Type: Borehole: BH2 Sample Ref: B Depth (m): 12.50



Particle Size (mm)

CLAV	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
CLAT		SILT			SAND		(GRAVEI		COBBLES

BS Test	Percentage
Sieve (mm)	Passing
125.0 75.0 63.0 37.5 20.0 10.0 6.30 3.35 2.00 1.18 0.600 0.425 0.212 0.150 0.063	100 100 100 100 100 100 98 96 92 89 87 84 81 45 34 27

Particle	Percentage
Diameter	Passing
0.02	21
0.006	17
0.002	13

Soil	Sieve
Fraction	Percentage
GRAVEL	11
SAND	62
SILT	14
CLAY	13

Soil Description:

Brown gravelly clayey SAND

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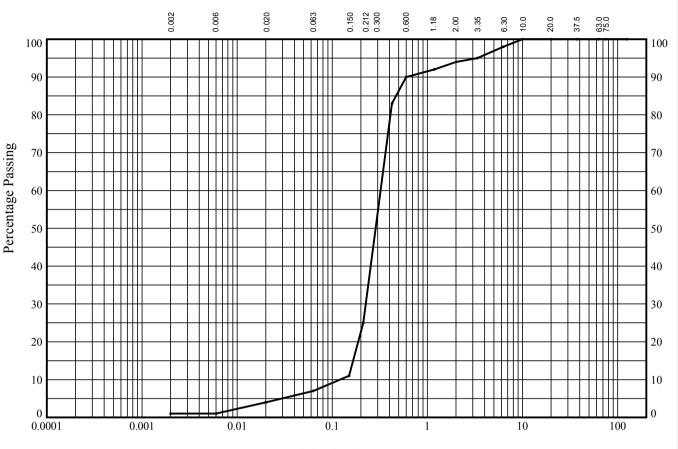
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In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Borehole: BH3 Sample Type: Sample Ref: B Depth (m): 3.00



Particle Size (mm)

CLAV	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
CLAT		SILT			SAND			GRAVEI		COBBLES

BS Test	Percentage
Sieve (mm)	Passing
125.0 75.0 63.0 37.5 20.0 10.0 6.30 3.35 2.00 1.18 0.600 0.425 0.212 0.150	1 assing 100 100 100 100 100 100 98 95 94 92 90 83 25 11
0.063	7
1	

Particle	Percentage
Diameter	Passing
0.02	4
0.006	1
0.002	1

Soil	Sieve				
Fraction	Percentage				
GRAVEL	6				
SAND	87				
SILT	6				
CLAY	1				

Soil Description:

Orangish brown gravelly silty SAND

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS



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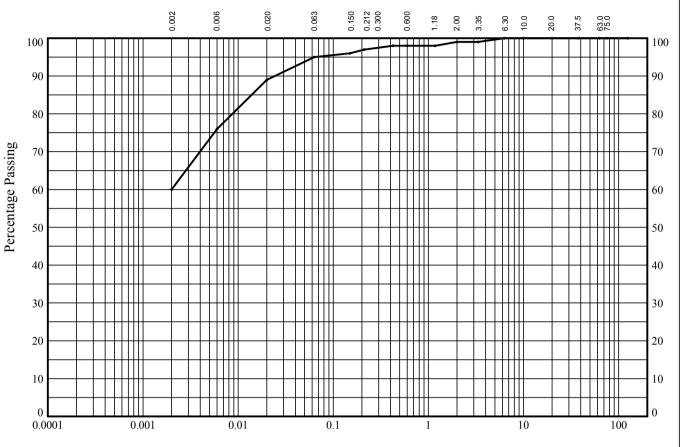
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In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Trial Pit: **TP2** Sample Ref: 1 Sample Type: **LB** Depth (m): **1.20**



Particle Size (mm)

CLAV	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
CLAT		SILT			SAND		(GRAVEI		COBBLES

	_
BS Test	Percentage
Sieve (mm)	Passing
125.0	100
75.0	100
63.0	100
37.5	100
20.0	100
10.0	100
6.30	100
3.35	99
2.00	99
1.18	98
0.600	98
0.425	98
0.212	97
0.150	96
0.063	95

Particle	Percentage
Diameter	Passing
0.02	89
0.006	76
0.002	60

Soil	Sieve				
Fraction	Percentage				
GRAVEL	1				
SAND	4				
SILT	35				
CLAY	60				

Soil Description:

Light brown slightly gravelly slightly sandy CLAY

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS



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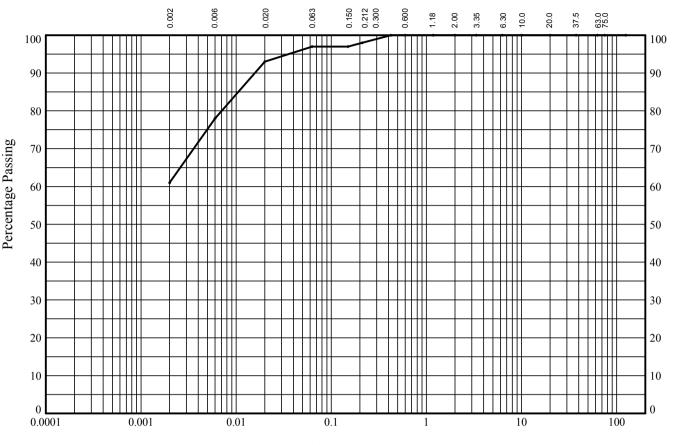
Compiled By					
A.S. fre	ALAN FROST	11/10/14			
Contract	Contract Ref:	-			

Junction 15 M1 West



In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Trial Pit: TP2 Sample Ref: 2 Sample Type: LB Depth (m): 2.80



Particle Size (mm)

CLAV	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
CLAT		SILT			SAND		(GRAVEI		COBBLES

BS Test	Percentage
Sieve (mm)	Passing
125.0 75.0 63.0 37.5 20.0	100 100 100 100 100
10.0 6.30 3.35 2.00	100 100 100 100 100
0.600 0.425 0.212 0.150 0.063	100 100 100 98 97 97
1	I

Particle	Percentage		Soil	Sieve
Diameter	Passing		Fraction	Percentage
0.02	93		GRAVEL	0
0.006			SAND	3
0.006	78		SILT	36
0.002	61		CLAY	61
		J		

Soil Description:

Grey slightly sandy CLAY

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS



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Contract	Contract Ref:		

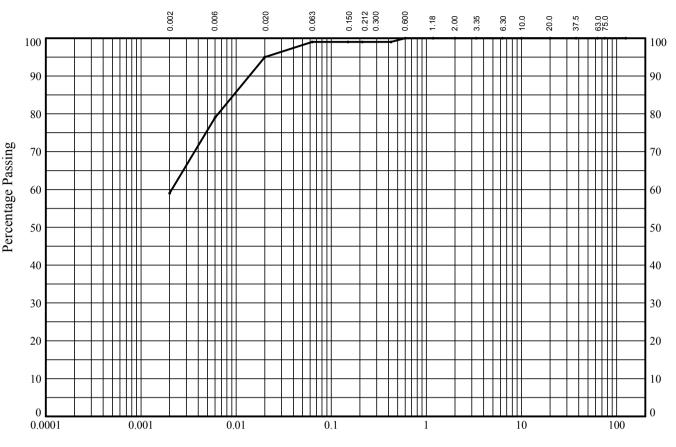
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In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Trial Pit: **TP2** Sample Ref: Sample Type: **B** Depth (m): **4.40**



Particle Size (mm)

CLAV	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
CLAT		SILT			SAND			GRAVEI		COBBLES

D.C.T.	ъ .
BS Test	Percentage
Sieve (mm)	Passing
125.0	100
75.0	100
63.0	100
37.5	100
20.0	100
10.0	100
6.30	100
3.35	100
2.00	100
1.18	100
0.600	100
0.425	99
0.212	99
0.150	99
0.063	99
1	

Particle	Percentage
Diameter	Passing
0.02	95
0.006	79
0.002	59

Soil	Sieve
Fraction	Percentage
GRAVEL	0
SAND	1
SILT	40
CLAY	59

Soil Description:

Dark brown slightly sandy CLAY

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS



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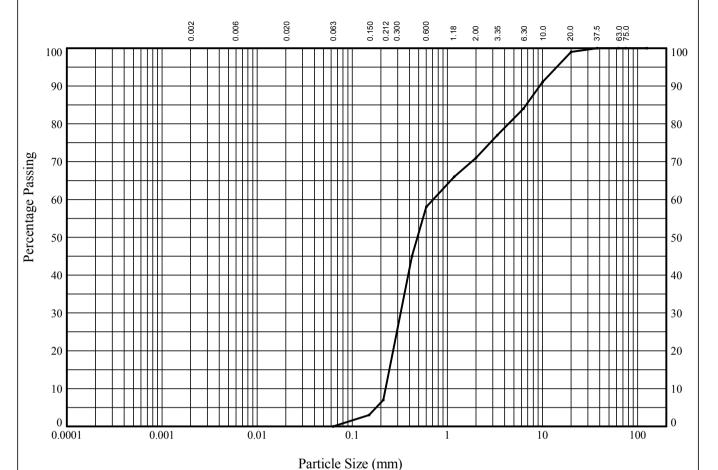
Contract Contract Ref:

Junction 15 M1 West



In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Trial Pit: TP6 Sample Ref: Sample Type: B Depth (m): 2.60



	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	
CLAY		SILT			SAND		(GRAVEL	,	COBBLES

BS Test	Percentage
Sieve (mm)	Passing
125.0 75.0 63.0 37.5 20.0 10.0 6.30 3.35 2.00	100 100 100 100 99 91 84 77 71
1.18 0.600 0.425 0.212 0.150 0.063	66 58 45 7 3 0

Particle	Percentage		Soil	Sieve	
Diameter	Passing		Fraction	Percentage	
			GRAVEL	29	
			SAND	71	
			SILT/CLAY	0	
Cail Decomption:					

Soil Description:

Reddish brown very gravelly SAND

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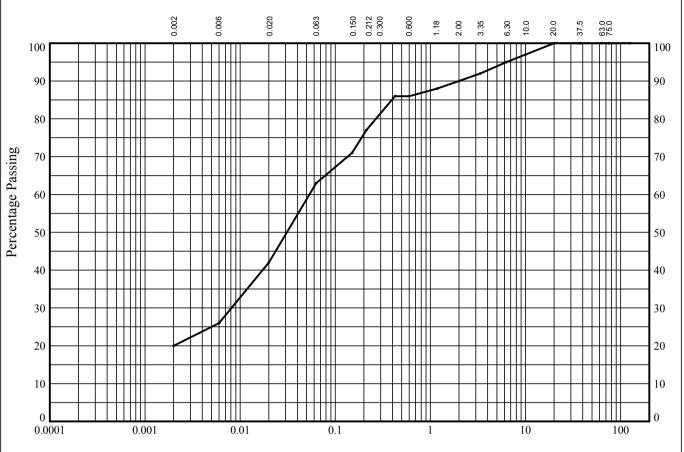
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Junction 15 M1 West



In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Trial Pit: **TP7** Sample Ref: Sample Type: **B** Depth (m): **1.20**



Particle	Size	(mm)
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CLAV	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
CLAT		SILT			SAND		(GRAVEI		COBBLES

BS Test	Percentage
Sieve (mm)	Passing
125.0	100
75.0	100
63.0	100
37.5	100
20.0	100
10.0	97
6.30	95
3.35	92 90
1.18	88
0 600	86
0.425	86
0.123	77
0.150	71
0.063	63

Particle	Percentage
Diameter	Passing
0.02	42
0.006	26
0.002	20
0.002	

Soil	Sieve
Fraction	Percentage
GRAVEL	10
SAND	27
SILT	43
CLAY	20

Soil Description:

Yellowish brown slightly gravelly slightly sandy silty CLAY

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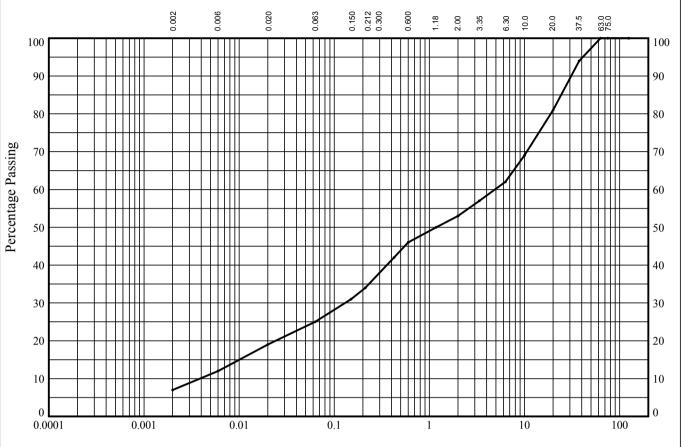
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Junction 15 M1 West



In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Trial Pit: TP7 Sample Ref: Sample Type: B Depth (m): 2.00



Particle Size (mm)	Particle	e Size	(mm))
--------------------	----------	--------	------	---

CLAV	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
CLAT		SILT			SAND		(GRAVEI		COBBLES

BS Test	Percentage
Sieve (mm)	Passing
125.0 75.0 63.0 37.5 20.0 10.0 6.30	100 100 100 94 81 69 62
3.35 2.00 1.18 0.600 0.425 0.212 0.150 0.063	57 53 50 46 42 34 31 25

Particle	Percentage
Diameter	Passing
0.02	19
0.006	12
0.002	7

Soil	Sieve
Fraction	Percentage
GRAVEL	47
SAND	28
SILT	18
CLAY	7

Soil Description:

Brown silty very sandy GRAVEL

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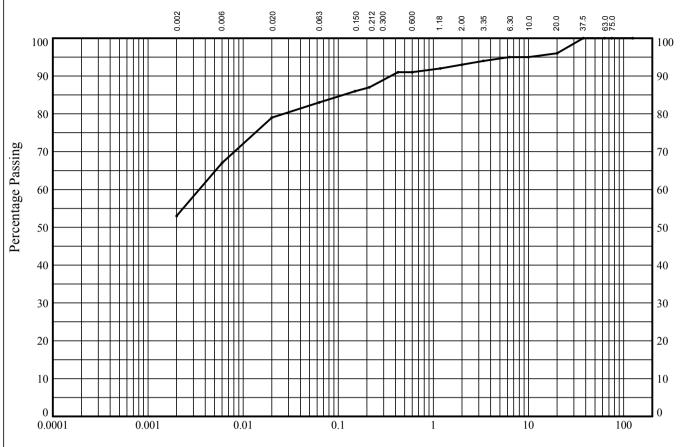
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Junction 15 M1 West



In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Trial Pit: TP10 Sample Ref: Sample Type: LB 1 Depth (m): 1.00



Particle Size (mm)

CLAV	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
CLAY		SILT		SAND		GRAVEL			COBBLES	

BS Test	Percentage
Sieve (mm)	Passing
125.0	100
75.0	100
63.0	100
37.5	100
20.0	96
10.0	95
6.30	95
3.35	94
2.00	93
1.18	92
0.600	91
0.425	91
0.212	87
0.150	86
0.063	83
1	

Particle	Percentage
Diameter	Passing
0.02	79
0.006	67
0.002	53

Soil	Sieve
Fraction	Percentage
GRAVEL	7
SAND	10
SILT	30
CLAY	53

Soil Description:

Dark brown slightly gravelly slightly sandy CLAY

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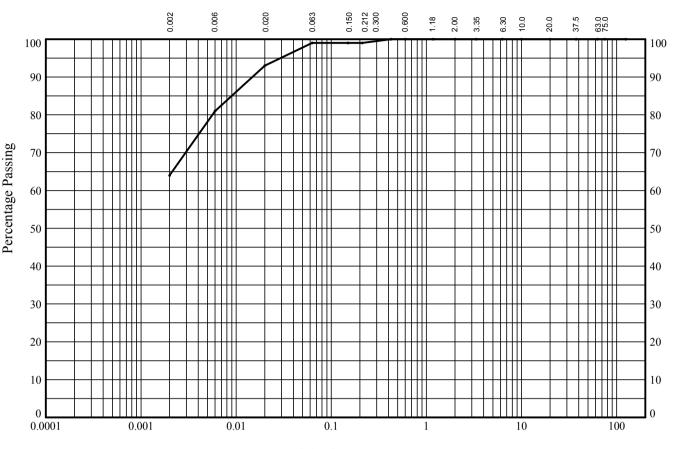
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In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Trial Pit: TP10 Sample Ref: 2 Sample Type: LB Depth (m): 2.40



Particle Size (mm)

CLAV	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
CLAT		SILT			SAND			GRAVEI		COBBLES

BS Test	Percentage
Sieve (mm)	Passing
125.0	100
75.0	100
63.0	100
37.5	100
20.0	100
10.0	100
6.30	100
3.35	100
2.00	100
1.18	100
0.600	100
0.425	100
0.212	99
0.150	99
0.063	99
1	ı

1		ı	ı		
	Particle	Percentage		Soil	Sieve
	Diameter	Passing		Fraction	Percentage
	0.02	93		GRAVEL	0
	0.006	0.1		SAND	1
	0.006	81		SILT	35
	0.002	64		CLAY	64
			l		

Soil Description:

Brown mottled grey slightly sandy CLAY

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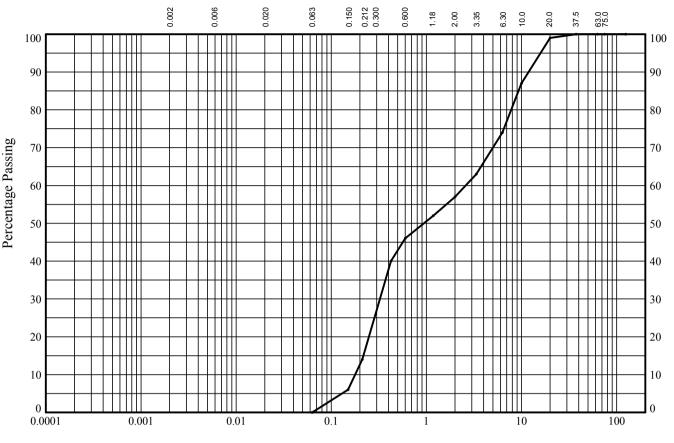
Junction 15 M1 West

745045



In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Trial Pit: TP10 Sample Ref: 3 Sample Type: LB Depth (m): 3.10



Particle Size (mm)

CLAV	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
CLAT		SILT			SAND		(GRAVEI		COBBLES

BS Test	Percentage
Sieve (mm)	Passing
125.0 75.0 63.0 37.5 20.0 10.0 6.30 3.35 2.00 1.18 0.600 0.425 0.212 0.150 0.063	100 100 100 100 100 99 87 74 63 57 52 46 40 14 6
0.002	v

Particle	Percentage	Soil	
Diameter	Passing	Fraction	
		GRAVEL	
		SAND	
		SILT/CLAY	

Soil Description:

Orangish brown very gravelly SAND

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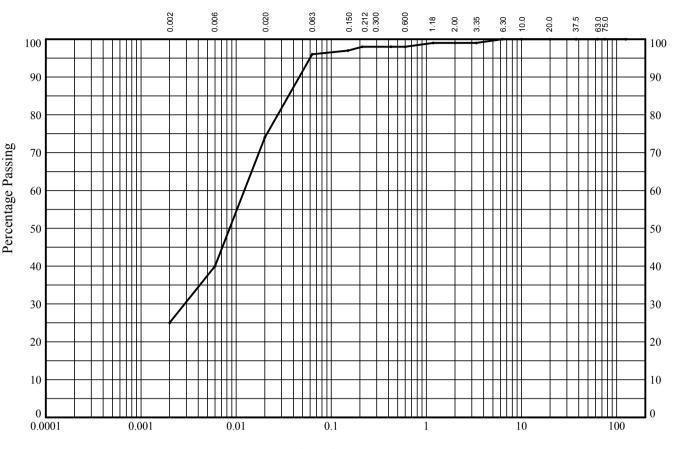
Sieve Percentage

43

57

In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Trial Pit: **TP11** Sample Ref: Sample Type: **B** Depth (m): **1.20**



Particle Size (mm)

CLAV	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
CLAY		SILT			SAND		(GRAVEI		COBBLES

BS Test	Percentage
Sieve (mm)	Passing
125.0 75.0 63.0 37.5 20.0 10.0 6.30 3.35 2.00 1.18 0.600 0.425 0.212 0.150 0.063	100 100 100 100 100 100 100 99 99 99 99 98 98 98 98

Particle	Percentage
Diameter	Passing
0.02	74
0.006	40
0.002	25

Soil	Sieve
Fraction	Percentage
GRAVEL	1
SAND	3
SILT	71
CLAY	25

Soil Description:

Light brown slightly gravelly slightly sandy silty CLAY

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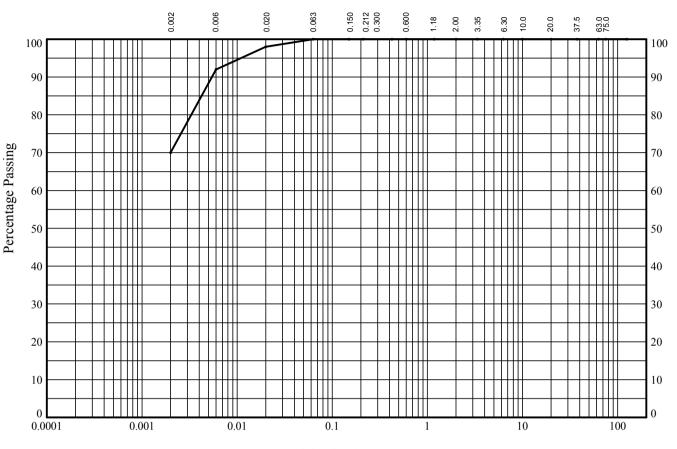
Contract Ref:

Junction 15 M1 West



In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Trial Pit: **TP11** Sample Ref: Sample Type: **B** Depth (m): **3.50**



Particle Size (mm)

CLAV	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
CLAT		SILT			SAND		(GRAVEI		COBBLES

BS Test	Percentage
Sieve (mm)	Passing
125.0 75.0 63.0 37.5 20.0 10.0 6 30	100 100 100 100 100 100
3.35 2.00 1.18 0.600 0.425 0.212 0.150 0.063	100 100 100 100 100 100 100 100
10.0 6.30 3.35 2.00 1.18 0.600 0.425 0.212 0.150	100 100 100 100 100 100 100 100 100

Particle	Percentage
Diameter	Passing
0.02	98
0.006	92
0.002	70

Soil	Sieve		
Fraction	Percentage		
GRAVEL	0		
SAND	0		
SILT	30		
CLAY	70		

Soil Description:

Grey CLAY

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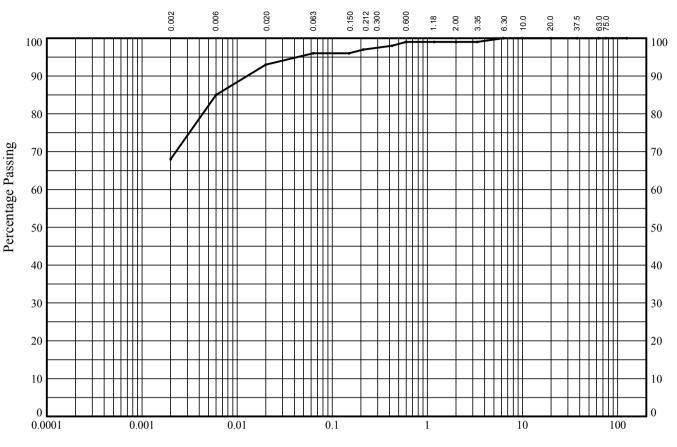
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In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Trial Pit: TP13 Sample Ref: Sample Type: LB 1 Depth (m): 1.20



Particle Size (mm)

CLAV	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
CLAT		SILT			SAND			GRAVEI		COBBLES

Percentage
Passing
100 100 100 100 100 100 100 100 99 99 99 99 99 99
96

Particle	Percentage	Soil	Sieve
Diameter	Passing	Fraction	Percentage
0.02	93	GRAVEL	1
0.006	0.5	SAND	3
0.006	85	SILT	28
0.002	68	CLAY	68

Soil Description:

Dark brown slightly gravelly slightly sandy CLAY

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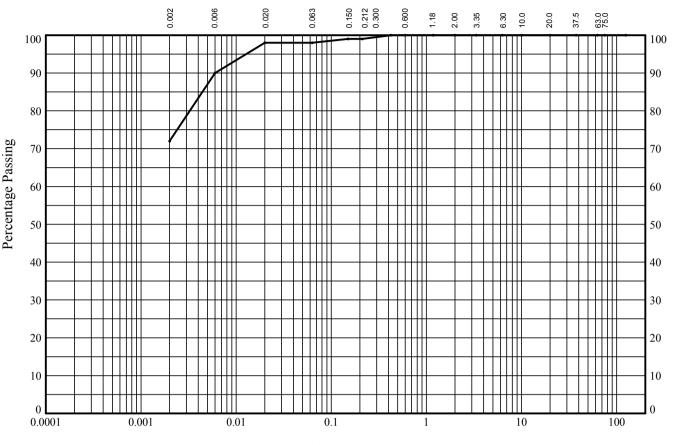
Contract Ref:

Junction 15 M1 West



In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Trial Pit: TP13 Sample Ref: 2 Sample Type: LB Depth (m): 2.10



Particle Size (mm)

CLAV	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
CLAT		SILT			SAND			GRAVEI		COBBLES

BS Test	Percentage
Sieve (mm)	Passing
125.0	100
75.0	100
63.0	100
37.5	100
20.0	100
10.0	100
6.30	100
3.35	100
2.00	100
1.18	100
0.600	100
0.425	100
0.212	99
0.150	99
0.063	98
1	

Particle	Percentage	
Diameter	Passing	
0.02	98	
0.006	90	
0.002	72	

Soil	Sieve
Fraction	Percentage
GRAVEL	0
SAND	2
SILT	26
CLAY	72

Soil Description:

Dark brown slightly sandy CLAY

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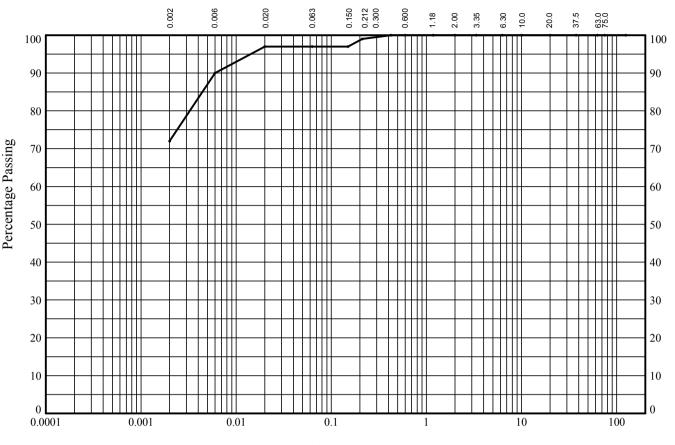
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Junction 15 M1 West



In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Trial Pit: TP13 Sample Ref: 3 Sample Type: LB Depth (m): 3.20



Particle Size (mm)

CLAV	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
CLAT		SILT			SAND		(GRAVEI		COBBLES

BS Test	Percentage
Sieve (mm)	Passing
125.0 75.0 63.0 37.5 20.0 10.0 6.30 3.35	100 100 100 100 100 100 100
2.00 1.18 0.600 0.425 0.212 0.150 0.063	100 100 100 100 99 97

Particle	Percentage
Diameter	Passing
0.02	97
0.006	90
0.002	72

Soil	Sieve
Fraction	Percentage
GRAVEL	0
SAND	3
SILT	25
CLAY	72

Soil Description:

Light brown slightly sandy CLAY

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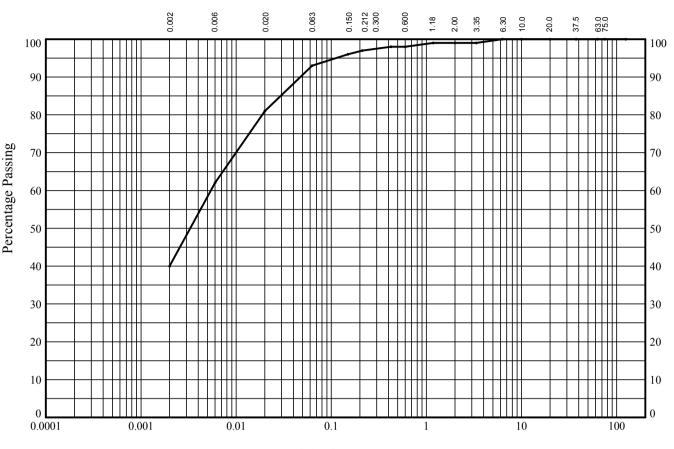
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In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Trial Pit: TP17 Sample Ref: Sample Type: B Depth (m): 1.00



Particle Size (mm)

CLAV	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
CLAT		SILT			SAND		(GRAVEI		COBBLES

BS Test	Percentage
Sieve (mm)	Passing
125.0 75.0 63.0 37.5 20.0 10.0 6.30 3.35 2.00 1.18 0.600 0.425 0.212 0.150	100 100 100 100 100 100 100 100 99 99 99 99 98 98 98
0.130	93
1	

Particle	Percentage		Soil	Sieve
Diameter	Passing]	Fraction	Percentage
0.02	81		GRAVEL	1
0.006	(2		SAND	6
0.006	62		SILT	53
0.002	40		CLAY	40

Soil Description:

Brown mottled grey slightly gravelly slightly sandy CLAY

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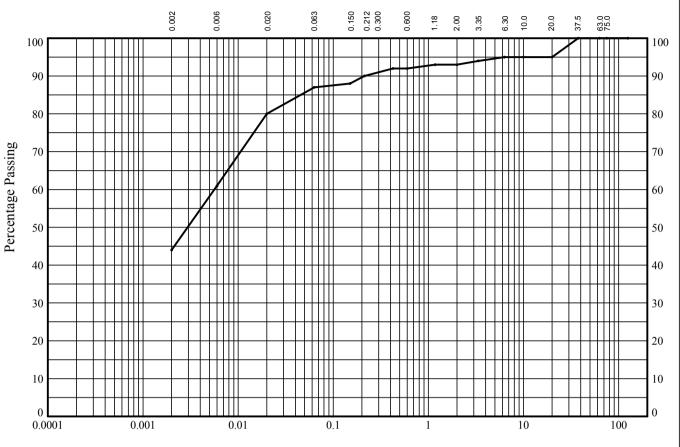
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In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Trial Pit: **TP22** Sample Ref: Sample Type: **B** Depth (m): **1.00**



Particle Size (mm)

CLAV	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
CLAT		SILT			SAND			GRAVEI		COBBLES

BS Test	Domontoro
BS Test	Percentage
Sieve (mm)	Passing
125.0	100
75.0	100
63.0	100
37.5	100
20.0	95
10.0	95
6.30	95
3.35	94
2.00	93
1.18	93
0.600	92
0.425	92
0.212	90
0.150	88
0.063	87

Particle	Percentage	
Diameter	Passing	
0.02	80	
0.006	61	
0.002	44	

Soil	Sieve
Fraction	Percentage
GRAVEL	7
SAND	6
SILT	43
CLAY	44

Soil Description:

Dark brown mottled grey slightly sandy slightly gravelly CLAY

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS



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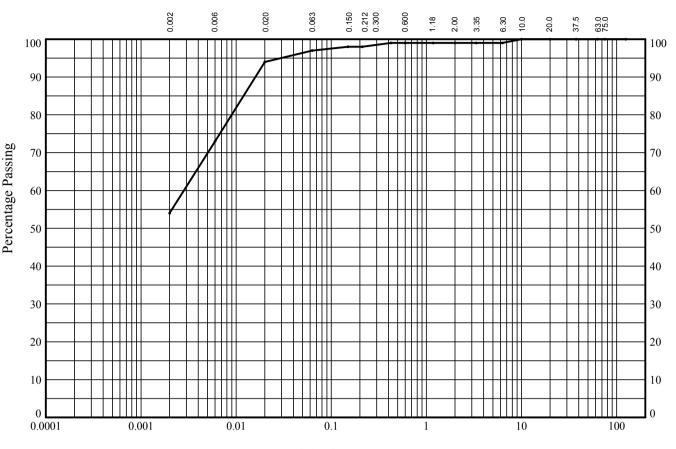
Contract Ref:

Junction 15 M1 West



In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Trial Pit: TP22 Sample Type: Sample Ref: B Depth (m): 1.80



Particle Size (mm)

CLAV	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
CLAT		SILT			SAND		(GRAVEI		COBBLES

DO T	ъ .
BS Test	Percentage
Sieve (mm)	Passing
125.0	100
75.0	100
63.0	100
37.5	100
20.0	100
10.0	100
6.30	99
3.35	99
2.00	99
1.18	99
0.600	99
0.425	99
0.212	98
0.150	98
0.063	97
1	

Particle	Percentage	
Diameter	Passing	
0.02	94	
0.006	73	
0.002	54	

Soil	Sieve
Fraction	Percentage
GRAVEL	1
SAND	2
SILT	43
CLAY	54

Soil Description:

Brown mottled grey slightly gravelly slightly sandy CLAY

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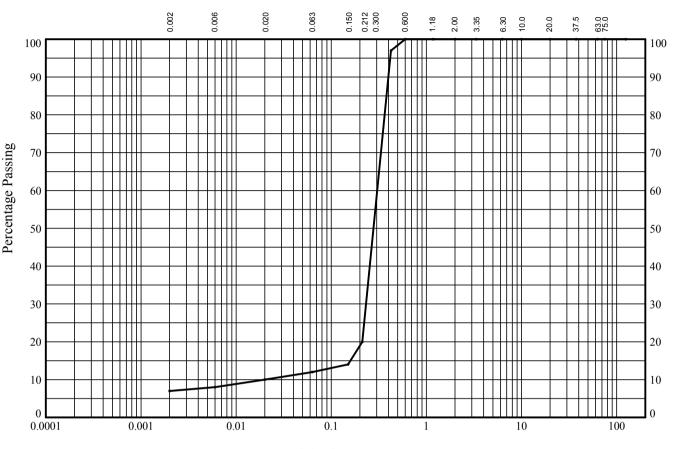
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In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Trial Pit: **TP23** Sample Ref: Sample Type: **B** Depth (m): **1.50**



Particle Size (mm)

CLAV	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
CLAT		SILT			SAND		(GRAVEI		COBBLES

BS Test	Percentage
Sieve (mm)	Passing
125.0	100
75.0	100
63.0	100
37.5	100
20.0	100
10.0	100
6.30	100
3.35	100
2.00	100
1.18	100
0.600	100
0.425	97
0.212	20
0.150	14
0.063	12
1	

Particle	Percentage
Diameter	Passing
0.02	10
0.006	8
0.002	7

Soil	Sieve	
Fraction	Percentage	
GRAVEL	0	
SAND	88	
SILT	5	
CLAY	7	

Soil Description:

Orangish brown clayey SAND

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS



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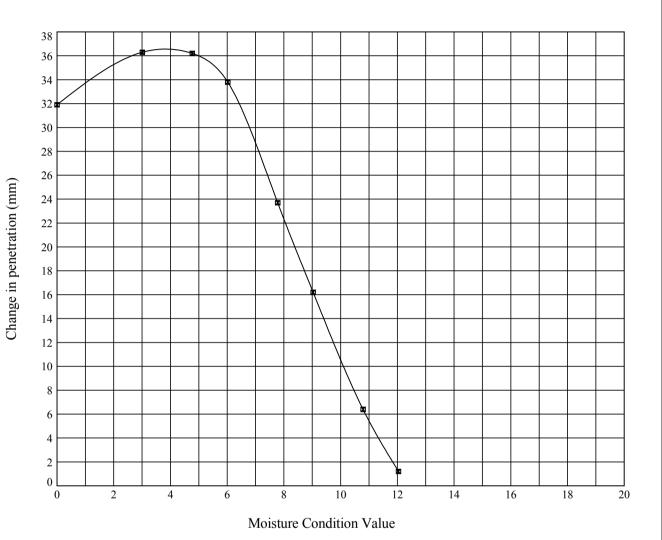
Junction 15 M1 West



In accordance with clause 5 of BS1377:Part 4:1990

Trial Pit: TP2 Sample Ref: 2 Sample Type: LB Depth (m): 2.80

Description: Grey slightly sandy CLAY



Moisture Content: = 26 %

Percentage retained on 20 mm sieve : = 0 %

Moisture Condition Value : = 10.9

Interpretation of curve: = Steepest straight line

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS

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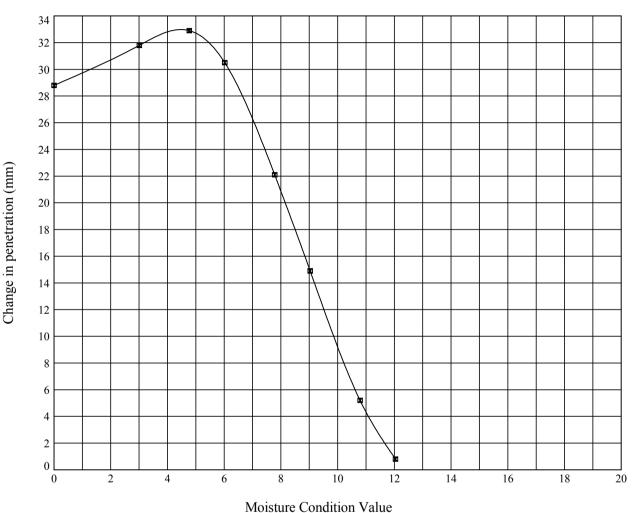
Contract Ref:

