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Central Land Parcels (KM13 to 20 and Local Centre) Whitelands Farm, Southwest Bicester, Oxfordshire

Phase II Geo-Environmental and Geotechnical Assessment

Countryside Properties (Bicester) Ltd

November 2011

QUALITY MANAGEMENT

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CONTENTS

EXECUTIVE SUMMARY

WSP Environmental Limited (WSPE) were instructed by Countryside Properties (Bicester) Ltd (the Client) to complete a Phase II Geo-Environmental and Geotechnical Assessment at Central Land Parcels, Whitelands Farm, South West Bicester, Oxford.

The proposed development of the current site that this report purports to includes the proposed construction of a largely residential development with some commercial premises within the land parcels designated by the client as KM13 to KM20.

The ground investigation was completed between 3rd and 12th August 2011 and included the progression of five cable percussive boreholes, sixteen window sampler boreholes and twenty four trial pits (eight with soakaways tests).

The ground conditions beneath the site are broadly consistent with published information and comprised 0.2 to 1.0m of Made Ground/Topsoil overlying a very variable and discontinuous layer (between 0.25m and 1.45m thick) of Kellaways Clay Member which overlies the Cornbrash Formation and Forest Marble at depth.

It is considered that, suspended floor slabs in the form of beam and block floors, traditionally used for modern housing will likely be suitable.

Spread foundations, if adopted, should be taken below any waterlogged soft Kellaways Clay Member and bear on firm to stiff Kellaways Clay Member (if present) or through the completely to highly weathered Cornbrash Formation and into the Cornbrash Formation.

Based on the ground conditions encountered and the test results available within the Cornbrash Formation it is anticipated that the minimum foundation depth is anticipated to be 1.5m below existing ground levels. At this foundation depth, the Cornbrash Formation would provide an allowable bearing capacity of 175 to 200kPa for standard spread foundations.

With reference to the Local Centre shallow spread foundations may be suitable depending on the structural load parameters and final design founding on the Cornbrash Formation. Should design loads prove higher than acceptable for shallow foundation techniques, micropiles into the Cornbrash Formation and/or Forest Marble Formation may be considered.

In addition to this in accordance with the 'Design Manual for Roads and Bridges Interim Advice Note 73/06' (Draft replacement for HD 25/94) based on the recorded plasticity indices across the site, a CBR value of between 2.5% and 4% is anticipated for the Kellaways Clay Member and between 3% and 5% for the Cornbrash Formation anticipated as being available for design purposes.

In accordance with BRE Special Digest 1 (2005) indicate that the design sulphate class is DS-1 and aggressive chemical environment for concrete (ACEC) class for the site is AC-1 (mobile groundwater conditions).

The soakage tests were proposed to be undertaken in accordance with BRE Digest 365 'Soakaway Design' 2007. However, with the exception of SA506 and SA531, the water within the remaining trial pits did not drain within the available time constraints and only one test per pit was completed (two were completed within SA506 and SA531). Therefore, it has not been possible to derive design infiltration rates for the strata in accordance with the guidance in the BRE Digest.

The geotechnical data within this report should be reviewed and a design investigation should be scoped and implemented in accordance with Eurocode 7 (EC7) once development proposals are finalised and the column loads, tolerable settlements / ultimate limit state requirements of the structure are known a Geotechnical Design Report (GDR) should be produced in accordance with the Eurocodes for the site.

A number of exceedances of arsenic were noted across the site when compared with the respective Generic Acceptance Criteria for the end-use that is currently proposed. However, it is considered likely that risks to human health may be mitigated by the provision of a suitable capping layer of at least 0.5m thickness.

Once final design layout plans are available, the contamination results should be re-appraised with regards to areas of soft standing and/or residential garden.

Based on the available data, the potential risk to the proposed development and future site users from ground gas and volatile vapours is considered to be low.

WSP ENVIRONMENTAL LIMITIED

The executive summary should be read in conjunction with the complete report (Ref. WSPE Phase II Geo-Environmental and Geotechnical Assessment Report 00020861/002, September 2011) and not relied upon as a separate document.

1 INTRODUCTION

1.1 AUTHORISATION

WSP Environmental Limited (WSPE) were instructed by Countryside Properties (Bicester) Ltd (the Client) to complete a Phase II Geo-Environmental and Geotechnical Assessment at Central Land Parcels (KM13 to KM20 and Local Centre), South West Bicester, Oxfordshire (the site). Site location and layout plans are provided within **Appendix A**.

1.2 BACKGROUND

The subject site is part of a larger proposed development of the Whitelands Farm site in Bicester. A phased approach has been undertaken to produce Geo-Environmental and Geotechnical assessments of the individual stages of the overall development. WSPE have previously completed the following reports on other parts of the site:

- WSPE 12370178-001 (July 2007) Whitelands Farm, Southwest Bicester Geo-Environmental and Geotechnical Interpretative Report;
- WSPE 12370324-001 (December 2009) Southwest Bicester Schools Sites Geo-Environmental and Geotechnical Interpretative Assessment; and
- WSPE 12370399-001 (May 2010) SW Bicester Geo-Environmental and Geotechnical Interpretative Assessment (for the purposes of distinguishing the area covered by this report, it will be referred to here as the northern land parcels).
- WSPE 12370324-002 (June 2011) Central Eastern Land Parcels, Geo-Environmental and Geotechnical Assessment Report.
- WSPE 00024179-001 (September 2011) Bicester Farmhouse, Geo-Environmental and Geotechnical Assessment Report.

This report should be read in conjunction with the previous reports listed above that investigated other stages of the proposed development. For the purposes of distinguishing the study area covered by this report, it will be referred to as the central land parcels.

1.3 PROPOSED DEVELOPMENT

The proposed development of the current site that this report purports to, includes the proposed construction of a largely residential development with some commercial premises within the land parcels designated by the client as KM13 to KM20. Although a detailed development plan was not available at the time of writing, the locations of the land parcels is presented within a Site Layout and Exploratory Hole Location Plan in **Appendix A**.

Based on information provided by the client, it is understood that the central land parcels are to be redeveloped into residential housing plus associated garden and amenity space as well as a commercial centre. It has been assumed that no below ground structures such as basements or below ground car parking are included within the proposed scheme.

1.4 OBJECTIVES

The objectives of the ground investigation and assessment are to appraise the ground; groundwater and ground gas conditions in the context of potential risks to identified receptors and provide advice on foundation solutions.

1.5 SCOPE OF WORKS

The following scope of works was undertaken at the site:

- Preparation of site specific health safety documentation;
- Utilities clearance survey of all proposed exploratory hole locations to enable safe working;
- Five cable percussion boreholes to 1.70m bgl, each with combined gas and groundwater monitoring wells (note that refusals were met prior to maximum proposed depth);
- Representative soakaway testing within nine pits spread across the site undertaken to determine preliminary indicative infiltration rates;
- The advancement of thirteen window sample boreholes, each with combined gas and groundwater monitoring wells installed (due to ground refusals a maximum depth of 2m bgl was achieved);
- The advancement of twenty four trial pits at approximate 75m centres (due to ground refusals a maximum depth of 2.3m bgl was achieved);
- In-situ testing and recovery of disturbed soil samples;
- Undertaking of laboratory testing, as appropriate, to allow representative derivation of geotechnical parameters and assessment of potential contamination risks; and
- Completion of three rounds of ground gas and groundwater (level) monitoring.

1.6 LIMITATIONS

The general limitations to the nature of the investigation are outlined in **Appendix I.**

2 SITE CHARACTERISATION

2.1 SITE DETAILS

Table 2.1 Site Details

Site Address	**Whitelands Farm, Middleton Stoney Road, Southwest Bicester**
National Grid Reference	457220, 222050
Area	Approximately 17 hectares
Site Location	The site is located approximately 250m southwest of the existing residential extents of the town of Bicester, Oxfordshire.
Current Site Use	The site was previously used for agricultural purposes. Construction works have commenced on some of the surrounding land parcels.
Summary of Surrounding Land Uses	The surrounding land uses comprise: ■ North: Development of formerly agricultural land into a health care centre and residential properties; ■ South: Development of formerly agricultural land into primary and secondary schools; ■ East: Oxford Road with adjacent petrol station, garden centre, supermarket and shopping centre; and, ■ West: Development of formerly agricultural land into residential properties including the listed farmhouse building.

The layout of the site is presented in **Appendix A**.

2.2 GEOLOGY, HYDROGEOLOGY AND HYDROLOGY

2.2.1 Geology/Hydrogeology

In accordance with the British Geological Survey (BGS) 1:50,000 Map Sheet 219 Buckingham (Solid and Drift) published in 2002, the site is indicated to be underlain by the following geological sequence.

Table 2.2 Published Geology

Geological Unit	Description	Aquifer Status*
Kellaways Clay Member	Dark grey clay	Unproductive strata
Cornbrash Formation	Rubbly grey to brown limestone	Secondary (A^+)
Forest Marble Formation	Grey mudstone with beds of limestone	Secondary (A^+)

Note: * Taken from the Environment Agency Website

$^+$ Secondary (A) is defined by the Environment Agency as permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.

The published geology map shows the Kellaways Clay Member to be absent in an area in the northern part of the site and the Cornbrash Formation outcropping.

Alluvium is indicated to outcrop adjacent to the southwest boundary of the site (off-site), the presence of which was confirmed during the site investigation of the secondary school site (12370324-001 (WSPE, 2009)). Alluvium was also encountered during the site investigation of the adjacent northern land parcels (12370399-001 (WSPE, 2010)).

The Environment Agency website indicates that the aquifer within the Cornbrash Formation (known as the Bicester-Otmoor Cornbrash Formation aquifer) is part of the Thames River Basin District. Current Quantitative Quality is good and the Current Chemical Quality is poor.

2.2.2 Hydrology

Several land drains are located in close proximity to the northern and southern boundaries of the site. In addition to the land drains, **Table 2.3** details other surface water features within 500m of the subject site.

Table 2.3: Surface Water Features

Surface Water Feature	Flow Direction	River Basin Management		Distance from site boundary	Direction
		Ecological Quality	Chemical Quality		
Pringle Brook	East	-	-	35m	North
Langford Brook	South	Moderate	-	240m	Southern
Gagle Brook	South	Moderate	-	350m	West

2.3 PRELIMINARY CONCEPTUAL SITE MODEL

Based on a previous Phase I Assessment and subsequent WSPE investigations of surrounding parcels of the wider site area, the following preliminary conceptual site model has been developed.

Table 2.4: Preliminary Conceptual Site Model

Potential contaminant sources	Associated contaminants	Potential migration pathways	Sensitive receptors
On-Site			
▪ Made Ground; ▪ Areas of burning (fallow land); ▪ Agricultural use	▪ Metals, inorganics (such as pH and sulphate) and asbestos; ▪ Total Petroleum Hydrocarbons; ▪ Polycyclic Aromatic Hydrocarbons (PAHs); ▪ Ground gases; and, ▪ Herbicides and pesticides.	**Human Health** ▪ Inhalation of volatile vapours/ ground gases; ▪ Ingestion of soil and dust; ▪ Direct contact with soil and groundwater; & ▪ Ingress into potable water supply pipes.	▪ Future Site Users (residential); & ▪ Construction & Maintenance Staff;
		Controlled Waters ▪ Leaching into groundwater & lateral migration	▪ Groundwater: Secondary (A) Aquifer; and, ▪ Pringle, Langford and Gagle brook.

Potential contaminant sources	Associated contaminants	Potential migration pathways	Sensitive receptors
		Built Environment ▪ Permeation into plastic pipes; & ▪ Direct Contact with aggressive ground and/or groundwater	▪ Below ground service; potable supply pipes & building service entry points; & ▪ Building fabric; Potential degradation of concrete foundations & below ground structures.
Off Site			
▪ Petrol stations; ▪ Adjacent railway land; ▪ Infilled quarry; ▪ Former coal depot; & ▪ Printers.	▪ Metals and Inorganics (such as pH and sulphate) and asbestos; ▪ Total Petroleum Hydrocarbons (TPH); ▪ Polycyclic Aromatic Hydrocarbons (PAHs); ▪ Volatile Organic Compounds (VOCs) and Semi Volatile Organic Compounds (SVOCs); & ▪ Volatile vapours & ground gas.	▪ Migration of groundwater or gas onto site.	▪ Future Site Users; ▪ Construction & Maintenance Staff; ▪ Groundwater: Secondary (A) Aquifer; ▪ Building fabric and construction materials; & ▪ Below ground services and supply pipes.

3 SITE INVESTIGATION

3.1 FIELD WORK

The site investigation works were completed between 3rd and 12th August 2011 under supervision of a WSPE engineer. The works comprised the scope as detailed in **Section 1.5**. An exploratory hole location plan and detailed logs showing the ground conditions encountered are presented in **Appendix A** and **Appendix B** respectively.

The ground investigation was undertaken in general accordance with techniques outlined in BS5930: 1999 Code of Practice for Site Investigations and BS10175: 2011 Code of Practice for the Investigation of Potentially Contaminated Sites. Appropriate personal protective equipment (PPE) was worn at all times by all personnel during the course of the ground investigation. The investigation was carried out under the supervision of an engineer from WSPE. In advance of the works, each exploratory hole location was cleared of services by a specialist contractor, as detailed within the WSPE Health and Safety Plan.

3.2 RATIONALE FOR EXPLORATORY HOLE LOCATIONS

The table below gives a summary of the exploratory holes completed as part of the ground investigation, along with the rationale for each technique.

Table 3.1: Site Investigation Rationale

Element of investigation	Details	Rationale
Trial Pits (with no soakage tests undertaken)	TP502 to TP516 TP518 to TP519 TP521 to TP524 TP526 to TP527 TP529 to TP530 & TP532	To provide general coverage of the shallow ground conditions.
Trial Pits (with soakage tests)	SA501, SA506, SA515/A, SA517, SA520, SA525, SA528 & SA531	To provide general coverage of information on shallow ground conditions and on infiltration rates. *It should be noted that the soakaways were positioned by WSPE in order to provide baseline coverage of the site. Should soakaways be proposed at the site, further testing will be required once the location and invert levels are confirmed.*
Cable Percussion Boreholes	CP501 to CP505	To provide preliminary geotechnical design parameters and install ground gas and groundwater monitoring wells.
Window Sample Boreholes	WS501 to WS516	To provide further information on shallow ground conditions and to install ground gas and groundwater monitoring wells.
In-situ Testing	Standard Penetration Tests (SPTs) were undertaken on the in-situ soils	To provide indicative geotechnical design parameters.

Element of investigation	Details	Rationale
Installation of gas and groundwater monitoring wells	Installed in 5 cable percussive boreholes and 10 window sample boreholes with response zones typically within the Kellaways Clay Member and Cornbrash Formation.	To provide information for characterising the ground gas regime and groundwater conditions.
Sampling	Disturbed & undisturbed in-situ (U100) sampling.	To provide appropriate samples for laboratory testing
Geotechnical Laboratory Testing	Soils samples were submitted to the UKAS accredited laboratories of Geo Laboratory Testing Services Ltd for geotechnical testing.	To allow assessment of geotechnical soil parameters.
Chemical Laboratory Analysis	Soil samples were submitted to the UKAS and MCERTS accredited laboratories of ALcontrol for chemical analysis.	To allow assessment of potential risks to identified receptors.

Note that deeper boreholes have been progressed by rotary methods in the adjacent Bicester Farmhouse site but were not deemed as required for the Central Land Parcel where potential sources/pathways do not require it.

3.3 CABLE PERCUSSIVE BOREHOLES

Five cable percussive boreholes (CP501 to CP505) were advanced to depths of between 0.7m and 1.7m bgl respectively (The final depth of each borehole were constrained by the site geology).

In-situ geotechnical testing (Standard Penetration Tests (SPT)) were carried out in each borehole.

Upon completion of the drilling, monitoring standpipes were installed in each borehole with response zones typically in the Kellaways Clay Member and Cornbrash Formation. Each well was fitted with an air tight gas tap and a secure cover raised above the surrounding ground level.

Representative disturbed and undisturbed samples were recovered for laboratory analysis.

Descriptive logs of the borehole with details of depths, sample type and in-situ test results are presented in **Appendix B.**

3.4 WINDOW SAMPLE BOREHOLES

Sixteen dynamic window sample boreholes (WS501 to WS516) were progressed to a maximum depth of 2m bgl to allow the inspection, in-situ testing and sampling of shallow strata including Made Ground.

In-situ geotechnical testing (Standard Penetration Tests (SPT)) were carried out in several of the boreholes and representative samples from each strata were recovered for laboratory analysis.

Descriptive window sample logs with details of depths and sample type are presented in **Appendix B**.

3.5 TRIAL PITS

Twenty four machine excavated trial pits were completed to a maximum depth of 2.3m bgl on approximate 75m grid centres across the site. The trial pits were excavated to gain a representative understanding of the shallow soils including the Made Ground and Kellaways Clay Member. In addition, a further nine trial pits were used to assess the baseline soil infiltration rates across the site (soakaway tests) Selected samples from each horizon were collected for laboratory analysis. Upon completion the trial pits were back filled with arisings.

Descriptive logs showing the ground conditions encountered and samples collected from the trial pits are presented in **Appendix B.**

3.6 GROUNDWATER AND GROUND GAS MONITORING

Ground gas monitoring has been completed on three occasions since the completion of the investigation in standpipes that were installed within natural stratum. A full ground gas monitoring record is provided in **Appendix E** and is discussed in detail in Section 6.6.

3.7 LABORATORY TESTING

Selected soil samples were submitted for analysis at the UKAS and MCERTS accredited laboratory of Alcontrol in Hawarden. The results of the soil contamination testing are presented in **Appendix C** and the geotechnical testing in **Appendix D** and included the following determinands:

3.7.1 Chemical Analysis

- Metals / Semi Metals – arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc and selenium.
- Organic Compounds – Total Petroleum Hydrocarbons Criteria Working Group (TPH-CWG), Polycyclic Aromatic Hydrocarbons (PAH), Semi-Volatile Organic Compounds (SVOCs), Volatile Organic Compounds (VOCs), Phenol and Benzene, Toluene, Ethylbenzene, and Xylene (BTEX).
- Pesticides/Herbicides – Organochlorine and Organophosphorous compounds
- Other –pH, sulphate, soil organic matter

3.7.2 Geotechnical Analysis

Sulphate, pH, Moisture Content, Liquid Limit, Plasticity Limit and Plasticity Index, Particle Size Distribution (PSD), Bulk/Dry Density, California Bearing Ration (CBR), Compaction, Consolidation and Point Load (axial) tests.

4 GROUND CONDITIONS

4.1 GENERAL

The ground conditions encountered in the exploratory holes are broadly consistent with the geological sequence as described in the British Geological Survey map for the site and comprised Topsoil/Made Ground and discontinuous layer of Kellaways Clay Member which were underlain by the Cornbrash Formation and Forest Marble (only possibly identified in TP532).

4.2 SUMMARY OF GROUND CONDITIONS

The table below provides a summary of ground conditions encountered with the associated exploratory hole logs provided in **Appendix B.**

Table 4.1: Summary of Ground Conditions

Strata	Depth range to top of stratum (m bgl)	Thickness of stratum (m bgl)	Brief Description
Topsoil	GL	0.20 to 0.70	Topsoil is generally grey brown slightly clayey, slightly sandy clay with rootlets.
Made Ground	GL	0.20 – 1.00	Material that was potentially Made Ground was only encountered in CP504, TP513, TP526, TP530 and TP532. It was generally found to comprise re-worked grey/brown slightly sandy, slightly gravelly clay.
Kellaways Clay Member	0.2 – 0.7	0.25 – 1.45	The Kellaways Clay Member was found to be discontinuous at the site and where identified is typically orange/brown, clay which was occasionally slightly gravelly and slightly sandy. The unit was found to vary across the site and occasionally comprised fissured dark bluish grey clay with occasional sand horizons.
Cornbrash Formation	GL – 1.7	0.05 - >1.70 Thickness remained unproven	The Cornbrash Formation typically comprised orange brown and grey limestone. Due to the nature of the techniques used to sample the material it was typically recovered as clayey gravel with cobbles.
Forest Marble Formation	-	Thickness remained unproven	Due the strength of the overlying Cornbrash Formation, the Forest Marble Formation was only possibly encountered in TP532. However, based on data from surrounding sites it typically comprises dark grey clay and dark orange completely weathered mudstone.

4.3 VISUAL AND OLFACTORY EVIDENCE OF CONTAMINATION

No visual or olfactory indicators of contamination were encountered during the ground investigation.

4.4 GROUNDWATER

Groundwater was not encountered within any of the boreholes, window sample boreholes or trial pits during the site investigation.

4.5 GROUND GAS

Ground gas monitoring has been completed on three occasions since the completion of the investigation in standpipes that were installed within natural stratum. A full ground gas monitoring record is provided in **Appendix E** and is discussed in detail in **Section 6.5.**

- Methane was not recorded at concentrations above the instruments limit of detection (<0.1%v/v);
- Carbon dioxide was recorded between <0.1% and 3.4%v.v;
- Oxygen generally ranged between 18.5% and 20.8%v.v; and
- Ground gas flow was recorded between -0.2 litres per hour (l/hr) and 0.2l/hr.

The full results are presented within **Appendix E.**

4.6 DRAINAGE

A number of soakaway tests were undertaken at nine locations across the site in order to provide preliminary baseline soil infiltrations rates.

The soakage tests were undertaken in varying targeted strata to gain representative infiltration rates of both Kellaways Clay Member and Cornbrash Formation as follows:

- SA501 & SA525 undertaken within the Kellaways Clay Member;
- SA506, SA515 & SA517 undertaken within the Cornbrash Formation; and
- SA520, SA528 & SA531 undertaken within Kellaways Clay Member exposed on the side walls with Cornbrash Formation exposed at the base of the pit.

The soakage tests were proposed to be undertaken in accordance with BRE Digest 365 'Soakaway Design' 2007. However, with the exception of SA506 and SA531, the water within the remaining trial pits did not drain within the available time constraints and only one test per pit was completed (two were completed within SA506 and SA531).

Therefore, it has not been possible to derive design infiltration rates for the strata in accordance with the guidance in the BRE Digest as the fall in water level and number of repeat tests within the pits was not sufficient. However, indicative infiltration rates based on the single tests alone are summarised as follows:

- In SA501 and SA525 infiltration rates varied between 1.48 $x10^{-5}$ and 5.66 $x10^{-5}$ m/s;
- In SA506, SA515 and SA517 infiltration rates varied between 1.14 $x10^{-4}$ and 9.11 $x10^{-5}$* m/s; and
- In SA520, SA528 and SA531 infiltration rates varied between 1.57 $x10^{-5}$ and 7.31 $x10^{-6}$ m/s.

* - Denotes infiltration rate achieved on second test.

It should be noted that the above infiltration rates are indicative only and should not be used for the detailed design of infiltration drainage. Should infiltration drainage be preferred then further tests in accordance with BRE 365, 2007 should be undertaken based on the final location, invert levels and storage capacities required.

Soakaway test results and plots are presented within **Appendix F**.

4.7 GEOTECHNICAL PROPERTIES AND CHARACTERISTIC VALUES OF SOIL PARAMETERS

4.7.1 Geotechnical Classification Tests

A summary of the geotechnical properties of the strata present at the site is given in the table below. A full copy of geotechnical laboratory data is presented in **Appendix D**.

Table 4.2: Summary of Geotechnical Properties

Geotechnical Properties	Stratum				
	Topsoil	**Made Ground**	**Kellaways Clay Member**	**Cornbrash Formation**	**Forest Marble Formation**
SPT 'N' Value	Not tested	Not tested	50 – 55	20 – >60	Not tested
Moisture content (%)	10 - 13	26 - 33	8 – 30	4.6 – 17	Not tested
Plasticity Index (%)	Not tested	30 - 41	17 – 41	14 – 25	Not tested
Bulk density (Mg/m^3)	Not tested	Not tested	1.90 – 1.93	1.81 – 2.08	Not tested
Dry Density (Mg/m^3)	Not tested	Not tested	1.43 – 1.65	1.43 – 1.93	Not tested
pH	7.94 – 8.61	7.61	7.11 – 8.51	7.30 – 8.81	Not tested
Sulphate (g/l)	Not tested	<0.01	<0.01 – 0.06	<0.008 – 0.0682	Not tested
Indicative Unconfined Compressive Strength (Correlated from the point load results)	Not tested	Not tested	Not tested	12.1 – 98.12	Not tested
Point Load Index (MPa)	Not tested	Not tested	Not tested	0.55 – 4.46	Not tested
Vibrating Hammer Compaction (mg/m^3)	1.66	Not tested	1.99	1.63 – 1.96	Not tested
Indicative California Bearing Ratio (top of sample)	27.1	15.4	24.2	3.4 – 52.32	Not tested

The following geotechnical plots have been compiled for correlation purposes and are presented within **Appendix G**.

- Moisture Content vs depth;
- SPT N Value vs depth;
- Undrained shear strength (from SPT's) vs depth;
- Plasticity Index vs depth;
- Plasticity chart; and,
- Corrected Unconfined Compressive Strength (from Point Load) vs depth

4.7.2 Particle Distribution Tests

A summary of the Particle Size Distribution (PSD) tests undertaken is presented below:

Table 4.3: Summary of Particle Size Distribution tests

Stratum	Min/Max	Cobbles (%)	Gravel (%)	Sand (%)	Silt/Clay (%)
Made Ground	Min/Max	0	0	20	80
	Max	Only one sample analysed			
Kellaways Clay Member	Min	0	0	3	30
	Max	0	19*	57	94
Cornbrash Formation	Min	18	0	5	6
	Max	27	82	55	89

Note: * High gravel content may be indicative of granular horizons within the Kellaways Clay Member

The results within the Kellaways Clay Member and the Cornbrash Formation are broadly consistent with the tests undertaken within surrounding parcels of land in each respective stratum.

The results within the Kellaways Clay Member are indicative that the stratum is relatively variable across the site, ranging from granular to cohesive in composition. Based on the exploratory hole logs this variability is also seen in the stratums thickness which shows the body to be discontinuous and undulating. It appears to be thickest towards the east with another shallow horizon towards the west. However, the Kellaways Member is distinctly absent over much of the site.

Site observations indicate the in-situ Cornbrash Formation is comprised of completely weathered limestone. The results of the PSD tests indicate the Cornbrash Formation was generally recovered as clayey, sandy cobbley gravel. This further indicates the weathered nature of much of the shallow rock and that the Cornbrash Formation was broken up in order to be excavated.

4.7.3 California Bearing Ratio Tests

A summary of the California Bearing Ratio (CBR) tests undertaken is presented following table.

Table 4.4: Summary of CBR Tests

Exploratory Hole	Depth (m bgl)	Stratum	Moisture Content (%)	CBR Value* (%)
CP501	0.5	Cornbrash Formation	14	21.4
CP502	0.1	Topsoil	11	27.1
TP504	0.7	Cornbrash Formation	6	17.1
TP505	0.5	Kellaways Clay Member	35	3.4
TP507	0.8	Cornbrash Formation	12	19.7

Exploratory Hole	Depth (m bgl)	Stratum	Moisture Content (%)	CBR Value* (%)
TP510	0.6	Cornbrash Formation	12	46.0
TP512	0.5	Cornbrash Formation	23	10.9
TP513	0.4	Made Ground	25	15.4
TP522	1.0	Cornbrash Formation	14	9.5
TP523	0.9	Cornbrash Formation	10	52.2
TP526	0.6	Kellaways Clay Member	15	24.2

Note: * CBR value taken from the sample top

The results of the CBR tests are broadly consistent with the testing undertaking on the adjacent land parcels.

4.7.4 Compaction Tests

A summary of the compaction tests undertaken is presented below.

Table 4.5: Summary of Compaction Tests

Exploratory Hole	Depth (m bgl)	Stratum	Initial Moisture Content (%)	Optimum Moisture Content (%)	Maximum Dry Density (mg/m^3)
CP505	0.7	Cornbrash Formation	20	14.5	1.99
TP502	1.0	Cornbrash Formation	19	15.2	1.95
TP505	1.5	Cornbrash Formation	15	15.1	1.90
TP508	1.2	Cornbrash Formation	14	18.3	1.68
TP511	0.9	Cornbrash Formation	10	13.5	1.96
TP521	0.3	Topsoil	12	17.7	1.66
TP522	1.0	Cornbrash Formation	14	11.2	1.63
TP524	1.5	Cornbrash Formation	11	14.7	1.92

The information presented in the tables above provides a summary of the geotechnical properties of the soils encountered at the site and should be referred to in conjunction with the Exploratory Hole Logs and Geotechnical Laboratory Results (**Appendix B** and **Appendix D** respectively).

5 GEOTECHNICAL ASSESSMENT

5.1 GENERAL

WSPE understand that the central land parcels are to be redeveloped into residential housing plus associated garden and amenity space and a local centre (assumed commercial). It has been assumed that no below ground structures such as basements or below ground car parking are included within the proposed scheme.

The loads for the proposed structures were unknown at the time of production of this report.

The recommendations given below are preliminary recommendations. The data within this report should be reviewed and a design investigation should be scoped and implemented in accordance with Eurocode 7 (EC7) once development proposals are finalised and the column loads, tolerable settlements / ultimate limit state requirements of the structure are known and if required a Geotechnical Design Report (GDR) should be produced in accordance with the Eurocodes for the site.

5.2 GROUND CONDITIONS (SUMMARY)

The ground conditions beneath the site are broadly consistent with published information and comprise 0.2 to 1.0m of Made Ground/Topsoil overlying a very variable and discontinuous layer (between 0.25m and 1.45m thick) of Kellaways Clay Member which overlies the Cornbrash Formation and Forest Marble at depth.

As noted, the Kellaways Clay Member was found to be discontinuous across the site outcropping at its thickest (0.5m to 1.45m) in the east of the site with a second thinner layer (0.2m to 1.25m) towards the western boundary.

Groundwater was not encountered during the site investigation works and all of the boreholes remained dry during the post field work monitoring.

5.3 FOUNDATIONS

Made Ground which is not considered a suitable founding stratum due to its inherent variability in composition and state of compaction was encountered in five exploratory holes (CP504, TP513, TP526, TP530, TP532).

Spread foundations may be suitable for lightly loaded structures (low rise residential properties) founding within the firm to stiff Kellaways Clay Member (if present) or into the Cornbrash Formation. However, given its variability and limited thickness, it is recommended that foundations are taken down to found on the Cornbrash Formation at a minimum depth of between 1.25m and 1.5m below existing ground level (foundations must be taken down to 1.5m bgl where completely to highly weathered Cornbrash Formation exists below 1.25m bgl).

Based on the ground conditions encountered and the test results available within the Cornbrash Formation it is anticipated that the minimum foundation depth is anticipated to be 1.5m below existing ground levels. At this foundation depth, the Cornbrash Formation would provide an allowable bearing capacity of 175 to 200kPa for standard spread foundations. Note that due to the clay matrix within the Cornbrash Formation, should construction be carried out in poor weather conditions or winter periods, the allowable bearing capacity may reduce.

With reference to the Local Centre shallow spread foundations may be suitable depending on the structural load parameters and final design founding on the Cornbrash Formation. Should design loads prove higher than acceptable for shallow foundation techniques, micropiles into the Cornbrash Formation and/or Forest Marble Formation may be considered.

Test results indicate that the Kellaways Clay Member has modified plasticity indices of between 17% and 41% and the Cornbrash Formation between 14% and 25%. In accordance with NHBC guidance (Chapter 4.2 Building Near Tress 2008) the Kellaways Clay Member and Cornbrash Formation are rated as having a predominantly medium volume change potential.

The final foundation depth should be determined with the consideration of existing trees and future tree planting. Guidance from NHBC Chapter 4.2 Building Near Trees should be referred and adhered to.

5.4 GROUND FLOOR CONSTRUCTION

Suspended floor slabs in the form of beam and block floors, traditionally used for modern housing are considered to be suitable. Should ground bearing floor slabs be required these are considered to be suitable subject to all Topsoil being stripped and any areas of Made Ground and/or soft spots being removed and replaced with compacted granular material.

It is considered for preliminary design purposes the use of a ground floor bearing slab on the firm to stiff Kellaways Clay Member or weathered Cornbrash Formation for the Commercial Centre would likely be appropriate, provided that topsoil is stripped and any soft spots removed and replaced with suitable granular fill. However, this should be confirmed once the structural load parameters and the final design of the commercial centre have been determined to ensure that the two strata are not spanned by the proposed slab.

Formation levels should be proof rolled, as per requirements set out within a detailed earthworks specification. In areas of potential desiccation, the NHBC recommend the use of suspended floor slabs in all situations where heave can occur in the area bounded by the proposed foundations. The recommendations further advise that this is considered to be applicable where their recommendations identify a founding depth in excess of 1.5mbgl, or where the formation soils become seasonally desiccated.

If required and where appropriate, consideration can be given to re-using suitable site won materials to raise ground levels beneath the slab, providing they are suitably compacted in accordance with a detailed earthworks specification to prevent differential or excessive settlements occurring.

5.5 PRELIMINARY PAVEMENT DESIGN

Road and car park pavements are anticipated to be constructed on either the Kellaways Clay Member or Cornbrash Formation which are variable in strength and composition.

5.5.1 Design Values

California Bearing ratio (CBR) test results indicate that the Kellaways Clay Member has a current CBR value ranging from 3.4% to 24.2% and the Cornbrash Formation between 9.5% and 52.2%.

In addition to this in accordance with the 'Design Manual for Roads and Bridges Interim Advice Note 73/06' (Draft replacement for HD 25/94) based on the recorded plasticity indices across the site, a CBR value of between 2.5% and 4% is anticipated for the Kellaways Clay Member and between 3% and 5% for the Cornbrash Formation anticipated as being available for design purposes. This is based on plasticity indices of between 17% and 41% and 14% and 25% respectively, high water table conditions during construction, average weather conditions and a thin road construction base being adopted.

The notable differences between the laboratory results based on CBR testing and Plasticity Index testing is considered to be based on the nature of the material tested i.e. remoulded samples combining cohesive and granular materials used for the CBR testing versus cohesive materials alone used for the Plasticity Index Testing. Further in-situ CBR testing should be undertaken prior to emplacement especially along lengths of primary roading corridors. Note that the completely to highly weathered surface of the Cornbrash Formation would not likely be considered suitable for the construction of pavements without the replacement of soft material with granular fill and/or the use of reinforcement.

As the Cornbrash Formation is composed of limestone, it may be frost-susceptible, therefore in accordance with 'Design Manual for Roads and Bridges Interim Advice Note 73/06' (Draft replacement for HD 25/94) minimum depth of subgrade of 450mm of non-frost susceptible material should be allowed for.

5.5.2 Pavement Construction

The exposed subgrade should be proof rolled with a suitable heavy roller and any soft spots encountered should be excavated and a greater depth of sub-base provided. Any sub structure remains should be "grubbed out" to a minimum depth of 500mm below the underside of formation to prevent hard spots from forming. Any voids arising from the removal of below ground obstructions or soft zones should be backfilled with well graded granular fill compacted to an appropriate detailed earthworks specification.

It is considered likely that following proof rolling a higher CBR value may able to be achieved, although in-situ CBR or plate load tests would be required to confirm this. In situ CBR testing are likely to be required as a matter of course for any adoptable areas of pavement.

5.6 EXCAVATIONS AND GROUND STABILITY

Excavation through the Kellaways Clay Member (where present) down to the top of the Cornbrash Formation should be readily achievable using conventional excavation plant. The side slopes should be generally stable in the short term as indicated by the trial pits being generally stable during this investigation. However, the stability of unsupported excavations at the site should not be relied upon. Zones loosened by the removal of existing and relict construction may be particularly unpredictable and liable to collapse

It should also be readily achievable to excavate through the weathered Cornbrash Formation using conventional excavation plant. However, as per recommendations in the investigations of the surrounding sites, allowance should be made for the side slopes to be battered back to a stable angle (approximately 1V:2.5H) due to the fractured nature of the material.

Excavation through structured rock in the Cornbrash Formation is likely to prove difficult using conventional excavation plant as demonstrated by refusals of trial pit and borehole excavation during the ground investigation. Should this be required suitable allowance should be made for more robust excavation techniques.

It is considered that the groundwater level may be prone to seasonal variation and in response to prolonged periods of heavy rainfall/storms. Groundwater ingress may be encountered as part of the excavation works of the proposed development. If groundwater is encountered, it is considered that appropriate measures should be taken to prevent groundwater ingress into open excavation such as sump and pump methods.

Where general excavations extend below 1.0m depth, it is recommended that the sides are battered back or appropriate shoring is used, in accordance with current Health and Safety requirements where access for personnel is required. Trench boxes may also be used where appropriate. Dewatering may also be required to facilitate the excavation.

Further Reference should be made to CIRIA Report No. 97,"Trenching Practice" 1992

5.7 REUSE OF EXCAVATED MATERIAL

5.7.1 Kellaways Clay Member

It would be expected that after appropriate on-site screening methods, the majority of this material would likely be suitable for re-use as Class 2 general cohesive fill. Compaction tests undertaken on samples of the Kellaways Clay Member found that initial moisture contents range between 8% and 30%. Optimum moisture content data is not available for this site but based on data from surrounding parcels, it is anticipated that the material would likely require drying out and/or lime stabilisation to reduce the natural moisture content to within the optimum range prior to use for engineering fill.

5.7.2 Cornbrash Formation

The majority of the Cornbrash Formation will likely be suitable as Class 1 general fill. However, the size and shape of the particles will require that the material is crushed to the desired grain size prior to use. There may occasionally be weathered Cornbrash Formation that contains too much fines for Class 1 classification. However, it should be possible by mixing with crushed material or by adopting washing of the Cornbrash to reduce the amount of fines to a satisfactory percentage

WSPE would be able to provide a suitable Earthwork Specifications for each of the above section elements, at request.

5.8 BURIED CONCRETE

Laboratory testing identified soil conditions to be typically neutral to slightly alkaline (pH of 7.11 to 8.80).

Water soluble sulphate concentrations were generally of between <8mg/l and 68.2mg/l were recorded within the soils.

In accordance with BRE Special Digest 1 (2005), the results indicate that the design sulphate class is DS-1 and the corresponding Aggressive Chemical Environment for Concrete (ACEC) class for the site is AC-1 (mobile groundwater conditions).

6 CONTAMINATION ASSESSMENT

6.1 HUMAN HEALTH ASSESSMENT

6.1.1 Overview

The presence of contaminated materials on a site is generally only of concern if an actual or potentially unacceptable risk exists. Part IIA was introduced into the EPA by the Environment Act 1995. Part IIA, its accompanying regulations and Statutory Guidance contained in DEFRA Circular 01/2006 presented the statutory definition of "contaminated land". For the purposes of Part IIA, contaminated land is defined as: "any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on, or under the land that::

- Significant harm is being caused or there is a significant possibility of such harm being caused;
- Pollution of controlled waters is being, or is likely to be caused.

The Part IIA regime was designed and intended to encourage voluntary remediation rather than regulatory action and to work with the established role of planning and building control in those cases where the land is suitable for or scheduled for redevelopment.

DEFRA Circular 01/2006 makes clear that, where new development is taking place, it is the developer's responsibility to ensure that development is safe and suitable for use for the purpose for which it is intended and thus to carry out any necessary remediation. In most cases the enforcement of remediation requirements is therefore through planning conditions and building control rather than through a Remediation Notice under Part IIA. Planning Policy Statement 23 (PPS23) Annex 2, states that 'As a minimum, after carrying out the development and commencement of its use, the land should not be capable of being determined as contaminated land under Part IIA of the EPA 1990.'

A developer will need to satisfy the local authority that unacceptable risk from contamination will be successfully addressed through remediation without undue environmental impact during and following the development.

Legislation and guidance on the assessment of contaminated sites acknowledges the need for a tiered risk based approach. This report represents a Generic Quantitative Risk Assessment (GQRA) being a comparison of site contaminant levels against generic standards and compliance criteria including an assessment of risk using the source-pathway-receptor model.

The term pollutant linkage has been described in the Preliminary Conceptual Site Model (**Section 2.3**) above as has Source, Pathway and Receptors. Each of these three elements can exist independently, but they create a risk only where they are linked together, so that a particular contaminant affects a particular receptor through a particular pathway. Without a pollutant linkage, there is not a risk – even if a contaminant is present. Even where there is a pollutant linkage and therefore some measure of risk, the question still needs to be asked as to whether the level of risk justifies remediation. In the context of land contamination, 'risk' is a combination of the probability, or frequency, of occurrence of a defined hazard and the magnitude of the consequences of the occurrence.

Further details of the WSPE risk assessment approach are provided in **Appendix H**.

6.2 RISK ASSESSMENT COMPLETED WITHIN THIS REPORT

6.2.1 Compliance Criteria

The Environment Agency have produced a number of Soil Guideline Values (SGVs) and where these are not available and in order to provide a consistent methodology for the assessment of various contaminants a series of Generic Assessment Criteria (GAC) screening values have been calculated by WSPE. These values have been calculated using CLEA V1.06, a computer modelling tool designed to assess human health related risks presented by contaminated soil.

6.2.2 Analysis of Data

This report includes a Generic Quantitative Risk Assessment (GQRA) which is presented in the following sections. The assessment completed is based on the proposed development comprise of a number of residential units with associated areas of communal gardens and private gardens.

As such, assessment criteria representative of a residential with plant uptake end use have been utilised. In addition, no statistical analysis has been completed and recorded concentrations have been compared directly to relevant Generic Assessment Criteria (GAC).

6.3 ASSESSMENT OF THE ANALYTICAL RESULTS – HUMAN HEALTH

6.3.1 General

A number of exploratory holes from previous WSPE investigations are located within the vicinity of the site boundary (on surrounding land parcels). For completeness, the following table summarises the surrounding exploratory hole locations and samples which have been assessed in parallel with the current dataset from the subject site.

Table 6.1: Environmental samples utilised from surrounding WSPE reports

WSPE Report Reference		
12370324/001 (December 2009)	**12370324/002 (June 2011)**	**12370399/001 (May 2010)**
TP25† @ 0.9m	TP201 @ 1m	TP115 @ 0.5m
TP26† @ 0.2m	TP203 @ 0.5m & 1m	TP117 @ 0.4m
TP28† @ 0.2m	TP206 @0.5m & 1m	TP118 @ 0.2m
TP33 @ 0.2m & 0.4m	TP220 @ 0.8m	TP121 @ 0.2m
TP34 @ 0.4m	TP222 @ 0.8m	TP123 @ 0.6m
TP38 @ 0.8m	WS201 @ 0.7m and 1.7m	TP126 @ 0.6m
TP39† @ 0.9m	WS207 @ 0.6m	TP127 @ 0.5m
TP40† @ 1m	WS208 @ 0.6m and 2m	TP130 @ 0.4m and 0.9m
WS5 @ 0.8-0.9m		WS114 @ 0.1m
		WS115 @ 0.6m
		WS120 @ 0.1m
		WS124 @ 0.3m
		WS126 @ 0.1m & 0.6m
		WS138 @ 0.3m
		WS139 @ 0.4m

† - Trial pits completed on-site as part of previous proposed road investigation.

From the current investigation, a total of twenty nine samples including twenty six of the shallow soils (typically <1.0m bgl), comprising fifteen samples of topsoil, four samples of Kellaways Clay Member and nine samples of Cornbrash Formation were analysed for a range of metal, inorganic and organic determinands. Copies of the analytical results are provided in **Appendix C**.

6.3.2 Metals and Inorganics

With the exception of elevated concentrations of arsenic recorded in nine of the samples, none of the remaining samples tested recorded determinand concentrations above the relevant GAC/SGV considering a residential with plant uptake end use.

It is noteworthy that elevated concentrations of arsenic have also been identified on parcels surrounding the site. **Table 6.2** provides a summary of the arsenic exceedances and their concentrations.

Table 6.2: Arsenic exceedances recorded on and surrounding the site.

Sample	Depth (m bgl)	Stratum	Exceedance	
			Concentration (mg/kg)	GAC/SGV* (mg/kg)
CP501	0.3	Cornbrash Formation	32.8	32
WS501	0.2	Topsoil	32.6	
WS503	0.1	Kellaways Clay Member	34	
WS505	0.15	Topsoil	38	
WS507	0.1	Topsoil	38.6	
WS508	0.1	Topsoil	32.8	
WS512	0.5	Topsoil	47.8	
WS515	0.15	Cornbrash Formation	39.9	
WS518	0.1	Topsoil	33.8	
TP206**	0.5	Kellaways Clay Member	57.2	
TP38**	0.8	Kellaways Clay Member	35	

Notes: * Residential (with gardens) end use
** Off-site data (south)

6.3.3 Organics

None of the samples tested recorded organic determinands above the relevant GAC/SGV considering a residential (with plant uptake) end use.

6.3.4 Herbicides and Pesticides

All determinands were below their respective laboratory limits of detection.

6.4 CONTROLLED WATERS

No groundwater samples were available from the monitoring wells installed on site. Therefore the below is based on previous groundwater data from peripheral boreholes which included:

- CP104, TP115, TP122 and TP129 to the north of the site; and
- WS201 to the south of the site.

6.4.1 Water Quality Standards (WQS)

Based on the 'prevent and limit' approach of the Water Framework Directive (2000/60/EC) and the identified receptors, the following Water Quality Standards (WQS) have been applied:

- UK Drinking Water Quality Standards 2000 (Amended 2004);
- Environmental Quality Standards (EQS). The River Basin Districts Typology, Standards and Groundwater Threshold Values (Water Framework Directive) (England and Wales) Directions 2010; and
- World Health Organisation (WHO) Petroleum Products in Drinking Water, 2008.

6.4.2 Assessment of the Analytical Results – Controlled Waters

None of the samples tested from peripheral off-site boreholes recorded determinands above the relevant WQS.

6.5 ASSESSMENT OF GROUND GAS

6.5.1 General Approach

A ground gas assessment has been undertaken to assess potential risks associated with carbon dioxide and methane to future site users and to provide an initial view of the potential ground gas regime should future development be considered. The results obtained have been compared with relevant guidance that includes the following:

- Guidance on evaluation of development proposals on sites where methane and carbon dioxide are present, report edition No.: 04, NHBC, 2007;
- The Building Regulations 2006, Approved Document C, Section 2;
- Assessing Risks Posed by Hazardous Gases to Buildings, CIRIA Report C665, 2007;
- BS 8485: 2007. Code of practice for the characterisation and remediation from ground gas in affected developments;
- Landfill Gas, Waste Management Paper Number 27;
- Construction of new buildings on gas-contaminated land, BRE Report, 1991; and,
- Protecting Developments from Methane, CIRA 149 Report 1995.

The CIRIA C665 method uses both gas concentrations and borehole flow rates to define a characteristic situation for a site based on the limiting borehole gas volume flow for methane and carbon dioxide. The limiting borehole gas volume flow is now renamed as the gas screening value. Gas screening value (l of gas per hour) = borehole flow rate (l/h) x gas concentration (%). The calculation is carried out for both methane and carbon dioxide and the worst case value adopted.

6.5.2 Assessment of the Results – Ground Gas

Monitoring wells were installed within thirteen boreholes as detailed within the exploratory hole records in **Appendix B**. Ground gas monitoring has been undertaken on three occasions following completion of the works. The results are presented in **Appendix E**. The following table provides a summary of the maximum concentrations observed:

TABLE 6.3: GAS SCREENING VALUES

SCREENED STRATA	MAXIMUM METHANE (%V/V)	MAXIMUM CARBON DIOXIDE (%V/V)	FLOW (L/HR)	GAS SCREENING VALUE (L/HR)
Kellaways Clay	<0.1	1.5	0.1	0.0015
Kellaways Clay/Cornbrash Formation	<0.1	3.4	0.1	0.0034
Cornbrash Formation	<0.1	1.4	0.1	0.0014

On this basis the ground gas regimes have been characterised as follows:

- NHBC Guidance: Green; ground gas protection measures are not required.
- CIRIA: Very Low Risk (Characteristic Situation 1).

Based on the three rounds of ground gas monitoring completed, the risks from ground gas on the proposed development are considered to be very low and reference to the relevant guidance documents indicates that no special precautions would be required.

7 REVISED CONCEPTUAL SITE MODEL

The following section provides a revised conceptual model for the site as a result of the Generic Assessment of the analytical results and their risk to Human Health and Controlled Water receptors.

7.1 CONTAMINANT SOURCES

Based on the data available it is considered that none of the potential on and off-site sources of contamination listed within **Table 2.4** has impacted the site. However, slightly elevated levels of arsenic were recorded within several natural shallow soil samples at the site.

From the information collected to date, no significantly elevated concentrations of ground gas have been identified.

7.2 MIGRATION PATHWAYS

7.2.1 Discounted Pathways

The following pathways have been discounted:

- Ingress into potable water supply pipes;
- Migration via the underlying soils and groundwater;
- Sulphate and built environment; &
- Inhalation of ground gases/volatile vapours

7.2.2 Active Pathways

The following pathways are considered to be active:

- Dermal contact with soil; and,
- Ingestion of soil and dust.

7.3 RECEPTORS

Potential receptors are considered to comprise the following:.

7.3.1 Active Receptors

- Underlying Secondary A aquifer;
- Land drains/brooks;
- Future site users; and,
- Construction workers.

7.4 PLAUSIBLE POLLUTANT LINKAGE

Based on the available data there is considered to be a plausible linkage between contaminants in the soil beneath in the areas with a proposed residential end use and potential human end users. Risks posed to construction works can be mitigated by the use of appropriate PPE and health and safety procedures during the construction phase.

Detailed development layout drawings were not available at the time of writing. However, it is considered that the concentrations of arsenic recorded in the soil samples can be discounted under commercial areas, under the building

footprints, under the road pavement corridors and when they are in areas proposed to have levels raised by 0.5m or more with suitable imported fill material.

Note that once the final development layout plans are determined, the elevated levels of arsenic levels will require reappraising with regards to soft standing and residential garden areas.

8 CONCLUSIONS AND RECOMMENDATIONS

8.1 GROUND INVESTIGATION

The site investigation works were completed between 3rd and 12th August 2011 and included the progression of five cable percussive boreholes, sixteen dynamic (window) sampler boreholes and thirty four trial pits (eight in which soakage tests were undertaken).

The ground conditions encountered in the exploratory holes are broadly consistent with the geological sequence as described by the British Geological Survey map and the previous investigations undertaken by WSPE and comprised Kellaways Clay Member overlying Cornbrash Formation over Forest Marble Formation. Topsoil and localised pockets of Made ground were also encountered across the site.

Groundwater was not encountered during the ground investigation or during post completion monitoring.

8.2 LAND CONTAMINATION

8.2.1 Soil

Based on the current information, localised slightly elevated concentrations of arsenic identified within the soil at the site are considered to pose a potential risk to future site users where they fall within areas of soft standing and/or residential gardens. Once final design layout plans are available, it may be deemed necessary to further assess residential garden areas on a plot by plot basis.

Detailed development layout drawings were not available at the time of writing. However, it is considered that the concentrations of arsenic recorded in the soil samples can be discounted under commercial areas, under the building footprints, under the road pavement corridors and when they are in areas proposed to have levels raised by 0.5m or more with suitable imported fill material.

8.2.2 Groundwater

Groundwater was not encountered during the site investigation or during post completion monitoring.

It is considered that during the construction phase, site workers may come into contact with groundwater. However, potential risks can be mitigated by the use of appropriate PPE and on-site health and safety procedures. Future site users are not likely to come into contact with groundwater.

8.2.1 Recommendations

Based on the conclusions, the following recommendation has been made;

- Once final design layout plans are available, the contamination results should be re-appraised with regards to soft standing and/or residential garden areas;

8.3 GEOTECHNICAL

The geotechnical data within this report should be reviewed and a design investigation should be scoped and implemented in accordance with EC7 once development proposals are finalised and the column loads, tolerable settlements / ultimate limit state requirements of the structure are known a Geotechnical Design Report (GDR) should be produced in accordance with the Eurocodes for the site, if required.

8.3.1 Foundations

The ground conditions beneath the site are broadly consistent with published information and comprise 0.2 to 1.0m of Made Ground/Topsoil overlying a very variable and discontinuous layer (between 0.25m and 1.45m thick) of Kellaways Clay Member which overlies the Cornbrash Formation and Forest Marble at depth.

As noted, the Kellaways Clay Member was found to be discontinuous across the site outcropping at its thickest (0.5m to 1.45m) in the east of the site with a second thinner layer (0.2m to 1.25m) towards the western boundary.

Spread foundations, if adopted, have to be taken into the firm to stiff Kellaways Clay Member (if present) or through the completely to highly weathered Cornbrash Formation and into the weathered Cornbrash Formation.

In areas where the base of the Kellaways Clay Member is either less than 1.5m bgl or not present, it is considered feasible that the foundations be taken down to bear on the hard Cornbrash Formation at a minimum depth of between 1.0 and 1.5m below original ground level (not directly on completely to highly weathered Cornbrash Formation).

With reference to the Local Centre shallow spread foundations may be suitable depending on the structural load parameters and final design founding on the Cornbrash Formation. Should design loads prove higher than acceptable for shallow foundation techniques, micropiles into the Cornbrash Formation and/or Forest Marble Formation may be considered.

8.3.2 Ground Floor Construction

It is considered that, suspended floor slabs in the form of beam and block floors, traditionally used for modern housing will likely be suitable.

It is considered for preliminary design purposes the use of a ground floor bearing slab on the firm to stiff Kellaways Clay Member or weathered Cornbrash Formation for the Commercial Centre would likely be appropriate, provided that topsoil is stripped and any soft spots removed and replaced with suitable granular fill. However, this should be confirmed once the structural load parameters and the final design of the commercial centre have been determined to ensure that the two strata are not spanned by the proposed slab.

8.3.3 Preliminary Pavement Design

It is recommended that a CBR value of between 2.5 to 4% be adopted in the preliminary design of road pavements and parking areas constructed on the Kellaways Clay Member and weathered Cornbrash Formation. Pavements with subgrade in the structured rock of the Cornbrash Formation could be designed for a CBR of between 3 to 5%.

Further testing should be undertaken along the line of the road networks and during detailed design.

8.3.4 Material Re-Use Suitability

It is considered at this stage that materials may be reused on-site for development purposes. However, a formal earthworks specification is required to ensure appropriate material and placement controls are in place. This can either be done by method specification or end product specification in accordance with Design Manual for Roads and Bridges. WSPE would be able to provide an appropriate Earthworks Specification on request.

8.3.5 Buried Concrete

In accordance with BRE Special Digest 1 (2005), the majority of the results indicate that the design sulphate class is DS-1 and the corresponding Aggressive Chemical Environment for Concrete (ACEC) class for the site is AC-1 (mobile groundwater conditions).

8.3.6 Drainage

Indicative infiltration rates within the Kellaways Clay varied between 1.48 $x10^{-5}$ and 5.66 $x10^{-5}$ m/s.

Indicative infiltration rates within the Cornbrash Formation varied between 1.14 $x10^{-4}$ and 9.11 $x10^{-5}$* m/s.