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In accordance with clause 5 of BS1377:Part 4:1990

Trial Pit: TP10 Sample Ref: Sample Type: LB Depth (m): 1.00

Description: Dark brown slightly gravelly slightly sandy CLAY



Moisture Content: = 24%

Percentage retained on 20 mm sieve: % = 0

Moisture Condition Value: = 10.7

Interpretation of curve: = Steepest straight line

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Date 11/10/14

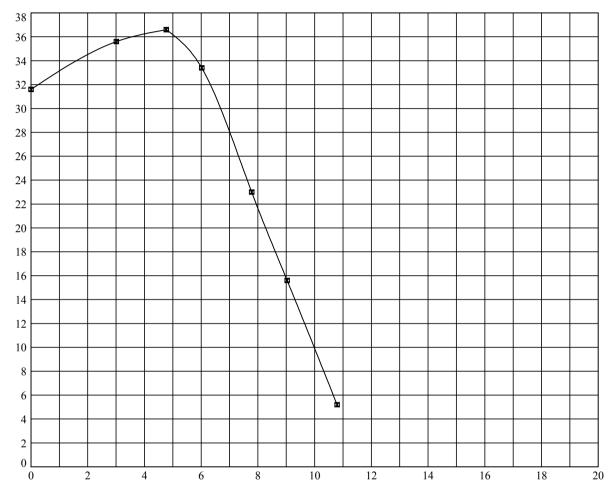
Contract Ref:

Junction 15 M1 West

In accordance with clause 5 of BS1377:Part 4:1990

Trial Pit: TP13 Sample Ref: Sample Type: LB Depth (m): 1.20

Description: Dark brown slightly gravelly slightly sandy CLAY



Moisture Condition Value

Moisture Content: = 29%

Percentage retained on 20 mm sieve: %

Moisture Condition Value: = 10.8

Interpretation of curve: = Steepest straight line

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS

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A.D. fre

Compiled By

ALAN FROST

Date 11/10/14

Contract

Contract Ref:

Junction 15 M1 West

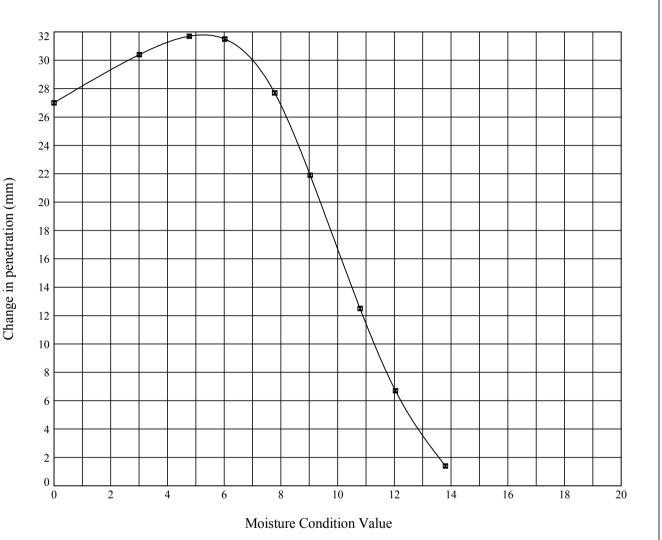
745045

Change in penetration (mm)

In accordance with clause 5 of BS1377:Part 4:1990

Trial Pit: TP13 Sample Ref: 2 Sample Type: LB Depth (m): 2.10

Description: Dark brown slightly sandy CLAY



Moisture Content: = 28 %

Percentage retained on 20 mm sieve : = 0 %

Moisture Condition Value : = 12.2

Interpretation of curve: = Steepest straight line

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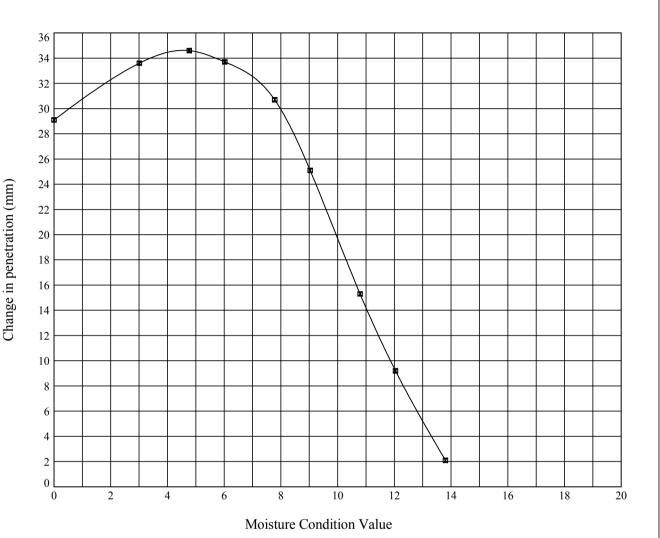
Contract Ref:

Junction 15 M1 West

In accordance with clause 5 of BS1377:Part 4:1990

Trial Pit: TP13 Sample Ref: 3 Sample Type: LB Depth (m): 3.20

Description: Light brown slightly sandy CLAY



Moisture Content: = 28 %

Percentage retained on 20 mm sieve : = 0 %

Moisture Condition Value : = 12.6

Interpretation of curve: = Steepest straight line

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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

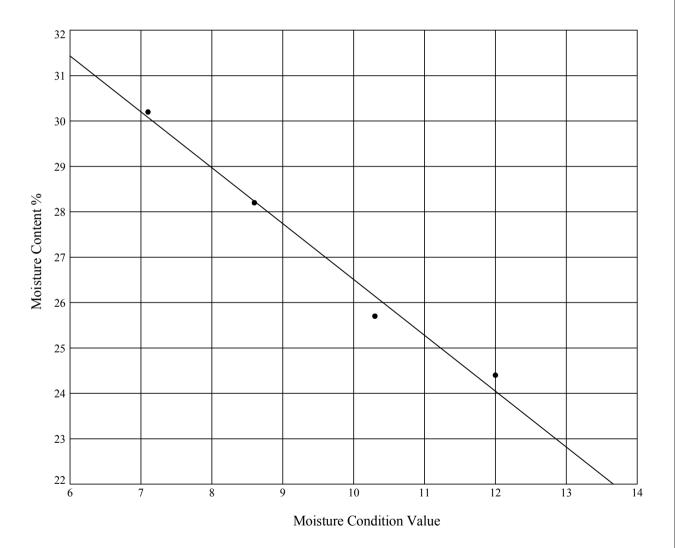
Trial Pit: TP2 Sample Ref: 1 Sample Type: LB Depth (m): 1.20

Percentage retained on 20mm sieve: $\mathbf{0}$

Description: Light brown slightly gravelly slightly sandy CLAY

Single/Separate Sample Used: Separate

Test Number	1	2	3	4	5
Moisture Content	25.7	24.4	28.2	30.2	-
MCV	10.3	12.0	8.6	7.1	-



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Junction 15 M1 West

MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

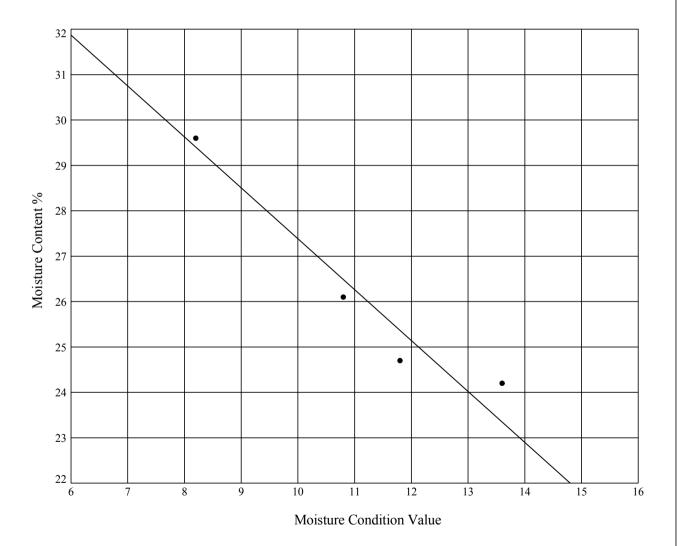
Trial Pit: **TP2** Sample Ref: Sample Type: **B** Depth (m): **4.40**

Percentage retained on 20mm sieve: 0

Description: Dark brown slightly sandy CLAY

Single/Separate Sample Used: Separate

Test Number	1	2	3	4	5
Moisture Content	24.2	24.7	29.6	26.1	-
MCV	13.6	11.8	8.2	10.8	-



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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

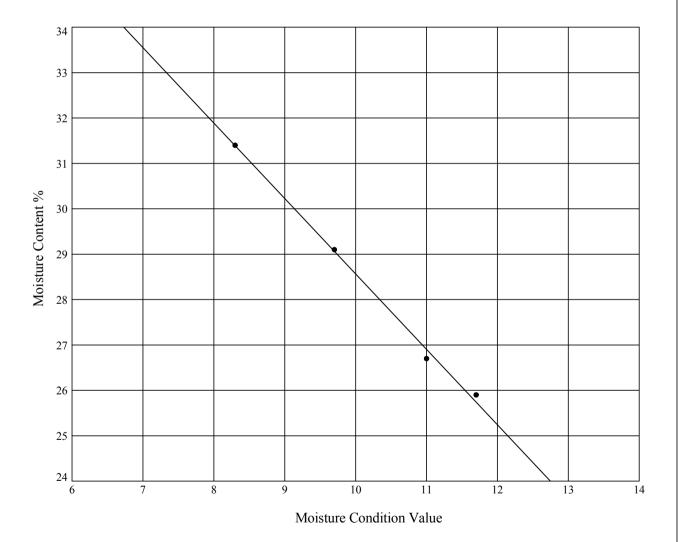
Trial Pit: TP10 Sample Ref: 2 Sample Type: LB Depth (m): 2.40

Percentage retained on 20mm sieve: 0

Description: Brown mottled grey slightly sandy CLAY

Single/Separate Sample Used: Separate

Test Number	1	2	3	4	5
Moisture Content	26.7	25.9	29.1	31.4	-
MCV	11.0	11.7	9.7	8.3	-



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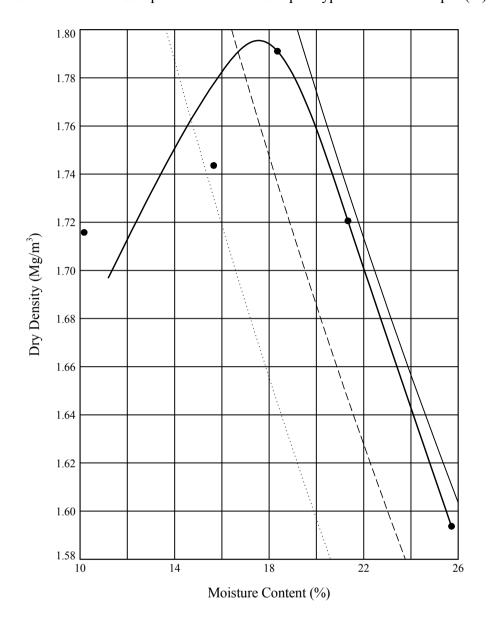


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	_	45045	

Junction 15 M1 West

Sample Ref: LB Trial Pit: TP2 1 Sample Type: Depth (m): 1.20



Initial Sample Conditions		Test Details	Test Results
Initial Moisture Content (%)	: 26	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 1.80
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 18
% Retained on 20.0mm BS Sieve	: 0	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - assumed (Mg/m ³)	: 2.75		Remarks:
Size of Soil Pieces	: <20mm	Separate samples were used.	
Sample Description		Key to Air Voids Lines	
Light brown slightly gravelly slightly sandy CLAY		0%	

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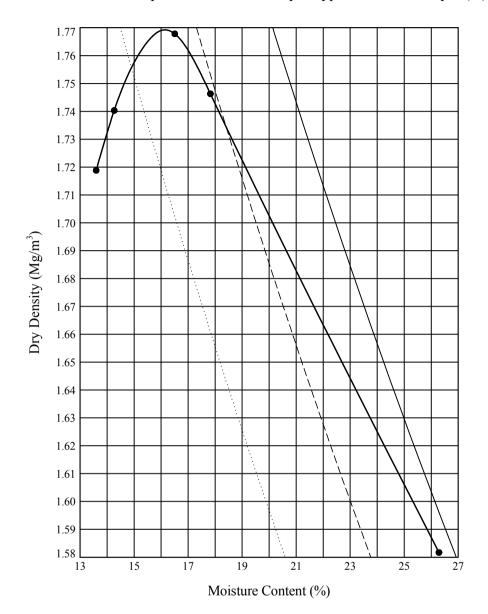
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Junction 15 M1 West

LB Trial Pit: TP2 Sample Ref: 2 Sample Type: Depth (m): 2.80



Initial Sample Conditions		Test Details	Test Results
Initial Moisture Content (%)	: 26	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 1.77
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 16
% Retained on 20.0mm BS Sieve	: 0	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - assumed (Mg/m ³)	: 2.75		Remarks:
Size of Soil Pieces	: <20mm	Separate samples were used.	
Sample Description		Key to Air Voids Lines	
Grey slightly sandy CLAY		0% 5% 10%	

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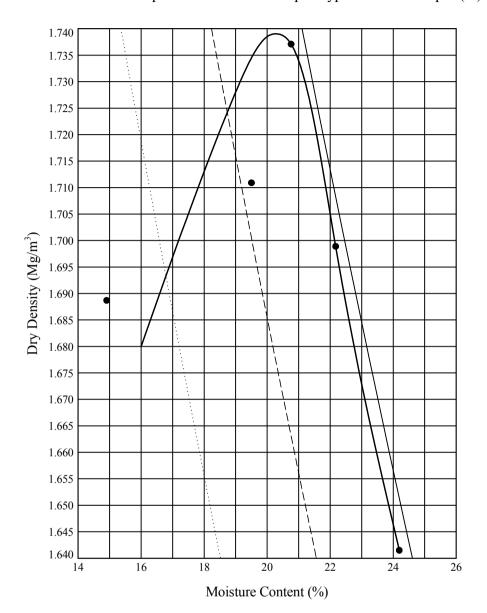
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Trial Pit: TP2 Sample Ref: Sample Type: B Depth (m): 4.40



Initial Sample Conditions		Test Details Test Results	
Initial Moisture Content (%)	: 24	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 1.74
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 20
% Retained on 20.0mm BS Sieve	: 0	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - assumed (Mg/m ³)	: 2.75		Remarks:
Size of Soil Pieces	: <20mm	Separate samples were used.	
Sample Description		Key to Air Voids Lines	
Dark brown slightly sandy CLAY		0% 5% 10%	

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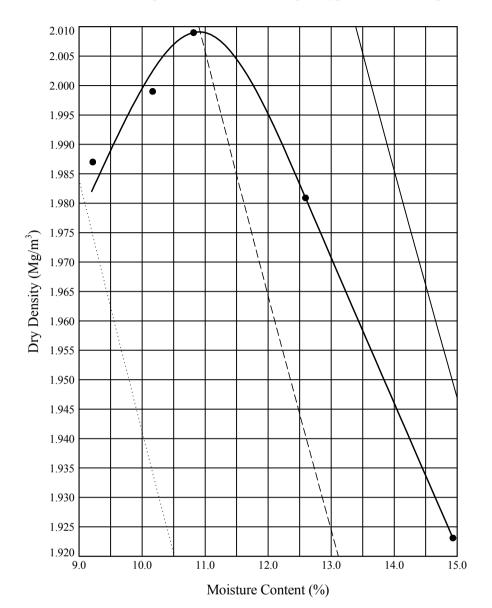
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11/10/14

Trial Pit: TP6 Sample Ref: Sample Type: B Depth (m): 2.60



Initial Sample Condition	ns	Test Details	Test Results
Initial Moisture Content (%)	: 9.2	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 2.01
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 11
% Retained on 20.0mm BS Sieve	: 1	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - assumed (Mg/m ³)	: 2.75		Remarks:
Size of Soil Pieces	: <20mm	Separate samples were used.	
Sample Description		Key to Air Voids Lines	
Reddish brown very gravelly S	AND		0%

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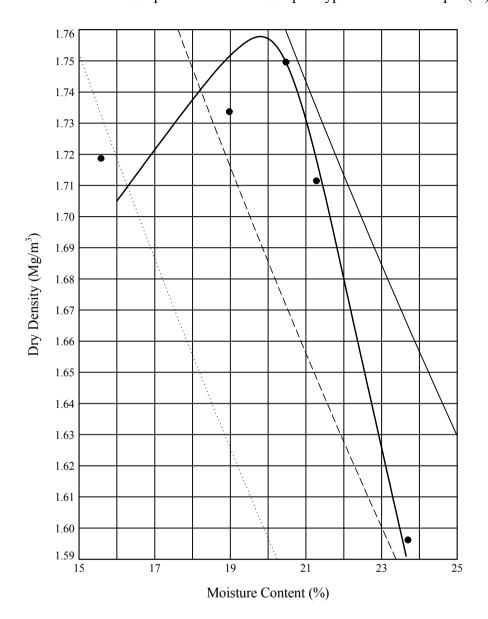
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1 Trial Pit: TP10 Sample Ref: Sample Type: LB Depth (m): 1.00



Initial Sample Condition	ns	Test Details	Test Results
Initial Moisture Content (%)	: 24	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 1.76
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 20
% Retained on 20.0mm BS Sieve	: 0	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - assumed (Mg/m ³)	: 2.75		Remarks:
Size of Soil Pieces	: <20mm	Separate samples were used.	
Sample Description		Key to Air Voids Lines	
Dark brown slightly gravelly slightly sandy CLAY		0%	

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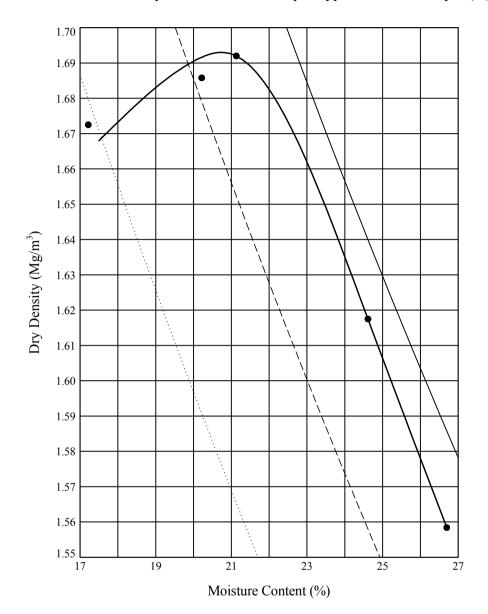
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2 Trial Pit: TP10 Sample Ref: Sample Type: LB Depth (m): 2.40



Initial Sample Condition	ns	Test Details	Test Results
Initial Moisture Content (%)	: 27	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 1.69
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 21
% Retained on 20.0mm BS Sieve	: 0	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - assumed (Mg/m ³)	: 2.75		Remarks:
Size of Soil Pieces	: <20mm	Separate samples were used.	
Sample Description		Key to Air Voids Lines	
Brown mottled grey slightly sandy CLAY		0% 5% 10%	

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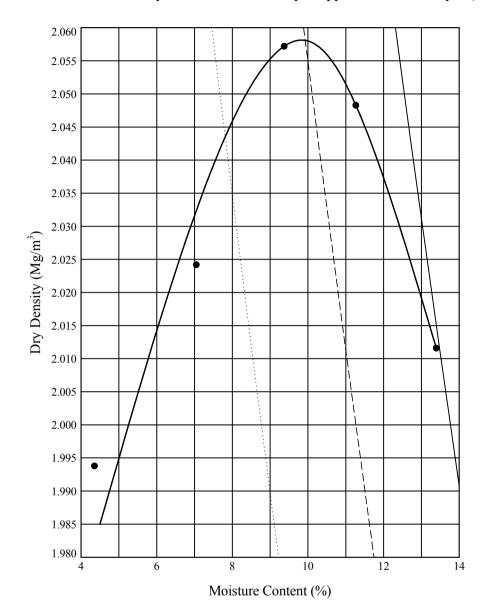
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Trial Pit: TP10 Sample Ref: 3 Sample Type: LB Depth (m): 3.10



Initial Sample Conditions		Test Details	Test Results
Initial Moisture Content (%)	: 7.0	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 2.06
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 9.8
% Retained on 20.0mm BS Sieve	: 0	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - assumed (Mg/m ³)	: 2.76		Remarks:
Size of Soil Pieces	: <20mm	Separate samples were used.	
Sample Description		Key to Air Voids Lines	
Orangish brown very gravelly SAND		0% 5% 10%	

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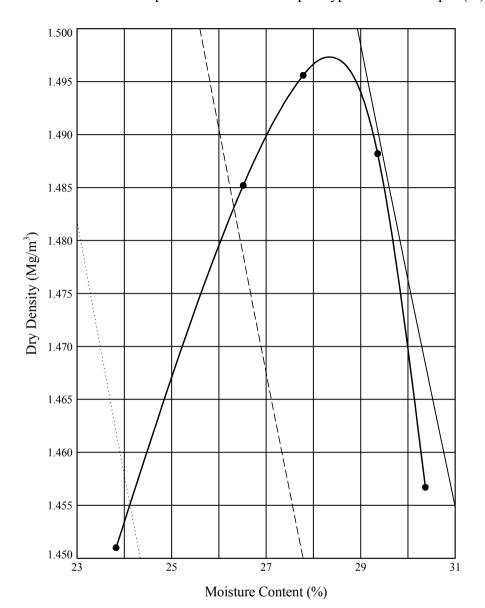
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Trial Pit: TP11 Sample Ref: Sample Type: B Depth (m): 1.20



Initial Sample Condition	ns	Test Details	Test Results
Initial Moisture Content (%)	: 29	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 1.50
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 28
% Retained on 20.0mm BS Sieve	: 0	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - assumed (Mg/m³)	: 2.65		Remarks:
Size of Soil Pieces	: <20mm	Separate samples were used.	
Sample Description		Key to Air Voids Lines	
Light brown slightly gravelly slightly sandy silty CLAY		0%	

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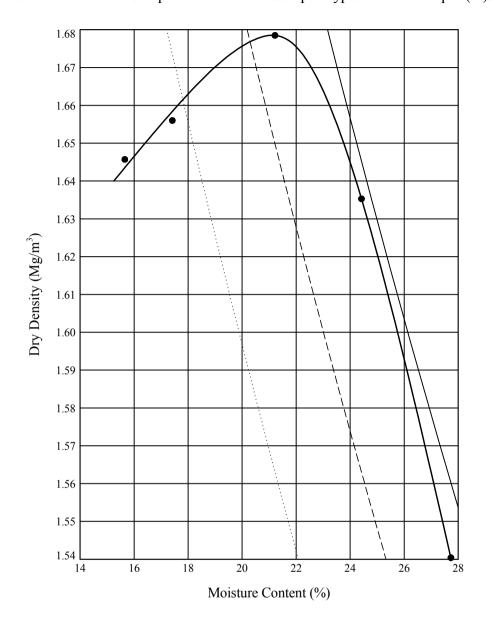
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Trial Pit: TP11 Sample Ref: Sample Type: B Depth (m): 3.50



Initial Sample Conditions		Test Details	Test Results
Initial Moisture Content (%)	: 28	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 1.68
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 21
% Retained on 20.0mm BS Sieve	: 0	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - assumed (Mg/m³)	: 2.75		Remarks:
Size of Soil Pieces	: <20mm	Separate samples were used.	
Sample Description		Key to Air Voids Lines	
Grey CLAY			0%

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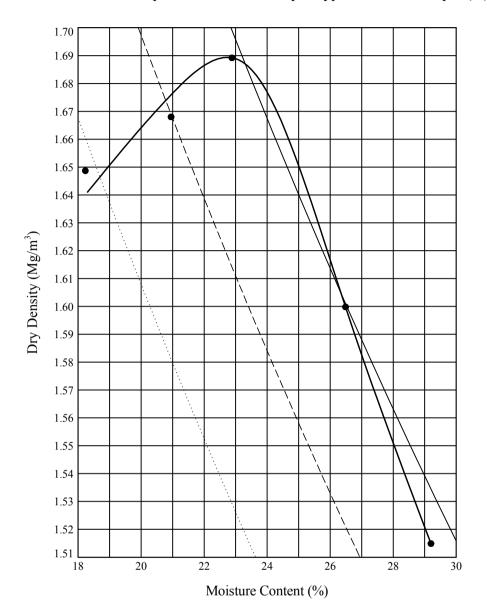
Junction 15 M1 West

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Contract Ref:



1 Trial Pit: TP13 Sample Ref: Sample Type: LB Depth (m): 1.20



Initial Sample Condition	ns	Test Details	Test Results
Initial Moisture Content (%)	: 29	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 1.69
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 23
% Retained on 20.0mm BS Sieve	: 0	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - assumed (Mg/m ³)	: 2.78		Remarks:
Size of Soil Pieces	: <20mm	Separate samples were used.	
Sample Description		Key to Air Voids Lines	
Dark brown slightly gravelly slightly sandy CLAY		0% 5% 10%	

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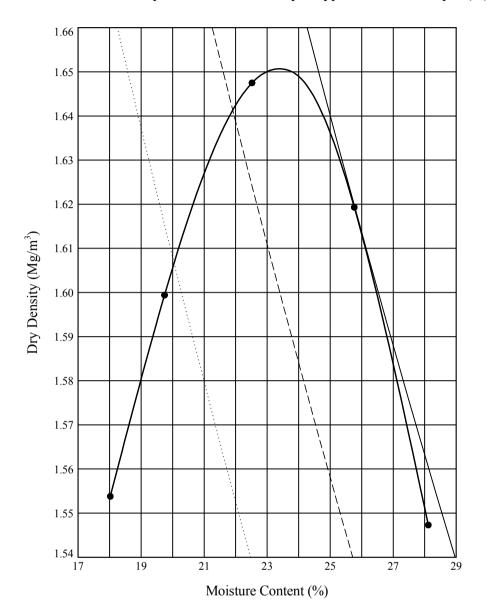
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Sample Ref: 2 LB Trial Pit: TP13 Sample Type: Depth (m): 2.10



Initial Sample Conditions		Test Details	Test Results
Initial Moisture Content (%)	: 28	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 1.65
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 23
% Retained on 20.0mm BS Sieve	: 0	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - assumed (Mg/m³)	: 2.78		Remarks:
Size of Soil Pieces	: <20mm	Separate samples were used.	
Sample Description		Key to Air Voids Lines	
Dark brown slightly sandy CLAY		0%	

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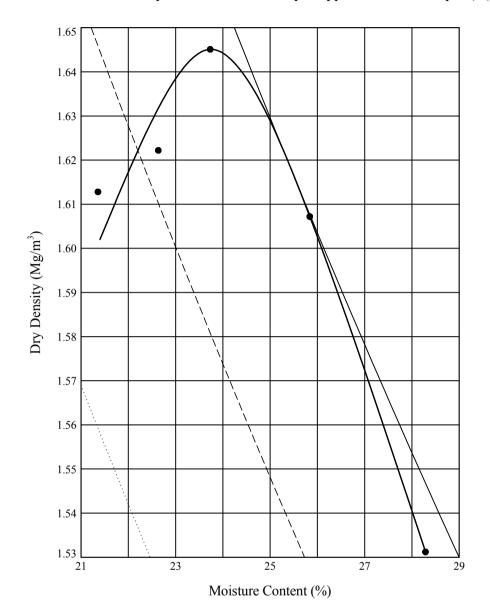
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Sample Ref: 3 LB Trial Pit: TP13 Sample Type: Depth (m): 3.20



Initial Sample Conditions		Test Details	Test Results
Initial Moisture Content (%)	: 28	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 1.65
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 24
% Retained on 20.0mm BS Sieve	: 0	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - assumed (Mg/m ³)	: 2.75		Remarks:
Size of Soil Pieces	: <20mm	Separate samples were used.	
Sample Description		Key to Air Voids Lines	
Light brown slightly sandy CLAY		0%	

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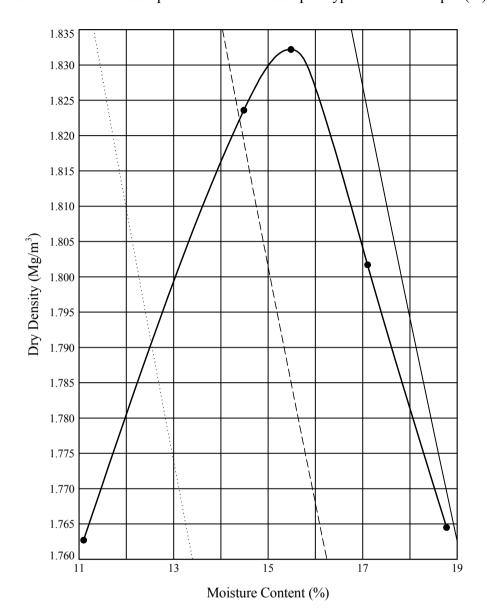
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Trial Pit: TP17 Sample Ref: Sample Type: B Depth (m): 1.00



Initial Sample Conditions		Test Details	Test Results
Initial Moisture Content (%)	: 19	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 1.83
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 15
% Retained on 20.0mm BS Sieve	: 0	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - assumed (Mg/m ³)	: 2.65		Remarks:
Size of Soil Pieces	: <20mm	Separate samples were used.	
Samp	Sample Description		
Brown mottled grey slightly gravelly slightly sandy CLAY		0% 5% 10%	

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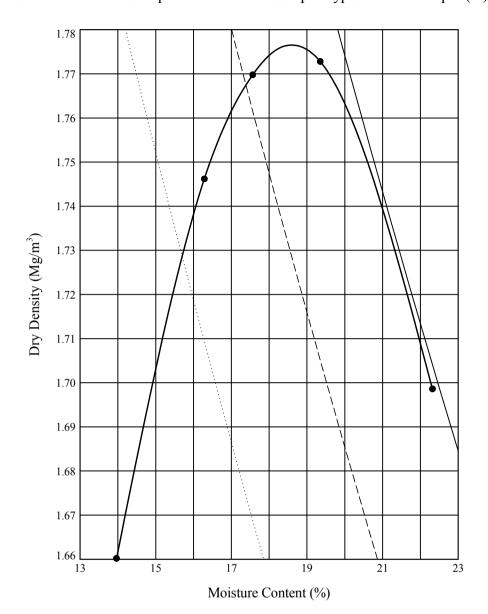
Date Compiled By ALAN FROST 12/10/14

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Trial Pit: TP22 Sample Ref: Sample Type: B Depth (m): 1.00



Initial Sample Conditions		Test Details	Test Results
Initial Moisture Content (%)	: 22	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 1.78
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 19
% Retained on 20.0mm BS Sieve	: 0	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - assumed (Mg/m³)	: 2.75		Remarks:
Size of Soil Pieces	: <20mm	Separate samples were used.	
Sample	Sample Description		
Dark brown mottled grey slightly sandy slightly gravelly CLAY			0%

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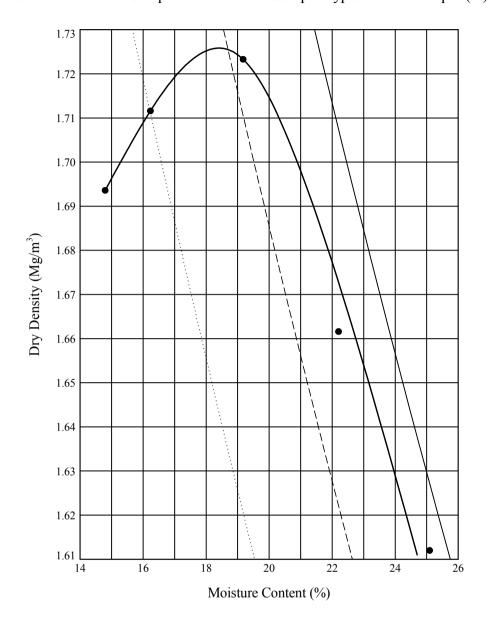
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Trial Pit: TP22 Sample Ref: Sample Type: B Depth (m): 1.80



Initial Sample Conditions		Test Details	Test Results
Initial Moisture Content (%)	: 25	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 1.73
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 18
% Retained on 20.0mm BS Sieve	: 0	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - assumed (Mg/m ³)	: 2.75		Remarks:
Size of Soil Pieces	: <20mm	Separate samples were used.	
Samp	Sample Description		
Brown mottled grey slightly gravelly slightly sandy CLAY			0%

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS



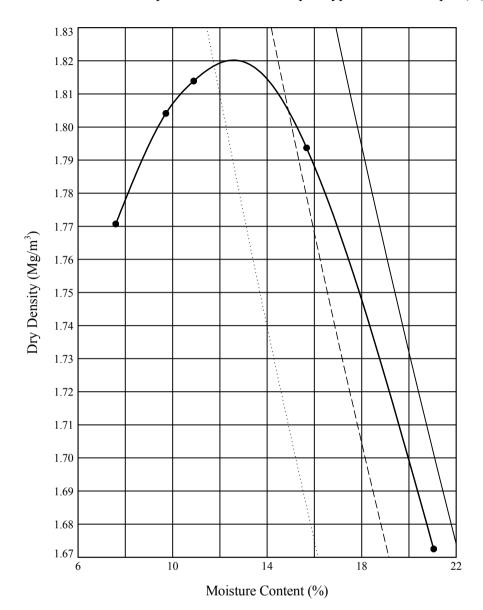
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Contract Contract Ref:

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Trial Pit: TP23 Sample Ref: Sample Type: B Depth (m): 1.50



Initial Sample Conditions		Test Details	Test Results
Initial Moisture Content (%)	: 16	Compaction Type : Heavy	Maximum Dry Density (Mg/m³) : 1.82
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg): 4.5	Optimum Moisture Content (%) : 13
% Retained on 20.0mm BS Sieve	: 0	Type of Mould : Proctor	Method Used: Clause 3.5
Particle Density - assumed (Mg/m³)	: 2.65		Remarks:
Size of Soil Pieces	: <20mm	Separate samples were used.	
Samp	Sample Description		
Orangish brown clayey SAND			0% 5% 10%

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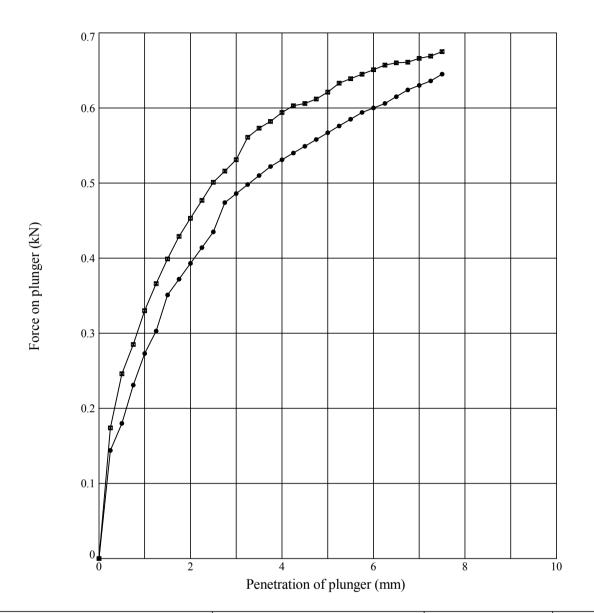
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Trial Pit: TP2 Sample Ref: 1 Sample Type: LB Depth (m): 1.20



Initial Sample Condi	tions	Test	Test Details		Тор	Base
Initial Moisture Content (%)	: 26	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)	26	26
Initial Bulk Density (Mg/m³)	: 2.00	Surcharge (kg)	: 4.5	CBR value (%)	3.3	3.8
Initial Dry Density (Mg/m³)	: 1.58	Soaking Time (hrs)	:	Remarks:		
% retained on 20mm sieve	: 0	Swelling (mm)	:			
	Sample Description					
Light brown slightly gravelly slightly sandy CLAY				● Top 🗷	Base	