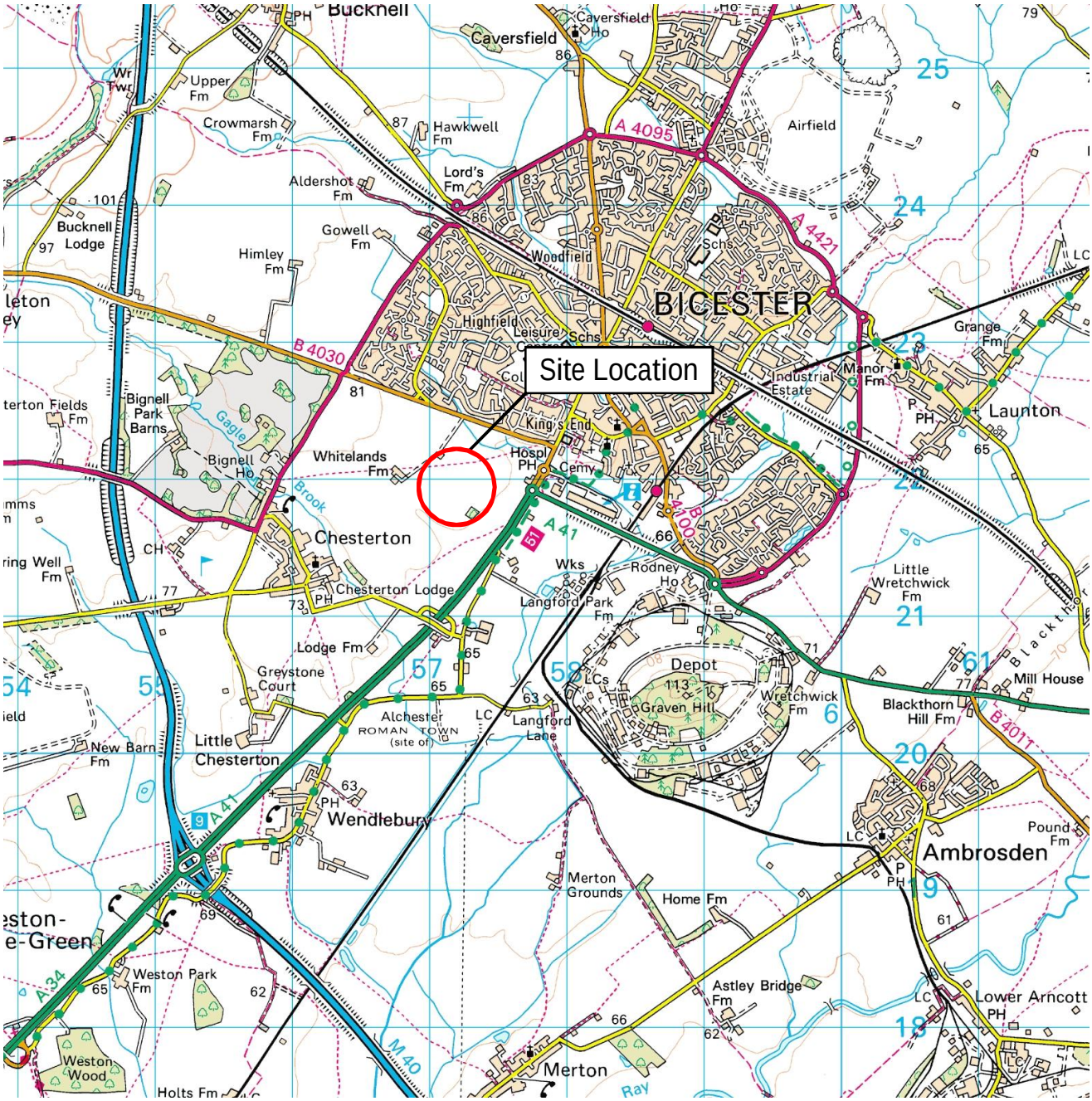
It should be noted that the above infiltration rates are indicative only and should not be used for the detailed design of infiltration drainage. Should infiltration drainage be preferred then further tests in accordance with BRE 365, 2007 should be undertaken based on the final location, invert levels and storage capacities required.

APPENDIX A FIGURES AND DEVELOPMENT SCHEMATICS

Site Location Plan

00020861/001 Figure 1

Scale @ A4 : 1:50 000



Bicester Central Land Parcels

Countryside Properties Limited

Designed & Checked : HG
Approved : HB
Drawn : HG
Date : August 2011

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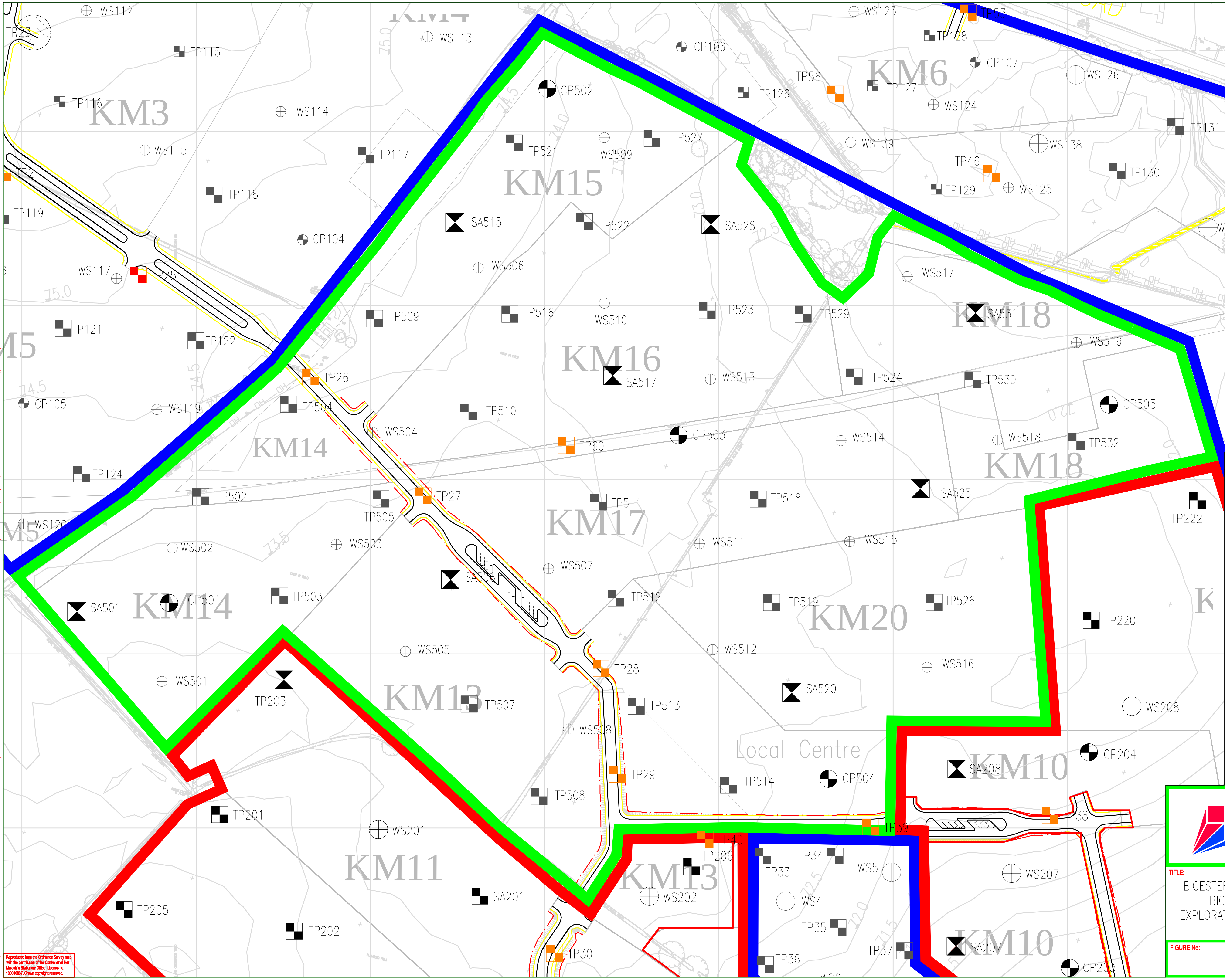
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SA531
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KEY

- SITE BOUNDARY

CURRENT INVESTIGATION
- CABLE PERCUSSION BOREHOLE
- WINDOW SAMPLE BOREHOLE
- TRIAL PIT
- SOAKAGE PIT
- ROTARY BOREHOLE

12370178-001 (2007) WHITELANDS FARM INITIAL INVESTIGATION
- TRIAL PIT

12370324 -001 (2009) PRIMARY SCHOOL SITE
- WINDOW SAMPLE BOREHOLE
- TRIAL PIT

12370324-001 (2009) SECONDARY SCHOOL SITE
- WINDOW SAMPLE BOREHOLE
- TRIAL PIT

12370399-001 (2010) NORTHERN LAND PARCELS
- CABLE PERCUSSION BOREHOLE
- WINDOW SAMPLE BOREHOLE
- TRIAL PIT

WSP

TITLE:
BICESTER CENTRAL LAND PARCELS
BICESTER, OXFORDSHIRE
EXPLORATORY HOLE LOCATION PLAN

FIGURE No:
FIGURE 2

M:_SOIL & GROUNDWATER\Bids and Projects 1237\00020861 - Bicester central\Drawings\exp hole plan final.dwg 23/09/2011 15:04:54 Gardiner, Helen

APPENDIX B EXPLORATORY HOLE LOGS

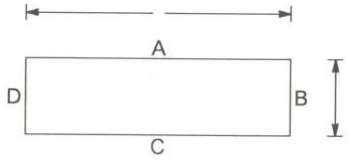
WSP Environmental Ltd
Mountbatten House, Basing View
Hampshire RG21 4HJ
Telephone: +44 (0)1256 318 800
Fax: +44 (0)1256 318 700

TRIAL PIT LOG

Project				TRIAL PIT No
Bicester				TP38
Job No	Date	Ground Level (m)	Co-Ordinates ()	
12370178	26-04-07 26-04-07		E 1,662 N 1,057	
Supervising Engineer		Client		Sheet
Chris Poole		Countryside Homes		1 of 1

Water	Depth (thickness)	No	Red'cd Level	STRATA DESCRIPTION	Legend	SAMPLES Depth	SAMPLES No	HSV Depth	HSV Result kN/m2
	0.00-0.30 (0.30)			TOPSOIL: Crop covered stiff to very stiff dessicated friable sandy gravelly SILT/CLAY with abundant rootlets. Sand is fine. Gravel is angular to subrounded fine to medium of limestone .		0.10 0.10	D1 E2	0.10	78
	0.30-0.60 (0.30)			0.10 Pocket Pentrometer results = 117 kN/m2 Firm brown to blue grey mottled brown slightly gravelly CLAY with extremely closely spaced partings. Gravel is angular to subangular fine claystones. (KELLAWAYS CLAY)		0.30-0.60 0.30-0.60	B3 E4	0.30	52
	0.60-1.60 (1.00)			0.30 - 0.60 Pocket Pentrometer results = 50 kN/m2 Firm dark bluish grey CLAY (KELLAWAYS CLAY) 1.00 Pocket Pentrometer results = 66 kN/m2		0.60-1.10 1.10-1.50 1.10-1.50	B5 B6 E7	1.00	53
	1.60-1.70			Red brown clayey gravelly SAND with small pockets of light grey clay. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium of limestone. (CORNBRASH/KELLAWAYS CLAY TRANSITION)		1.60-1.70	E8		
	1.70-1.90			Extremely to very closely fractured yellow brown LIMESTONE. Fractures are infilled up to10mm with clayey sand. Recovered as angular to subangularfine to coarse gravel and tabular cobbles and boulders of limestone with matrix of clayey sand. Borderline between highly fractured rock and a soil. (CORNBRASH)		1.70-1.90	D9		

Shoring/Support:
Stability:



GENERAL REMARKS

Unable to penetrate bedrock below 1.9m. Groundwater not encountered.

All dimensions in metres Scale 1:30.3	Contractor Birse	Method/ Plant Used 11 Tonne Digger	Logged By Chris Poole

WSP Environmental Ltd
Mountbatten House, Basing View
Basingstoke, Hampshire RG21 4HJ
Telephone: 01256 318800
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TRIAL PIT LOG

Hole No. **TP206**

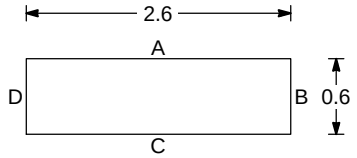
Project: Whitelands Farm, South West Bicester, Oxford

Sheet: 1 of 1

Job No	Client	Date
12370324-002	Countryside Properties	18-11-10 18-11-10

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
	JCB 3CX	Ajq	E 0.000 N 0.000	

SAMPLES & TESTS						STRATA					
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill
							(0.30) 0.30	Soft grey brown slightly sandy slightly gravelly CLAY with rootlets. Gravel is subrounded fine to coarse. (TOPSOIL)		TS	
0.50-0.50 0.50-0.50	D ES						(0.40) 0.70	Orange brown fine to coarse SAND and subangular to subrounded fine to coarse GRAVEL. (KELLAWAYS CLAY MEMBER)			
1.00-1.00 1.00-1.00 1.00-1.00	B D ES						(1.20) 1.90	Stiff dark grey locally mottled orange brown fissured CLAY with occasional shells and white sand sized grains (possibly comminuted shells). Occasional roots. (KELLAWAYS CLAY MEMBER)		KLB	
2.00-2.00	D						2.00	Very weak dark orange brown completely weathered MUDSTONE. (KELLAWAYS CLAY MEMBER)		KLB	
								Orange brown LIMESTONE. No Recovery. (CORNBRASH FORMATION)		CB	



Length: 2.60m

Width: 0.60m

Orientation: degrees from north

Shoring/Support:

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Trial Pit terminated on hard strata.
Trial pit backfilled with arisings on completion

Scale 1:25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP TP LOG STANDARD 12370324-002 WHITELANDS FARM SW BICESTER.GPJ WSPETEMPLATE1.03.GDT 24/2/11

WSP Environmental
Mountbatten House, Basing View, Basingstoke
Hampshire, RG21 4HJ
Telephone: 01256 318800
Fax:

BOREHOLE LOG

Hole No. **CP501**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 05-08-11
05-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Dando	S Dunstan	E 456984.617 N 222028.261	73.287

SAMPLES & TESTS							STRATA					Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Dia. 50 mm
0.10-0.50	B								Soft, dark brown slightly gravelly sandy CLAY. Gravel is subangular, fine to medium of limestone. Frequent soft light grey clay lenses. (CORNBRASH FORMATION)		CB	
0.30	ES							(1.00)				
0.50-1.00	B						72.29	1.00				
1.00	SPT	8,21,32 28 N=60/ 0.136(C)						(0.70)	Stiff Light grey brown very sandy gravelly CLAY. Gravel is subangular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
1.00-1.45	B						71.59	1.70				
1.50-1.70	B								Borehole terminated at 1.70m bgl - refusal on bedrock.			
1.70	SPT	2,60 N=62/ 0.075(C)										

Boring Progress

Date	Time	Depth	Casing Dpt	Dia. (mm)	Water Dpt

Chiselling

From	To	Hours	Tool
1.7	1.7	0100	

Water Added

From	To

Water Strikes

Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:62.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP BH LOG 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

WSP Environmental
Mountbatten House, Basing View, Basingstoke
Hampshire, RG21 4HJ
Telephone: 01256 318800
Fax:

BOREHOLE LOG

Hole No. **CP502**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 05-08-11
05-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Dando	S Dunstan	E 457201.701 N 222323.623	74.083

SAMPLES & TESTS							STRATA					Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Dia. 50 mm
0.10-0.70	B							(0.70)	Light brown slightly gravelly sandy CLAY. Gravel is subangular, fine to medium of limestone. Occasional lenses of dark brown and light grey clay. (TOPSOIL)		TS	
0.40	ES						73.38	0.70				
0.70	SPT	10,60 75 N=70/ 0(C)							Borehole terminated at 0.70m bgl - refusal on bedrock.			

Boring Progress

Date	Time	Depth	Casing Dpt	Dia. (mm)	Water Dpt

Water Strikes

Date	Time	Strike	Minutes	Standing	Casing

Chiselling

From	To	Hours	Tool
0.6	0.7	0100	

Water Added

From	To

General Remarks
No Groundwater encountered.

Scale 1:62.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP BH LOG 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

WSP Environmental
Mountbatten House, Basing View, Basingstoke
Hampshire, RG21 4HJ
Telephone: 01256 318800
Fax:

BOREHOLE LOG

Hole No. **CP503**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No	Client	Date
00020861/001	Countryside Properties (Bicester) Ltd	05-08-11 05-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Dando	S Dunstan	E 457278.565 N 222116.571	73.244

SAMPLES & TESTS							STRATA						Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description		Legend	Geology	Dia. 50 mm
0.00-0.40	B												
0.20	ES						72.84	0.40	Dark brown slightly gravelly sandy CLAY. Gravel is subangular, fine to medium of limestone. Occasional lenses of light brown sandy clay. (TOPSOIL)			TS	
							72.44	0.80	Light brown very sandy gravelly CLAY. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)			CB	
0.80	SPT	10,60 N=70/ 0.075(C)							Borehole terminated at 0.80m bgl - refusal on bedrock.				

Boring Progress

Date	Time	Depth	Casing Dpt	Dia. (mm)	Water Dpt

Chiselling

From	To	Hours	Tool
0.7	.8	0100	

Water Added

From	To

Water Strikes

Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:62.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

WSP Environmental
Mountbatten House, Basing View, Basingstoke
Hampshire, RG21 4HJ
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Fax:

BOREHOLE LOG

Hole No. **CP504**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No	Client	Date
00020861/001	Countryside Properties (Bicester) Ltd	05-08-11 05-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Dando	S Dunstan	E 457363.062 N 221927.317	72.665

SAMPLES & TESTS							STRATA					Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Dia. 50 mm
0.00-0.20	D						72.47	0.20	(MADE GROUND) Soft dark brown slightly gravelly very sandy CLAY. Gravel is subrounded to subangular, fine to medium of limestone. Rare brick fragments.		MG	
0.20 0.30	ES D								Firm mottled grey red brown CLAY. (KELLAWAYS CLAY MEMBER)			
								(1.45)			KLB	
1.20	SPT	1,1,2 3,25,25 N=55(S)							1.20 m bgl Becoming slightly gravelly. Gravel is angular, fine to medium of limestone.			
							71.02	1.65				
1.70	D						70.97	1.70	Light grey brown very clayey gravelly SAND. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
									Borehole terminated at 1.70m bgl - refusal on bedrock.			

Boring Progress

Date	Time	Depth	Casing Dpt	Dia. (mm)	Water Dpt

Chiselling

From	To	Hours	Tool
1.5	1.6	0100	

Water Added

From	To

Water Strikes

Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:62.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

WSP Environmental
Mountbatten House, Basing View, Basingstoke
Hampshire, RG21 4HJ
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BOREHOLE LOG

Hole No. **CP505**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 05-08-11
05-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Dando	S Dunstan	E 457524.204 N 222142.160	72.041

SAMPLES & TESTS							STRATA						Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology		Dia. 50 mm
0.00-0.70	B								Light brown very sandy slightly gravelly CLAY. Gravel is angular, fine to coarse of limestone. (KELLAWAYS CLAY MEMBER)				
0.30	ES							(1.20)			KLB		
0.70-1.20	B								0.70 m bgl Pockets of light grey clay.				
1.00	SPT	10,15,60 N=60/ 0.075(C)					70.84	1.20					
							70.39	1.65	Light grey brown slightly clayey sandy GRAVEL. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB		
									Borehole terminated at 1.65m bgl - refusal on bedrock.				

Boring Progress

Date	Time	Depth	Casing Dpt	Dia. (mm)	Water Dpt

Water Strikes

Date	Time	Strike	Minutes	Standing	Casing

Chiselling

From	To	Hours	Tool
1.3	1.4	0100	

Water Added

From	To

General Remarks
No Groundwater encountered.

Scale 1:62.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP BH LOG 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

WSP Environmental
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Hampshire, RG21 4HJ
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TRIAL PIT LOG

Hole No. **SA501**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

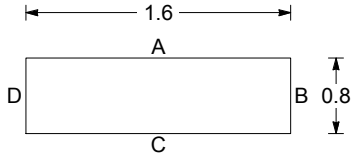
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 10-08-11
10-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	S Dunstan	E 456931.458 N 222023.310	73.339

SAMPLES & TESTS						STRATA					
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill
						73.14	0.20	Dark brown clayey gravelly SAND. Gravel is angular to subrounded, fine to coarse of limestone. Frequent rootlets. (TOPSOIL)		TS	
						72.74	(0.40) 0.60	Orange/brown clayey sandy GRAVEL. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
0.70	B					71.84	(0.90) 1.50	Dense dark yellowish brown clayey sandy cobbly GRAVEL. Gravel and cobbles of very angular, fine to coarse, limestone. (CORNBRASH FORMATION)		CB	
								Trial pit terminated at 1.50m bgl - refusal on bedrock.			



Length: 1.60m

Width: 0.80m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP TP LOG STANDARD 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

WSP Environmental
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Hampshire, RG21 4HJ
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Fax:

TRIAL PIT LOG

Hole No. **SA506**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

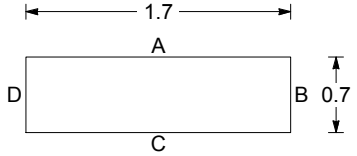
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 10-08-11
10-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	S Dunstan	E 457146.606 N 222041.583	73.372

SAMPLES & TESTS						STRATA					
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill
						73.17	0.20	(TOPSOIL) Grass over firm dark brown sandy slightly gravelly CLAY. Gravel is subrounded, fine to medium of limestone.		TS	
							(0.30)	0.00 - 0.10 m bgl Rootlets.		CB	
						72.87	0.50	Firm orange/brown slightly sandy slightly gravelly CLAY. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)			
1.40	B						(1.30)	Dense light grey brown, slightly clayey sandy slightly cobbly GRAVEL. Gravel and cobbles of angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
						71.57	1.80				
								Trial pit terminated at 1.80m bgl - refusal on bedrock.			



Length: 1.70m

Width: 0.70m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP TP LOG STANDARD 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

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Hampshire, RG21 4HJ
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TRIAL PIT LOG

Hole No. **SA515**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

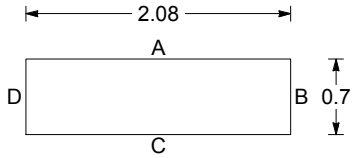
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 11-08-11
11-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	S Dunstan	E 457148.662 N 222246.803	74.330

SAMPLES & TESTS						STRATA					
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill
						74.13	0.20	Grass over brown clayey gravelly SAND. Gravel is angular to subrounded, fine to coarse of limestone. Frequent rootlets. TOPSOIL)		TS	
						73.88	(0.25) 0.45	Orange/brown slightly clayey very sandy slightly cobbly GRAVEL. Gravel and cobbles of angular, fine to coarse limestone. (CORNBRASH FORMATION)		CB	
						73.53	(0.35) 0.80	Dark yellow brown slightly clayey slightly sandy gravelly COBBLES. Very angular tabular cobbles and gravel of very angular, fine to coarse limestone. (CORNBRASH FORMATION)		CB	
								Trial pit terminated at 0.80m bgl - refusal on bedrock.			



Length: 2.08m

Width: 0.70m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP TP LOG STANDARD 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

WSP Environmental
Mountbatten House, Basing View, Basingstoke
Hampshire, RG21 4HJ
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TRIAL PIT LOG

Hole No. **SA515A**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

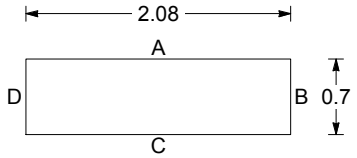
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 11-08-11
11-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	S Dunstan	E 457148.662 N 222246.803	74.330

SAMPLES & TESTS						STRATA					
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill
						74.13	0.20	Grass over brown clayey very gravelly SAND. Gravel is angular to subrounded, fine to coarse of limestone. Abundant rootlets. (TOPSOIL)		TS	
						73.93	0.40	Orange/brown slightly clayey very sandy slightly cobbly GRAVEL. Gravel and cobbles of angular, fine to coarse limestone. (CORNBRASH FORMATION)		CB	
0.70	B					73.43	(0.50) 0.90	Dark yellow brown slightly clayey slightly sandy gravelly COBBLES. Cobbles and gravel of angular tabular, fine to coarse limestone. (CORNBRASH FORMATION)		CB	
								Trial pit terminated at 0.90m bgl - refusal on bedrock.			



Length: 2.08m

Width: 0.70m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

WSP Environmental
Mountbatten House, Basing View, Basingstoke
Hampshire, RG21 4HJ
Telephone: 01256 318800
Fax:

TRIAL PIT LOG

Hole No. **SA517**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

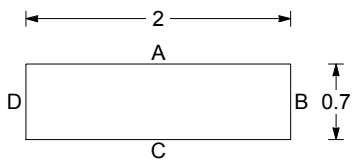
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 10-08-11
10-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	S Dunstan	E 457239.372 N 222157.841	73.292

SAMPLES & TESTS						STRATA					Install / Backfill
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	
						72.89	(0.40) 0.40	Grass over dark brown clayey very gravelly SAND. Gravel is angular, fine to coarse of limestone. (TOPSOIL) 0.00 - 0.10 Rootlets.		TS	
						72.59	(0.30) 0.70	Grey/brown sandy very gravelly COBBLES. Gravel and cobbles of angular, fine to coarse limestone. (CORNBRASH FORMATION)		CB	
1.50	B					71.69	(0.90) 1.60	Orange/brown slightly clayey slightly sandy gravelly COBBLES. Gravel and cobbles of angular, fine to coarse limestone (CORNBRASH FORMATION) 1.10 m bgl Becoming dark yellow brown.		CB	
								Trial pit terminated at 1.60m bgl - refusal on bedrock.			



Length: 2.00m

Width: 0.70m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP TP LOG STANDARD 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

WSP Environmental
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TRIAL PIT LOG

Hole No. **SA520**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

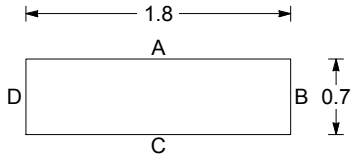
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 11-08-11
11-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	S Dunstan	E 457342.305 N 221976.686	73.421

SAMPLES & TESTS						STRATA					Install / Backfill
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	
						73.12	(0.30) 0.30	Grass over soft dark brown sandy slightly gravelly CLAY. Gravel is subangular, fine to medium of limestone. (TOPSOIL) 0.00 - 0.20 m bgl Rootlets.		TS	
						72.52	(0.60) 0.90	Soft to firm red brown sandy slightly gravelly CLAY. Gravel is subangular, fine to coarse of limestone. (KELLAWAYS CLAY MEMBER)		KLB	
0.90	B					71.92	(0.60) 1.50	Firm orange/brown mottled grey slightly sandy CLAY. (KELLAWAYS CLAY MEMBER)		KLB	
						71.22	(0.70) 2.20	Dark grey brown clayey slightly sandy gravelly COBBLES. Gravel and cobbles of angular, fine to coarse limestone. (CORNBRASH FORMATION) 1.50 - 2.20 m bgl Becoming slightly sandy and slightly gravelly with depth.		CB	
								Trial pit terminated at 2.20m bgl - refusal on bedrock.			



Length: 1.80m

Width: 0.70m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

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TRIAL PIT LOG

Hole No. **SA525**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

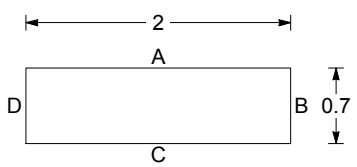
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 11-08-11
11-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	S Dunstan	E 457415.755 N 222093.752	72.789

SAMPLES & TESTS						STRATA					
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill
						72.59	0.20	Soft dark brown sandy slightly gravelly CLAY. Abundant rootlets. (TOPSOIL)		TS	
						72.19	(0.40) 0.60	Brown very clayey gravelly SAND. Gravel is subangular, fine to medium of limestone. (KELLAWAYS CLAY MEMBER)		KLB	
						71.99	0.80	Soft light grey brown sandy slightly gravelly CLAY. Gravel is subangular, fine to medium of limestone. (KELLAWAYS CLAY MEMBER)		KLB	
						71.24	(0.75) 1.55	Firm orange/brown mottled grey sandy gravelly CLAY. Gravel is subangular, fine to coarse of limestone. (KELLAWAYS CLAY MEMBER)		KLB	
1.50	B					71.19	1.60	Light grey brown sandy gravelly COBBLES. Gravel and cobbles of very angular, fine to coarse limestone. (CORNBRASH FORMATION)		CB	
								Trial pit terminated at 1.60m bgl - refusal on bedrock.			



Length: 2.00m

Width: 0.70m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

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TRIAL PIT LOG

Hole No. **SA528**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

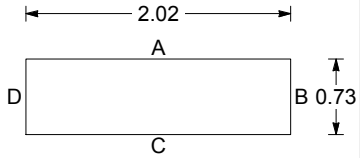
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 11-08-11
11-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	S Dunstan	E 457295.872 N 222245.159	72.889

SAMPLES & TESTS						STRATA					
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill
						72.74	0.15	Firm dark brown sandy gravelly CLAY with abundant rootlets. (TOPSOIL)		TS	
							(0.45)	Firm dark brown slightly sandy slightly gravelly CLAY. (KELLAWAYS CLAY MEMBER)		KLB	
						72.29	0.60				
							(0.80)	Soft to firm mottled orange/brown grey sandy slightly gravelly CLAY. Gravel is subangular, fine to coarse of limestone . (KELLAWAYS CLAY MEMBER) 0.60 - 1.40 m bgl Becoming darker grey with depth		KLB	
						71.49	1.40				
							(0.70)	Soft to firm grey, occasionally mottled orange/brown sandy very gravelly CLAY. Gravel is subangular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
2.00	B					70.79	2.10				
								Trial pit terminated at 2.10m bgl - refusal on bedrock.			



Length: 2.02m

Width: 0.73m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

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TRIAL PIT LOG

Hole No. **SA531**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

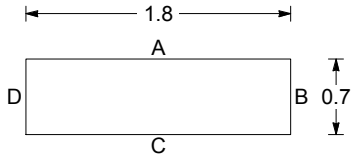
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 11-08-11
11-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	S Dunstan	E 457447.742 N 222194.863	71.310

SAMPLES & TESTS						STRATA					Install / Backfill
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	
						71.16	0.15	Firm dark brown sandy gravelly CLAY. Abundant rootlets. (TOPSOIL)		TS	
							(0.45)	Firm dark brown slightly sandy slightly gravelly CLAY. (KELLAWAYS CLAY MEMBER)		KLB	
						70.71	0.60				
							(0.80)	Soft to firm mottled orange/brown grey sandy slightly gravelly CLAY. Gravel is subangular, fine to coarse of limestone. (KELLAWAYS CLAY MEMBER) 0.60 - 1.40 m bgl Becoming dark grey with depth.		KLB	
						69.91	1.40				
							(0.80)	Soft to firm grey occasionally mottled orange/brown sandy very gravelly CLAY. Gravel is subangular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
2.00	B					69.11	2.20				
								Trial pit terminated at 2.20m bgl - refusal on bedrock.			



Length: 1.80m

Width: 0.70m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

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TRIAL PIT LOG

Hole No. **TP502**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

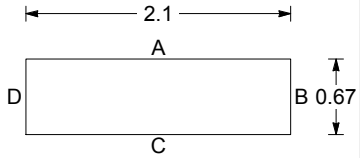
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 04-08-11
04-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457002.669 N 222090.084	73.845

SAMPLES & TESTS						STRATA					Install / Backfill
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	
0.20	B					73.45	(0.40) 0.40	Soft friable dark brown gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of limestone. (TOPSOIL)		TS	
1.00	B					72.45	(1.00) 1.40	Yellow brown very sandy gravelly COBBLES. Cobbles are of strong angular tabular limestone. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
								Trial pit terminated at 1.40m bgl - refusal on bedrock.			



Length: 2.10m

Width: 0.67m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

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TRIAL PIT LOG

Hole No. **TP503**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

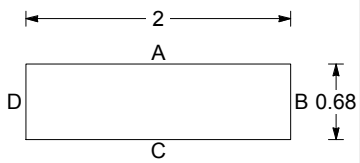
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 04-08-11
04-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457048.178 N 222032.196	73.532

SAMPLES & TESTS						STRATA					
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill
						73.28	(0.25) 0.25	Soft dark brown CLAY. (TOPSOIL)		TS	
0.30	B					73.03	(0.25) 0.50	Soft dark closely fissured orange brown CLAY. (WEATHERED CORNBRASH FORMATION)		CB	
1.10	B					71.93	(1.10) 1.60	Light yellow brown slightly sandy gravelly COBBLES. Cobbles are strong angular tabular of limestone. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
								Trial pit terminated at 1.60m bgl - refusal on bedrock.			



Length: 2.00m

Width: 0.68m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

WSP Environmental
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TRIAL PIT LOG

Hole No. **TP504**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

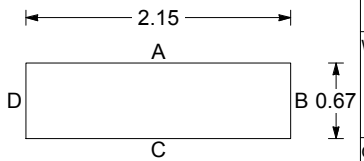
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 04-08-11
04-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457059.581 N 222129.705	73.903

SAMPLES & TESTS					Water	STRATA					Install / Backfill
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)		Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	
						73.60	(0.30) 0.30	Dark brown very clayey GRAVEL. Occasional cobbles of strong, angular tabular limestone. Gravel is angular, fine to coarse of limestone. (TOPSOIL)		TS	
0.25	B										
0.70	B						(1.00)	Yellow brown very sandy gravelly COBBLES of strong angular tabular limestone. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
						72.60	1.30				
								Trial pit terminated at 1.30m bgl - refusal on bedrock.			



Length: 2.15m

Width: 0.67m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP TP LOG STANDARD 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

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TRIAL PIT LOG

Hole No. **TP505**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

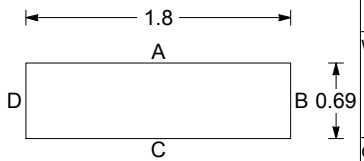
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 04-08-11
04-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457106.493 N 222088.494	73.554

SAMPLES & TESTS					Water	STRATA					Install / Backfill
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)		Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	
						73.25	(0.30) 0.30	Soft dark brown slightly gravelly CLAY. Gravel is angular to subangular, fine to coarse of limestone. (TOPSOIL)		TS	
						72.95	(0.30) 0.60	Soft closely fissured orange brown CLAY. (WEATHERED CORNBRASH FORMATION)		CB	
0.50	B										
							(1.20)	Very light yellow brown slightly sand, gravelly COBBLES of strong angular tabular limestone. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
1.50	B										
						71.75	1.80				
								Trial pit terminated at 1.80m bgl - refusal on bedrock.			



Length: 1.80m

Width: 0.69m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

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TRIAL PIT LOG

Hole No. **TP507**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

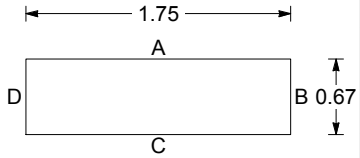
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 04-08-11
04-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457156.962 N 221970.372	73.455

SAMPLES & TESTS						STRATA					
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill
						73.26	0.20	Soft dark brown CLAY. (TOPSOIL)		TS	
							(0.30)	Soft orangish brown CLAY. (KELLAWAYS CLAY MEMBER)		KLB	
0.40	B					72.96	0.50				
0.80	B						(1.40)	Yellow brown sandy GRAVEL of angular, fine to coarse of limestone. Occasional cobbles of strong, angular tabular limestone. (CORNBRASH FORMATION)		CB	
						71.56	1.90				
								Trial pit terminated at 1.90m bgl - refusal on bedrock.			



Length: 1.75m

Width: 0.67m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP TP LOG STANDARD 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

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TRIAL PIT LOG

Hole No. **TP508**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

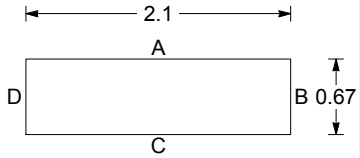
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 04-08-11
04-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457197.177 N 221917.574	73.171

SAMPLES & TESTS						STRATA					
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill
						72.92	(0.25) 0.25	Soft dark brown slightly gravelly CLAY. Gravel is angular to subangular, fine to medium of limestone. (TOPSOIL)		TS	
0.40	B					72.37	(0.55) 0.80	Stiff widely fissured light brown mottled blue grey CLAY. (KELLAWAYS CLAY MEMBER)		KLB	
1.20	B					71.17	(1.20) 2.00	Yellow brown sandy GRAVEL of angular to subangular, fine to coarse of limestone. Occasional cobbles of strong angular tabular limestone. (CORNBRASH FORMATION)		CB	
								Trial pit terminated at 2.00m bgl - refusal on bedrock.			



Length: 2.10m

Width: 0.67m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

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TRIAL PIT LOG

Hole No. **TP509**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

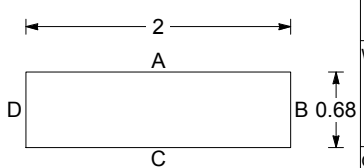
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 04-08-11
04-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457126.843 N 222188.252	74.230

SAMPLES & TESTS					Water	STRATA					Install / Backfill
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)		Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	
0.10	B					73.83	(0.40) 0.40	Soft dark brown gravelly CLAY. Gravel is angular to subrounded, fine to coarse of flint and limestone. (TOPSOIL)		TS	
1.00	B					72.83	(1.00) 1.40	Dense yellow brown very sandy gravelly COBBLES of strong angular tabular limestone. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
								Trial pit terminated at 1.40m BGL - refusal on bedrock.			



Length: 2.00m

Width: 0.68m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

WSP Environmental
Mountbatten House, Basing View, Basingstoke
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TRIAL PIT LOG

Hole No. **TP510**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

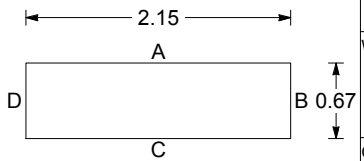
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 04-08-11
04-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457156.581 N 222137.450	73.511

SAMPLES & TESTS					Water	STRATA				Install / Backfill
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)		Elev. (m AOD)	Depth (Thickness)	Description	Legend	Geology	
						73.16	(0.35) 0.35	Soft dark brown slightly gravelly CLAY. Gravel is subangular, fine to medium of limestone. (TOPSOIL)		TS	
0.30	B										
0.60	B					72.16	(1.00) 1.35	Dense yellow brown sandy gravelly COBBLES of strong angular tabular limestone. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
								Trial pit terminated at 1.35m bgl - refusal on bedrock.			



Length: 2.15m

Width: 0.67m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

WSP Environmental
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TRIAL PIT LOG

Hole No. **TP511**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

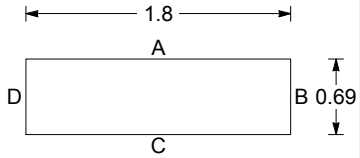
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 05-08-11
05-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457231.094 N 222085.863	73.457

SAMPLES & TESTS						STRATA					
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill
0.15	B					73.26	0.20	Soft dark brown slightly gravelly CLAY. Gravel is angular to subrounded, fine to medium of limestone. (TOPSOIL)		TS	
							(0.40)	Soft orange brown CLAY with occasional cobbles of strong angular tabular limestone. (WEATHERED CORNBRASH FORMATION)		CB	
0.90	B					72.86	0.60	Yellow and orange brown sandy gravelly COBBLES of strong angular tabular limestone. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
							(0.90)				
						71.96	1.50	Trial pit terminated at 1.50m bgl - refusal on bedrock.			



Length: 1.80m

Width: 0.69m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP TP LOG STANDARD 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

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TRIAL PIT LOG

Hole No. **TP512**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

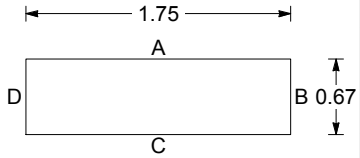
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 05-08-11
05-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457240.996 N 222030.993	73.314

SAMPLES & TESTS						STRATA					Install / Backfill
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	
						73.01	(0.30) 0.30	Soft dark brown CLAY. (TOPSOIL)		TS	
0.50	B					72.46	(0.55) 0.85	Soft yellow brown and orange brown gravelly CLAY. Gravel is angular to subrounded, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
1.80	B					71.31	(1.15) 2.00	Yellow brown sandy gravelly COBBLES of strong angular tabular limestone. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
								Trial pit terminated at 2.00m bgl - refusal on bedrock.			



Length: 1.75m

Width: 0.67m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP TP LOG STANDARD 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

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TRIAL PIT LOG

Hole No. **TP513**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

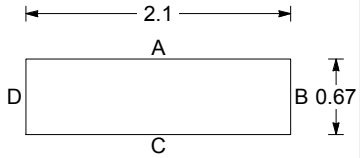
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 05-08-11
05-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457252.491 N 221968.705	73.313

SAMPLES & TESTS						STRATA					
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill
						73.01	(0.30) 0.30	(MADE GROUND) Soft dark brown slightly gravelly CLAY. Gravel is angular to subangular, fine to coarse of limestone. (REWORKED)		MG	
						72.31	(0.70) 1.00	(MADE GROUND) Firm to stiff dark grey CLAY, with occasional fragments of red piping. (REWORKED)		MG	
						71.41	(0.90) 1.90	Light yellow brown sandy gravelly COBBLES of strong angular tabular limestone. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
								Trial pit terminated at 1.90m bgl - refusal on bedrock.			



Length: 2.10m

Width: 0.67m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

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TRIAL PIT LOG

Hole No. **TP514**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

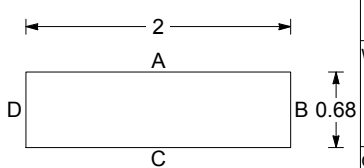
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 05-08-11
05-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457305.308 N 221922.997	73.046

SAMPLES & TESTS						STRATA					
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill
0.20	B					72.65	(0.40) 0.40	Soft dark brown slightly gravelly CLAY. Gravel is subangular, fine of limestone. (TOPSOIL)		TS	
1.20	B					71.45	(1.20) 1.60	Stiff blue grey CLAY with occasional pockets of orange brown sand. (KELLAWAYS CLAY MEMBER)		KLB	
						71.25	1.80	Light yellow brown sandy gravelly COBBLES of very strong angular tabular limestone. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
								Trial pit terminated at 1.80m bgl - refusal on bedrock.			



Length: 2.00m

Width: 0.68m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

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TRIAL PIT LOG

Hole No. **TP516**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

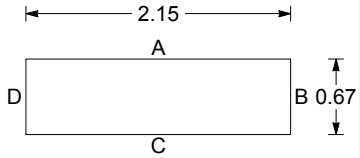
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 08-08-11
08-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457180.393 N 222193.950	73.669

SAMPLES & TESTS						STRATA					
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill
						73.37	(0.30) 0.30	Soft dark brown CLAY. (TOPSOIL)		TS	
0.40	B					73.17	0.50	Firm orange brown CLAY with occasional yellow brown, sandy pockets. (KELLAWAYS CLAY MEMBER)		KLB	
0.80	B					72.77	(0.40) 0.90	Yellow brown sandy gravelly COBBLES of strong angular tabular limestone. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
								Trial pit terminated at 0.90m bgl - refusal on bedrock.			



Length: 2.15m

Width: 0.67m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP TP LOG STANDARD 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

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TRIAL PIT LOG

Hole No. **TP518**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

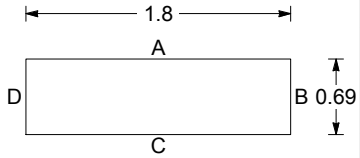
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 05-08-11
05-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457322.779 N 222087.860	73.179

SAMPLES & TESTS					Water	STRATA				Install / Backfill
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)		Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	
0.20	B					72.88	(0.30) 0.30	Soft dark brown gravelly CLAY. Gravel is angular, fine to coarse of limestone. (TOPSOIL)		TS	
						72.48	(0.40) 0.70	Soft orange brown clayey GRAVEL of fine to coarse angular limestone. (CORNBRASH FORMATION)		CB	
1.30	B					71.68	(0.80) 1.50	Yellow brown sandy GRAVEL of angular, fine to coarse tabular limestone. Occasional cobbles of angular limestone. (CORNBRASH FORMATION)		CB	
								Trial pit terminated at 1.50m bgl - refusal on bedrock.			



Length: 1.80m

Width: 0.69m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

WSP Environmental
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TRIAL PIT LOG

Hole No. **TP519**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

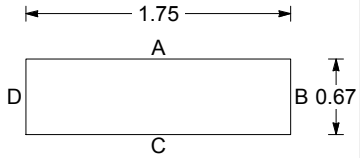
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 05-08-11
05-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457330.458 N 222029.119	73.061

SAMPLES & TESTS						STRATA					Install / Backfill
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	
0.10	B					72.76	(0.30) 0.30	Soft dark brown slightly gravelly CLAY. Gravel is angular to subrounded, fine to coarse of limestone. (TOPSOIL)		TS	
1.00	B						(1.30)	Light brown,sandy GRAVEL of angular to subangular, fine to coarse limestone. (CORNBRASH FORMATION)		CB	
						71.46	1.60	Trial pit terminated at 1.60m bgl - refusal on bedrock.			



Length: 1.75m

Width: 0.67m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP TP LOG STANDARD 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

WSP Environmental
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TRIAL PIT LOG

Hole No. **TP521**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

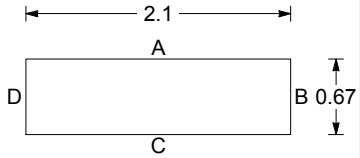
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 08-08-11
08-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457183.091 N 222292.394	74.297

SAMPLES & TESTS						STRATA					Install / Backfill
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	
							(0.40)	Soft dark brown gravelly cobbly CLAY. Gravel is angular, fine to coarse of limestone. Cobbles of strong angular tabular limestone. (TOPSOIL)		TS	
0.30	B					73.90	0.40				
							(1.20)	Yellow brown sandy GRAVEL. Gravel is angular, fine to coarse of limestone. Occasional cobbles of strong, angular tabular limestone. (CORNBRASH FORMATION)		CB	
1.10	B							1.20 - 1.60 m bgl Abundant cobbles.			
						72.70	1.60				
								Trial pit terminated at 1.60m bgl - refusal on bedrock.			



Length: 2.10m

Width: 0.67m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

WSP Environmental
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TRIAL PIT LOG

Hole No. **TP522**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

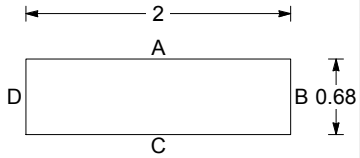
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 08-08-11
08-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457222.917 N 222247.231	73.636

SAMPLES & TESTS					Water	STRATA					Install / Backfill
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)		Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	
0.20	B					73.29	(0.35) 0.35	Soft dark brown slightly gravelly CLAY. Gravel is angular to subangular, fine to coarse of limestone. Occasional cobbles of strong, angular tabular limestone. (TOPSOIL)		TS	
1.00	B					72.44	(0.85) 1.20	Yellow brown sandy gravelly COBBLES of strong angular tabular limestone. Gravel is angular, fine to coarse of limestone. Sand is fine. (CORNBRASH FORMATION)		CB	
								Trial pit terminated at 1.20m bgl - refusal on bedrock.			



Length: 2.00m

Width: 0.68m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

WSP Environmental
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TRIAL PIT LOG

Hole No. **TP523**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

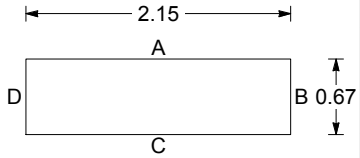
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 08-08-11
08-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457293.636 N 222195.769	73.083

SAMPLES & TESTS					Water	STRATA					Install / Backfill
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)		Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	
0.05	B					72.88	0.20	Soft dark brown very gravelly CLAY. Gravel is angular, fine to coarse of limestone. (TOPSOIL)		TS	
0.90	B						(1.20)	Dense yellow brown sandy gravelly COBBLES of angular tabular limestone. Gravel is angular, fine to coarse of limestone. Sand is fine. (CORNBRASH FORMATION)		CB	
						71.68	1.40	Trial pit terminated at 1.40m bgl - refusal on bedrock.			



Length: 2.15m

Width: 0.67m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP TP LOG STANDARD 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

WSP Environmental
Mountbatten House, Basing View, Basingstoke
Hampshire, RG21 4HJ
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TRIAL PIT LOG

Hole No. **TP524**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

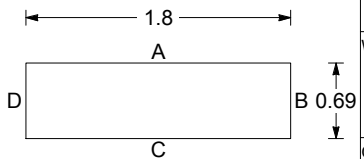
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 08-08-11
08-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457376.786 N 222163.117	72.165

SAMPLES & TESTS					Water	STRATA					Install / Backfill
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)		Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	
0.10	B					71.92	(0.25) 0.25	Soft dark brown gravelly CLAY,with occasional cobbles of strong angular tabular limestone. Gravel is angular, fine to coarse of limestone. (TOPSOIL)		TS	
							(1.55)	Yellow brown sandy gravelly COBBLES of angular tabular limestone. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
1.50	B					70.37	1.80				
								Trial pit terminated at 1.80m bgl - refusal on bedrock.			



Length: 1.80m

Width: 0.69m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP TP LOG STANDARD 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

WSP Environmental
Mountbatten House, Basing View, Basingstoke
Hampshire, RG21 4HJ
Telephone: 01256 318800
Fax:

TRIAL PIT LOG

Hole No. **TP526**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

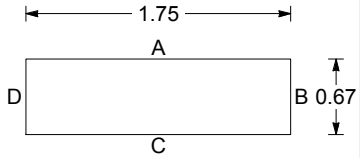
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 05-08-11
05-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457423.814 N 222028.448	72.590

SAMPLES & TESTS						STRATA					Install / Backfill
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	
						72.29	(0.30) 0.30	(MADE GROUND) Soft dark brown CLAY with occasional red pipe fragments.		MG	
0.60	B					71.79	(0.50) 0.80	Firm orange brown CLAY. (KELLAWAYS CLAY MEMBER)		KLB	
2.00	B					70.29	(1.50) 2.30	Dense yellow brown sandy GRAVEL angular, fine to coarse tabular limestone. Occasional cobbles of angular tabular limestone. (CORNBRASH FORMATION)		CB	
								Trial pit terminated at 2.30m bgl - refusal on bedrock.			



Length: 1.75m

Width: 0.67m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP TP LOG STANDARD 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

WSP Environmental
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TRIAL PIT LOG

Hole No. **TP527**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

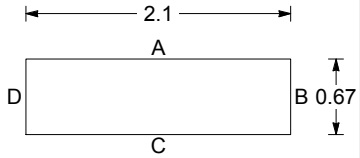
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 08-08-11
08-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457261.893 N 222295.274	73.305

SAMPLES & TESTS						STRATA					
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill
0.10	B					73.11	0.20	Soft dark brown gravelly CLAY. Gravel is angular, fine to coarse of limestone. (TOPSOIL)		TS	
						72.61	(0.50) 0.70	Soft dark brown gravelly very cobbly CLAY. Gravel is angular, fine to coarse of limestone. Cobbles of strong, angular tabular limestone. (CORNBRASH FORMATION)		CB	
1.30	B					71.91	(0.70) 1.40	Dense yellow brown sandy gravelly COBBLES of strong, angular tabular limestone. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
						71.61	(0.30) 1.70	Firm yellow brown mottled light grey CLAY. (clay band within CORNBRASH FORMATION)		CB	
						71.41	1.90	Dense yellow brown sandy gravelly COBBLES of strong, angular tabular limestone. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
								Trial pit terminated at 1.90m bgl - refusal on bedrock.			



Length: 2.10m

Width: 0.67m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

WSP Environmental
Mountbatten House, Basing View, Basingstoke
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TRIAL PIT LOG

Hole No. **TP529**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

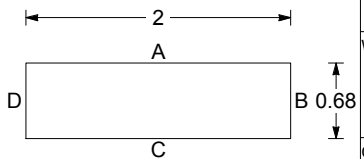
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 08-08-11
08-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457348.715 N 222194.144	72.303

SAMPLES & TESTS					Water	STRATA				Install / Backfill
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)		Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	
						72.00	(0.30) 0.30	Soft dark brown slightly gravelly CLAY. Gravel is angular, fine to medium of limestone and occasional flint. (TOPSOIL)		TS	
0.25	B										
						71.10	(0.90) 1.20	Dense yellow brown sandy gravelly COBBLES of strong, angular tabular limestone. Gravel is angular, fine to coarse of limestone. Sand is fine. (CORNBRASH FORMATION)		CB	
						70.30	(0.80) 2.00	Dense yellow brown mottled light yellow brown clayey COBBLES of strong angular tabular limestone. (CORNBRASH FORMATION)		CB	
1.90	B										
								Trial pit terminated at 2.00m bgl - refusal on bedrock.			



Length: 2.00m

Width: 0.68m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

WSP Environmental
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TRIAL PIT LOG

Hole No. **TP530**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

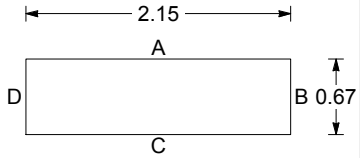
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 08-08-11
08-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457446.658 N 222149.290	71.773

SAMPLES & TESTS						STRATA					
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill
0.20	B					71.41	(0.36) 0.36	(MADE GROUND) Soft dark brown CLAY with occasional gravel of angular to subrounded, fine to medium flint, limestone and red brick.		MG	
0.50	B					70.87	(0.54) 0.90	Soft yellow brown sandy slightly gravelly CLAY. Gravel is subangular to subrounded , fine to medium of limestone. (KELLAWAYS CLAY MEMBER)		KLB	
						70.17	(0.70) 1.60	Dense light yellow brown slightly sandy gravelly COBBLES of strong angular tabular limestone. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
								Trial pit terminated at 1.60m bgl - refusal on bedrock.			



Length: 2.15m

Width: 0.67m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

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TRIAL PIT LOG

Hole No. **TP532**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

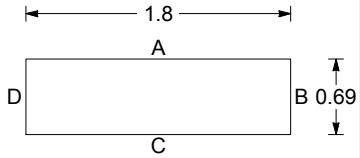
Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 08-08-11
08-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
David Beecroft Ltd	JCB 3CX	A Linnell	E 457505.719 N 222120.889	72.224

SAMPLES & TESTS						STRATA					
Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill
0.25	B					71.92	(0.30) 0.30	(MADE GROUND) Soft dark brown CLAY with occasional gravel of angular to subrounded, fine to medium flint, limestone and red brick.		MG	
						71.37	(0.55) 0.85	Moderately dense yellow brown,sandy gravelly COBBLES of strong angular tabular limestone. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB	
						70.52	(0.85) 1.70	Firm yellow brown mottled grey cobbly CLAY. Cobbles of strong, angular tabular limestone. (FOREST MARBLE FORMATION?)		FMB	
1.70	B							Trial pit terminated at 1.70m bgl - refusal on bedrock.			



Length: 1.80m

Width: 0.69m

Orientation: degrees from north

Shoring/Support: None

Stability: Stable

Water Strikes

Date	Time	Strike	Minutes	Standing	Remarks

General Remarks
Soil strength based on engineer's observations. No groundwater encountered.

Scale 1:31.25

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

WSP Environmental
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WINDOW SAMPLE LOG

Hole No. **WS501**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 05-08-11
05-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Terrier	S Dunstan	E 456980.530 N 221983.126	72.911

SAMPLES & TESTS							STRATA						Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description		Legend	Geology	Dia. mm
0.20	ES	.					72.66	0.25	Soft dark brown sandy slightly gravelly CLAY. Gravel is subangular, fine to medium of limestone. (TOPSOIL)			TS	
0.60	(C)	18,34,25 60 N=85/ 0.075.					72.31	(0.35) 0.60	Light grey brown slightly clayey sandy slightly cobbly GRAVEL. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)			CB	
									Window sample terminated at 0.60m bgl - refusal at 0.6m on bedrock.				

Hole Diameter			Recovery			Water Strikes					
Depth	Diameter (mm)	Remarks	Core Top (m)	Core Base (m)	% Recovery	Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:37.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP WINDOW SAMPLE LOG 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

WSP Environmental
Mountbatten House, Basing View, Basingstoke
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WINDOW SAMPLE LOG

Hole No. **WS502**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 05-08-11
05-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Terrier	S Dunstan	E 456986.861 N 222059.741	73.519

SAMPLES & TESTS							STRATA						Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology		Dia. mm
							73.42	0.10	Grass over dark brown clayey gravelly SAND. Gravel is angular, fine to medium of limestone. Frequent rootlets. (TOPSOIL)		TS		
0.25	ES	.					73.17	0.35	Stiff red brown slightly sandy CLAY. (KELLAWAYS CLAY MEMBER)		KLB		
								(0.85)	Light grey brown slightly clayey sandy cobbly GRAVEL. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB		
1.00	ES (C)	3,5,16 4,15,25 N=60.					72.32	1.20					
									Window sample terminated at 1.20m bgl - refusal on bedrock.				

Hole Diameter			Recovery			Water Strikes					
Depth	Diameter (mm)	Remarks	Core Top (m)	Core Base (m)	% Recovery	Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:37.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP WINDOW SAMPLE LOG 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

WSP Environmental
Mountbatten House, Basing View, Basingstoke
Hampshire, RG21 4HJ
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Fax:

WINDOW SAMPLE LOG

Hole No. **WS503**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 05-08-11
05-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Terrier	S Dunstan	E 457080.468 N 222061.715	73.433

SAMPLES & TESTS							STRATA						Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description		Legend	Geology	Dia. mm
0.10	ES	.					73.33	0.10	Dark brown clayey slightly gravelly SAND. Gravel is subangular to angular, fine to medium of limestone. (TOPSOIL)			TS	
							73.03	(0.30) 0.40	Stiff redd brown slightly gravelly CLAY. (KELLAWAYS CLAY MEMBER)			KLB	
0.70	(C)	60 N=60/ 0.03.					72.73	(0.30) 0.70	Light grey brown very sandy GRAVEL. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)			CB	
									Window sample terminated at 0.70m bgl - refusal on bedrock.				

Hole Diameter			Recovery			Water Strikes					
Depth	Diameter (mm)	Remarks	Core Top (m)	Core Base (m)	% Recovery	Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:37.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

WSP Environmental
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WINDOW SAMPLE LOG

Hole No. **WS504**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 05-08-11
05-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Terrier	A Linnell	E 457109.655 N 222123.333	73.644

SAMPLES & TESTS							STRATA						Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology		Dia. mm
							73.44	0.20	Soft dark brown slightly gravelly CLAY. Gravel is angular to subangular, fine of limestone. (TOPSOIL)		TS		
0.70	ES	.						(1.00)	Very dense yellow brown and orange/brown sandy GRAVEL of angular, fine to coarse limestone. (CORNBRASH FORMATION)		CB		
1.00	(C)	6,10,8 9,13,25 N=55.					72.44	1.20					
1.20	(C)	60 N=60/ 0.03.							Window sample hole terminated at 1.20m bgl - refusal on bedrock.				