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS



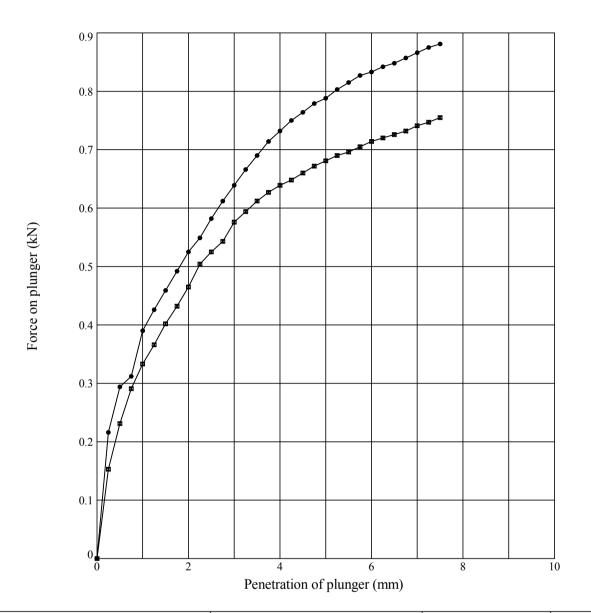
STRUCTURAL SOILS 1a Princess Street Bedminster **Bristol BS3 4AG**

Compiled By			Date	
A.S. frem		ALAN FROST		11/10/14
Contract		Contract Ref:		

Junction 15 M1 West



Trial Pit: TP2 Sample Ref: 2 Sample Type: LB Depth (m): 2.80



Initial Sample Condi	tions	Test Details		Test Results	Top	Base
Initial Moisture Content (%)	: 26	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)	26	26
Initial Bulk Density (Mg/m³)	: 1.98	Surcharge (kg)	: 4.5	CBR value (%)	4.4	4.0
Initial Dry Density (Mg/m³) : 1.57 Soaking Time (hrs) :			Remarks:			
% retained on 20mm sieve	: 0	Swelling (mm)	:			
	Sample Description					
Grey slightly sandy CLAY				● Top X	Base	

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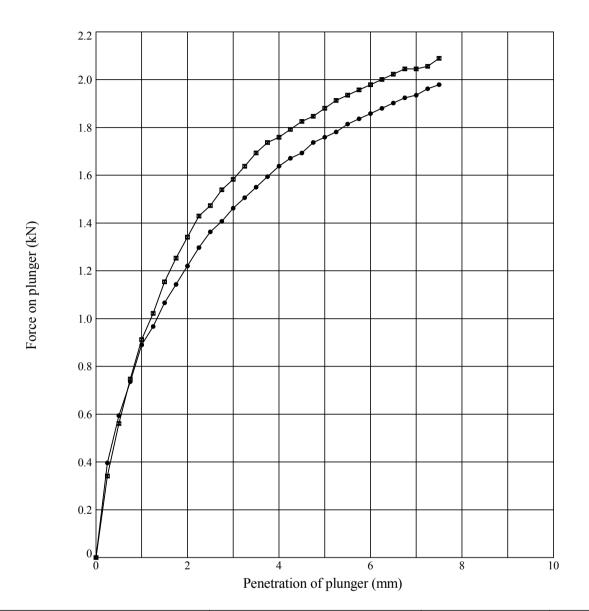
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Compiled By		
A.S. fre	ALAN FROST	11/10/14

Contract Contract Ref:

Junction 15 M1 West

Trial Pit: TP2 Sample Ref: Sample Type: B Depth (m): 4.40



Initial Sample Condi	tions	Test	Test Details		Тор	Base
Initial Moisture Content (%)	: 24	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)	23	23
Initial Bulk Density (Mg/m³)	: 2.05	Surcharge (kg)	: 4.5	CBR value (%)	10	11
Initial Dry Density (Mg/m³)	: 1.66	Soaking Time (hrs)	:	Remarks:		
% retained on 20mm sieve	: 0	Swelling (mm)	:			
	Sample I	Description		Key		
Dark brown slightly sandy CLAY				● Top 	Base	

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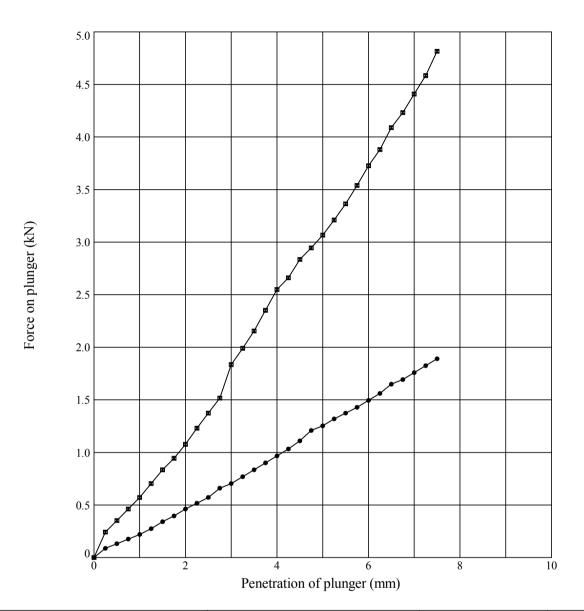
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Contract	Contract Ref:	•

Junction 15 M1 West



Trial Pit: TP6 Sample Ref: Sample Type: B Depth (m): 2.60



Initial Sample Condi	tions	Test	Details	Test Results Top		Base
Initial Moisture Content (%)	: 9.2	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)	9.9	9.4
Initial Bulk Density (Mg/m³)	: 2.14	Surcharge (kg)	: 4.5	CBR value (%)	6.3	15
Initial Dry Density (Mg/m³)	: 1.96	Soaking Time (hrs)	:	Remarks:		
% retained on 20mm sieve	: 1	Swelling (mm)	:			
	Sample I	Description		Key		
Reddish brown very gravelly SAND			● Top 🗷	Base		

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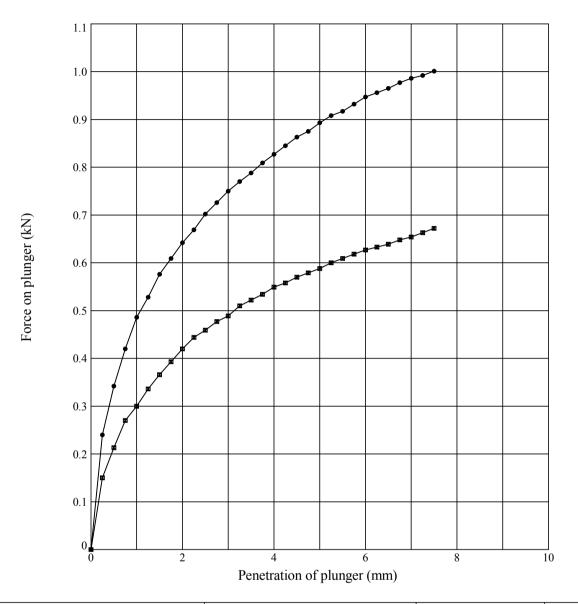
Compiled By			
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Contract Contract Ref:

Junction 15 M1 West



Trial Pit: TP10 Sample Ref: 1 Sample Type: LB Depth (m): 1.00



Initial Sample Condi	tions	S	Test Details Test Results		Top	Base	
Initial Moisture Content (%)	:	24	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)	24	25
Initial Bulk Density (Mg/m³)	:	2.00	Surcharge (kg)	: 4.5	CBR value (%)	5.3	3.5
Initial Dry Density (Mg/m³)	:	1.61	Soaking Time (hrs)	:	Remarks:		
% retained on 20mm sieve	:	0	Swelling (mm)	:			
	Sar	nple De	escription		Key		
Dark brown slightly gravelly slightly sandy CLAY			● Top 🗷	Base			

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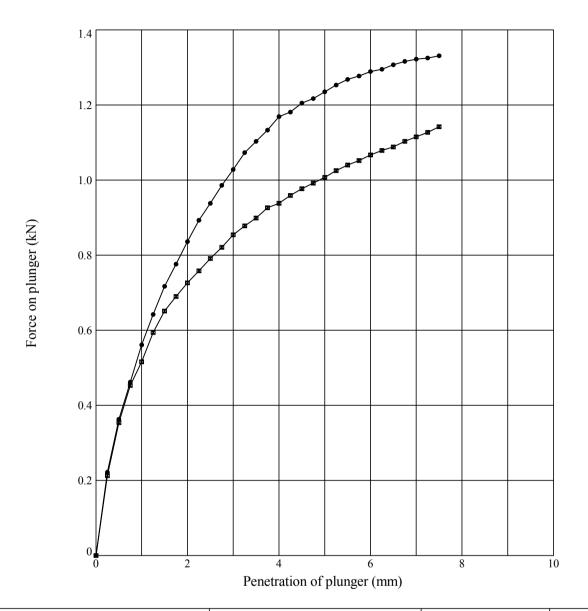
Compiled By		
A.S. fre	ALAN FROST	11/10/14

Contract Contract Ref:

Junction 15 M1 West



Trial Pit: TP10 2 Sample Ref: Sample Type: LB Depth (m): 2.40



Initial Sample Condi	tions	ions Test Details Test Results Top		Тор	Base	
Initial Moisture Content (%)	: 27	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)	27	27
Initial Bulk Density (Mg/m³)	: 1.97	Surcharge (kg)	: 4.5	CBR value (%)	7.1	6.0
Initial Dry Density (Mg/m³)	: 1.55	Soaking Time (hrs)	:	Remarks:	•	
% retained on 20mm sieve	: 0	Swelling (mm)	:			
	Sample De	escription		Key		
Brown mottled grey slightly sandy CLAY			● Top 🗷	Base		

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STRUCTURAL SOILS 1a Princess Street Bedminster **Bristol BS3 4AG**

Compiled By			Date
A.S. fre	ALAN FROST		11/10/14
Contract	Contract Ref:	•	

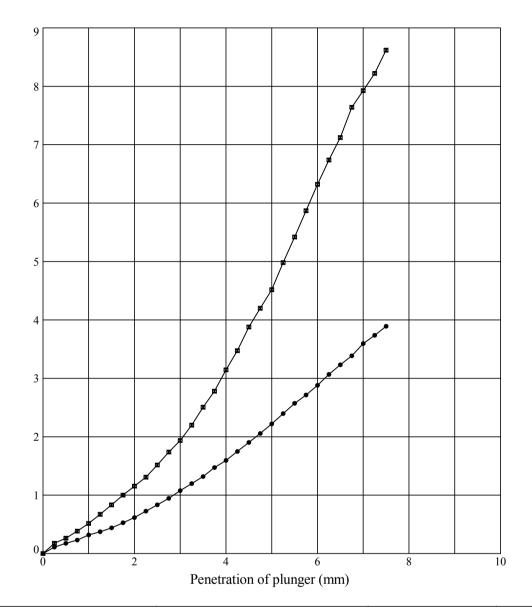
Junction 15 M1 West



Force on plunger (kN)

LABORATORY CALIFORNIA BEARING RATIO TEST In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit: TP10 3 Sample Type: Sample Ref: LB Depth (m): 3.10



Initial Sample Condi	tions	Test	Details	Test Results Top		Base
Initial Moisture Content (%)	: 7.4	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)	7.4	7.6
Initial Bulk Density (Mg/m³)	: 2.15	Surcharge (kg)	: 4.5	CBR value (%)	11	23
Initial Dry Density (Mg/m³)	: 2.00	Soaking Time (hrs)	:	Remarks:	•	
% retained on 20mm sieve	: 0	Swelling (mm)	:			
	Sample De	escription		Key		
Orangish brown very gravelly SAND			● Top X	Base		

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STRUCTURAL SOILS 1a Princess Street Bedminster **Bristol BS3 4AG**

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Contract	Contract Ref:	•

Junction 15 M1 West



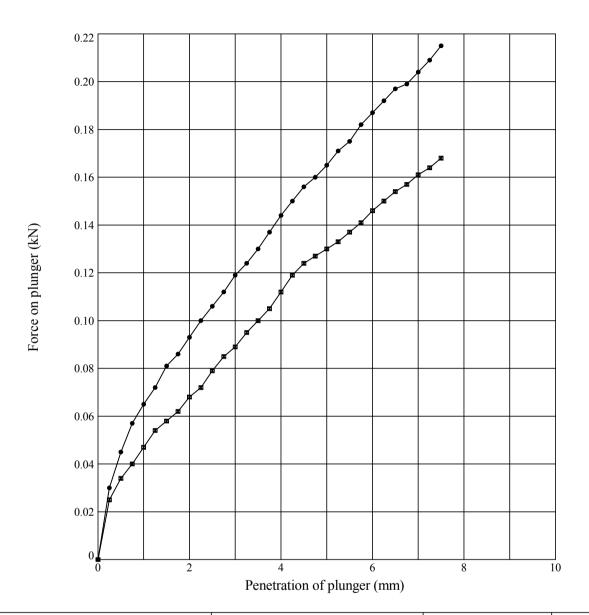
Sample Ref:

Sample Type:

B

Depth (m):

1.20



Initial Sample Condi	tions	Test	Details	Test Results Top		Base
Initial Moisture Content (%)	: 29	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)	29	29
Initial Bulk Density (Mg/m³)	: 1.91	Surcharge (kg)	: 4.5	CBR value (%)	0.83	0.70
Initial Dry Density (Mg/m³)	: 1.48	Soaking Time (hrs)	:	Remarks:		
% retained on 20mm sieve	: 0	Swelling (mm)	:			
	Sample De	escription		Key		
Light brown slightly gravelly slightly sandy silty CLAY			● Top 🗷	Base		

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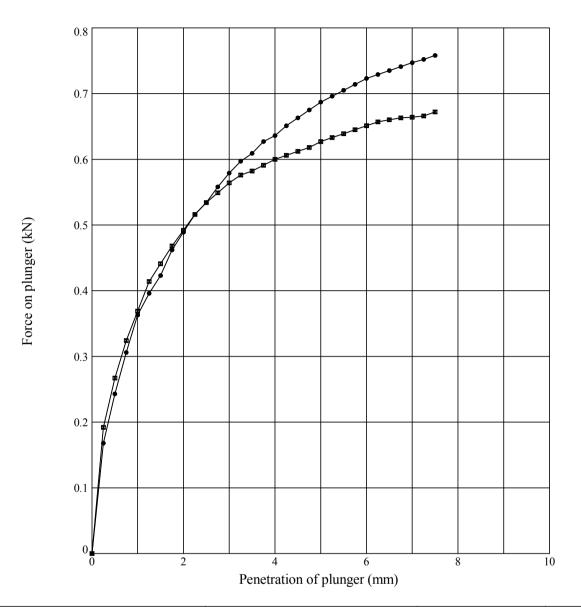
Trial Pit: TP11

Compiled By		
A.S. fre	ALAN FROST	11/10/14
Contract	Contract Ref:	

Junction 15 M1 West



Trial Pit: TP13 Sample Ref: 1 Sample Type: LB Depth (m): 1.20



Initial Sample Condi	tions	Test	Details	Test Results Top		Base
Initial Moisture Content (%)	: 29	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)	29	29
Initial Bulk Density (Mg/m³)	: 1.95	Surcharge (kg)	: 4.5	CBR value (%)	4.0	4.0
Initial Dry Density (Mg/m³)	: 1.51	Soaking Time (hrs)	:	Remarks:	•	
% retained on 20mm sieve	: 0	Swelling (mm)	:			
	Sample	Description		Key		
Dark brown slightly gravelly slightly sandy CLAY			● Top 🗷	Base		

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS



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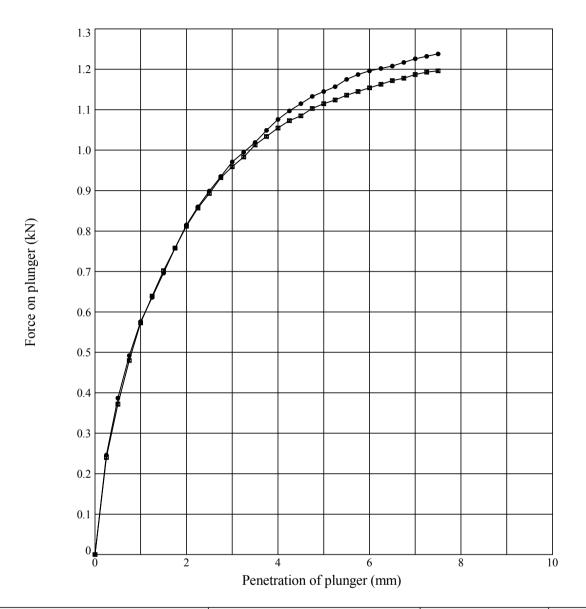
Compiled By				
A.S. fre	ALAN FROST	11/10/14		

Contract Contract Ref:

Junction 15 M1 West



Trial Pit: TP13 Sample Ref: 2 Sample Type: LB Depth (m): 2.10



Initial Sample Conditions Test Details		Test Results	Top	Base				
Initial Moisture Content (%)	: 2	28	Compaction Type	: 4.5 kg Dyn	amic	Moisture Content (%)	28	28
Initial Bulk Density (Mg/m³)	: 1.	.97	Surcharge (kg)	: 4.5		CBR value (%)	6.8	6.7
Initial Dry Density (Mg/m³)	: 1.	.54	Soaking Time (hrs)	:		Remarks:		
% retained on 20mm sieve	:	0	Swelling (mm)	:				
Sample Description				Key				
Dark brown slightly sandy CLAY				● Top 	Base			

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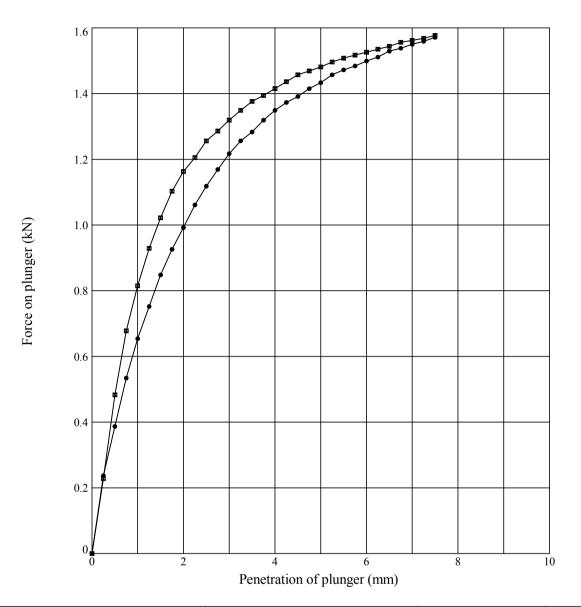
Compiled By				
	A.S. fre	ALAN FROST	11/10/14	
	Contract	Contract Ref:		

Contract Ref:

Junction 15 M1 West

745045 AGS

Trial Pit: TP13 3 Sample Ref: Sample Type: LB Depth (m): 3.20



Initial Sample Condi	le Conditions Test Details		Test Results	Top	Base	
Initial Moisture Content (%)	: 28	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)	28	28
Initial Bulk Density (Mg/m³)	: 1.98	Surcharge (kg)	: 4.5	CBR value (%)	8.4	9.5
Initial Dry Density (Mg/m³)	: 1.55	Soaking Time (hrs)	:	Remarks:		
% retained on 20mm sieve	: 0	Swelling (mm)	:			
Sample Description				Key		
Light brown slightly sandy CLAY			● Top X	Base		

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS



STRUCTURAL SOILS 1a Princess Street Bedminster **Bristol BS3 4AG**

Con	npiled By
A.S. fre	ALAN FROST
Contract	Contract Ref:

Junction 15 M1 West

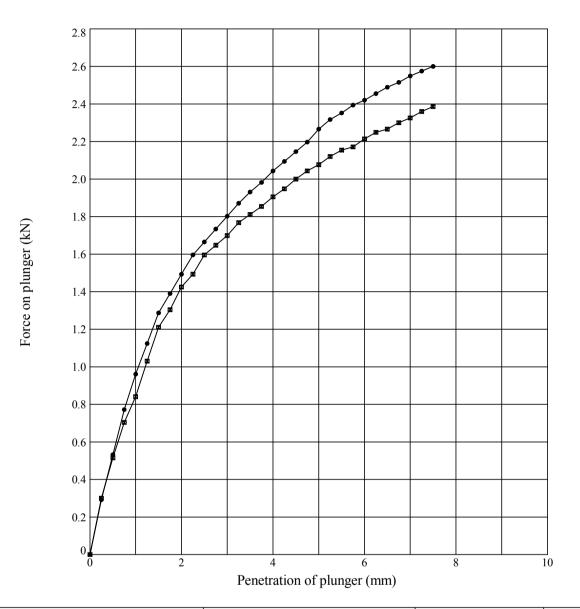
745045



Date

11/10/14

Trial Pit: TP22 Sample Ref: Sample Type: B Depth (m): 1.00



Initial Sample Conditions Test Details		Test Results	Тор	Base		
Initial Moisture Content (%)	: 20	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)	20	21
Initial Bulk Density (Mg/m³)	: 2.09	Surcharge (kg)	: 4.5	CBR value (%)	13	12
Initial Dry Density (Mg/m³)	: 1.74	Soaking Time (hrs)	:	Remarks:	•	
% retained on 20mm sieve	: 0	Swelling (mm)	:			
Sample Description				Key		
Dark brown mottled grey slightly sandy slightly gravelly CLAY T				● Top 🗷	Base	

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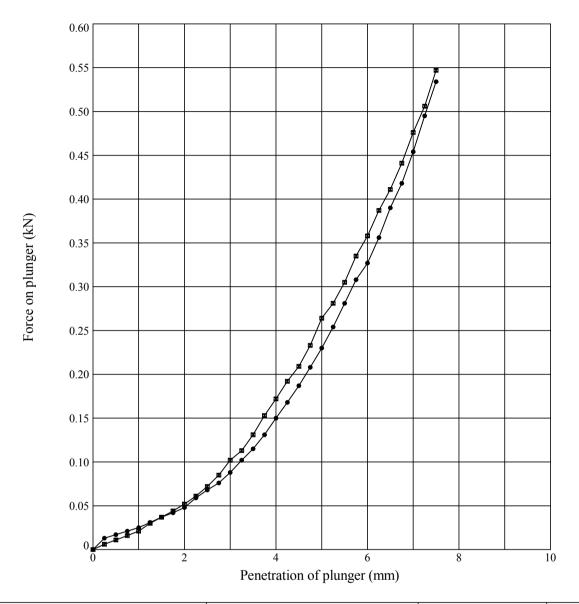
Compiled By			
A.S. fre	ALAN FROST	11/10/14	
Contract	Contract Ref:	•	

Contract

Junction 15 M1 West



Trial Pit: TP23 Sample Type: Sample Ref: B Depth (m): 1.50



Initial Sample Condi	Initial Sample Conditions Test Details		Test Results	Top	Base	
Initial Moisture Content (%)	: 16	Compaction Type	: 4.5 kg Dynamic	Moisture Content (%)	16	16
Initial Bulk Density (Mg/m³)	: 2.03	Surcharge (kg)	: 4.5	CBR value (%)	1.2	1.3
Initial Dry Density (Mg/m³)	: 1.75	Soaking Time (hrs)	:	Remarks:		
% retained on 20mm sieve	: 0	Swelling (mm)	:			
Sample Description			Key			
Orangish brown clayey SAND				● Top 🗷	Base	

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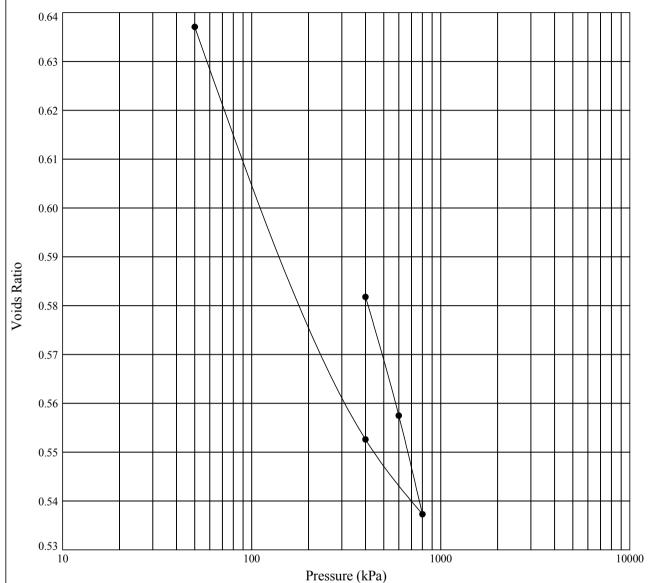
Date

11/10/14

GINT_LIBRARY V8 05.GLB LibVersion: v8 05 - Lib0004 PriVersion: v8 05 - Core+Logs+Geotech Lab-Bristol - 0003 | Graph L - 1-D CONSOL DATALOGGED | 745045.GPJ - v8 05 | 11/10/14 - 08.22 | AF. Structural Soils Lid, Branch Office - Bristol Lab. 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk.

ONE DIMENSIONAL CONSOLIDATION TEST In accordance with BS1377:Part 5:1990

Borehole: BH2 Depth (m): Sample Ref: Sample Type: U 8.20



Moisture Content (%) : 24 Moisture Content (%) : 26 Bulk Density (Mg/m³) : 2.02 Bulk Density (Mg/m³) : 2.05 Dry Density (Mg/m³) : 1.63 Dry Density (Mg/m³) : 1.62 Void Ratio : 0.6371 Void Ratio : 0.6371	Initial Specime	en Co	ondition	Final Specime	n Co	ondition
	Bulk Density (Mg/m ³) Dry Density (Mg/m ³)	:	2.02 1.63	Bulk Density (Mg/m ³) Dry Density (Mg/m ³)	:	2.05 1.62

Tola ratio .	0.021	Void ratio .	0.0071
	Specime	n Details	
Description		Height (mm)	: 18.90
Dark grey CLAY		Diameter (mm) Particle Density (Mg/m³) (assumed)	75.86 2.65
		Swelling Pressure (kPa)	: NA

Test Results					
Pressure	Mv	Cv			
Range (kPa)	(m^2/MN)	(m²/yr)			
0 - 50	Sample	Swelling			
50 - 100	Sample	Swelling			
100 - 200	Sample	Swelling			
200 - 400	0.073	1.5			
400 - 600	0.077	0.48			
600 - 800	0.065	0.33			
800 - 400	NA	NA			
400 - 50	NA	NA			

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STRUCTURAL SOILS 1a Princess Street Bedminster **Bristol BS3 4AG**

Compiled By			
A.S. fre	ALAN FROST	11/10/14	

Contract Contract Ref:

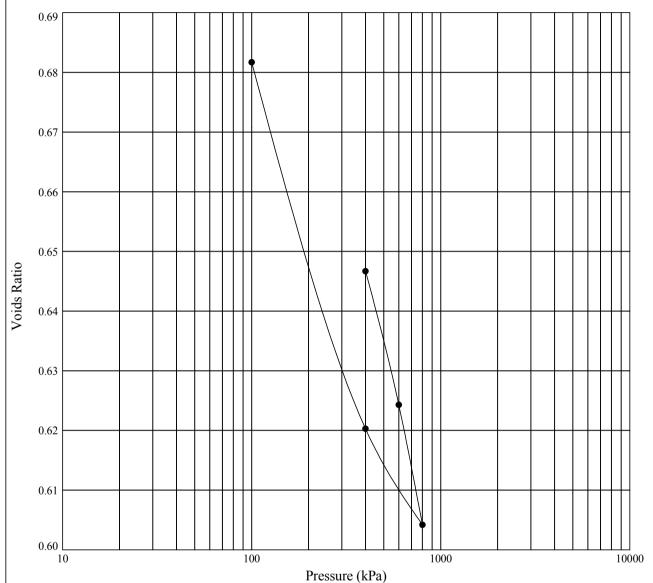
Junction 15 M1 West



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ONE DIMENSIONAL CONSOLIDATION TEST In accordance with BS1377:Part 5:1990

Borehole: BH2 Sample Type: Depth (m): Sample Ref: U 9.81



Initial Specime	en Co	ondition	Final Specime	n Co	ndition
Moisture Content (%)	:	27	Moisture Content (%)	:	28
Bulk Density (Mg/m ³)	:	2.00	Bulk Density (Mg/m ³)	:	2.02
Dry Density (Mg/m ³)	:	1.58	Dry Density (Mg/m ³)	:	1.58
Void Ratio	:	0.6806	Void Ratio	:	0.6817
Specimen Details					

, ora reacto	0.0000	, ora reacto		0.001.
	Specime	n Details		
Descriptio	n	Height (mm)	:	19.08
Dark grey CLAY		Diameter (mm) Particle Density (Mg/m³) (assumed)	:	76.04 2.65
		Swelling Pressure (kPa)	:	NA

Test Results		
Pressure Range (kPa)	Mv (m²/MN)	Cv (m²/yr)
0 - 100	Sample	Swelling
100 - 200	Sample	Swelling
200 - 400	0.057	8.3
400 - 600	0.068	1.1
600 - 800	0.062	0.45
800 - 400	NA	NA
400 - 100	NA	NA

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS



STRUCTURAL SOILS 1a Princess Street Bedminster **Bristol BS3 4AG**

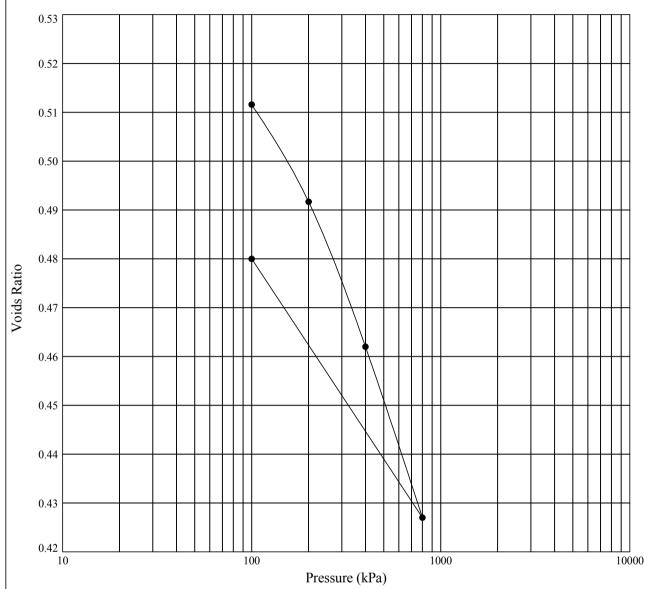
Compiled By		Date
A.S. fre	ALAN FROST	11/10/14

Contract

Junction 15 M1 West

Contract Ref: 745045

Borehole: BH3 Sample Ref: Sample Type: U Depth (m): 7.77



Initial Specimen Condition	Final Specimen Condition			
Moisture Content (%) : 20 Bulk Density (Mg/m³) : 2.08 Dry Density (Mg/m³) : 1.73 Void Ratio : 0.5288	Moisture Content (%) : 20 Bulk Density (Mg/m³) : 2.14 Dry Density (Mg/m³) : 1.78 Void Ratio : 0.4800			
Specimen Details				
Description	Height (mm) : 19.43			
Crox slightly sandy CLAV	Diameter (mm) : 75.08			

	Pressure Range (kPa)	Mv (m²/MN)	Cv (m²/yr)
١	0 - 50	Sample	Swelling
1	50 - 100	0.11	13
1	100 - 200	0.13	0.76
l	200 - 400	0.099	0.77
l	400 - 800	0.060	0.76
l	800 - 100	NA	NA
١			
١			

Test Results

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS

2.65

NA



Grey slightly sandy CLAY

STRUCTURAL SOILS 1a Princess Street Bedminster **Bristol BS3 4AG**

Compiled By		Date
A.S. fre	ALAN FROST	11/10/14

Contract Contract Ref:

Junction 15 M1 West

745045



Particle Density (Mg/m³) :

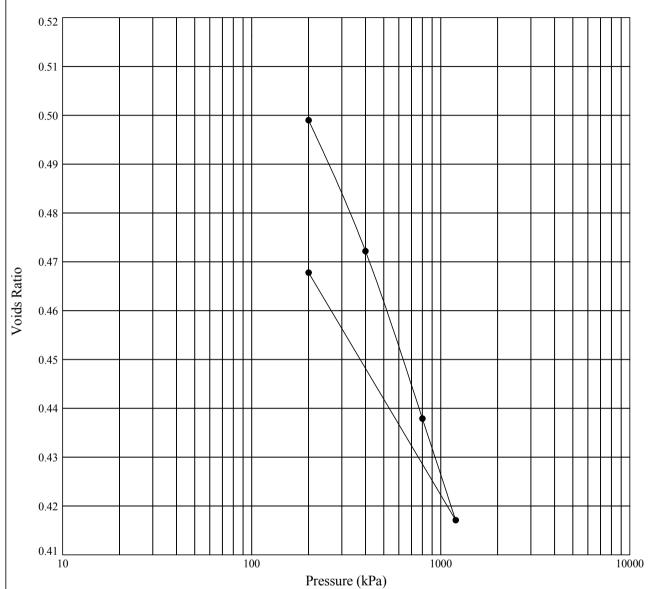
Swelling Pressure (kPa)

(assumed)

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ONE DIMENSIONAL CONSOLIDATION TEST In accordance with BS1377:Part 5:1990

Borehole: BH3 Depth (m): Sample Ref: Sample Type: U 9.21



Initial Specime	en Co	ondition	Final Specime	n Co	ndition
Moisture Content (%) Bulk Density (Mg/m³) Dry Density (Mg/m³) Void Ratio	:	20 2.08 1.73 0.5295	Moisture Content (%) Bulk Density (Mg/m³) Dry Density (Mg/m³) Void Ratio	: : : : : : : : : : : : : : : : : : : :	20 2.16 1.80 0.4678
Specimen Details					

Specimen Details				
Description		19.10		
Grey CLAY	Diameter (mm) Particle Density (Mg/m³) (assumed)	:	76.04 2.65	
	Swelling Pressure (kPa)	:	NA	

Test Results		
Pressure Range (kPa)	Mv (m²/MN)	Cv (m²/yr)
0 - 100	Sample	Swelling
100 - 200	0.11	2.6
200 - 400	0.089	0.95
400 - 800	0.058	0.97
800 - 1200	0.036	1.2
1200 - 200	NA	NA

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS



STRUCTURAL SOILS 1a Princess Street Bedminster **Bristol BS3 4AG**

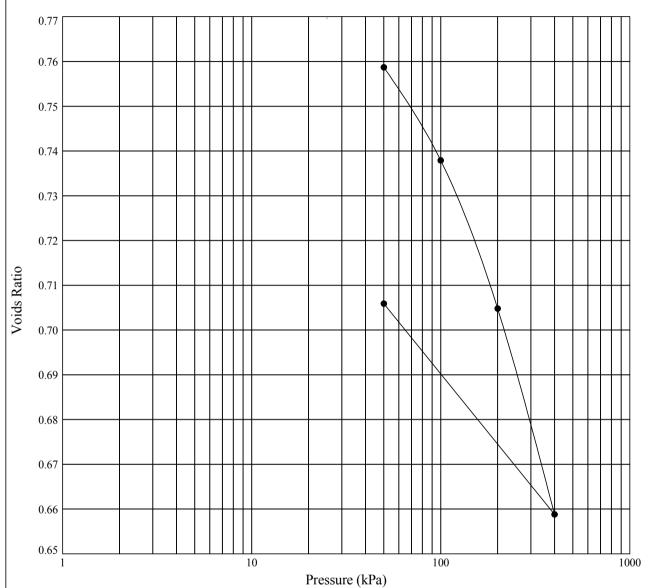
Compiled By		Date
A.S. fre	ALAN FROST	11/10/14

Contract Contract Ref:

Junction 15 M1 West



Borehole: BH5 Sample Ref: Sample Type: U Depth (m): 1.22



Initial Specimen Condition	Final Specimen Condition			
Moisture Content (%) : 30 Bulk Density (Mg/m³) : 1.94 Dry Density (Mg/m³) : 1.49 Void Ratio : 0.7756	Moisture Content (%) : 29 Bulk Density (Mg/m³) : 2.00 Dry Density (Mg/m³) : 1.55 Void Ratio : 0.7059			
Specimen Details				
Description	Height (mm) : 19.17			
D WILL CLASS	Diameter (mm) : 76.04			

Pressure Range (kPa)	Mv (m²/MN)	Cv (m²/yr)
0 - 25	Sample	Swelling
25 - 50	0.25	1.8
50 - 100	0.24	1.6
100 - 200	0.19	1.9
200 - 400	0.14	1.6
400 - 50	NA	NA

Test Results

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS

2.65

NA



STRUCTURAL SOILS 1a Princess Street Bedminster **Bristol** BS3 4AG

Brown mottled grey CLAY

Compiled By		
A.S. fre	ALAN FROST	11/10/14

Contract Contract Ref:

Junction 15 M1 West

745045

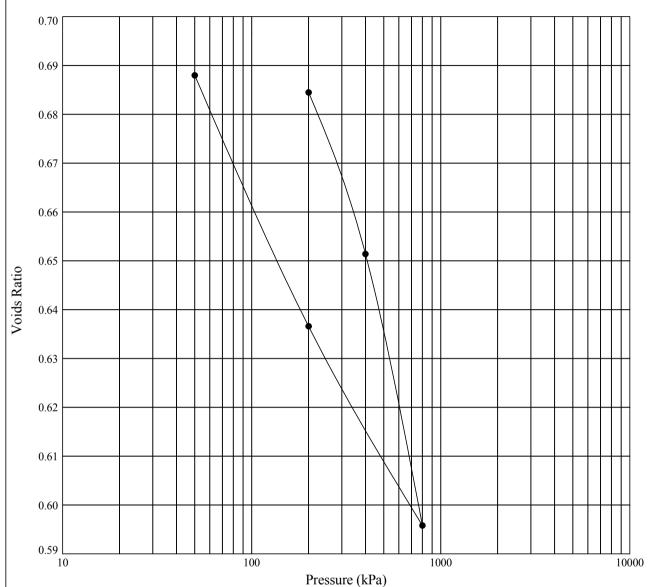


Particle Density (Mg/m³) :