Hole Diameter			Recovery			Water Strikes					
Depth	Diameter (mm)	Remarks	Core Top (m)	Core Base (m)	% Recovery	Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:37.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP WINDOW SAMPLE LOG 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

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WINDOW SAMPLE LOG

Hole No. **WS505**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 05-08-11
05-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Terrier	S Dunstan	E 457120.148 N 222000.515	73.161

SAMPLES & TESTS							STRATA						Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description		Legend	Geology	Dia. mm
0.15	ES	.					72.91	0.25	Stiff dark brown silty sandy slightly gravelly CLAY. Gravel is subangular, fine of limestone. (TOPSOIL)			TS	
									0.00 - 0.10 m bgl Rootlets noted to 0.10m.				
								(0.75)	Very dense light grey brown slightly clayey very sandy GRAVEL. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)			CB	
1.00	(C)	60 N=60/ 0.03.					72.16	1.00	Window sample hole terminated at 1.00m bgl - refusal on bedrock.				

Hole Diameter			Recovery			Water Strikes					
Depth	Diameter (mm)	Remarks	Core Top (m)	Core Base (m)	% Recovery	Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:37.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP WINDOW SAMPLE LOG 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

WSP Environmental
Mountbatten House, Basing View, Basingstoke
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WINDOW SAMPLE LOG

Hole No. **WS506**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 05-08-11
05-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Terrier	A Linnell	E 457162.142 N 222220.639	74.164

SAMPLES & TESTS							STRATA						Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology		Dia. mm
0.15	ES	.					73.96	0.20	Soft dark brown slightly gravelly CLAY. Gravel is angular, fine to medium of limestone. (TOPSOIL)		TS		
								(0.60)	Very dense yellow/brown sandy GRAVEL of angular, fine to coarse tabular limestone. (CORNBRASH FORMATION)		CB		
0.80	(C)	17,13,60 N=60/ 0.075.					73.36	0.80	Window sample hole terminated at 0.80m bgl - refusal on bedrock.				

Hole Diameter			Recovery			Water Strikes					
Depth	Diameter (mm)	Remarks	Core Top (m)	Core Base (m)	% Recovery	Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:37.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP WINDOW SAMPLE LOG 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

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WINDOW SAMPLE LOG

Hole No. **WS507**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 05-08-11
05-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Terrier	A Linnell	E 457202.414 N 222047.824	73.215

SAMPLES & TESTS							STRATA						Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description		Legend	Geology	Dia. mm
0.10	ES	.					72.82	(0.40) 0.40	Soft dark brown slightly gravelly CLAY. Gravel is angular, fine to coarse of limestone. (TOPSOIL)			TS	
								(0.80)	Dense light yellow brown and orange/brow, sandy GRAVEL of angular, fine to coarse tabular limestone. (CORNBRASH FORMATION)			CB	
1.20	(C)	10,20,60 N=60/ 0.075.					72.02	1.20	Window sample hole terminated at 1.20m bgl - refusal on bedrock.				

Hole Diameter			Recovery			Water Strikes					
Depth	Diameter (mm)	Remarks	Core Top (m)	Core Base (m)	% Recovery	Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:37.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP WINDOW SAMPLE LOG 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

WSP Environmental
Mountbatten House, Basing View, Basingstoke
Hampshire, RG21 4HJ
Telephone: 01256 318800
Fax:

WINDOW SAMPLE LOG

Hole No. **WS508**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 06-08-11
06-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Terrier	S Dunstan	E 457217.157 N 221954.177	73.174

SAMPLES & TESTS							STRATA						Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description		Legend	Geology	Dia. mm
0.10	ES	.					72.97	0.20	Soft to firm dark brown sandy gravelly CLAY. Gravel is subangular, fine to medium of limestone. Occasional rootlets. (TOPSOIL)			TS	
							72.62	(0.35) 0.55	Stiff grey mottled brown CLAY. (WEATHERED CORNBRASH FORMATION)			KLB	
1.00	(C)	7,8,8 7,4,5 N=24.						(1.45)	Light grey brown sandy slightly cobbly GRAVEL. Gravel is angular, fine to coarse of limestone with occasional pockets of orange/brown sandy clay. (CORNBRASH FORMATION)			CB	
1.40	ES	.											
1.50	(C)	30 N=30/ 0.03.					71.17	2.00	Window sample hole terminated at 2.00m bgl - refusal on bedrock.				

Hole Diameter			Recovery			Water Strikes					
Depth	Diameter (mm)	Remarks	Core Top (m)	Core Base (m)	% Recovery	Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:37.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP WINDOW SAMPLE LOG 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

WSP Environmental
Mountbatten House, Basing View, Basingstoke
Hampshire, RG21 4HJ
Telephone: 01256 318800
Fax:

WINDOW SAMPLE LOG

Hole No. **WS509**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 06-08-11
06-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Terrier	S Dunstan	E 457234.643 N 222295.636	73.652

SAMPLES & TESTS							STRATA						Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology		Dia. mm
0.10	ES	.					73.40	0.25	Grass over firm to stiff dark brown sandy gravelly CLAY. Gravel is subangular to angular, fine to medium of limestone. Occasional rootlets. (TOPSOIL)		TS		
								(0.65)	Dense light grey clayey slightly sandy slightly cobbly GRAVEL. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)		CB		
0.90	(C)	13,17,19 60 N=79/ 0.075.					72.75	0.90	Window sample hole terminated at 0.90m bgl - refusal on bedrock.				

Hole Diameter			Recovery			Water Strikes					
Depth	Diameter (mm)	Remarks	Core Top (m)	Core Base (m)	% Recovery	Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:37.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

WSP Environmental
Mountbatten House, Basing View, Basingstoke
Hampshire, RG21 4HJ
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Fax:

WINDOW SAMPLE LOG

Hole No. **WS510**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 06-08-11
06-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Terrier	S Dunstan	E 457234.573 N 222200.320	73.311

SAMPLES & TESTS							STRATA						Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description		Legend	Geology	Dia. mm
0.10	ES	.					73.16	0.15	Very soft dark brown sandy slightly gravelly CLAY with abundant rootlets. Gravel is subangular, fine to medium of limestone. (TOPSOIL)			TS	
							72.96	0.35	Stiff orange/brown sandy CLAY. (KELLAWAYS CLAY MEMBER)			KLB	
								(0.35)				CB	
0.70	(C)	30 N=30/ 0.03.					72.61	0.70	Light grey brown slightly clayey sandy GRAVEL. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)				
									Window sample hole terminated at 0.70m bgl - refusal on bedrock.				

Hole Diameter			Recovery			Water Strikes					
Depth	Diameter (mm)	Remarks	Core Top (m)	Core Base (m)	% Recovery	Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:37.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

WSP Environmental
Mountbatten House, Basing View, Basingstoke
Hampshire, RG21 4HJ
Telephone: 01256 318800
Fax:

WINDOW SAMPLE LOG

Hole No. **WS511**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 05-08-11
05-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Terrier	A Linnell	E 457289.080 N 222062.281	73.276

SAMPLES & TESTS							STRATA						Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology		Dia. mm
							72.95	(0.33) 0.33	Stiff dark brown slightly gravelly CLAY. Gravel is angular, fine of limestone. (TOPSOIL)		TS		
0.70	ES	.							Medium dense to dense light yellow/brown sandy GRAVEL of angular, fine to coarse limestone. (CORNBRASH FORMATION)				
1.00	(C)	11,7,8 8,7,8 N=31.						(1.27)			CB		
							71.68	1.60					
1.60	(C)	60 N=60/ 0.03.							Window sample terminated at 1.60m bgl - refusal on bedrock.				

Hole Diameter			Recovery			Water Strikes					
Depth	Diameter (mm)	Remarks	Core Top (m)	Core Base (m)	% Recovery	Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:37.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP WINDOW SAMPLE LOG 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

WSP Environmental
Mountbatten House, Basing View, Basingstoke
Hampshire, RG21 4HJ
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Fax:

WINDOW SAMPLE LOG

Hole No. **WS512**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 05-08-11
05-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Terrier	A Linnell	E 457296.474 N 222001.478	73.186

SAMPLES & TESTS							STRATA					Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Dia. mm
								(0.54)	Stiff dark brown slightly gravelly CLAY. Gravel is subangular, fine of limestone. (TOPSOIL)		TS	
0.50	ES	.					72.65	0.54	0.40 m bgl Becoming orange/brown.			
1.00	(C)	6,8,10 9,8,7 N=34.						(1.46)	Medium dense to dense light yellow/brown slightly sandy GRAVEL of angular, fine to coarse limestone. (CORNBRASH FORMATION)		CB	
									1.60 - 1.80 m bgl Becoming very sandy.			
2.00	(C)	60 N=60/ 0.03.					71.19	2.00	Window sample terminated at 2.00m bgl - refusal on bedrock			
									m bgl Becoming very dense.			

Hole Diameter			Recovery			Water Strikes					
Depth	Diameter (mm)	Remarks	Core Top (m)	Core Base (m)	% Recovery	Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:37.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP WINDOW SAMPLE LOG 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

WSP Environmental
Mountbatten House, Basing View, Basingstoke
Hampshire, RG21 4HJ
Telephone: 01256 318800
Fax:

WINDOW SAMPLE LOG

Hole No. **WS513**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 06-08-11
06-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Terrier	S Dunstan	E 457295.484 N 222156.650	73.118

SAMPLES & TESTS							STRATA						Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description		Legend	Geology	Dia. mm
0.10	ES	.					72.87	0.25	Very soft dark brown sandy slightly gravelly CLAY. Gravel is subrounded, fine to medium of limestone. (TOPSOIL)			TS	
								(0.45)	0.15 m bgl Becoming stiff.				
0.60	(C)	60 N=60/ 0.03.					72.42	0.70	Light grey brown clayey sandy GRAVEL. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)			CB	
									Window sample hole terminated at 0.70m bgl - refusal on bedrock.				

Hole Diameter			Recovery			Water Strikes					
Depth	Diameter (mm)	Remarks	Core Top (m)	Core Base (m)	% Recovery	Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:37.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

WSP Environmental
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Hampshire, RG21 4HJ
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Fax:

WINDOW SAMPLE LOG

Hole No. **WS514**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 06-08-11
06-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Terrier	S Dunstan	E 457370.529 N 222121.313	72.710

SAMPLES & TESTS							STRATA						Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology		Dia. mm
0.10	ES	.					72.51	0.20	Soft becoming firm sandy slightly gravelly CLAY. Gravel is subangular, fine to medium of limestone. Occasional rootlets. (TOPSOIL)		TS		
0.60	ES (C)	60 N=60/ 0.03.						(0.70)	Light grey brown clayey sandy GRAVEL. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION) 0.50 m bgl Becoming very clayey.		CB		
							71.81	0.90	Window sample hole terminated at 0.90m bgl - refusal on bedrock.				

Hole Diameter			Recovery			Water Strikes					
Depth	Diameter (mm)	Remarks	Core Top (m)	Core Base (m)	% Recovery	Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:37.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

WSP Environmental
Mountbatten House, Basing View, Basingstoke
Hampshire, RG21 4HJ
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Fax:

WINDOW SAMPLE LOG

Hole No. **WS515**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 06-08-11
06-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Terrier	S Dunstan	E 457375.199 N 222063.287	72.913

SAMPLES & TESTS							STRATA					Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Dia. mm
							72.76	0.15	Grass over dark brown very clayey gravelly SAND. Gravel is angular to subangular, fine to coarse of limestone. Abundant rootlets. (TOPSOIL)		TS	
0.15	ES	.							Light grey brown clayey slightly sandy GRAVEL. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)			
								(1.25)			CB	
1.00	(C)	4,7,8 8,9,10 N=35.										
							71.51	1.40				
1.40	(C)	60 30 N=60/ 0.							Window sample hole terminated at 1.40m bgl - refusal on bedrock.			

Hole Diameter			Recovery			Water Strikes					
Depth	Diameter (mm)	Remarks	Core Top (m)	Core Base (m)	% Recovery	Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:37.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP WINDOW SAMPLE LOG 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

WSP Environmental
Mountbatten House, Basing View, Basingstoke
Hampshire, RG21 4HJ
Telephone: 01256 318800
Fax:

WINDOW SAMPLE LOG

Hole No. **WS516**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 06-08-11
06-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Terrier	S Dunstan	E 457419.636 N 221991.204	72.635

SAMPLES & TESTS							STRATA					Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description	Legend	Geology	Dia. mm
							71.64	(1.00) 1.00	Stiff brown sandy CLAY. (TOPSOIL) 0.00 - 1.00 m bgl Poor recovery.		TS	
1.00	(C)	6,24,30 60 N=90/ 0.075.					71.24	(0.40) 1.40	Light grey brown slightly clayey sandy GRAVEL. Gravel is angular, fine to coarse of limestone (CORNBRASH FORMATION)		CB	
1.40	(C)	60 N=60/ 0.03.							Window sample hole terminated at 1.40m bgl - refusal on bedrock.			

Hole Diameter			Recovery			Water Strikes					
Depth	Diameter (mm)	Remarks	Core Top (m)	Core Base (m)	% Recovery	Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:37.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP WINDOW SAMPLE LOG 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

WSP Environmental
Mountbatten House, Basing View, Basingstoke
Hampshire, RG21 4HJ
Telephone: 01256 318800
Fax:

WINDOW SAMPLE LOG

Hole No. **WS517**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 06-08-11
06-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Terrier	S Dunstan	E 457407.947 N 222208.790	71.518

SAMPLES & TESTS							STRATA						Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description		Legend	Geology	Dia. mm
0.10	ES	.					71.42	0.10	Very soft dark brown sandy slightly gravelly CLAY. Frequent grass rootlets. (TOPSOIL)			TS	
								(0.45)	Firm orange brown slightly sandy sightly gravelly CLAY with black speckling. Gravel is subangular, fine to medium of limestone. (CORNBRASH FORMATION)			CB	
							70.97	0.55	Light grey brown clayey very gravelly SAND. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)				
1.00	(C)	6,10,8 9,7,6 N=30.						(0.80)				CB	
1.20	ES	.					70.17	1.35	Dark orange/grey brown very clayey sandy GRAVEL. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)				
								(1.05)	1.90 m bgl becoming predominantly grey brown.			CB	
2.40	(C)	60 N=60/ 0.03.					69.12	2.40	Window sample hole terminated at 2.40m bgl - refusal on bedrock.				

Hole Diameter			Recovery			Water Strikes					
Depth	Diameter (mm)	Remarks	Core Top (m)	Core Base (m)	% Recovery	Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:37.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP WINDOW SAMPLE LOG 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

WSP Environmental
Mountbatten House, Basing View, Basingstoke
Hampshire, RG21 4HJ
Telephone: 01256 318800
Fax:

WINDOW SAMPLE LOG

Hole No. **WS518**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 06-08-11
06-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Terrier	S Dunstan	E 457460.204 N 222121.716	72.077

SAMPLES & TESTS							STRATA						Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description		Legend	Geology	Dia. mm
0.10	ES	.					71.93	0.15	Very soft dark brown very sandy gravelly CLAY. Frequent rootlets. (TOPSOIL)			TS	
								(0.55)	Stiff red brown sandy slightly gravelly CLAY. Gravel is subangular, fine to coarse of limestone. (CORNBRASH FORMATION)			CB	
							71.38	0.70					
1.00	(C)	12,10,7 7,8,9 N=31.						(0.90)	Light grey brown clayey very sandy GRAVEL. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION) 0.70 m bgl Becoming very gravelly.			CB	
							70.48	1.60					
									Window sample hole terminated at 1.60m bgl - refusal on bedrock.				

Hole Diameter			Recovery			Water Strikes					
Depth	Diameter (mm)	Remarks	Core Top (m)	Core Base (m)	% Recovery	Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:37.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP WINDOW SAMPLE LOG 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

WSP Environmental
Mountbatten House, Basing View, Basingstoke
Hampshire, RG21 4HJ
Telephone: 01256 318800
Fax:

WINDOW SAMPLE LOG

Hole No. **WS519**

Project: Bicester Central Land Parcels

Sheet: 1 of 1

Job No: 00020861/001

Client: Countryside Properties (Bicester) Ltd

Date: 06-08-11
06-08-11

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
Glover UK Ltd	Terrier	S Dunstan	E 457504.306 N 222179.257	71.559

SAMPLES & TESTS							STRATA						Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m AOD)	Depth (Thick-ness)	Description		Legend	Geology	Dia. mm
							71.46	0.10	Very soft dark brown silty sandy slightly gravelly CLAY. Gravel is angular, fine to medium of limestone. Frequent rootlets. (TOPSOIL)			TS	
							71.01	(0.45)	Firm to stiff dark brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded, fine to coarse of limestone. (KELLAWAYS CLAY MEMBER)			KB	
0.70	ES	.					70.66	(0.35)	0.10 - 0.55 m bgl Becoming progressively more gravelly. Soft red brown sandy CLAY. (KELLAWAYS CLAY MEMBER)			KB	
1.00	(C)	4,4,6 8,10,11 N=35.					69.96	(0.70)	Light grey brown slightly clayey sandy GRAVEL. Gravel is angular, fine to coarse of limestone. (CORNBRASH FORMATION)			CB	
1.80	ES	.					69.26	(0.70)	Firm mottled light brown grey gravelly CLAY. Gravel is subangular, fine to coarse of limestone. (CORNBRASH FORMATION)			CB	
2.00	(C)	12,9,4 5,4,7 N=20.											
2.30	(C)	60 N=60/ 0.03.							Window sample hole terminated at 2.30m bgl - refusal on bedrock.				

Hole Diameter			Recovery			Water Strikes					
Depth	Diameter (mm)	Remarks	Core Top (m)	Core Base (m)	% Recovery	Date	Time	Strike	Minutes	Standing	Casing

General Remarks
No Groundwater encountered.

Scale 1:37.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

08 WSP WINDOW SAMPLE LOG 00020861 BICESTER CLP NEW.GPJ WSPETEMPLATE1.03.GDT 30/9/11

APPENDIX C CHEMICAL LABORATORY RESULTS

ALcontrol Laboratories

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: mkt@alcontrol.com
Website: www.alcontrol.com

WSP Environmental
Mountbatten House
Basing View
Baskingstoke
Hampshire
RG21 4HJ

Attention: Helen Gardiner

CERTIFICATE OF ANALYSIS

Date:	26 August 2011
Customer:	H_WSP_BAS
Sample Delivery Group (SDG):	110812-132
Your Reference:	
Location:	Bicetser Central Eastern Land Parcels
Report No:	147189

We received 33 samples on Tuesday August 09, 2011 and 29 of these samples were scheduled for analysis which was completed on Friday August 26, 2011. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

[redacted]

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
4095375	CP501	ES	0.30	
4095376	CP502	ES	0.20	
4095377	CP503	ES	0.10	
4095378	CP504	ES	0.40	
4095380	CP505	ES	0.20	
4095349	WS501	ES	0.20	04/08/2011
4095368	WS502	ES	0.25	04/08/2011
4095381	WS502	ES	1.00	04/08/2011
4095382	WS503	ES	0.10	04/08/2011
4095383	WS504	ES	0.70	
4095385	WS505	ES	0.15	04/08/2011
4105310	WS506		0.15	
4105311	WS506		0.20	
4095386	WS507	ES	0.10	
4095387	WS508	ES	0.10	04/08/2011
4095388	WS508	ES	1.40	04/08/2011
4095350	WS509	ES	0.10	05/08/2011
4105138	WS509		0.20	
4095351	WS510	ES	0.10	05/08/2011
4095352	WS511	ES	0.70	08/08/2011
4095353	WS512	ES	0.50	
4095354	WS513	ES	0.10	05/08/2011
4105140	WS513		0.10	
4095356	WS514	ES	0.10	05/08/2011
4095358	WS514	ES	0.60	05/08/2011
4095360	WS515	ES	0.15	05/08/2011
4095364	WS516	ES	0.00 - 1.00	08/08/2011
4095367	WS516	ES	1.00	08/08/2011
4095370	WS517	ES	0.10	05/08/2011
4095371	WS517	ES	1.20	05/08/2011
4095372	WS518	ES	0.10	
4095373	WS519	ES	0.70	05/08/2011
4095374	WS519	ES	1.80	05/08/2011

Only received samples which have had analysis scheduled will be shown on the following pages.

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

SOLID

Results Legend

X Test

N No Determination Possible

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container
Ammoniacal N as NH4 in 2:1 extract	All	NDPs: 0 Tests: 8	4095375	CP501	ES	0.30	1kg TUB
			4095349	WS501	ES	0.20	250g Amber Jar (AL
			4095376	CP502	ES	0.20	1kg TUB
			4095368	WS502	ES	0.25	250g Amber Jar (AL
			4095350	WS509	ES	0.10	60g VOC (ALE215)
			4095351	WS510	ES	0.10	1kg TUB
			4095352	WS511	ES	0.70	250g Amber Jar (AL
			4095353	WS512	ES	0.50	1kg TUB
			4095354	WS513	ES	0.10	250g Amber Jar (AL
			4095356	WS514	ES	0.10	60g VOC (ALE215)
			4095358	WS514	ES	0.60	1kg TUB
			4095360	WS515	ES	0.15	250g Amber Jar (AL
			4095364	WS516	ES	0.00 - 1.00	60g VOC (ALE215)
			4095367	WS516	ES	1.00	1kg TUB
			4095370	WS517	ES	0.10	250g Amber Jar (AL
			4095371	WS517	ES	1.20	1kg TUB
			4095372	WS518	ES	0.10	250g Amber Jar (AL
			4095373	WS519	ES	0.70	60g VOC (ALE215)
			4095374	WS519	ES	1.80	1kg TUB
Anions by Kone (soil)	All	NDPs: 0 Tests: 7					
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 5					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7					
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 4					
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 4					
GRO by GC-FID (S)	All	NDPs: 0 Tests: 4					
Metals by iCap-OES (Soil)	Arsenic	NDPs: 0 Tests: 29					
	Cadmium	NDPs: 0 Tests: 29					
	Chromium	NDPs: 0 Tests: 29					
	Copper	NDPs: 0 Tests: 29					
	Lead	NDPs: 0 Tests: 29					
	Mercury	NDPs: 0 Tests: 29					
	Nickel	NDPs: 0 Tests: 29					
	Selenium	NDPs: 0 Tests: 29					

ALcontrol Laboratories

Validated

CERTIFICATE OF ANALYSIS

SDG: 110812-132
Job: H_WSP_BAS-9
Client Reference:

Location: Bicetser Central Eastern Land Parcels
Customer: WSP Environmental
Attention: Helen Gardiner

Order Number:
Report Number: 147189
Superseded Report:

SOLID

Results Legend

X Test

N No Determination Possible

Lab Sample No(s)			4095375		4095349		4095376			4095368			4095350		4095351		4095352		4095353		4095354			4095356		4095358			4095360			4095364	4095367	4095370	4095371			4095372	4095373			4095374
Customer Sample Reference			CP501		WS501		CP502			WS502			WS509		WS510		WS511		WS512		WS513			WS514		WS514			WS515			WS516	WS516	WS517	WS517			WS518	WS519			WS519
AGS Reference			ES		ES		ES			ES			ES		ES		ES		ES		ES			ES		ES			ES			ES	ES	ES	ES			ES	ES			ES
Depth (m)			0.30		0.20		0.20			0.25			0.10		0.10		0.70		0.50		0.10			0.10		0.60			0.15			0.00 - 1.00	1.00	0.10	1.20			0.10	0.70			1.80
Container			1kg TUB	250g Amber Jar (AL	1kg TUB	250g Amber Jar (AL	1kg TUB	250g Amber Jar (AL	60g VOC (ALE215)	1kg TUB	250g Amber Jar (AL	60g VOC (ALE215)	1kg TUB	250g Amber Jar (AL	1kg TUB	250g Amber Jar (AL	1kg TUB	250g Amber Jar (AL	1kg TUB	250g Amber Jar (AL	1kg TUB	250g Amber Jar (AL	60g VOC (ALE215)	1kg TUB	250g Amber Jar (AL	1kg TUB	250g Amber Jar (AL	60g VOC (ALE215)	1kg TUB	250g Amber Jar (AL	60g VOC (ALE215)	1kg TUB	1kg TUB	250g Amber Jar (AL	1kg TUB	250g Amber Jar (AL	60g VOC (ALE215)	250g Amber Jar (AL	1kg TUB	250g Amber Jar (AL	60g VOC (ALE215)	1kg TUB
Metals by iCap-OES (Soil)	Zinc	NDPs: 0 Tests: 29		X		X		X			X			X		X		X		X		X			X		X			X		X	X	X		X		X		X		X
OC, OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 8												X				X				X											X	X								
PAH by GCMS	All	NDPs: 0 Tests: 11												X				X												X						X						
pH	All	NDPs: 0 Tests: 29	X		X		X			X			X		X		X		X		X			X		X			X			X	X	X	X			X	X			X
Sample description	All	NDPs: 0 Tests: 29		X		X		X			X			X		X		X		X		X			X		X			X		X	X	X		X		X		X		X
Semi Volatiles in soils by GC-MS	All	NDPs: 0 Tests: 9				X		X														X					X						X							X		
Total Organic Carbon	All	NDPs: 0 Tests: 20		X				X						X		X		X		X					X		X			X			X			X		X		X		X
TPH c6-40 Value of soil	All	NDPs: 0 Tests: 16		X		X								X				X				X								X			X			X		X		X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 4									X																X															X
VOC MS (S)	All	NDPs: 0 Tests: 13							X			X											X					X			X		X				X				X	X

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

SOLID

Results Legend

X **Test**

N **No Determination Possible**

			Lab Sample No(s)	4095381	4095377	4095382	4095378	4095383	4095380	4095385	4095386	4095387	4095388
			Customer Sample Reference	WS502	CP503	WS503	CP504	WS504	CP505	WS505	WS507	WS508	WS508
			AGS Reference	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
			Depth (m)	1.00	0.10	0.10	0.40	0.70	0.20	0.15	0.10	0.10	1.40
			Container	1kg TUB	250g Amber Jar (AL	60g VOC (ALE215)	1kg TUB	250g Amber Jar (AL	1kg TUB	250g Amber Jar (AL	250g Amber Jar (AL	60g VOC (ALE215)	1kg TUB	250g Amber Jar (AL	60g VOC (ALE215)	1kg TUB	250g Amber Jar (AL	1kg TUB	250g Amber Jar (AL	60g VOC (ALE215)
Ammoniacal N as NH4 in 2:1 extract	All	NDPs: 0 Tests: 8				X			X				X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 7		X				X							X
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 5			X						X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7				X					X				
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 4	X												
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 4	X												
GRO by GC-FID (S)	All	NDPs: 0 Tests: 4		X											
Metals by iCap-OES (Soil)	Arsenic	NDPs: 0 Tests: 29	X		X	X	X	X		X		X	X	X	X	X
	Cadmium	NDPs: 0 Tests: 29	X		X	X	X	X		X		X	X	X	X	X
	Chromium	NDPs: 0 Tests: 29	X		X	X	X	X		X		X	X	X	X	X
	Copper	NDPs: 0 Tests: 29	X		X	X	X	X		X		X	X	X	X	X
	Lead	NDPs: 0 Tests: 29	X		X	X	X	X		X		X	X	X	X	X
	Mercury	NDPs: 0 Tests: 29	X		X	X	X	X		X		X	X	X	X	X
	Nickel	NDPs: 0 Tests: 29	X		X	X	X	X		X		X	X	X	X	X
	Selenium	NDPs: 0 Tests: 29	X		X	X	X	X		X		X	X	X	X	X

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

SOLID

Results Legend

X **Test**

N **No Determination Possible**

			Lab Sample No(s)	4095381	4095377	4095382	4095378	4095383	4095380	4095385	4095386	4095387	4095388
			Customer Sample Reference	WS502	CP503	WS503	CP504	WS504	CP505	WS505	WS507	WS508	WS508
			AGS Reference	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
			Depth (m)	1.00	0.10	0.10	0.40	0.70	0.20	0.15	0.10	0.10	1.40
			Container	1kg TUB	250g Amber Jar (AL	60g VOC (ALE215)	1kg TUB	250g Amber Jar (AL	250g Amber Jar (AL	1kg TUB	250g Amber Jar (AL	60g VOC (ALE215)	1kg TUB	250g Amber Jar (AL	60g VOC (ALE215)	1kg TUB	250g Amber Jar (AL	1kg TUB	250g Amber Jar (AL	1kg TUB	250g Amber Jar (AL	60g VOC (ALE215)
Metals by iCap-OES (Soil)	Zinc	NDPs: 0 Tests: 29		X		X	X	X	X	X	X	X	X	X	X
OC, OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 8		X						X					X
PAH by GCMS	All	NDPs: 0 Tests: 11		X		X	X		X		X		X		
pH	All	NDPs: 0 Tests: 29	X		X		X	X	X	X		X		X		X		X		X	
Sample description	All	NDPs: 0 Tests: 29		X		X	X	X	X		X		X	X	X	X	X	X	X	X	X
Semi Volatiles in soils by GC-MS	All	NDPs: 0 Tests: 9					X							X					X		
Total Organic Carbon	All	NDPs: 0 Tests: 20		X				X	X		X		X							X	
TPH c6-40 Value of soil	All	NDPs: 0 Tests: 16				X	X		X		X		X							X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 4		X																	
VOC MS (S)	All	NDPs: 0 Tests: 13			X					X		X									X

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
4095375	CP501	0.30	Light Brown	Clay Loam	<0.063 mm	None	None
4095376	CP502	0.20	Light Brown	Sandy Clay Loam	0.1 - 2 mm	Stones	None
4095377	CP503	0.10	Dark Brown	Silty Clay Loam	0.063 - 0.1 mm	Vegetation	Stones
4095378	CP504	0.40	Light Brown	Clay	<0.063 mm	Stones	None
4095380	CP505	0.20	Light Brown	Silty Clay	0.063 - 0.1 mm	Stones	None
4095349	WS501	0.20	Dark Brown	Silty Clay	0.063 - 0.1 mm	Stones	N/A
4095368	WS502	0.25	Light Brown	Silty Clay	0.063 - 0.1 mm	Stones	N/A
4095381	WS502	1.00	Light Brown	Silty Clay	0.063 - 0.1 mm	Stones	N/A
4095382	WS503	0.10	Light Brown	Silty Clay	0.063 - 0.1 mm	N/A	N/A
4095383	WS504	0.70	Light Brown	Silty Clay	0.063 - 0.1 mm	Stones	N/A
4095385	WS505	0.15	Light Brown	Sandy Silt Loam	0.063 - 0.1 mm	Stones	N/A
4095386	WS507	0.10	Dark Brown	Silty Clay Loam	0.063 - 0.1 mm	Stones	Vegetation
4095387	WS508	0.10	Dark Brown	Silt Loam	0.063 - 0.1 mm	Stones	N/A
4095388	WS508	1.40	Light Brown	Sandy Silt Loam	0.063 - 0.1 mm	Stones	N/A
4095350	WS509	0.10	Light Brown	Silty Clay	0.063 - 0.1 mm	Stones	None
4095351	WS510	0.10	Dark Brown	Silt Loam	0.063 - 0.1 mm	Stones	N/A
4095352	WS511	0.70	Light Brown	Silty Sand	0.063 - 0.1 mm	N/A	Stones
4095353	WS512	0.50	Dark Brown	Silty Clay Loam	0.063 - 0.1 mm	None	None
4095354	WS513	0.10	Dark Brown	Silty Clay	0.063 - 0.1 mm	Stones	N/A
4095356	WS514	0.10	Dark Brown	Silty Clay	0.063 - 0.1 mm	Stones	N/A
4095358	WS514	0.60	Light Brown	Silty Clay	0.063 - 0.1 mm	N/A	Stones
4095360	WS515	0.15	Dark Brown	Silty Clay Loam	0.063 - 0.1 mm	Stones	None
4095364	WS516	0.00 - 1.00	Dark Brown	Clay	<0.063 mm	None	None
4095367	WS516	1.00	Yellow	Sandy Clay	0.1 - 2 mm	Stones	None
4095370	WS517	0.10	Light Brown	Chalk	<0.063 mm	Vegetation	None
4095371	WS517	1.20	Light Brown	Silty Sand	0.063 - 0.1 mm	Stones	N/A
4095372	WS518	0.10	Dark Brown	Silty Clay	0.063 - 0.1 mm	N/A	Stones
4095373	WS519	0.70	Dark Brown	Silty Clay Loam	0.063 - 0.1 mm	None	None
4095374	WS519	1.80	Light Brown	Sandy Clay	0.1 - 2 mm	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	CP501	CP502	CP503	CP504	CP505	WS501
			Depth (m)	0.30	0.20	0.10	0.40	0.20	0.20
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	-	-	-	-	-	04/08/2011
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095375	4095376	4095377	4095378	4095380	4095349
			AGS Reference	ES	ES	ES	ES	ES	ES
Moisture content ratio	%	PM024			10				13
Soil Organic Matter (SOM)	<0.35 %	TM132		2.74 #	1.49 #		2.29 #	1 #	
pH	1 pH Units	TM133		8.12 M	8.61 M	8.29 M	8.11 M	8.51 M	8.29 M
Cyanide, Total	<1 mg/kg	TM153			<1 M				<1 M
TPH >C6-C8	<10 mg/kg	TM154		<10		<10		<10	<10
TPH >C12-C16	<10 mg/kg	TM154		<10		<10		<10	<10
TPH >C16-C21	<10 mg/kg	TM154		<10		<10		<10	<10
TPH >C21-C40	<10 mg/kg	TM154		<10		85.5		<10	151
TPH >C6-C40	<10 mg/kg	TM154		<10 #		89 #		<10 #	160 #
TPH >C8-12	<10 mg/kg	TM154		<10		<10		<10	<10
Arsenic	<0.6 mg/kg	TM181		32.8 M	15.9 M	26.9 M	24.2 M	10.5 M	32.6 M
Cadmium	<0.02 mg/kg	TM181		0.942 M	0.491 M	0.872 M	0.972 M	0.253 M	0.639 M
Chromium	<0.9 mg/kg	TM181		34.2 M	13.3 M	23.1 M	26.7 M	10.4 M	32.4 M
Copper	<1.4 mg/kg	TM181		19.2 M	9.72 M	18.9 M	20.2 M	5.63 M	17.5 M
Lead	<0.7 mg/kg	TM181		346 M	14.8 M	26.9 M	27 M	7.14 M	29 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		29.5 M	13.3 M	26.6 M	30.1 M	8.56 M	29.4 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Zinc	<1.9 mg/kg	TM181		69.2 M	33.8 M	72.9 M	91.4 M	17.2 M	75.4 M
Ammoniacal N as NH4 in 2:1 extract BRE	<0.0003 g/l	TM248		<0.0003				<0.0003 §	<0.0003 §
N-Nitrosodimethylamine	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Pyridine	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
2-Picoline	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
N-Nitrosomethylethylamine	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Methyl Methanesulfonate	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
N-Nitrosodiethylamine	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Ethyl Methanesulfonate	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Phenol	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Aniline	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Pentachloroethane	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Bis(2-chloroethyl)ether	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
2-Chlorophenol	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
1,3-Dichlorobenzene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
1,4-Dichlorobenzene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Benzyl Alcohol	<1.3 mg/kg	TM322			<1.3 §				<1.3 §

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	CP501	CP502	CP503	CP504	CP505	WS501
			Depth (m)	0.30	0.20	0.10	0.40	0.20	0.20
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	-	-	-	-	-	04/08/2011
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095375	4095376	4095377	4095378	4095380	4095349
			AGS Reference	ES	ES	ES	ES	ES	ES
1,2-Dichlorobenzene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
2-Methylphenol	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Bis(2-chloroisopropyl)ether	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
N-Nitrosopyrrolidine	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
3+4-Methylphenol	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Acetophenone	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
N-Nitroso-di-N-propylamine	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
o-Toluidine	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Hexachloroethane	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Nitrobenzene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
N-Nitrosopiperidine	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Isophorone	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
2-Nitrophenol	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
2,4-Dimethylphenol	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Bis(2-chloroethoxy)methane	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
2,4-Dichlorophenol	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
1,2,4-Trichlorobenzene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
3+4-Chlorophenol	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Naphthalene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
p-Chloroaniline	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
2,6-Dichlorophenol	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Hexachloropropene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Hexachlorobutadiene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
N-Nitroso-di-N-butylamine	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
4-Chloro-3-Methylphenol	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Safrole	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
2-Methylnaphthalene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
1,2,4,5-Tetrachlorobenzene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Hexachlorocyclopentadiene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
2,4,5-Trichlorophenol	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
2,4,6-Trichlorophenol	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Isosafrole	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
2-Chloronaphthalene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
2-Nitroaniline	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
1,4-Naphthoquinone	<1.3 mg/kg	TM322			<1.3 §				<1.3 §

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	CP501	CP502	CP503	CP504	CP505	WS501
			Depth (m)	0.30	0.20	0.10	0.40	0.20	0.20
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	-	-	-	-	-	04/08/2011
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095375	4095376	4095377	4095378	4095380	4095349
			AGS Reference	ES	ES	ES	ES	ES	ES
Dimethyl Phthalate	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Acenaphthylene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
2,6-Dinitrotoluene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
1,3-Dinitrobenzene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
3-Nitroaniline	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Acenaphthene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
2,4-Dinitrophenol	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
4-Nitrophenol	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Dibenzofuran	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Pentachlorobenzene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
2,4-Dinitrotoluene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
1-Naphthylamine	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
2-Naphthylamine	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
2,3,4,6-Tetrachlorophenol	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Diethyl Phthalate	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Fluorene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
4-Chlorophenylphenylether	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
5-Nitro-o-toluidine	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
4-Nitroaniline	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
2-Methyl-4,6-dinitrophenol	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Diphenylamine	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Azobenzene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
1,3,5-Trinitrobenzene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Diallate	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
4-Bromophenylphenylether	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Phenacetin	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Hexachlorobenzene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
4-Aminobiphenyl	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Pentachlorophenol	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Pronamide	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Pentachloronitrobenzene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Phenanthrene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Anthracene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Dinoseb	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Carbazole	<1.3 mg/kg	TM322			<1.3 §				<1.3 §

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	CP501	CP502	CP503	CP504	CP505	WS501
			Depth (m)	0.30	0.20	0.10	0.40	0.20	0.20
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	-	-	-	-	-	04/08/2011
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095375	4095376	4095377	4095378	4095380	4095349
			AGS Reference	ES	ES	ES	ES	ES	ES
Di-N-butyl Phthalate	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Isodrin	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Fluoranthene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Benzidine	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Pyrene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
p-Dimethylaminoazobenzene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Chlorobenzilate	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
3,3-Dimethylbenzidine	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Kepone	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Butyl Benzyl Phthalate	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
2-Acetylaminofluorene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Benzo(a)anthracene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
3,3-Dichlorobenzidine	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Chrysene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Bis(2-ethylhexyl)phthalate	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Di-n-octylphthalate	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Benzo(b)fluoranthene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
7,12-Dimethylbenz(a)anthracene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Benzo(k)fluoranthene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Benzo(a)pyrene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
3-Methylcholanthrene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Indeno(1,2,3-c,d)pyrene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Dibenzo(a,h)anthracene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §
Benzo(g,h,i)perylene	<1.3 mg/kg	TM322			<1.3 §				<1.3 §

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS502	WS502	WS503	WS504	WS505	WS507
			Depth (m)	0.25	1.00	0.10	0.70	0.15	0.10
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	04/08/2011	04/08/2011	04/08/2011	-	04/08/2011	-
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095368	4095381	4095382	4095383	4095385	4095386
			AGS Reference	ES	ES	ES	ES	ES	ES
Moisture content ratio	%	PM024			13		10		
Soil Organic Matter (SOM)	<0.35 %	TM132			1.58 #		0.553 #	2.33 #	
pH	1 pH Units	TM133		8.2 M	8.49 M	8.31 M	8.8 M	8.2 M	8.52 M
Cyanide, Total	<1 mg/kg	TM153				<1 M			<1 M
TPH >C6-C8	<10 mg/kg	TM154					<10	<10	
TPH >C12-C16	<10 mg/kg	TM154					<10	<10	
TPH >C16-C21	<10 mg/kg	TM154					<10	21.9	
TPH >C21-C40	<10 mg/kg	TM154					<10	138	
TPH >C6-C40	<10 mg/kg	TM154				80.2 #	<10 #	168 #	
TPH >C8-12	<10 mg/kg	TM154					<10	<10	
Arsenic	<0.6 mg/kg	TM181		28.1 M	15.8 M	34 M	13.9 M	38 M	38.6 M
Cadmium	<0.02 mg/kg	TM181		0.486 M	0.238 M	0.703 M	0.248 M	0.688 M	1.16 M
Chromium	<0.9 mg/kg	TM181		39.6 M	12 M	32.5 M	7.81 M	23 M	26.4 M
Copper	<1.4 mg/kg	TM181		13.2 M	6.55 M	19.6 M	5.56 M	18.8 M	18.9 M
Lead	<0.7 mg/kg	TM181		18.6 M	7.32 M	29.6 M	4.49 M	24.3 M	24.5 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		30.2 M	11.3 M	32.6 M	8.37 M	33.5 M	34.8 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Zinc	<1.9 mg/kg	TM181		62.9 M	18.7 M	79.1 M	12.7 M	94 M	89 M
Water Soluble Sulphate as SO4 2:1 Extract	<0.008 g/l	TM243			0.0156 M		0.0116 M		
Ammoniacal N as NH4 in 2:1 extract BRE	<0.0003 g/l	TM248				<0.0003 §			
N-Nitrosodimethylamine	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Pyridine	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
2-Picoline	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
N-Nitrosomethylethylamine	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Methyl Methanesulfonate	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
N-Nitrosodiethylamine	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Ethyl Methanesulfonate	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Phenol	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Aniline	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Pentachloroethane	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Bis(2-chloroethyl)ether	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
2-Chlorophenol	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
1,3-Dichlorobenzene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
1,4-Dichlorobenzene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS502	WS502	WS503	WS504	WS505	WS507
			Depth (m)	0.25	1.00	0.10	0.70	0.15	0.10
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	04/08/2011	04/08/2011	04/08/2011	-	04/08/2011	-
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095368	4095381	4095382	4095383	4095385	4095386
			AGS Reference	ES	ES	ES	ES	ES	ES
Benzyl Alcohol	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
1,2-Dichlorobenzene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
2-Methylphenol	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Bis(2-chloroisopropyl)ether	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
N-Nitrosopyrrolidine	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
3+4-Methylphenol	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Acetophenone	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
N-Nitroso-di-N-propylamine	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
o-Toluidine	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Hexachloroethane	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Nitrobenzene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
N-Nitrosopiperidine	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Isophorone	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
2-Nitrophenol	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
2,4-Dimethylphenol	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Bis(2-chloroethoxy)methane	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
2,4-Dichlorophenol	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
1,2,4-Trichlorobenzene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
3+4-Chlorophenol	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Naphthalene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
p-Chloroaniline	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
2,6-Dichlorophenol	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Hexachloropropene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Hexachlorobutadiene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
N-Nitroso-di-N-butylamine	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
4-Chloro-3-Methylphenol	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Safrole	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
2-Methylnaphthalene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
1,2,4,5-Tetrachlorobenzene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Hexachlorocyclopentadiene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
2,4,5-Trichlorophenol	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
2,4,6-Trichlorophenol	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Isosafrole	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
2-Chloronaphthalene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
2-Nitroaniline	<1.3 mg/kg	TM322				<1.3 §			<1.3 §

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS502	WS502	WS503	WS504	WS505	WS507
			Depth (m)	0.25	1.00	0.10	0.70	0.15	0.10
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	04/08/2011	04/08/2011	04/08/2011	-	04/08/2011	-
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095368	4095381	4095382	4095383	4095385	4095386
			AGS Reference	ES	ES	ES	ES	ES	ES
1,4-Naphthoquinone	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Dimethyl Phthalate	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Acenaphthylene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
2,6-Dinitrotoluene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
1,3-Dinitrobenzene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
3-Nitroaniline	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Acenaphthene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
2,4-Dinitrophenol	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
4-Nitrophenol	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Dibenzofuran	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Pentachlorobenzene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
2,4-Dinitrotoluene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
1-Naphthylamine	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
2-Naphthylamine	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
2,3,4,6-Tetrachlorophenol	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Diethyl Phthalate	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Fluorene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
4-Chlorophenylphenylether	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
5-Nitro-o-toluidine	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
4-Nitroaniline	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
2-Methyl-4,6-dinitrophenol	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Diphenylamine	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Azobenzene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
1,3,5-Trinitrobenzene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Diallate	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
4-Bromophenylphenylether	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Phenacetin	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Hexachlorobenzene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
4-Aminobiphenyl	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Pentachlorophenol	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Pronamide	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Pentachloronitrobenzene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Phenanthrene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Anthracene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Dinoseb	<1.3 mg/kg	TM322				<1.3 §			<1.3 §

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS502	WS502	WS503	WS504	WS505	WS507
			Depth (m)	0.25	1.00	0.10	0.70	0.15	0.10
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	04/08/2011	04/08/2011	04/08/2011	-	04/08/2011	-
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095368	4095381	4095382	4095383	4095385	4095386
			AGS Reference	ES	ES	ES	ES	ES	ES
Carbazole	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Di-N-butyl Phthalate	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Isodrin	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Fluoranthene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Benzidine	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Pyrene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
p-Dimethylaminoazobenzene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Chlorobenzilate	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
3,3-Dimethylbenzidine	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Kepone	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Butyl Benzyl Phthalate	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
2-Acetylaminofluorene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Benzo(a)anthracene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
3,3-Dichlorobenzidine	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Chrysene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Bis(2-ethylhexyl)phthalate	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Di-n-octylphthalate	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Benzo(b)fluoranthene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
7,12-Dimethylbenz(a)anthracene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Benzo(k)fluoranthene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Benzo(a)pyrene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
3-Methylcholanthrene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Indeno(1,2,3-c,d)pyrene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Dibenzo(a,h)anthracene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §
Benzo(g,h,i)perylene	<1.3 mg/kg	TM322				<1.3 §			<1.3 §

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS508	WS508	WS509	WS510	WS511	WS512
			Depth (m)	0.10	1.40	0.10	0.10	0.70	0.50
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	04/08/2011	04/08/2011	05/08/2011	05/08/2011	08/08/2011	-
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095387	4095388	4095350	4095351	4095352	4095353
			AGS Reference	ES	ES	ES	ES	ES	ES
Moisture content ratio	%	PM024		13				5.8	
Soil Organic Matter (SOM)	<0.35 %	TM132			0.476 #	2.62 #	2.6 #	0.51 #	1.12 #
pH	1 pH Units	TM133		8.26 M	8.61 M	8.16 M	8.14 M	8.81 M	8.42 M
Cyanide, Total	<1 mg/kg	TM153					<1 M		
TPH >C6-C8	<10 mg/kg	TM154			<10	<10		<10	
TPH >C12-C16	<10 mg/kg	TM154			<10	<10		<10	
TPH >C16-C21	<10 mg/kg	TM154			<10	22.2		<10	
TPH >C21-C40	<10 mg/kg	TM154			<10	237		<10	
TPH >C6-C40	<10 mg/kg	TM154			<10 #	259 #		<10 #	
TPH >C8-12	<10 mg/kg	TM154			<10	<10		<10	
Arsenic	<0.6 mg/kg	TM181		32.8 M	7.49 M	22.8 M	27.7 M	24.6 M	47.8 M
Cadmium	<0.02 mg/kg	TM181		0.808 M	0.115 M	0.805 M	0.649 M	0.487 M	1.08 M
Chromium	<0.9 mg/kg	TM181		29.7 M	6.62 M	23.5 M	23 M	7.51 M	43.5 M
Copper	<1.4 mg/kg	TM181		24.6 M	3.85 M	18.8 M	18.2 M	5.33 M	23.1 M
Lead	<0.7 mg/kg	TM181		31.1 M	3.95 M	33.8 M	27.5 M	4.83 M	19.9 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		35 M	5.47 M	24.3 M	26.6 M	12 M	50.8 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Zinc	<1.9 mg/kg	TM181		108 M	8.58 M	67.9 M	73.4 M	14.8 M	107 M
Water Soluble Sulphate as SO4 2:1 Extract	<0.008 g/l	TM243			0.0156 M			<0.008 M	
Ammoniacal N as NH4 in 2:1 extract BRE	<0.0003 g/l	TM248		<0.0003 §			<0.0003 §		
N-Nitrosodimethylamine	<1.3 mg/kg	TM322			<1.3 §				
Pyridine	<1.3 mg/kg	TM322			<1.3 §				
2-Picoline	<1.3 mg/kg	TM322			<1.3 §				
N-Nitrosomethylethylamine	<1.3 mg/kg	TM322			<1.3 §				
Methyl Methanesulfonate	<1.3 mg/kg	TM322			<1.3 §				
N-Nitrosodiethylamine	<1.3 mg/kg	TM322			<1.3 §				
Ethyl Methanesulfonate	<1.3 mg/kg	TM322			<1.3 §				
Phenol	<1.3 mg/kg	TM322			<1.3 §				
Aniline	<1.3 mg/kg	TM322			<1.3 §				
Pentachloroethane	<1.3 mg/kg	TM322			<1.3 §				
Bis(2-chloroethyl)ether	<1.3 mg/kg	TM322			<1.3 §				
2-Chlorophenol	<1.3 mg/kg	TM322			<1.3 §				
1,3-Dichlorobenzene	<1.3 mg/kg	TM322			<1.3 §				
1,4-Dichlorobenzene	<1.3 mg/kg	TM322			<1.3 §				

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS508	WS508	WS509	WS510	WS511	WS512
			Depth (m)	0.10	1.40	0.10	0.10	0.70	0.50
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	04/08/2011	04/08/2011	05/08/2011	05/08/2011	08/08/2011	-
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095387	4095388	4095350	4095351	4095352	4095353
			AGS Reference	ES	ES	ES	ES	ES	ES
Benzyl Alcohol	<1.3 mg/kg	TM322			<1.3 §				
1,2-Dichlorobenzene	<1.3 mg/kg	TM322			<1.3 §				
2-Methylphenol	<1.3 mg/kg	TM322			<1.3 §				
Bis(2-chloroisopropyl)ether	<1.3 mg/kg	TM322			<1.3 §				
N-Nitrosopyrrolidine	<1.3 mg/kg	TM322			<1.3 §				
3+4-Methylphenol	<1.3 mg/kg	TM322			<1.3 §				
Acetophenone	<1.3 mg/kg	TM322			<1.3 §				
N-Nitroso-di-N-propylamine	<1.3 mg/kg	TM322			<1.3 §				
o-Toluidine	<1.3 mg/kg	TM322			<1.3 §				
Hexachloroethane	<1.3 mg/kg	TM322			<1.3 §				
Nitrobenzene	<1.3 mg/kg	TM322			<1.3 §				
N-Nitrosopiperidine	<1.3 mg/kg	TM322			<1.3 §				
Isophorone	<1.3 mg/kg	TM322			<1.3 §				
2-Nitrophenol	<1.3 mg/kg	TM322			<1.3 §				
2,4-Dimethylphenol	<1.3 mg/kg	TM322			<1.3 §				
Bis(2-chloroethoxy)methane	<1.3 mg/kg	TM322			<1.3 §				
2,4-Dichlorophenol	<1.3 mg/kg	TM322			<1.3 §				
1,2,4-Trichlorobenzene	<1.3 mg/kg	TM322			<1.3 §				
3+4-Chlorophenol	<1.3 mg/kg	TM322			<1.3 §				
Naphthalene	<1.3 mg/kg	TM322			<1.3 §				
p-Chloroaniline	<1.3 mg/kg	TM322			<1.3 §				
2,6-Dichlorophenol	<1.3 mg/kg	TM322			<1.3 §				
Hexachloropropene	<1.3 mg/kg	TM322			<1.3 §				
Hexachlorobutadiene	<1.3 mg/kg	TM322			<1.3 §				
N-Nitroso-di-N-butylamine	<1.3 mg/kg	TM322			<1.3 §				
4-Chloro-3-Methylphenol	<1.3 mg/kg	TM322			<1.3 §				
Safrole	<1.3 mg/kg	TM322			<1.3 §				
2-Methylnaphthalene	<1.3 mg/kg	TM322			<1.3 §				
1,2,4,5-Tetrachlorobenzene	<1.3 mg/kg	TM322			<1.3 §				
Hexachlorocyclopentadiene	<1.3 mg/kg	TM322			<1.3 §				
2,4,5-Trichlorophenol	<1.3 mg/kg	TM322			<1.3 §				
2,4,6-Trichlorophenol	<1.3 mg/kg	TM322			<1.3 §				
Isosafrole	<1.3 mg/kg	TM322			<1.3 §				
2-Chloronaphthalene	<1.3 mg/kg	TM322			<1.3 §				
2-Nitroaniline	<1.3 mg/kg	TM322			<1.3 §				

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS508	WS508	WS509	WS510	WS511	WS512
			Depth (m)	0.10	1.40	0.10	0.10	0.70	0.50
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	04/08/2011	04/08/2011	05/08/2011	05/08/2011	08/08/2011	-
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095387	4095388	4095350	4095351	4095352	4095353
			AGS Reference	ES	ES	ES	ES	ES	ES
1,4-Naphthoquinone	<1.3 mg/kg	TM322		<1.3 §					
Dimethyl Phthalate	<1.3 mg/kg	TM322		<1.3 §					
Acenaphthylene	<1.3 mg/kg	TM322		<1.3 §					
2,6-Dinitrotoluene	<1.3 mg/kg	TM322		<1.3 §					
1,3-Dinitrobenzene	<1.3 mg/kg	TM322		<1.3 §					
3-Nitroaniline	<1.3 mg/kg	TM322		<1.3 §					
Acenaphthene	<1.3 mg/kg	TM322		<1.3 §					
2,4-Dinitrophenol	<1.3 mg/kg	TM322		<1.3 §					
4-Nitrophenol	<1.3 mg/kg	TM322		<1.3 §					
Dibenzofuran	<1.3 mg/kg	TM322		<1.3 §					
Pentachlorobenzene	<1.3 mg/kg	TM322		<1.3 §					
2,4-Dinitrotoluene	<1.3 mg/kg	TM322		<1.3 §					
1-Naphthylamine	<1.3 mg/kg	TM322		<1.3 §					
2-Naphthylamine	<1.3 mg/kg	TM322		<1.3 §					
2,3,4,6-Tetrachlorophenol	<1.3 mg/kg	TM322		<1.3 §					
Diethyl Phthalate	<1.3 mg/kg	TM322		<1.3 §					
Fluorene	<1.3 mg/kg	TM322		<1.3 §					
4-Chlorophenylphenylether	<1.3 mg/kg	TM322		<1.3 §					
5-Nitro-o-toluidine	<1.3 mg/kg	TM322		<1.3 §					
4-Nitroaniline	<1.3 mg/kg	TM322		<1.3 §					
2-Methyl-4,6-dinitrophenol	<1.3 mg/kg	TM322		<1.3 §					
Diphenylamine	<1.3 mg/kg	TM322		<1.3 §					
Azobenzene	<1.3 mg/kg	TM322		<1.3 §					
1,3,5-Trinitrobenzene	<1.3 mg/kg	TM322		<1.3 §					
Diallate	<1.3 mg/kg	TM322		<1.3 §					
4-Bromophenylphenylether	<1.3 mg/kg	TM322		<1.3 §					
Phenacetin	<1.3 mg/kg	TM322		<1.3 §					
Hexachlorobenzene	<1.3 mg/kg	TM322		<1.3 §					
4-Aminobiphenyl	<1.3 mg/kg	TM322		<1.3 §					
Pentachlorophenol	<1.3 mg/kg	TM322		<1.3 §					
Pronamide	<1.3 mg/kg	TM322		<1.3 §					
Pentachloronitrobenzene	<1.3 mg/kg	TM322		<1.3 §					
Phenanthrene	<1.3 mg/kg	TM322		<1.3 §					
Anthracene	<1.3 mg/kg	TM322		<1.3 §					
Dinoseb	<1.3 mg/kg	TM322		<1.3 §					