Swelling Pressure (kPa)

(assumed)

Borehole: BH5 Sample Type: Depth (m): Sample Ref: U 3.02



Initial Specimen Condition		Final Specimen Condition			
Moisture Content (%) Bulk Density (Mg/m³) Dry Density (Mg/m³) Void Ratio	:	26 1.97 1.55 0.7042	Moisture Content (%) Bulk Density (Mg/m³) Dry Density (Mg/m³) Void Ratio	: : : : : : : : : : : : : : : : : : : :	28 2.00 1.57 0.6880
Specimen Details					

Specimen Details					
Description	Height (mm)	:	18.88		
Brown mottled grey CLAY	Diameter (mm) Particle Density (Mg/m³) (assumed)	:	74.96 2.65		
	Swelling Pressure (kPa)	:	NA		

Test Results				
Pressure Range (kPa)	Mv (m²/MN)	Cv (m²/yr)		
0 - 50	Sample	Swelling		
50 - 100	Sample	Swelling		
100 - 200	0.071	12		
200 - 400	0.098	0.89		
400 - 800	0.084	0.71		
800 - 200	NA	NA		
200 - 50	NA	NA		

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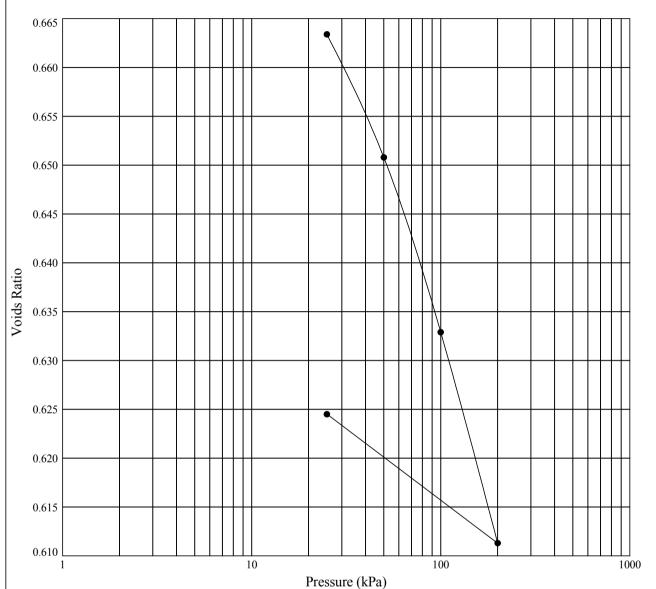
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Contract Contract Ref:

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Borehole: BH6 Sample Ref: Sample Type: U Depth (m): 1.48



Initial Specimen Condition		Final Specimen Condition			
Moisture Content (%) Bulk Density (Mg/m³) Dry Density (Mg/m³) Void Ratio	: : : : : : : : : : : : : : : : : : : :	27 1.98 1.57 0.6932	Moisture Content (%) Bulk Density (Mg/m³) Dry Density (Mg/m³) Void Ratio	: : : : : : : : : : : : : : : : : : : :	26 2.05 1.63 0.6245
Specimen Details					

Specimen Details				
Description	Height (mm)	:	18.94	
Light brown mottled dark brown CEAY	Diameter (mm) Particle Density (Mg/m³) (assumed)	:	74.97 2.65	
	Swelling Pressure (kPa)	:	NA	

Test Results				
Mv (m²/MN)	Cv (m²/yr)			
0.70	14			
0.30	27			
0.22	15			
0.13	19			
NA	NA			
	Mv (m ² /MN) 0.70 0.30 0.22 0.13			

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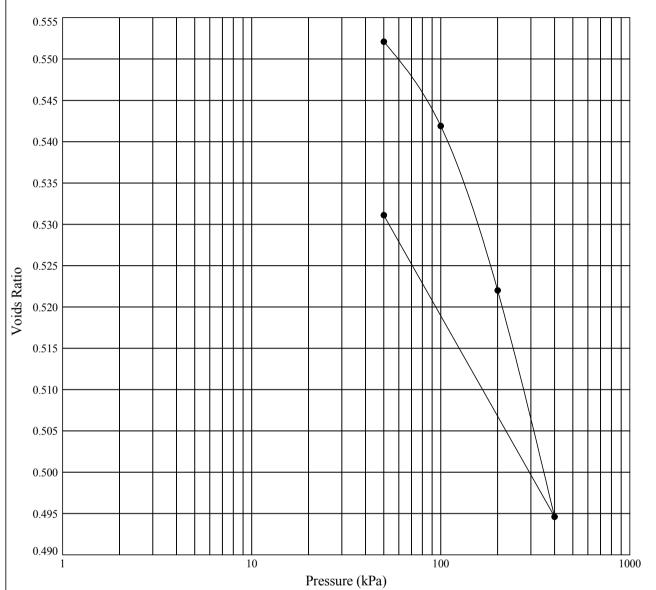
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Borehole: BH9 2 Sample Ref: Sample Type: Depth (m): 1.45



Initial Specimen Condition		Final Specimen Condition			
Moisture Content (%) Bulk Density (Mg/m³) Dry Density (Mg/m³) Void Ratio	:	22 2.07 1.69 0.5639	Moisture Content (%) Bulk Density (Mg/m³) Dry Density (Mg/m³) Void Ratio	:	22 2.11 1.73 0.5311

Void Ratio . 0.5059	void Ratio .	0.5511
Specime	en Details	
Description	Height (mm)	: 19.01
Brown mottled grey slightly gravelly CLAY	Diameter (mm) Particle Density (Mg/m³) (assumed)	: 74.98 : 2.65
	Swelling Pressure (kPa)	: NA

Test Results					
Pressure Mv Cv					
Range (kPa)	(m^2/MN)	(m²/yr)			
0 - 50	0.15	44			
50 - 100	0.13	2.1			
100 - 200	0.13	1.4			
200 - 400	0.090	1.5			
400 - 50	NA	NA			

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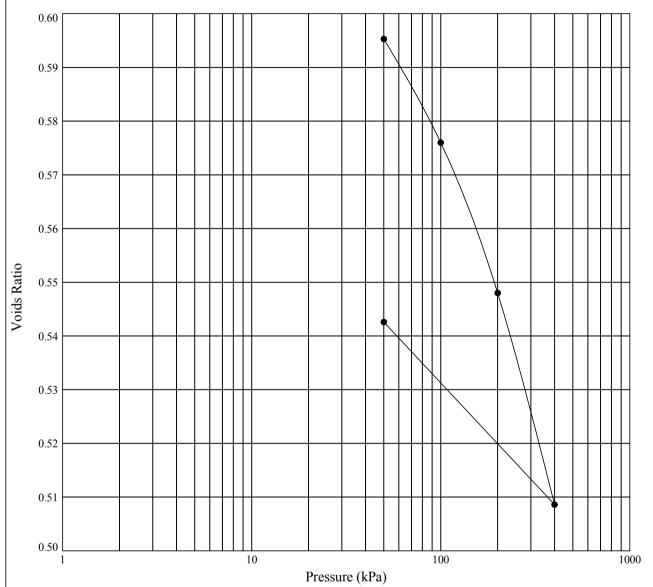
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Borehole: BH10 2 Sample Ref: Sample Type: Depth (m): 1.44



Initial Specimen Condition		Final Specimen Condition			
Moisture Content (%) Bulk Density (Mg/m³) Dry Density (Mg/m³) Void Ratio	:	24 2.03 1.63 0.6242	Moisture Content (%) Bulk Density (Mg/m³) Dry Density (Mg/m³) Void Ratio	: : : : : : : : : : : : : : : : : : : :	23 2.11 1.71 0.5426
Specimen Details					

Specimen Details					
Description Height (mm)			18.92		
Grey mottled orangish brown mottled grey slightly gravelly CLAY	Diameter (mm) Particle Density (Mg/m³) (assumed)	:	75.03 2.65		
	Swelling Pressure (kPa)	:	NA		

Test Results					
Pressure Range (kPa)	Mv (m²/MN)	Cv (m²/yr)			
0 - 50	0.36	0.83			
50 - 100	0.24	1.2			
100 - 200	0.18	1.8			
200 - 400	0.13	3.4			
400 - 50	NA	NA			

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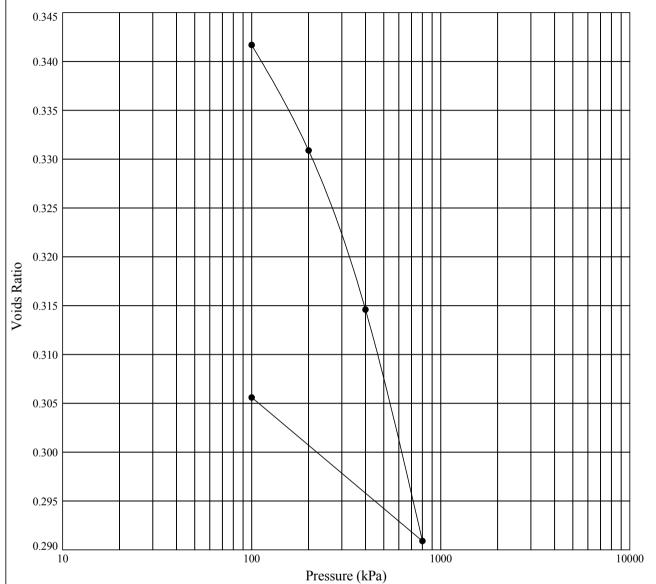
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Borehole: BH11 9 Sample Ref: Sample Type: Depth (m): 3.24



Initial Specimen Condition		Final Specimen Condition			
Moisture Content (%) Bulk Density (Mg/m³) Dry Density (Mg/m³) Void Ratio	:	14 2.18 1.91 0.3872	Moisture Content (%) Bulk Density (Mg/m³) Dry Density (Mg/m³) Void Ratio	:	14 2.32 2.03 0.3056

, old 14410 . 0.0072	Void ratio .	0.000			
Specimen Details					
Description	Height (mm)	: 19.77			
Grey mottled orangish brown slightly gravelly slightly sandy CLAY	Diameter (mm) Particle Density (Mg/m³) (assumed)	75.06 2.65			
	Swelling Pressure (kPa)	: NA			

Test Results					
Pressure	Mv	Cv			
Range (kPa)	(m^2/MN)	(m²/yr)			
0 - 100	0.33	60			
100 - 200	0.081	15			
200 - 400	0.061	15			
400 - 800	0.045	12			
800 - 100	NA	NA			

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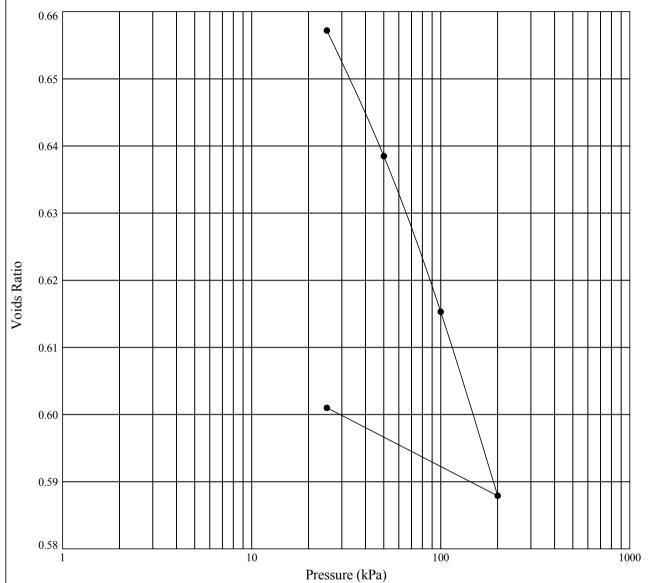
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Borehole: BH12 3 Sample Ref: Sample Type: U Depth (m): 1.58



Initial Specimen Condition		Final Specimen Condition		ondition	
Moisture Content (%) Bulk Density (Mg/m³) Dry Density (Mg/m³) Void Ratio	:	29 1.96 1.52 0.7385	Moisture Content (%) Bulk Density (Mg/m³) Dry Density (Mg/m³) Void Ratio	:	26 2.08 1.65 0.6010
Specimen Details					

Specime	n Details		
Description Height (mm)		:	20.54
Orangish brown mottled grey sandy CLAY	Diameter (mm) Particle Density (Mg/m³) (assumed)		75.28 2.65
	Swelling Pressure (kPa)	:	NA

Test Results					
Pressure Range (kPa)	Mv (m²/MN)	Cv (m²/yr)			
0 - 25	1.9	1.6			
25 - 50	0.45	3.8			
50 - 100	0.28	5.6			
100 - 200	0.17	7.0			
200 - 25	NA	NA			

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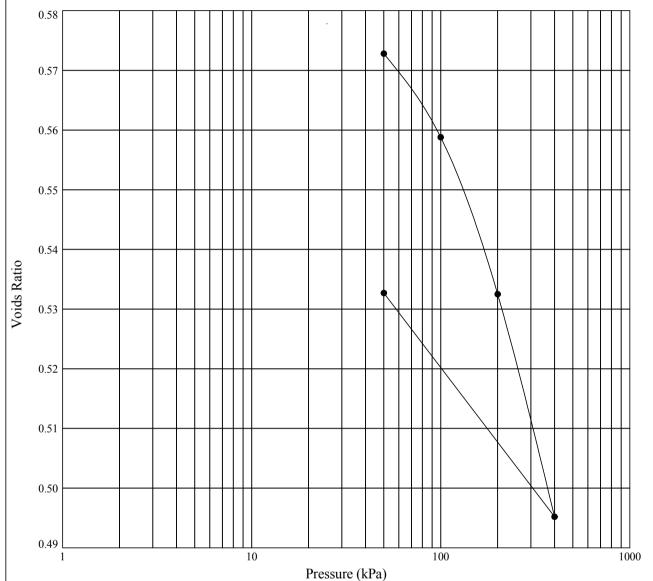
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Borehole: BH13 3 Sample Ref: Sample Type: U Depth (m): 1.22



Initial Specimen Condition		Final Specimen Condition			
Moisture Content (%) Bulk Density (Mg/m³) Dry Density (Mg/m³) Void Ratio	: : : : : : : : : : : : : : : : : : : :	22 2.05 1.67 0.5849	Moisture Content (%) Bulk Density (Mg/m³) Dry Density (Mg/m³) Void Ratio	:	22 2.11 1.73 0.5327
Specimen Details					
Descri	ntion		Height (mm)	:	19.05

Specimen Details						
Description	Height (mm)	:	19.05			
Orangish brown mottled grey slightly gravelly CLAY	Diameter (mm) Particle Density (Mg/m³) (assumed)	:	74.98 2.65			
	Swelling Pressure (kPa)	:	NA			

Test Results				
Pressure	Mv	Cv		
Range (kPa)	(m^2/MN)	(m ² /yr)		
0 - 25	Sample	Swelling		
25 - 50	0.13	31		
50 - 100	0.18	2.7		
100 - 200	0.17	3.0		
200 - 400	0.12	1.4		
400 - 50	NA	NA		

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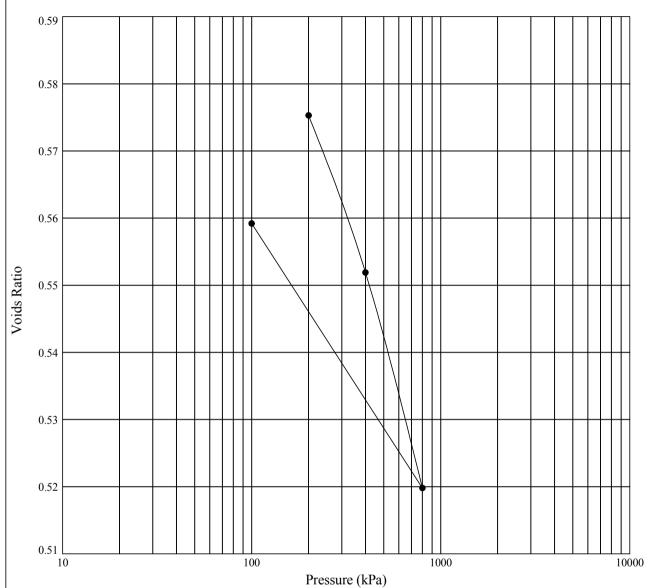
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Borehole: BH13 7 Sample Ref: Sample Type: U Depth (m): 3.31



Initial Specimen Condition		Final Specimen Condition			
Moisture Content (%)	:	23	Moisture Content (%)	:	23 2.10
Bulk Density (Mg/m ³) Dry Density (Mg/m ³)		2.02 1.65	Bulk Density (Mg/m ³) Dry Density (Mg/m ³)		2.10 1.70
Void Ratio	:	0.6094	Void Ratio	:	0.5592
Specimen Details					

Specime	n Details		
Description Height (mm)		:	19.02
D 11	Diameter (mm)	:	74.97
Brownish grey mottled orange slightly gravelly CLAY	Particle Density (Mg/m³) (assumed)	:	2.65
	Swelling Pressure (kPa)	:	NA

Test Results				
Pressure	Mv	Cv		
Range (kPa)	(m²/MN)	(m²/yr)		
0 - 100	Sample	Swelling		
100 - 200	0.084	13		
200 - 400	0.074	15		
400 - 800	0.052	13		
800 - 100	NA	NA		

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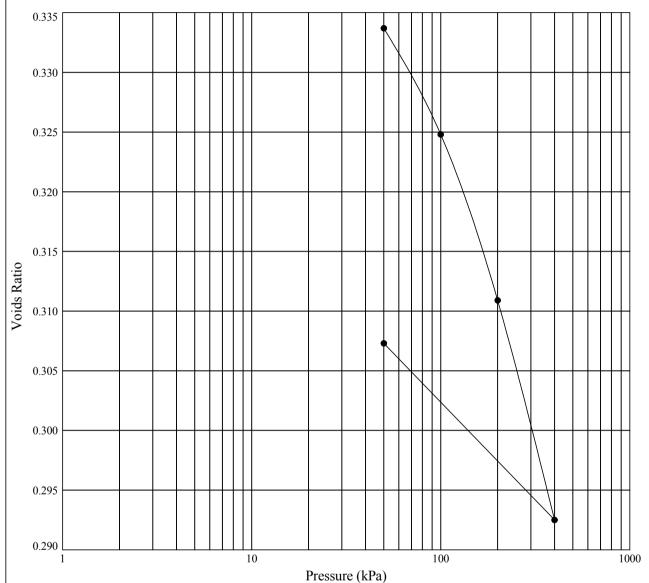
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GINT_LIBRARY V8 05.GLB LibVersion: v8 05 - Lib0004 PriVersion: v8 05 - Core+Logs+Geotech Lab-Bristol - 0003 | Graph L - 1-D CONSOL DATALOGGED | 745045.GPJ - v8 05 | 11/10/14 - 08.28 | AF. Structural Soils Lid, Branch Office - Bristol Lab. 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk.

ONE DIMENSIONAL CONSOLIDATION TEST In accordance with BS1377:Part 5:1990

Borehole: BH14 Sample Ref: Sample Type: U Depth (m): 2.33



Initial Specimen Condition			Final Specimen Condition		
Moisture Content (%) Bulk Density (Mg/m³) Dry Density (Mg/m³) Void Ratio	:	13 2.23 1.97 0.3481	Moisture Content (%) Bulk Density (Mg/m³) Dry Density (Mg/m³) Void Ratio	:	13 2.29 2.03 0.3073

Void Ratio	: 0.3481	Void Ratio :	0.3073
	Specime	en Details	
Descri	ption	Height (mm)	: 19.88
Greyish brown slightly gravelly C	ghtly sandy LAY	Diameter (mm) Particle Density (Mg/m³) (assumed)	75.05 2.65
		Swelling Pressure (kPa)	: NA

Test Results						
Pressure Range (kPa)	Mv (m²/MN)	Cv (m²/yr)				
0 - 50	0.21	23				
50 - 100	0.13	3.7				
100 - 200	0.10	10				
200 - 400	0.070	13				
400 - 50	NA	NA				

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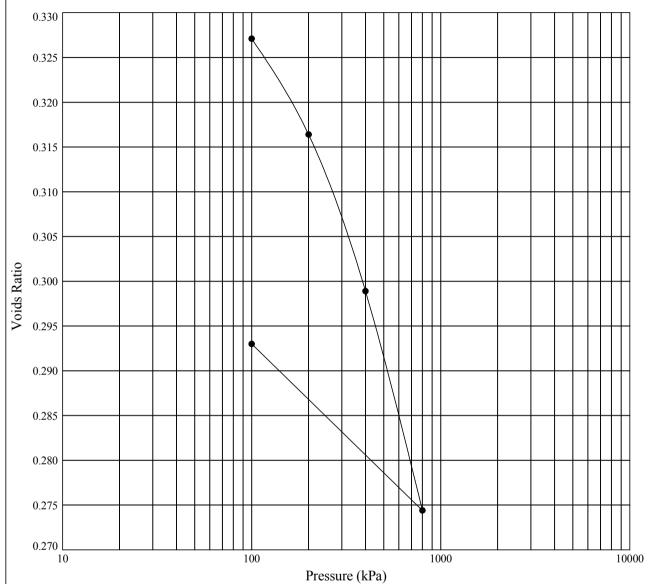
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Contract Contract Ref:

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Borehole: BH15 Sample Ref: 14 Sample Type: U Depth (m): 6.25



Initial Specimen Condition			Final Specimen Condition			
Moisture Content (%) Bulk Density (Mg/m³) Dry Density (Mg/m³) Void Ratio	:	12 2.22 1.97 0.3419	Moisture Content (%) Bulk Density (Mg/m³) Dry Density (Mg/m³) Void Ratio	:	12 2.31 2.06 0.2930	
						_

voia ratio . 0.041)	Void Ratio .	0.2750			
Specimen Details					
Description	Height (mm)	19.08			
Grey slightly gravelly slightly sandy CLAY	Diameter (mm) Particle Density (Mg/m³) (assumed)	74.96 2.65			
	Swelling Pressure (kPa)	: NA			

Test Results						
Pressure Range (kPa)	Mv (m²/MN)	Cv (m²/yr)				
0 - 100 100 - 200	0.11 0.081	21 6.3				
200 - 400	0.066	9.4				
400 - 800 800 - 100	0.047 NA	6.4 NA				

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SUMMARY OF LABORATORY HAND PENETROMETER & VANE TEST RESULTS

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content (%)	Vane Type	Average Reading (kPa)	Sample Description	
BH2		U	8.00	22	HVP	260	Greyish brown CLAY	
BH4		U	1.34	17	HVP	16	Brown silty SAND	
BH5		U	1.20	27	HVP	122	Brown mottled grey CLAY	
BH5		U	2.10	31	HVP	84	Brown mottled grey CLAY	
BH5		U	4.40	26	HVP	195	Grey mottled brown CLAY with occasional gypsum	
BH5		U	7.12	21	HVP	268	Grey CLAY	
ВН6		U	3.29	17	HVP	50	Brown slightly gravelly slightly sandy CLAY	
ВН8	12	U	5.12	13	HVP	296	Grey mottled brown slightly sandy CLAY	

Key: HVP = Hand Vane (Peak), HVR = Hand Vane (Remoulded), PP = Pocket Penetrometer.

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Contract Ref:

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SUMMARY OF LABORATORY HAND PENETROMETER & VANE TEST RESULTS

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content (%)	Vane Type	Average Reading (kPa)	Sample Description
ВН9	10	U	5.35	18	HVP	158	Grey mottled orange and brown slightly gravelly slightly sandy CLAY
BH12	11	U	5.11	22	HVP	234	Grey CLAY
BH14		U	1.59	21	HVP	96	Brown mottled reddish brown and grey slightly gravelly slightly sandy
							CLAY
BH16	20	U	7.74	19	HVP	302	Grey CLAY

Key: HVP = Hand Vane (Peak), HVR = Hand Vane (Remoulded), PP = Pocket Penetrometer.

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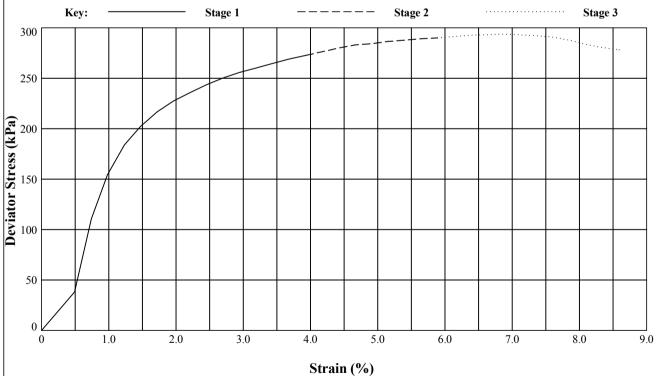
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Contract:				
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In accordance with BS1377:Part 7:1990, Clause 9

Borehole: **BH2** Sample Ref: Sample Type: U Depth (m): 9.61

Description: Dark grey CLAY

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	102.45		
	Height	(mm)	203.79		
	Moisture Content	(%)	25		
	Bulk Density	(Mg/m³)	2.01		
	Dry Density	(Mg/m³)	1.61		
TEST DETAILS	Membrane Thickness	(mm)	0.96	0.96	0.96
	Rate of Axial Displacement	(%/min)	1.23	1.23	1.23
	Cell Pressure	(kPa)	100	200	300
	Membrane Correction	(kPa)	1.01	1.42	1.60
	Corrected Deviator Stress	(kPa)	273	290	294
	Undrained Shear Strength	(kPa)	136	145	147
	Strain at Failure	(%)	3.9	5.9	6.9
	Mode of Failure				Compound



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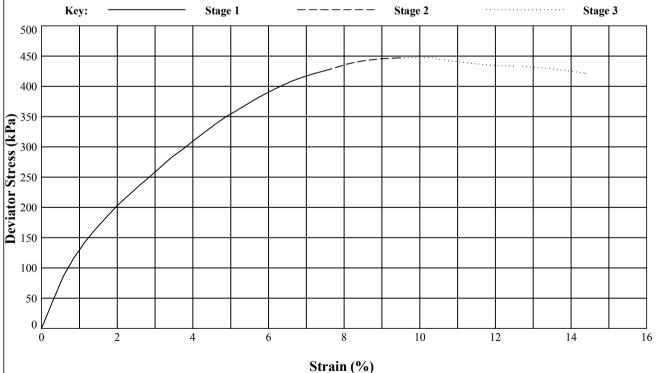
In accordance with BS1377:Part 7:1990, Clause 9

Borehole: **BH3** Sample Ref: Sample Type: U Depth (m): 7.50

Description: Grey slightly sandy CLAY

Remarks: Non-standard sample height

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	103.12		
	Height	(mm)	173.88		
	Moisture Content	(%)	19		
	Bulk Density	(Mg/m³)	2.10		
	Dry Density	(Mg/m³)	1.77		
TEST DETAILS	Membrane Thickness	(mm)	0.65	0.65	0.65
	Rate of Axial Displacement	(%/min)	1.44	1.44	1.44
	Cell Pressure	(kPa)	100	200	300
	Membrane Correction	(kPa)	1.15	1.39	1.46
	Corrected Deviator Stress	(kPa)	426	447	448
	Undrained Shear Strength	(kPa)	213	224	224
	Strain at Failure	(%)	7.5	9.5	10.1
	Mode of Failure				Compound



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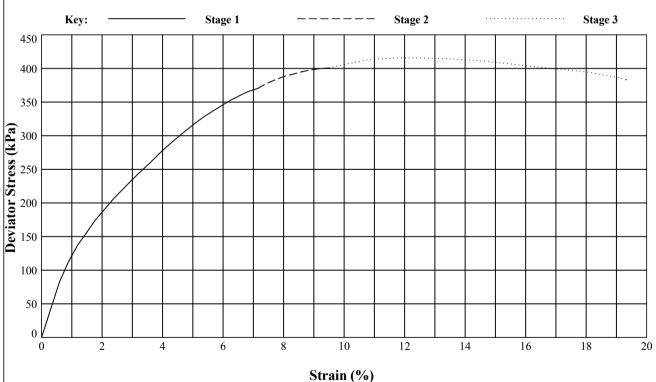
In accordance with BS1377:Part 7:1990, Clause 9

Borehole: **BH3** Sample Ref: Sample Type: U Depth (m): 9.00

Description: Grey CLAY

Remarks: Non-standard sample height

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	103.34		
	Height	(mm)	168.17		
	Moisture Content	(%)	19		
	Bulk Density	(Mg/m³)	2.10		
	Dry Density	(Mg/m ³)	1.76		
TEST DETAILS	Membrane Thickness	(mm)	0.89	0.89	0.89
	Rate of Axial Displacement	(%/min)	1.49	1.49	1.49
	Cell Pressure	(kPa)	80	160	320
	Membrane Correction	(kPa)	1.51	1.90	2.24
	Corrected Deviator Stress	(kPa)	370	401	416
	Undrained Shear Strength	(kPa)	185	200	208
	Strain at Failure	(%)	7.1	9.5	11.9
	Mode of Failure				Compound



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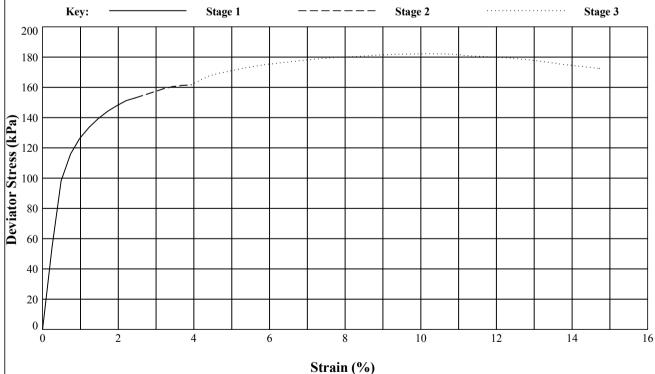


In accordance with BS1377:Part 7:1990, Clause 9

Borehole: BH5 Sample Ref: Sample Type: U Depth (m): 3.22

Description: Brown mottled grey CLAY

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	102.96		
	Height	(mm)	203.72		
	Moisture Content	(%)	29		
	Bulk Density	(Mg/m³)	1.94		
	Dry Density	(Mg/m³)	1.50		
TEST DETAILS	Membrane Thickness	(mm)	0.61	0.61	0.61
	Rate of Axial Displacement	(%/min)	1.23	1.23	1.23
	Cell Pressure	(kPa)	50	100	200
	Membrane Correction	(kPa)	0.41	0.64	1.40
	Corrected Deviator Stress	(kPa)	153	162	182
	Undrained Shear Strength	(kPa)	77	81	91
	Strain at Failure	(%)	2.4	3.9	10.3
	Mode of Failure				Compound



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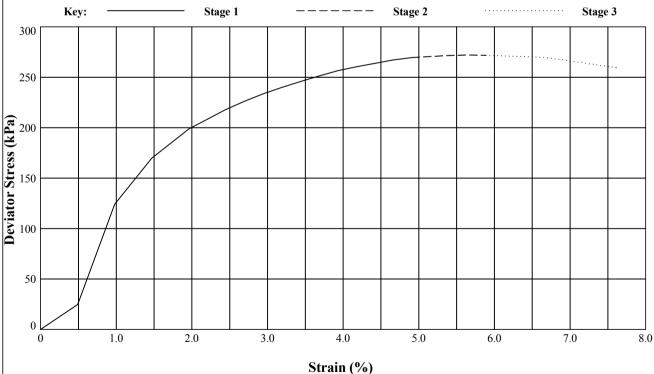


In accordance with BS1377:Part 7:1990, Clause 9

Borehole: BH5 Sample Ref: Sample Type: U Depth (m): 5.15

Description: Brown mottled grey CLAY

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	102.29		
	Height	(mm)	203.75		
	Moisture Content	(%)	30		
	Bulk Density	(Mg/m³)	1.96		
	Dry Density	(Mg/m³)	1.50		
TEST DETAILS	Membrane Thickness	(mm)	0.88	0.88	0.88
	Rate of Axial Displacement	(%/min)	1.23	1.23	1.23
	Cell Pressure	(kPa)	100	200	300
	Membrane Correction	(kPa)	1.15	1.27	1.31
	Corrected Deviator Stress	(kPa)	270	272	272
	Undrained Shear Strength	(kPa)	135	136	136
	Strain at Failure	(%)	4.9	5.6	5.9
	Mode of Failure				Compound



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Contract	Contract Ref:	•

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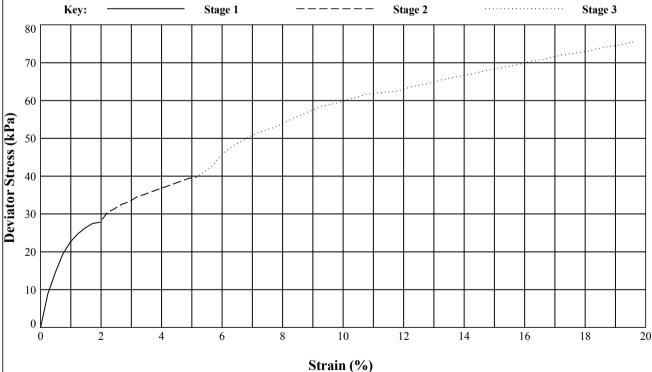
Junction 15 M1 West

In accordance with BS1377:Part 7:1990, Clause 9

Borehole: **BH6** Sample Ref: Sample Type: U Depth (m): 1.26

Description: Light brown mottled dark brown CLAY

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	100.43		
	Height	(mm)	204.35		
	Moisture Content	(%)	24		
	Bulk Density	(Mg/m³)	1.87		
	Dry Density	(Mg/m³)	1.50		
TEST DETAILS	Membrane Thickness	(mm)	0.39	0.39	0.39
	Rate of Axial Displacement	(%/min)	1.22	1.22	1.22
	Cell Pressure	(kPa)	40	80	160
	Membrane Correction	(kPa)	0.19	0.54	1.46
	Corrected Deviator Stress	(kPa)	28	40	76
	Undrained Shear Strength	(kPa)	14	20	38
	Strain at Failure	(%)	1.7	5.1	19.6
	Mode of Failure				Compound



Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS



STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

 Compiled By
 Date

 A - S - Free
 ALAN FROST
 11/10/14

Contract Contract Ref:

Junction 15 M1 West

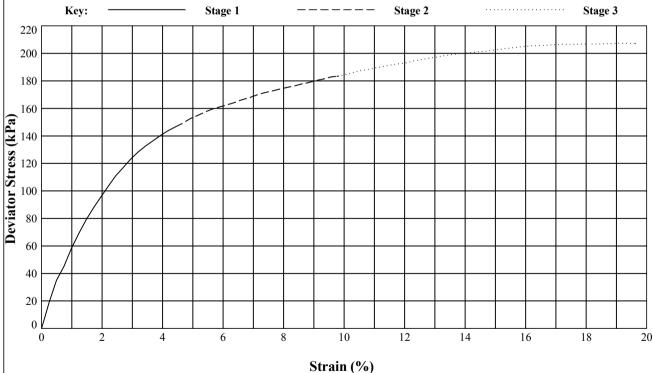


In accordance with BS1377:Part 7:1990, Clause 9

Borehole: BH9 Sample Ref: 2 Sample Type: U Depth (m): 1.24

Description: Brown mottled grey slightly gravelly CLAY

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	99.68		
	Height	(mm)	203.82		
	Moisture Content	(%)	22		
	Bulk Density	(Mg/m³)	2.07		
	Dry Density	(Mg/m³)	1.69		
TEST DETAILS	Membrane Thickness	(mm)	0.72	0.72	0.72
	Rate of Axial Displacement	(%/min)	1.23	1.23	1.23
	Cell Pressure	(kPa)	50	100	150
	Membrane Correction	(kPa)	0.87	1.64	2.66
	Corrected Deviator Stress	(kPa)	147	184	207
	Undrained Shear Strength	(kPa)	73	92	104
	Strain at Failure	(%)	4.4	9.8	19.1
	Mode of Failure				Compound



Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS



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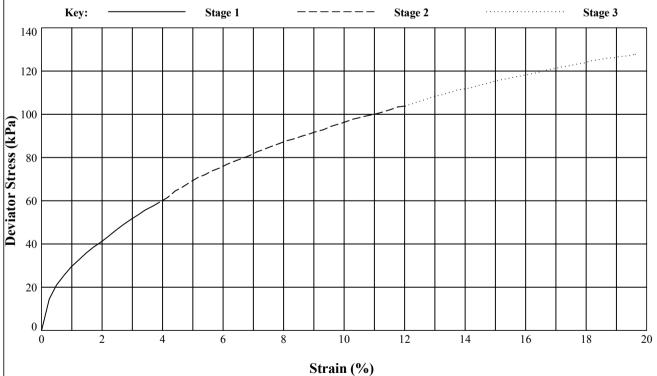