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS508	WS508	WS509	WS510	WS511	WS512
			Depth (m)	0.10	1.40	0.10	0.10	0.70	0.50
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	04/08/2011	04/08/2011	05/08/2011	05/08/2011	08/08/2011	-
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095387	4095388	4095350	4095351	4095352	4095353
			AGS Reference	ES	ES	ES	ES	ES	ES
Carbazole	<1.3 mg/kg	TM322		<1.3 §					
Di-N-butyl Phthalate	<1.3 mg/kg	TM322		<1.3 §					
Isodrin	<1.3 mg/kg	TM322		<1.3 §					
Fluoranthene	<1.3 mg/kg	TM322		<1.3 §					
Benzidine	<1.3 mg/kg	TM322		<1.3 §					
Pyrene	<1.3 mg/kg	TM322		<1.3 §					
p-Dimethylaminoazobenzene	<1.3 mg/kg	TM322		<1.3 §					
Chlorobenzilate	<1.3 mg/kg	TM322		<1.3 §					
3,3-Dimethylbenzidine	<1.3 mg/kg	TM322		<1.3 §					
Kepone	<1.3 mg/kg	TM322		<1.3 §					
Butyl Benzyl Phthalate	<1.3 mg/kg	TM322		<1.3 §					
2-Acetylaminofluorene	<1.3 mg/kg	TM322		<1.3 §					
Benzo(a)anthracene	<1.3 mg/kg	TM322		<1.3 §					
3,3-Dichlorobenzidine	<1.3 mg/kg	TM322		<1.3 §					
Chrysene	<1.3 mg/kg	TM322		<1.3 §					
Bis(2-ethylhexyl)phthalate	<1.3 mg/kg	TM322		<1.3 §					
Di-n-octylphthalate	<1.3 mg/kg	TM322		<1.3 §					
Benzo(b)fluoranthene	<1.3 mg/kg	TM322		<1.3 §					
7,12-Dimethylbenz(a)anthracene	<1.3 mg/kg	TM322		<1.3 §					
Benzo(k)fluoranthene	<1.3 mg/kg	TM322		<1.3 §					
Benzo(a)pyrene	<1.3 mg/kg	TM322		<1.3 §					
3-Methylcholanthrene	<1.3 mg/kg	TM322		<1.3 §					
Indeno(1,2,3-c,d)pyrene	<1.3 mg/kg	TM322		<1.3 §					
Dibenzo(a,h)anthracene	<1.3 mg/kg	TM322		<1.3 §					
Benzo(g,h,i)perylene	<1.3 mg/kg	TM322		<1.3 §					

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS513	WS514	WS514	WS515	WS516	WS516
			Depth (m)	0.10	0.10	0.60	0.15	0.00 - 1.00	1.00
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	05/08/2011	05/08/2011	05/08/2011	05/08/2011	08/08/2011	08/08/2011
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095354	4095356	4095358	4095360	4095364	4095367
			AGS Reference	ES	ES	ES	ES	ES	ES
Moisture content ratio	%	PM024		11					10
Soil Organic Matter (SOM)	<0.35 %	TM132			2.4 #	0.846 #	2.91 #		0.9 #
pH	1 pH Units	TM133		8.1 M	8.52 M	8.71 M	8.14 M	8.06 M	8.64 M
Cyanide, Total	<1 mg/kg	TM153			<1 M				
TPH >C6-C8	<10 mg/kg	TM154		<10			<10		<10
TPH >C12-C16	<10 mg/kg	TM154		<10			<10		<10
TPH >C16-C21	<10 mg/kg	TM154		<10			<10		<10
TPH >C21-C40	<10 mg/kg	TM154		94.9			85		<10
TPH >C6-C40	<10 mg/kg	TM154		94.9 #			89.9 #		<10 #
TPH >C8-12	<10 mg/kg	TM154		<10			<10		<10
Arsenic	<0.6 mg/kg	TM181		22.9 M	27.9 M	14.4 M	39.9 M	10.3 M	7.87 M
Cadmium	<0.02 mg/kg	TM181		0.585 M	0.683 M	0.256 M	1.11 M	0.268 M	0.243 M
Chromium	<0.9 mg/kg	TM181		18.1 M	27.9 M	16 M	34.3 M	38.8 M	19.7 M
Copper	<1.4 mg/kg	TM181		23.9 M	16.7 M	8.28 M	24.1 M	15.4 M	9.89 M
Lead	<0.7 mg/kg	TM181		24.5 M	29.1 M	56.5 M	38.3 M		
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		21.8 M	24.4 M	13.5 M	34.7 M	20.7 M	23.1 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Zinc	<1.9 mg/kg	TM181		63.8 M	67.5 M	18.2 M	93 M	55.8 M	38.3 M
Water Soluble Sulphate as SO4 2:1 Extract	<0.008 g/l	TM243							0.0136 M
Ammoniacal N as NH4 in 2:1 extract BRE	<0.0003 g/l	TM248			<0.0003				
N-Nitrosodimethylamine	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Pyridine	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
2-Picoline	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
N-Nitrosomethylethylamine	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Methyl Methanesulfonate	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
N-Nitrosodiethylamine	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Ethyl Methanesulfonate	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Phenol	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Aniline	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Pentachloroethane	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Bis(2-chloroethyl)ether	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
2-Chlorophenol	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
1,3-Dichlorobenzene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
1,4-Dichlorobenzene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS513	WS514	WS514	WS515	WS516	WS516
			Depth (m)	0.10	0.10	0.60	0.15	0.00 - 1.00	1.00
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	05/08/2011	05/08/2011	05/08/2011	05/08/2011	08/08/2011	08/08/2011
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095354	4095356	4095358	4095360	4095364	4095367
			AGS Reference	ES	ES	ES	ES	ES	ES
Benzyl Alcohol	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
1,2-Dichlorobenzene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
2-Methylphenol	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Bis(2-chloroisopropyl)ether	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
N-Nitrosopyrrolidine	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
3+4-Methylphenol	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Acetophenone	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
N-Nitroso-di-N-propylamine	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
o-Toluidine	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Hexachloroethane	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Nitrobenzene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
N-Nitrosopiperidine	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Isophorone	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
2-Nitrophenol	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
2,4-Dimethylphenol	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Bis(2-chloroethoxy)methane	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
2,4-Dichlorophenol	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
1,2,4-Trichlorobenzene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
3+4-Chlorophenol	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Naphthalene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
p-Chloroaniline	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
2,6-Dichlorophenol	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Hexachloropropene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Hexachlorobutadiene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
N-Nitroso-di-N-butylamine	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
4-Chloro-3-Methylphenol	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Safrole	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
2-Methylnaphthalene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
1,2,4,5-Tetrachlorobenzene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Hexachlorocyclopentadiene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
2,4,5-Trichlorophenol	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
2,4,6-Trichlorophenol	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Isosafrole	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
2-Chloronaphthalene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
2-Nitroaniline	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS513	WS514	WS514	WS515	WS516	WS516
			Depth (m)	0.10	0.10	0.60	0.15	0.00 - 1.00	1.00
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	05/08/2011	05/08/2011	05/08/2011	05/08/2011	08/08/2011	08/08/2011
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095354	4095356	4095358	4095360	4095364	4095367
			AGS Reference	ES	ES	ES	ES	ES	ES
1,4-Naphthoquinone	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Dimethyl Phthalate	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Acenaphthylene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
2,6-Dinitrotoluene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
1,3-Dinitrobenzene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
3-Nitroaniline	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Acenaphthene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
2,4-Dinitrophenol	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
4-Nitrophenol	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Dibenzofuran	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Pentachlorobenzene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
2,4-Dinitrotoluene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
1-Naphthylamine	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
2-Naphthylamine	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
2,3,4,6-Tetrachlorophenol	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Diethyl Phthalate	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Fluorene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
4-Chlorophenylphenylether	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
5-Nitro-o-toluidine	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
4-Nitroaniline	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
2-Methyl-4,6-dinitrophenol	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Diphenylamine	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Azobenzene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
1,3,5-Trinitrobenzene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Diallate	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
4-Bromophenylphenylether	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Phenacetin	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Hexachlorobenzene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
4-Aminobiphenyl	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Pentachlorophenol	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Pronamide	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Pentachloronitrobenzene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Phenanthrene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Anthracene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Dinoseb	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS513	WS514	WS514	WS515	WS516	WS516
			Depth (m)	0.10	0.10	0.60	0.15	0.00 - 1.00	1.00
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	05/08/2011	05/08/2011	05/08/2011	05/08/2011	08/08/2011	08/08/2011
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095354	4095356	4095358	4095360	4095364	4095367
			AGS Reference	ES	ES	ES	ES	ES	ES
Carbazole	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Di-N-butyl Phthalate	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Isodrin	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Fluoranthene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Benzidine	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Pyrene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
p-Dimethylaminoazobenzene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Chlorobenzilate	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
3,3-Dimethylbenzidine	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Kepone	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Butyl Benzyl Phthalate	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
2-Acetylaminofluorene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Benzo(a)anthracene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
3,3-Dichlorobenzidine	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Chrysene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Bis(2-ethylhexyl)phthalate	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Di-n-octylphthalate	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Benzo(b)fluoranthene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
7,12-Dimethylbenz(a)anthracene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Benzo(k)fluoranthene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Benzo(a)pyrene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
3-Methylcholanthrene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Indeno(1,2,3-c,d)pyrene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Dibenzo(a,h)anthracene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §
Benzo(g,h,i)perylene	<1.3 mg/kg	TM322		<1.3 §		<1.3 §			<1.3 §

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS517	WS517	WS518	WS519	WS519
			Depth (m)	0.10	1.20	0.10	0.70	1.80
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	05/08/2011	05/08/2011	-	05/08/2011	05/08/2011
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095370	4095371	4095372	4095373	4095374
			AGS Reference	ES	ES	ES	ES	ES
Moisture content ratio	%	PM024			4.6	12		
Soil Organic Matter (SOM)	<0.35 %	TM132			<0.35 #	2.93 #	0.896 #	0.524 #
pH	1 pH Units	TM133		8.17 #	8.69 M	7.94 M	8.4 M	8.57 M
Cyanide, Total	<1 mg/kg	TM153		<1 #				
TPH >C6-C8	<10 mg/kg	TM154			<10	<10	<10	
TPH >C12-C16	<10 mg/kg	TM154			<10	<10	<10	
TPH >C16-C21	<10 mg/kg	TM154			<10	13.8	<10	
TPH >C21-C40	<10 mg/kg	TM154			<10	152	<10	
TPH >C6-C40	<10 mg/kg	TM154			<10 #	165 #	<10 #	
TPH >C8-12	<10 mg/kg	TM154			<10	<10	<10	
Arsenic	<0.6 mg/kg	TM181		24.2 #	13.3 M	33.8 M	20.8 M	18 M
Cadmium	<0.02 mg/kg	TM181		0.832 #	0.342 M	0.842 M	0.731 M	0.195 M
Chromium	<0.9 mg/kg	TM181		28.2 #	6.33 M	45.2 M	23.8 M	10.3 M
Copper	<1.4 mg/kg	TM181		16.6 #	4.01 M	42.6 M	11.4 M	5.97 M
Lead	<0.7 mg/kg	TM181		36.1 #	5.06 M	39.6 M	15.1 M	
Mercury	<0.14 mg/kg	TM181		<0.14 #	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		24.2 #	12.9 M	32.1 M	21.5 M	11.4 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	<1 #	<1 #
Zinc	<1.9 mg/kg	TM181		70.8 #	16.8 M	96.5 M	54.1 M	14.1 M
Water Soluble Sulphate as SO4 2:1 Extract	<0.008 g/l	TM243			0.0092 M			0.0682 M
Ammoniacal N as NH4 in 2:1 extract BRE	<0.0003 g/l	TM248		<0.0003 §				
N-Nitrosodimethylamine	<1.3 mg/kg	TM322					<1.3 §	
Pyridine	<1.3 mg/kg	TM322					<1.3 §	
2-Picoline	<1.3 mg/kg	TM322					<1.3 §	
N-Nitrosomethylethylamine	<1.3 mg/kg	TM322					<1.3 §	
Methyl Methanesulfonate	<1.3 mg/kg	TM322					<1.3 §	
N-Nitrosodiethylamine	<1.3 mg/kg	TM322					<1.3 §	
Ethyl Methanesulfonate	<1.3 mg/kg	TM322					<1.3 §	
Phenol	<1.3 mg/kg	TM322					<1.3 §	
Aniline	<1.3 mg/kg	TM322					<1.3 §	
Pentachloroethane	<1.3 mg/kg	TM322					<1.3 §	
Bis(2-chloroethyl)ether	<1.3 mg/kg	TM322					<1.3 §	
2-Chlorophenol	<1.3 mg/kg	TM322					<1.3 §	
1,3-Dichlorobenzene	<1.3 mg/kg	TM322					<1.3 §	
1,4-Dichlorobenzene	<1.3 mg/kg	TM322					<1.3 §	

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS517	WS517	WS518	WS519	WS519
			Depth (m)	0.10	1.20	0.10	0.70	1.80
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	05/08/2011	05/08/2011	-	05/08/2011	05/08/2011
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095370	4095371	4095372	4095373	4095374
			AGS Reference	ES	ES	ES	ES	ES
Benzyl Alcohol	<1.3 mg/kg	TM322					<1.3 §	
1,2-Dichlorobenzene	<1.3 mg/kg	TM322					<1.3 §	
2-Methylphenol	<1.3 mg/kg	TM322					<1.3 §	
Bis(2-chloroisopropyl)ether	<1.3 mg/kg	TM322					<1.3 §	
N-Nitrosopyrrolidine	<1.3 mg/kg	TM322					<1.3 §	
3+4-Methylphenol	<1.3 mg/kg	TM322					<1.3 §	
Acetophenone	<1.3 mg/kg	TM322					<1.3 §	
N-Nitroso-di-N-propylamine	<1.3 mg/kg	TM322					<1.3 §	
o-Toluidine	<1.3 mg/kg	TM322					<1.3 §	
Hexachloroethane	<1.3 mg/kg	TM322					<1.3 §	
Nitrobenzene	<1.3 mg/kg	TM322					<1.3 §	
N-Nitrosopiperidine	<1.3 mg/kg	TM322					<1.3 §	
Isophorone	<1.3 mg/kg	TM322					<1.3 §	
2-Nitrophenol	<1.3 mg/kg	TM322					<1.3 §	
2,4-Dimethylphenol	<1.3 mg/kg	TM322					<1.3 §	
Bis(2-chloroethoxy)methane	<1.3 mg/kg	TM322					<1.3 §	
2,4-Dichlorophenol	<1.3 mg/kg	TM322					<1.3 §	
1,2,4-Trichlorobenzene	<1.3 mg/kg	TM322					<1.3 §	
3+4-Chlorophenol	<1.3 mg/kg	TM322					<1.3 §	
Naphthalene	<1.3 mg/kg	TM322					<1.3 §	
p-Chloroaniline	<1.3 mg/kg	TM322					<1.3 §	
2,6-Dichlorophenol	<1.3 mg/kg	TM322					<1.3 §	
Hexachloropropene	<1.3 mg/kg	TM322					<1.3 §	
Hexachlorobutadiene	<1.3 mg/kg	TM322					<1.3 §	
N-Nitroso-di-N-butylamine	<1.3 mg/kg	TM322					<1.3 §	
4-Chloro-3-Methylphenol	<1.3 mg/kg	TM322					<1.3 §	
Safrole	<1.3 mg/kg	TM322					<1.3 §	
2-Methylnaphthalene	<1.3 mg/kg	TM322					<1.3 §	
1,2,4,5-Tetrachlorobenzene	<1.3 mg/kg	TM322					<1.3 §	
Hexachlorocyclopentadiene	<1.3 mg/kg	TM322					<1.3 §	
2,4,5-Trichlorophenol	<1.3 mg/kg	TM322					<1.3 §	
2,4,6-Trichlorophenol	<1.3 mg/kg	TM322					<1.3 §	
Isosafrole	<1.3 mg/kg	TM322					<1.3 §	
2-Chloronaphthalene	<1.3 mg/kg	TM322					<1.3 §	
2-Nitroaniline	<1.3 mg/kg	TM322					<1.3 §	

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS517	WS517	WS518	WS519	WS519
			Depth (m)	0.10	1.20	0.10	0.70	1.80
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	05/08/2011	05/08/2011	-	05/08/2011	05/08/2011
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095370	4095371	4095372	4095373	4095374
			AGS Reference	ES	ES	ES	ES	ES
1,4-Naphthoquinone	<1.3 mg/kg	TM322					<1.3 §	
Dimethyl Phthalate	<1.3 mg/kg	TM322					<1.3 §	
Acenaphthylene	<1.3 mg/kg	TM322					<1.3 §	
2,6-Dinitrotoluene	<1.3 mg/kg	TM322					<1.3 §	
1,3-Dinitrobenzene	<1.3 mg/kg	TM322					<1.3 §	
3-Nitroaniline	<1.3 mg/kg	TM322					<1.3 §	
Acenaphthene	<1.3 mg/kg	TM322					<1.3 §	
2,4-Dinitrophenol	<1.3 mg/kg	TM322					<1.3 §	
4-Nitrophenol	<1.3 mg/kg	TM322					<1.3 §	
Dibenzofuran	<1.3 mg/kg	TM322					<1.3 §	
Pentachlorobenzene	<1.3 mg/kg	TM322					<1.3 §	
2,4-Dinitrotoluene	<1.3 mg/kg	TM322					<1.3 §	
1-Naphthylamine	<1.3 mg/kg	TM322					<1.3 §	
2-Naphthylamine	<1.3 mg/kg	TM322					<1.3 §	
2,3,4,6-Tetrachlorophenol	<1.3 mg/kg	TM322					<1.3 §	
Diethyl Phthalate	<1.3 mg/kg	TM322					<1.3 §	
Fluorene	<1.3 mg/kg	TM322					<1.3 §	
4-Chlorophenylphenylether	<1.3 mg/kg	TM322					<1.3 §	
5-Nitro-o-toluidine	<1.3 mg/kg	TM322					<1.3 §	
4-Nitroaniline	<1.3 mg/kg	TM322					<1.3 §	
2-Methyl-4,6-dinitrophenol	<1.3 mg/kg	TM322					<1.3 §	
Diphenylamine	<1.3 mg/kg	TM322					<1.3 §	
Azobenzene	<1.3 mg/kg	TM322					<1.3 §	
1,3,5-Trinitrobenzene	<1.3 mg/kg	TM322					<1.3 §	
Diallate	<1.3 mg/kg	TM322					<1.3 §	
4-Bromophenylphenylether	<1.3 mg/kg	TM322					<1.3 §	
Phenacetin	<1.3 mg/kg	TM322					<1.3 §	
Hexachlorobenzene	<1.3 mg/kg	TM322					<1.3 §	
4-Aminobiphenyl	<1.3 mg/kg	TM322					<1.3 §	
Pentachlorophenol	<1.3 mg/kg	TM322					<1.3 §	
Pronamide	<1.3 mg/kg	TM322					<1.3 §	
Pentachloronitrobenzene	<1.3 mg/kg	TM322					<1.3 §	
Phenanthrene	<1.3 mg/kg	TM322					<1.3 §	
Anthracene	<1.3 mg/kg	TM322					<1.3 §	
Dinoseb	<1.3 mg/kg	TM322					<1.3 §	

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS517	WS517	WS518	WS519	WS519
			Depth (m)	0.10	1.20	0.10	0.70	1.80
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	05/08/2011	05/08/2011	-	05/08/2011	05/08/2011
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095370	4095371	4095372	4095373	4095374
			AGS Reference	ES	ES	ES	ES	ES
Carbazole	<1.3 mg/kg	TM322					<1.3 §	
Di-N-butyl Phthalate	<1.3 mg/kg	TM322					<1.3 §	
Isodrin	<1.3 mg/kg	TM322					<1.3 §	
Fluoranthene	<1.3 mg/kg	TM322					<1.3 §	
Benzidine	<1.3 mg/kg	TM322					<1.3 §	
Pyrene	<1.3 mg/kg	TM322					<1.3 §	
p-Dimethylaminoazobenzene	<1.3 mg/kg	TM322					<1.3 §	
Chlorobenzilate	<1.3 mg/kg	TM322					<1.3 §	
3,3-Dimethylbenzidine	<1.3 mg/kg	TM322					<1.3 §	
Kepone	<1.3 mg/kg	TM322					<1.3 §	
Butyl Benzyl Phthalate	<1.3 mg/kg	TM322					<1.3 §	
2-Acetylaminofluorene	<1.3 mg/kg	TM322					<1.3 §	
Benzo(a)anthracene	<1.3 mg/kg	TM322					<1.3 §	
3,3-Dichlorobenzidine	<1.3 mg/kg	TM322					<1.3 §	
Chrysene	<1.3 mg/kg	TM322					<1.3 §	
Bis(2-ethylhexyl)phthalate	<1.3 mg/kg	TM322					<1.3 §	
Di-n-octylphthalate	<1.3 mg/kg	TM322					<1.3 §	
Benzo(b)fluoranthene	<1.3 mg/kg	TM322					<1.3 §	
7,12-Dimethylbenz(a)anthracene	<1.3 mg/kg	TM322					<1.3 §	
Benzo(k)fluoranthene	<1.3 mg/kg	TM322					<1.3 §	
Benzo(a)pyrene	<1.3 mg/kg	TM322					<1.3 §	
3-Methylcholanthrene	<1.3 mg/kg	TM322					<1.3 §	
Indeno(1,2,3-c,d)pyrene	<1.3 mg/kg	TM322					<1.3 §	
Dibenzo(a,h)anthracene	<1.3 mg/kg	TM322					<1.3 §	
Benzo(g,h,i)perylene	<1.3 mg/kg	TM322					<1.3 §	

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

OC, OP Pesticides and Triazine Herb

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS502	WS505	WS508	WS509	WS511	WS513
			Depth (m)	1.00	0.15	1.40	0.10	0.70	0.10
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	04/08/2011	04/08/2011	04/08/2011	05/08/2011	08/08/2011	05/08/2011
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095381	4095385	4095388	4095350	4095352	4095354
			AGS Reference	ES	ES	ES	ES	ES	ES
Mevinphos	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichlorvos	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tecnazene	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Hexachlorocyclohexane (HCH / Lindane)	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trifluralin	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Quintozene (PCNB)	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Etrimphos	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Triallate	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-Hexachlorocyclohexane (HCH / Lindane)	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Propetamphos	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dimethoate	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyriphos methyl	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorothalonil	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Hexachlorocyclohexane (HCH / Lindane)	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pirimiphos-methyl	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Telodrin	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyriphos	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Isodrin	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl parathion	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Malathion	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fenitrothion	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Triadimefon	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pendimethalin	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o,p-DDE	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans-chlordane	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulphan I	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
p,p-DDE	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

OC, OP Pesticides and Triazine Herb

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS502	WS505	WS508	WS509	WS511	WS513
			Depth (m)	1.00	0.15	1.40	0.10	0.70	0.10
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	04/08/2011	04/08/2011	04/08/2011	05/08/2011	08/08/2011	05/08/2011
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095381	4095385	4095388	4095350	4095352	4095354
			AGS Reference	ES	ES	ES	ES	ES	ES
cis-Chlordane	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o,p-TDE (DDD)	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o,p-DDT	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
p,p-TDE (DDD)	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
p,p-DDT	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulphan II	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o,p-Methoxychlor	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
p,p-Methoxychlor	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Triazophos	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Permethrin I	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulphan sulphate	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Permethrin II	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phosalone	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos-ethyl	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos-methyl	<0.05 mg/kg	TM073		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

OC, OP Pesticides and Triazine Herb

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS516	WS517				
			Depth (m)	1.00	0.10				
			Sample Type	Soil/Solid	Soil/Solid				
			Date Sampled	08/08/2011	05/08/2011				
			Date Received	09/08/2011	09/08/2011				
			SDG Ref	110812-132	110812-132				
			Lab Sample No.(s)	4095367	4095370				
			AGS Reference	ES	ES				
Mevinphos	<0.05 mg/kg	TM073		<0.05	<0.05				
Dichlorvos	<0.05 mg/kg	TM073		<0.05	<0.05				
Hexachlorobenzene	<0.05 mg/kg	TM073		<0.05	<0.05				
Tecnazene	<0.05 mg/kg	TM073		<0.05	<0.05				
alpha-Hexachlorocyclohexane (HCH / Lindane)	<0.05 mg/kg	TM073		<0.05	<0.05				
Trifluralin	<0.05 mg/kg	TM073		<0.05	<0.05				
Diazinon	<0.05 mg/kg	TM073		<0.05	<0.05				
Quintozene (PCNB)	<0.05 mg/kg	TM073		<0.05	<0.05				
Etrimphos	<0.05 mg/kg	TM073		<0.05	<0.05				
Triallate	<0.05 mg/kg	TM073		<0.05	<0.05				
gamma-Hexachlorocyclohexane (HCH / Lindane)	<0.05 mg/kg	TM073		<0.05	<0.05				
Heptachlor	<0.05 mg/kg	TM073		<0.05	<0.05				
Propetamphos	<0.05 mg/kg	TM073		<0.05	<0.05				
Dimethoate	<0.05 mg/kg	TM073		<0.05	<0.05				
Chlorpyriphos methyl	<0.05 mg/kg	TM073		<0.05	<0.05				
Chlorothalonil	<0.05 mg/kg	TM073		<0.05	<0.05				
Aldrin	<0.05 mg/kg	TM073		<0.05	<0.05				
beta-Hexachlorocyclohexane (HCH / Lindane)	<0.05 mg/kg	TM073		<0.05	<0.05				
Pirimiphos-methyl	<0.05 mg/kg	TM073		<0.05	<0.05				
Telodrin	<0.05 mg/kg	TM073		<0.05	<0.05				
Chlorpyriphos	<0.05 mg/kg	TM073		<0.05	<0.05				
Isodrin	<0.05 mg/kg	TM073		<0.05	<0.05				
Methyl parathion	<0.05 mg/kg	TM073		<0.05	<0.05				
Malathion	<0.05 mg/kg	TM073		<0.05	<0.05				
Fenthion	<0.05 mg/kg	TM073		<0.05	<0.05				
Fenitrothion	<0.05 mg/kg	TM073		<0.05	<0.05				
Triadimefon	<0.05 mg/kg	TM073		<0.05	<0.05				
Heptachlor epoxide	<0.05 mg/kg	TM073		<0.05	<0.05				
Parathion	<0.05 mg/kg	TM073		<0.05	<0.05				
Pendimethalin	<0.05 mg/kg	TM073		<0.05	<0.05				
Chlorfenvinphos	<0.05 mg/kg	TM073		<0.05	<0.05				
o,p-DDE	<0.05 mg/kg	TM073		<0.05	<0.05				
Trans-chlordane	<0.05 mg/kg	TM073		<0.05	<0.05				
Endosulphan I	<0.05 mg/kg	TM073		<0.05	<0.05				
p,p-DDE	<0.05 mg/kg	TM073		<0.05	<0.05				

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

OC, OP Pesticides and Triazine Herb

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS516	WS517				
			Depth (m)	1.00	0.10				
			Sample Type	Soil/Solid	Soil/Solid				
			Date Sampled	08/08/2011	05/08/2011				
			Date Received	09/08/2011	09/08/2011				
			SDG Ref	110812-132	110812-132				
			Lab Sample No.(s)	4095367	4095370				
			AGS Reference	ES	ES				
cis-Chlordane	<0.05 mg/kg	TM073		<0.05	<0.05				
o,p-TDE (DDD)	<0.05 mg/kg	TM073		<0.05	<0.05				
Dieldrin	<0.05 mg/kg	TM073		<0.05	<0.05				
o,p-DDT	<0.05 mg/kg	TM073		<0.05	<0.05				
Endrin	<0.05 mg/kg	TM073		<0.05	<0.05				
Ethion	<0.05 mg/kg	TM073		<0.05	<0.05				
p,p-TDE (DDD)	<0.05 mg/kg	TM073		<0.05	<0.05				
p,p-DDT	<0.05 mg/kg	TM073		<0.05	<0.05				
Endosulphan II	<0.05 mg/kg	TM073		<0.05	<0.05				
o,p-Methoxychlor	<0.05 mg/kg	TM073		<0.05	<0.05				
Carbophenothion	<0.05 mg/kg	TM073		<0.05	<0.05				
p,p-Methoxychlor	<0.05 mg/kg	TM073		<0.05	<0.05				
Triazophos	<0.05 mg/kg	TM073		<0.05	<0.05				
Permethrin I	<0.05 mg/kg	TM073		<0.05	<0.05				
Endosulphan sulphate	<0.05 mg/kg	TM073		<0.05	<0.05				
Permethrin II	<0.05 mg/kg	TM073		<0.05	<0.05				
Phosalone	<0.05 mg/kg	TM073		<0.05	<0.05				
Azinphos-ethyl	<0.05 mg/kg	TM073		<0.05	<0.05				
Azinphos-methyl	<0.05 mg/kg	TM073		<0.05	<0.05				

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	CP503	CP505	WS502	WS503	WS504	WS505
			Depth (m)	0.10	0.20	1.00	0.10	0.70	0.15
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	-	-	04/08/2011	04/08/2011	-	04/08/2011
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095377	4095380	4095381	4095382	4095383	4095385
			AGS Reference	ES	ES	ES	ES	ES	ES
Naphthalene-d8 % recovery**	%	TM218		72.2	95.9	99.7	99.1	95.9	97.6
Acenaphthene-d10 % recovery**	%	TM218		70.6	92.6	97.7	96.5	93.5	95.7
Phenanthrene-d10 % recovery**	%	TM218		71.6	91	95.4	94.6	91.9	94
Chrysene-d12 % recovery**	%	TM218		72.9	85.3	89.7	88.3	87.6	88.5
Perylene-d12 % recovery**	%	TM218		75.1	82.9	89.2	87.1	88.6	88.1
Naphthalene	<0.009 mg/kg	TM218		0.0115 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.019 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	0.0204 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	<0.016 M	<0.016 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.0378 M	<0.017 M	0.0335 M	0.03 M	<0.017 M	0.0338 M
Pyrene	<0.015 mg/kg	TM218		0.0315 M	<0.015 M	0.0268 M	0.0241 M	<0.015 M	0.028 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0313 M	<0.014 M	0.0209 M	<0.014 M	<0.014 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.0223 M	<0.01 M	0.0185 M	<0.01 M	<0.01 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0405 M	<0.015 M	0.0294 M	0.0273 M	<0.015 M	0.0291 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	<0.014 M	<0.014 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0263 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M	<0.018 M	<0.018 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.22	<0.118	0.129	<0.118	<0.118	<0.118

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS507	WS509	WS511	WS515	WS517
			Depth (m)	0.10	0.10	0.70	0.15	1.20
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	-	05/08/2011	08/08/2011	05/08/2011	05/08/2011
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095386	4095350	4095352	4095360	4095371
			AGS Reference	ES	ES	ES	ES	ES
Naphthalene-d8 % recovery**	%	TM218		98.4	95.3	96.4	96.9	94.9
Acenaphthene-d10 % recovery**	%	TM218		97.7	92.3	94.2	98.4	92.3
Phenanthrene-d10 % recovery**	%	TM218		96	90.4	92.2	96.8	90.4
Chrysene-d12 % recovery**	%	TM218		94.4	84.4	88.5	98.1	85.1
Perylene-d12 % recovery**	%	TM218		99.9	83.5	89.9	106	83.9
Naphthalene	<0.009 mg/kg	TM218		0.0141 M	<0.009 M	<0.009 M	0.0129 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	0.0202 M	<0.015 M	0.0184 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	<0.016 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.0307 M	0.0338 M	<0.017 M	0.0362 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		0.0255 M	0.0291 M	<0.015 M	0.0309 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	0.0223 M	<0.014 M	0.0388 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.0135 M	0.0203 M	<0.01 M	0.0232 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0355 M	0.0345 M	<0.015 M	0.0417 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	<0.014 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0216 M	<0.015 M	<0.015 M	0.0288 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M	<0.018 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218			0.16	<0.118	0.231	<0.118
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.141				

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS502	WS502	WS514	WS519		
			Depth (m)	0.25	1.00	0.60	1.80		
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
			Date Sampled	04/08/2011	04/08/2011	05/08/2011	05/08/2011		
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011		
			SDG Ref	110812-132	110812-132	110812-132	110812-132		
			Lab Sample No.(s)	4095368	4095381	4095358	4095374		
			AGS Reference	ES	ES	ES	ES		
GRO Surrogate % recovery**	%	TM089		111	120	120	122 §		
GRO >C5-C12	<0.044 mg/kg	TM089		<0.044	<0.044	<0.044	<0.044 §		
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.005 #	<0.005 #	<0.005 #	<0.005 § #		
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01 §		
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01 §		
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01 §		
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01 §		
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.358	2.44	<0.1	13.6		
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	2.03	<0.1	3.77		
Aliphatics >C21-C35	<0.1 mg/kg	TM173		1.88	8.53	<0.1	3.56		
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	3.52	<0.1	0.831		
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		2.24	16.5	<0.1	21.7		
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01 §		
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01 §		
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01 §		
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01 §		
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.43	2.72	<0.1	15.8		
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		1.39	2.33	<0.1	4.55		
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		4.43	7.61	0.248	4.28		
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		2.14	1.3	<0.1	1.01		
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		0.867	0.345	<0.1	0.2		
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		11.4	14	0.248	25.7		
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		13.6	30.5	0.249	47.4		
Total Aliphatics >C5-35	<0.1 mg/kg	TM173		2.24	13	<0.1	20.9		
Total Aromatics >C5-35	<0.1 mg/kg	TM173		9.25	12.7	0.249	24.7		
Total Aliphatics & Aromatics >C5-35	<0.1 mg/kg	TM173		11.5	25.7	0.249	45.6		

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	CP502	CP505	WS502	WS502	WS504	WS508
			Depth (m)	0.20	0.20	0.25	1.00	0.70	1.40
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	-	-	04/08/2011	04/08/2011	-	04/08/2011
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095376	4095380	4095368	4095381	4095383	4095388
			AGS Reference	ES	ES	ES	ES	ES	ES
Dibromofluoromethane**	%	TM116		37.2	46.9		40.6	42.8	37.9
Toluene-d8**	%	TM116		101	101		99.5	100	102
4-Bromofluorobenzene**	%	TM116		111	106		103	103	105
Dichlorodifluoromethane	<0.004 mg/kg	TM116		<0.004 M	<0.004 M		<0.004 M	<0.004 M	<0.004 M
Chloromethane	<0.007 mg/kg	TM116		<0.007 #	<0.007 #		<0.007 #	<0.007 #	<0.007 #
Vinyl Chloride	<0.01 mg/kg	TM116		<0.01 #	<0.01 #		<0.01 #	<0.01 #	<0.01 #
Bromomethane	<0.013 mg/kg	TM116		<0.013 M	<0.013 M		<0.013 M	<0.013 M	<0.013 M
Chloroethane	<0.014 mg/kg	TM116		<0.014 M	<0.014 M		<0.014 M	<0.014 M	<0.014 M
Trichlorofluorormethane	<0.006 mg/kg	TM116		<0.006 M	<0.006 M		<0.006 M	<0.006 M	<0.006 M
1.1-Dichloroethene	<0.01 mg/kg	TM116		<0.01 #	<0.01 #		<0.01 #	<0.01 #	<0.01 #
Carbon Disulphide	<0.007 mg/kg	TM116		<0.007 M	<0.007 M		<0.007 M	<0.007 M	<0.007 M
Dichloromethane	<0.01 mg/kg	TM116		<0.01 #	<0.01 #		<0.01 #	<0.01 #	<0.01 #
Methyl Tertiary Butyl Ether	<0.011 mg/kg	TM116		<0.011 M	<0.011 M		<0.011 M	<0.011 M	<0.011 M
trans-1-2-Dichloroethene	<0.011 mg/kg	TM116		<0.011 M	<0.011 M		<0.011 M	<0.011 M	<0.011 M
1.1-Dichloroethane	<0.008 mg/kg	TM116		<0.008 M	<0.008 M		<0.008 M	<0.008 M	<0.008 M
cis-1-2-Dichloroethene	<0.005 mg/kg	TM116		<0.005 M	<0.005 M		<0.005 M	<0.005 M	<0.005 M
2.2-Dichloropropane	<0.012 mg/kg	TM116		<0.012 M	<0.012 M		<0.012 M	<0.012 M	<0.012 M
Bromochloromethane	<0.014 mg/kg	TM116		<0.014 M	<0.014 M		<0.014 M	<0.014 M	<0.014 M
Chloroform	<0.008 mg/kg	TM116		<0.008 M	<0.008 M		<0.008 M	<0.008 M	<0.008 M
1.1.1-Trichloroethane	<0.007 mg/kg	TM116		<0.007 M	<0.007 M		<0.007 M	<0.007 M	<0.007 M
1.1-Dichloropropene	<0.011 mg/kg	TM116		<0.011 M	<0.011 M		<0.011 M	<0.011 M	<0.011 M
Carbontetrachloride	<0.014 mg/kg	TM116		<0.014 M	<0.014 M		<0.014 M	<0.014 M	<0.014 M
1.2-Dichloroethane	<0.005 mg/kg	TM116		<0.005 M	<0.005 M		<0.005 M	<0.005 M	<0.005 M
Benzene	<0.009 mg/kg	TM116		<0.009 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M
Trichloroethene	<0.009 mg/kg	TM116		<0.009 M	<0.009 M		<0.009 M	<0.009 M	<0.009 M
1.2-Dichloropropane	<0.012 mg/kg	TM116		<0.012 M	<0.012 M		<0.012 M	<0.012 M	<0.012 M
Dibromomethane	<0.009 mg/kg	TM116		<0.009 M	<0.009 M		<0.009 M	<0.009 M	<0.009 M
Bromodichloromethane	<0.007 mg/kg	TM116		<0.007 M	<0.007 M		<0.007 M	<0.007 M	<0.007 M
cis-1-3-Dichloropropene	<0.014 mg/kg	TM116		<0.014 M	<0.014 M		<0.014 M	<0.014 M	<0.014 M
Toluene	<0.005 mg/kg	TM116		<0.005 M	<0.005 M	<0.005 M	<0.005 M	<0.005 M	<0.005 M
trans-1-3-Dichloropropene	<0.014 mg/kg	TM116		<0.014	<0.014		<0.014	<0.014	<0.014
1.1.2-Trichloroethane	<0.01 mg/kg	TM116		<0.01 M	<0.01 M		<0.01 M	<0.01 M	<0.01 M
1.3-Dichloropropane	<0.007 mg/kg	TM116		<0.007 #	<0.007 #		<0.007 #	<0.007 #	<0.007 #
Tetrachloroethene	<0.005 mg/kg	TM116		<0.005 M	<0.005 M		<0.005 M	<0.005 M	<0.005 M
Dibromochloromethane	<0.013 mg/kg	TM116		<0.013 M	<0.013 M		<0.013 M	<0.013 M	<0.013 M

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	CP502	CP505	WS502	WS502	WS504	WS508
			Depth (m)	0.20	0.20	0.25	1.00	0.70	1.40
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	-	-	04/08/2011	04/08/2011	-	04/08/2011
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095376	4095380	4095368	4095381	4095383	4095388
			AGS Reference	ES	ES	ES	ES	ES	ES
1.2-Dibromoethane	<0.012 mg/kg	TM116		<0.012 M	<0.012 M		<0.012 M	<0.012 M	<0.012 M
Chlorobenzene	<0.005 mg/kg	TM116		<0.005 M	<0.005 M		<0.005 M	<0.005 M	<0.005 M
1.1.1.2-Tetrachloroethane	<0.01 mg/kg	TM116		<0.01 M	<0.01 M		<0.01 M	<0.01 M	<0.01 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.004 M	<0.004 M	<0.004 M	<0.004 M	<0.004 M	<0.004 M
p/m-Xylene	<0.014 mg/kg	TM116		<0.014 #	<0.014 #	<0.014 #	<0.014 #	<0.014 #	<0.014 #
o-Xylene	<0.01 mg/kg	TM116		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Styrene	<0.01 mg/kg	TM116		<0.01 M	<0.01 M		<0.01 M	<0.01 M	<0.01 M
Bromoform	<0.01 mg/kg	TM116		<0.01 M	<0.01 M		<0.01 M	<0.01 M	<0.01 M
Isopropylbenzene	<0.005 mg/kg	TM116		<0.005 M	<0.005 M		<0.005 M	<0.005 M	<0.005 M
1.1.2.2-Tetrachloroethane	<0.01 mg/kg	TM116		<0.01 #	<0.01 #		<0.01 #	<0.01 #	<0.01 #
1.2.3-Trichloropropane	<0.017 mg/kg	TM116		<0.017 M	<0.017 M		<0.017 M	<0.017 M	<0.017 M
Bromobenzene	<0.01 mg/kg	TM116		<0.01 M	<0.01 M		<0.01 M	<0.01 M	<0.01 M
Propylbenzene	<0.011 mg/kg	TM116		<0.011 M	<0.011 M		<0.011 M	<0.011 M	<0.011 M
2-Chlorotoluene	<0.009 mg/kg	TM116		<0.009 M	<0.009 M		<0.009 M	<0.009 M	<0.009 M
1.3.5-Trimethylbenzene	<0.008 mg/kg	TM116		<0.008 #	<0.008 #		<0.008 #	<0.008 #	<0.008 #
4-Chlorotoluene	<0.012 mg/kg	TM116		<0.012 M	<0.012 M		<0.012 M	<0.012 M	<0.012 M
tert-Butylbenzene	<0.012 mg/kg	TM116		<0.012 #	<0.012 #		<0.012 #	<0.012 #	<0.012 #
1.2.4-Trimethylbenzene	<0.009 mg/kg	TM116		<0.009 #	<0.009 #		<0.009 #	<0.009 #	<0.009 #
sec-Butylbenzene	<0.01 mg/kg	TM116		<0.01 M	<0.01 M		<0.01 M	<0.01 M	<0.01 M
4-Isopropyltoluene	<0.011 mg/kg	TM116		<0.011 M	<0.011 M		<0.011 M	<0.011 M	<0.011 M
1.3-Dichlorobenzene	<0.006 mg/kg	TM116		<0.006 M	<0.006 M		<0.006 M	<0.006 M	<0.006 M
1.4-Dichlorobenzene	<0.005 mg/kg	TM116		<0.005 M	<0.005 M		<0.005 M	<0.005 M	<0.005 M
n-Butylbenzene	<0.01 mg/kg	TM116		<0.01 M	<0.01 M		<0.01 M	<0.01 M	<0.01 M
1.2-Dichlorobenzene	<0.012 mg/kg	TM116		<0.012 M	<0.012 M		<0.012 M	<0.012 M	<0.012 M
1.2-Dibromo-3-chloropropane	<0.014 mg/kg	TM116		<0.014 M	<0.014 M		<0.014 M	<0.014 M	<0.014 M
Tert-amyl methyl ether	<0.015 mg/kg	TM116		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
1.2.4-Trichlorobenzene	<0.006 mg/kg	TM116		<0.006 #	<0.006 #		<0.006 #	<0.006 #	<0.006 #
Hexachlorobutadiene	<0.012 mg/kg	TM116		<0.012	<0.012		<0.012	<0.012	<0.012
Naphthalene	<0.013 mg/kg	TM116		<0.013 M	<0.013 M		<0.013 M	<0.013 M	<0.013 M
1.2.3-Trichlorobenzene	<0.006 mg/kg	TM116		<0.006 M	<0.006 M		<0.006 M	<0.006 M	<0.006 M

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS513	WS514	WS515	WS516	WS517	WS519
			Depth (m)	0.10	0.60	0.15	1.00	1.20	0.70
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	05/08/2011	05/08/2011	05/08/2011	08/08/2011	05/08/2011	05/08/2011
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095354	4095358	4095360	4095367	4095371	4095373
			AGS Reference	ES	ES	ES	ES	ES	ES
Dibromofluoromethane**	%	TM116		68.4		97.1	36.3 §	39.9	107
Toluene-d8**	%	TM116		99.7		99.4	103 §	102	100
4-Bromofluorobenzene**	%	TM116		120		125	110 §	100	110
Dichlorodifluoromethane	<0.004 mg/kg	TM116		<0.004 M		<0.004 M	<0.004 § M	<0.004 M	<0.004 M
Chloromethane	<0.007 mg/kg	TM116		<0.007 #		<0.007 #	<0.007 § #	<0.007 #	<0.007 #
Vinyl Chloride	<0.01 mg/kg	TM116		<0.01 #		<0.01 #	<0.01 § #	<0.01 #	<0.01 #
Bromomethane	<0.013 mg/kg	TM116		<0.013 M		<0.013 M	<0.013 § M	<0.013 M	<0.013 M
Chloroethane	<0.014 mg/kg	TM116		<0.014 M		<0.014 M	<0.014 § M	<0.014 M	<0.014 M
Trichlorofluorormethane	<0.006 mg/kg	TM116		<0.006 M		<0.006 M	<0.006 § M	<0.006 M	<0.006 M
1.1-Dichloroethene	<0.01 mg/kg	TM116		<0.01 #		<0.01 #	<0.01 § #	<0.01 #	<0.01 #
Carbon Disulphide	<0.007 mg/kg	TM116		<0.007 M		<0.007 M	<0.007 § M	<0.007 M	<0.007 M
Dichloromethane	<0.01 mg/kg	TM116		<0.01 #		<0.01 #	<0.01 § #	<0.01 #	<0.01 #
Methyl Tertiary Butyl Ether	<0.011 mg/kg	TM116		<0.011 M		<0.011 M	<0.011 § M	<0.011 M	<0.011 M
trans-1-2-Dichloroethene	<0.011 mg/kg	TM116		<0.011 M		<0.011 M	<0.011 § M	<0.011 M	<0.011 M
1.1-Dichloroethane	<0.008 mg/kg	TM116		<0.008 M		<0.008 M	<0.008 § M	<0.008 M	<0.008 M
cis-1-2-Dichloroethene	<0.005 mg/kg	TM116		<0.005 M		<0.005 M	<0.005 § M	<0.005 M	<0.005 M
2.2-Dichloropropane	<0.012 mg/kg	TM116		<0.012 M		<0.012 M	<0.012 § M	<0.012 M	<0.012 M
Bromochloromethane	<0.014 mg/kg	TM116		<0.014 M		<0.014 M	<0.014 § M	<0.014 M	<0.014 M
Chloroform	<0.008 mg/kg	TM116		<0.008 M		<0.008 M	<0.008 § M	<0.008 M	<0.008 M
1.1.1-Trichloroethane	<0.007 mg/kg	TM116		<0.007 M		<0.007 M	<0.007 § M	<0.007 M	<0.007 M
1.1-Dichloropropene	<0.011 mg/kg	TM116		<0.011 M		<0.011 M	<0.011 § M	<0.011 M	<0.011 M
Carbontetrachloride	<0.014 mg/kg	TM116		<0.014 M		<0.014 M	<0.014 § M	<0.014 M	<0.014 M
1.2-Dichloroethane	<0.005 mg/kg	TM116		<0.005 M		<0.005 M	<0.005 § M	<0.005 M	<0.005 M
Benzene	<0.009 mg/kg	TM116		<0.009 M	<0.009 M	<0.009 M	<0.009 § M	<0.009 M	<0.009 M
Trichloroethene	<0.009 mg/kg	TM116		<0.009 M		<0.009 M	<0.009 § M	<0.009 M	<0.009 M
1.2-Dichloropropane	<0.012 mg/kg	TM116		<0.012 M		<0.012 M	<0.012 § M	<0.012 M	<0.012 M
Dibromomethane	<0.009 mg/kg	TM116		<0.009 M		<0.009 M	<0.009 § M	<0.009 M	<0.009 M
Bromodichloromethane	<0.007 mg/kg	TM116		<0.007 M		<0.007 M	<0.007 § M	<0.007 M	<0.007 M
cis-1-3-Dichloropropene	<0.014 mg/kg	TM116		<0.014 M		<0.014 M	<0.014 § M	<0.014 M	<0.014 M
Toluene	<0.005 mg/kg	TM116		<0.005 M	<0.005 M	0.00752 M	<0.005 § M	<0.005 M	<0.005 M
trans-1-3-Dichloropropene	<0.014 mg/kg	TM116		<0.014		<0.014	<0.014 §	<0.014	<0.014
1.1.2-Trichloroethane	<0.01 mg/kg	TM116		<0.01 M		<0.01 M	<0.01 § M	<0.01 M	<0.01 M
1.3-Dichloropropane	<0.007 mg/kg	TM116		<0.007 #		<0.007 #	<0.007 § #	<0.007 #	<0.007 #
Tetrachloroethene	<0.005 mg/kg	TM116		<0.005 M		<0.005 M	<0.005 § M	<0.005 M	<0.005 M
Dibromochloromethane	<0.013 mg/kg	TM116		<0.013 M		<0.013 M	<0.013 § M	<0.013 M	<0.013 M

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS513	WS514	WS515	WS516	WS517	WS519
			Depth (m)	0.10	0.60	0.15	1.00	1.20	0.70
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	05/08/2011	05/08/2011	05/08/2011	08/08/2011	05/08/2011	05/08/2011
			Date Received	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011	09/08/2011
			SDG Ref	110812-132	110812-132	110812-132	110812-132	110812-132	110812-132
			Lab Sample No.(s)	4095354	4095358	4095360	4095367	4095371	4095373
			AGS Reference	ES	ES	ES	ES	ES	ES
1.2-Dibromoethane	<0.012 mg/kg	TM116		<0.012 M		<0.012 M	<0.012 § M	<0.012 M	<0.012 M
Chlorobenzene	<0.005 mg/kg	TM116		<0.005 M		<0.005 M	<0.005 § M	<0.005 M	<0.005 M
1.1.1.2-Tetrachloroethane	<0.01 mg/kg	TM116		<0.01 M		<0.01 M	<0.01 § M	<0.01 M	<0.01 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.004 M	<0.004 M	<0.004 M	<0.004 § M	<0.004 M	<0.004 M
p/m-Xylene	<0.014 mg/kg	TM116		<0.014 #	<0.014 #	<0.014 #	<0.014 § #	<0.014 #	<0.014 #
o-Xylene	<0.01 mg/kg	TM116		<0.01 M	<0.01 M	<0.01 M	<0.01 § M	<0.01 M	<0.01 M
Styrene	<0.01 mg/kg	TM116		<0.01 M		<0.01 M	<0.01 § M	<0.01 M	<0.01 M
Bromoform	<0.01 mg/kg	TM116		<0.01 M		<0.01 M	<0.01 § M	<0.01 M	<0.01 M
Isopropylbenzene	<0.005 mg/kg	TM116		<0.005 M		<0.005 M	<0.005 § M	<0.005 M	<0.005 M
1.1.2.2-Tetrachloroethane	<0.01 mg/kg	TM116		<0.01 #		<0.01 #	<0.01 § #	<0.01 #	<0.01 #
1.2.3-Trichloropropane	<0.017 mg/kg	TM116		<0.017 M		<0.017 M	<0.017 § M	<0.017 M	<0.017 M
Bromobenzene	<0.01 mg/kg	TM116		<0.01 M		<0.01 M	<0.01 § M	<0.01 M	<0.01 M
Propylbenzene	<0.011 mg/kg	TM116		<0.011 M		<0.011 M	<0.011 § M	<0.011 M	<0.011 M
2-Chlorotoluene	<0.009 mg/kg	TM116		<0.009 M		<0.009 M	<0.009 § M	<0.009 M	<0.009 M
1.3.5-Trimethylbenzene	<0.008 mg/kg	TM116		<0.008 #		<0.008 #	<0.008 § #	<0.008 #	<0.008 #
4-Chlorotoluene	<0.012 mg/kg	TM116		<0.012 M		<0.012 M	<0.012 § M	<0.012 M	<0.012 M
tert-Butylbenzene	<0.012 mg/kg	TM116		<0.012 #		<0.012 #	<0.012 § #	<0.012 #	<0.012 #
1.2.4-Trimethylbenzene	<0.009 mg/kg	TM116		<0.009 #		<0.009 #	<0.009 § #	<0.009 #	<0.009 #
sec-Butylbenzene	<0.01 mg/kg	TM116		<0.01 M		<0.01 M	<0.01 § M	<0.01 M	<0.01 M
4-Isopropyltoluene	<0.011 mg/kg	TM116		<0.011 M		<0.011 M	<0.011 § M	<0.011 M	<0.011 M
1.3-Dichlorobenzene	<0.006 mg/kg	TM116		<0.006 M		<0.006 M	<0.006 § M	<0.006 M	<0.006 M
1.4-Dichlorobenzene	<0.005 mg/kg	TM116		<0.005 M		<0.005 M	<0.005 § M	<0.005 M	<0.005 M
n-Butylbenzene	<0.01 mg/kg	TM116		<0.01 M		<0.01 M	<0.01 § M	<0.01 M	<0.01 M
1.2-Dichlorobenzene	<0.012 mg/kg	TM116		<0.012 M		<0.012 M	<0.012 § M	<0.012 M	<0.012 M
1.2-Dibromo-3-chloropropane	<0.014 mg/kg	TM116		<0.014 M		<0.014 M	<0.014 § M	<0.014 M	<0.014 M
Tert-amyl methyl ether	<0.015 mg/kg	TM116		<0.015	<0.015	<0.015	<0.015 §	<0.015	<0.015
1.2.4-Trichlorobenzene	<0.006 mg/kg	TM116		<0.006 #		<0.006 #	<0.006 § #	<0.006 #	<0.006 #
Hexachlorobutadiene	<0.012 mg/kg	TM116		<0.012		<0.012	<0.012 §	<0.012	<0.012
Naphthalene	<0.013 mg/kg	TM116		<0.013 M		<0.013 M	<0.013 § M	<0.013 M	<0.013 M
1.2.3-Trichlorobenzene	<0.006 mg/kg	TM116		<0.006 M		<0.006 M	<0.006 § M	<0.006 M	<0.006 M

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
§	Deviating sample.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed

Component	LOD/Units	Method	Customer Sample R	WS519
			Depth (m)	1.80
			Sample Type	Soil/Solid
			Date Sampled	05/08/2011
			Date Received	09/08/2011
			SDG Ref	110812-132
			Lab Sample No.(s)	4095374
			AGS Reference	ES
Benzene	<0.009 mg/kg	TM116		<0.009 § M
Toluene	<0.005 mg/kg	TM116		<0.005 § M
Ethylbenzene	<0.004 mg/kg	TM116		<0.004 § M
p/m-Xylene	<0.014 mg/kg	TM116		<0.014 § #
o-Xylene	<0.01 mg/kg	TM116		<0.01 § M
Tert-amyl methyl ether	<0.015 mg/kg	TM116		<0.015 §

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Asbestos Identification

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthrophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CP503 ES Z 0.10 SOLID 110812-132 4,095,377 TM048	22/08/2011	Tomasz Pawlikowski	No Asbestos Detected	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS507 ES Z 0.10 SOLID 110812-132 4,095,386 TM048	22/08/2011	Tomasz Pawlikowski	No Asbestos Detected	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS512 ES Z 0.50 SOLID 110812-132 4,095,353 TM048	22/08/2011	Tomasz Pawlikowski	No Asbestos Detected	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS515 ES Z 0.15 SOLID 05/08/2011 00:00:00 110812-132 4,095,360 TM048	22/08/2011	Tomasz Pawlikowski	No Asbestos Detected	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS519 ES Z 0.70 SOLID 05/08/2011 00:00:00 110812-132 4,095,373 TM048	22/08/2011	Tomasz Pawlikowski	No Asbestos Detected	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	1,2,4,5-Tetrachlorobenzene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	1,2,4-Trichlorobenzene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	1,2-Dichlorobenzene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	1,3,5-Trinitrobenzene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	1,3-Dichlorobenzene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	1,3-Dinitrobenzene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	1,4-Dichlorobenzene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	1,4-Naphthoquinone	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	1-Naphthylamine	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	2,3,4,6-Tetrachlorophenol	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	2,4,5-Trichlorophenol	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	2,4,6-Trichlorophenol	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dichlorophenol	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dimethylphenol	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dinitrophenol	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dinitrotoluene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	2,6-Dichlorophenol	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	2,6-Dinitrotoluene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	2-Acetylaminofluorene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	2-Chloronaphthalene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	2-Chlorophenol	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	2-Methyl-4,6-dinitrophenol	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	2-Methylnaphthalene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	2-Methylphenol	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	2-Naphthylamine	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	2-Nitroaniline	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	2-Nitrophenol	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	2-Picoline	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	3,3-Dichlorobenzidine	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	3,3-Dimethylbenzidine	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	3+4-Chlorophenol	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	3+4-Methylphenol	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	3-Methylcholanthrene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	3-Nitroaniline	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	4-Aminobiphenyl	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	4-Bromophenylphenylether	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	4-Chloro-3-Methylphenol	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	4-Chlorophenylphenylether	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	4-Nitroaniline	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	4-Nitrophenol	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	5-Nitro-o-toluidine	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	7,12-Dimethylbenz(a)anthracene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Acenaphthene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Acenaphthylene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Acetophenone	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Aniline	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Anthracene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Azobenzene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Benzidine	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Benzo(a)anthracene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Benzo(a)pyrene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Benzo(b)fluoranthene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Benzo(g,h,i)perylene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Benzo(k)fluoranthene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Benzyl Alcohol	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroethoxy)methane	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroethyl)ether	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroisopropyl)ether	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-ethylhexyl)phthalate	Sample holding time exceeded

CERTIFICATE OF ANALYSIS

SDG: 110812-132 **Location:** Bicetser Central Eastern Land Parcels **Order Number:**
Job: H_WSP_BAS-9 **Customer:** WSP Environmental **Report Number:** 147189
Client Reference: **Attention:** Helen Gardiner **Superseded Report:**

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Butyl Benzyl Phthalate	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Carbazole	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Chlorobenzilate	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Chrysene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Diallate	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Dibenzo(a,h)anthracene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Dibenzofuran	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Diethyl Phthalate	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Dimethyl Phthalate	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Di-N-butyl Phthalate	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Di-n-octylphthalate	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Dinoseb	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Diphenylamine	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Ethyl Methanesulfonate	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Fluoranthene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Fluorene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorobenzene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorobutadiene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorocyclopentadiene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Hexachloroethane	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Hexachloropropene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Indeno(1,2,3-c,d)pyrene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Isodrin	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Isophorone	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Isosafrole	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Kepone	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Methyl Methanesulfonate	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Naphthalene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Nitrobenzene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosodiethylamine	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosodimethylamine	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	N-Nitroso-di-N-butylamine	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	N-Nitroso-di-N-propylamine	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosomethylethylamine	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosopiperidine	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosopyrrolidine	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	o-Toluidine	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	p-Chloroaniline	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	p-Dimethylaminoazobenzene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Pentachlorobenzene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Pentachloroethane	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Pentachloronitrobenzene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Pentachlorophenol	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Phenacetin	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Phenanthrene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Phenol	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Pronamide	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Pyrene	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Pyridine	Sample holding time exceeded
4108202	WS516 ESZ	1.00	SOLID	Semi Volatiles in soils by GC-MS	Safrole	Sample holding time exceeded
4109513	WS517 ESZ	0.10	SOLID	Ammoniacal N as NH4 in 2:1 extract	Ammoniacal N as NH4 in 2:1 extract BRE	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	1,2,4,5-Tetrachlorobenzene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	1,2,4-Trichlorobenzene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	1,2-Dichlorobenzene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	1,3,5-Trinitrobenzene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	1,3-Dichlorobenzene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	1,3-Dinitrobenzene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	1,4-Dichlorobenzene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	1,4-Naphthoquinone	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	1-Naphthylamine	Sample holding time exceeded

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2,3,4,6-Tetrachlorophenol	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2,4,5-Trichlorophenol	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2,4,6-Trichlorophenol	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dichlorophenol	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dimethylphenol	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dinitrophenol	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dinitrotoluene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2,6-Dichlorophenol	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2,6-Dinitrotoluene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2-Acetylaminofluorene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2-Chloronaphthalene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2-Chlorophenol	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2-Methyl-4,6-dinitrophenol	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2-Methylnaphthalene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2-Methylphenol	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2-Naphthylamine	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2-Nitroaniline	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2-Nitrophenol	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2-Picoline	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	3,3-Dichlorobenzidine	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	3,3-Dimethylbenzidine	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	3+4-Chlorophenol	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	3+4-Methylphenol	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	3-Methylcholanthrene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	3-Nitroaniline	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	4-Aminobiphenyl	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	4-Bromophenylphenylether	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	4-Chloro-3-Methylphenol	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	4-Chlorophenylphenylether	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	4-Nitroaniline	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	4-Nitrophenol	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	5-Nitro-o-toluidine	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	7,12-Dimethylbenz(a)anthracene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Acenaphthene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Acenaphthylene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Acetophenone	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Aniline	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Anthracene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Azobenzene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Benzidine	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Benzo(a)anthracene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Benzo(a)pyrene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Benzo(b)fluoranthene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Benzo(g,h,i)perylene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Benzo(k)fluoranthene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Benzyl Alcohol	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroethoxy)methane	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroethyl)ether	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroisopropyl)ether	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-ethylhexyl)phthalate	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Butyl Benzyl Phthalate	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Carbazole	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Chlorobenzilate	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Chrysene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Diallate	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Dibenzo(a,h)anthracene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Dibenzofuran	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Diethyl Phthalate	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Dimethyl Phthalate	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Di-N-butyl Phthalate	Sample holding time exceeded

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Di-n-octylphthalate	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Dinoseb	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Diphenylamine	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Ethyl Methanesulfonate	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Fluoranthene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Fluorene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorobenzene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorobutadiene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorocyclopentadiene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Hexachloroethane	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Hexachloropropene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Indeno(1,2,3-c,d)pyrene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Isodrin	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Isophorone	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Isosafrole	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Kepone	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Methyl Methanesulfonate	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Naphthalene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Nitrobenzene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosodiethylamine	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosodimethylamine	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	N-Nitroso-di-N-butylamine	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	N-Nitroso-di-N-propylamine	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosomethylethylamine	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosopiperidine	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosopyrrolidine	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	o-Toluidine	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	p-Chloroaniline	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	p-Dimethylaminoazobenzene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Pentachlorobenzene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Pentachloroethane	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Pentachloronitrobenzene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Pentachlorophenol	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Phenacetin	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Phenanthrene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Phenol	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Pronamide	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Pyrene	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Pyridine	Sample holding time exceeded
4109688	CP502 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Safrole	Sample holding time exceeded
4110132	WS510 ESZ	0.10	SOLID	Ammoniacal N as NH4 in 2:1 extract	Ammoniacal N as NH4 in 2:1 extract BRE	Sample holding time exceeded
4110856	CP505 ESZ	0.20	SOLID	Ammoniacal N as NH4 in 2:1 extract	Ammoniacal N as NH4 in 2:1 extract BRE	
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	1,2,4,5-Tetrachlorobenzene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	1,2,4-Trichlorobenzene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	1,2-Dichlorobenzene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	1,3,5-Trinitrobenzene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	1,3-Dichlorobenzene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	1,3-Dinitrobenzene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	1,4-Dichlorobenzene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	1,4-Naphthoquinone	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	1-Naphthylamine	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2,3,4,6-Tetrachlorophenol	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2,4,5-Trichlorophenol	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2,4,6-Trichlorophenol	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dichlorophenol	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dimethylphenol	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dinitrophenol	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dinitrotoluene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2,6-Dichlorophenol	Sample holding time exceeded

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2,6-Dinitrotoluene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2-Acetylaminofluorene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2-Chloronaphthalene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2-Chlorophenol	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2-Methyl-4,6-dinitrophenol	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2-Methylnaphthalene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2-Methylphenol	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2-Naphthylamine	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2-Nitroaniline	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2-Nitrophenol	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	2-Picoline	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	3,3-Dichlorobenzidine	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	3,3-Dimethylbenzidine	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	3+4-Chlorophenol	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	3+4-Methylphenol	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	3-Methylcholanthrene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	3-Nitroaniline	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	4-Aminobiphenyl	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	4-Bromophenylphenylether	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	4-Chloro-3-Methylphenol	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	4-Chlorophenylphenylether	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	4-Nitroaniline	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	4-Nitrophenol	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	5-Nitro-o-toluidine	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	7,12-Dimethylbenz(a)anthracene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Acenaphthene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Acenaphthylene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Acetophenone	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Aniline	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Anthracene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Azobenzene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Benzidine	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Benzo(a)anthracene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Benzo(a)pyrene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Benzo(b)fluoranthene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Benzo(g,h,i)perylene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Benzo(k)fluoranthene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Benzyl Alcohol	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroethoxy)methane	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroethyl)ether	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroisopropyl)ether	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-ethylhexyl)phthalate	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Butyl Benzyl Phthalate	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Carbazole	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Chlorobenzilate	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Chrysene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Diallate	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Dibenzo(a,h)anthracene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Dibenzofuran	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Diethyl Phthalate	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Dimethyl Phthalate	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Di-N-butyl Phthalate	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Di-n-octylphthalate	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Dinoseb	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Diphenylamine	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Ethyl Methanesulfonate	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Fluoranthene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Fluorene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorobenzene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorobutadiene	Sample holding time exceeded

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorocyclopentadiene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Hexachloroethane	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Hexachloropropene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Indeno(1,2,3-c,d)pyrene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Isodrin	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Isophorone	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Isosafrole	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Kepone	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Methyl Methanesulfonate	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Naphthalene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Nitrobenzene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosodiethylamine	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosodimethylamine	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	N-Nitroso-di-N-butylamine	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	N-Nitroso-di-N-propylamine	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosomethylethylamine	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosopiperidine	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosopyrrolidine	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	o-Toluidine	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	p-Chloroaniline	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	p-Dimethylaminoazobenzene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Pentachlorobenzene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Pentachloroethane	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Pentachloronitrobenzene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Pentachlorophenol	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Phenacetin	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Phenanthrene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Phenol	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Pronamide	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Pyrene	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Pyridine	Sample holding time exceeded
4121982	WS501 ESZ	0.20	SOLID	Semi Volatiles in soils by GC-MS	Safrole	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,2,4,5-Tetrachlorobenzene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,2,4-Trichlorobenzene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,2-Dichlorobenzene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,3,5-Trinitrobenzene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,3-Dichlorobenzene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,3-Dinitrobenzene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,4-Dichlorobenzene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,4-Naphthoquinone	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1-Naphthylamine	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,3,4,6-Tetrachlorophenol	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,4,5-Trichlorophenol	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,4,6-Trichlorophenol	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dichlorophenol	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dimethylphenol	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dinitrophenol	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dinitrotoluene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,6-Dichlorophenol	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,6-Dinitrotoluene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Acetylaminofluorene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Chloronaphthalene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Chlorophenol	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Methyl-4,6-dinitrophenol	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Methylnaphthalene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Methylphenol	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Naphthylamine	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Nitroaniline	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Nitrophenol	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Picoline	Sample holding time exceeded

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	3,3-Dichlorobenzidine	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	3,3-Dimethylbenzidine	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	3+4-Chlorophenol	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	3+4-Methylphenol	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	3-Methylcholanthrene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	3-Nitroaniline	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	4-Aminobiphenyl	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	4-Bromophenylphenylether	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	4-Chloro-3-Methylphenol	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	4-Chlorophenylphenylether	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	4-Nitroaniline	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	4-Nitrophenol	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	5-Nitro-o-toluidine	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	7,12-Dimethylbenz(a)anthracene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Acenaphthene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Acenaphthylene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Acetophenone	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Aniline	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Anthracene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Azobenzene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Benzidine	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Benzo(a)anthracene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Benzo(a)pyrene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Benzo(b)fluoranthene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Benzo(g,h,i)perylene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Benzo(k)fluoranthene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Benzyl Alcohol	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroethoxy)methane	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroethyl)ether	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroisopropyl)ether	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-ethylhexyl)phthalate	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Butyl Benzyl Phthalate	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Carbazole	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Chlorobenzilate	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Chrysene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Diallate	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Dibenzo(a,h)anthracene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Dibenzofuran	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Diethyl Phthalate	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Dimethyl Phthalate	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Di-N-butyl Phthalate	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Di-n-octylphthalate	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Dinoseb	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Diphenylamine	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Ethyl Methanesulfonate	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Fluoranthene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Fluorene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorobenzene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorobutadiene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorocyclopentadiene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Hexachloroethane	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Hexachloropropene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Indeno(1,2,3-c,d)pyrene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Isodrin	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Isophorone	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Isosafrole	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Kepone	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Methyl Methanesulfonate	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Naphthalene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Nitrobenzene	Sample holding time exceeded

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosodiethylamine	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosodimethylamine	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	N-Nitroso-di-N-butylamine	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	N-Nitroso-di-N-propylamine	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosomethylethylamine	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosopiperidine	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosopyrrolidine	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	o-Toluidine	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	p-Chloroaniline	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	p-Dimethylaminoazobenzene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Pentachlorobenzene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Pentachloroethane	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Pentachloronitrobenzene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Pentachlorophenol	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Phenacetin	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Phenanthrene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Phenol	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Pronamide	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Pyrene	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Pyridine	Sample holding time exceeded
4122139	WS503 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Safrole	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	1,2,4,5-Tetrachlorobenzene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	1,2,4-Trichlorobenzene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	1,2-Dichlorobenzene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	1,3,5-Trinitrobenzene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	1,3-Dichlorobenzene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	1,3-Dinitrobenzene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	1,4-Dichlorobenzene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	1,4-Naphthoquinone	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	1-Naphthylamine	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	2,3,4,6-Tetrachlorophenol	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	2,4,5-Trichlorophenol	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	2,4,6-Trichlorophenol	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dichlorophenol	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dimethylphenol	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dinitrophenol	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dinitrotoluene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	2,6-Dichlorophenol	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	2,6-Dinitrotoluene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	2-Acetylaminofluorene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	2-Chloronaphthalene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	2-Chlorophenol	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	2-Methyl-4,6-dinitrophenol	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	2-Methylnaphthalene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	2-Methylphenol	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	2-Naphthylamine	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	2-Nitroaniline	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	2-Nitrophenol	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	2-Picoline	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	3,3-Dichlorobenzidine	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	3,3-Dimethylbenzidine	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	3+4-Chlorophenol	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	3+4-Methylphenol	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	3-Methylcholanthrene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	3-Nitroaniline	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	4-Aminobiphenyl	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	4-Bromophenylphenylether	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	4-Chloro-3-Methylphenol	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	4-Chlorophenylphenylether	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	4-Nitroaniline	Sample holding time exceeded

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	4-Nitrophenol	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	5-Nitro-o-toluidine	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	7,12-Dimethylbenz(a)anthracene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Acenaphthene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Acenaphthylene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Acetophenone	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Aniline	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Anthracene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Azobenzene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Benzidine	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Benzo(a)anthracene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Benzo(a)pyrene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Benzo(b)fluoranthene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Benzo(g,h,i)perylene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Benzo(k)fluoranthene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Benzyl Alcohol	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroethoxy)methane	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroethyl)ether	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroisopropyl)ether	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-ethylhexyl)phthalate	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Butyl Benzyl Phthalate	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Carbazole	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Chlorobenzilate	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Chrysene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Diallate	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Dibenzo(a,h)anthracene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Dibenzofuran	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Diethyl Phthalate	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Dimethyl Phthalate	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Di-N-butyl Phthalate	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Di-n-octylphthalate	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Dinoseb	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Diphenylamine	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Ethyl Methanesulfonate	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Fluoranthene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Fluorene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorobenzene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorobutadiene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorocyclopentadiene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Hexachloroethane	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Hexachloropropene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Indeno(1,2,3-c,d)pyrene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Isodrin	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Isophorone	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Isosafrole	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Kepone	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Methyl Methanesulfonate	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Naphthalene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Nitrobenzene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosodiethylamine	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosodimethylamine	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	N-Nitroso-di-N-butylamine	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	N-Nitroso-di-N-propylamine	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosomethylethylamine	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosopiperidine	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosopyrrolidine	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	o-Toluidine	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	p-Chloroaniline	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	p-Dimethylaminoazobenzene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Pentachlorobenzene	Sample holding time exceeded

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Pentachloroethane	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Pentachloronitrobenzene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Pentachlorophenol	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Phenacetin	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Phenanthrene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Phenol	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Pronamide	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Pyrene	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Pyridine	Sample holding time exceeded
4122361	WS508 ESZ	1.40	SOLID	Semi Volatiles in soils by GC-MS	Safrole	Sample holding time exceeded
4122557	WS508 ESZ	0.10	SOLID	Ammoniacal N as NH4 in 2:1 extract	Ammoniacal N as NH4 in 2:1 extract BRE	Sample holding time exceeded
4122609	WS501 ESZ	0.20	SOLID	Ammoniacal N as NH4 in 2:1 extract	Ammoniacal N as NH4 in 2:1 extract BRE	Sample holding time exceeded
4122698	WS503 ESZ	0.10	SOLID	Ammoniacal N as NH4 in 2:1 extract	Ammoniacal N as NH4 in 2:1 extract BRE	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,2,4,5-Tetrachlorobenzene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,2,4-Trichlorobenzene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,2-Dichlorobenzene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,3,5-Trinitrobenzene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,3-Dichlorobenzene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,3-Dinitrobenzene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,4-Dichlorobenzene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,4-Naphthoquinone	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1-Naphthylamine	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,3,4,6-Tetrachlorophenol	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,4,5-Trichlorophenol	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,4,6-Trichlorophenol	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dichlorophenol	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dimethylphenol	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dinitrophenol	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dinitrotoluene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,6-Dichlorophenol	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,6-Dinitrotoluene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Acetylaminofluorene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Chloronaphthalene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Chlorophenol	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Methyl-4,6-dinitrophenol	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Methylnaphthalene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Methylphenol	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Naphthylamine	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Nitroaniline	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Nitrophenol	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Picoline	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	3,3-Dichlorobenzidine	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	3,3-Dimethylbenzidine	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	3+4-Chlorophenol	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	3+4-Methylphenol	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	3-Methylcholanthrene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	3-Nitroaniline	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	4-Aminobiphenyl	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	4-Bromophenylphenylether	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	4-Chloro-3-Methylphenol	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	4-Chlorophenylphenylether	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	4-Nitroaniline	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	4-Nitrophenol	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	5-Nitro-o-toluidine	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	7,12-Dimethylbenz(a)anthracene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Acenaphthene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Acenaphthylene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Acetophenone	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Aniline	Sample holding time exceeded

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Anthracene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Azobenzene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Benzidine	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Benzo(a)anthracene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Benzo(a)pyrene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Benzo(b)fluoranthene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Benzo(g,h,i)perylene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Benzo(k)fluoranthene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Benzyl Alcohol	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroethoxy)methane	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroethyl)ether	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroisopropyl)ether	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-ethylhexyl)phthalate	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Butyl Benzyl Phthalate	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Carbazole	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Chlorobenzilate	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Chrysene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Diallate	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Dibenzo(a,h)anthracene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Dibenzofuran	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Diethyl Phthalate	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Dimethyl Phthalate	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Di-N-butyl Phthalate	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Di-n-octylphthalate	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Dinoseb	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Diphenylamine	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Ethyl Methanesulfonate	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Fluoranthene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Fluorene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorobenzene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorobutadiene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorocyclopentadiene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Hexachloroethane	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Hexachloropropene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Indeno(1,2,3-c,d)pyrene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Isodrin	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Isophorone	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Isosafrole	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Kepone	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Methyl Methanesulfonate	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Naphthalene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Nitrobenzene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosodiethylamine	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosodimethylamine	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	N-Nitroso-di-N-butylamine	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	N-Nitroso-di-N-propylamine	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosomethylethylamine	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosopiperidine	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosopyrrolidine	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	o-Toluidine	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	p-Chloroaniline	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	p-Dimethylaminoazobenzene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Pentachlorobenzene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Pentachloroethane	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Pentachloronitrobenzene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Pentachlorophenol	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Phenacetin	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Phenanthrene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Phenol	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Pronamide	Sample holding time exceeded

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Pyrene	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Pyridine	Sample holding time exceeded
4122999	WS513 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Safrole	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	1,2,4,5-Tetrachlorobenzene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	1,2,4-Trichlorobenzene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	1,2-Dichlorobenzene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	1,3,5-Trinitrobenzene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	1,3-Dichlorobenzene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	1,3-Dinitrobenzene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	1,4-Dichlorobenzene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	1,4-Naphthoquinone	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	1-Naphthylamine	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	2,3,4,6-Tetrachlorophenol	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	2,4,5-Trichlorophenol	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	2,4,6-Trichlorophenol	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dichlorophenol	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dimethylphenol	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dinitrophenol	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dinitrotoluene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	2,6-Dichlorophenol	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	2,6-Dinitrotoluene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	2-Acetylaminofluorene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	2-Chloronaphthalene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	2-Chlorophenol	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	2-Methyl-4,6-dinitrophenol	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	2-Methylnaphthalene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	2-Methylphenol	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	2-Naphthylamine	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	2-Nitroaniline	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	2-Nitrophenol	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	2-Picoline	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	3,3-Dichlorobenzidine	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	3,3-Dimethylbenzidine	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	3+4-Chlorophenol	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	3+4-Methylphenol	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	3-Methylcholanthrene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	3-Nitroaniline	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	4-Aminobiphenyl	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	4-Bromophenylphenylether	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	4-Chloro-3-Methylphenol	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	4-Chlorophenylphenylether	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	4-Nitroaniline	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	4-Nitrophenol	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	5-Nitro-o-toluidine	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	7,12-Dimethylbenz(a)anthracene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Acenaphthene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Acenaphthylene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Acetophenone	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Aniline	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Anthracene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Azobenzene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Benzidine	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Benzo(a)anthracene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Benzo(a)pyrene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Benzo(b)fluoranthene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Benzo(g,h,i)perylene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Benzo(k)fluoranthene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Benzyl Alcohol	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroethoxy)methane	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroethyl)ether	Sample holding time exceeded

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroisopropyl)ether	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-ethylhexyl)phthalate	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Butyl Benzyl Phthalate	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Carbazole	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Chlorobenzilate	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Chrysene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Diallate	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Dibenzo(a,h)anthracene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Dibenzofuran	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Diethyl Phthalate	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Dimethyl Phthalate	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Di-N-butyl Phthalate	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Di-n-octylphthalate	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Dinoseb	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Diphenylamine	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Ethyl Methanesulfonate	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Fluoranthene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Fluorene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorobenzene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorobutadiene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorocyclopentadiene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Hexachloroethane	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Hexachloropropene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Indeno(1,2,3-c,d)pyrene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Isodrin	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Isophorone	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Isosafrole	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Kepone	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Methyl Methanesulfonate	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Naphthalene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Nitrobenzene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosodiethylamine	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosodimethylamine	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	N-Nitroso-di-N-butylamine	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	N-Nitroso-di-N-propylamine	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosomethylethylamine	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosopiperidine	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosopyrrolidine	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	o-Toluidine	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	p-Chloroaniline	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	p-Dimethylaminoazobenzene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Pentachlorobenzene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Pentachloroethane	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Pentachloronitrobenzene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Pentachlorophenol	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Phenacetin	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Phenanthrene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Phenol	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Pronamide	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Pyrene	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Pyridine	Sample holding time exceeded
4123040	WS514 ESZ	0.60	SOLID	Semi Volatiles in soils by GC-MS	Safrole	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	1,2,4,5-Tetrachlorobenzene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	1,2,4-Trichlorobenzene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	1,2-Dichlorobenzene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	1,3,5-Trinitrobenzene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	1,3-Dichlorobenzene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	1,3-Dinitrobenzene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	1,4-Dichlorobenzene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	1,4-Naphthoquinone	Sample holding time exceeded

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	1-Naphthylamine	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	2,3,4,6-Tetrachlorophenol	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	2,4,5-Trichlorophenol	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	2,4,6-Trichlorophenol	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dichlorophenol	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dimethylphenol	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dinitrophenol	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dinitrotoluene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	2,6-Dichlorophenol	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	2,6-Dinitrotoluene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	2-Acetylaminofluorene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	2-Chloronaphthalene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	2-Chlorophenol	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	2-Methyl-4,6-dinitrophenol	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	2-Methylnaphthalene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	2-Methylphenol	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	2-Naphthylamine	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	2-Nitroaniline	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	2-Nitrophenol	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	2-Picoline	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	3,3-Dichlorobenzidine	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	3,3-Dimethylbenzidine	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	3+4-Chlorophenol	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	3+4-Methylphenol	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	3-Methylcholanthrene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	3-Nitroaniline	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	4-Aminobiphenyl	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	4-Bromophenylphenylether	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	4-Chloro-3-Methylphenol	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	4-Chlorophenylphenylether	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	4-Nitroaniline	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	4-Nitrophenol	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	5-Nitro-o-toluidine	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	7,12-Dimethylbenz(a)anthracene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Acenaphthene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Acenaphthylene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Acetophenone	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Aniline	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Anthracene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Azobenzene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Benzidine	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Benzo(a)anthracene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Benzo(a)pyrene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Benzo(b)fluoranthene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Benzo(g,h,i)perylene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Benzo(k)fluoranthene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Benzyl Alcohol	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroethoxy)methane	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroethyl)ether	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroisopropyl)ether	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-ethylhexyl)phthalate	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Butyl Benzyl Phthalate	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Carbazole	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Chlorobenzilate	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Chrysene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Diallate	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Dibenzo(a,h)anthracene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Dibenzofuran	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Diethyl Phthalate	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Dimethyl Phthalate	Sample holding time exceeded

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Di-N-butyl Phthalate	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Di-n-octylphthalate	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Dinoseb	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Diphenylamine	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Ethyl Methanesulfonate	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Fluoranthene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Fluorene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorobenzene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorobutadiene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorocyclopentadiene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Hexachloroethane	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Hexachloropropene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Indeno(1,2,3-c,d)pyrene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Isodrin	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Isophorone	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Isosafrole	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Kepone	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Methyl Methanesulfonate	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Naphthalene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Nitrobenzene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosodiethylamine	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosodimethylamine	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	N-Nitroso-di-N-butylamine	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	N-Nitroso-di-N-propylamine	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosomethylethylamine	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosopiperidine	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosopyrrolidine	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	o-Toluidine	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	p-Chloroaniline	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	p-Dimethylaminoazobenzene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Pentachlorobenzene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Pentachloroethane	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Pentachloronitrobenzene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Pentachlorophenol	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Phenacetin	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Phenanthrene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Phenol	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Pronamide	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Pyrene	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Pyridine	Sample holding time exceeded
4156351	WS519 ESZ	0.70	SOLID	Semi Volatiles in soils by GC-MS	Safrole	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,2,4,5-Tetrachlorobenzene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,2,4-Trichlorobenzene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,2-Dichlorobenzene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,3,5-Trinitrobenzene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,3-Dichlorobenzene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,3-Dinitrobenzene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,4-Dichlorobenzene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1,4-Naphthoquinone	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	1-Naphthylamine	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,3,4,6-Tetrachlorophenol	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,4,5-Trichlorophenol	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,4,6-Trichlorophenol	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dichlorophenol	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dimethylphenol	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dinitrophenol	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,4-Dinitrotoluene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,6-Dichlorophenol	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2,6-Dinitrotoluene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Acetylaminofluorene	Sample holding time exceeded

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Chloronaphthalene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Chlorophenol	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Methyl-4,6-dinitrophenol	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Methylnaphthalene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Methylphenol	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Naphthylamine	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Nitroaniline	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Nitrophenol	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	2-Picoline	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	3,3-Dichlorobenzidine	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	3,3-Dimethylbenzidine	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	3+4-Chlorophenol	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	3+4-Methylphenol	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	3-Methylcholanthrene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	3-Nitroaniline	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	4-Aminobiphenyl	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	4-Bromophenylphenylether	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	4-Chloro-3-Methylphenol	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	4-Chlorophenylphenylether	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	4-Nitroaniline	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	4-Nitrophenol	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	5-Nitro-o-toluidine	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	7,12-Dimethylbenz(a)anthracene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Acenaphthene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Acenaphthylene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Acetophenone	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Aniline	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Anthracene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Azobenzene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Benzidine	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Benzo(a)anthracene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Benzo(a)pyrene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Benzo(b)fluoranthene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Benzo(g,h,i)perylene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Benzo(k)fluoranthene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Benzyl Alcohol	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroethoxy)methane	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroethyl)ether	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-chloroisopropyl)ether	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Bis(2-ethylhexyl)phthalate	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Butyl Benzyl Phthalate	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Carbazole	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Chlorobenzilate	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Chrysene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Diallate	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Dibenzo(a,h)anthracene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Dibenzofuran	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Diethyl Phthalate	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Dimethyl Phthalate	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Di-N-butyl Phthalate	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Di-n-octylphthalate	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Dinoseb	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Diphenylamine	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Ethyl Methanesulfonate	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Fluoranthene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Fluorene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorobenzene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorobutadiene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Hexachlorocyclopentadiene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Hexachloroethane	Sample holding time exceeded

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Hexachloropropene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Indeno(1,2,3-c,d)pyrene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Isodrin	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Isophorone	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Isosafrole	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Kepone	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Methyl Methanesulfonate	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Naphthalene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Nitrobenzene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosodiethylamine	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosodimethylamine	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	N-Nitroso-di-N-butylamine	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	N-Nitroso-di-N-propylamine	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosomethylethylamine	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosopiperidine	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	N-Nitrosopyrrolidine	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	o-Toluidine	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	p-Chloroaniline	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	p-Dimethylaminoazobenzene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Pentachlorobenzene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Pentachloroethane	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Pentachloronitrobenzene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Pentachlorophenol	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Phenacetin	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Phenanthrene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Phenol	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Pronamide	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Pyrene	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Pyridine	Sample holding time exceeded
4156399	WS507 ESZ	0.10	SOLID	Semi Volatiles in soils by GC-MS	Safrole	Sample holding time exceeded
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	1.1.1.2-Tetrachloroethane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	1.1.1-Trichloroethane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	1.1.2.2-Tetrachloroethane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	1.1.2-Trichloroethane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	1.1-Dichloroethane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	1.1-Dichloroethene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	1.1-Dichloropropene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	1.2.3-Trichlorobenzene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	1.2.3-Trichloropropane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	1.2.4-Trichlorobenzene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	1.2.4-Trimethylbenzene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	1.2-Dibromo-3-chloropropane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	1.2-Dibromoethane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	1.2-Dichlorobenzene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	1.2-Dichloroethane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	1.2-Dichloropropane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	1.3.5-Trimethylbenzene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	1.3-Dichlorobenzene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	1.3-Dichloropropane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	1.4-Dichlorobenzene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	2.2-Dichloropropane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	2-Chlorotoluene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	4-Bromofluorobenzene**	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	4-Chlorotoluene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	4-Isopropyltoluene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Benzene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Bromobenzene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Bromochloromethane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Bromodichloromethane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Bromoform	Volatile container not received

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Bromomethane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Carbon Disulphide	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Carbontetrachloride	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Chlorobenzene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Chloroethane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Chloroform	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Chloromethane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	cis-1-2-Dichloroethene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	cis-1-3-Dichloropropene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Dibromochloromethane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Dibromofluoromethane**	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Dibromomethane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Dichlorodifluoromethane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Dichloromethane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Ethylbenzene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Hexachlorobutadiene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Isopropylbenzene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Methyl Tertiary Butyl Ether	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Naphthalene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	n-Butylbenzene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	o-Xylene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	p/m-Xylene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Propylbenzene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	sec-Butylbenzene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Styrene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Tert-amyl methyl ether	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	tert-Butylbenzene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Tetrachloroethene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Toluene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Toluene-d8**	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	trans-1-2-Dichloroethene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	trans-1-3-Dichloropropene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Trichloroethene	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Trichlorofluorormethane	Volatile container not received
4096066	WS516 ESZ	1.00	SOLID	VOC MS (S)	Vinyl Chloride	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	GRO by GC-FID (S)	Aliphatics >C10-C12	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	GRO by GC-FID (S)	Aliphatics >C5-C6	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	GRO by GC-FID (S)	Aliphatics >C6-C8	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	GRO by GC-FID (S)	Aliphatics >C8-C10	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	GRO by GC-FID (S)	Aromatics >EC10-EC12	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	GRO by GC-FID (S)	Aromatics >EC5-EC7	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	GRO by GC-FID (S)	Aromatics >EC7-EC8	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	GRO by GC-FID (S)	Aromatics >EC8-EC10	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	GRO by GC-FID (S)	GRO >C5-C12	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	GRO by GC-FID (S)	GRO Surrogate % recovery**	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	GRO by GC-FID (S)	Methyl tertiary butyl ether (MTBE)	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	1.1.1.2-Tetrachloroethane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	1.1.1-Trichloroethane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	1.1.2.2-Tetrachloroethane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	1.1.2-Trichloroethane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	1.1-Dichloroethane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	1.1-Dichloroethene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	1.1-Dichloropropene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	1.2.3-Trichlorobenzene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	1.2.3-Trichloropropane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	1.2.4-Trichlorobenzene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	1.2.4-Trimethylbenzene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	1.2-Dibromo-3-chloropropane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	1.2-Dibromoethane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	1.2-Dichlorobenzene	Volatile container not received

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	1.2-Dichloroethane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	1.2-Dichloropropane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	1.3.5-Trimethylbenzene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	1.3-Dichlorobenzene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	1.3-Dichloropropane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	1.4-Dichlorobenzene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	2.2-Dichloropropane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	2-Chlorotoluene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	4-Bromofluorobenzene**	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	4-Chlorotoluene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	4-Isopropyltoluene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Benzene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Bromobenzene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Bromochloromethane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Bromodichloromethane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Bromoform	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Bromomethane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Carbon Disulphide	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Carbontetrachloride	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Chlorobenzene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Chloroethane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Chloroform	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Chloromethane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	cis-1-2-Dichloroethene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	cis-1-3-Dichloropropene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Dibromochloromethane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Dibromofluoromethane**	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Dibromomethane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Dichlorodifluoromethane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Dichloromethane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Ethylbenzene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Hexachlorobutadiene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Isopropylbenzene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Methyl Tertiary Butyl Ether	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Naphthalene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	n-Butylbenzene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	o-Xylene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	p/m-Xylene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Propylbenzene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	sec-Butylbenzene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Styrene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Tert-amyl methyl ether	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	tert-Butylbenzene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Tetrachloroethene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Toluene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Toluene-d8**	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	trans-1-2-Dichloroethene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	trans-1-3-Dichloropropene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Trichloroethene	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Trichlorofluorormethane	Volatile container not received
4096134	WS519 ESZ	1.80	SOLID	VOC MS (S)	Vinyl Chloride	Volatile container not received

Note : Test results may be compromised

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Table of Results - Appendix

REPORT KEY

Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03x10-7

NDP	No Determination Possible	#	ISO 17025 Accredited	*	Subcontracted Test	M	MCERTS Accredited
NFD	No Fibres Detected	PFD	Possible Fibres Detected	»	Result previously reported (Incremental reports only)	EC	Equivalent Carbon (Aromatics C8-C35)

Note: Method detection limits are not always achievable due to various circumstances beyond our control

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM073	MEWAM BOOK 60 1980,95 1985, HMSO / Modified: US EPA Method 8081A & 8141A	Determination of organochlorine and organophosphorous pesticides by GCMS		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM154	In - house Method	Determination of Petroleum Hydrocarbons by EZ Flash GC-FID in the Carbon range C6- C40		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM243		Mixed Anions In Soils By Kone		
TM248	In-House Method	Determination of Ammonium BRE (2:1 Extract) on solids		
TM322				

[1] Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

CERTIFICATE OF ANALYSIS

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	4095375	4095376	4095377	4095378	4095380	4095349	4095368	4095381	4095382	4095383
Customer Sample Ref.	CP501	CP502	CP503	CP504	CP505	WS501	WS502	WS502	WS503	WS504
AGS Ref.	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
Depth	0.30	0.20	0.10	0.40	0.20	0.20	0.25	1.00	0.10	0.70
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Ammoniacal N as NH4 in 2:1 extract	16-Aug-2011				19-Aug-2011	19-Aug-2011			19-Aug-2011	
Anions by Kone (soil)								18-Aug-2011		19-Aug-2011
Asbestos Identification (Soil)			23-Aug-2011							
Cyanide Comp/Free/Total/Thiocyanate		17-Aug-2011				19-Aug-2011			19-Aug-2011	
EPH CWG (Aliphatic) GC (S)							22-Aug-2011	19-Aug-2011		
EPH CWG (Aromatic) GC (S)							22-Aug-2011	19-Aug-2011		
GRO by GC-FID (S)							25-Aug-2011	25-Aug-2011		
Metals by iCap-OES (Soil)	18-Aug-2011	18-Aug-2011	23-Aug-2011	18-Aug-2011	18-Aug-2011	19-Aug-2011	19-Aug-2011	18-Aug-2011	19-Aug-2011	19-Aug-2011
OC, OP Pesticides and Triazine Herb								24-Aug-2011		
PAH by GCMS			25-Aug-2011		23-Aug-2011			23-Aug-2011	23-Aug-2011	23-Aug-2011
pH	17-Aug-2011	17-Aug-2011	24-Aug-2011	16-Aug-2011	16-Aug-2011	19-Aug-2011	19-Aug-2011	16-Aug-2011	19-Aug-2011	16-Aug-2011
Sample description	16-Aug-2011	16-Aug-2011	23-Aug-2011	16-Aug-2011	16-Aug-2011	17-Aug-2011	17-Aug-2011	17-Aug-2011	17-Aug-2011	17-Aug-2011
Semi Volatiles in soils by GC-MS		26-Aug-2011				26-Aug-2011			26-Aug-2011	
Total Organic Carbon	22-Aug-2011	22-Aug-2011		22-Aug-2011	22-Aug-2011			22-Aug-2011		22-Aug-2011
TPH c6-40 Value of soil	18-Aug-2011		26-Aug-2011		18-Aug-2011	22-Aug-2011			26-Aug-2011	22-Aug-2011
TPH CWG GC (S)							25-Aug-2011	25-Aug-2011		
VOC MS (S)		26-Aug-2011			26-Aug-2011		26-Aug-2011	26-Aug-2011		26-Aug-2011

Lab Sample No(s)	4095385	4095386	4095387	4095388	4095350	4095351	4095352	4095353	4095354	4095356
Customer Sample Ref.	WS505	WS507	WS508	WS508	WS509	WS510	WS511	WS512	WS513	WS514
AGS Ref.	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
Depth	0.15	0.10	0.10	1.40	0.10	0.10	0.70	0.50	0.10	0.10
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Ammoniacal N as NH4 in 2:1 extract			19-Aug-2011			19-Aug-2011				16-Aug-2011
Anions by Kone (soil)				19-Aug-2011			19-Aug-2011			
Asbestos Identification (Soil)		23-Aug-2011						23-Aug-2011		
Cyanide Comp/Free/Total/Thiocyanate		24-Aug-2011				18-Aug-2011				18-Aug-2011
Metals by iCap-OES (Soil)	19-Aug-2011	23-Aug-2011	19-Aug-2011	19-Aug-2011	18-Aug-2011	19-Aug-2011	19-Aug-2011	23-Aug-2011	19-Aug-2011	19-Aug-2011
OC, OP Pesticides and Triazine Herb	24-Aug-2011			24-Aug-2011	24-Aug-2011		24-Aug-2011		24-Aug-2011	
PAH by GCMS	23-Aug-2011	25-Aug-2011			23-Aug-2011		23-Aug-2011			
pH	16-Aug-2011	24-Aug-2011	19-Aug-2011	19-Aug-2011	16-Aug-2011	16-Aug-2011	17-Aug-2011	24-Aug-2011	17-Aug-2011	17-Aug-2011
Sample description	17-Aug-2011	23-Aug-2011	17-Aug-2011	17-Aug-2011	16-Aug-2011	17-Aug-2011	17-Aug-2011	23-Aug-2011	17-Aug-2011	17-Aug-2011
Semi Volatiles in soils by GC-MS		26-Aug-2011		26-Aug-2011					26-Aug-2011	
Total Organic Carbon	22-Aug-2011			22-Aug-2011	22-Aug-2011	22-Aug-2011	22-Aug-2011	25-Aug-2011		22-Aug-2011
TPH c6-40 Value of soil	23-Aug-2011			23-Aug-2011	18-Aug-2011		23-Aug-2011		23-Aug-2011	
VOC MS (S)				26-Aug-2011					26-Aug-2011	

Lab Sample No(s)	4095358	4095360	4095364	4095367	4095370	4095371	4095372	4095373	4095374
Customer Sample Ref.	WS514	WS515	WS516	WS516	WS517	WS517	WS518	WS519	WS519
AGS Ref.	ES	ES	ES	ES	ES	ES	ES	ES	ES
Depth	0.60	0.15	0.00 - 1.00	1.00	0.10	1.20	0.10	0.70	1.80
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Ammoniacal N as NH4 in 2:1 extract					19-Aug-2011				
Anions by Kone (soil)				18-Aug-2011		18-Aug-2011			18-Aug-2011
Asbestos Identification (Soil)		23-Aug-2011						23-Aug-2011	
Cyanide Comp/Free/Total/Thiocyanate					17-Aug-2011				
EPH CWG (Aliphatic) GC (S)	19-Aug-2011								19-Aug-2011
EPH CWG (Aromatic) GC (S)	19-Aug-2011								19-Aug-2011
GRO by GC-FID (S)	25-Aug-2011								25-Aug-2011
Metals by iCap-OES (Soil)	19-Aug-2011	23-Aug-2011	22-Aug-2011	22-Aug-2011	18-Aug-2011	19-Aug-2011	19-Aug-2011	23-Aug-2011	22-Aug-2011
OC, OP Pesticides and Triazine Herb				24-Aug-2011	24-Aug-2011				
PAH by GCMS		25-Aug-2011				23-Aug-2011			
pH	22-Aug-2011	24-Aug-2011	17-Aug-2011	17-Aug-2011	16-Aug-2011	17-Aug-2011	18-Aug-2011	24-Aug-2011	17-Aug-2011
Sample description	17-Aug-2011	23-Aug-2011	15-Aug-2011	15-Aug-2011	16-Aug-2011	17-Aug-2011	17-Aug-2011	23-Aug-2011	15-Aug-2011
Semi Volatiles in soils by GC-MS	26-Aug-2011			26-Aug-2011				26-Aug-2011	
Total Organic Carbon	22-Aug-2011	24-Aug-2011		22-Aug-2011		22-Aug-2011	22-Aug-2011	25-Aug-2011	22-Aug-2011
TPH c6-40 Value of soil		26-Aug-2011		18-Aug-2011		23-Aug-2011	23-Aug-2011	26-Aug-2011	
TPH CWG GC (S)	25-Aug-2011								25-Aug-2011
VOC MS (S)	26-Aug-2011	26-Aug-2011		26-Aug-2011		26-Aug-2011		26-Aug-2011	26-Aug-2011

SDG:	110812-132	**Location:**	Bicetser Central Eastern Land Parcels	**Order Number:**	
Job:	H_WSP_BAS-9	**Customer:**	WSP Environmental	**Report Number:**	147189
Client Reference:		**Attention:**	Helen Gardiner	**Superseded Report:**	

Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors
employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute themajor part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 -C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENT EXTRACTABLE MATTER	D&C	DCM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DCM	SOXTHERM	HPLC
PHENOLS BY GCMS	WET	DCM	SOXTHERM	GC-MS
HERBICIDES	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
PESTICIDES	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (MIN OIL)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (CLEANED UP)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH CWG BY GC	D&C	HEXANE:ACETONE	END OVER END	GC-FID
PCB TOT/PCB CON	D&C	HEXANE:ACETONE	END OVER END	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE:ACETONE	MICROWAVE TM218.	GC-MS
C8-C40 (C8-C40) EZ FLASH	WET	HEXANE:ACETONE	SHAKER	GC-EZ
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE:ACETONE	SHAKER	GC-EZ
SEMI VOLATILE ORGANIC COMPOUNDS	WET	DCM:ACETONE	SONICATE	GC-MS

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAH-MS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-MS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
PCB 7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-MS
PCB TOTAL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-MS
SVOC	DCM	LIQUID/LIQUID SHAKE	GC-MS
FREE SULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PEST OCP/OPP	DCM	LIQUID/LIQUID SHAKE	GC-MS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GC-MS
PHENOLS-MS	DCM	SOLID PHASE EXTRACTION	GC-MS
TPH by INFRARED (IR)	TCE	LIQUID/LIQUID SHAKE	HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GC-MS

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -
Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

APPENDIX D GEOTECHNICAL LABORATORY RESULTS

Laboratory Report

LABORATORY TESTING SERVICES LIMITED

Contract Number: 13224

Client's Reference: SDG 110815-17 Req 181173 PO 132032 Report Date: 26-08-2011

Client Name: ALcontrol Laboratories
Manor Road, Hawarden
Deeside
CH5 3US

Contract Title: Bicester
For the attention of: HAWARDEN

Date Received: 05-08-2011
Date Commenced: 05-08-2011
Date Completed: 26-08-2011

Test Description	Quantity	Checked	Approved
Plasticity 4 Point Limit *	25		
Moisture Content *	25		
PSD-Wet Sieve/Dry Sieve *	15		
Sedimentation *	7		
Compaction - Vibrating Hammer Method *	8		
CBR Remoulded *	12		
MCV Single Point	5		
One Dimensional consolidation *	4		

Continued on page 2 >

Test Description	Quantity	Checked	Approved
WS Sulphate	17		
Ph Limit	17		
Point Load Axial/Diametrical	15		

Notes: **Observations and Interpretations are outside the UKAS Accreditation**
*** - Denotes test included in laboratory scope of accreditation**
 # - Denotes test carried out by approved contractor

Approved Signatories:
D V Edwards (Managing Director), Paul Evans (Technical Manager), E Sharp (Technical Co-Ordinator).

Hole Number	Sample Number	Type	Depth	Description of Sample*
TP502			1.00	Brown (fine to coarse) gravelly silty CLAY.
TP503			0.30	Brown (fine to coarse) clayey silty SAND.
TP503			1.10	Brown (fine to coarse) slightly clayey sandy GRAVEL with many cobbles.
TP504			0.70	Brown (fine to coarse) gravelly silty CLAY.
TP505			0.50	Brown (fine to coarse) gravelly silty CLAY.
TP505			1.50	Brown (fine to coarse) gravelly sandy silty CLAY.
TP507			0.40	Brown (fine to coarse) silty clayey SAND.
TP507			0.80	Brown (fine to coarse) slightly clayey sandy GRAVEL with cobbles.
TP508			0.40	Brown (fine to coarse) gravelly silty CLAY.
TP508			1.20	Brown (fine to coarse) gravelly silty CLAY.
TP509			1.00	Brown (fine to coarse) slightly clayey sandy GRAVEL.
TP510			0.60	Brown (fine to coarse) gravelly silty CLAY.
TP511			0.90	Brown (fine to coarse) gravelly silty CLAY.
TP512			0.50	Brown (fine to coarse) gravelly silty CLAY.
TP512			1.80	Brown (fine to coarse) CLAY with minor sand and gravel.
TP513			0.40	Brown (fine to coarse) sandy silty CLAY.
TP513			1.30	Brown (fine to coarse) gravelly silty CLAY.
TP514			1.20	Brown (fine to coarse) silty CLAY with minor sand and gravel.
TP516			0.40	Brown (fine to coarse) silty clayey SAND.
TP518			1.30	Brown (fine to coarse) slightly clayey sandy GRAVEL.
TP519			1.00	Brown (fine to coarse) clayey sandy GRAVEL.
TP521			0.30	Brown (fine to coarse) gravelly silty CLAY.
TP521			1.10	Brown (fine to coarse) clayey sandy GRAVEL.
TP522			1.00	Brown (fine to coarse) silty clayey sandy GRAVEL.
TP523			0.90	Brown (fine to coarse) gravelly silty CLAY.
TP524			0.10	Brown (fine to coarse) gravelly silty CLAY.
TP524			1.50	Brown (fine to coarse) slightly clayey sandy GRAVEL with many cobbles.
TP526			0.60	Brown (fine to coarse) slightly sandy silty CLAY.
TP526			2.00	Brown (fine to coarse) gravelly silty CLAY.
TP527			1.30	Brown (fine to coarse) slightly clayey sandy GRAVEL with many cobbles.
TP530			0.50	Brown (fine to coarse) gravelly silty CLAY.
TP532			0.25	Brown (fine to coarse) gravelly silty CLAY.
TP532			1.70	Brown (fine to coarse) clayey sandy GRAVEL.

Note: Results on this table are in summary format and may not meet the requirements of the relevant standards, additional information is held by the laboratory

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LABORATORY TESTING SERVICES LIMITED

Bicester

Contract No.: 13224-160811
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Hole Number	Sample Number	Type	Depth	Description of Sample*
CP501			0.50	Brown (fine to coarse) gravelly silty CLAY.
CP502			0.10	Brown (fine to coarse) gravelly silty CLAY.
CP503			0.40	Brown (fine to coarse) gravelly clayey SAND.
CP504			0.40	Brown (fine to coarse) gravelly silty CLAY.
CP504			1.20	Brown (fine to coarse) gravelly clayey SAND.
CP505			0.00	Brown (fine to coarse) gravelly silty CLAY.
CP505			0.70	Brown (fine to coarse) gravelly silty CLAY.
CP505			1.20	Brown (fine to coarse) gravelly sandy silty CLAY.

Note: Results on this table are in summary format and may not meet the requirements of the relevant standards, additional information is held by the laboratory

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LABORATORY TESTING SERVICES LIMITED

Bicester

Contract No.: 13224-160811
Client ref: TBC

Summary of Soil Classification Tests

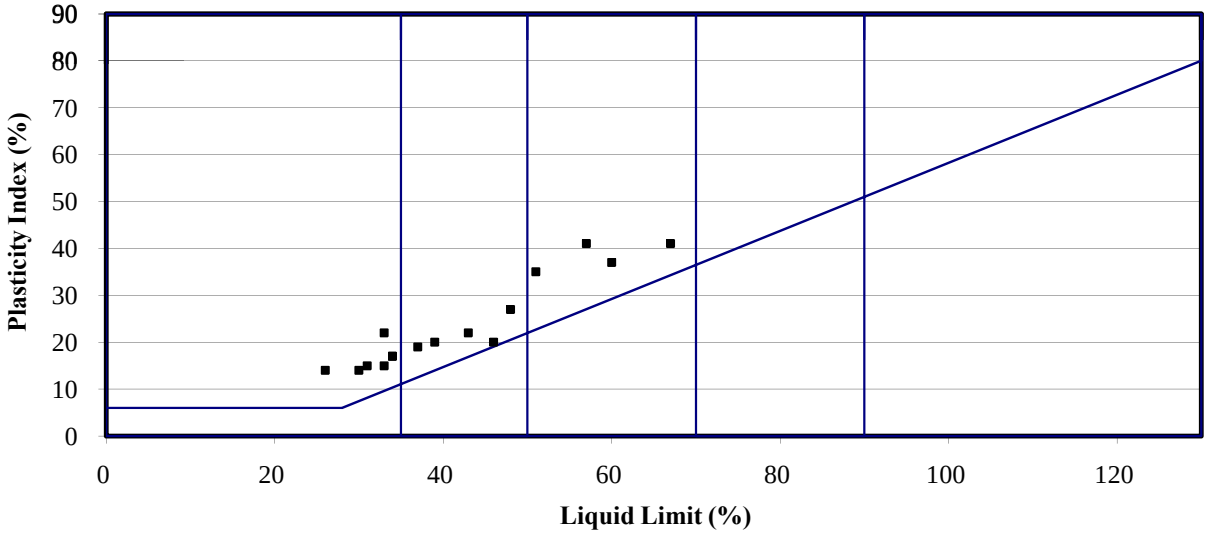
BS 1377:Part 2:1990

Hole/ Sample Number	Sample Type	Depth m	Moisture Content % Cl. 3.2	Liquid Limit % Cl. 4.3/4.4	Plastic Limit % Cl. 5.	Plasticity Index % Cl. 6.	% Passing .425mm	Remarks
TP502	B	1.00	17	46	26	20	97	CI Intermediate Plasticity
TP503	B	0.30	11	34	17	17	95	CL Low Plasticity
TP503	B	1.10	10	31	16	15	55	CL Low Plasticity
TP504	B	0.70	10	33	11	22	75	CL Low Plasticity
TP505	B	1.50	13	37	18	19	40	CI Intermediate Plasticity
TP507	B	0.40	15	39	19	20	100	CI Intermediate Plasticity
TP507	B	0.80	10	34	17	17	60	CL Low Plasticity
TP508	B	0.40	30	57	16	41	90	CH High Plasticity
TP510	B	0.60	9.0	26	12	14	45	CL Low Plasticity
TP513	B	0.40	26	67	26	41	100	CH High Plasticity
TP514	B	1.20	30	60	23	37	90	CH High Plasticity
TP516	B	0.40	21	48	21	27	70	CI Intermediate Plasticity
TP518	B	1.30	10	30	16	14	40	CL Low Plasticity
TP522	B	1.00	15	33	18	15	40	CL Low Plasticity
TP524	B	0.10	19	43	21	22	75	CI Intermediate Plasticity
TP526	B	0.60	19	51	16	35	90	CH High Plasticity

Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.

BS 5930:1999



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UKAS TESTING 2788

Summary of Soil Classification Tests

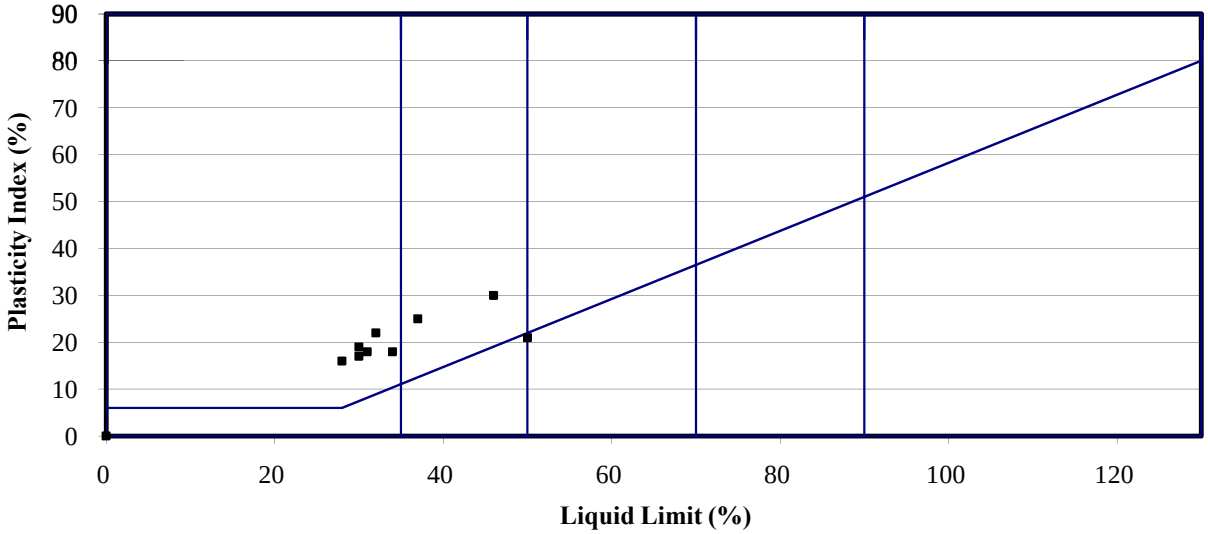
BS 1377:Part 2:1990

Hole/ Sample Number	Sample Type	Depth m	Moisture Content % Cl. 3.2	Liquid Limit % Cl. 4.3/4.4	Plastic Limit % Cl. 5.	Plasticity Index % Cl. 6.	% Passing .425mm	Remarks
TP527	B	1.30	8.0	37	12	25	92	CI Intermediate Plasticity
TP530	B	0.50	18	50	29	21	100	MI/H Inter/High Plasticity
TP532	B	0.25	33	46	16	30	70	CI Intermediate Plasticity
CP501	B	0.50 - 1.00	11	34	16	18	45	CL Low Plasticity
CP502	B	0.10 - 0.70	9.0	31	13	18	50	CL Low Plasticity
CP504	B	0.40	8.0	32	10	22	78	CL Low Plasticity
CP504	B	1.20 - 1.60	11	30	11	19	82	CL Low Plasticity
CP505	B	0.00 - 0.70	11	30	13	17	65	CL Low Plasticity
CP505	B	1.20 - 1.65	11	28	12	16	85	CL Low Plasticity

Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.