In accordance with BS1377:Part 7:1990, Clause 9

Borehole: BH10 Sample Ref: 2 Sample Type: U Depth (m): 1.25

Description: Grey mottled orangish brown mottled grey slightly gravelly CLAY

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	102.57		
	Height	(mm)	203.82		
	Moisture Content	(%)	24		
	Bulk Density	(Mg/m³)	2.03		
	Dry Density	(Mg/m³)	1.64		
TEST DETAILS	Membrane Thickness	(mm)	0.40	0.40	0.40
	Rate of Axial Displacement	(%/min)	1.23	1.23	1.23
	Cell Pressure	(kPa)	50	100	150
	Membrane Correction	(kPa)	0.39	1.02	1.47
	Corrected Deviator Stress	(kPa)	58	104	128
	Undrained Shear Strength	(kPa)	29	52	64
	Strain at Failure	(%)	3.7	12.0	19.6
	Mode of Failure				Compound



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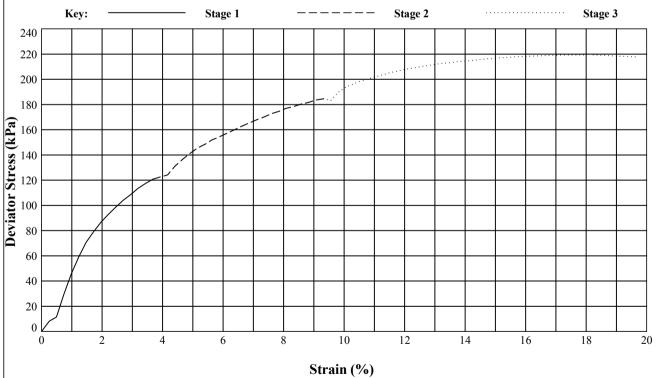
In accordance with BS1377:Part 7:1990, Clause 9

Borehole: BH11 Sample Ref: 9 Sample Type: U Depth (m): 3.03

Description: Grey mottled orangish brown slightly gravelly slightly sandy

CLAY

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	100.67		
	Height	(mm)	203.92		
	Moisture Content	(%)	17		
	Bulk Density	(Mg/m^3)	2.09		
	Dry Density	(Mg/m^3)	1.79		
TEST DETAILS	Membrane Thickness	(mm)	0.86	0.86	0.86
	Rate of Axial Displacement	(%/min)	1.23	1.23	1.23
	Cell Pressure	(kPa)	100	200	300
	Membrane Correction	(kPa)	0.86	1.86	3.02
	Corrected Deviator Stress	(kPa)	121	185	219
	Undrained Shear Strength	(kPa)	60	92	110
	Strain at Failure	(%)	3.7	9.3	18.1
	Mode of Failure				Compound



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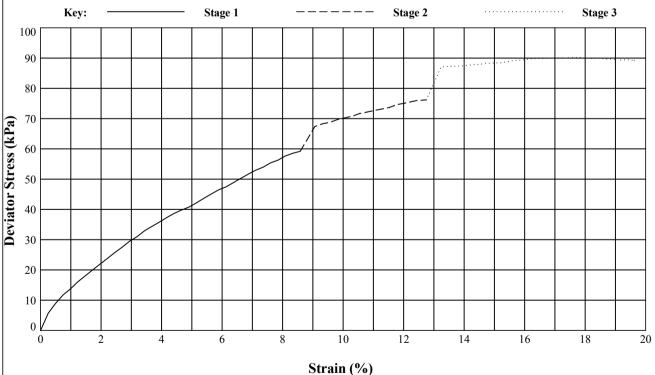


In accordance with BS1377:Part 7:1990, Clause 9

Borehole: BH12 Sample Ref: 3 Sample Type: U Depth (m): 1.30

Description: Orangish brown mottled grey sandy CLAY

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	103.25		
	Height	(mm)	203.86		
	Moisture Content	(%)	26		
	Bulk Density (Mg/m ³		2.01		
	Dry Density	(Mg/m³)	1.59		
TEST DETAILS	Membrane Thickness	(mm)	0.38	0.38	0.38
	Rate of Axial Displacement	(%/min)	1.23	1.23	1.23
	Cell Pressure	(kPa)	40	80	160
	Membrane Correction	(kPa)	0.75	1.00	1.28
	Corrected Deviator Stress	(kPa)	59	76	90
	Undrained Shear Strength	(kPa)	30	38	45
	Strain at Failure	(%)	8.6	12.8	17.7
	Mode of Failure				Compound



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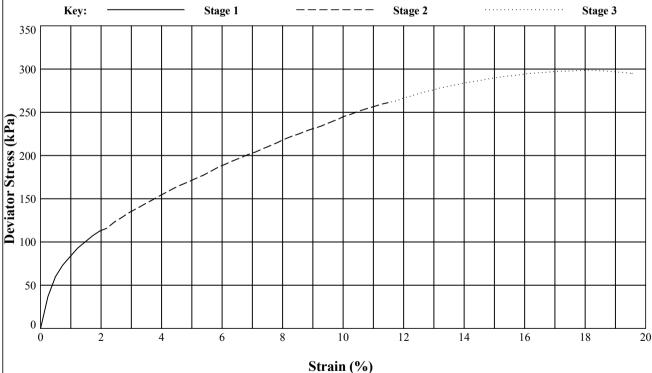


In accordance with BS1377:Part 7:1990, Clause 9

Borehole: BH13 Sample Ref: 3 Sample Type: U Depth (m): 1.24

Description: Orangish brown mottled grey slightly gravelly CLAY

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	103.51		
	Height	(mm)	204.63		
	Moisture Content	(%)	21		
	Bulk Density	(Mg/m³)	2.06		
	Dry Density	(Mg/m ³)	1.70		
TEST DETAILS	Membrane Thickness	(mm)	0.87	0.87	0.87
	Rate of Axial Displacement	(%/min)	1.22	1.22	1.22
	Cell Pressure	(kPa)	100	200	300
	Membrane Correction	(kPa)	0.47	2.13	2.97
	Corrected Deviator Stress	(kPa)	113	261	299
	Undrained Shear Strength	(kPa)	56	131	149
	Strain at Failure	(%)	2.0	11.5	18.1
	Mode of Failure				Compound



Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS



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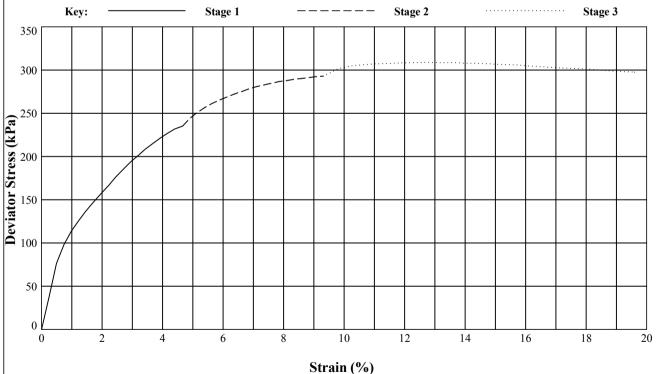


In accordance with BS1377:Part 7:1990, Clause 9

Borehole: BH13 Sample Ref: 7 Sample Type: Depth (m): 3.07

Description: Brownish grey mottled orange slightly gravelly CLAY

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	102.86		
	Height	(mm)	204.06		
	Moisture Content	(%)	22		
	Bulk Density	(Mg/m³)	2.07		
	Dry Density	(Mg/m³)	1.69		
TEST DETAILS	Membrane Thickness	(mm)	0.73	0.73	0.73
	Rate of Axial Displacement	(%/min)	1.23	1.23	1.23
	Cell Pressure	(kPa)	100	200	300
	Membrane Correction	(kPa)	0.90	1.54	1.93
	Corrected Deviator Stress	(kPa)	235	293	309
	Undrained Shear Strength	(kPa)	118	147	154
	Strain at Failure	(%)	4.7	9.3	12.7
	Mode of Failure				Compound



Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS



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Contract	Contract Ref			

Contract Contract Ref:

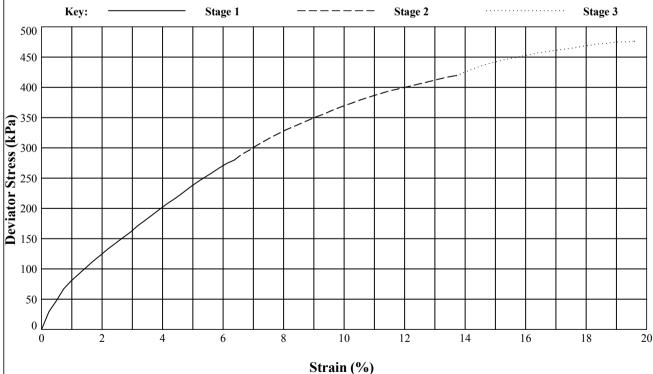
Junction 15 M1 West

In accordance with BS1377:Part 7:1990, Clause 9

Borehole: BH14 Sample Ref: Sample Type: U Depth (m): 2.09

Description: Greyish brown slightly sandy slightly gravelly CLAY

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	103.08		
	Height	(mm)	204.11		
	Moisture Content	(%)	13		
	Bulk Density	(Mg/m³)	2.28		
	Dry Density	(Mg/m ³)	2.02		
TEST DETAILS	Membrane Thickness	(mm)	0.88	0.88	0.88
	Rate of Axial Displacement	(%/min)	1.22	1.22	1.22
	Cell Pressure	(kPa)	40	80	160
	Membrane Correction	(kPa)	1.38	2.45	3.21
	Corrected Deviator Stress	(kPa)	280	420	476
	Undrained Shear Strength	(kPa)	140	210	238
	Strain at Failure	(%)	6.4	13.7	19.6
	Mode of Failure				Compound



Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK S.PHILP J.SHALLCROSS



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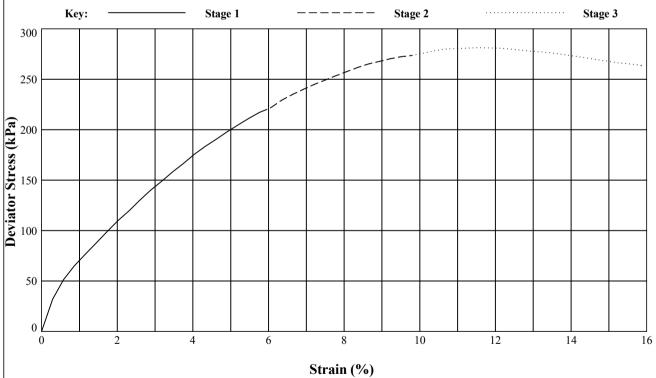
In accordance with BS1377:Part 7:1990, Clause 9

Borehole: BH15 Sample Ref: 14 Sample Type: U Depth (m): 6.00

Description: Grey slightly sandy CLAY

Remarks: Non-standard sample height

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	101.58		
	Height	(mm)	173.44		
	Moisture Content	(%)	19		
	Bulk Density (Mg/m ³		2.12		
	Dry Density (Mg/m³)		1.79		
TEST DETAILS	Membrane Thickness	(mm)	0.85	0.85	0.85
	Rate of Axial Displacement	(%/min)	1.44	1.44	1.44
	Cell Pressure	(kPa)	100	200	300
	Membrane Correction	(kPa)	1.25	1.90	2.13
	Corrected Deviator Stress	(kPa)	217	274	281
	Undrained Shear Strength	(kPa)	109	137	141
	Strain at Failure	(%)	5.8	9.8	11.5
	Mode of Failure				Compound



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		-

Contract Ref:

Junction 15 M1 West



APPENDIX H CHEMICAL LABORATORY CERTIFICATES FOR SOIL ANALYSIS



FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 14/04743

Issue Number: 1 **Date:** 17 September, 2014

Client: RSK Environment Ltd Coventry

Humber Road, Abbey Park

Coventry

UK

CV3 4AQ

Project Manager: Darren Bench/Michael Lawson

Project Name: Junction 15 M1 West

Project Ref: 312598 Order No: N/A

Date Samples Received:27/08/14Date Instructions Received:04/09/14Date Analysis Completed:17/09/14

Prepared by: Approved by:

Carolyn Field Iain Haslock

Sales Executive Analytical Consultant



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Lab Sample ID	14/04743/1	14/04743/4	14/04743/11	14/04743/12	14/04743/13	14/04743/14	14/04743/17	14/04743/24		
Client Sample No	S2									
Client Sample ID	CP1	WS1	WS8	WS9	WS10	WS11	WS14	TP6		
Depth to Top	0.20	0.30	0.50	0.40	0.20	0.20	0.60	0.30		
Depth To Bottom										
Date Sampled	18-Aug-14	21-Aug-14	20-Aug-14	19-Aug-14	19-Aug-14	21-Aug-14	20-Aug-14	28-Aug-14		je T
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	ø	Method ref
MCERTS Sample Matrix Code	6AE	5AE	5AE	1A	6AE	5E	5A	6E	Units	Meth
% Stones >10mm _A #	9.6	3.7	4.6	3.5	6.6	<0.1	23.8	<0.1	% w/w	A-T-044
pH _D ^{M#}	7.82	7.50	7.84	8.03	7.86	7.26	7.64	7.33	рН	A-T-031s
Phenois - Total by HPLC _A	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	A-T-050s
Total Organic Carbon _D ^{M#}	1.72	1.59	0.35	0.21	2.35	1.44	0.43	2.27	% w/w	A-T-032s
Arsenic _D ^{M#}	9	10	10	12	16	12	6	12	mg/kg	A-T-024s
Cadmium _D ^{M#}	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	A-T-024s
Copper _D ^{M#}	14	14	10	8	16	14	8	16	mg/kg	A-T-024s
Chromium _D ^{M#}	35	33	30	16	32	27	29	34	mg/kg	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1	<1	<1	<1	<1	mg/kg	A-T-040s
Lead _D ^{M#}	27	31	12	12	31	28	11	30	mg/kg	A-T-024s
Mercury _D	0.18	0.29	0.17	<0.17	0.20	<0.17	0.18	0.18	mg/kg	A-T-024s
Nickel _D ^{M#}	21	23	19	15	21	22	20	25	mg/kg	A-T-024s
Selenium _D ^{M#}	<1	<1	<1	<1	<1	<1	<1	1	mg/kg	A-T-024s
Zinc _D ^{M#}	60	65	50	49	69	67	39	70	mg/kg	A-T-024s



-					Chefft Proj	ect Ref: 31	2596			
Lab Sample ID	14/04743/1	14/04743/4	14/04743/11	14/04743/12	14/04743/13	14/04743/14	14/04743/17	14/04743/24		
Client Sample No	S2									
Client Sample ID	CP1	WS1	WS8	WS9	WS10	WS11	WS14	TP6		
Depth to Top	0.20	0.30	0.50	0.40	0.20	0.20	0.60	0.30		
Depth To Bottom										
Date Sampled	18-Aug-14	21-Aug-14	20-Aug-14	19-Aug-14	19-Aug-14	21-Aug-14	20-Aug-14	28-Aug-14		1 5
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	"	Method ref
MCERTS Sample Matrix Code	6AE	5AE	5AE	1A	6AE	5E	5A	6E	Units	Meth
Pest-c										
Mevinphos	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Dichlorvos	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
alpha-Hexachlorocyclohexane (HCH)	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Diazinon	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Heptachlor	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Aldrin	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
beta-Hexachlorocyclohexane (HCH)	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Methyl Parathion	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Malathion	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Fenitrothion	<50	<50	•	<50	•	<50			μg/kg	Subcon
Heptachlor Epoxide	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Parathion (Ethyl Parathion)	<50	<50	•	<50	•	<50			μg/kg	Subcon
p,p-DDE	<50	<50	•	<50	•	<50	•	•	μg/kg	Subcon
p,p-DDT	<50	<50	•	<50	•	<50	•	•	μg/kg	Subcon
p,p-Methoxychlor	<50	<50	•	<50	•	<50	•	•	μg/kg	Subcon
p,p-TDE (DDD)	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
o,p-DDE	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
o,p-DDT	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
o,p-Methoxychlor	<50	<50	•	<50	•	<50	•	•	μg/kg	Subcon
o,p-TDE (DDD)	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Endosulphan I	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Endosulphan II	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Endosulphan Sulphate	<50	<50	-	<50	-	<50	-	•	μg/kg	Subcon
Endrin	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Ethion	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Dieldrin	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Azinphos-methyl	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon



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Lab Sample ID	14/04743/1	14/04743/4	14/04743/11	14/04743/12	14/04743/13	14/04743/14	14/04743/17	14/04743/24		
Client Sample No	S2									
Client Sample ID	CP1	WS1	WS8	WS9	WS10	WS11	WS14	TP6		
Depth to Top	0.20	0.30	0.50	0.40	0.20	0.20	0.60	0.30		
Depth To Bottom										
Date Sampled	18-Aug-14	21-Aug-14	20-Aug-14	19-Aug-14	19-Aug-14	21-Aug-14	20-Aug-14	28-Aug-14		*
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		Method ref
MCERTS Sample Matrix Code	6AE	5AE	5AE	1A	6AE	5E	5A	6E	Units	Meth
PAH 16										
Acenaphthene _A ^{M#}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-019s
Anthracene _A ^{M#}	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	<0.04	<0.04	<0.04	0.04	0.05	<0.04	<0.04	mg/kg	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04	<0.04	<0.04	<0.04	0.05	0.07	<0.04	<0.04	mg/kg	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	<0.05	<0.05	<0.05	0.07	0.07	<0.05	<0.05	mg/kg	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	A-T-019s
Chrysene _A ^{M#}	<0.06	<0.06	<0.06	<0.06	0.07	<0.06	<0.06	<0.06	mg/kg	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	A-T-019s
Fluoranthene _A ^{M#}	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	mg/kg	A-T-019s
Fluorene _A ^{M#}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03	<0.03	<0.03	<0.03	<0.03	0.05	<0.03	<0.03	mg/kg	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	A-T-019s
Phenanthrene _A ^{M#}	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	A-T-019s
Pyrene _A ^{M#}	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	A-T-019s
PAH (total 16) _A ^{M#}	<0.08	<0.08	<0.08	<0.08	0.24	0.22	<0.08	<0.08	mg/kg	A-T-019s



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Lab Sample ID	14/04743/1	14/04743/4	14/04743/11	14/04743/12	14/04743/13	14/04743/14	14/04743/17	14/04743/24		
Client Sample No	S2									
Client Sample ID	CP1	WS1	WS8	WS9	WS10	WS11	WS14	TP6		
Depth to Top	0.20	0.30	0.50	0.40	0.20	0.20	0.60	0.30		
Depth To Bottom										
Date Sampled	18-Aug-14	21-Aug-14	20-Aug-14	19-Aug-14	19-Aug-14	21-Aug-14	20-Aug-14	28-Aug-14		je
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	ø	Method ref
MCERTS Sample Matrix Code	6AE	5AE	5AE	1A	6AE	5E	5A	6E	Units	Meth
Nitrogen Pests										
Ametryn	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Atraton	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Atrazine	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Prometon	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Prometryn	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Propazine	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Simazine	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Simetryn	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Terbuthylazine	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon
Terbutryn	<50	<50	-	<50	-	<50	-	-	μg/kg	Subcon



_					Client Pro	ject Ref: 31	2598			
Lab Sample ID	14/04743/1	14/04743/4	14/04743/11	14/04743/12	14/04743/13	14/04743/14	14/04743/17	14/04743/24		
Client Sample No	S2									
Client Sample ID	CP1	WS1	WS8	WS9	WS10	WS11	WS14	TP6		
Depth to Top	0.20	0.30	0.50	0.40	0.20	0.20	0.60	0.30		
Depth To Bottom										
Date Sampled	18-Aug-14	21-Aug-14	20-Aug-14	19-Aug-14	19-Aug-14	21-Aug-14	20-Aug-14	28-Aug-14		-
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		Method ref
MCERTS Sample Matrix Code		5AE	5AE	1A	6AE	5E	5A	6E	Units	Meth
TPH CWG										
Ali >C5-C6 _A #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Ali >C6-C8 _A #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Ali >C8-C10 _A #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Ali >C10-C12 _A #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Ali >C12-C16 _A #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Ali >C16-C21 _A #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Ali >C21-C35 _A #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Total Aliphatics	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022+23s
Aro >C5-C7 _A #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Aro >C7-C8 _A #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Aro >C8-C9 _A #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Aro >C9-C10 _A #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Aro >C10-C12 _A #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Aro >C12-C16 _A #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Aro >C16-C21 _A #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Aro >C21-C35 _A #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Total Aromatics _A	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022+23s
TPH (Ali & Aro) _A	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022+23s
BTEX - Benzene _A #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
BTEX - Toluene _A #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
BTEX - Ethyl Benzene _A #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
BTEX - m & p Xylene _A #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
BTEX - o Xylene _A #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
MTBE _A #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s



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Lab Sample ID	14/04743/25	14/04743/26	14/04743/27	14/04743/28	14/04743/33	14/04743/34	14/04743/40	14/04743/41		
Client Sample No										
Client Sample ID	TP7	TP8	TP8	TP9	TP14	TP16	TP24	TP25		
Depth to Top	0.20	0.35	0.80	0.80	0.90	0.40	0.20	0.40		
Depth To Bottom		0.60								
Date Sampled	27-Aug-14	27-Aug-14	27-Aug-14	27-Aug-14	27-Aug-14	27-Aug-14	26-Aug-14	26-Aug-14		7
Sample Type	Soil	ø	Method ref							
MCERTS Sample Matrix Code	6E	5A	5E	5	5A		6E	6A	Units	Meth
% Stones >10mm _A #	<0.1	6.3	<0.1	<0.1	9.5	-	<0.1	8.7	% w/w	A-T-044
pH _D ^{M#}	7.50	8.42	8.08	8.05	8.44	-	7.85	7.96	рН	A-T-031s
Phenois - Total by HPLC _A	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	mg/kg	A-T-050s
Total Organic Carbon _D ^{M#}	2.17	0.44	0.74	0.85	1.18	-	2.43	1.67	% w/w	A-T-032s
Arsenic _D ^{M#}	11	9	13	11	11	-	9	10	mg/kg	A-T-024s
Cadmium _D ^{M#}	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	mg/kg	A-T-024s
Copper _D ^{M#}	14	6	12	9	13	-	17	16	mg/kg	A-T-024s
Chromium _D ^{M#}	28	19	27	22	24	-	32	31	mg/kg	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1	<1	-	<1	<1	mg/kg	A-T-040s
Lead _D ^{M#}	30	12	21	18	11	-	30	26	mg/kg	A-T-024s
Mercury _D	<0.17	<0.17	<0.17	0.23	0.67	-	<0.17	0.26	mg/kg	A-T-024s
Nickel _D ^{M#}	20	14	26	18	23	-	28	26	mg/kg	A-T-024s
Selenium _D ^{M#}	1	<1	<1	1	<1	-	1	<1	mg/kg	A-T-024s
Zinc _D ^{M#}	68	42	53	43	48	-	66	65	mg/kg	A-T-024s



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Lab Sample ID	14/04743/25	14/04743/26	14/04743/27	14/04743/28	14/04743/33	14/04743/34	14/04743/40	14/04743/41		
Client Sample No										
Client Sample ID	TP7	TP8	TP8	TP9	TP14	TP16	TP24	TP25		
Depth to Top	0.20	0.35	0.80	0.80	0.90	0.40	0.20	0.40		
Depth To Bottom		0.60								
Date Sampled	27-Aug-14	27-Aug-14	27-Aug-14	27-Aug-14	27-Aug-14	27-Aug-14	26-Aug-14	26-Aug-14		je
Sample Type	Soil	ø	Method ref							
MCERTS Sample Matrix Code	6E	5A	5E	5	5A		6E	6A	Units	Meth
Pest-c										
Mevinphos	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Dichlorvos	<50	-	-	-	-	<50	•	<50	μg/kg	Subcon
alpha-Hexachlorocyclohexane (HCH)	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Diazinon	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Heptachlor	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Aldrin	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
beta-Hexachlorocyclohexane (HCH)	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Methyl Parathion	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Malathion	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Fenitrothion	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Heptachlor Epoxide	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Parathion (Ethyl Parathion)	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
p,p-DDE	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
p,p-DDT	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
p,p-Methoxychlor	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
p,p-TDE (DDD)	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
o,p-DDE	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
o,p-DDT	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
o,p-Methoxychlor	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
o,p-TDE (DDD)	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Endosulphan I	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Endosulphan II	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Endosulphan Sulphate	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Endrin	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Ethion	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Dieldrin	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Azinphos-methyl	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon



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Lab Sample ID	14/04743/25	14/04743/26	14/04743/27	14/04743/28	14/04743/33	14/04743/34	14/04743/40	14/04743/41		
Client Sample No										
Client Sample ID	TP7	TP8	TP8	TP9	TP14	TP16	TP24	TP25		
Depth to Top	0.20	0.35	0.80	0.80	0.90	0.40	0.20	0.40		
Depth To Bottom		0.60								
Date Sampled	27-Aug-14	27-Aug-14	27-Aug-14	27-Aug-14	27-Aug-14	27-Aug-14	26-Aug-14	26-Aug-14		76
Sample Type	Soil	ø	Method ref							
MCERTS Sample Matrix Code	6E	5A	5E	5	5A		6E	6A	Units	Meth
PAH 16										
Acenaphthene _A ^{M#}	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	mg/kg	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	mg/kg	A-T-019s
Anthracene _A ^{M#}	<0.02	<0.02	<0.02	<0.02	<0.02	•	<0.02	<0.02	mg/kg	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	<0.04	<0.04	<0.04	<0.04	-	<0.04	<0.04	mg/kg	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04	<0.04	<0.04	<0.04	<0.04	-	<0.04	<0.04	mg/kg	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	mg/kg	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	mg/kg	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07	<0.07	<0.07	-	<0.07	<0.07	mg/kg	A-T-019s
Chrysene _A ^{M#}	<0.06	<0.06	<0.06	<0.06	<0.06	-	<0.06	<0.06	mg/kg	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	<0.04	<0.04	<0.04	-	<0.04	<0.04	mg/kg	A-T-019s
Fluoranthene _A ^{M#}	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	<0.08	mg/kg	A-T-019s
Fluorene _A ^{M#}	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	mg/kg	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.03	mg/kg	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.03	mg/kg	A-T-019s
Phenanthrene _A ^{M#}	<0.03	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.03	mg/kg	A-T-019s
Pyrene _A ^{M#}	<0.07	<0.07	<0.07	<0.07	<0.07	-	<0.07	<0.07	mg/kg	A-T-019s
PAH (total 16) _A ^{M#}	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	<0.08	mg/kg	A-T-019s



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Lab Sample ID	14/04743/25	14/04743/26	14/04743/27	14/04743/28	14/04743/33	14/04743/34	14/04743/40	14/04743/41		
Client Sample No										
Client Sample ID	TP7	TP8	TP8	TP9	TP14	TP16	TP24	TP25		
Depth to Top	0.20	0.35	0.80	0.80	0.90	0.40	0.20	0.40		
Depth To Bottom		0.60								
Date Sampled	27-Aug-14	27-Aug-14	27-Aug-14	27-Aug-14	27-Aug-14	27-Aug-14	26-Aug-14	26-Aug-14		75
Sample Type	Soil	ø	Method ref							
MCERTS Sample Matrix Code	6E	5A	5E	5	5A		6E	6A	Units	Meth
Nitrogen Pests										
Ametryn	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Atraton	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Atrazine	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Prometon	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Prometryn	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Propazine	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Simazine	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Simetryn	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Terbuthylazine	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon
Terbutryn	<50	-	-	-	-	<50	-	<50	μg/kg	Subcon



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Lab Sample ID	14/04743/25	14/04743/26	14/04743/27	14/04743/28	14/04743/33	14/04743/34	14/04743/40	14/04743/41		
Client Sample No										
Client Sample ID	TP7	TP8	TP8	TP9	TP14	TP16	TP24	TP25		
Depth to Top	0.20	0.35	0.80	0.80	0.90	0.40	0.20	0.40		
Depth To Bottom		0.60								
Date Sampled	27-Aug-14	27-Aug-14	27-Aug-14	27-Aug-14	27-Aug-14	27-Aug-14	26-Aug-14	26-Aug-14		*
Sample Type	Soil		Method ref							
MCERTS Sample Matrix Code	6E	5A	5E	5	5A		6E	6A	Units	Meth
TPH CWG										
Ali >C5-C6 _A #	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	mg/kg	A-T-022s
Ali >C6-C8 _A #	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	mg/kg	A-T-022s
Ali >C8-C10 _A #	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	mg/kg	A-T-022s
Ali >C10-C12 _A #	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	mg/kg	A-T-023s
Ali >C12-C16 _A #	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	mg/kg	A-T-023s
Ali >C16-C21 _A #	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	mg/kg	A-T-023s
Ali >C21-C35 _A #	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	mg/kg	A-T-023s
Total Aliphatics _A	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	mg/kg	A-T-022+23s
Aro >C5-C7 _A #	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	mg/kg	A-T-022s
Aro >C7-C8 _A #	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	mg/kg	A-T-022s
Aro >C8-C9 _A #	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	mg/kg	A-T-022s
Aro >C9-C10 _A #	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	mg/kg	A-T-022s
Aro >C10-C12 _A #	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	mg/kg	A-T-023s
Aro >C12-C16 _A #	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	mg/kg	A-T-023s
Aro >C16-C21 _A #	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	mg/kg	A-T-023s
Aro >C21-C35 _A #	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	mg/kg	A-T-023s
Total Aromatics _A	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	mg/kg	A-T-022+23s
TPH (Ali & Aro) _A	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	mg/kg	A-T-022+23s
BTEX - Benzene _A #	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	mg/kg	A-T-022s
BTEX - Toluene _A #	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	mg/kg	A-T-022s
BTEX - Ethyl Benzene _A #	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	mg/kg	A-T-022s
BTEX - m & p Xylene _A #	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	mg/kg	A-T-022s
BTEX - o Xylene _A #	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	mg/kg	A-T-022s
MTBE _A #	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	mg/kg	A-T-022s



			••	nject net. 3 i			
Lab Sample ID	14/04743/48						
Client Sample No							
Client Sample ID	СРВН2						
Depth to Top	0.50						
Depth To Bottom							
Date Sampled	18-Aug-14						1 6
Sample Type	Soil					ø	Method ref
MCERTS Sample Matrix Code	5					Units	Meth
% Stones >10mm _A #	<0.1					% w/w	A-T-044
pH _D ^{M#}	7.71					рН	A-T-031s
Phenois - Total by HPLC _A	<0.2					mg/kg	A-T-050s
Total Organic Carbon _D ^{M#}	0.51					% w/w	A-T-032s
Arsenic _D ^{M#}	17					mg/kg	A-T-024s
Cadmium _D ^{M#}	<0.5					mg/kg	A-T-024s
Copper _D ^{M#}	12					mg/kg	A-T-024s
Chromium _D ^{M#}	31					mg/kg	A-T-024s
Chromium (hexavalent) _D	<1					mg/kg	A-T-040s
Lead _D ^{M#}	20					mg/kg	A-T-024s
Mercury _D	<0.17					mg/kg	A-T-024s
Nickel _D ^{M#}	25					mg/kg	A-T-024s
Selenium _D ^{M#}	<1					mg/kg	A-T-024s
Zinc _D ^{M#}	66					mg/kg	A-T-024s



				ect net. 31			
Lab Sample ID	14/04743/48						
Client Sample No							
Client Sample ID	СРВН2						
Depth to Top	0.50						
Depth To Bottom							
Date Sampled	18-Aug-14						JĘ
Sample Type	Soil						Method ref
MCERTS Sample Matrix Code	5					Units	Meth
PAH 16							
Acenaphthene _A ^{M#}	<0.01					mg/kg	A-T-019s
Acenaphthylene _A ^{M#}	<0.01					mg/kg	A-T-019s
Anthracene _A ^{M#}	<0.02					mg/kg	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04					mg/kg	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04					mg/kg	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05					mg/kg	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05					mg/kg	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07					mg/kg	A-T-019s
Chrysene _A ^{M#}	<0.06					mg/kg	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04					mg/kg	A-T-019s
Fluoranthene _A ^{M#}	<0.08					mg/kg	A-T-019s
Fluorene _A ^{M#}	<0.01					mg/kg	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03					mg/kg	A-T-019s
Naphthalene _A ^{M#}	<0.03					mg/kg	A-T-019s
Phenanthrene _A ^{M#}	<0.03					mg/kg	A-T-019s
Pyrene _A ^{M#}	<0.07					mg/kg	A-T-019s
PAH (total 16) _A ^{M#}	<0.08					mg/kg	A-T-019s



			Client Pro	ject Ref: 31	2598		
Lab Sample ID	14/04743/48						
Client Sample No							
Client Sample ID	СРВН2						
Depth to Top	0.50						
Depth To Bottom							
Date Sampled	18-Aug-14						-
Sample Type	Soil						Method ref
MCERTS Sample Matrix Code	5					Units	Meth
TPH CWG							
Ali >C5-C6 _A #	<0.01					mg/kg	A-T-022s
Ali >C6-C8 _A #	<0.01					mg/kg	A-T-022s
Ali >C8-C10 _A #	<0.01					mg/kg	A-T-022s
Ali >C10-C12 _A #	<0.1					mg/kg	A-T-023s
Ali >C12-C16 _A #	<0.1					mg/kg	A-T-023s
Ali >C16-C21 _A #	<0.1					mg/kg	A-T-023s
Ali >C21-C35 _A #	<0.1					mg/kg	A-T-023s
Total Aliphatics _A	<0.1					mg/kg	A-T-022+23s
Aro >C5-C7 _A #	<0.01					mg/kg	A-T-022s
Aro >C7-C8 _A #	<0.01					mg/kg	A-T-022s
Aro >C8-C9 _A #	<0.01					mg/kg	A-T-022s
Aro >C9-C10 _A #	<0.01					mg/kg	A-T-022s
Aro >C10-C12 _A #	<0.1					mg/kg	A-T-023s
Aro >C12-C16 _A #	<0.1					mg/kg	A-T-023s
Aro >C16-C21 _A #	<0.1					mg/kg	A-T-023s
Aro >C21-C35 _A #	<0.1					mg/kg	A-T-023s
Total Aromatics _A	<0.1					mg/kg	A-T-022+23s
TPH (Ali & Aro) _A	<0.1					mg/kg	A-T-022+23s
BTEX - Benzene _A #	<0.01					mg/kg	A-T-022s
BTEX - Toluene _A #	<0.01					mg/kg	A-T-022s
BTEX - Ethyl Benzene _A #	<0.01					mg/kg	A-T-022s
BTEX - m & p Xylene _A #	<0.01					mg/kg	A-T-022s
BTEX - o Xylene _A #	<0.01					mg/kg	A-T-022s
MTBE _A #	<0.01					mg/kg	A-T-022s



REPORT NOTES

Notes - Soil chemical analysis

All results are reported as dry weight (<40 °C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General

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Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts.

Superscript "M" indicates method accredited to MCERTS.

If results are in italic font they are associated with an AQC failure and are not accredited. The results may be unreliable. A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

TPH analysis of water by method A-T-007

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos in soil

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if present as discrete fibres/fragments. Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified a being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER. Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.