BS 5930:1999



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Contract No.:
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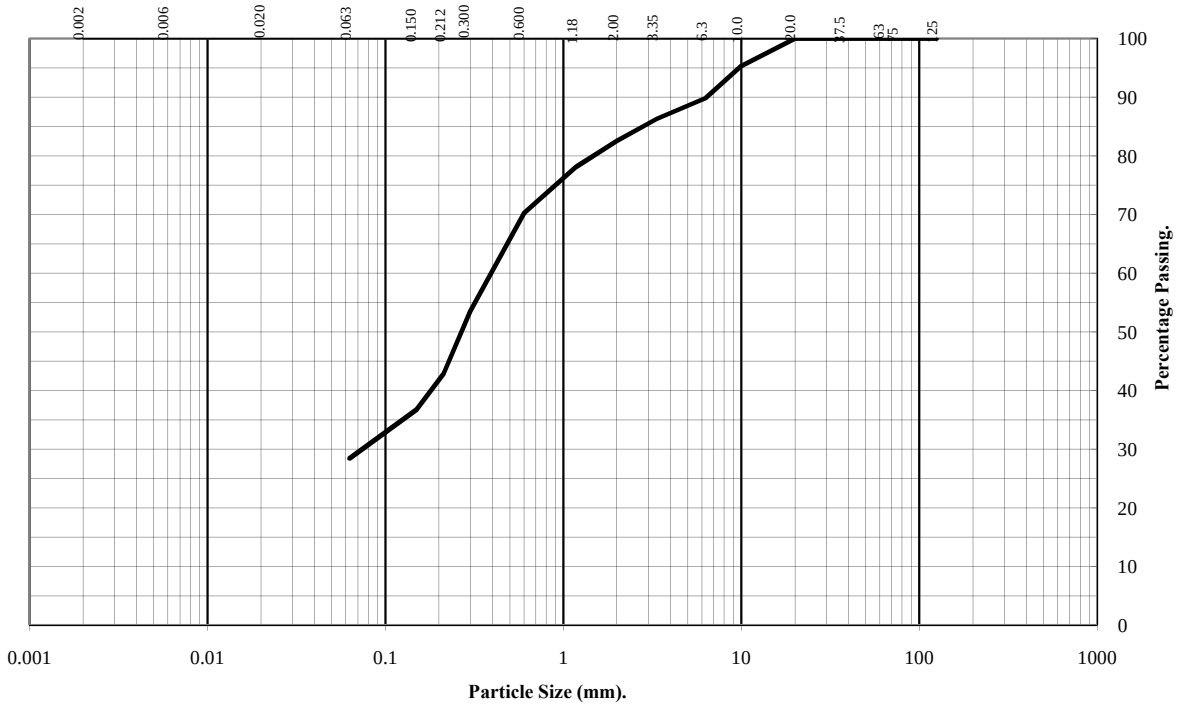
UKAS TESTING 2788

PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

Hole Number: **CP503** Type: **B** Depth (m): **0.40** to **0.80**



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	95
6.3	90
3.35	86
2.00	83
1.18	78
0.60	70
0.300	53
0.212	43
0.150	37
0.063	28

Particle Diameter	Percentage Passing
0.02	#
0.006	#
0.002	#

Soil Fraction	Total Percentage
Cobbles	0
Gravel	17
Sand	55
Silt and Clay	28

Remarks:

#- not determined

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LABORATORY TESTING SERVICES LIMITED

Bicester

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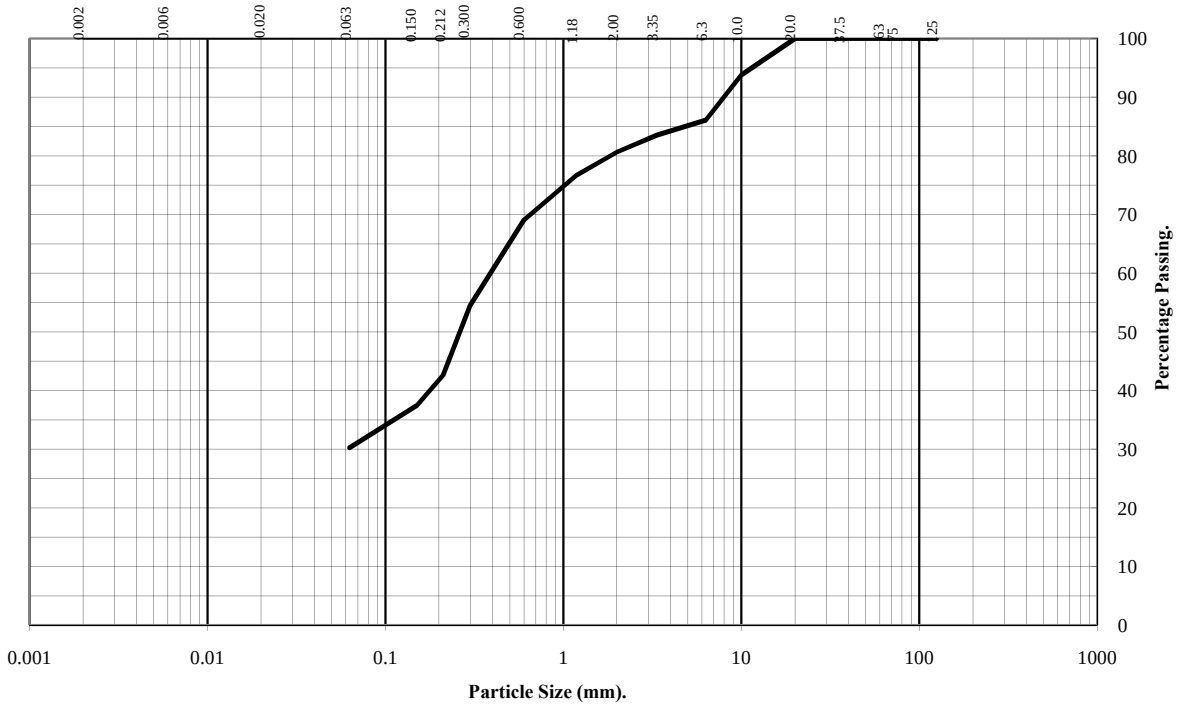
UKAS TESTING 2788

PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

Hole Number: **CP504** Type: **B** Depth (m): **1.20** to **1.60**



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	94
6.3	86
3.35	84
2.00	81
1.18	77
0.60	69
0.300	54
0.212	43
0.150	37
0.063	30

Particle Diameter	Percentage Passing
0.02	#
0.006	#
0.002	#

Soil Fraction	Total Percentage
Cobbles	0
Gravel	19
Sand	51
Silt and Clay	30

Remarks:

#- not determined

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LABORATORY TESTING SERVICES LIMITED

Bicester

Contract No.:
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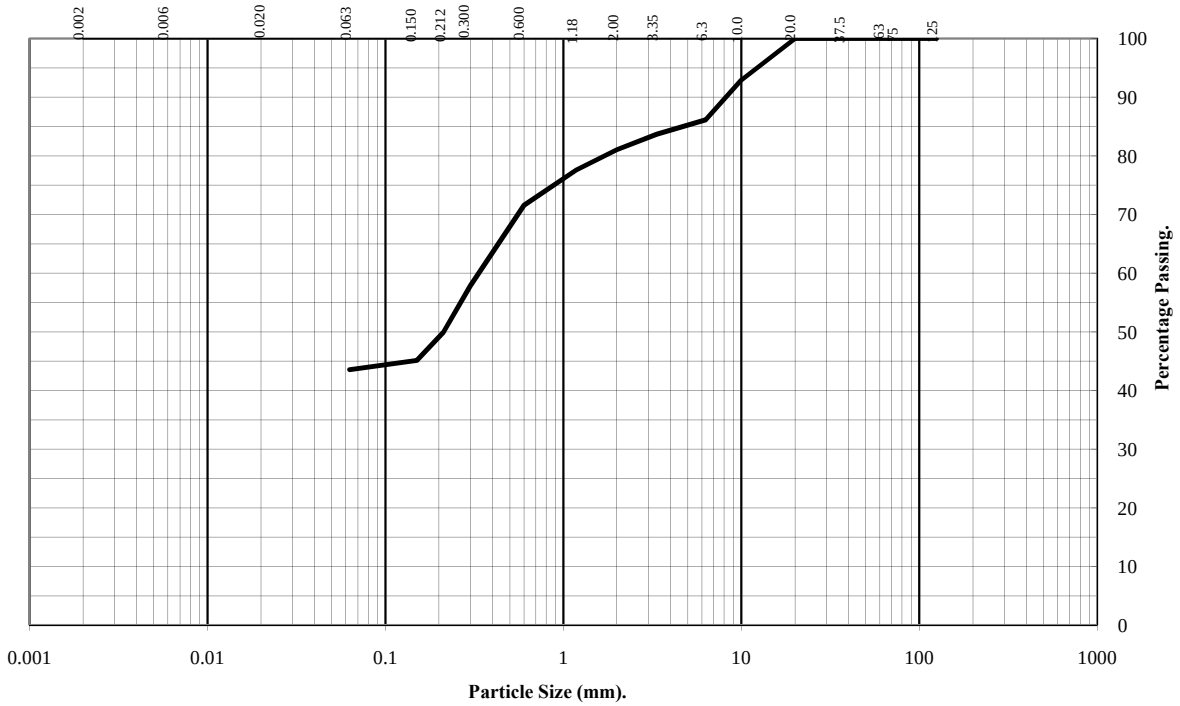
UKAS TESTING 2788

PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

Hole Number: **CP505** Type: **B** Depth (m): **1.20** to **1.65**



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	93
6.3	86
3.35	84
2.00	81
1.18	78
0.60	72
0.300	58
0.212	50
0.150	45
0.063	44

Particle Diameter	Percentage Passing
0.02	#
0.006	#
0.002	#

Soil Fraction	Total Percentage
Cobbles	0
Gravel	19
Sand	37
Silt and Clay	44

Remarks:

#- not determined

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LABORATORY TESTING SERVICES LIMITED

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13224-160811
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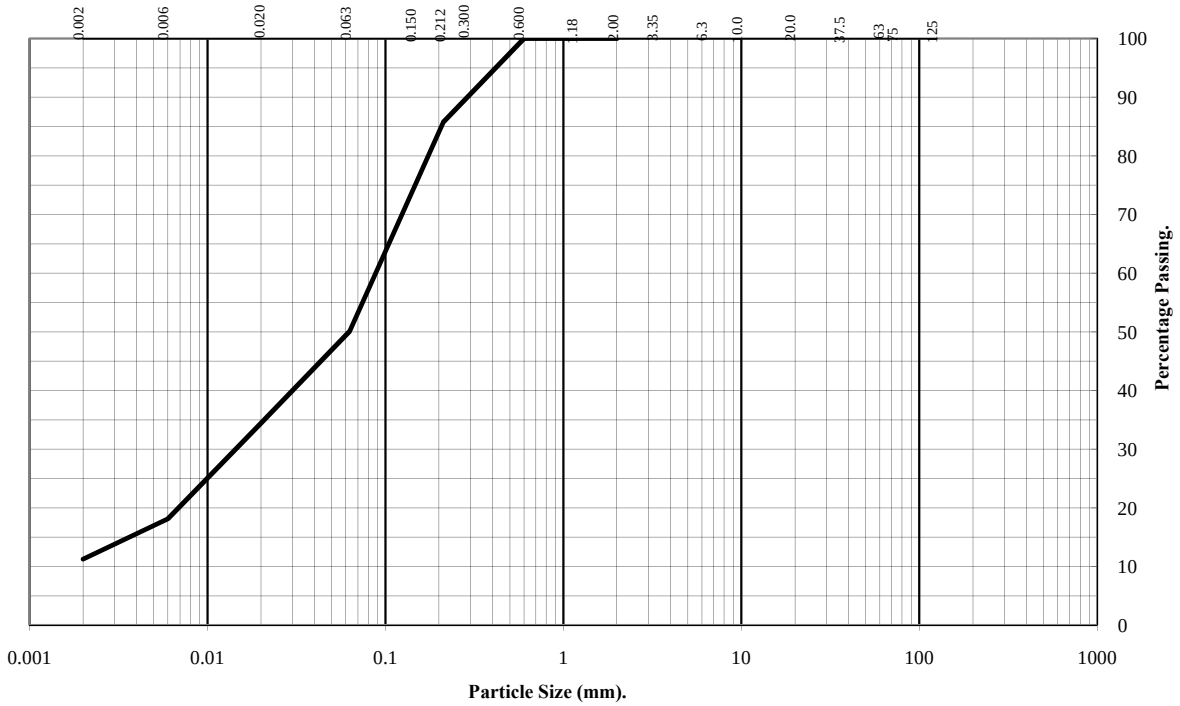
UKAS TESTING
2788

PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: **TP503** Type: **B** Depth (m): **0.30**



BS Test Sieve	Percentage Passing
2.00	100
0.60	100
0.212	86
0.063	50

Particle Diameter	Percentage Passing
0.02	34
0.006	18
0.002	11

Soil Fraction	Total Percentage
Gravel	0
Sand	50
Silt	39
Clay	11

Remarks:

Cl 9.4.8 - Sample has not been pretreated

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LABORATORY TESTING SERVICES LIMITED

Bicester

Contract No.:
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Client Ref No:
SDG 110815-1'

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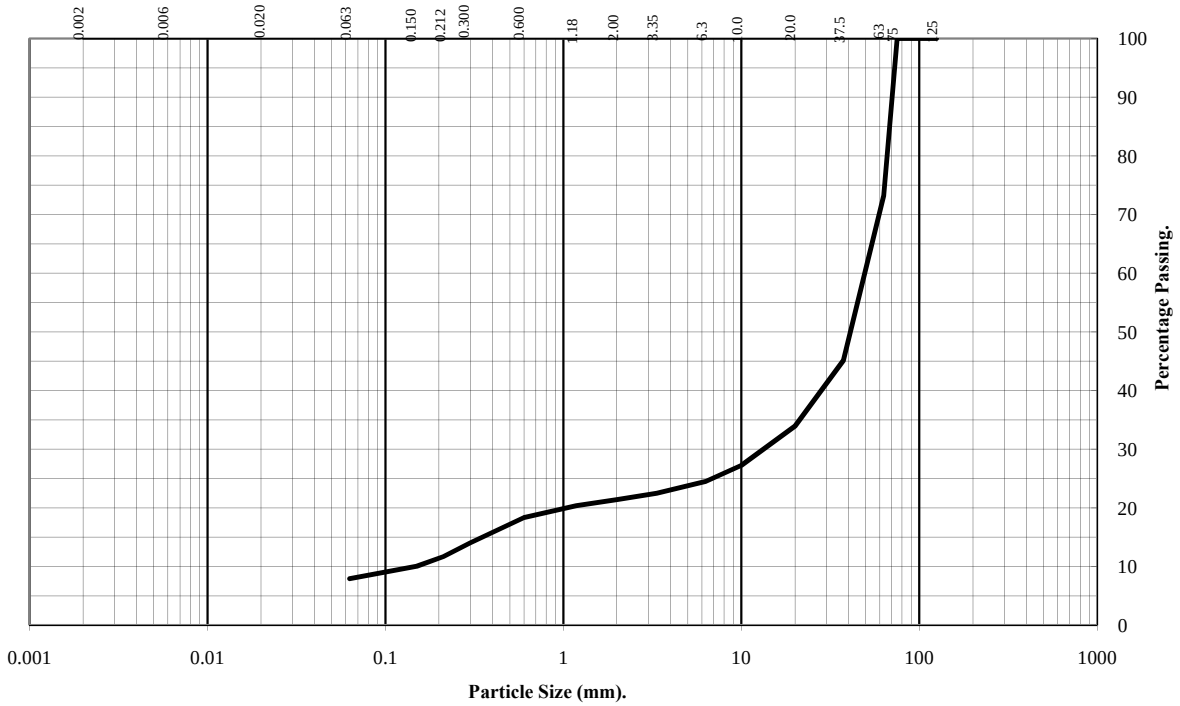
PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

Hole Number: **TP503** Type: **B** Depth (m): **1.10**



BS Test Sieve	Percentage Passing
125	100
75	100
63	73
37.5	45
20	34
10	27
6.3	25
3.35	23
2.00	21
1.18	20
0.60	18
0.300	14
0.212	12
0.150	10
0.063	8

Particle Diameter	Percentage Passing
0.02	#
0.006	#
0.002	#

Soil Fraction	Total Percentage
Cobbles	27
Gravel	52
Sand	13
Silt and Clay	8

Remarks:

#- not determined

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LABORATORY TESTING SERVICES LIMITED

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Client Ref No:
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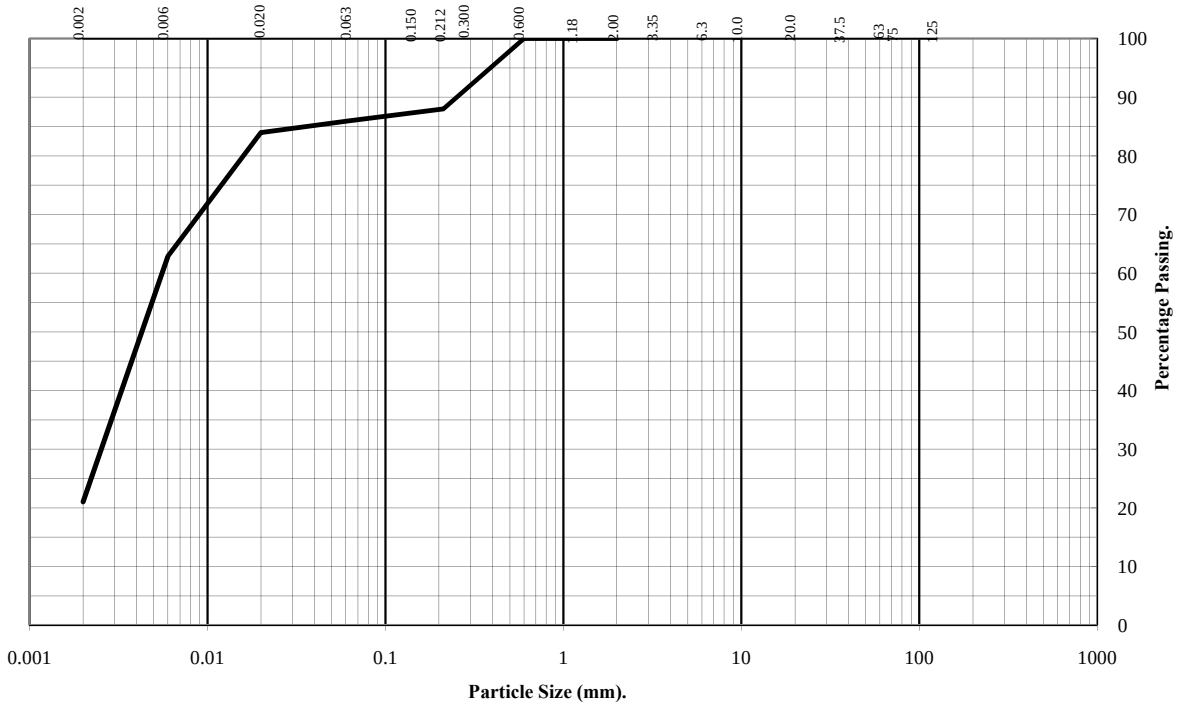
PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: **TP505** Type: **B** Depth (m): **1.50**



BS Test Sieve	Percentage Passing
2.00	100
0.60	100
0.212	88
0.063	86

Particle Diameter	Percentage Passing
0.02	84
0.006	63
0.002	21

Soil Fraction	Total Percentage
Gravel	0
Sand	14
Silt	65
Clay	21

Remarks:

Cl 9.4.8 - Sample has not been pretreated

[redacted] 26/08/2011

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LABORATORY TESTING SERVICES LIMITED

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13224-160811
Client Ref No:
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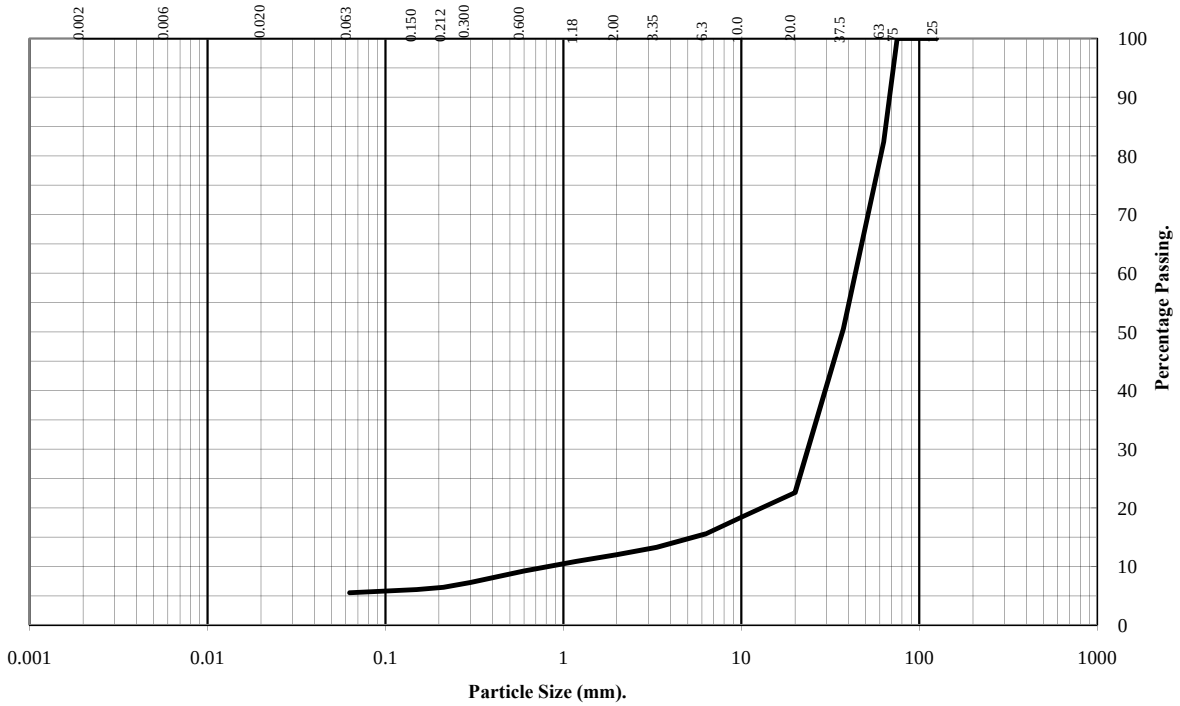
UKAS TESTING 2788

PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

Hole Number: **TP507** Type: **B** Depth (m): **0.80**



BS Test Sieve	Percentage Passing
125	100
75	100
63	82
37.5	51
20	23
10	18
6.3	16
3.35	13
2.00	12
1.18	11
0.60	9
0.300	7
0.212	6
0.150	6
0.063	6

Particle Diameter	Percentage Passing
0.02	#
0.006	#
0.002	#

Soil Fraction	Total Percentage
Cobbles	18
Gravel	70
Sand	6
Silt and Clay	6

Remarks:

#- not determined

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LABORATORY TESTING SERVICES LIMITED

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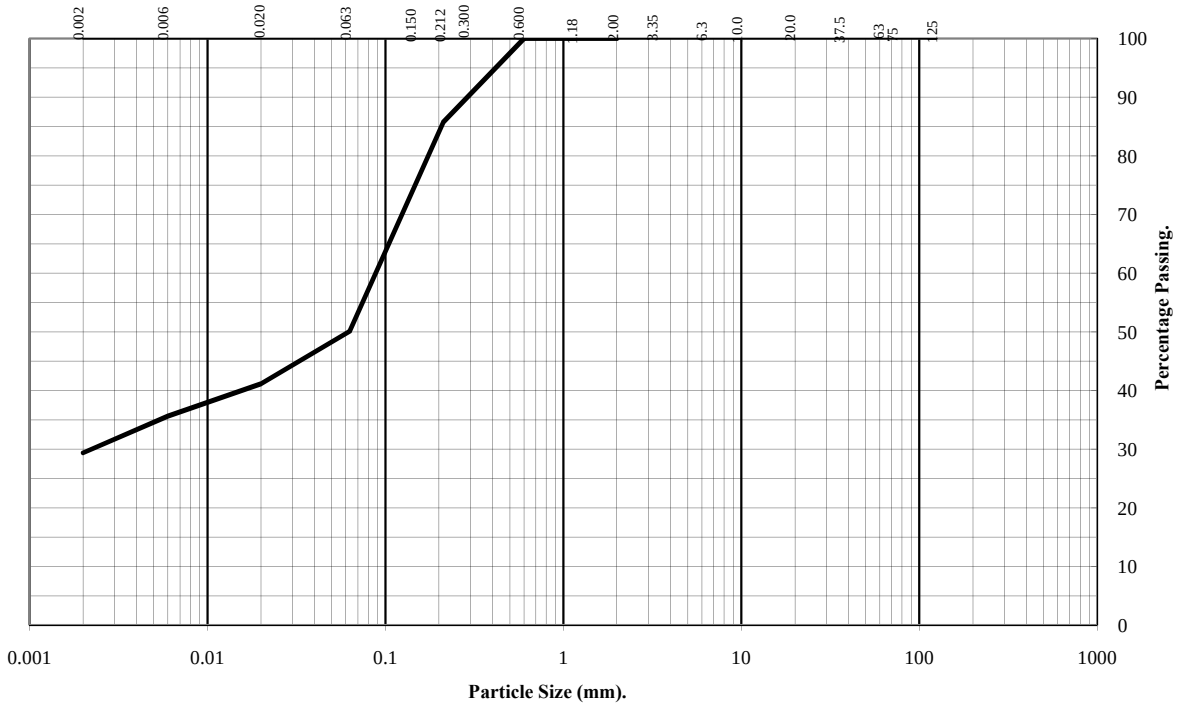
UKAS TESTING 2788

PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: **TP507** Type: **B** Depth (m): **0.40**



BS Test Sieve	Percentage Passing
2.00	100
0.60	100
0.212	86
0.063	50

Particle Diameter	Percentage Passing
0.02	41
0.006	36
0.002	29

Soil Fraction	Total Percentage
Gravel	0
Sand	50
Silt	21
Clay	29

Remarks:

Cl 9.4.8 - Sample has not been pretreated

[redacted] 26/08/2011

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[redacted] 26/08/2011

Approved by **Date**

LABORATORY TESTING SERVICES LIMITED

Bicester

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13224-160811
Client Ref No:
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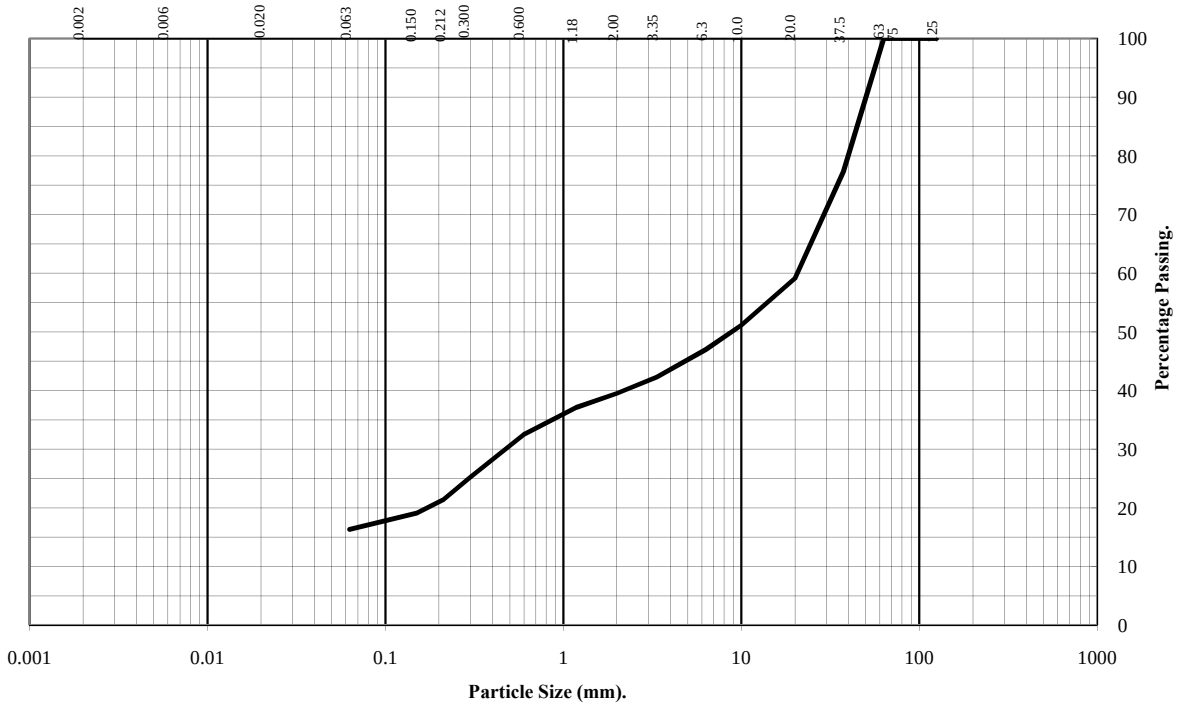
PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

Hole Number: **TP509** Type: **B** Depth (m): **1.00**



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	77
20	59
10	51
6.3	47
3.35	42
2.00	39
1.18	37
0.60	33
0.300	25
0.212	21
0.150	19
0.063	16

Particle Diameter	Percentage Passing
0.02	#
0.006	#
0.002	#

Soil Fraction	Total Percentage
Cobbles	0
Gravel	61
Sand	23
Silt and Clay	16

Remarks:

#- not determined

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LABORATORY TESTING SERVICES LIMITED

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Contract No.:
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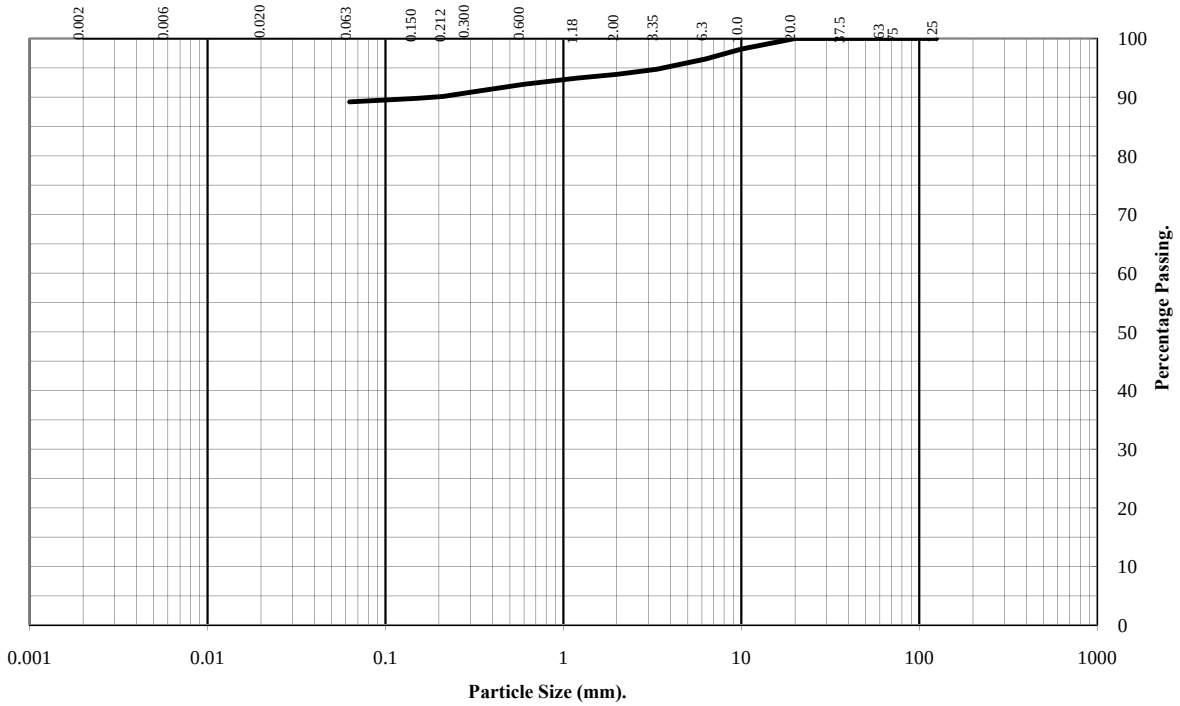
PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

Hole Number: **TP512** Type: **B** Depth (m): **1.80**



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	98
6.3	97
3.35	95
2.00	94
1.18	93
0.60	92
0.300	91
0.212	90
0.150	90
0.063	89

Particle Diameter	Percentage Passing
0.02	#
0.006	#
0.002	#

Soil Fraction	Total Percentage
Cobbles	0
Gravel	6
Sand	5
Silt and Clay	89

Remarks:

#- not determined

[redacted] 8/25/2011

Checked by **Date**

[redacted] 8/25/2011

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LABORATORY TESTING SERVICES LIMITED

Bicester

Contract No.:
13224-160811
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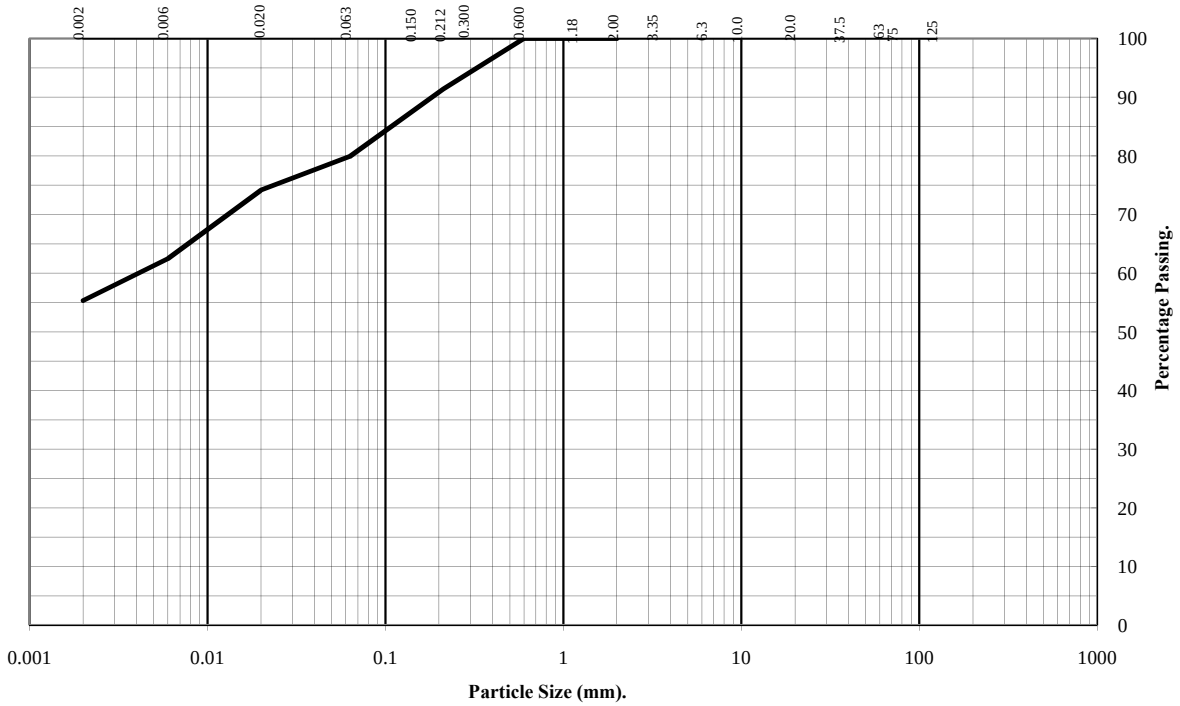
2788

PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: **TP513** Type: **B** Depth (m): **0.40**



BS Test Sieve	Percentage Passing
2.00	100
0.60	100
0.212	91
0.063	80

Particle Diameter	Percentage Passing
0.02	74
0.006	62
0.002	55

Soil Fraction	Total Percentage
Gravel	0
Sand	20
Silt	25
Clay	55

Remarks:

Cl 9.4.8 - Sample has not been pretreated

[redacted] 26/08/2011

Checked by **Date**

[redacted] 26/08/2011

Approved by **Date**

LABORATORY TESTING SERVICES LIMITED

Bicester

Contract No.:
13224-160811
Client Ref No:
SDG 110815-1'

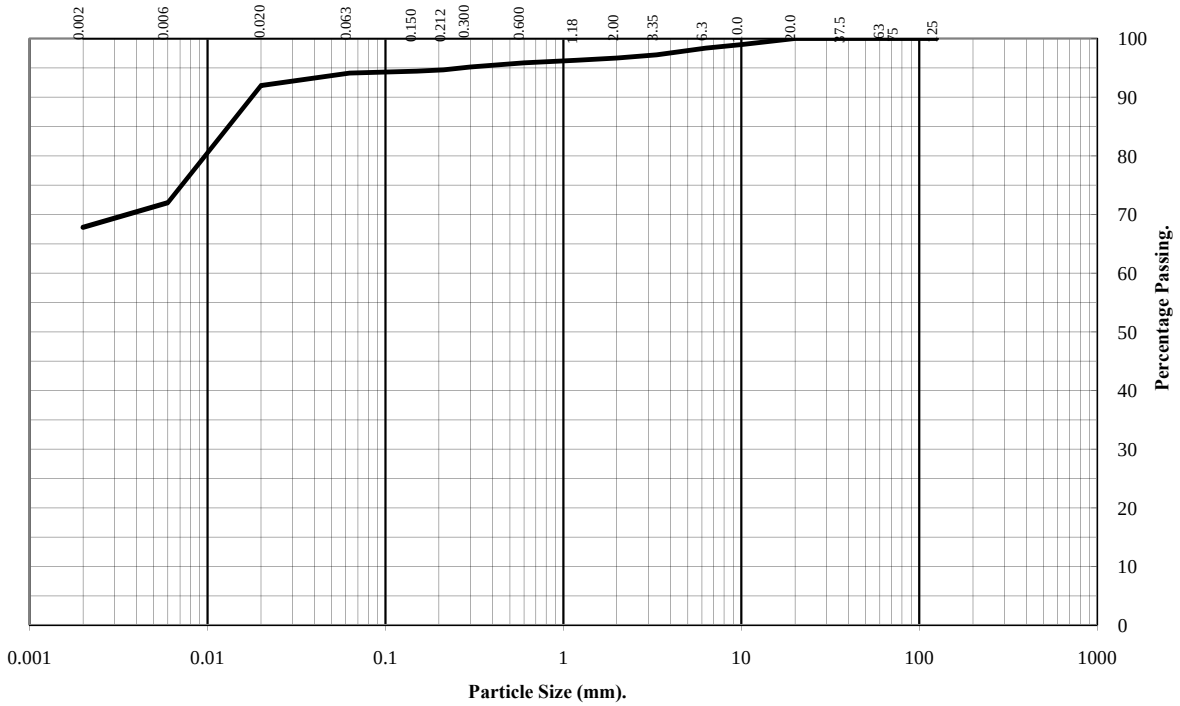
UKAS TESTING
2788

PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: **TP514** Type: **B** Depth (m): **1.20**



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	99
6.3	98
3.35	97
2.00	97
1.18	96
0.60	96
0.300	95
0.212	95
0.150	94
0.063	94

Particle Diameter	Percentage Passing
0.02	92
0.006	72
0.002	68

Soil Fraction	Total Percentage
Cobbles	0
Gravel	3
Sand	3
Silt	26
Clay	68

Remarks:

Cl 9.4.8 - Sample has not been pretreated

[redacted] 31/08/2011

Checked by **Date**

[redacted] 31/08/2011

Approved by **Date**

LABORATORY TESTING SERVICES LIMITED

Bicester

Contract No.:
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Client Ref No:
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UKAS TESTING
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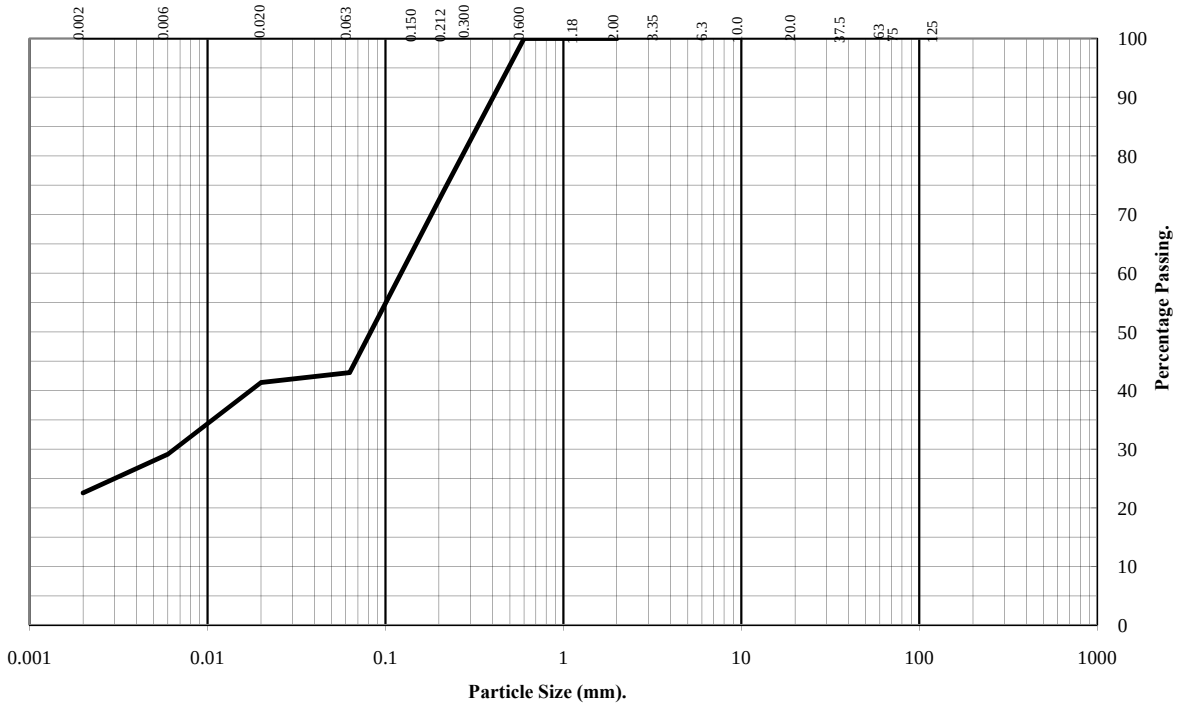
PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: **TP516** Type: **B** Depth (m): **0.40**



BS Test Sieve	Percentage Passing
2.00	100
0.60	100
0.212	74
0.063	43

Particle Diameter	Percentage Passing
0.02	41
0.006	29
0.002	23

Soil Fraction	Total Percentage
Gravel	0
Sand	57
Silt	21
Clay	23

Remarks:

Cl 9.4.8 - Sample has not been pretreated

[redacted] 26/08/2011

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LABORATORY TESTING SERVICES LIMITED

Bicester

Contract No.:
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Client Ref No:
SDG 110815-1'

UKAS TESTING
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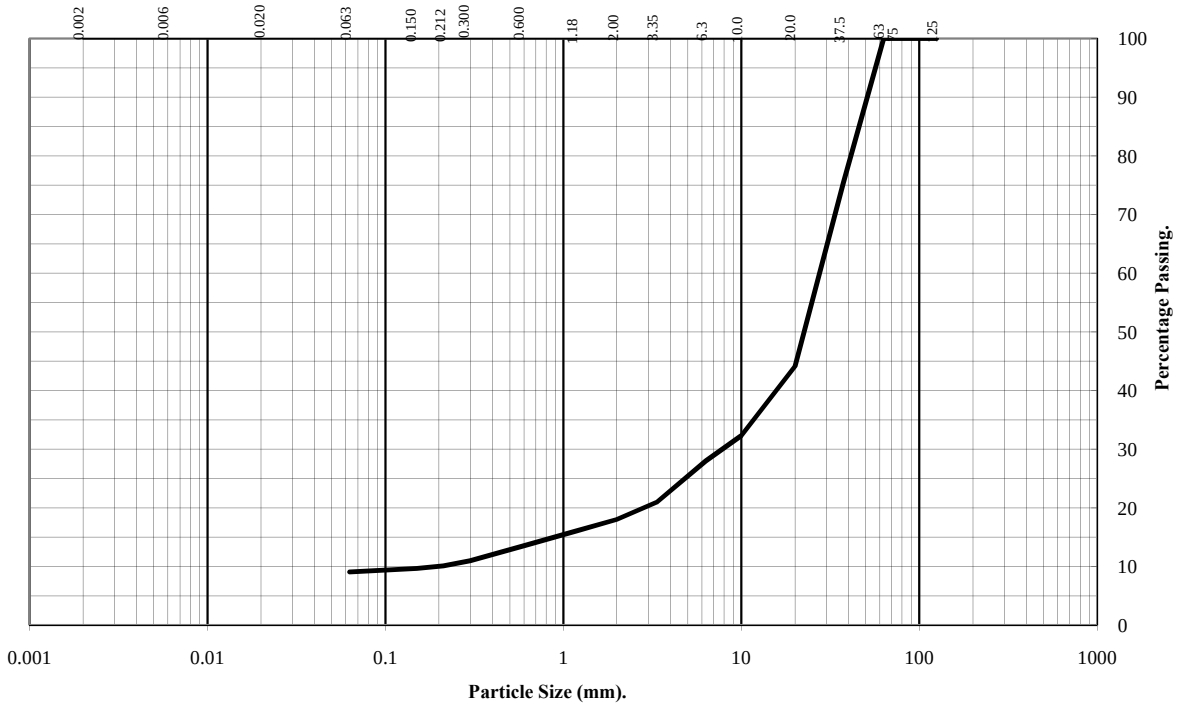
PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

Hole Number: **TP518** Type: **B** Depth (m): **1.30**



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	75
20	44
10	32
6.3	28
3.35	21
2.00	18
1.18	16
0.60	14
0.300	11
0.212	10
0.150	10
0.063	9

Particle Diameter	Percentage Passing
0.02	#
0.006	#
0.002	#

Soil Fraction	Total Percentage
Cobbles	0
Gravel	82
Sand	9
Silt and Clay	9

Remarks:

#- not determined

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LABORATORY TESTING SERVICES LIMITED

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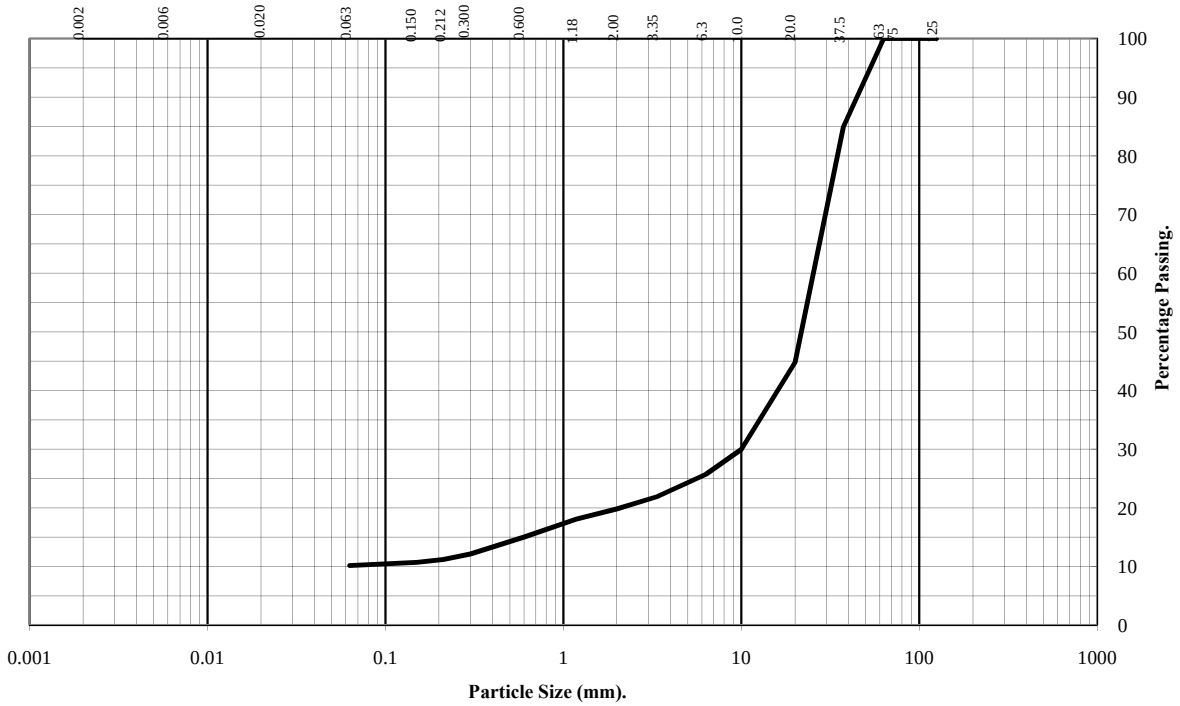
PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

Hole Number: **TP519** Type: **B** Depth (m): **1.00**



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	85
20	45
10	30
6.3	26
3.35	22
2.00	20
1.18	18
0.60	15
0.300	12
0.212	11
0.150	11
0.063	10

Particle Diameter	Percentage Passing
0.02	#
0.006	#
0.002	#

Soil Fraction	Total Percentage
Cobbles	0
Gravel	80
Sand	10
Silt and Clay	10

Remarks:

#- not determined

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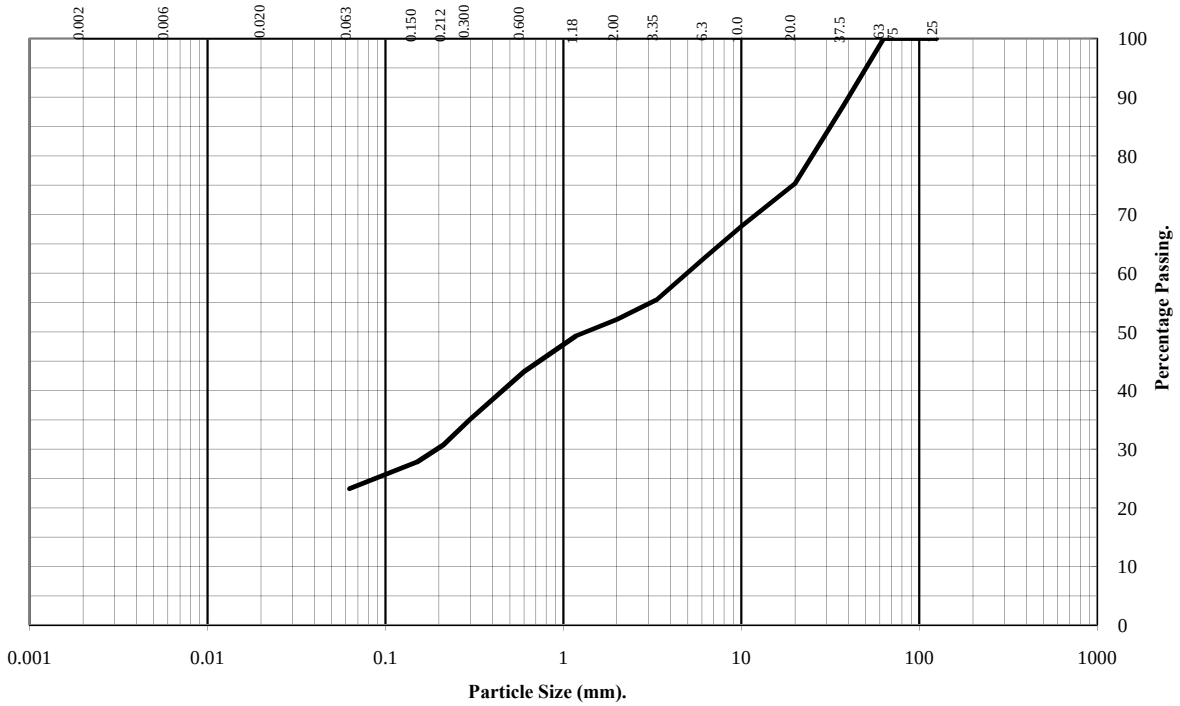
PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

Hole Number: **TP521** Type: **B** Depth (m): **1.10**



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	89
20	75
10	68
6.3	63
3.35	55
2.00	52
1.18	49
0.60	43
0.300	35
0.212	31
0.150	28
0.063	23

Particle Diameter	Percentage Passing
0.02	#
0.006	#
0.002	#

Soil Fraction	Total Percentage
Cobbles	0
Gravel	48
Sand	29
Silt and Clay	23

Remarks:

#- not determined

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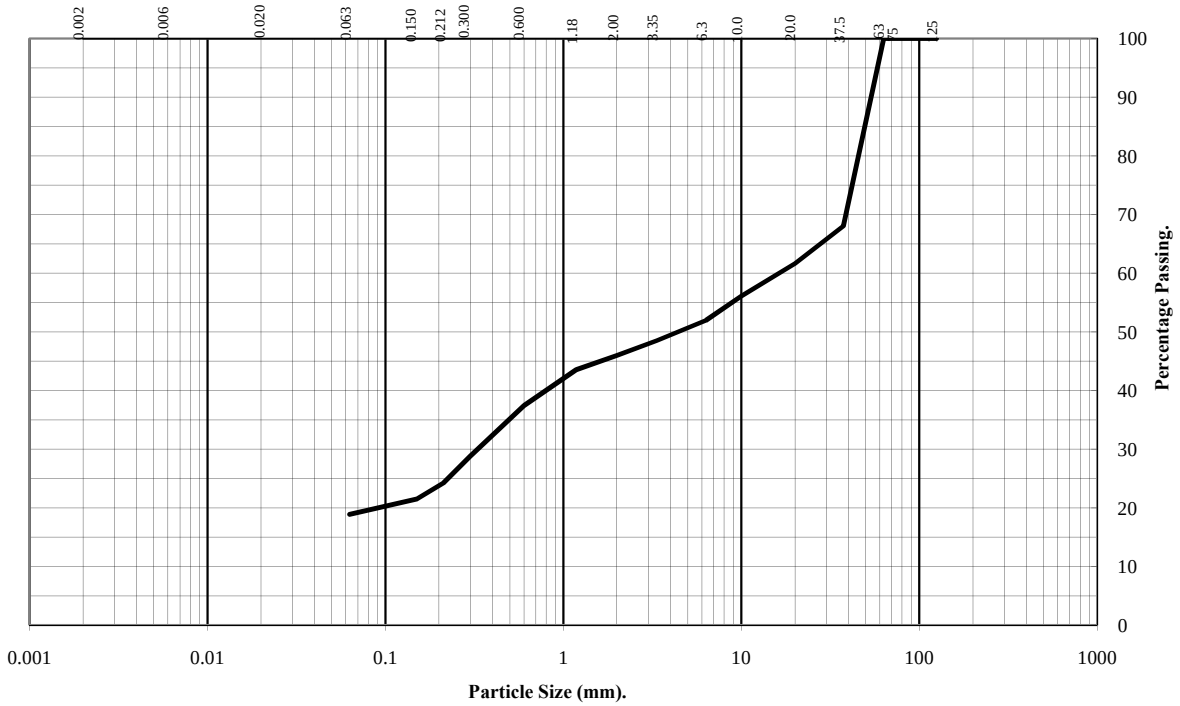
PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

Hole Number: **TP522** Type: **B** Depth (m): **1.00**



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	68
20	62
10	56
6.3	52
3.35	49
2.00	46
1.18	44
0.60	37
0.300	29
0.212	24
0.150	22
0.063	19

Particle Diameter	Percentage Passing
0.02	#
0.006	#
0.002	#

Soil Fraction	Total Percentage
Cobbles	0
Gravel	54
Sand	27
Silt and Clay	19

Remarks:

#- not determined

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Contract No.:
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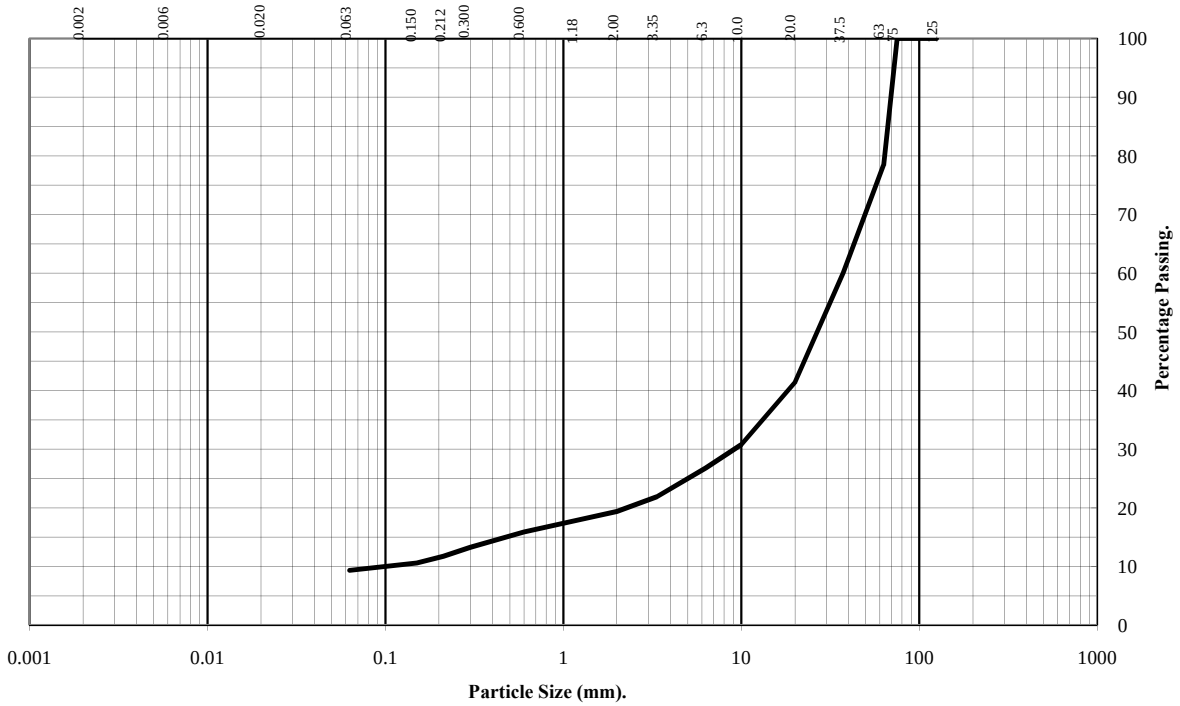
PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

Hole Number: **TP524** Type: **B** Depth (m): **1.50**



BS Test Sieve	Percentage Passing
125	100
75	100
63	78
37.5	60
20	41
10	31
6.3	27
3.35	22
2.00	19
1.18	18
0.60	16
0.300	13
0.212	12
0.150	11
0.063	9

Particle Diameter	Percentage Passing
0.02	#
0.006	#
0.002	#

Soil Fraction	Total Percentage
Cobbles	22
Gravel	59
Sand	10
Silt and Clay	9

Remarks:

#- not determined

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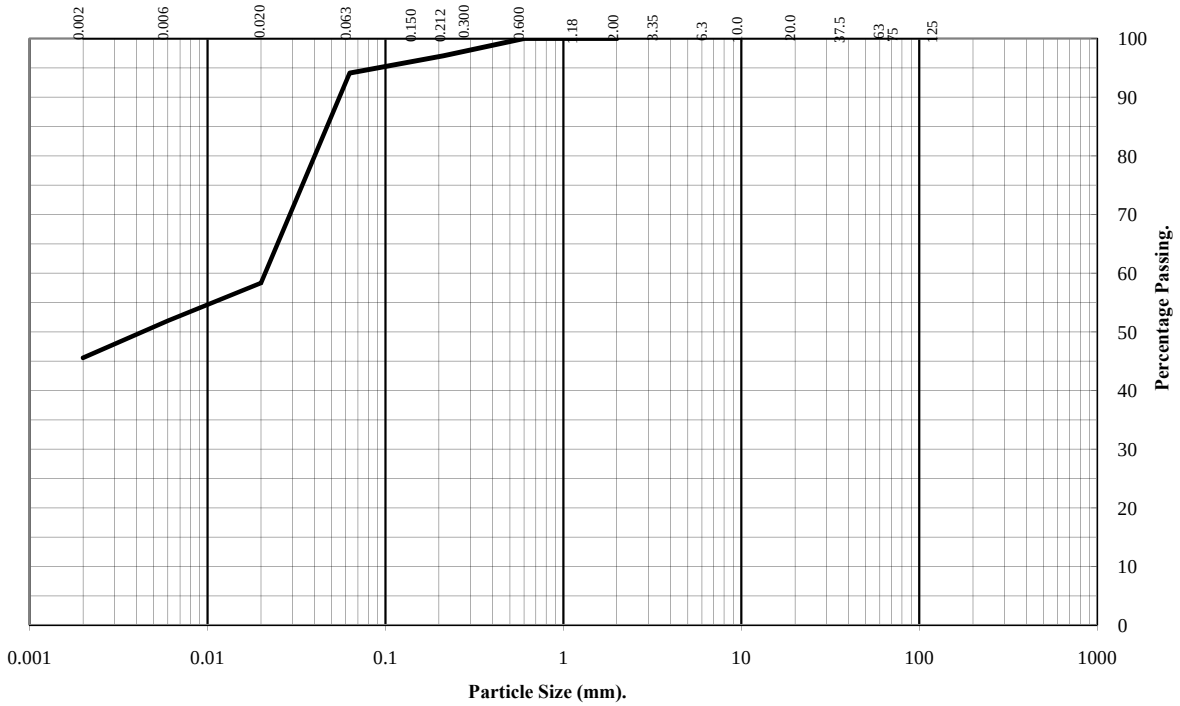
PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: **TP526** Type: **B** Depth (m): **0.60**



BS Test Sieve	Percentage Passing
2.00	100
0.60	100
0.212	97
0.063	94

Particle Diameter	Percentage Passing
0.02	58
0.006	52
0.002	46

Soil Fraction	Total Percentage
Gravel	0
Sand	6
Silt	49
Clay	46

Remarks:

Cl 9.4.8 - Sample has not been pretreated

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LABORATORY TESTING SERVICES LIMITED

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Client Ref No:
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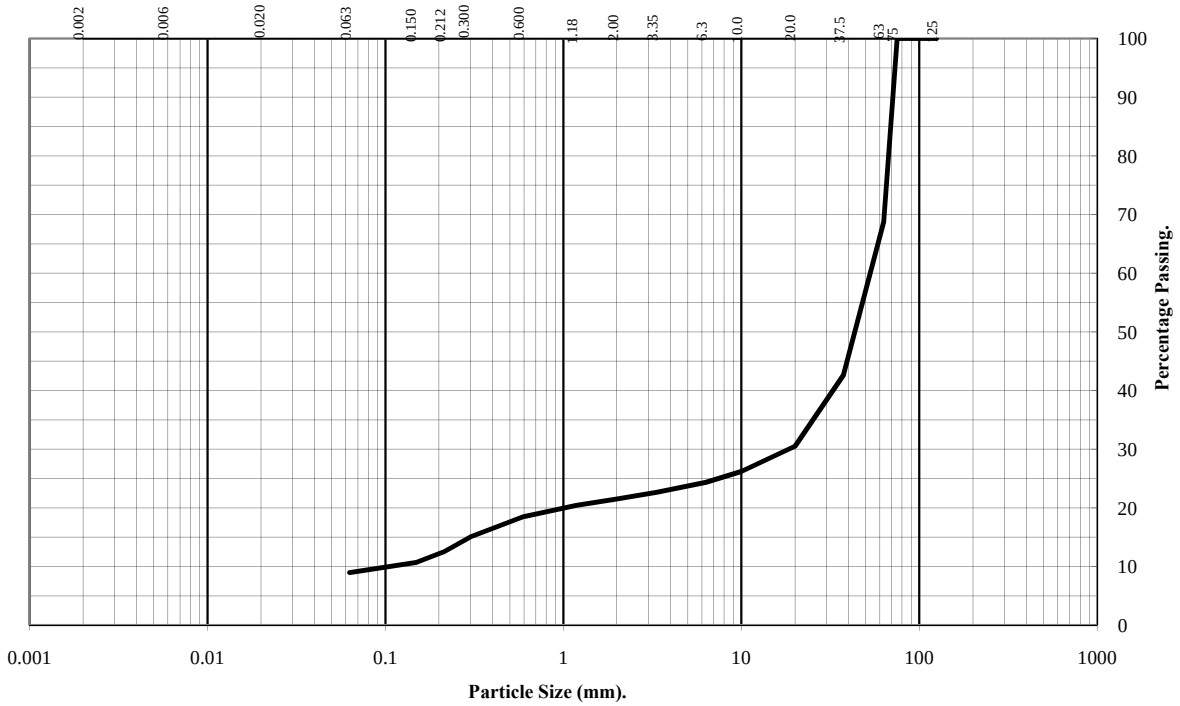
PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

Hole Number: **TP527** Type: **B** Depth (m): **1.30**



BS Test Sieve	Percentage Passing
125	100
75	100
63	69
37.5	43
20	31
10	26
6.3	24
3.35	23
2.00	21
1.18	20
0.60	19
0.300	15
0.212	12
0.150	11
0.063	9

Particle Diameter	Percentage Passing
0.02	#
0.006	#
0.002	#

Soil Fraction	Total Percentage
Cobbles	31
Gravel	48
Sand	12
Silt and Clay	9

Remarks:

#- not determined

[redacted] 8/25/2011

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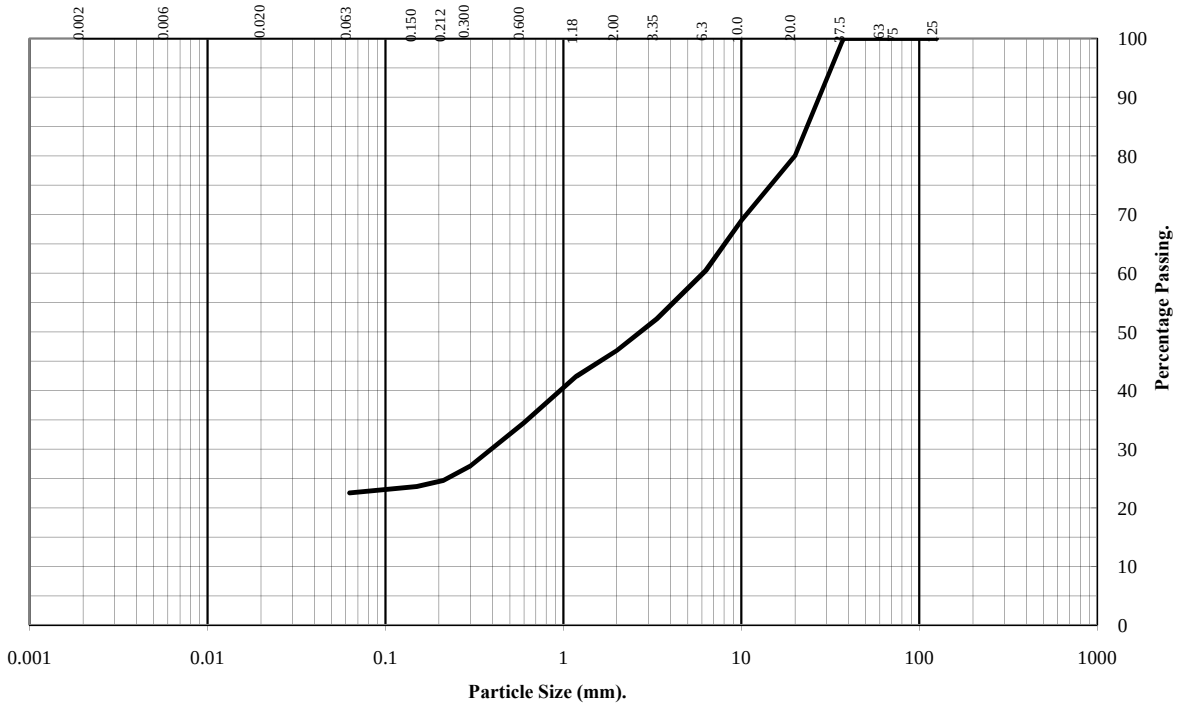
PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

Hole Number: **TP532** Type: **B** Depth (m): **1.70**



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	80
10	69
6.3	60
3.35	52
2.00	47
1.18	42
0.60	34
0.300	27
0.212	25
0.150	24
0.063	23

Particle Diameter	Percentage Passing
0.02	#
0.006	#
0.002	#

Soil Fraction	Total Percentage
Cobbles	0
Gravel	53
Sand	24
Silt and Clay	23

Remarks:

#- not determined

[redacted] 8/25/2011

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Contract No.:
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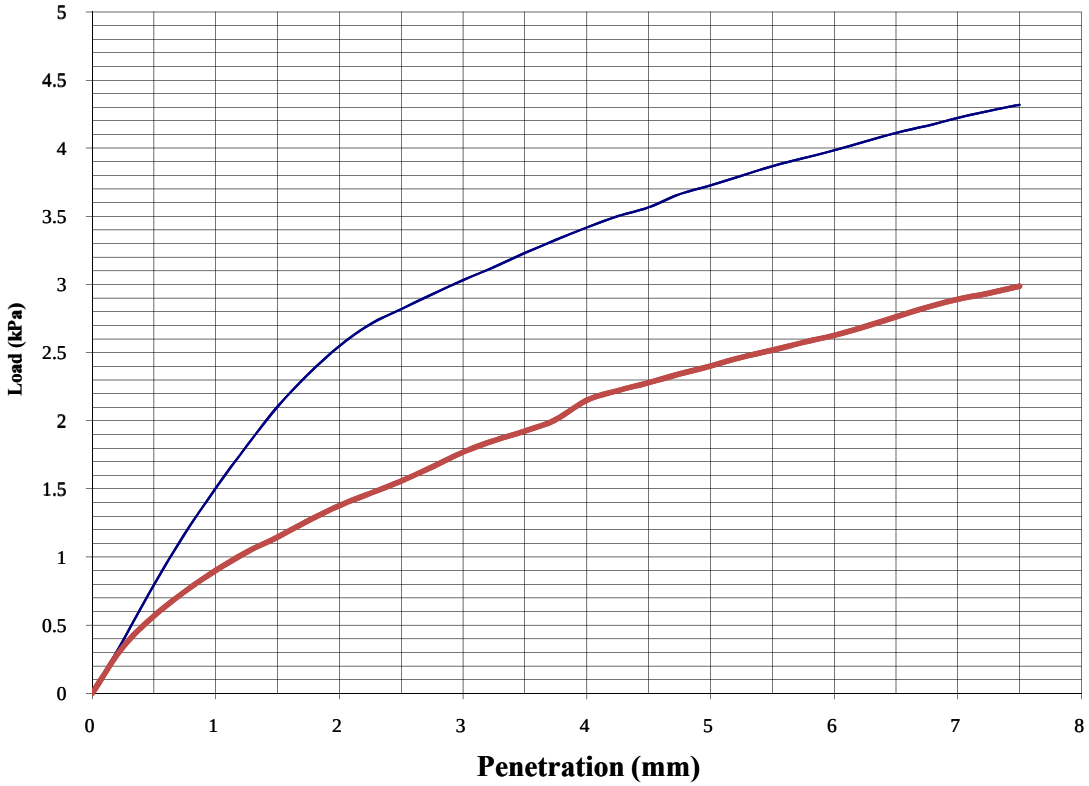
California Bearing Ratio Test.

BS 1377:Part 4:1990

Hole Number: **CP501** **Depth (m)** **0.50**



Initial Sample Conditions		Test Conditions		Method of compaction : 2.5 Kg Rammer	
Moisture Content:	14	Surcharge Kg:	2.0	Final Moisture Content %	
Bulk Density Mg/m3:	1.96	Soaking Time hrs	n/a	Sample Top	13.6
Dry Density Mg/m3:	1.73	Swelling mm:	n/a	Sample Bottom	13.6
C.B.R. Value %	Sample Top	21.4		Sample Bottom	12.0
Percentage retained on 20mm BS test sieve:		0	Remarks:		

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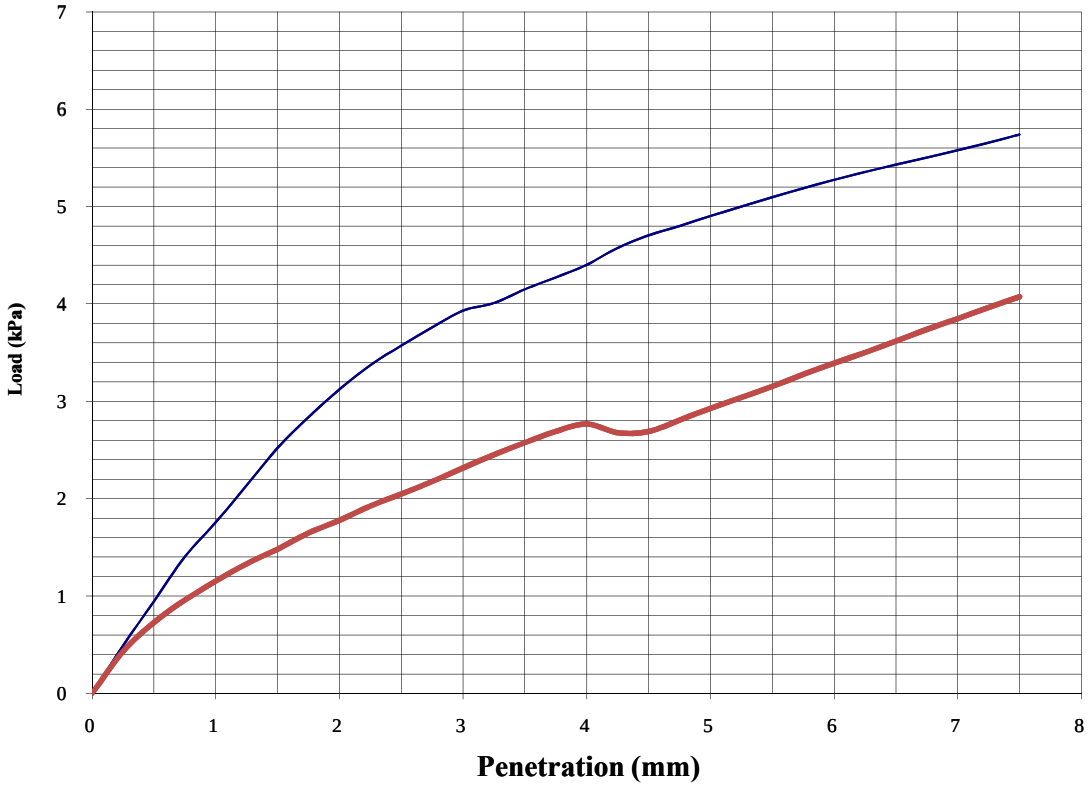
California Bearing Ratio Test.

BS 1377:Part 4:1990

Hole Number: **CP502** **Depth (m)** **0.10**



Initial Sample Conditions		Test Conditions		Method of compaction : 2.5 Kg Rammer	
Moisture Content:	11	Surcharge Kg:	2.0	Final Moisture Content %	
Bulk Density Mg/m3:	2.02	Soaking Time hrs	n/a	Sample Top	10.5
Dry Density Mg/m3:	1.83	Swelling mm:	n/a	Sample Bottom	10.5
C.B.R. Value %	Sample Top	27.1		Sample Bottom	15.5
Percentage retained on 20mm BS test sieve:		0	Remarks:		

[redacted] 23/08/11

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[redacted] 23/08/11

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Contract No.:
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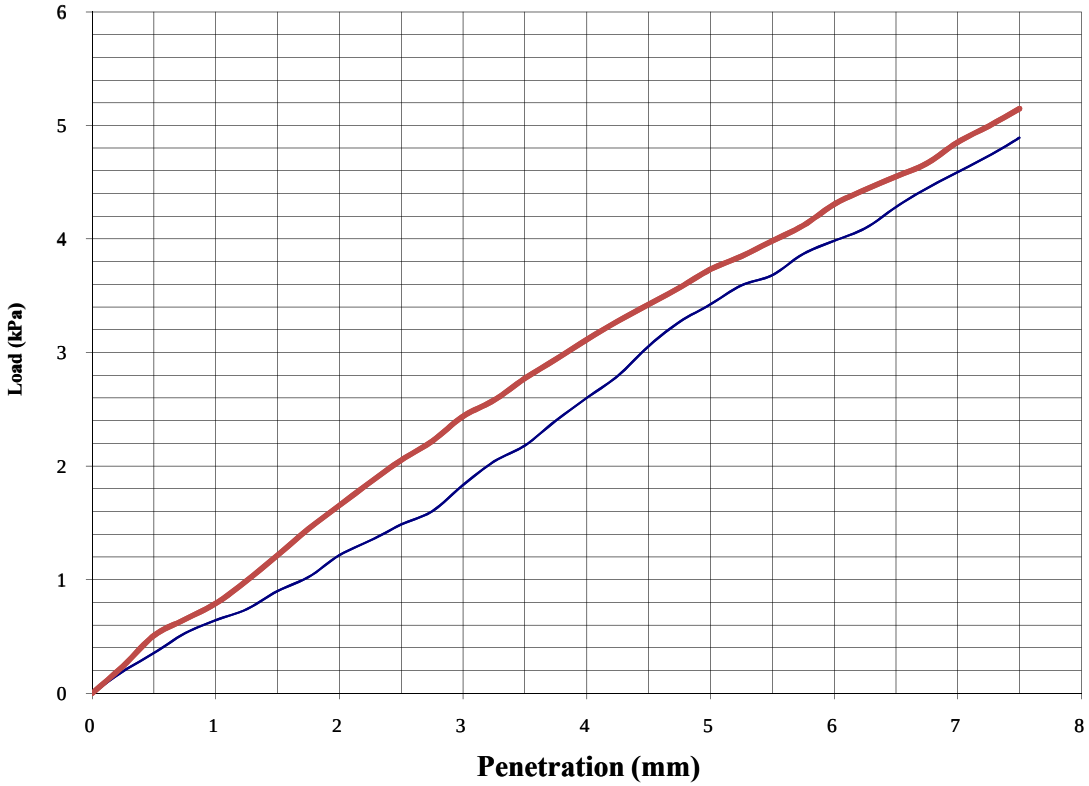
California Bearing Ratio Test.

BS 1377:Part 4:1990

Hole Number: **TP504** **Depth (m)** **0.70**



Initial Sample Conditions		Test Conditions		Method of compaction : 2.5 Kg Rammer	
Moisture Content:	6	Surcharge Kg:	2.0	Final Moisture Content %	
Bulk Density Mg/m3:	2.05	Soaking Time hrs	n/a	Sample Top	6.0
Dry Density Mg/m3:	1.93	Swelling mm:	n/a	Sample Bottom	6.0
C.B.R. Value %	Sample Top	17.1		Sample Bottom	18.7
Percentage retained on 20mm BS test sieve:		0	Remarks:		

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[redacted] 23/08/11

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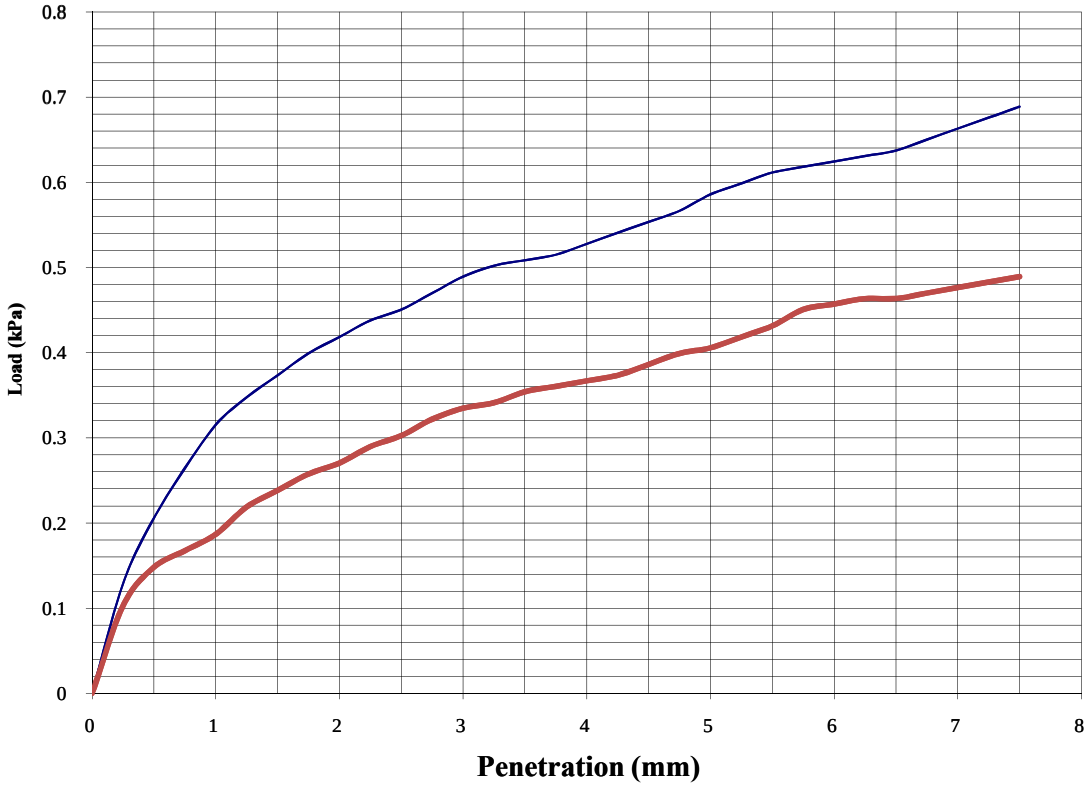
California Bearing Ratio Test.

BS 1377:Part 4:1990

Hole Number: **TP505** **Depth (m)** **0.50**



Initial Sample Conditions		Test Conditions		Method of compaction : 2.5 Kg Rammer	
Moisture Content:	35	Surcharge Kg:	2.0	Final Moisture Content %	
Bulk Density Mg/m3:	1.93	Soaking Time hrs	n/a	Sample Top	34.9
Dry Density Mg/m3:	1.43	Swelling mm:	n/a	Sample Bottom	34.9
C.B.R. Value %	Sample Top	3.4		Sample Bottom	2.3
Percentage retained on 20mm BS test sieve:		0	Remarks:		

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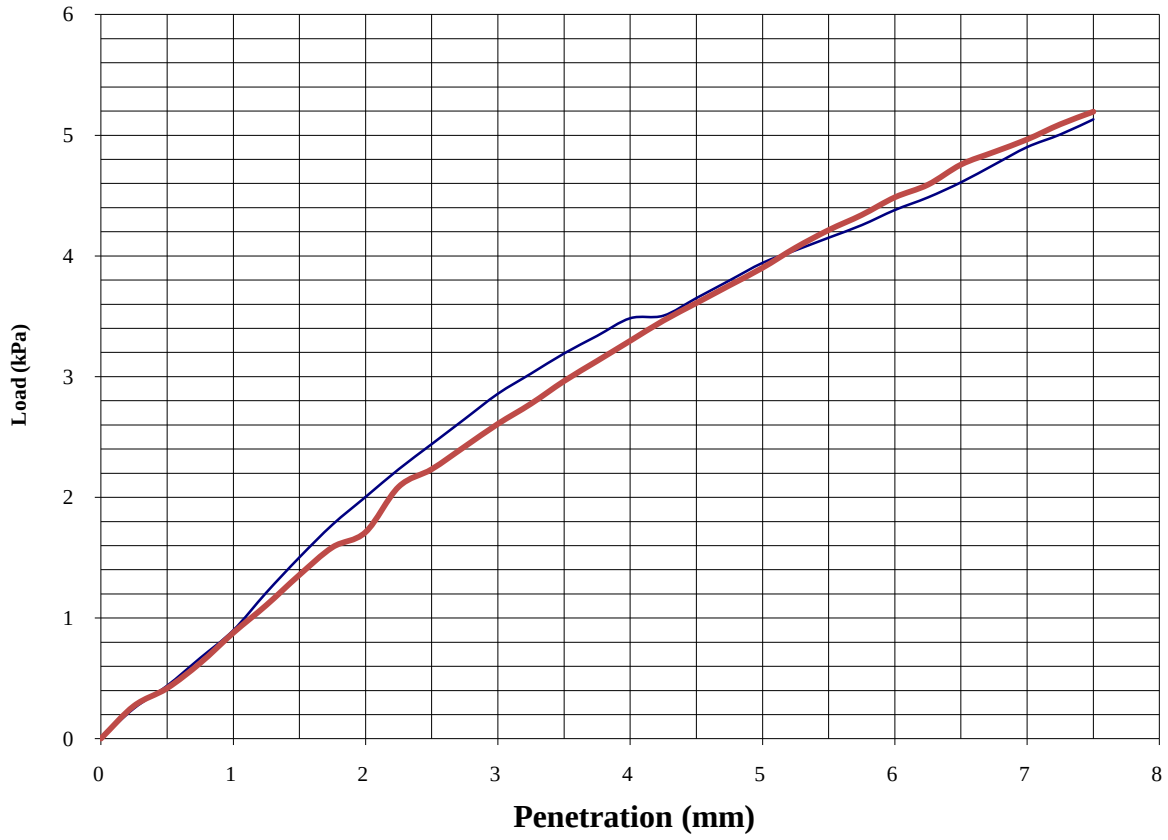
California Bearing Ratio Test.

BS 1377:Part 4:1990

Hole Number: **TP507** **Depth (m)** **0.80**



Initial Sample Conditions		Test Conditions		Method of compaction : 2.5 Kg Rammer	
Moisture Content:	12	Surcharge Kg:	2.0	Final Moisture Content %	
Bulk Density Mg/m3:	2.10	Soaking Time hrs	n/a	Sample Top	13.3
Dry Density Mg/m3:	1.87	Swelling mm:	n/a	Sample Bottom	12.6
C.B.R. Value %	Sample Top	19.7		Sample Bottom	19.5
Percentage retained on 20mm BS test sieve:		0	Remarks:		

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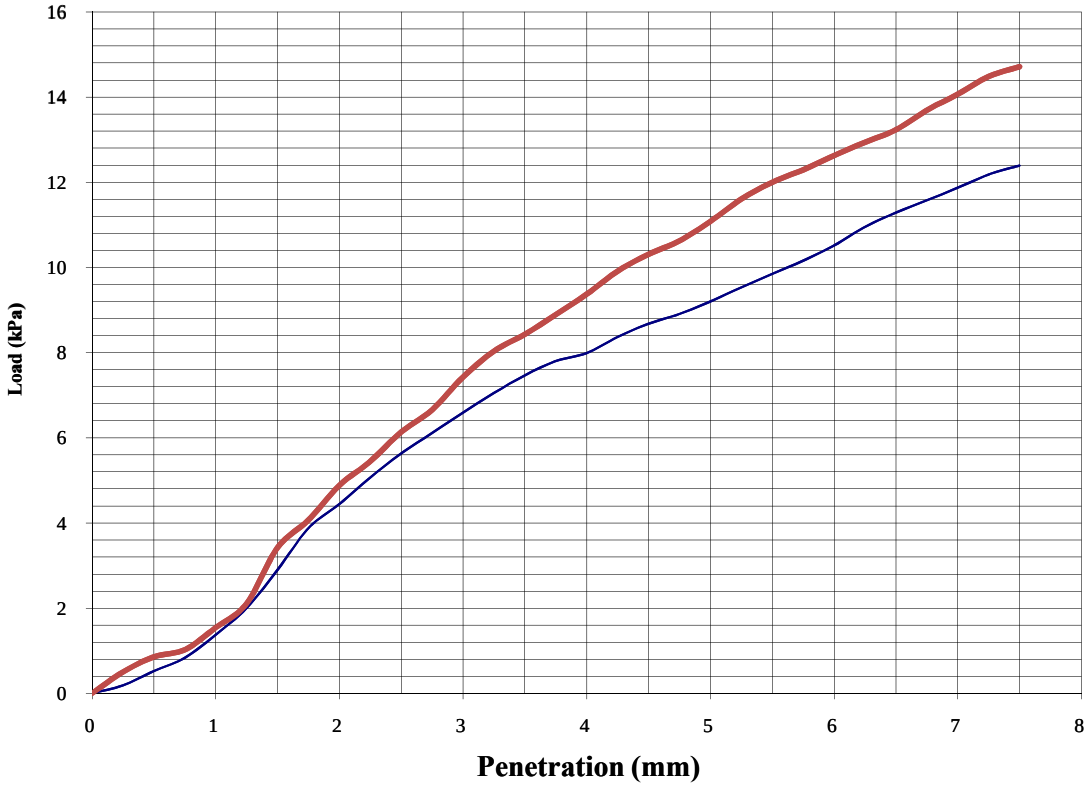
California Bearing Ratio Test.

BS 1377:Part 4:1990

Hole Number: **TP510** **Depth (m)** **0.60**



Initial Sample Conditions		Test Conditions		Method of compaction : 2.5 Kg Rammer	
Moisture Content:	12	Surcharge Kg:	2.0	Final Moisture Content %	
Bulk Density Mg/m3:	1.99	Soaking Time hrs	n/a	Sample Top	12.0
Dry Density Mg/m3:	1.79	Swelling mm:	n/a	Sample Bottom	12.3
C.B.R. Value %	Sample Top	46.0		Sample Bottom	55.4
Percentage retained on 20mm BS test sieve:		0	Remarks:		

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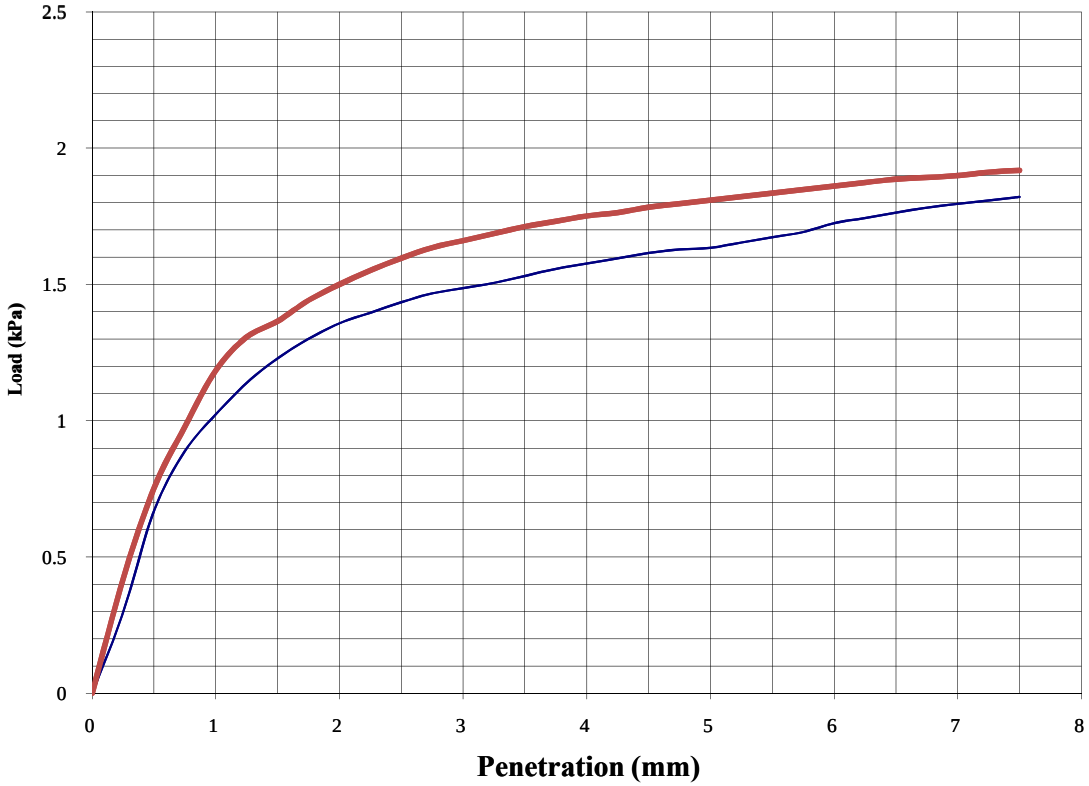
California Bearing Ratio Test.

BS 1377:Part 4:1990

Hole Number: **TP512** **Depth (m)** **0.50**



Initial Sample Conditions		Test Conditions		Method of compaction : 2.5 Kg Rammer	
Moisture Content:	23	Surcharge Kg:	2.0	Final Moisture Content %	
Bulk Density Mg/m3:	1.94	Soaking Time hrs	n/a	Sample Top	23.3
Dry Density Mg/m3:	1.57	Swelling mm:	n/a	Sample Bottom	23.3
C.B.R. Value %	Sample Top	10.9		Sample Bottom	12.1
Percentage retained on 20mm BS test sieve:		0	Remarks:		

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Checked by **Date**

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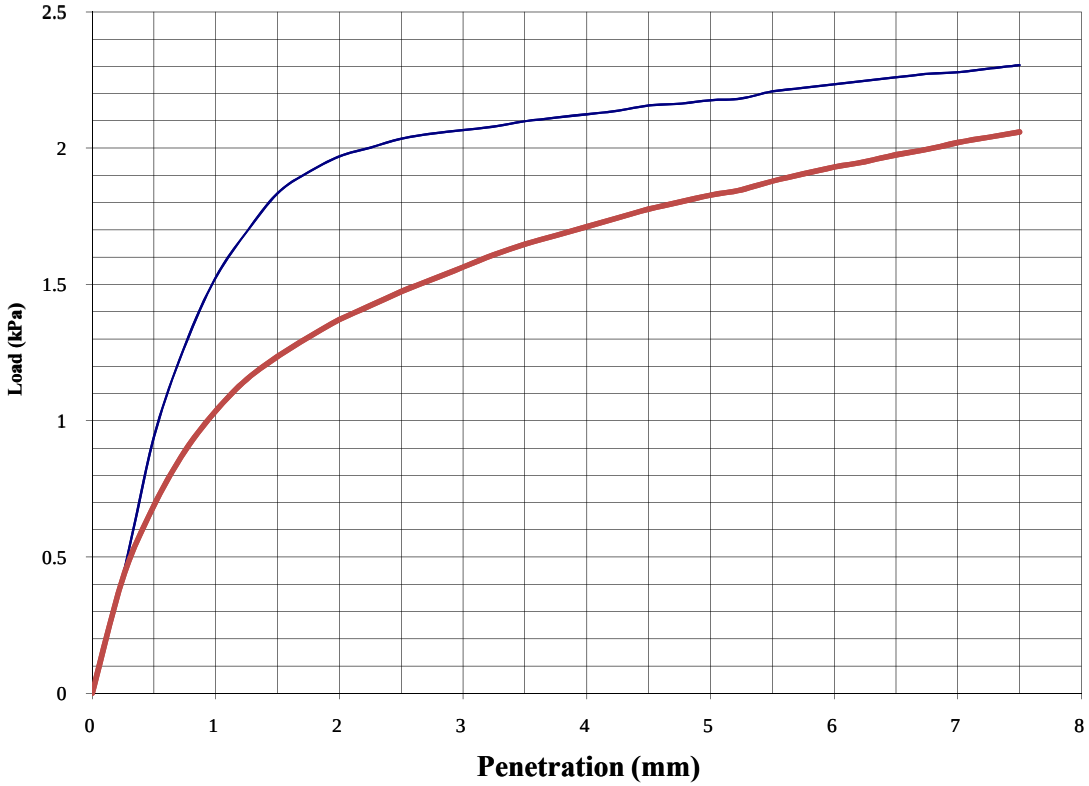
California Bearing Ratio Test.

BS 1377:Part 4:1990

Hole Number: **TP513** **Depth (m)** **0.40**



Initial Sample Conditions		Test Conditions		Method of compaction : 2.5 Kg Rammer	
Moisture Content:	25	Surcharge Kg:	2.0	Final Moisture Content %	
Bulk Density Mg/m3:	1.77	Soaking Time hrs	n/a	Sample Top	24.7
Dry Density Mg/m3:	1.42	Swelling mm:	n/a	Sample Bottom	24.5
C.B.R. Value %	Sample Top	15.4		Sample Bottom	11.2
Percentage retained on 20mm BS test sieve:		0	Remarks:		

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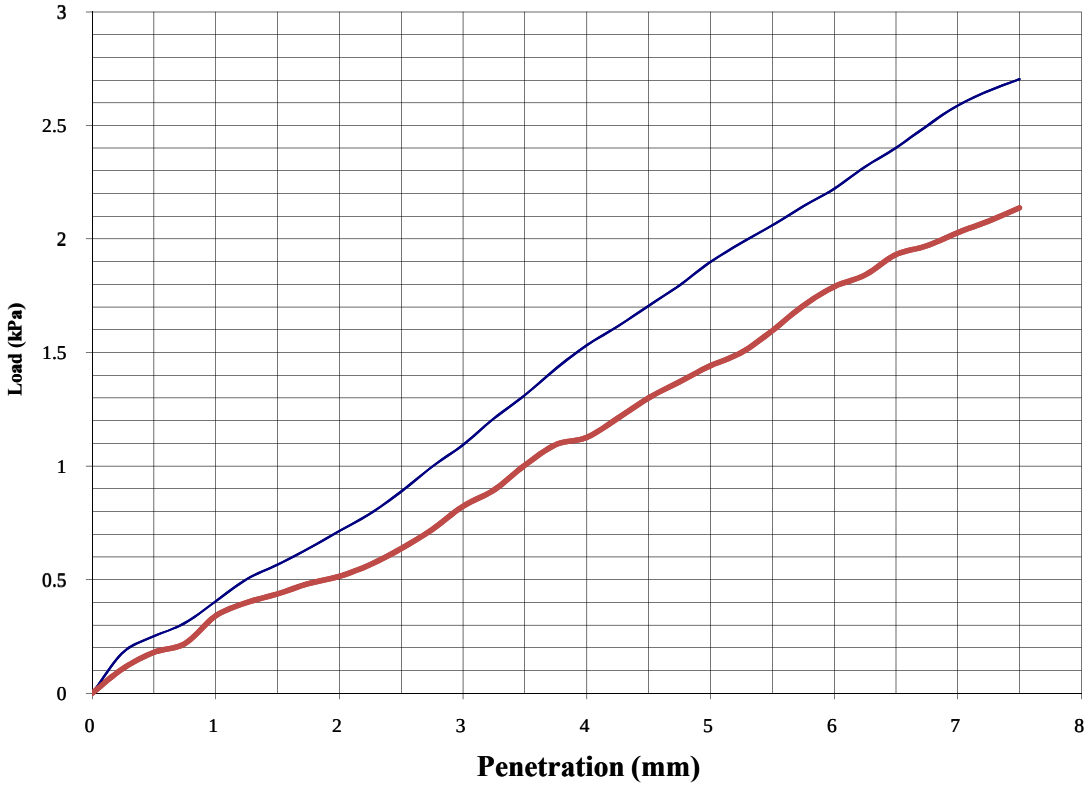
California Bearing Ratio Test.

BS 1377:Part 4:1990

Hole Number: **TP522** **Depth (m)** **1.00**



Initial Sample Conditions		Test Conditions		Method of compaction : 2.5 Kg Rammer	
Moisture Content:	14	Surcharge Kg:	2.0	Final Moisture Content %	
Bulk Density Mg/m3:	1.81	Soaking Time hrs	n/a	Sample Top	14.0
Dry Density Mg/m3:	1.58	Swelling mm:	n/a	Sample Bottom	14.0
C.B.R. Value %	Sample Top	9.5		Sample Bottom	7.2
Percentage retained on 20mm BS test sieve:		0	Remarks:		

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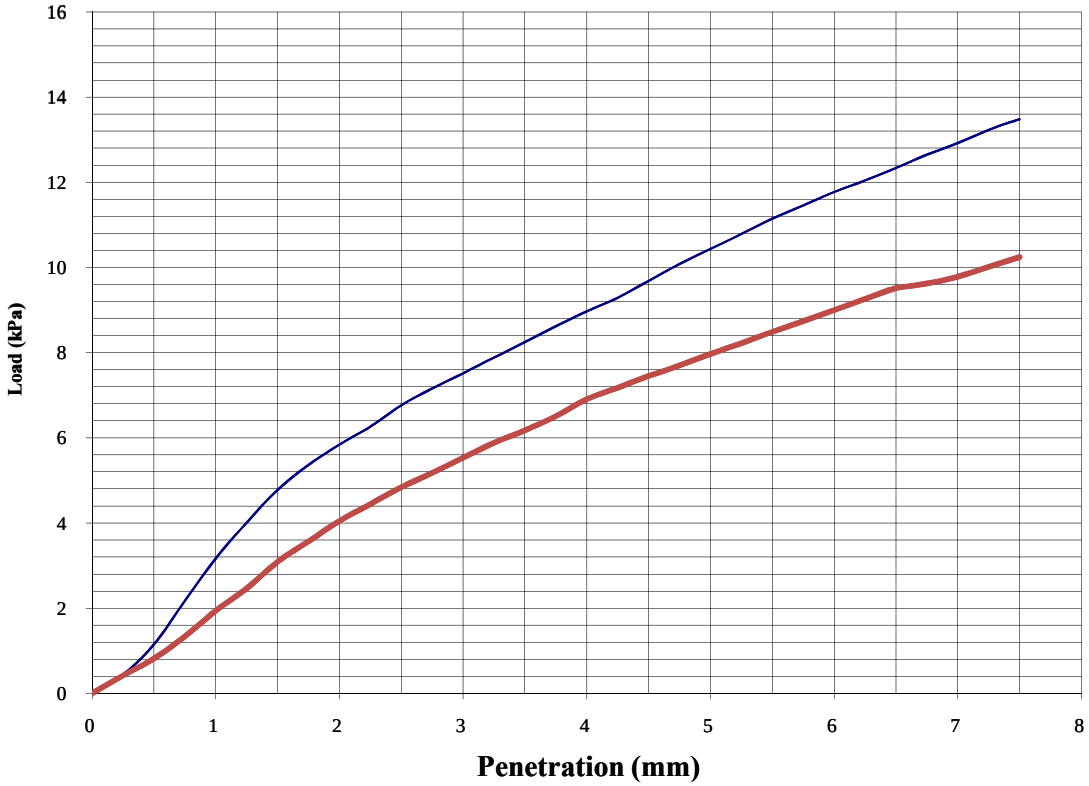
California Bearing Ratio Test.

BS 1377:Part 4:1990

Hole Number: **TP523** **Depth (m)** **0.90**



Initial Sample Conditions		Test Conditions		Method of compaction : 2.5 Kg Rammer	
Moisture Content:	10	Surcharge Kg:	2.0	Final Moisture Content %	
Bulk Density Mg/m3:	2.08	Soaking Time hrs	n/a	Sample Top	11.2
Dry Density Mg/m3:	1.89	Swelling mm:	n/a	Sample Bottom	10.3
C.B.R. Value %	Sample Top	52.2		Sample Bottom	39.8
Percentage retained on 20mm BS test sieve:		0	Remarks:		

[redacted] 23/08/11

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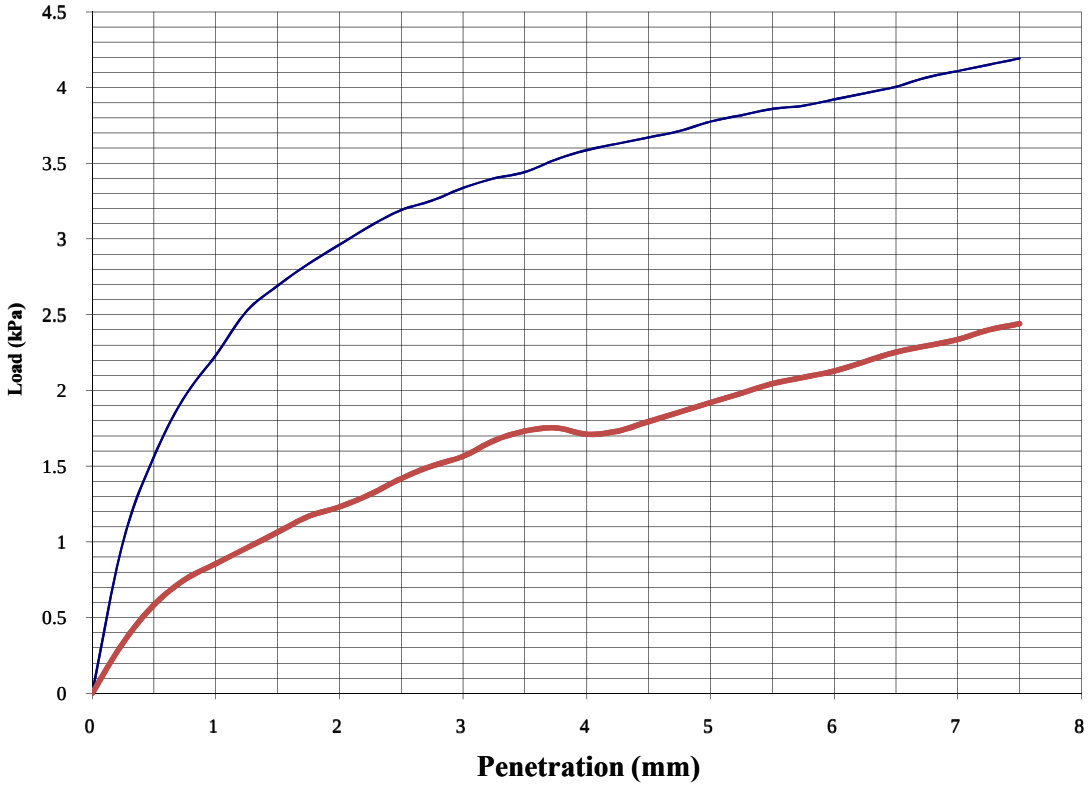
California Bearing Ratio Test.

BS 1377:Part 4:1990

Hole Number: **TP526** **Depth (m)** **0.60**



Initial Sample Conditions		Test Conditions		Method of compaction : 2.5 Kg Rammer	
Moisture Content:	15	Surcharge Kg:	2.0	Final Moisture Content %	
Bulk Density Mg/m3:	1.90	Soaking Time hrs	n/a	Sample Top	19.0
Dry Density Mg/m3:	1.65	Swelling mm:	n/a	Sample Bottom	16.7
C.B.R. Value %	Sample Top	24.2		Sample Bottom	10.7
Percentage retained on 20mm BS test sieve:		0	Remarks:		

[redacted] 23/08/11

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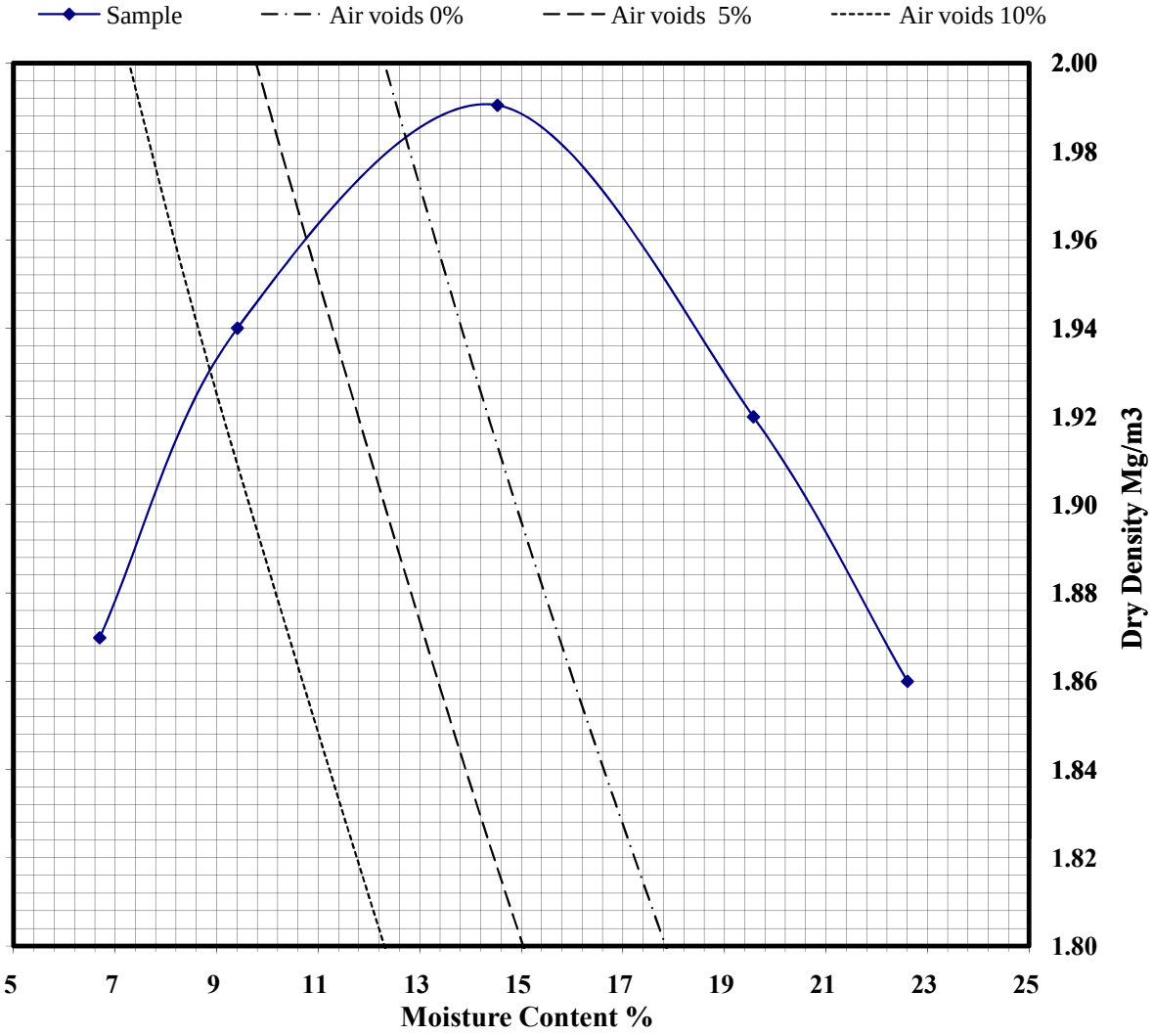
Contract No.:
13224-160811
Client Ref No:
SDG 110815-17

UKAS TESTING 2788

Dry Density/Moisture Content Relationship

BS 1377:Part 4:1990

Trial Pit Number: CP505 **Sample Number:** 0 **Depth (m):** 0.70-1.20



Initial Moisture Content:	20	Method of Compaction	Vibro Hammer / Single Sample
Particle Density (Mg/m3):	2.65* Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (mg/m3):	1.99	Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):	14.5	Sample Preparation Clause :	3.2.4.2

** - not included in laboratory scope of accreditation*

Remarks

[redacted] 24/08/11
Checked by **Date**

[redacted] 24/08/11
Approved by **Date**

LABORATORY TESTING SERVICES LIMITED

Bicester

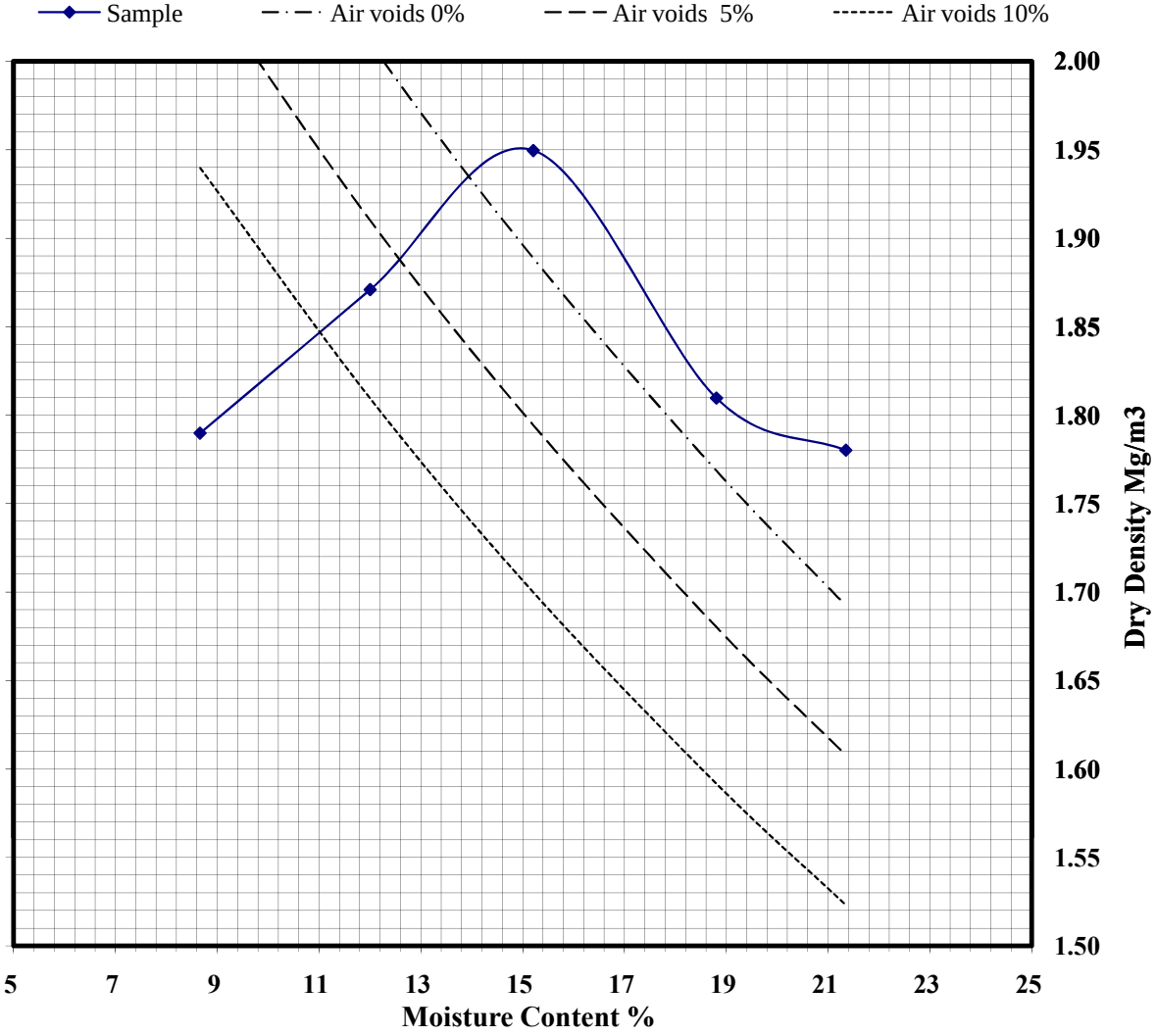
Contract No.:
13224-160811
Client Ref No:
0

UKAS TESTING 2788

Dry Density/Moisture Content Relationship

BS 1377:Part 4:1990

Trial Pit Number: TP502 **Sample Number:** 0 **Depth (m):** 1.00



Initial Moisture Content:	19	Method of Compaction	Vibro Hammer / Single Sample
Particle Density (Mg/m3):	2.65* Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (mg/m3):	1.95	Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):	15.2	Sample Preparation Clause :	3.2.4.2