APPENDIX I CHEMICAL LABORATORY CERTIFICATES FOR GROUNDWATER ANALYSIS



FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 14/04819

Issue Number: 1 **Date:** 22 September, 2014

Client: RSK Environment Ltd Coventry

Humber Road, Abbey Park

Coventry

UK

CV3 4AQ

Project Manager: Darren Bench

Project Name: Junction 15 M1 West

Project Ref: 312598 Order No: N/A

Date Samples Received:09/09/14Date Instructions Received:09/09/14Date Analysis Completed:19/09/14

Prepared by: Approved by:

Georgia King Iain Haslock

Administrative Assistant Analytical Consultant





_					Cilent Pro	ject Ref: 31	2390			
Lab Sample ID	14/04819/1	14/04819/2	14/04819/3	14/04819/4	14/04819/5	14/04819/6	14/04819/7	14/04819/8		
Client Sample No										
Client Sample ID	СРЗ	WS6	WS8	CP5	CP6	CP14	CP7	CP11		
Depth to Top	5.33	0.51	1.42	5.11	3.40	0.56	0.85	4.40		
Depth To Bottom										
Date Sampled	05-Sep-14	05-Sep-14	05-Sep-14	05-Sep-14	05-Sep-14	05-Sep-14	05-Sep-14	05-Sep-14		-
Sample Type	Water - EW	Water - EW	Water - EW		Method ref					
MCERTS Sample Matrix Code	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Units	Meth
pH (w) _A #	7.76	7.87	7.89	7.78	7.80	7.94	7.83	7.80	pН	A-T-031w
Redox Potential (w) _A	255	253	251	247	243	241	239	237	mV	A-T-048
Electrical conductivity @ 20degC (w) DEFAULT _A #	524	2290	287	720	806	796	760	722	μs/cm	A-T-037w
Dissolved oxygen _A	8.2	6.8	4.5	4.9	4.8	4.2	5.3	3.9	mg/l	A-T-048
Hardness Total _A #	412	1169	2200	2382	630	1048	2189	522	mg/l Ca CO3	A-T-049w
Ammoniacal nitrogen (w) _A #	0.10	0.15	<0.02	0.04	0.07	0.09	0.08	0.10	mg/l	A-T-033w
Phenols - Total by HPLC (w) _A	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/l	A-T-050w
Arsenic (dissolved) _A #	1	1	5	1	3	5	9	2	μg/l	A-T-025w
Boron (dissolved) _A #	60	101	117	102	63	63	94	101	μg/l	A-T-025w
Cadmium (dissolved) _A #	<1	<1	<1	<1	<1	<1	<1	<1	μg/l	A-T-025w
Copper (dissolved) _A #	4	4	<1	<1	4	30	7	4	μg/l	A-T-025w
Chromium (dissolved) _A #	7	9	<1	<1	11	12	4	10	μg/l	A-T-025w
Chromium (hexavalent) (w) _A #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/l	A-T-040w
Lead (dissolved) _A #	8	4	<1	<1	5	116	2	6	μg/l	A-T-025w
Mercury (dissolved) _A #	<0.1	0.2	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	μg/l	A-T-025w
Nickel (dissolved) _A #	2	3	15	30	7	19	21	4	μg/l	A-T-025w
Selenium (dissolved) _A #	2	10	1	<1	<1	1	23	16	μg/l	A-T-025w
Zinc (dissolved) _A #	27	53	27	21	23	68	78	33	μg/l	A-T-025w



_					Client Pro	ject Ref: 31	2598			
Lab Sample ID	14/04819/1	14/04819/2	14/04819/3	14/04819/4	14/04819/5	14/04819/6	14/04819/7	14/04819/8		
Client Sample No										
Client Sample ID	CP3	WS6	WS8	CP5	CP6	CP14	CP7	CP11		
Depth to Top	5.33	0.51	1.42	5.11	3.40	0.56	0.85	4.40		
Depth To Bottom										
Date Sampled	05-Sep-14	05-Sep-14	05-Sep-14	05-Sep-14	05-Sep-14	05-Sep-14	05-Sep-14	05-Sep-14		-
Sample Type	Water - EW	Water - EW	Water - EW		Method ref					
MCERTS Sample Matrix Code	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Units	Meth
TPH CWG										
Ali >C5-C6 (w) _A #	<1	<1	<1	<1	<1	<1	<1	<1	μg/l	A-T-022w
Ali >C6-C8 (w) _A #	<1	<1	<1	<1	<1	<1	<1	<1	μg/l	A-T-022w
Ali >C8-C10 (w) _A #	<1	<1	<1	<1	<1	<1	<1	<1	μg/l	A-T-022w
Ali >C10-C12 (w) _A #	<5	<5	<5	<5	<5	<5	<5	<5	μg/l	A-T-023w
Ali >C12-C16 (w) _A #	<5	<5	<5	<5	<5	<5	<5	<5	μg/l	A-T-023w
Ali >C16-C21 (w) _A #	<5	<5	<5	<5	<5	<5	<5	<5	μg/l	A-T-023w
Ali >C21-C35 (w) _A #	<5	<5	<5	<5	<5	<5	<5	<5	μg/l	A-T-023w
Total Aliphatics (w) _A	<5	<5	<5	<5	<5	<5	<5	<5	μg/l	A-T-022+23w
Aro >C5-C7 (w) _A #	<1	<1	<1	<1	<1	<1	<1	<1	μg/l	A-T-022w
Aro >C7-C8 (w) _A #	<1	<1	<1	<1	<1	<1	<1	<1	μg/l	A-T-022w
Aro >C8-C9 (w) _A #	<1	<1	<1	<1	<1	<1	<1	<1	μg/l	A-T-022w
Aro >C9-C10 (w) _A #	<1	<1	<1	<1	<1	<1	<1	<1	μg/l	A-T-022w
Aro >C10-C12 (w) _A #	<5	<5	<5	<5	<5	<5	<5	<5	μg/l	A-T-023w
Aro >C12-C16 (w) _A #	<5	<5	<5	<5	<5	<5	<5	<5	μg/l	A-T-023w
Aro >C16-C21 (w) _A #	<5	<5	<5	<5	<5	<5	<5	<5	μg/l	A-T-023w
Aro >C21-C35 (w) _A #	<5	<5	<5	<5	<5	<5	<5	<5	μg/l	A-T-023w
Total Aromatics (w) _A	<5	<5	<5	<5	<5	<5	<5	<5	μg/l	A-T-022+23w
TPH (Ali & Aro) (w) _A	<5	<5	<5	<5	<5	<5	<5	<5	μg/l	A-T-022+23w
BTEX - Benzene (w) _A #	<1	<1	<1	<1	<1	<1	<1	<1	μg/l	A-T-022w
BTEX - Toluene (w) _A #	<1	<1	<1	<1	<1	<1	<1	<1	μg/l	A-T-022w
BTEX - Ethyl Benzene (w) _A #	<1	<1	<1	<1	<1	<1	<1	<1	μg/l	A-T-022w
BTEX - m & p Xylene (w) _A #	<1	<1	<1	<1	<1	<1	<1	<1	μg/l	A-T-022w
BTEX - o Xylene (w) _A #	<1	<1	<1	<1	<1	<1	<1	<1	μg/l	A-T-022w
MTBE (w) _A #	<1	<1	<1	<1	<1	<1	<1	<1	μg/l	A-T-022w



<u>-</u>				Chentrio	ject Ref: 31	2330		
Lab Sample ID	14/04819/9	14/04819/10						
Client Sample No								
Client Sample ID	CP13	CP9						
Depth to Top	2.79	4.83						
Depth To Bottom								
Date Sampled	05-Sep-14	05-Sep-14						-
Sample Type	Water - EW	Water - EW					<u> </u>	Method ref
MCERTS Sample Matrix Code	N/A	N/A					Units	Meth
pH (w) _A #	8.16	7.98					pН	A-T-031w
Redox Potential (w) _A	235	236					mV	A-T-048
Electrical conductivity @ 20degC (w) DEFAULT _A #	2240	2660					µs/ст	A-T-037w
Dissolved oxygen _A	4.9	5.8					mg/l	A-T-048
Hardness Total _A #	1930	1713					mg/l Ca CO3	A-T-049w
Ammoniacal nitrogen (w) _A #	0.59	0.22					mg/l	A-T-033w
Phenois - Total by HPLC (w) _A	<0.01	<0.01					mg/l	A-T-050w
Arsenic (dissolved) _A #	5	2					μg/l	A-T-025w
Boron (dissolved) _A #	385	416					μg/l	A-T-025w
Cadmium (dissolved) _A #	<1	<1					μg/l	A-T-025w
Copper (dissolved) _A #	8	6					μg/l	A-T-025w
Chromium (dissolved) _A #	12	9					μg/l	A-T-025w
Chromium (hexavalent) (w) _A #	<0.05	<0.05					mg/l	A-T-040w
Lead (dissolved) _A #	10	9					μg/l	A-T-025w
Mercury (dissolved) _A #	<0.1	<0.1					μg/l	A-T-025w
Nickel (dissolved) _A #	9	10					μg/l	A-T-025w
Selenium (dissolved) _A #	5	2					μg/l	A-T-025w
Zinc (dissolved) _A #	1170	254					μg/l	A-T-025w



-				Client Pro	ject Ref: 31	2596		
Lab Sample ID	14/04819/9	14/04819/10						
Client Sample No								
Client Sample ID	CP13	CP9						
Depth to Top	2.79	4.83						
Depth To Bottom								
Date Sampled	05-Sep-14	05-Sep-14						-
Sample Type	Water - EW	Water - EW						Method ref
MCERTS Sample Matrix Code	N/A	N/A					Units	Meth
TPH CWG								
Ali >C5-C6 (w) _A #	<1	<1					μg/l	A-T-022w
Ali >C6-C8 (w) _A #	<1	<1					μg/l	A-T-022w
Ali >C8-C10 (w) _A #	<1	<1					μg/l	A-T-022w
Ali >C10-C12 (w) _A #	<5	<5					μg/l	A-T-023w
Ali >C12-C16 (w) _A #	<5	<5					μg/l	A-T-023w
Ali >C16-C21 (w) _A #	<5	<5					μg/l	A-T-023w
Ali >C21-C35 (w) _A #	<5	<5					μg/l	A-T-023w
Total Aliphatics (w) _A	<5	<5					μg/l	A-T-022+23w
Aro >C5-C7 (w) _A #	<1	<1					μg/l	A-T-022w
Aro >C7-C8 (w) _A #	<1	<1					μg/l	A-T-022w
Aro >C8-C9 (w) _A #	<1	<1					μg/l	A-T-022w
Aro >C9-C10 (w) _A #	<1	<1					μg/l	A-T-022w
Aro >C10-C12 (w) _A #	<5	<5					μg/l	A-T-023w
Aro >C12-C16 (w) _A #	<5	<5					μg/l	A-T-023w
Aro >C16-C21 (w) _A #	<5	<5					μg/l	A-T-023w
Aro >C21-C35 (w) _A #	<5	<5					μg/l	A-T-023w
Total Aromatics (w) _A	<5	<5					μg/l	A-T-022+23w
TPH (Ali & Aro) (w) _A	<5	<5					μg/l	A-T-022+23w
BTEX - Benzene (w) _A #	<1	<1					μg/l	A-T-022w
BTEX - Toluene (w) _A #	<1	<1					μg/l	A-T-022w
BTEX - Ethyl Benzene (w) _A #	<1	<1					μg/l	A-T-022w
BTEX - m & p Xylene (w) _A #	<1	<1					μg/l	A-T-022w
BTEX - o Xylene (w) _A #	<1	<1					μg/l	A-T-022w
MTBE (w) _A #	<1	<1					μg/l	A-T-022w



REPORT NOTES

Notes - Soil chemical analysis

All results are reported as dry weight (<40 °C).
For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General

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

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts.

Superscript "M" indicates method accredited to MCERTS

If results are in italic font they are associated with an AQC failure and are not accredited. The results may be unreliable. A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

TPH analysis of water by method A-T-007

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos in soil

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if present as discrete fibres/fragments. Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified a being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

1 = SAND. 2 = LOAM. 3 = CLAY. 4 = LOAM/SAND. 5 = SAND/CLAY. 6 = CLAY/LOAM. 7 = OTHER.

Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.



APPENDIX J GAS AND GROUNDWATER MONITORING RESULTS

[Pressures]	Previous	During	<u>Start</u>	<u>End</u>	Equipment Used & Remarks
Round 1	Falling	Falling	1010	1007	Ground: Dry + Wind: Light + Air Temp: 16DegC
Round 2	Rising	Constant	1013	1013	Ground: Dry + Wind: None + Air Temp: 21DegC
Round 3	Falling	Fluctuating	1009	1010	Ground: Wet + Wind: Light + Air Temp: 14DegC
Round 4	Falling	Rising	1003	1005	Ground: Damp + Wind: Medium + Air Temp: 15DegC

Exploratory Position ID	Monitoring Round	Measured Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP1	1	11.52	05/09/2014 09:47:00	1009	1009	-0.1 _(I)	11.44	0.0	0.0	20.7	0.0	0.0	0.0	
CP1	1		15 secs	-	-	0.0 _(SS)	-	0.8	0.0	20.1	0.0	0.0	0.0	
CP1	1		30 secs	-	-	-	-	1.3	0.0	19.1	0.0	0.0	0.0	
CP1	1		60 secs	-	-	-	-	1.5	0.0	18.6	0.0	0.0	0.0	
CP1	1		90 secs	-	-	-	-	1.6	0.0	18.5	0.0	0.0	0.0	
CP1	1		120 secs	-	-	-	-	1.8	0.0	18.2	0.0	0.0	0.0	
CP1	1		180 secs	-	-	-	-	1.9	0.0	18.0	0.0	0.0	0.0	
CP1	1		240 secs	-	-	-	-	1.9	0.0	17.9	0.0	0.0	0.0	
CP1	1		300 secs	-	-	-	-	1.9	0.0	17.9	0.0	0.0	0.0	
CP1	1		360 secs	-	-	-	-	1.9	0.0	17.9	0.0	0.0	0.0	
CP1	2	11.51	09/09/2014 10:41:00	1014	1013	0.0 _(I)	11.43	0.0	0.0	20.8	0.0	0.0	0.0	
CP1	2		15 secs	-	-	0.0 _(SS)	-	0.0	0.1	20.9	1.0	0.0	0.0	
CP1	2		30 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
CP1	2		60 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
CP1	2		90 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
CP1	2		120 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
CP1	2		180 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
CP1	2		240 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

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Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP1	2		300 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
CP1	3	11.52	15/09/2014 10:27:00	1008	1009	1.0 _(I)	11.43	0.0	0.0	20.6	0.0	0.0	0.0	
CP1	3		15 secs	-	-	1.1 _(SS)	-	2.1	0.0	18.5	0.0	0.0	0.0	
CP1	3		30 secs	-	-	-	-	2.1	0.0	18.0	0.0	0.0	0.0	
CP1	3		60 secs	-	-	-	-	2.1	0.0	17.9	0.0	0.0	0.0	
CP1	3		90 secs	-	-	-	-	2.1	0.0	17.9	0.0	0.0	0.0	
CP1	3		120 secs	-	-	-	-	2.1	0.0	17.9	0.0	0.0	0.0	
CP1	3		180 secs	-	-	-	-	2.1	0.0	17.9	0.0	0.0	0.0	
CP1	3		240 secs	-	-	-	-	2.1	0.0	17.9	0.0	0.0	0.0	
CP1	3		300 secs	-	-	-	-	2.1	0.0	17.9	0.0	0.0	0.0	
CP1	4	11.52	24/09/2014 12:27:00	1005	1005	0.0(1)	11.46	0.0	0.0	20.8	0.0	0.0	0.0	
CP1	4		15 secs	-	-	0.0 _(SS)	-	1.9	0.0	18.4	0.0	0.0	0.0	
CP1	4		30 secs	-	-	-	-	1.9	0.0	17.8	0.0	0.0	0.0	
CP1	4		60 secs	-	-	-	-	2.0	0.0	17.8	0.0	0.0	0.0	
CP1	4		90 secs	-	-	-	-	2.0	0.0	17.8	0.0	0.0	0.0	
CP1	4		120 secs	-	-	-	-	2.0	0.0	17.8	0.0	0.0	0.0	
CP1	4		180 secs	-	-	-	-	2.0	0.0	17.8	0.0	0.0	0.0	
CP1	4		240 secs	-	-	-	-	2.0	0.0	17.8	0.0	0.0	0.0	
CP1	4		300 secs	-	-	-	-	2.0	0.0	17.8	0.0	0.0	0.0	
CP2	1	5.00	05/09/2014 10:29:00	1007	1007	0.1 _(I)	DRY	0.0	0.0	20.7	0.0	0.0	0.0	
CP2	1		15 secs	-	-	0.0 _(SS)	-	1.0	0.0	18.4	0.0	0.0	0.0	
CP2	1		30 secs	-	-	-	-	1.2	0.0	17.3	0.0	0.0	0.0	
CP2	1		60 secs	-	-	-	-	1.3	0.0	16.8	0.0	0.0	0.0	
CP2	1		90 secs	-	-	-	-	1.3	0.0	16.7	0.0	0.0	0.0	

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Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP2	1		120 secs	-	-	-	-	1.3	0.0	16.8	0.0	0.0	0.0	
CP2	1		180 secs	-	-	-	-	1.4	0.0	16.8	0.0	0.0	0.0	
CP2	1		240 secs	-	-	-	-	1.3	0.0	16.8	0.0	0.0	0.0	
CP2	1		300 secs	-	-	-	-	1.1	0.0	16.8	0.0	0.0	0.0	
CP2	2	5.07	09/09/2014 11:02:00	1013	1013	0.0(1)	DRY	0.0	0.0	20.7	0.0	0.0	0.0	
CP2	2		15 secs	-	-	0.0 _(SS)	-	0.1	0.0	19.9	0.0	0.0	0.0	
CP2	2		30 secs	-	-	-	-	0.1	0.0	19.7	0.0	0.0	0.0	
CP2	2		60 secs	-	-	-	-	0.2	0.0	19.6	0.0	0.0	0.0	
CP2	2		90 secs	-	-	-	-	0.2	0.0	19.4	0.0	0.0	0.0	
CP2	2		120 secs	-	-	ı	-	0.2	0.0	19.3	0.0	0.0	0.0	
CP2	2		180 secs	-	-	-	-	0.2	0.0	19.1	0.0	0.0	0.0	
CP2	2		240 secs	-	-	-	-	0.3	0.0	18.9	0.0	0.0	0.0	
CP2	2		300 secs	-	-	-	-	0.3	0.1	18.7	1.0	0.0	0.0	
CP2	2		360 secs	-	-	-	-	0.3	0.0	18.6	0.0	0.0	0.0	
CP2	2		420 secs	-	-	-	-	0.3	0.0	18.6	0.0	0.0	0.0	
CP2	2		480 secs	-	-	-	-	0.3	0.0	18.6	0.0	0.0	0.0	
CP2	3	5.05	15/09/2014 11:05:00	1009	1009	0.6 _(I)	DRY	0.0	0.0	20.8	0.0	0.0	0.0	
CP2	3		15 secs	-	-	0.4 _(SS)	-	2.1	0.0	16.8	0.0	0.0	0.0	
CP2	3		30 secs	-	-	-	-	1.9	0.0	16.4	0.0	0.0	0.0	
CP2	3		60 secs	-	-	-	-	1.7	0.0	16.8	0.0	0.0	0.0	
CP2	3		90 secs	-	-	-	-	1.7	0.0	16.9	0.0	0.0	0.0	
CP2	3		120 secs	-	-	-	-	1.7	0.0	17.0	0.0	0.0	0.0	
CP2	3		180 secs	-	-	-	-	1.6	0.0	17.0	0.0	0.0	0.0	
CP2	3		240 secs	-	-	-	-	1.6	0.0	17.0	0.0	0.0	0.0	
CP2	3		300 secs	-	-	-	-	1.6	0.0	17.0	0.0	0.0	0.0	

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CP2	4	19.60	24/09/2014 10:50:00	1002	1003	0.7(1)	16.52	0.0	0.0	20.8	0.0	0.0	0.0	
CP2	4		15 secs	-	-	0.7 _(SS)	-	2.2	0.0	17.0	0.0	0.0	0.0	
CP2	4		30 secs	-	-	-	-	2.1	0.0	16.0	0.0	0.0	0.0	
CP2	4		60 secs	-	-	-	-	2.0	0.0	16.2	0.0	0.0	0.0	
CP2	4		90 secs	-	-	-	-	2.0	0.0	16.3	0.0	0.0	0.0	
CP2	4		120 secs	-	-	-	-	2.0	0.0	16.3	0.0	0.0	0.0	
CP2	4		180 secs	-	-	-	-	1.9	0.0	16.3	0.0	0.0	0.0	
CP2	4		240 secs	-	-	-	-	1.9	0.0	16.3	0.0	0.0	0.0	
CP2	4		300 secs	-	-	-	-	1.9	0.0	16.3	0.0	0.0	0.0	
CP3	1	12.33	05/09/2014 09:11:00	1009	1009	0.0(1)	5.33	0.0	0.0	20.6	0.0	0.0	0.0	
CP3	1		15 secs	-	-	0.0 _(SS)	-	0.3	0.0	20.1	0.0	0.0	0.0	
CP3	1		30 secs	=	-	-	-	0.3	0.0	20.0	0.0	0.0	0.0	
CP3	1		60 secs	-	-	-	-	0.2	0.0	20.1	0.0	0.0	0.0	
CP3	1		90 secs	-	-	-	-	0.2	0.0	20.2	0.0	0.0	0.0	
CP3	1		120 secs	-	-	-	-	0.2	0.0	20.2	0.0	0.0	0.0	
CP3	1		180 secs	-	-	-	-	0.2	0.0	20.2	0.0	0.0	0.0	
CP3	1		240 secs	-	-	-	-	0.3	0.0	20.1	0.0	0.0	0.0	
CP3	1		300 secs	-	-	-	-	0.2	0.0	20.2	0.0	0.0	0.0	
CP3	2	12.40	09/09/2014 10:16:00	1013	1013	0.0(1)	5.49	0.0	0.0	20.9	0.0	0.0	0.0	
CP3	2		15 secs	-	-	0.0 _(SS)	-	0.2	0.0	20.8	0.0	0.0	0.0	
CP3	2		30 secs	-	-	-	-	0.2	0.0	20.8	0.0	0.0	0.0	
CP3	2		60 secs	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0.0	
CP3	2		90 secs	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0.0	
CP3	2		120 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	

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CP3	2		180 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
CP3	2		240 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
CP3	2		300 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
CP3	3	12.41	15/09/2014 10:00:00	1009	1009	0.0 _(I)	5.51	0.0	0.0	20.8	0.0	0.0	0.0	
CP3	3		15 secs	-	-	0.0 _(SS)	-	0.3	0.0	20.8	0.0	0.0	0.0	
CP3	3		30 secs	-	-	-	-	0.2	0.0	20.8	0.0	0.0	0.0	
CP3	3		60 secs	-	-	-	-	0.2	0.0	20.9	0.0	0.0	0.0	
CP3	3		90 secs	-	-	-	-	0.2	0.0	20.9	0.0	0.0	0.0	
CP3	3		120 secs	-	-	-	-	0.2	0.0	20.9	0.0	0.0	0.0	
CP3	3		180 secs	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0.0	
CP3	3		240 secs	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0.0	
CP3	3		300 secs	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0.0	
CP3	4	12.39	24/09/2014 12:57:00	1005	1005	0.0(1)	5.65	0.0	0.0	20.5	0.0	0.0	0.0	
CP3	4		15 secs	-	-	0.0 _(SS)	-	0.7	0.0	19.8	0.0	0.0	0.0	
CP3	4		30 secs	-	-	-	-	0.5	0.1	19.9	1.0	0.0	0.0	
CP3	4		60 secs	-	-	-	-	0.3	0.0	20.2	0.0	0.0	0.0	
CP3	4		90 secs	-	-	-	-	0.2	0.1	20.4	1.0	0.0	0.0	
CP3	4		120 secs	-	-	-	-	0.2	0.0	20.4	0.0	0.0	0.0	
CP3	4		180 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP3	4		240 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
CP3	4		300 secs	-	-	-	-	0.1	0.0	20.8	0.0	0.0	0.0	
CP4	1	5.16	04/09/2014 15:07:00	1007	1007	0.0(1)	4.47	0.1	0.0	20.6	-	0.0	0.0	
CP4	1		15 secs	-	-	0.0 _(SS)	-	1.2	0.0	18.5	-	1.0	0.0	
CP4	1		30 secs	-	-	-	-	1.2	0.0	18.0	-	0.0	0.0	

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CP4	1		60 secs	-	-	-	-	1.2	0.0	17.9	-	0.0	0.0	
CP4	1		90 secs	-	-	-	-	1.2	0.0	17.8	-	0.0	0.0	
CP4	1		120 secs	-	-	-	-	1.3	0.0	17.8	-	0.0	0.0	
CP4	1		180 secs	-	-	-	-	1.3	0.0	17.7	-	0.0	0.0	
CP4	1		240 secs	-	-	-	-	1.3	0.0	17.7	-	0.0	0.0	
CP4	1		300 secs	-	-	-	-	1.3	0.0	17.7	-	0.0	0.0	
CP4	2	5.15	09/09/2014 08:57:00	1013	1013	0.0(1)	4.51	0.0	0.0	20.5	0.0	0.0	0.0	
CP4	2		15 secs	-	-	0.0 _(SS)	-	0.2	0.0	20.4	0.0	0.0	0.0	
CP4	2		30 secs	-	-	-	-	0.2	0.0	20.4	0.0	0.0	0.0	
CP4	2		60 secs	-	-	-	-	0.2	0.0	20.4	0.0	0.0	0.0	
CP4	2		90 secs	-	-	-	-	0.2	0.0	20.4	0.0	0.0	0.0	
CP4	2		120 secs	-	-	-	-	0.2	0.0	20.4	0.0	0.0	0.0	
CP4	2		180 secs	-	-	-	-	0.2	0.0	20.5	0.0	0.0	0.0	
CP4	2		240 secs	-	-	-	-	0.2	0.0	20.5	0.0	0.0	0.0	
CP4	2		300 secs	-	-	-	-	0.2	0.0	20.5	0.0	0.0	0.0	
CP4	3	5.15	15/09/2014 08:44:00	1009	1009	0.0 _(I)	4.53	0.0	0.0	20.8	0.0	0.0	0.0	
CP4	3		15 secs	-	-	0.0 _(SS)	-	1.4	0.0	18.6	0.0	0.0	0.0	
CP4	3		30 secs	-	-	-	-	1.4	0.0	17.9	0.0	0.0	0.0	
CP4	3		60 secs	-	-	-	-	1.4	0.0	17.8	0.0	0.0	0.0	
CP4	3		90 secs	-	-	-	-	1.4	0.0	17.9	0.0	0.0	0.0	
CP4	3		120 secs	-	-	-	-	1.4	0.0	18.2	0.0	0.0	0.0	
CP4	3		180 secs	-	-	-	-	1.4	0.0	18.3	0.0	0.0	0.0	
CP4	3		240 secs	-	-	-	-	1.4	0.0	18.1	0.0	0.0	0.0	
CP4	3		300 secs	-	-	-	-	1.4	0.0	18.1	0.0	0.0	0.0	
CP4	4	5.15	24/09/2014 13:16:00	1005	1005	0.0(1)	4.56	0.0	0.0	20.8	0.0	0.0	0.0	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

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Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP4	4		15 secs	-	-	0.0 _(SS)	-	0.6	0.0	20.4	0.0	0.0	0.0	
CP4	4		30 secs	-	-	-	-	0.6	0.0	20.3	0.0	0.0	0.0	
CP4	4		60 secs	-	-	-	-	0.6	0.0	20.3	0.0	0.0	0.0	
CP4	4		90 secs	-	-	-	-	0.7	0.0	20.1	0.0	0.0	0.0	
CP4	4		120 secs	-	-	-	-	0.9	0.0	19.6	0.0	0.0	0.0	
CP4	4		180 secs	-	-	-	-	1.0	0.0	19.1	0.0	0.0	0.0	
CP4	4		240 secs	-	-	-	-	1.1	0.1	18.4	1.0	0.0	0.0	
CP4	4		300 secs	-	-	-	-	1.2	0.0	18.0	0.0	0.0	0.0	
CP4	4		360 secs	-	-	-	-	1.2	0.0	17.8	0.0	0.0	0.0	
CP4	4		420 secs	-	-	-	-	1.2	0.0	17.8	0.0	0.0	0.0	
CP5	1	6.50	05/09/2014 13:05:00	1007	1007	0.0(1)	5.11	0.0	0.0	20.6	0.0	0.0	0.0	
CP5	1		15 secs	-	-	0.0 _(SS)	-	0.5	0.0	19.9	0.0	0.0	0.0	
CP5	1		30 secs	-	-	-	-	0.5	0.0	19.8	0.0	0.0	0.0	
CP5	1		60 secs	-	-	-	-	0.5	0.0	19.7	0.0	0.0	0.0	
CP5	1		90 secs	-	-	-	-	0.5	0.0	19.7	0.0	0.0	0.0	
CP5	1		120 secs	-	-	-	-	0.5	0.0	19.7	0.0	0.0	0.0	
CP5	1		180 secs	-	-	-	-	0.5	0.0	19.6	0.0	0.0	0.0	
CP5	1		240 secs	-	-	-	-	0.5	0.0	19.7	0.0	0.0	0.0	
CP5	1		300 secs	-	-	-	-	0.5	0.0	19.7	0.0	0.0	0.0	
CP5	2	6.46	09/09/2014 08:45:00	1013	1013	-0.1 _(I)	5.14	0.1	0.0	20.7	0.0	0.0	0.0	
CP5	2		15 secs	-	-	-0.1 _(SS)	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP5	2		30 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP5	2		60 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
CP5	2		90 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

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Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP5	2		120 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
CP5	2		180 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
CP5	2		240 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
CP5	2		300 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP5	3	6.44	15/09/2014 08:30:00	1009	1009	0.0(1)	5.13	0.0	0.0	20.8	0.0	0.0	0.0	
CP5	3		15 secs	-	-	0.0 _(SS)	-	0.6	0.0	20.0	0.0	0.0	0.0	
CP5	3		30 secs	-	-	-	-	0.6	0.0	19.7	0.0	0.0	0.0	
CP5	3		60 secs	-	-	-	-	0.6	0.0	19.7	0.0	0.0	0.0	
CP5	3		90 secs	-	-	-	-	0.6	0.0	19.7	0.0	0.0	0.0	
CP5	3		120 secs	-	-	-	-	0.6	0.0	19.7	0.0	0.0	0.0	
CP5	3		180 secs	-	-	-	-	0.6	0.0	19.6	0.0	0.0	0.0	
CP5	3		240 secs	-	-	-	-	0.7	0.0	19.5	0.0	0.0	0.0	
CP5	3		300 secs	-	-	-	-	0.7	0.0	19.5	0.0	0.0	0.0	
CP5	3		360 secs	-	-	-	-	0.7	0.0	19.5	0.0	0.0	0.0	
CP5	4	6.39	24/09/2014 14:41:00	1004	1004	0.0 _(I)	5.16	0.0	0.0	20.4	0.0	0.0	0.0	
CP5	4		15 secs	-	-	0.0 _(SS)	-	0.8	0.0	19.2	0.0	0.0	0.0	
CP5	4		30 secs	-	-	-	-	0.9	0.0	18.9	0.0	0.0	0.0	
CP5	4		60 secs	-	-	-	-	0.9	0.0	18.9	0.0	0.0	0.0	
CP5	4		90 secs	-	-	-	-	0.9	0.0	18.9	0.0	0.0	0.0	
CP5	4		120 secs	-	-	-	-	0.9	0.0	18.8	0.0	0.0	0.0	
CP5	4		180 secs	-	-	-	-	0.9	0.0	18.8	0.0	0.0	0.0	
CP5	4		240 secs	-	-	-	-	0.9	0.0	18.8	0.0	0.0	0.0	
CP5	4		300 secs	-	-	-	-	0.9	0.0	18.7	0.0	0.0	0.0	
CP6	1	10.85	04/09/2014 14:24:00	1007	1007	0.1(1)	3.33	0.1	0.0	20.5	-	0.0	0.0	

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Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP6	1		15 secs	-	-	0.2 _(SS)	-	0.6	0.0	19.7	-	0.0	0.0	
CP6	1		30 secs	-	-	-	-	0.6	0.0	19.7	-	2.0	0.0	
CP6	1		60 secs	-	-	-	-	0.6	0.0	19.7	-	2.0	1.0	
CP6	1		90 secs	-	-	-	-	0.6	0.0	19.7	-	1.0	1.0	
CP6	1		120 secs	-	-	-	-	0.6	0.0	19.7	-	1.0	1.0	
CP6	1		180 secs	-	-	-	-	0.5	0.0	19.4	-	1.0	1.0	
CP6	1		240 secs	-	-	-	-	0.5	0.0	19.2	-	1.0	1.0	
CP6	1		300 secs	-	-	-	-	0.4	0.0	18.9	-	1.0	1.0	
CP6	1		360 secs	-	-	-	-	0.4	0.0	18.7	-	1.0	1.0	
CP6	1		420 secs	-	-	-	-	0.3	0.0	18.6	-	1.0	0.0	
CP6	1		480 secs	-	-	-	-	0.3	0.0	18.5	-	0.0	0.0	
CP6	1		540 secs	-	-	-	-	0.3	0.0	18.5	-	1.0	0.0	
CP6	1		600 secs	-	-	-	-	0.3	0.0	18.6	-	1.0	0.0	
CP6	2	10.42	09/09/2014 09:37:00	1013	1013	-0.8 _(I)	3.38	0.1	0.0	20.6	0.0	0.0	0.0	
CP6	2		15 secs	-	-	-0.2 _(SS)	-	0.4	0.0	20.3	0.0	0.0	0.0	
CP6	2		30 secs	-	-	-	-	0.4	0.0	20.2	0.0	0.0	0.0	
CP6	2		60 secs	-	-	-	-	0.4	0.0	20.2	0.0	0.0	0.0	
CP6	2		90 secs	-	-	-	-	0.4	0.0	20.3	0.0	0.0	0.0	
CP6	2		120 secs	-	-	-	-	0.5	0.0	19.1	0.0	0.0	0.0	
CP6	2		180 secs	-	-	-	-	0.6	0.0	17.6	0.0	0.0	0.0	
CP6	2		240 secs	-	-	-	-	0.7	0.0	16.5	0.0	0.0	0.0	
CP6	2		300 secs	-	-	-	-	0.8	0.0	15.6	0.0	0.0	0.0	
CP6	2		360 secs	-	-	-	-	0.8	0.0	15.0	0.0	0.0	0.0	
CP6	2		420 secs	-	-	-	-	0.9	0.0	14.9	0.0	0.0	0.0	
CP6	2		480 secs	-	-	-	-	0.9	0.0	14.9	0.0	0.0	0.0	

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Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP6	2		540 secs	-	-	-	-	0.9	0.0	15.0	0.0	0.0	0.0	
CP6	3	10.40	15/09/2014 09:23:00	1009	1009	1.0 _(I)	3.37	0.0	0.0	20.5	0.0	0.0	0.0	
CP6	3		15 secs	-	-	0.1 _(SS)	-	0.5	0.0	19.2	0.0	0.0	0.0	
CP6	3		30 secs	-	-	-	-	0.5	0.0	19.1	0.0	0.0	0.0	
CP6	3		60 secs	-	-	-	-	0.5	0.0	19.1	0.0	0.0	0.0	
CP6	3		90 secs	-	-	-	-	0.5	0.0	19.1	0.0	0.0	0.0	
CP6	3		120 secs	-	-	-	-	0.5	0.0	19.1	0.0	0.0	0.0	
CP6	3		180 secs	-	-	-	-	0.6	0.0	18.4	0.0	0.0	0.0	
CP6	3		240 secs	-	-	-	-	1.0	0.0	16.1	0.0	0.0	0.0	
CP6	3		300 secs	-	-	-	-	1.3	0.0	14.8	0.0	0.0	0.0	
CP6	3		360 secs	-	-	-	-	1.4	0.0	14.5	0.0	0.0	0.0	
CP6	3		420 secs	-	-	-	-	1.4	0.0	14.8	0.0	0.0	0.0	
CP6	3		480 secs	-	-	-	-	1.3	0.0	15.4	0.0	0.0	0.0	
CP6	3		540 secs	-	-	-	-	1.2	0.0	16.0	0.0	0.0	0.0	
CP6	3		600 secs	-	-	-	-	1.2	0.0	16.6	0.0	0.0	0.0	
CP6	4	10.29	24/09/2014 14:03:00	1004	1004	0.0 _(I)	3.40	0.0	0.0	20.7	0.0	0.0	0.0	
CP6	4		15 secs	-	-	0.0 _(SS)	-	0.6	0.0	18.7	0.0	0.0	0.0	
CP6	4		30 secs	-	-	-	-	0.7	0.0	18.6	0.0	0.0	0.0	
CP6	4		60 secs	-	-	-	-	0.7	0.0	18.6	0.0	0.0	0.0	
CP6	4		90 secs	-	-	-	-	0.7	0.0	18.5	0.0	0.0	0.0	
CP6	4		120 secs	-	-	-	-	0.7	0.0	18.5	0.0	0.0	0.0	
CP6	4		180 secs	-	-	-	-	0.7	0.0	18.4	0.0	0.0	0.0	
CP6	4		240 secs	-	-	-	-	1.3	0.0	16.8	0.0	0.0	0.0	
CP6	4		300 secs	-	-	-	-	1.4	0.0	16.6	0.0	0.0	0.0	
CP6	4		360 secs	-	-	-	-	1.4	0.0	16.9	0.0	0.0	0.0	

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CP6	4		420 secs	-	-	-	-	1.4	0.0	17.3	0.0	0.0	0.0	
CP7	1	3.85	04/09/2014 13:39:00	1008	1008	0.1 _(I)	0.85	0.1	0.0	20.9	-	0.0	0.0	
CP7	1		15 secs	-	-	0.0 _(SS)	-	0.1	0.0	20.9	-	1.0	0.0	
CP7	1		30 secs	-	-	-	-	0.1	0.0	20.9	-	0.0	0.0	
CP7	1		60 secs	-	-	-	-	0.1	0.0	20.9	ī	0.0	0.0	
CP7	1		90 secs	-	-	-	-	0.1	0.0	20.9	-	0.0	0.0	
CP7	1		120 secs	-	-	-	-	0.1	0.0	20.9	ı	0.0	0.0	
CP7	1		180 secs	-	-	-	-	0.1	0.0	20.9	-	0.0	0.0	
CP7	1		240 secs	-	-	-	-	0.1	0.0	20.9	-	0.0	0.0	
CP7	1		300 secs	-	-	-	-	0.1	0.0	20.9	-	0.0	0.0	
CP7	2	3.47	09/09/2014 12:47:00	1013	1013	0.0(1)	0.83	0.0	0.0	20.7	0.0	0.0	0.0	
CP7	2		15 secs	-	-	0.0 _(SS)	-	0.0	0.0	20.7	0.0	0.0	0.0	
CP7	2		30 secs	-	-	-	-	0.0	0.0	20.6	0.0	0.0	0.0	
CP7	2		60 secs	-	-	-	-	0.0	0.0	20.7	0.0	0.0	0.0	
CP7	2		90 secs	-	-	-	-	0.0	0.0	20.7	0.0	0.0	0.0	
CP7	2		120 secs	-	-	-	-	0.0	0.0	20.8	0.0	0.0	0.0	
CP7	2		180 secs	-	-	-	-	0.0	0.0	20.8	0.0	0.0	0.0	
CP7	2		240 secs	-	-	-	-	0.0	0.0	20.8	0.0	0.0	0.0	
CP7	2		300 secs	-	-	-	-	0.0	0.0	20.7	0.0	0.0	0.0	
CP7	3	3.46	15/09/2014 12:40:00	1010	1010	0.0(1)	0.83	0.0	0.0	20.5	0.0	0.0	0.0	
CP7	3		15 secs	-	-	0.0 _(SS)	-	0.1	0.0	20.4	0.0	0.0	0.0	
CP7	3		30 secs	-	-	-	-	0.1	0.0	20.4	0.0	0.0	0.0	
CP7	3		60 secs	-	-	-	-	0.1	0.0	20.4	0.0	0.0	0.0	
CP7	3		90 secs	-	-	-	-	0.0	0.0	20.4	0.0	0.0	0.0	

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CP7	3		120 secs	-	-	-	-	0.0	0.0	20.4	0.0	0.0	0.0	
CP7	3		180 secs	-	-	-	-	0.0	0.0	20.4	0.0	0.0	0.0	
CP7	3		240 secs	-	-	-	-	0.0	0.0	20.4	0.0	0.0	0.0	
CP7	3		300 secs	-	-	-	-	0.0	0.0	20.4	0.0	0.0	0.0	
CP7	4	3.46	24/09/2014 15:15:00	1005	1005	0.0(1)	0.85	0.0	0.0	20.4	0.0	0.0	0.0	
CP7	4		15 secs	-	-	0.0 _(SS)	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP7	4		30 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP7	4		60 secs	-	-	-	-	0.0	0.0	20.5	0.0	0.0	0.0	
CP7	4		90 secs	-	-	-	-	0.0	0.0	20.5	0.0	0.0	0.0	
CP7	4		120 secs	-	-	-	-	0.0	0.0	20.5	0.0	0.0	0.0	
CP7	4		180 secs	-	-	-	-	0.0	0.0	20.5	0.0	0.0	0.0	
CP7	4		240 secs	-	-	-	-	0.0	0.0	20.6	0.0	0.0	0.0	
CP7	4		300 secs	-	-	-	-	0.0	0.0	20.6	0.0	0.0	0.0	
CP8	1	2.46	04/09/2014 12:32:00	1009	1009	0.1(1)	1.50	0.1	0.0	20.9	-	0.0	0.0	
CP8	1		15 secs	-	-	0.0 _(SS)	-	1.3	0.0	19.5	-	1.0	0.0	
CP8	1		30 secs	-	-	-	-	1.3	0.0	19.0	-	0.0	0.0	
CP8	1		60 secs	-	-	-	-	1.3	0.0	18.9	-	0.0	0.0	
CP8	1		90 secs	-	-	-	-	1.3	0.0	18.9	-	0.0	0.0	
CP8	1		120 secs	-	-	-	-	1.3	0.0	18.9	-	1.0	0.0	
CP8	1		180 secs	-	-	-	-	1.4	0.0	18.8	-	0.0	0.0	
CP8	1		240 secs	-	-	-	-	1.6	0.0	18.4	-	0.0	0.0	
CP8	1		300 secs	-	-	-	-	1.9	0.0	17.9	-	0.0	0.0	
CP8	1		360 secs	-	-	-	-	2.0	0.0	17.9	-	0.0	0.0	
CP8	1		420 secs	-	-	-	-	2.0	0.0	17.8	-	0.0	0.0	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

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Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP8	1		480 secs	-	-	-	-	2.0	0.0	17.8	-	0.0	0.0	
CP8	2	2.42	09/09/2014 13:27:00	1013	1013	-0.1 _(I)	1.50	0.0	0.0	20.6	0.0	0.0	0.0	
CP8	2		15 secs	-	-	-0.1 _(SS)	-	1.6	0.0	18.3	0.0	0.0	0.0	
CP8	2		30 secs	-	-	-	-	1.6	0.0	18.2	0.0	0.0	0.0	
CP8	2		60 secs	-	-	-	-	1.6	0.0	18.1	0.0	0.0	0.0	
CP8	2		90 secs	-	-	-	-	1.6	0.0	18.1	0.0	0.0	0.0	
CP8	2		120 secs	-	-	-	-	1.6	0.0	18.1	0.0	0.0	0.0	
CP8	2		180 secs	-	-	-	-	1.7	0.0	18.0	0.0	1.0	0.0	
CP8	2		240 secs	-	-	-	-	2.0	0.0	17.6	0.0	0.0	0.0	
CP8	2		300 secs	-	-	-	-	2.2	0.0	17.4	0.0	0.0	0.0	
CP8	2		360 secs	-	-	=	-	2.2	0.0	17.4	0.0	0.0	0.0	
CP8	2		420 secs	-	-	-	-	2.2	0.0	17.4	0.0	0.0	0.0	
CP8	3	2.35	15/09/2014 13:30:00	1010	1010	0.0(1)	1.47	0.0	0.0	20.8	0.0	0.0	0.0	
CP8	3		15 secs	-	-	0.0 _(SS)	-	1.8	0.0	19.1	0.0	0.0	0.0	
CP8	3		30 secs	-	-	-	-	1.8	0.0	18.5	0.0	0.0	0.0	
CP8	3		60 secs	-	-	-	-	1.8	0.0	18.5	0.0	0.0	0.0	
CP8	3		90 secs	-	-	-	-	1.8	0.0	18.4	0.0	0.0	0.0	
CP8	3		120 secs	-	-	-	-	1.8	0.0	18.4	0.0	0.0	0.0	
CP8	3		180 secs	-	-	-	-	1.9	0.0	18.4	0.0	0.0	0.0	
CP8	3		240 secs	-	-	-	-	2.1	0.0	18.1	0.0	0.0	0.0	
CP8	3		300 secs	-	-	-	-	2.1	0.0	18.1	0.0	0.0	0.0	
CP8	3		360 secs	-	-	-	-	2.1	0.0	18.1	0.0	0.0	0.0	
CP8	4	2.35	24/09/2014 16:08:00	1005	1005	0.0(1)	1.47	0.0	0.0	20.4	0.0	0.0	0.0	
CP8	4		15 secs	-	-	0.0 _(SS)	-	1.5	0.0	19.0	0.0	0.0	0.0	
CP8	4		30 secs	-	-	-	-	1.5	0.0	18.7	0.0	0.0	0.0	

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Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP8	4		60 secs	-	-	-	-	1.5	0.0	18.6	0.0	0.0	0.0	
CP8	4		90 secs	-	-	-	-	1.5	0.0	18.5	0.0	0.0	0.0	
CP8	4		120 secs	-	-	-	-	1.6	0.0	18.4	0.0	0.0	0.0	
CP8	4		180 secs	-	-	-	-	1.6	0.0	18.3	0.0	0.0	0.0	
CP8	4		240 secs	-	-	-	-	1.7	0.0	18.2	0.0	0.0	0.0	
CP8	4		300 secs	-	-	-	-	1.7	0.0	18.2	0.0	0.0	0.0	
CP8	4		360 secs	-	-	-	-	1.7	0.0	18.2	0.0	0.0	0.0	
CP9	1	10.57	04/09/2014 10:53:00	1010	1010	0.1 _(I)	4.83	0.1	0.0	20.7	-	0.0	0.0	
CP9	1		15 secs	-	-	0.1 _(SS)	-	0.5	0.0	19.6	-	1.0	0.0	
CP9	1		30 secs	-	-	-	-	0.4	0.0	19.8	-	1.0	0.0	
CP9	1		60 secs	-	-	-	-	0.3	0.0	20.1	-	1.0	0.0	
CP9	1		90 secs	-	-	-	-	0.3	0.0	20.1	-	1.0	0.0	
CP9	1		120 secs	-	-	-	-	0.2	0.0	20.1	-	0.0	0.0	
CP9	1		180 secs	-	-	-	-	0.2	0.0	20.1	-	0.0	0.0	
CP9	1		240 secs	-	-	-	-	0.3	0.0	20.1	-	0.0	0.0	
CP9	1		300 secs	-	-	-	-	0.3	0.0	20.1	-	0.0	0.0	
CP9	1		360 secs	-	-	-	-	0.3	0.0	20.1	-	0.0	0.0	
CP9	2	10.55	09/09/2014 14:15:00	1013	1013	0.0(1)	4.83	0.0	0.0	20.8	0.0	0.0	0.0	
CP9	2		15 secs	-	-	0.0 _(SS)	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP9	2		30 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
CP9	2		60 secs	_	-	-	-	0.1	0.0	20.8	0.0	0.0	0.0	
CP9	2		90 secs	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0.0	
CP9	2		120 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
CP9	2		180 secs	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0.0	

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Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP9	2		240 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
CP9	2		300 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
CP9	2		360 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
CP9	3	10.55	15/09/2014 14:18:00	1010	1010	0.0 _(I)	4.70	0.0	0.0	20.4	0.0	0.0	0.0	
CP9	3		15 secs	-	-	0.0 _(SS)	-	0.4	0.0	19.9	0.0	0.0	0.0	
CP9	3		30 secs	-	-	-	-	0.2	0.0	20.1	0.0	0.0	0.0	
CP9	3		60 secs	-	-	-	-	0.1	0.0	20.3	0.0	0.0	0.0	
CP9	3		90 secs	-	-	-	-	0.1	0.0	20.4	0.0	0.0	0.0	
CP9	3		120 secs	-	-	-	-	0.0	0.0	20.4	0.0	0.0	0.0	
CP9	3		180 secs	-	-	-	-	0.0	0.0	20.4	0.0	0.0	0.0	
CP9	3		240 secs	-	-	-	-	0.0	0.0	20.4	0.0	0.0	0.0	
CP9	3		300 secs	-	-	-	-	0.0	0.0	20.4	0.0	0.0	0.0	
CP9	4	10.57	24/09/2014 16:46:00	1005	1005	0.0(1)	4.95	0.0	0.0	20.8	0.0	0.0	0.0	
CP9	4		15 secs	-	-	0.0 _(SS)	-	0.4	0.0	20.3	0.0	0.0	0.0	
CP9	4		30 secs	-	-	-	-	0.4	0.0	20.3	0.0	0.0	0.0	
CP9	4		60 secs	-	-	-	-	0.2	0.0	20.5	0.0	0.0	0.0	
CP9	4		90 secs	-	-	-	-	0.2	0.0	20.5	0.0	0.0	0.0	
CP9	4		120 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP9	4		180 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
CP9	4		240 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
CP9	4		300 secs	-	-	-	-	0.0	0.0	20.7	0.0	0.0	0.0	
CP9	4		360 secs	-	-	-	-	0.0	0.0	20.8	0.0	0.0	0.0	
CP9	4		420 secs	-	-	-	-	0.0	0.0	20.8	0.0	0.0	0.0	
CP10	1	4.96	04/09/2014 10:38:00	1010	1010	-0.1 _(I)	DRY	0.1	0.0	20.5		0.0	0.0	

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CP10	1		15 secs	-	-	0.0 _(SS)	-	0.1	0.0	20.3	-	0.0	0.0	
CP10	1		30 secs	-	-	-	-	0.1	0.0	19.9	-	1.0	0.0	
CP10	1		60 secs	-	-	-	-	0.1	0.0	19.7	-	1.0	0.0	
CP10	1		90 secs	-	-	-	-	0.1	0.0	19.5	-	1.0	0.0	
CP10	1		120 secs	-	-	-	-	0.1	0.0	19.3	-	1.0	0.0	
CP10	1		180 secs	-	-	-	-	0.1	0.0	19.1	-	1.0	0.0	
CP10	1		240 secs	-	-	-	-	0.1	0.0	18.9	-	1.0	0.0	
CP10	1		300 secs	-	-	-	-	0.1	0.0	18.8	-	1.0	0.0	
CP10	2	4.96	09/09/2014 14:29:00	1013	1013	0.0(1)	4.90	0.0	0.0	20.7	0.0	0.0	0.0	
CP10	2		15 secs	-	-	0.0 _(SS)	-	0.1	0.0	18.8	0.0	0.0	0.0	
CP10	2		30 secs	-	-	-	-	0.1	0.0	18.5	0.0	0.0	0.0	
CP10	2		60 secs	-	-	-	-	0.1	0.0	18.4	0.0	0.0	0.0	
CP10	2		90 secs	-	-	-	-	0.1	0.0	18.3	0.0	0.0	0.0	
CP10	2		120 secs	-	-	-	-	0.1	0.0	18.2	0.0	0.0	0.0	
CP10	2		180 secs	-	-	-	-	0.1	0.0	17.9	0.0	0.0	0.0	
CP10	2		240 secs	-	-	-	-	0.1	0.0	17.8	0.0	0.0	0.0	
CP10	2		300 secs	-	-	-	-	0.1	0.0	17.6	0.0	0.0	0.0	
CP10	3	4.99	15/09/2014 14:40:00	1010	1010	0.0(1)	4.70	0.0	0.0	20.4	0.0	0.0	0.0	
CP10	3		15 secs	-	-	0.0 _(SS)	-	0.2	0.0	18.1	0.0	0.0	0.0	
CP10	3		30 secs	-	-	-	-	0.2	0.0	17.5	0.0	0.0	0.0	
CP10	3		60 secs	-	-	-	-	0.2	0.0	17.4	0.0	0.0	0.0	
CP10	3		90 secs	-	-	-	-	0.2	0.0	17.2	0.0	0.0	0.0	
CP10	3		120 secs	-	-	-	-	0.2	0.0	17.0	0.0	0.0	0.0	
CP10	3		180 secs	-	-	-	-	0.2	0.0	16.8	0.0	0.0	0.0	
CP10	3		240 secs	-	-	-	-	0.2	0.0	16.4	0.0	0.0	0.0	

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CP10	3		300 secs	-	-	-	-	0.2	0.0	16.2	0.0	0.0	0.0	
CP10	4	4.99	24/09/2014 16:59:00	1005	1005	0.0(1)	4.31	0.0	0.0	20.8	0.0	0.0	0.0	
CP10	4		15 secs	-	-	0.0 _(SS)	-	0.3	0.0	17.2	0.0	0.0	0.0	
CP10	4		30 secs	-	-	-	-	0.4	0.0	16.2	0.0	0.0	0.0	
CP10	4		60 secs	-	-	-	-	0.4	0.0	16.0	0.0	0.0	0.0	
CP10	4		90 secs	-	-	-	-	0.4	0.0	15.8	0.0	0.0	0.0	
CP10	4		120 secs	-	-	-	-	0.4	0.0	15.7	0.0	0.0	0.0	
CP10	4		180 secs	-	-	-	-	0.4	0.0	15.4	0.0	0.0	0.0	
CP10	4		240 secs	-	-	-	-	0.4	0.0	15.2	0.0	0.0	0.0	
CP10	4		300 secs	-	-	-	-	0.4	0.0	14.8	0.0	0.0	0.0	
CP11	1	10.48	04/09/2014 12:16:00	1009	1009	0.0 _(I)	4.36	0.1	0.0	20.8	-	0.0	0.0	
CP11	1		15 secs	-	-	0.0 _(SS)	-	0.1	0.0	20.9	-	0.0	0.0	
CP11	1		30 secs	-	-	-	-	0.1	0.0	20.9	-	0.0	0.0	
CP11	1		60 secs	-	-	-	-	0.1	0.0	20.9	-	0.0	0.0	
CP11	1		90 secs	-	-	-	-	0.1	0.0	20.9	-	0.0	0.0	
CP11	1		120 secs	-	-	-	-	0.1	0.0	20.9	-	0.0	0.0	
CP11	1		180 secs	-	-	-	-	0.1	0.0	20.9	-	0.0	0.0	
CP11	1		240 secs	-	-	-	-	0.1	0.0	20.9	-	0.0	0.0	
CP11	1		300 secs	-	-	-	-	0.1	0.0	20.9	-	0.0	0.0	
CP11	2	10.45	09/09/2014 13:39:00	1013	1013	0.0 _(I)	4.40	0.1	0.0	20.6	0.0	0.0	0.0	
CP11	2		15 secs	-	-	0.0 _(SS)	-	0.0	0.0	20.7	0.0	0.0	0.0	
CP11	2		30 secs	-	-	-	-	0.0	0.0	20.7	0.0	0.0	0.0	
CP11	2		60 secs	-	-	-	-	0.0	0.0	20.8	0.0	0.0	0.0	
CP11	2		90 secs	-	-	-	-	0.0	0.0	20.8	0.0	0.0	0.0	

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CP11	2		120 secs	-	-	-	-	0.0	0.0	20.8	0.0	0.0	0.0	
CP11	2		180 secs	-	-	-	-	0.0	0.0	20.8	0.0	0.0	0.0	
CP11	2		240 secs	-	-	-	-	0.0	0.0	20.8	0.0	0.0	0.0	
CP11	2		300 secs	-	-	-	-	0.0	0.0	20.8	0.0	0.0	0.0	
CP11	3	10.45	15/09/2014 13:41:00	1010	1010	0.0(1)	4.39	0.0	0.0	20.4	0.0	0.0	0.0	
CP11	3		15 secs	-	-	0.0 _(SS)	-	0.2	0.0	20.2	0.0	0.0	0.0	
CP11	3		30 secs	-	-	-	-	0.2	0.0	20.3	0.0	0.0	0.0	
CP11	3		60 secs	-	-	-	-	0.1	0.0	20.3	0.0	0.0	0.0	
CP11	3		90 secs	-	-	-	-	0.1	0.0	20.4	0.0	0.0	0.0	
CP11	3		120 secs	-	-	-	-	0.1	0.0	20.4	0.0	0.0	0.0	
CP11	3		180 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP11	3		240 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP11	3		300 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP11	4	10.44	24/09/2014 16:19:00	1004	1005	0.0(1)	4.41	0.0	0.0	20.8	0.0	0.0	0.0	
CP11	4		15 secs	-	-	0.0 _(SS)	-	0.2	0.0	20.6	0.0	0.0	0.0	
CP11	4		30 secs	-	-	-	-	0.2	0.0	20.6	0.0	0.0	0.0	
CP11	4		60 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
CP11	4		90 secs	-	-	-	-	0.1	0.0	20.8	0.0	0.0	0.0	
CP11	4		120 secs	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0.0	
CP11	4		180 secs	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0.0	
CP11	4		240 secs	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0.0	
CP11	4		300 secs	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0.0	
CP12	1	4.12	04/09/2014 11:54:00	1010	1010	0.2 _(I)	1.48	0.1	0.0	20.9	-	0.0	0.0	
CP12	1		15 secs	-	-	0.2 _(SS)	-	0.1	0.0	20.2	-	2.0	0.0	

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Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP12	1		30 secs	-	-	-	-	0.2	0.0	19.8	-	3.0	0.0	
CP12	1		60 secs	-	-	-	-	0.2	0.0	19.7	-	3.0	0.0	
CP12	1		90 secs	-	-	-	-	0.2	0.0	19.7	-	3.0	0.0	
CP12	1		120 secs	-	-	-	-	0.2	0.0	19.6	-	3.0	0.0	
CP12	1		180 secs	-	-	-	-	0.2	0.0	19.4	-	3.0	0.0	
CP12	1		240 secs	-	-	-	-	0.2	0.0	19.4	-	3.0	0.0	
CP12	1		300 secs	-	-	-	-	0.2	0.0	19.4	-	3.0	0.0	
CP12	2	4.01	09/09/2014 13:51:00	1013	1013	0.0(1)	1.53	0.0	0.0	20.4	0.0	0.0	0.0	
CP12	2		15 secs	-	-	0.0 _(SS)	-	0.1	0.0	19.4	0.0	0.0	0.0	
CP12	2		30 secs	-	-	-	-	0.1	0.0	19.4	0.0	0.0	0.0	
CP12	2		60 secs	-	-	-	-	0.1	0.0	19.3	0.0	0.0	0.0	
CP12	2		90 secs	-	-	-	-	0.1	0.0	19.3	0.0	0.0	0.0	
CP12	2		120 secs	-	-	-	-	0.1	0.0	19.3	0.0	0.0	0.0	
CP12	2		180 secs	-	-	-	-	0.1	0.0	19.1	0.0	0.0	0.0	
CP12	2		240 secs	-	-	-	-	0.1	0.0	19.1	0.0	0.0	0.0	
CP12	2		300 secs	-	-	-	-	0.1	0.0	19.1	0.0	0.0	0.0	
CP12	3	4.00	15/09/2014 13:55:00	1010	1010	0.0(1)	1.50	0.0	0.0	20.5	0.0	0.0	0.0	
CP12	3		15 secs	-	-	0.0 _(SS)	-	0.2	0.0	19.8	0.0	0.0	0.0	
CP12	3		30 secs	-	-	-	-	0.3	0.0	19.6	0.0	0.0	0.0	
CP12	3		60 secs	-	-	-	-	0.3	0.0	19.6	0.0	0.0	0.0	
CP12	3		90 secs	-	-	-	-	0.3	0.0	19.5	0.0	0.0	0.0	
CP12	3		120 secs	-	-	-	-	0.3	0.0	19.5	0.0	0.0	0.0	
CP12	3		180 secs	-	-	-	-	0.3	0.0	19.4	0.0	0.0	0.0	
CP12	3		240 secs	-	-	-	-	0.3	0.0	19.4	0.0	0.0	0.0	
CP12	3		300 secs	-	-	-	-	0.3	0.0	19.4	0.0	0.0	0.0	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

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Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP12	4		24/09/2014 16:28:00	-	1005	-	-	-	-	-	-	-	-	
	Remarks	: Installation	buried as a result	of the field	being plou	ıghed.								
CP13	1	12.14	04/09/2014 11:11:00	1010	1010	0.1 _(I)	2.76	0.1	0.0	20.8	-	0.0	0.0	
CP13	1		15 secs	-	-	0.0 _(SS)	-	0.8	0.0	20.1	-	2.0	0.0	
CP13	1		30 secs	-	-	-	-	0.7	0.0	19.8	-	2.0	0.0	
CP13	1		60 secs	-	-	-	-	0.7	0.0	19.8	-	2.0	0.0	
CP13	1		90 secs	-	-	-	-	0.7	0.0	19.8	-	2.0	0.0	
CP13	1		120 secs	-	-	-	-	0.7	0.0	19.8	-	2.0	0.0	
CP13	1		180 secs	-	-	-	-	0.7	0.0	19.7	-	2.0	0.0	
CP13	1		240 secs	-	-	-	-	0.7	0.0	19.7	-	2.0	0.0	
CP13	1		300 secs	-	-	-	-	0.8	0.0	19.4	-	2.0	0.0	
CP13	1		360 secs	-	-	-	-	0.8	0.0	19.3	-	2.0	0.0	
CP13	1		420 secs	-	-	-	-	0.8	0.0	19.3	-	2.0	0.0	
CP13	2	12.05	09/09/2014 14:05:00	1013	1013	0.0(1)	2.59	0.0	0.0	20.5	0.0	0.0	0.0	
CP13	2		15 secs	-	-	0.0 _(SS)	-	0.2	0.0	20.4	0.0	0.0	0.0	
CP13	2		30 secs	-	-	-	-	0.2	0.0	20.5	0.0	0.0	0.0	
CP13	2		60 secs	-	-	-	-	0.2	0.0	20.5	0.0	0.0	0.0	
CP13	2		90 secs	-	-	-	-	0.2	0.0	20.5	0.0	0.0	0.0	
CP13	2		120 secs	-	-	-	-	0.2	0.0	20.5	0.0	0.0	0.0	
CP13	2		180 secs	-	-	-	-	0.2	0.0	20.5	0.0	0.0	0.0	
CP13	2		240 secs	-	-	-	-	0.2	0.0	20.5	0.0	0.0	0.0	
CP13	2		300 secs	-	-	-	-	0.2	0.0	20.5	0.0	0.0	0.0	
CP13	3	12.04	15/09/2014 14:07:00	1010	1010	0.0(1)	2.44	0.0	0.0	20.4	0.0	0.0	0.0	
CP13	3		15 secs	-	-	0.0 _(SS)	-	0.3	0.0	20.0	0.0	0.0	0.0	
CP13	3		30 secs	-	-	-	-	0.2	0.0	20.1	0.0	0.0	0.0	

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Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (I/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP13	3		60 secs	-	-	-	-	0.2	0.0	20.2	0.0	0.0	0.0	
CP13	3		90 secs	-	-	-	-	0.1	0.0	20.3	0.0	0.0	0.0	
CP13	3		120 secs	-	-	-	-	0.1	0.0	20.3	0.0	0.0	0.0	
CP13	3		180 secs	-	-	-	-	0.1	0.0	20.3	0.0	0.0	0.0	
CP13	3		240 secs	-	-	-	-	0.1	0.0	20.3	0.0	0.0	0.0	
CP13	3		300 secs	-	-	-	-	0.1	0.0	20.3	0.0	0.0	0.0	
CP13	4	12.01	24/09/2014 16:36:00	1005	1005	0.0(1)	2.34	0.0	0.0	20.9	0.0	0.0	0.0	
CP13	4		15 secs	-	-	0.0 _(SS)	-	0.1	0.0	20.8	0.0	0.0	0.0	
CP13	4		30 secs	-	-	-	-	0.1	0.0	20.8	0.0	0.0	0.0	
CP13	4		60 secs	-	-	-	-	0.1	0.0	20.8	0.0	0.0	0.0	
CP13	4		90 secs	-	-	-	-	0.1	0.0	20.8	0.0	0.0	0.0	
CP13	4		120 secs	-	-	-	-	0.1	0.0	20.8	0.0	0.0	0.0	
CP13	4		180 secs	-	-	-	-	0.1	0.0	20.8	0.0	0.0	0.0	
CP13	4		240 secs	-	-	-	-	0.1	0.0	20.8	0.0	0.0	0.0	
CP13	4		300 secs	-	-	-	-	0.1	0.0	20.8	0.0	0.0	0.0	
CP14	1	5.20	04/09/2014 13:22:00	1009	1009	0.1(1)	0.55	0.1	0.0	20.8	-	0.0	0.0	
CP14	1		15 secs	-	-	0.0 _(SS)	-	0.1	0.0	20.7	-	0.0	0.0	
CP14	1		30 secs	-	-	=	-	0.1	0.0	20.8	-	0.0	0.0	
CP14	1		60 secs	-	-	-	-	0.1	0.0	20.8	-	0.0	0.0	
CP14	1		90 secs	-	-	-	-	0.1	0.0	20.8	-	0.0	0.0	
CP14	1		120 secs	-	-	-	-	0.1	0.0	20.8	-	0.0	0.0	
CP14	1		180 secs	-	-	-	-	0.1	0.0	20.8	-	0.0	0.0	
CP14	1		240 secs	-	-	-	-	0.1	0.0	20.9	-	0.0	0.0	
CP14	1		300 secs	-	-	-	_	0.1	0.0	20.9	-	0.0	0.0	

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CP14	2	5.02	09/09/2014 12:58:00	1013	1013	0.0(1)	0.55	0.0	0.0	20.9	0.0	0.0	0.0	
CP14	2		15 secs	-	-	0.0 _(SS)	-	0.0	0.0	20.9	0.0	0.0	0.0	
CP14	2		30 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
CP14	2		60 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
CP14	2		90 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
CP14	2		120 secs	-	-	-	-	0.0	0.0	21.0	0.0	0.0	0.0	
CP14	2		180 secs	-	-	-	-	0.0	0.0	21.0	0.0	0.0	0.0	
CP14	2		240 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
CP14	2		300 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
CP14	3	5.14	15/09/2014 12:52:00	1010	1010	0.0 _(I)	0.55	0.0	0.0	20.5	0.0	0.0	0.0	
CP14	3		15 secs	-	-	0.0 _(SS)	-	0.0	0.0	20.4	0.0	0.0	0.0	
CP14	3		30 secs	-	-	-	-	0.0	0.0	20.4	0.0	0.0	0.0	
CP14	3		60 secs	-	-	-	-	0.0	0.0	20.5	0.0	0.0	0.0	
CP14	3		90 secs	-	-	-	-	0.0	0.0	20.5	0.0	0.0	0.0	
CP14	3		120 secs	-	-	-	-	0.0	0.0	20.5	0.0	0.0	0.0	
CP14	3		180 secs	-	-	-	-	0.0	0.0	20.5	0.0	0.0	0.0	
CP14	3		240 secs	-	-	-	-	0.0	0.0	20.5	0.0	0.0	0.0	
CP14	3		300 secs	-	-	-	-	0.0	0.0	20.5	0.0	0.0	0.0	
CP14	4	5.10	24/09/2014 15:29:00	1005	1005	0.0 _(I)	0.54	0.0	0.0	20.6	0.0	0.0	0.0	
CP14	4		15 secs	-	-	0.0 _(SS)	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP14	4		30 secs	-	-	-	-	0.1	0.0	20.4	0.0	0.0	0.0	
CP14	4		60 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP14	4		90 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP14	4		120 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP14	4		180 secs	-	-	-	-	0.0	0.0	20.5	0.0	0.0	0.0	

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CP14	4		240 secs	-	-	-	-	0.0	0.0	20.6	0.0	0.0	0.0	
CP14	4		300 secs	-	-	-	-	-	-	-	-	-	-	
	Remarks	: Test stopp	ed short at 250 sed	conds after	water drav	wn up ana	lyser hose							
CP15	1	7.80	04/09/2014 13:06:00	1009	1009	0.1(1)	1.10	0.1	0.0	20.9	-	0.0	0.0	
CP15	1		15 secs	-	-	0.0 _(SS)	-	0.1	0.0	20.9	-	0.0	0.0	
CP15	1		30 secs	-	-	-	-	0.1	0.0	20.9	-	0.0	0.0	
CP15	1		60 secs	-	-	-	-	0.1	0.0	20.9	-	0.0	0.0	
CP15	1		90 secs	-	-	-	-	0.1	0.0	20.9	-	0.0	0.0	
CP15	1		120 secs	-	-	-	-	0.1	0.0	20.9	-	0.0	0.0	
CP15	1		180 secs	-	-	-	-	0.1	0.0	20.9	-	0.0	0.0	
CP15	1		240 secs	-	-	-	-	0.1	0.0	20.9	-	0.0	0.0	
CP15	1		300 secs	-	-	-	-	0.1	0.0	20.9	=	0.0	0.0	
CP15	2	7.78	09/09/2014 13:07:00	1013	1013	0.0(1)	1.11	0.0	0.0	20.8	0.0	0.0	0.0	
CP15	2		15 secs	-	-	0.0 _(SS)	-	0.0	0.0	20.7	0.0	0.0	0.0	
CP15	2		30 secs	-	-	-	-	0.0	0.0	20.7	0.0	0.0	0.0	
CP15	2		60 secs	-	-	-	-	0.0	0.0	20.7	0.0	0.0	0.0	
CP15	2		90 secs	-	-	-	-	0.0	0.0	20.7	0.0	0.0	0.0	
CP15	2		120 secs	-	-	-	-	0.0	0.0	20.8	0.0	0.0	0.0	
CP15	2		180 secs	-	-	-	-	0.0	0.0	20.8	0.0	0.0	0.0	
CP15	2		240 secs	-	-	-	-	0.0	0.0	20.8	0.0	0.0	0.0	
CP15	2		300 secs	-	-	-	-	0.0	0.0	20.8	0.0	0.0	0.0	
CP15	3	7.78	15/09/2014 13:03:00	1010	1010	0.0(1)	1.10	0.0	0.0	20.6	0.0	0.0	0.0	
CP15	3		15 secs	-	-	0.0 _(SS)	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP15	3		30 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP15	3		60 secs	-	-	-	-	0.0	0.0	20.6	0.0	0.0	0.0	

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CP15	3		90 secs	-	-	-	-	0.0	0.0	20.6	0.0	0.0	0.0	
CP15	3		120 secs	-	-	-	-	0.0	0.0	20.6	0.0	0.0	0.0	
CP15	3		180 secs	-	-	-	-	0.0	0.0	20.7	0.0	0.0	0.0	
CP15	3		240 secs	-	-	-	-	0.0	0.0	20.7	0.0	0.0	0.0	
CP15	3		300 secs	-	-	-	-	0.0	0.0	20.7	0.0	0.0	0.0	
CP15	4	7.76	24/09/2014 15:43:00	1005	1005	0.0(1)	1.13	0.0	0.0	20.4	0.0	0.0	0.0	
CP15	4		15 secs	-	-	0.0 _(SS)	-	0.0	0.0	20.2	0.0	0.0	0.0	
CP15	4		30 secs	-	-	-	-	0.0	0.0	20.2	0.0	0.0	0.0	
CP15	4		60 secs	-	-	-	-	0.0	0.0	20.2	0.0	0.0	0.0	
CP15	4		90 secs	-	-	-	-	0.0	0.0	20.2	0.0	0.0	0.0	
CP15	4		120 secs	-	-	-	-	0.0	0.0	20.2	0.0	0.0	0.0	
CP15	4		180 secs	-	-	-	-	0.0	0.0	20.3	0.0	0.0	0.0	
CP15	4		240 secs	-	-	-	-	0.0	0.0	20.2	0.0	0.0	0.0	
CP15	4		300 secs	-	-	-	-	0.0	0.0	20.2	0.0	0.0	0.0	
CP16	1	4.51	04/09/2014 12:50:00	1009	1009	0.1(1)	1.19	0.1	0.0	20.6	-	0.0	0.0	
CP16	1		15 secs	-	-	0.1 _(SS)	-	0.3	0.0	20.5	-	0.0	0.0	
CP16	1		30 secs	-	-	-	-	0.3	0.0	20.5	-	0.0	0.0	
CP16	1		60 secs	-	-	-	-	0.3	0.0	20.5	-	0.0	0.0	
CP16	1		90 secs	-	-	-	-	0.3	0.0	20.6	-	0.0	0.0	
CP16	1		120 secs	-	-	-	-	0.3	0.0	20.6	-	0.0	0.0	
CP16	1		180 secs	-	-	-	-	0.3	0.0	20.6	-	0.0	0.0	
CP16	1		240 secs	-	-	-	-	0.3	0.0	20.7	-	0.0	0.0	
CP16	1		300 secs	-	-	-	-	0.3	0.0	20.7	-	0.0	0.0	
CP16	2	4.54	09/09/2014 13:16:00	1013	1013	0.0(1)	1.23	0.0	0.0	20.6	0.0	0.0	0.0	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

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Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP16	2		15 secs	-	-	0.0 _(SS)	-	0.6	0.0	19.7	0.0	0.0	0.0	
CP16	2		30 secs	-	-	-	-	0.5	0.0	19.8	0.0	0.0	0.0	
CP16	2		60 secs	-	-	-	-	0.4	0.0	19.9	0.0	0.0	0.0	
CP16	2		90 secs	-	-	-	-	0.4	0.0	19.9	0.0	0.0	0.0	
CP16	2		120 secs	-	-	-	-	0.4	0.0	20.0	0.0	0.0	0.0	
CP16	2		180 secs	-	-	-	-	0.4	0.0	20.0	0.0	0.0	0.0	
CP16	2		240 secs	-	-	-	-	0.4	0.0	20.1	0.0	0.0	0.0	
CP16	2		300 secs	-	-	-	-	0.4	0.0	20.1	0.0	0.0	0.0	
CP16	3	4.51	15/09/2014 13:18:00	1010	1010	0.0(1)	1.21	0.0	0.0	20.8	0.0	0.0	0.0	
CP16	3		15 secs	-	-	0.0 _(SS)	-	0.6	0.0	20.2	0.0	0.0	0.0	
CP16	3		30 secs	-	-	-	-	0.5	0.0	20.1	0.0	0.0	0.0	
CP16	3		60 secs	-	-	-	-	0.5	0.0	20.2	0.0	0.0	0.0	
CP16	3		90 secs	-	-	-	-	0.5	0.0	20.2	0.0	0.0	0.0	
CP16	3		120 secs	-	-	-	-	0.5	0.0	20.2	0.0	0.0	0.0	
CP16	3		180 secs	-	-	-	-	0.5	0.0	20.3	0.0	0.0	0.0	
CP16	3		240 secs	-	-	-	-	0.4	0.0	20.3	0.0	0.0	0.0	
CP16	3		300 secs	-	-	-	-	0.5	0.0	20.3	0.0	0.0	0.0	
CP16	3		360 secs	-	-	-	-	0.5	0.0	20.2	0.0	0.0	0.0	
CP16	3		420 secs	-	-	-	-	0.5	0.0	20.2	0.0	0.0	0.0	
CP16	4	4.51	24/09/2014 15:56:00	1005	1005	-0.1 _(I)	1.27	0.0	0.0	20.4	0.0	0.0	0.0	
CP16	4		15 secs	-	-	0.0 _(SS)	-	0.7	0.0	19.5	0.0	0.0	0.0	
CP16	4		30 secs	-	-	-	-	0.6	0.0	19.5	0.0	0.0	0.0	
CP16	4		60 secs	-	-	-	-	0.6	0.0	19.6	0.0	0.0	0.0	
CP16	4		90 secs	-	-	-	-	0.5	0.0	19.7	0.0	0.0	0.0	
CP16	4		120 secs	-	-	-	-	0.5	0.0	19.7	0.0	0.0	0.0	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

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Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP16	4		180 secs	-	-	-	-	0.5	0.0	19.8	0.0	0.0	0.0	
CP16	4		240 secs	-	-	-	-	0.5	0.0	19.8	0.0	0.0	0.0	
CP16	4		300 secs	-	-	-	-	0.5	0.0	19.8	0.0	0.0	0.0	
WS2	1	3.18	04/09/2014 13:59:00	1008	1008	0.1 _(l)	DRY	0.1	0.0	20.7	-	0.0	0.0	
WS2	1		15 secs	-	-	0.0 _(SS)	-	1.4	0.0	19.2	-	0.0	0.0	
WS2	1		30 secs	-	-	-	-	1.4	0.0	19.1	-	0.0	0.0	
WS2	1		60 secs	-	-	-	-	1.4	0.0	19.1	-	0.0	0.0	
WS2	1		90 secs	-	-	-	-	1.5	0.0	19.0	-	0.0	0.0	
WS2	1		120 secs	-	-	-	-	1.5	0.0	19.0	-	0.0	0.0	
WS2	1		180 secs	-	-	-	-	1.5	0.0	18.9	-	0.0	0.0	
WS2	1		240 secs	-	-	-	-	1.6	0.0	18.9	-	0.0	0.0	
WS2	1		300 secs	-	-	-	-	1.6	0.0	18.9	-	0.0	0.0	
WS2	1		360 secs	-	-	-	-	1.6	0.0	18.9	-	0.0	0.0	
WS2	2	3.19	09/09/2014 09:25:00	1013	1013	0.0(1)	DRY	0.0	0.0	20.7	0.0	0.0	0.0	
WS2	2		15 secs	-	-	0.0 _(SS)	-	1.6	0.0	19.4	0.0	0.0	0.0	
WS2	2		30 secs	-	-	-	-	1.6	0.0	19.1	0.0	0.0	0.0	
WS2	2		60 secs	-	-	-	-	1.6	0.0	19.0	0.0	0.0	0.0	
WS2	2		90 secs	-	-	-	-	1.7	0.0	19.0	0.0	0.0	0.0	
WS2	2		120 secs	-	-	-	-	1.7	0.0	19.0	0.0	0.0	0.0	
WS2	2		180 secs	-	-	-	-	1.7	0.0	19.0	0.0	0.0	0.0	
WS2	2		240 secs	-	-	-	-	1.7	0.0	19.0	0.0	0.0	0.0	
WS2	2		300 secs	-	-	-	-	1.7	0.0	18.9	0.0	0.0	0.0	
WS2	3	3.18	15/09/2014 09:10:00	1009	1009	0.1(1)	DRY	0.0	0.0	20.6	0.0	0.0	0.0	
WS2	3		15 secs	-	-	0.1 _(SS)	-	1.7	0.0	19.7	0.0	0.0	0.0	

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Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
WS2	3		30 secs	-	-	-	-	1.7	0.0	19.4	0.0	0.0	0.0	
WS2	3		60 secs	-	-	-	-	1.7	0.0	19.3	0.0	0.0	0.0	
WS2	3		90 secs	-	-	-	-	1.8	0.0	19.3	0.0	0.0	0.0	
WS2	3		120 secs	-	-	-	-	1.8	0.0	19.3	0.0	0.0	0.0	
WS2	3		180 secs	-	-	-	-	1.8	0.0	19.3	0.0	0.0	0.0	
WS2	3		240 secs	-	-	-	-	1.8	0.0	19.3	0.0	0.0	0.0	
WS2	3		300 secs	-	-	-	-	1.8	0.0	19.3	0.0	0.0	0.0	
WS2	4	3.18	24/09/2014 13:49:00	1004	1004	0.0(1)	DRY	0.0	0.0	20.7	0.0	0.0	0.0	
WS2	4		15 secs	-	-	0.0 _(SS)	-	1.5	0.0	20.0	0.0	0.0	0.0	
WS2	4		30 secs	-	-	-	-	1.5	0.0	19.8	0.0	0.0	0.0	
WS2	4		60 secs	-	-	-	-	1.5	0.0	19.8	0.0	0.0	0.0	
WS2	4		90 secs	-	-	-	-	1.5	0.0	19.8	0.0	0.0	0.0	
WS2	4		120 secs	-	-	-	-	1.5	0.0	19.7	0.0	0.0	0.0	
WS2	4		180 secs	-	-	-	-	1.6	0.0	19.7	0.0	0.0	0.0	
WS2	4		240 secs	-	-	-	-	1.6	0.0	19.7	0.0	0.0	0.0	
WS2	4		300 secs	-	-	-	-	1.6	0.0	19.7	0.0	0.0	0.0	
WS3	1	4.67	04/09/2014 15:19:00	1006	1006	0.2 _(I)	4.47	0.1	0.0	20.5	-	0.0	0.0	
WS3	1		15 secs	-	-	0.3 _(SS)	-	1.4	0.0	19.3	-	1.0	0.0	
WS3	1		30 secs	-	-	-	-	1.4	0.0	18.8	-	0.0	0.0	
WS3	1		60 secs	-	-	-	-	1.4	0.0	18.7	-	0.0	0.0	
WS3	1		90 secs	-	-	-	-	1.4	0.0	18.7	-	0.0	0.0	
WS3	1		120 secs	-	-	-	-	1.4	0.0	18.7	-	0.0	0.0	
WS3	1		180 secs	-	-	-	-	1.5	0.0	18.6	-	0.0	0.0	
WS3	1		240 secs	-	-	-	-	1.6	0.0	18.5	-	0.0	0.0	

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WS3	1		300 secs	-	-	-	-	1.7	0.0	18.5	-	0.0	0.0	
WS3	1		360 secs	-	-	-	-	1.7	0.0	18.4	-	0.0	0.0	
WS3	1		420 secs	-	-	-	-	1.8	0.0	18.3	-	0.0	0.0	
WS3	1		480 secs	-	-	-	-	1.9	0.0	18.2	-	0.0	0.0	
WS3	1		540 secs	-	-	-	-	1.9	0.0	18.1	-	0.0	0.0	
WS3	1		600 secs	-	-	-	-	2.0	0.0	18.1	-	0.0	0.0	
WS3	2	4.66	09/09/2014 09:06:00	1013	1013	0.0(1)	4.49	0.0	0.0	20.5	0.0	0.0	0.0	
WS3	2		15 secs	-	-	0.0 _(SS)	-	1.3	0.0	19.4	0.0	0.0	0.0	
WS3	2		30 secs	-	-	-	-	1.3	0.0	19.1	0.0	0.0	0.0	
WS3	2		60 secs	-	-	-	-	1.3	0.0	19.1	0.0	0.0	0.0	
WS3	2		90 secs	-	-	-	-	1.3	0.0	19.0	0.0	0.0	0.0	
WS3	2		120 secs	-	-	-	-	1.3	0.0	19.0	0.0	0.0	0.0	
WS3	2		180 secs	-	-	-	-	1.4	0.0	19.0	0.0	0.0	0.0	
WS3	2		240 secs	-	-	-	-	1.4	0.0	18.9	0.0	0.0	0.0	
WS3	2		300 secs	-	-	-	-	1.6	0.0	18.8	0.0	0.0	0.0	
WS3	2		360 secs	-	-	-	-	1.7	0.0	18.6	0.0	0.0	0.0	
WS3	2		420 secs	-	-	-	-	1.8	0.0	18.5	0.0	0.0	0.0	
WS3	2		480 secs	-	-	-	-	1.9	0.0	18.4	0.0	0.0	0.0	
WS3	2		540 secs	-	-	-	-	2.0	0.0	18.2	0.0	0.0	0.0	
WS3	2		600 secs	-	-	-	-	2.2	0.0	18.0	0.0	0.0	0.0	
WS3	3	4.66	15/09/2014 08:53:00	1009	1009	0.1 _(I)	4.50	0.0	0.0	20.5	0.0	0.0	0.0	
WS3	3		15 secs	-	-	0.1 _(SS)	-	1.9	0.0	19.1	0.0	0.0	0.0	
WS3	3		30 secs	-	-	-	-	1.9	0.0	18.6	0.0	0.0	0.0	
WS3	3		60 secs	-	-	-	-	1.9	0.0	18.6	0.0	0.0	0.0	
WS3	3		90 secs	-	-	-	-	2.0	0.0	18.5	0.0	0.0	0.0	

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WS3	3		120 secs	-	-	-	-	2.0	0.0	18.5	0.0	0.0	0.0	
WS3	3		180 secs	-	-	-	-	2.1	0.0	18.4	0.0	0.0	0.0	
WS3	3		240 secs	-	-	-	-	2.1	0.0	18.4	0.0	0.0	0.0	
WS3	3		300 secs	-	-	-	-	2.2	0.0	18.3	0.0	0.0	0.0	
WS3	3		360 secs	-	-	-	-	2.2	0.0	18.3	0.0	0.0	0.0	
WS3	3		420 secs	-	-	-	-	2.3	0.0	18.2	0.0	0.0	0.0	
WS3	3		480 secs	-	-	-	-	2.3	0.0	18.1	0.0	0.0	0.0	
WS3	3		540 secs	-	-	-	-	2.4	0.0	18.1	0.0	0.0	0.0	
WS3	3		600 secs	-	-	-	-	2.4	0.0	18.1	0.0	0.0	0.0	
WS3	4	4.65	24/09/2014 13:30:00	1005	1005	0.0 _(I)	4.52	0.0	0.0	20.7	0.0	0.0	0.0	
WS3	4		15 secs	-	-	0.0 _(SS)	-	1.8	0.0	18.9	0.0	0.0	0.0	
WS3	4		30 secs	-	-	-	-	1.8	0.0	18.5	0.0	0.0	0.0	
WS3	4		60 secs	-	-	-	-	1.9	0.0	18.5	0.0	0.0	0.0	
WS3	4		90 secs	-	-	-	-	1.9	0.0	18.5	0.0	0.0	0.0	
WS3	4		120 secs	-	-	-	-	1.9	0.0	18.6	0.0	0.0	0.0	
WS3	4		180 secs	-	-	-	-	1.9	0.0	18.6	0.0	0.0	0.0	
WS3	4		240 secs	-	-	-	-	1.9	0.0	18.5	0.0	0.0	0.0	
WS3	4		300 secs	-	-	-	-	1.9	0.0	18.4	0.0	0.0	0.0	
WS4	1	4.86	05/09/2014 09:32:00	1009	1009	0.0(1)	DRY	0.0	0.0	20.6	0.0	0.0	0.0	
WS4	1		15 secs	-	-	0.0 _(SS)	-	1.1	0.0	19.6	0.0	0.0	0.0	
WS4	1		30 secs	-	-	_	-	1.1	0.0	19.2	0.0	0.0	0.0	
WS4	1		60 secs	-	-	-	-	1.1	0.0	19.2	0.0	0.0	0.0	
WS4	1		90 secs	-	-	-	-	1.1	0.0	19.2	0.0	0.0	0.0	
WS4	1		120 secs	-	-	-	-	1.1	0.0	19.3	0.0	0.0	0.0	

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WS4	1		180 secs	-	-	-	-	1.0	0.0	19.5	0.0	0.0	0.0	
WS4	1		240 secs	-	-	-	-	1.0	0.0	19.5	0.0	0.0	0.0	
WS4	1		300 secs	-	-	-	-	1.0	0.0	19.5	0.0	0.0	0.0	
WS4	2	4.83	09/09/2014 10:28:00	1013	1013	-0.1 _(I)	DRY	0.0	0.0	20.9	0.0	0.0	0.0	
WS4	2		15 secs	-	-	-0.1 _(SS)	-	0.3	0.0	20.5	0.0	0.0	0.0	
WS4	2		30 secs	-	-	-	-	0.3	0.0	20.4	0.0	0.0	0.0	
WS4	2		60 secs	-	-	-	-	0.3	0.0	20.4	0.0	0.0	0.0	
WS4	2		90 secs	-	-	-	-	0.3	0.0	20.4	0.0	0.0	0.0	
WS4	2		120 secs	-	-	-	-	0.3	0.0	20.4	0.0	0.0	0.0	
WS4	2		180 secs	-	-	-	-	0.3	0.0	20.5	0.0	0.0	0.0	
WS4	2		240 secs	-	-	-	-	0.3	0.0	20.5	0.0	0.0	0.0	
WS4	2		300 secs	-	-	-	-	0.3	0.0	20.4	0.0	0.0	0.0	
WS4	3	4.83	15/09/2014 10:11:00	1009	1009	0.0 _(I)	DRY	0.0	0.0	20.8	0.0	0.0	0.0	
WS4	3		15 secs	-	-	0.0 _(SS)	-	1.2	0.0	19.8	0.0	0.0	0.0	
WS4	3		30 secs	-	-	-	-	1.2	0.0	19.3	0.0	0.0	0.0	
WS4	3		60 secs	-	-	-	-	1.3	0.0	19.3	0.0	0.0	0.0	
WS4	3		90 secs	-	-	-	-	1.3	0.0	19.2	0.0	0.0	0.0	
WS4	3		120 secs	-	-	-	-	1.3	0.0	19.2	0.0	0.0	0.0	
WS4	3		180 secs	-	-	-	-	1.3	0.0	19.2	0.0	0.0	0.0	
WS4	3		240 secs	-	-	-	-	1.3	0.0	19.2	0.0	0.0	0.0	
WS4	3		300 secs	-	-	-	-	1.4	0.0	19.1	0.0	0.0	0.0	
WS4	3		360 secs	-	-	-	-	1.3	0.0	19.1	0.0	0.0	0.0	
WS4	3		420 secs	-	-	-	-	1.3	0.0	19.2	0.0	0.0	0.0	
WS4	3		480 secs	-	-	-	-	1.3	0.0	19.2	0.0	0.0	0.0	
WS4	4	4.83	24/09/2014 12:10:00	1005	1005	0.0(1)	DRY	0.0	0.0	20.8	0.0	0.0	0.0	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

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Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
WS4	4		15 secs	-	-	0.0 _(SS)	-	1.2	0.0	19.6	0.0	0.0	0.0	
WS4	4		30 secs	-	-	-	-	1.2	0.0	19.3	0.0	0.0	0.0	
WS4	4		60 secs	-	-	-	-	1.2	0.0	19.4	0.0	0.0	0.0	
WS4	4		90 secs	-	-	-	-	1.1	0.0	19.5	0.0	0.0	0.0	
WS4	4		120 secs	-	-	-	-	1.1	0.0	19.6	0.0	0.0	0.0	
WS4	4		180 secs	-	-	-	-	0.9	0.0	20.1	0.0	0.0	0.0	
WS4	4		240 secs	-	-	-	-	0.9	0.0	20.1	0.0	0.0	0.0	
WS4	4		300 secs	-	-	-	-	0.9	0.0	20.0	0.0	0.0	0.0	
WS6	1	5.60	05/09/2014 10:15:00	1009	1009	-0.1 _(I)	0.51	0.0	0.0	20.7	0.0	0.0	0.0	
WS6	1		15 secs	-	-	0.0 _(SS)	-	0.1	0.0	20.7	0.0	0.0	0.0	
WS6	1		30 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
WS6	1		60 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
WS6	1		90 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
WS6	1		120 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
WS6	1		180 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
WS6	1		240 secs	-	-	-	-	0.0	0.0	20.7	0.0	0.0	0.0	
WS6	1		300 secs	-	-	-	-	0.0	0.0	20.7	0.0	0.0	0.0	
WS6	2	5.58	09/09/2014 10:52:00	1013	1013	0.0(1)	0.57	0.0	0.0	20.7	0.0	0.0	0.0	
WS6	2		15 secs	-	-	0.0 _(SS)	-	0.0	0.0	20.7	0.0	0.0	0.0	
WS6	2		30 secs	-	-	-	-	0.0	0.0	20.7	0.0	0.0	0.0	
WS6	2		60 secs	-	-	-	-	0.0	0.0	20.7	0.0	0.0	0.0	
WS6	2		90 secs	-	-	-	-	0.0	0.0	20.7	0.0	0.0	0.0	
WS6	2		120 secs	-	-	-	-	0.0	0.0	20.8	0.0	0.0	0.0	
WS6	2		180 secs	-	-	-	-	0.0	0.0	20.8	0.0	0.0	0.0	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

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Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
WS6	2		240 secs	-	-	-	-	0.0	0.0	20.8	0.0	0.0	0.0	
WS6	2		300 secs	-	-	-	-	0.0	0.0	20.8	0.0	0.0	0.0	
WS6	3	5.63	15/09/2014 10:37:00	1009	1009	0.0(1)	0.58	0.1	0.0	20.7	0.0	0.0	0.0	
WS6	3		15 secs	-	-	0.0 _(SS)	-	0.1	0.0	20.9	0.0	0.0	0.0	
WS6	3		30 secs	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0.0	
WS6	3		60 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
WS6	3		90 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
WS6	3		120 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
WS6	3		180 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
WS6	3		240 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
WS6	3		300 secs	-	-	-	-	0.0	0.0	20.9	0.0	0.0	0.0	
WS6	4	5.53	24/09/2014 11:25:00	1004	1004	0.2(1)	0.53	0.0	0.0	20.4	0.0	0.0	0.0	
WS6	4		15 secs	-	-	0.0 _(SS)	-	0.0	0.0	20.2	0.0	0.0	0.0	
WS6	4		30 secs	-	-	-	-	0.0	0.0	20.2	0.0	0.0	0.0	
WS6	4		60 secs	-	-	-	-	0.0	0.0	20.3	0.0	0.0	0.0	
WS6	4		90 secs	-	-	-	-	0.0	0.0	20.3	0.0	0.0	0.0	
WS6	4		120 secs	-	-	-	-	0.0	0.0	20.3	0.0	0.0	0.0	
WS6	4		180 secs	-	-	-	-	0.0	0.0	20.3	0.0	0.0	0.0	
WS6	4		240 secs	-	-	-	-	0.0	0.0	20.3	0.0	0.0	0.0	
WS6	4		300 secs	-	-	-	-	0.0	0.0	20.3	0.0	0.0	0.0	
WS8	1	2.40	05/09/2014 11:15:00	1007	1007	0.0(1)	1.42	0.0	0.0	20.7	0.0	0.0	0.0	
WS8	1		15 secs	-	-	0.0 _(SS)	-	0.6	0.0	19.9	0.0	0.0	0.0	
WS8	1		30 secs	-	-	-	-	0.6	0.0	19.7	0.0	0.0	0.0	
WS8	1		60 secs	-	-	-	-	0.6	0.0	19.6	0.0	0.0	0.0	

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WS8	1		90 secs	-	-	-	-	0.6	0.0	19.6	0.0	0.0	0.0	
WS8	1		120 secs	-	-	-	-	0.6	0.0	19.6	0.0	0.0	0.0	
WS8	1		180 secs	-	-	-	-	0.5	0.0	19.6	0.0	0.0	0.0	
WS8	1		240 secs	-	-	-	-	0.5	0.0	20.1	0.0	0.0	0.0	
WS8	1		300 secs	-	-	-	-	0.5	0.0	20.1	0.0	0.0	0.0	
WS8	2	2.39	09/09/2014 11:16:00	1013	1013	0.0(1)	1.36	0.0	0.0	20.6	0.0	0.0	0.0	
WS8	2		15 secs	-	-	0.0 _(SS)	-	0.4	0.0	20.0	0.0	0.0	0.0	
WS8	2		30 secs	-	-	-	-	0.4	0.1	19.9	1.0	0.0	0.0	
WS8	2		60 secs	-	-	-	-	0.4	0.1	19.9	1.0	0.0	0.0	
WS8	2		90 secs	-	-	-	-	0.4	0.1	19.9	1.0	0.0	0.0	
WS8	2		120 secs	-	-	-	-	0.4	0.1	19.9	1.0	0.0	0.0	
WS8	2		180 secs	-	-	-	-	0.5	0.1	19.8	1.0	0.0	0.0	
WS8	2		240 secs	-	-	-	-	0.8	0.1	19.4	1.0	0.0	0.0	
WS8	2		300 secs	-	-	-	-	0.8	0.1	19.3	1.0	0.0	0.0	
WS8	2		360 secs	-	-	-	-	0.8	0.1	19.3	1.0	0.0	0.0	
WS8	3	2.38	15/09/2014 10:52:00	1009	1009	-0.1 _(I)	1.33	0.0	0.0	20.9	0.0	0.0	0.0	
WS8	3		15 secs	-	-	0.0 _(SS)	-	0.7	0.0	20.2	0.0	0.0	0.0	
WS8	3		30 secs	-	-	-	-	0.7	0.0	19.9	0.0	0.0	0.0	
WS8	3		60 secs	-	-	-	-	0.7	0.0	19.9	0.0	0.0	0.0	
WS8	3		90 secs	-	-	-	-	0.7	0.0	19.9	0.0	0.0	0.0	
WS8	3		120 secs	-	-	-	-	0.7	0.0	19.9	0.0	0.0	0.0	
WS8	3		180 secs	-	-	-	-	0.8	0.0	19.9	0.0	0.0	0.0	
WS8	3		240 secs	-	-	-	-	0.9	0.0	19.8	0.0	0.0	0.0	
WS8	3		300 secs	-	-	-	-	1.0	0.0	19.8	0.0	0.0	0.0	
WS8	3		360 secs	-	-	-	-	1.0	0.0	19.8	0.0	0.0	0.0	

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WS8	3		420 secs	-	-	-	-	1.0	0.0	19.8	0.0	0.0	0.0	
WS8	4	2.36	24/09/2014 11:10:00	1003	1003	0.0(1)	1.34	0.0	0.0	20.8	0.0	0.0	0.0	
WS8	4		15 secs	-	-	0.0 _(SS)	-	0.7	0.0	20.2	0.0	0.0	0.0	
WS8	4		30 secs	-	-	-	-	0.7	0.0	20.0	0.0	0.0	0.0	
WS8	4		60 secs	-	-	-	-	0.7	0.0	20.0	0.0	0.0	0.0	
WS8	4		90 secs	-	-	-	-	0.7	0.0	19.8	0.0	0.0	0.0	
WS8	4		120 secs	-	-	-	-	0.8	0.0	19.7	0.0	0.0	0.0	
WS8	4		180 secs	-	-	-	-	0.9	0.0	19.5	0.0	0.0	0.0	
WS8	4		240 secs	-	-	-	-	0.9	0.0	19.4	0.0	0.0	0.0	
WS8	4		300 secs	-	-	-	-	0.9	0.0	19.4	0.0	0.0	0.0	
WS9	1	5.58	05/09/2014 11:23:00	1006	1007	0.0(1)	5.56	0.0	0.0	20.7	0.0	0.0	0.0	
WS9	1		15 secs	-	-	0.0 _(SS)	-	1.5	0.0	18.2	0.0	0.0	0.0	
WS9	1		30 secs	-	-	-	-	1.6	0.0	17.6	0.0	0.0	0.0	
WS9	1		60 secs	-	-	-	-	1.6	0.0	17.6	0.0	0.0	0.0	
WS9	1		90 secs	-	-	-	-	1.6	0.0	17.5	0.0	0.0	0.0	
WS9	1		120 secs	-	-	-	-	1.6	0.0	17.5	0.0	0.0	0.0	
WS9	1		180 secs	-	-	-	-	1.6	0.0	17.4	0.0	0.0	0.0	
WS9	1		240 secs	-	-	-	-	1.5	0.0	17.5	0.0	0.0	0.0	
WS9	1		300 secs	-	-	-	-	1.5	0.0	17.6	0.0	0.0	0.0	
WS9	2	5.45	09/09/2014 11:29:00	1013	1013	0.0(1)	DRY	0.0	0.0	20.5	0.0	0.0	0.0	
WS9	2		15 secs	-	-	0.0 _(SS)	-	1.3	0.0	18.3	0.0	0.0	0.0	
WS9	2		30 secs	-	-	-	-	1.3	0.0	18.0	0.0	0.0	0.0	
WS9	2		60 secs	-	-	-	-	1.4	0.0	18.0	0.0	0.0	0.0	
WS9	2		90 secs	-	-	-	-	1.4	0.0	17.9	0.0	0.0	0.0	

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WS9	2		120 secs	-	-	-	-	1.4	0.0	17.8	0.0	0.0	0.0	
WS9	2		180 secs	-	-	-	-	1.4	0.0	17.7	0.0	0.0	0.0	
WS9	2		240 secs	-	-	-	-	1.5	0.0	17.5	0.0	0.0	0.0	
WS9	2		300 secs	-	-	-	-	1.6	0.0	17.3	0.0	0.0	0.0	
WS9	2		360 secs	-	-	-	-	1.6	0.0	17.1	0.0	0.0	0.0	
WS9	2		420 secs	-	-	-	-	1.7	0.1	17.0	1.0	0.0	0.0	
WS9	2		480 secs	-	-	-	-	1.8	0.1	16.8	1.0	0.0	0.0	
WS9	2		540 secs	-	-	-	-	1.8	0.1	16.9	1.0	0.0	0.0	
WS9	2		600 secs	-	-	-	-	1.8	0.0	17.2	0.0	0.0	0.0	
WS9	3	5.52	15/09/2014 11:16:00	1009	1009	0.0 _(I)	5.07	0.0	0.0	20.3	0.0	0.0	0.0	
WS9	3		15 secs	-	-	0.0 _(SS)	-	1.8	0.0	18.6	0.0	0.0	0.0	
WS9	3		30 secs	-	-	-	-	1.8	0.0	18.1	0.0	0.0	0.0	
WS9	3		60 secs	-	-	-	-	1.8	0.0	18.0	0.0	0.0	0.0	
WS9	3		90 secs	-	-	-	-	1.8	0.0	18.0	0.0	0.0	0.0	
WS9	3		120 secs	-	-	-	-	1.9	0.0	18.0	0.0	0.0	0.0	
WS9	3		180 secs	-	-	-	-	1.9	0.0	17.9	0.0	0.0	0.0	
WS9	3		240 secs	-	-	-	-	2.0	0.0	17.8	0.0	0.0	0.0	
WS9	3		300 secs	-	-	-	-	2.0	0.0	17.6	0.0	0.0	0.0	
WS9	3		360 secs	-	-	-	-	2.1	0.0	17.5	0.0	0.0	0.0	
WS9	3		420 secs	-	-	-	-	2.2	0.0	17.4	0.0	0.0	0.0	
WS9	3		480 secs	-	-	-	-	2.2	0.0	17.2	0.0	0.0	0.0	
WS9	3		540 secs	-	-	-	-	2.3	0.0	17.3	0.0	0.0	0.0	
WS9	3		600 secs	-	-	-	-	2.1	0.0	17.7	0.0	0.0	0.0	
WS9	4	5.50	24/09/2014 12:45:00	1005	1005	0.0(1)	4.30	0.0	0.0	20.7	0.0	0.0	0.0	
WS9	4		15 secs	-	-	0.0 _(SS)	-	1.9	0.0	18.5	0.0	0.0	0.0	

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WS9	4		30 secs	-	-	-	-	1.9	0.0	17.8	0.0	0.0	0.0	
WS9	4		60 secs	-	-	-	-	1.9	0.0	17.7	0.0	0.0	0.0	
WS9	4		90 secs	-	-	-	-	2.0	0.0	17.7	0.0	0.0	0.0	
WS9	4		120 secs	-	-	-	-	2.0	0.0	17.5	0.0	0.0	0.0	
WS9	4		180 secs	-	-	-	-	2.1	0.0	17.4	0.0	0.0	0.0	
WS9	4		240 secs	-	-	-	-	2.1	0.0	17.3	0.0	0.0	0.0	
WS9	4		300 secs	-	-	-	-	2.1	0.0	17.2	0.0	0.0	0.0	
WS11	1	3.98	04/09/2014 14:45:00	1007	1007	0.1 _(I)	2.78	0.1	0.0	20.8	-	0.0	0.0	
WS11	1		15 secs	-	-	0.1 _(SS)	-	2.0	0.0	19.2	-	0.0	0.0	
WS11	1		30 secs	-	-	-	-	2.1	0.0	18.8	-	0.0	0.0	
WS11	1		60 secs	-	-	-	-	2.1	0.0	18.8	-	0.0	0.0	
WS11	1		90 secs	-	-	-	-	2.1	0.0	18.8	-	1.0	0.0	
WS11	1		120 secs	-	-	-	-	2.1	0.0	18.8	-	0.0	0.0	
WS11	1		180 secs	-	-	-	-	2.1	0.0	18.7	-	0.0	0.0	
WS11	1		240 secs	-	-	-	-	2.2	0.0	18.7	-	0.0	0.0	
WS11	1		300 secs	-	-	-	-	2.2	0.0	18.6	-	0.0	0.0	
WS11	1		360 secs	-	-	-	-	2.2	0.0	18.6	-	0.0	0.0	
WS11	2	3.97	09/09/2014 09:52:00	1013	1013	0.0(1)	2.79	0.1	0.0	20.5	0.0	0.0	0.0	
WS11	2		15 secs	-	-	0.0 _(SS)	-	2.2	0.0	19.4	0.0	0.0	0.0	
WS11	2		30 secs	-	-	-	-	2.2	0.0	19.1	0.0	0.0	0.0	
WS11	2		60 secs	-	-	-	-	2.2	0.0	19.0	0.0	0.0	0.0	
WS11	2		90 secs	-	-	-	-	2.2	0.0	18.9	0.0	0.0	0.0	
WS11	2		120 secs	-	-	-	-	2.3	0.0	18.9	0.0	0.0	0.0	
WS11	2		180 secs	-	-	-	-	2.3	0.0	18.7	0.0	0.0	0.0	

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Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
WS11	2		240 secs	-	-	-	-	2.3	0.0	18.6	0.0	0.0	0.0	
WS11	2		300 secs	-	-	-	-	2.4	0.0	18.4	0.0	0.0	0.0	
WS11	2		360 secs	-	-	-	-	2.4	0.0	18.3	0.0	0.0	0.0	
WS11	2		420 secs	-	-	-	-	2.4	0.0	18.1	0.0	0.0	0.0	
WS11	3	3.98	15/09/2014 09:39:00	1009	1009	0.0(1)	2.80	0.0	0.0	20.3	0.0	0.0	0.0	
WS11	3		15 secs	-	-	0.0 _(SS)	-	2.3	0.0	19.1	0.0	0.0	0.0	
WS11	3		30 secs	-	-	-	-	2.3	0.0	18.8	0.0	0.0	0.0	
WS11	3		60 secs	-	-	-	-	2.3	0.0	18.8	0.0	0.0	0.0	
WS11	3		90 secs	-	-	-	-	2.3	0.0	18.8	0.0	0.0	0.0	
WS11	3		120 secs	-	-	-	-	2.3	0.0	18.8	0.0	0.0	0.0	
WS11	3		180 secs	-	-	-	-	2.4	0.0	18.8	0.0	0.0	0.0	
WS11	3		240 secs	-	-	-	-	2.4	0.0	18.8	0.0	0.0	0.0	
WS11	3		300 secs	-	-	-	-	2.4	0.0	18.8	0.0	0.0	0.0	
WS11	4	3.97	24/09/2014 14:24:00	1004	1004	0.0(1)	2.85	0.0	0.0	20.4	0.0	0.0	0.0	
WS11	4		15 secs	-	-	0.0 _(SS)	-	2.2	0.0	18.9	0.0	0.0	0.0	
WS11	4		30 secs	-	-	-	-	2.3	0.0	18.7	0.0	0.0	0.0	
WS11	4		60 secs	-	-	-	-	2.3	0.0	18.7	0.0	0.0	0.0	
WS11	4		90 secs	-	-	-	-	2.3	0.0	18.6	0.0	0.0	0.0	
WS11	4		120 secs	-	-	-	-	2.3	0.0	18.6	0.0	0.0	0.0	
WS11	4		180 secs	-	-	-	-	2.3	0.0	18.6	0.0	0.0	0.0	
WS11	4		240 secs	-	-	-	-	2.3	0.0	18.6	0.0	0.0	0.0	
WS11	4		300 secs	-	-	-	-	2.3	0.0	18.6	0.0	0.0	0.0	
											<u> </u>			
WS15	1	5.31	05/09/2014 13:46:00	1007	1007	0.0 _(I)	1.50	0.0	0.0	20.6	0.0	0.0	0.0	
WS15	1		15 secs	-	-	0.0 _(SS)	-	0.7	0.0	19.6	0.0	0.0	0.0	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.



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Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
WS15	1		30 secs	-	-	-	-	0.7	0.0	19.5	0.0	0.0	0.0	
WS15	1		60 secs	-	-	-	-	0.7	0.0	19.5	0.0	0.0	0.0	
WS15	1		90 secs	-	-	-	-	0.8	0.0	19.4	0.0	0.0	0.0	
WS15	1		120 secs	-	-	-	-	0.8	0.0	19.4	0.0	0.0	0.0	
WS15	1		180 secs	-	-	-	-	0.7	0.0	19.5	0.0	0.0	0.0	
WS15	1		240 secs	-	-	-	-	0.7	0.0	19.5	0.0	0.0	0.0	
WS15	1		300 secs	-	-	-	-	0.7	0.0	19.5	0.0	0.0	0.0	
WS15	2	5.28	09/09/2014 12:24:00	1011	1011	0.0(1)	1.48	0.0	0.0	20.5	0.0	0.0	0.0	
WS15	2		15 secs	-	-	0.0 _(SS)	-	0.5	0.0	19.6	0.0	0.0	0.0	
WS15	2		30 secs	-	-	-	-	0.5	0.0	19.5	0.0	0.0	0.0	
WS15	2		60 secs	-	-	-	-	0.5	0.0	19.4	0.0	0.0	0.0	
WS15	2		90 secs	-	-	-	-	0.6	0.0	19.2	0.0	0.0	0.0	
WS15	2		120 secs	-	-	-	-	0.7	0.0	19.1	0.0	0.0	0.0	
WS15	2		180 secs	-	-	-	-	0.7	0.0	19.1	0.0	0.0	0.0	
WS15	2		240 secs	-	-	-	-	0.7	0.0	19.1	0.0	0.0	0.0	
WS15	2		300 secs	-	-	-	-	0.7	0.0	19.1	0.0	0.0	0.0	
WS15	3	5.29	15/09/2014 12:15:00	1008	1008	0.0(1)	1.48	0.0	0.0	20.4	0.0	0.0	0.0	
WS15	3		15 secs	-	-	0.0 _(SS)	-	0.6	0.0	19.8	0.0	0.0	0.0	
WS15	3		30 secs	-	-	-	-	0.6	0.0	19.7	0.0	0.0	0.0	
WS15	3		60 secs	-	-	-	-	0.6	0.0	19.6	0.0	0.0	0.0	
WS15	3		90 secs	-	-	-	-	0.7	0.0	19.5	0.0	0.0	0.0	
WS15	3		120 secs	-	-	-	-	0.7	0.0	19.5	0.0	0.0	0.0	
WS15	3		180 secs	-	-	-	-	0.7	0.0	19.5	0.0	0.0	0.0	
WS15	3		240 secs	-	-	-	-	0.7	0.0	19.5	0.0	0.0	0.0	
WS15	3		300 secs	-	-	-	-	0.7	0.0	19.5	0.0	0.0	0.0	

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Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
WS15	4	5.28	24/09/2014 15:01:00	1004	1004	-0.1 _(I)	1.50	0.1	0.0	20.3	0.0	0.0	0.0	
WS15	4		15 secs	-	-	-0.1 _(SS)	-	0.5	0.0	19.5	0.0	0.0	0.0	
WS15	4		30 secs	-	-	-	-	0.5	0.0	19.4	0.0	0.0	0.0	
WS15	4		60 secs	-	-	-	-	0.5	0.0	19.4	0.0	0.0	0.0	
WS15	4		90 secs	-	-	-	-	0.5	0.0	19.4	0.0	0.0	0.0	
WS15	4		120 secs	-	-	-	-	0.5	0.0	19.4	0.0	0.0	0.0	
WS15	4		180 secs	-	-	-	-	0.5	0.0	19.4	0.0	0.0	0.0	
WS15	4		240 secs	-	-	-	-	0.5	0.0	19.4	0.0	0.0	0.0	
WS15	4		300 secs	-	-	-	-	0.5	0.0	19.4	0.0	0.0	0.0	

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