** - not included in laboratory scope of accreditation*

Remarks

[redacted] 24/08/11
Checked by Date

[redacted] 24/08/11
Approved by Date

LABORATORY TESTING SERVICES LIMITED

Bicester

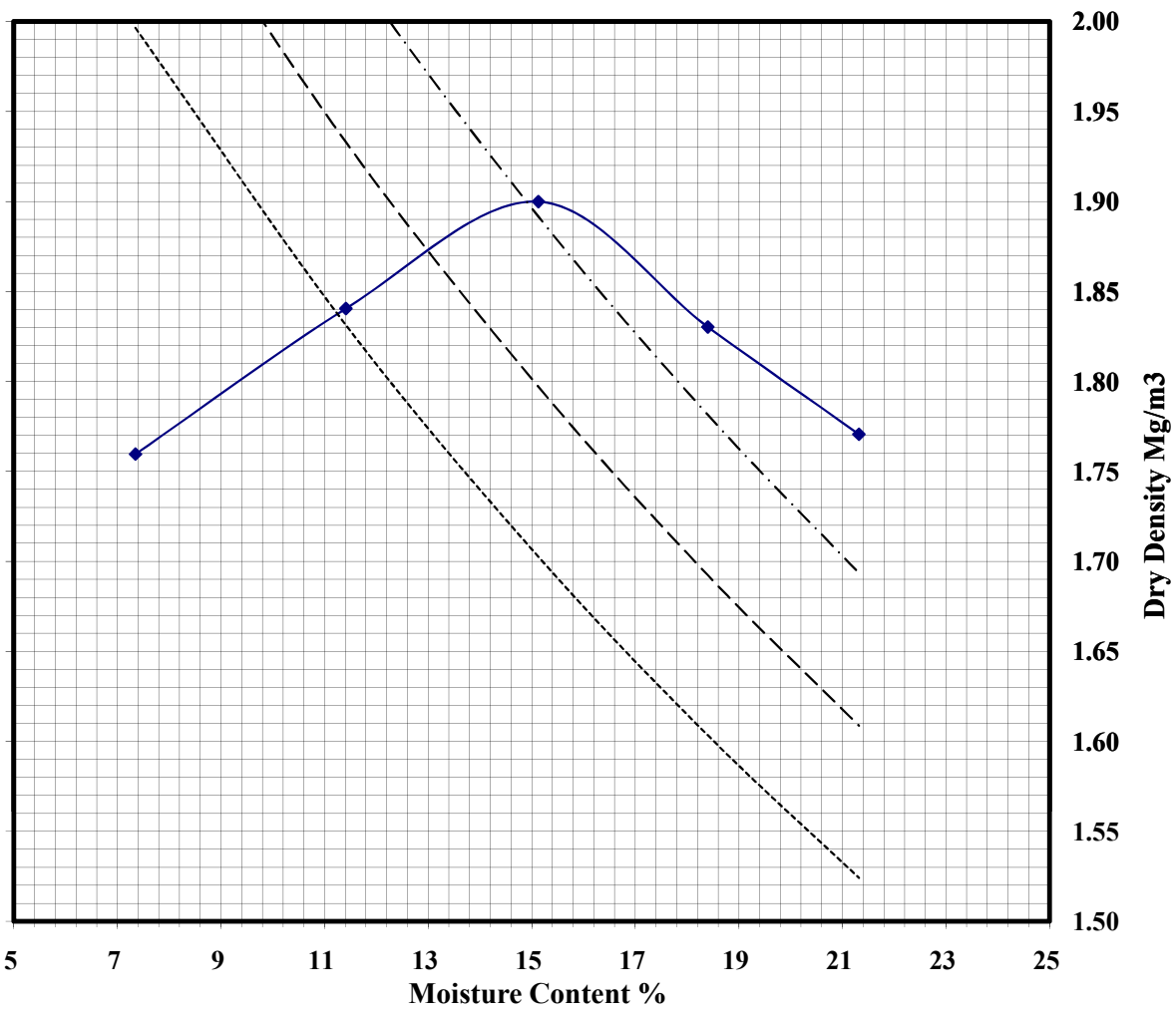
Contract No.:
13224-160811
Client Ref No:
0

UKAS TESTING 2788

Dry Density/Moisture Content Relationship

BS 1377:Part 4:1990

Trial Pit Number: TP505 **Sample Number:** 0 **Depth (m):** 1.50



Initial Moisture Content:	15	Method of Compaction	Vibro Hammer / Single Sample
Particle Density (Mg/m3):	2.65* Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (mg/m3):	1.90	Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):	15.1	Sample Preparation Clause :	3.2.4.2

** - not included in laboratory scope of accreditation*

Remarks

[redacted] 24/08/11
Checked by **Date**

[redacted] 24/08/11
Approved by **Date**

LABORATORY TESTING SERVICES LIMITED

Bicester

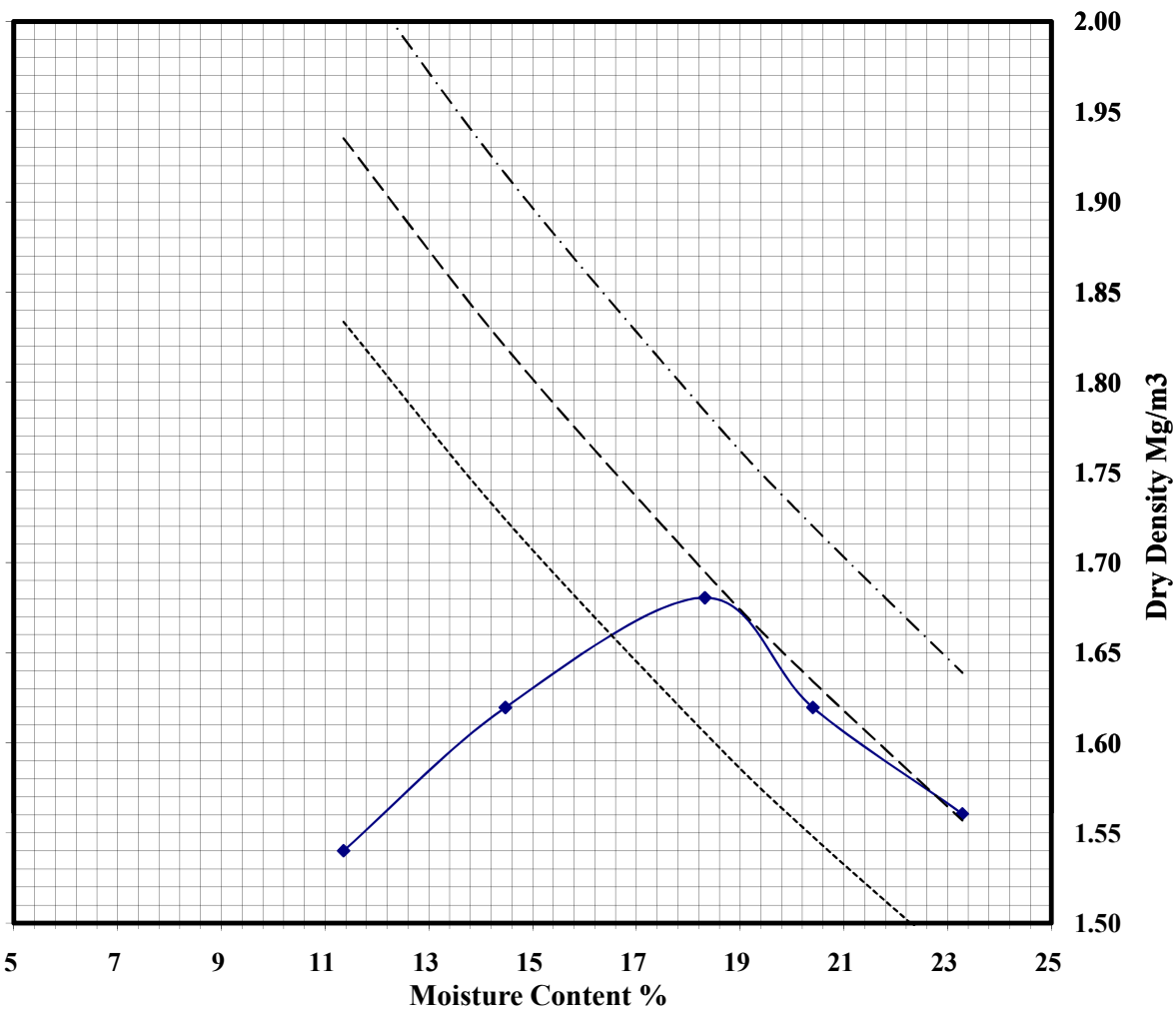
Contract No.:
13224-160811
Client Ref No:
0

UKAS TESTING 2788

Dry Density/Moisture Content Relationship

BS 1377:Part 4:1990

Trial Pit Number: TP508 **Sample Number:** 0 **Depth (m):** 1.20



Initial Moisture Content:	14	Method of Compaction	Vibro Hammer / Single Sample
Particle Density (Mg/m3):	2.65* Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (mg/m3):	1.68	Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):	18.3	Sample Preparation Clause :	3.2.4.2

** - not included in laboratory scope of accreditation*

Remarks

[redacted] 24/08/11
Checked by **Date**

[redacted] 24/08/11
Approved by **Date**

LABORATORY TESTING SERVICES LIMITED

Bicester

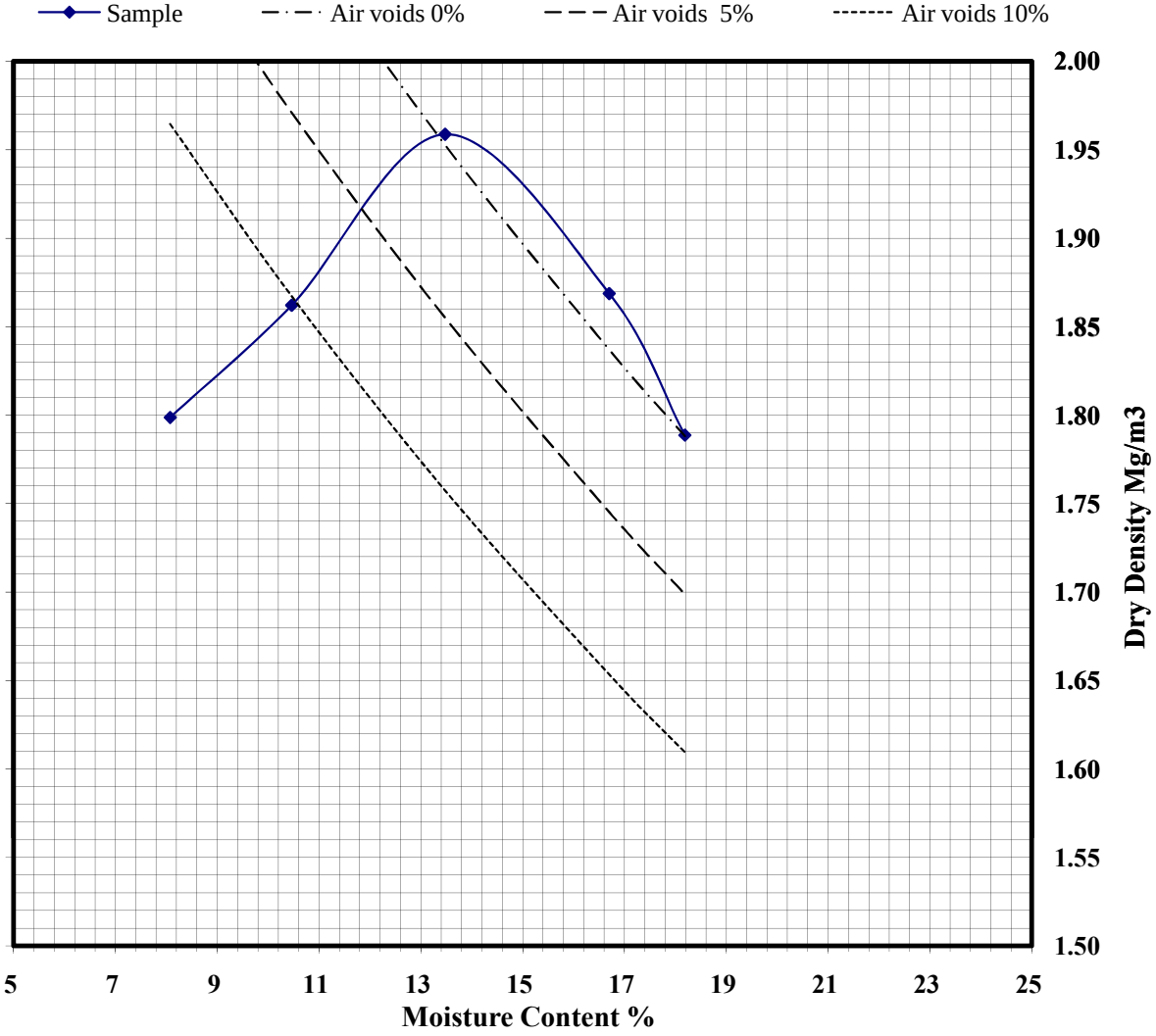
Contract No.:
13224-160811
Client Ref No:
0

UKAS TESTING 2788

Dry Density/Moisture Content Relationship

BS 1377:Part 4:1990

Trial Pit Number: TP511 **Sample Number:** 0 **Depth (m):** 0.90



Initial Moisture Content:	10	Method of Compaction	Vibro Hammer / Single Sample
Particle Density (Mg/m3):	2.65* Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (mg/m3):	1.96	Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):	13.5	Sample Preparation Clause :	3.2.4.2

** - not included in laboratory scope of accreditation*

Remarks

[redacted] 24/08/11
Checked by **Date**

[redacted] 24/08/11
Approved by **Date**

LABORATORY TESTING SERVICES LIMITED

Bicester

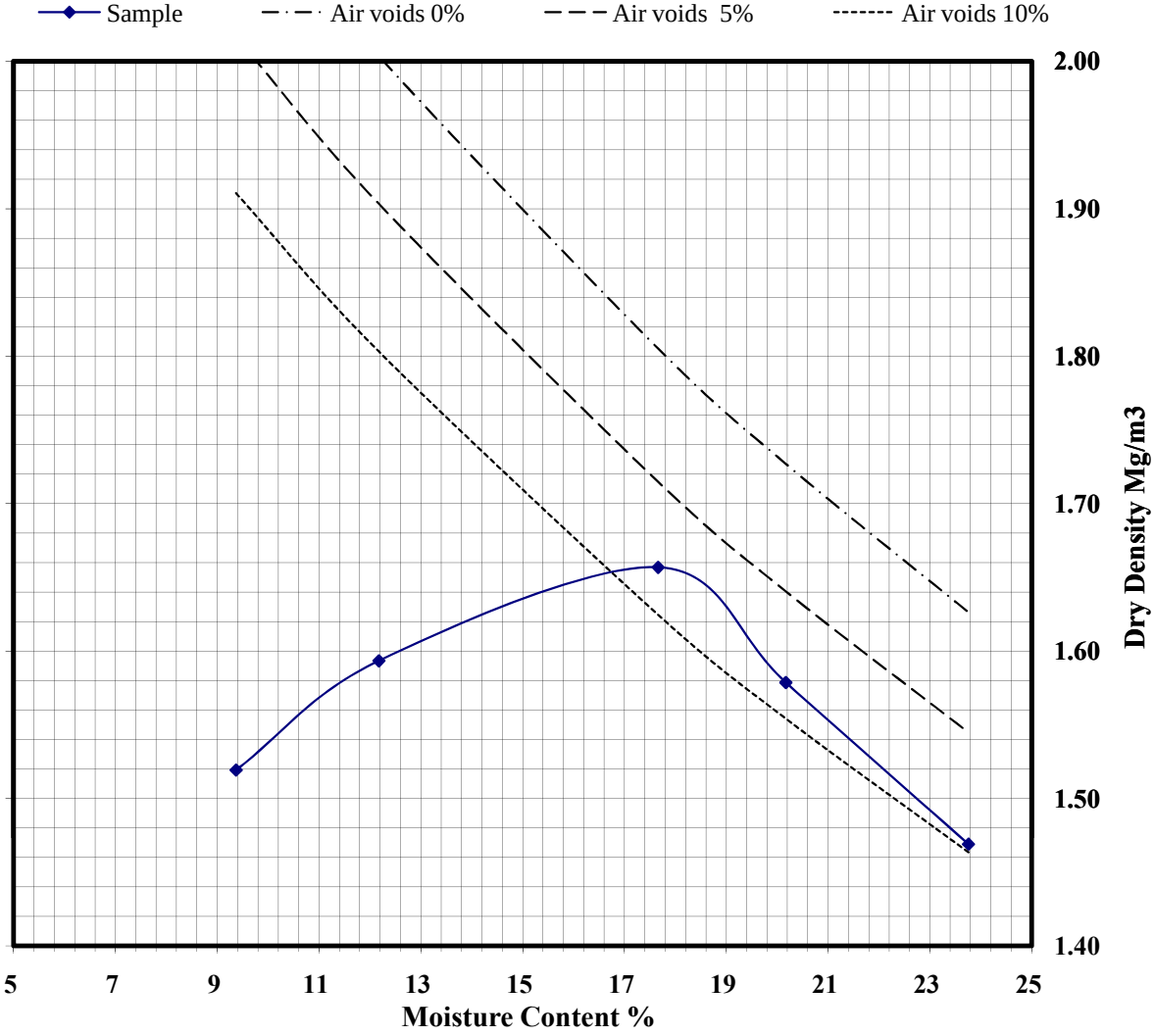
Contract No.:
13224-160811
Client Ref No:
0

UKAS TESTING 2788

Dry Density/Moisture Content Relationship

BS 1377:Part 4:1990

Trial Pit Number: TP521 **Sample Number:** 0 **Depth (m):** 0.30



Initial Moisture Content:	12	Method of Compaction	Vibro Hammer / Single Sample
Particle Density (Mg/m3):	2.65* Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (mg/m3):	1.66	Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):	17.7	Sample Preparation Clause :	3.2.4.2

** - not included in laboratory scope of accreditation*

Remarks

[redacted] 24/08/11
Checked by **Date**

[redacted] 24/08/11
Approved by **Date**

LABORATORY TESTING SERVICES LIMITED

Bicester

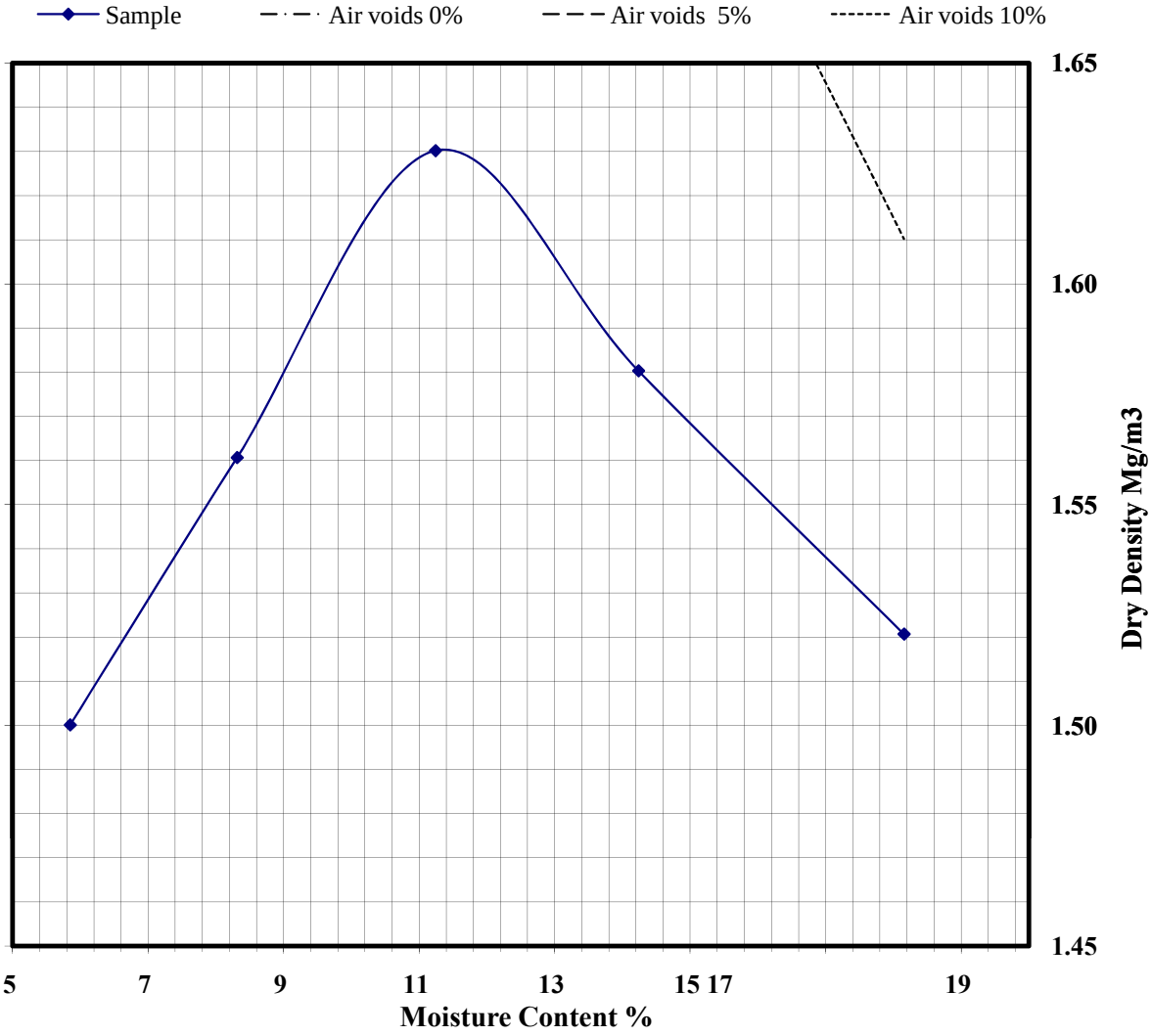
Contract No.:
13224-160811
Client Ref No:
0

UKAS TESTING 2788

Dry Density/Moisture Content Relationship

BS 1377:Part 4:1990

Trial Pit Number: TP522 **Sample Number:** 0 **Depth (m):** 1.00



Initial Moisture Content:	14	Method of Compaction	Vibro Hammer / Single Sample
Particle Density (Mg/m3):	2.65* Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (mg/m3):	1.63	Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):	11.2	Sample Preparation Clause :	3.2.4.2

** - not included in laboratory scope of accreditation*

Remarks

[redacted] 24/08/11
Date

[redacted] 24/08/11
Approved by Date

LABORATORY TESTING SERVICES LIMITED

Bicester

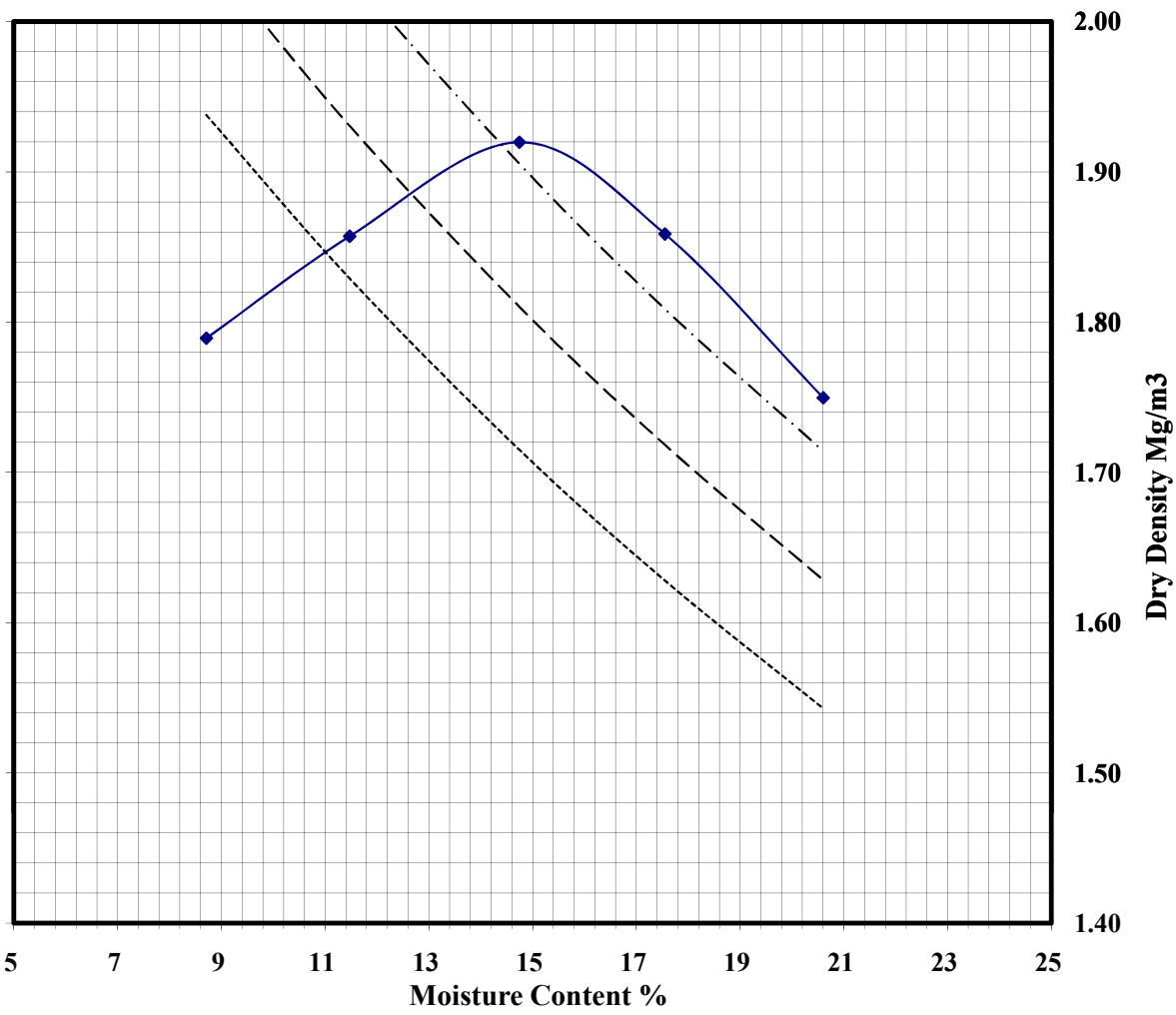
Contract No.:
13224-160811
Client Ref No:
0

UKAS TESTING 2788

Dry Density/Moisture Content Relationship

BS 1377:Part 4:1990

Trial Pit Number: TP524 **Sample Number:** 0 **Depth (m):** 1.50



Initial Moisture Content:	11	Method of Compaction	Vibro Hammer / Single Sample
Particle Density (Mg/m3):	2.65* Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (mg/m3):	1.92	Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):	14.7	Sample Preparation Clause :	3.2.4.2

** - not included in laboratory scope of accreditation*

Remarks

[redacted] 24/08/11
Checked by Date

[redacted] 24/08/11
Date

LABORATORY TESTING SERVICES LIMITED

Bicester

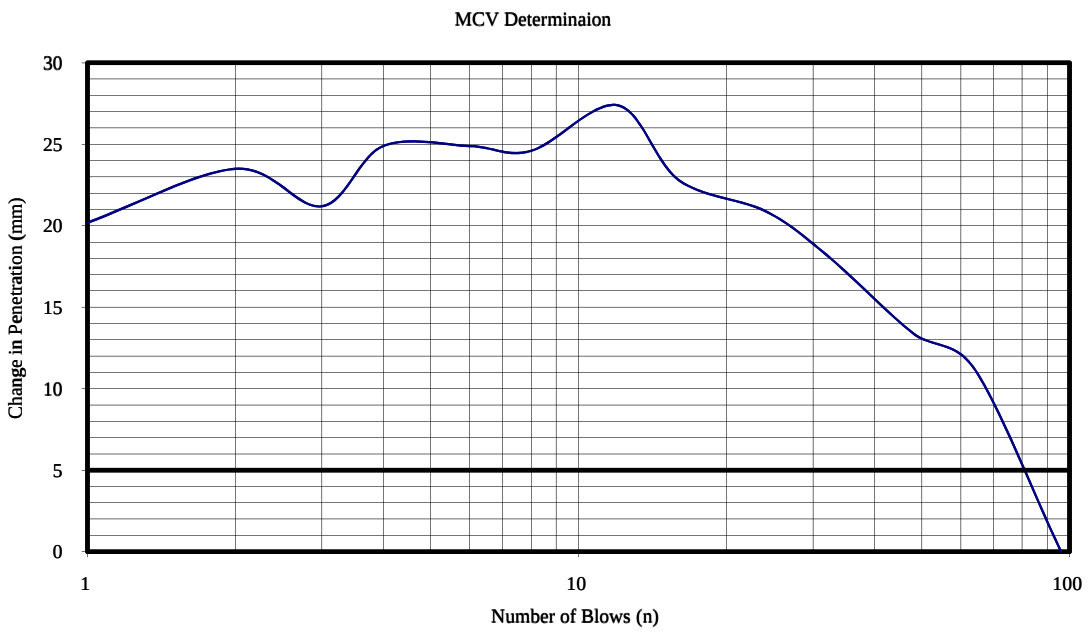
Contract No.:
13224-160811
Client Ref No:
0

UKAS TESTING 2788

Moisture Condition Value

BS 1377:Part 4:1990

Hole Number: **TP503** **Depth(m):** **0.30**



Remarks: Normal method used to determine MCV

Material Retained on the 20mm BS Test Sieve (%).:	0

Blows (N)	Penetration (mm)	n to 4 n (mm)
1	136	20.2
2	127	23.5
3	120.8	21.2
4	115.8	24.9
6	108.9	24.9
8	103.5	24.6
12	99.6	27.4
16	90.9	22.8

Blows (N)	Penetration (mm)	n to 4 n (mm)
24	84	20.9
32	78.9	18.2
48	72.2	13.4
64	68.1	11.2
96	63.1	
128	60.7	
192	58.8	
256	56.9	

Test Results.

Moisture Content (%). **16**

MCV **18.5**

Checked by **Date** **Approved by** **Date**

LABORATORY TESTING SERVICES LIMITED

Bicester

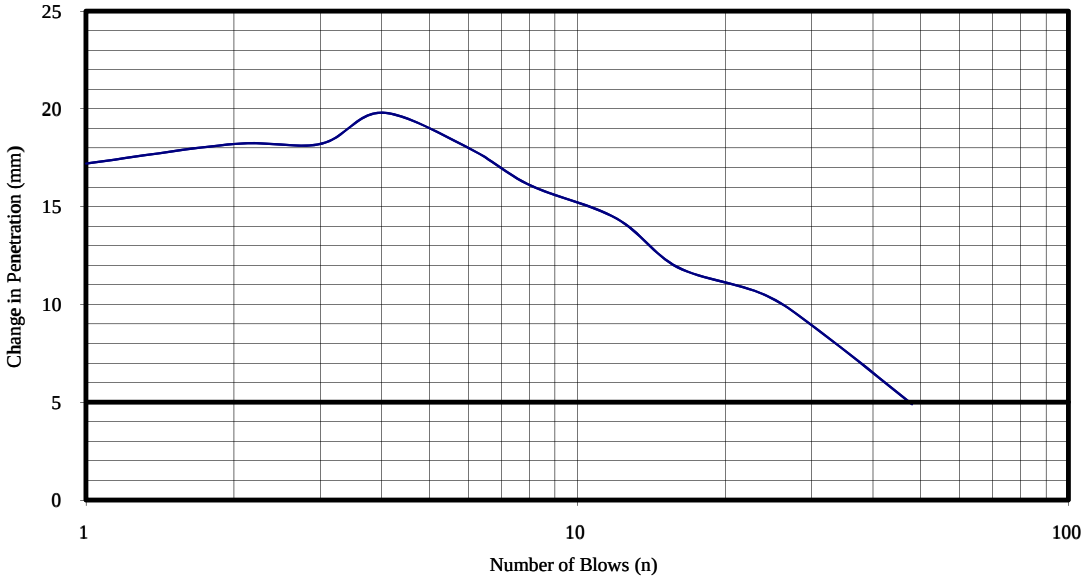
Contract No.:
13224-160811
Client Ref No:
SDG 110815-17

UKAS TESTING 2788

Moisture Condition Value

BS 1377:Part 4:1990

Hole Number: **TP505** MCV Determinaion **Depth(m):** **1.50**



Remarks: Normal method used to determine MCV

Material Retained on the 20mm BS Test Sieve (%).:	0

Blows (N)	Penetration (mm)	n to 4 n (mm)
1	107.1	17.2
2	98.3	18.2
3	92.9	18.2
4	89.9	19.8
6	84.5	18.0
8	80.1	16.1
12	74.7	14.4
16	70.1	11.9

Blows (N)	Penetration (mm)	n to 4 n (mm)
24	66.5	10.5
32	64	8.4
48	60.3	4.9
64	58.2	
96	56	
128	55.6	
192	55.4	
256		

Test Results.

Moisture Content (%). **12**

MCV **16.7**

Checked by **Date** **Approved by** **Date**

LABORATORY TESTING SERVICES LIMITED

Bicester

Contract No.:
13224-160811
Client Ref No:
SDG 110815-17

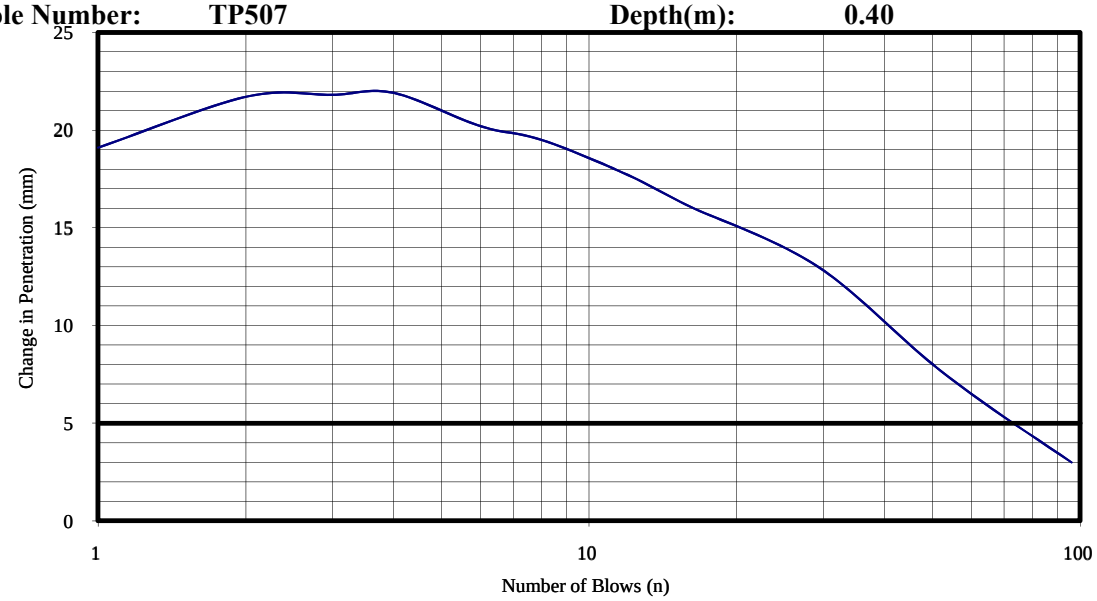
UKAS TESTING 2788

Moisture Condition Value

BS 1377:Part 4:1990

MCV Determinaion

Hole Number: **TP507** **Depth(m):** **0.40**



Remarks: Normal method used to determine MCV

Material Retained on the 20mm BS Test Sieve (%).:	0

Blows (N)	Penetration (mm)	n to 4 n (mm)
1	125.1	19.1
2	116.2	21.7
3	110.3	21.8
4	106	21.9
6	99.2	20.2
8	94.5	19.5
12	88.5	17.7
16	84.1	16.1

Blows (N)	Penetration (mm)	n to 4 n (mm)
24	79	14.2
32	75	12.3
48	70.8	8.4
64	68	6.0
96	64.8	3.0
128	62.7	
192	62.4	
256		

Test Results.

Moisture Content (%). **13**

MCV **18.8**

Checked by **Date** **Approved by** **Date**

LABORATORY TESTING SERVICES LIMITED

Bicester

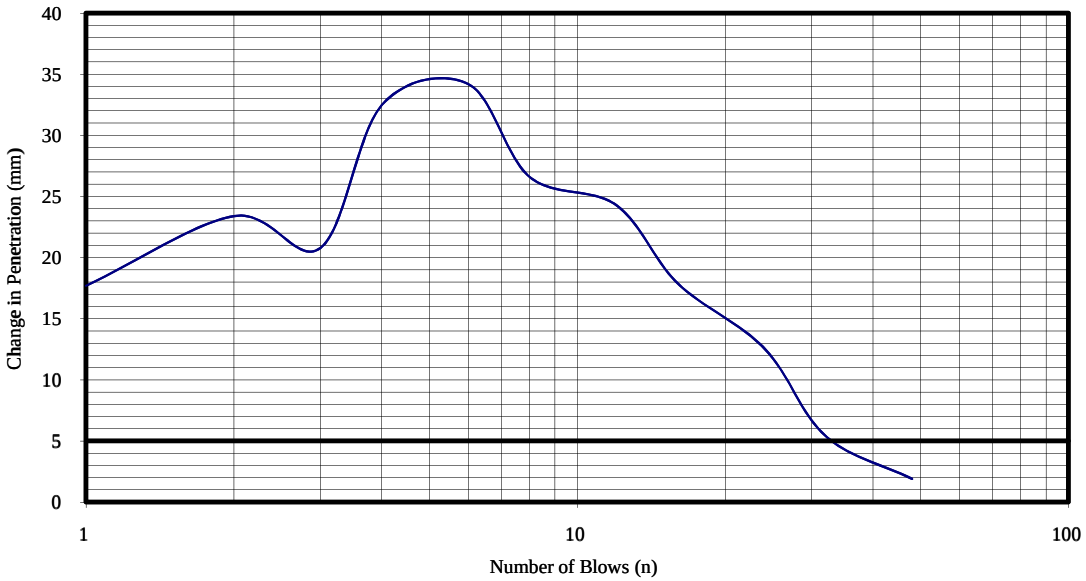
Contract No.:
13224-160811
Client Ref No:
SDG 110815-17

UKAS TESTING 2788

Moisture Condition Value

BS 1377:Part 4:1990

Hole Number: **TP512** MCV Determinaion **Depth(m):** **0.50**



Remarks: Normal method used to determine MCV

Material Retained on the 20mm BS Test Sieve (%).:	0

Blows (N)	Penetration (mm)	n to 4 n (mm)
1	131.5	17.7
2	118.4	23.4
3	109.9	20.8
4	113.8	32.5
6	109.9	34.2
8	95	26.6
12	89.1	24.3
16	81.3	17.9

Blows (N)	Penetration (mm)	n to 4 n (mm)
24	75.7	12.6
32	68.4	5.4
48	64.8	1.9
64	63.4	
96	63.1	
128	63	
192	62.9	
256		

Test Results.

Moisture Content (%). **25**

MCV **15.1**

Checked by **Date** **Approved by** **Date**

LABORATORY TESTING SERVICES LIMITED

Bicester

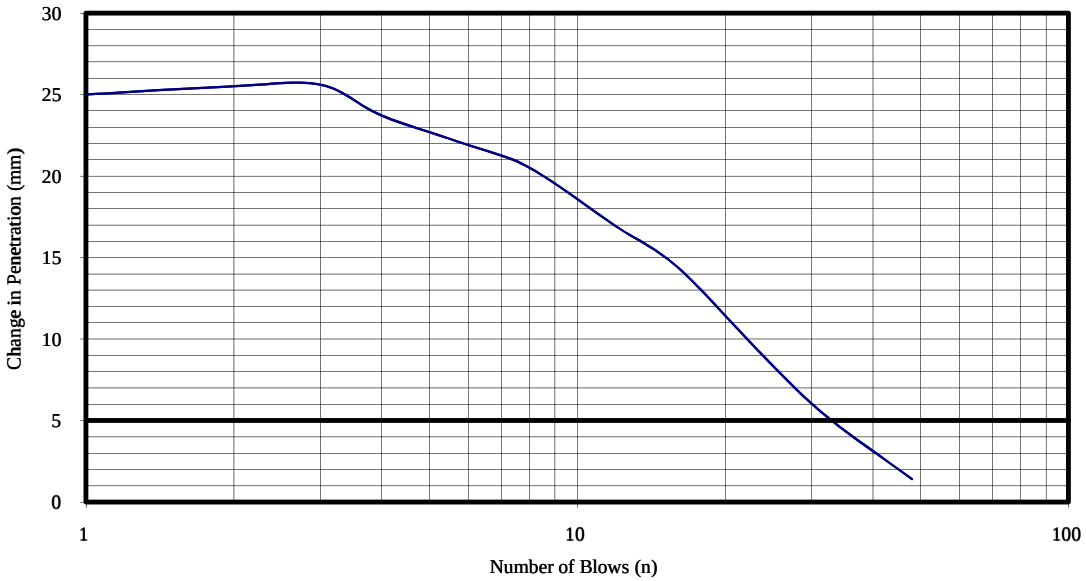
Contract No.:
13224-160811
Client Ref No:
SDG 110815-17

UKAS TESTING 2788

Moisture Condition Value

BS 1377:Part 4:1990

Hole Number: **TP516** MCV Determinaion **Depth(m):** **0.40**



Remarks: Normal method used to determine MCV

Material Retained on the 20mm BS Test Sieve (%).:	0

Blows (N)	Penetration (mm)	n to 4 n (mm)
1	126.5	25.0
2	114.2	25.5
3	106.8	25.6
4	101.5	23.7
6	93.8	21.9
8	88.7	20.5
12	81.2	16.9
16	77.8	14.4

Blows (N)	Penetration (mm)	n to 4 n (mm)
24	71.9	8.9
32	68.2	5.3
48	64.3	1.4
64	63.4	
96	63	
128	62.9	
192	62.9	
256		

Test Results.

Moisture Content (%). **16**
MCV **14.9**

Checked by **Date** **Approved by** **Date**

LABORATORY TESTING SERVICES LIMITED

Bicester

Contract No.:
13224-160811
Client Ref No:
SDG 110815-17

UKAS TESTING 2788

SUMMARY OF POINT LOAD TESTS.

Int. J. Rock Mech. Sci. & Geomech. Abstr. Vol. 22, No. 2, pp. 51 - 60, 1985.

Borehole Number	Depth (m)	Type of Test d a b/i	Type of Test I //	Width (W) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MPa)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MPa)	Angle between plane of anisotropy & core axis.	Type of anisotropy (Bedding or Cleavage).	Remarks.
TP503	1.10	i		105	41	5.97	74	1.09	1.19	1.30			
		i		70	32	3.94	53	1.38	1.03	1.42			
TP504	0.70	i		73	30	4.24	53	1.52	1.02	1.56			
		i		44	34	6.86	44	3.60	0.94	3.39			
TP510	0.60	i		70	25	2.91	47	1.31	0.97	1.27			
		i		72	24	3.21	47	1.46	0.97	1.42			
TP512	1.80	i		99	41	2.42	72	0.47	1.18	0.55			
		i		76	32	3.67	56	1.18	1.05	1.24			
TP513	1.30	i		70	41	6.96	60	1.90	1.09	2.07			
		i		82	45	8.20	69	1.75	1.15	2.01			
TP516	0.80	i		90	42	16.66	69	3.46	1.16	4.01			
		i		75	40	6.50	62	1.70	1.10	1.87			
TP518	1.30	i		105	40	8.40	73	1.57	1.19	1.86			
		i		73	30	2.53	53	0.91	1.02	0.93			
TP521	1.10	i		73	34	3.89	56	1.23	1.05	1.30			
		i		82	32	2.95	58	0.88	1.07	0.94			
TP523	0.90	i		95	52	5.27	79	0.84	1.23	1.03			
		i		45	35	4.42	45	2.20	0.95	2.10			
TP527	1.30	i		102	51	10.36	81	1.56	1.25	1.95			
		i		54	35	10.82	49	4.50	0.99	4.46			

Key : d = diametral; a = axial; b = block; i = irregular lump test; I = perpendicular; // = parallel to planes of weakness.

[redacted]

Checked By

30/08/11

Date

[redacted]

Approved By

30/08/11

Date

Contract No.

13224

Client Ref No.

SDG 110815-17

LABORATORY TESTING SERVICES LIMITED

Bicester

SUMMARY OF POINT LOAD TESTS.

Int. J. Rock Mech. Sci. & Geomech. Abstr. Vol. 22, No. 2, pp. 51 - 60, 1985.

Borehole Number	Depth (m)	Type of Test d a b/i	Type of Test I //	Width (W) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MPa)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MPa)	Angle between plane of anisotropy & core axis.	Type of anisotropy (Bedding or Cleavage).	Remarks.
TP502	1.00	i		70	39	7.31	59	2.10	1.08	2.26			UCS Test could not be performed as
		i		68	20	2.55	42	1.47	0.92	1.36			insufficent rock sample recieved
TP509	1.00	i		88	32	10.36	60	2.89	1.08	3.13			UCS requirement is 2.5 x diameter
		i		102	30	3.02	62	0.77	1.10	0.86			UCS Test could not be performed as
TP519	1.00	i		70	32	5.62	53	1.97	1.03	2.03			insufficent rock sample recieved
		i		81	33	5.95	58	1.75	1.07	1.87			UCS requirement is 2.5 x diameter
TP522	1.00	i		69	39	7.58	59	2.21	1.07	2.38			UCS Test could not be performed as
		i		77	32	5.19	56	1.65	1.05	1.74			insufficent rock sample recieved
CP501	0.50 - 1.00	i		35	35	1.28	39	0.82	0.90	0.74			UCS requirement is 2.5 x diameter
		i		30	21	1.22	28	1.52	0.77	1.18			UCS Test could not be performed as
													insufficent rock sample recieved
													UCS requirement is 2.5 x diameter

Key : d = diametral; a = axial; b = block; i = irregular lump test; I = perpendicular; // = parallel to planes of weakness.

[redacted]
Checked By

26/08/11
Date

[redacted]
Approved By

26/08/11
Date

Contract No.

13224

Client Ref No.

SDG 110815-17

LABORATORY TESTING SERVICES LIMITED

Bicester

LABORATORY TESTING SERVICES LIMITED

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The Avenue
Delta Lakes
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SA15 2DS
tel: +44 (0)1554 749720 / 757734
fax: +44 (0)1554 749845 / 775107
e-mail: info@geolab.org.uk

Certificate of Analysis

Date:	24/08/2011
Client:	Alcontrol
Our Reference:	13224-160811
Client Reference:	
Contract Title:	Bicester Central
Description: (Total Samples)	17
Date Received:	16/08/2011
Date Started:	22/08/2011
Date Completed:	23/08/2011
Test Procedures:	(B.S. 1377 : PART 3 : 1990)

Notes:

Solid samples will be disposed 1 month and liquids 2 weeks

Approved By:

Authorised Signatories:

Vaughan Edwards	Wayne Honey	Paul Evans
Managing Director	Laboratory Technician	Technical Manager

Contract No: 13224-160811
Client Ref:
Location: Bicester Central
Date: 23/08/2011

LABORATORY TESTING SERVICES LIMITED

SUMMARY OF CHEMICAL ANALYSES

(B.S. 1377 : PART 3 : 1990)

Hole Number	Sample Number	Depth m	Sulphate Content SO3 (as SO_4)			Chloride Content		pH Value @ 25°C	Organic Matter Content %	Loss on Ignition %	Remarks
			Acid Soluble Sulphate as % SO_4	Aqueous Extract Sulphate as g/l SO_4	Ground-water g/l	Soluble Chloride as % equiv. NaCl	Ground-water g/l				
			Clause 5.5.	Clause 5.5.	Clause 5.4.	Clause 7.3	Clause 7.2	Clause 9.	Clause 3.	Clause 4.	
TP502		1.00		0.01 (0.02)				8.02			
TP503		0.30		0.01 (0.02)				7.30			
TP507		0.80		0.03 (0.03)				7.88			
TP509		1.00		<.01 (<.01)				7.94			
TP511		0.90		<.01 (<.01)				7.68			
TP513		0.40		<.01 (<.01)				7.61			
TP514		1.20		<.01 (<.01)				7.65			
TP516		0.40		0.01 (0.02)				7.48			
TP519		1.00		<.01 (<.01)				7.82			
TP522		1.00		<.01 (<.01)				8.08			
TP526		0.60		0.01 (0.02)				7.66			
TP530		0.50		0.05 (0.06)				7.89			
CP501		0.50		<.01 (<.01)				7.41			
CP503		4.00		0.01 (0.02)				7.46			
CP504		0.40		0.01 (0.02)				7.77			
CP505		G.L		<.01 (<.01)				7.38			
CP505		1.20		<.01 (<.01)				7.40			

NCP - No Chloride present
G.L - Ground Level

APPENDIX E MONITORING DATA

Groundwater and Ground Gas Monitoring Summary

Site Name	Bicester Central Land Parcels
Client	Countryside Properties Ltd
Job No.	00020861/001

Start Date	31/08/2011
End Date	29/09/2011
No. Visits	3

	Borehole	Methane (% v/v)		Carbon Dioxide (% v/v)		Oxygen (% v/v)		Flow (l/hr)		Standing Water Level (m)		Gas Screening Value Methane (l/hr)	Gas Screening Value Carbon Dioxide (l/hr)
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX		
1	CP501	0.0	0.0	0.0	0.5	20.1	20.8	0.0	0.1	0.00	0.00		0.0005
2	CP502	0.0	0.0	0.0	0.0	20.7	20.8	0.0	0.1	0.00	0.00		
3	CP503	0.0	0.0	0.0	0.3	20.7	20.8	0.0	0.2	0.00	0.00		0.0006
4	CP504	0.0	0.0	0.2	1.5	20.2	20.5	0.0	0.1	0.00	0.00		0.0015
5	CP505	0.0	0.0	0.0	0.6	20.2	20.7	0.0	0.0	0.00	0.00		
6	WS502	0.0	0.0	0.3	0.4	20.2	20.7	0.0	0.1	0.00	0.00		0.0004
7	WS504	0.0	0.0	0.6	1.4	19.3	20.1	0.0	0.1	0.00	0.00		0.0014
8	WS505	0.0	0.0	0.4	0.5	20.4	20.7	0.0	0.1	0.00	0.00		0.0005
9	WS508	0.0	0.0	0.3	1.2	20.1	20.4	-0.2	0.0	0.00	0.00		
10	WS511	0.0	0.0	0.5	0.9	20.4	20.7	0.0	0.0	0.00	0.00		
11	WS512	0.0	0.0	0.1	0.9	20.5	20.6	0.0	0.0	0.00	0.00		
12	WS514	0.0	0.0	0.4	0.6	20.6	20.8	0.0	0.2	0.00	0.00		0.0012
13	WS516	0.0	0.0	0.0	0.7	20.3	20.7	0.0	0.0	0.00	0.00		
14	WS517	0.0	0.0	0.0	0.6	20.5	20.8	0.0	0.1	0.00	0.00		0.0006
15	WS519	0.0	0.0	0.2	3.4	18.5	20.6	0.0	0.1	0.00	0.00		0.0034
16													
17													
18													
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Groundwater and Ground Gas Monitoring Summary

Site Name	Bicester Central Land Parcels
Client	Countryside Properties Ltd
Job No.	00020861/001

Start Date	31/08/2011
End Date	29/09/2011
No. Visits	3

	Borehole	Standing Water Level (m)		Response Zone		Thickness of Product (mm)		PID Readings ppmV		H2S ppm	CO ppm	Was the well ever flooded?	Was Product >1mm detected?
		MIN	MAX	TOP	BASE	MIN	MAX	MIN	MAX	MAX	MAX		
1	CP501	0.0	0.0	0.7	1.7	0	0	0	0	0	0	Yes	No
2	CP502	0.0	0.0	0.0	0.7	0	0	0	0	0	0	No	No
3	CP503	0.0	0.0	0.0	0.8	0	0	0	0	0	0	No	No
4	CP504	0.0	0.0	0.7	1.7	0	0	0	0	0	0	Yes	No
5	CP505	0.0	0.0	0.7	1.7	0	0	0	0	0	0	Yes	No
6	WS502	0.0	0.0	0.6	1.2	0	0	0	0	0	0	Yes	No
7	WS504	0.0	0.0	0.2	1.2	0	0	0	0	0	0	Yes	No
8	WS505	0.0	0.0	0.5	1.0	0	0	0	0	0	0	Yes	No
9	WS508	0.0	0.0	0.5	2.0	0	0	0	0	0	0	Yes	No
10	WS511	0.0	0.0	0.7	1.6	0	0	0	0	0	0	Yes	No
11	WS512	0.0	0.0	1.0	2.0	0	0	0	0	0	0	Yes	No
12	WS514	0.0	0.0	0.4	0.9	0	0	0	0	0	0	Yes	No
13	WS516	0.0	0.0	0.4	1.4	0	0	0	0	0	0	Yes	No
14	WS517	0.0	0.0	1.0	1.4	0	0	0	0	0	0	Yes	No
15	WS519	0.0	0.0	0.3	2.3	0	0	0	0	0	0	Yes	No
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Groundwater and Ground Gas Monitoring Summary

Site Name	Bicester Central Land Parcels
Client	Countryside Properties Ltd
Job No.	00020861/001

Start Date	31/08/2011
End Date	29/09/2011
No. Visits	3

Visit No.	Visit Date	Pressure Trend	Start mB	End mB
1	31/08/2011	No Change	1004	1004
2	12/09/2011	Rising	1010	1012
3	29/09/2011		1012	1012
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

	Minimum mB	Maximum mB
Barometric Pressure	1004	1012

Gas Screening Value (GSV) Calculation

	GSV Max per hole (l/hr)	GSV using Max Values (l/hr)	Maximum Values (% v/v)
Carbon Dioxide	0.0034	**0.0068**	3.4
Methane	0	**0**	0.0

Max Flow (l/hr)	0.2

GSV Max Per Hole is the maximum calculated GSV using data *specific to each borehole* over the monitoring period.

GSV Using Max Values is a worst case estimated of the GSV using Maxmimum Concentration and Maximum Flow for the whole data set.

CIRIA C665 - Table 8.5 (Refer to CIRIA document for full table and notes) (2007)

	Characteristic Situation (CIRIA R149)	Comparable PIT gas regime	Risk Classification	Gas Screening Value (l/hr)	Additional Factors
	1	A	Very Low Risk	<0.07	Typically methane ≤ 1% and/or carbon dioxide ≤ 5% otherwise consider increase to Characteristic Situation 2
	2	B	Low Risk	<0.7	Borehole air flow rate not to exceed 70l/hr. Otherwise consider increase to Characteristic Situation 3
	3	C	Moderate Risk	<3.5	
	4	D	Moderate to High Risk	<15	Quantitative Risk Assessment required to evaluate scope of protection measures
	5	E	High Risk	<70	
	6	F	Very High Risk	>70	

NHBC Report No. 4 - Table 14.1 (Refer to NHBC document for full table) (March 2007)

Traffic Light Classification	Methane		Carbon Dioxide	
	Typical Max Concentration (%v/v)	Gas Screening Value (l/hr)	Typical Max Concentration (%v/v)	Gas Screening Value (l/hr)
Green				
Amber	1	0.13	5	0.78
Amber 2	5	0.63	10	1.6
Red	20	1.6	30	3.1

Notes:
1. The worst-case ground gas regime identified on the site, either methane or carbon dioxide, at the worst case temporal conditions that the site may be expected to encounter will be the decider as to what Traffic Light is allocated.
2. Borehole Gas Volume Flow Rate, in litres per hour is defined as Wilson and Card (1999), is the borehole flow rate multiplied by the concentrations in the air stream of the particular gas being considered;
3. The typical Maximum Concentration can be exceeded in certain circumstances should the conceptual model indicate that it is safe to do so;
4. The Gas Screening Value Threshold should not generally be exceeded without the completion fo a detailed ground gas risk assessment taking into account site-specific conditions.

APPENDIX F SOAKAWAY TEST RESULTS

WSP Environmental

Project: Bicester Central Land Parcels
Code: 00020861-001
Client: Countryside Properties (Bicester) Ltd

TRIAL PIT SOAKAGE TEST

TEST DATA

Pit reference	**SA501**
Pit depth (m)	1.50
Pit width (m)	0.80
Pit length (m)	1.60
Depth to standing water (m)	

Test 1

Time (min)	**Depth (m)**
0.0	0.54
0.5	0.56
1.0	0.59
1.5	0.60
2.0	0.60
2.5	0.62
3.0	0.64
3.5	0.66
4.0	0.67
4.5	0.69
5.0	0.70
6.0	0.74
7.0	0.76
8.0	0.79
9.0	0.83
10.0	0.86
12.0	0.90
14.0	0.94
16.0	0.97
18.0	0.99
20.0	1.02
25.0	1.07
30.0	1.11
35.0	1.15
40.0	1.18
45.0	1.20
50.0	1.23
55.0	1.25
60.0	1.27
65.0	1.30
75.0	1.33
90.0	1.38
105.0	1.39

Test 2

Time (min)	**Depth (m)**

Test 3

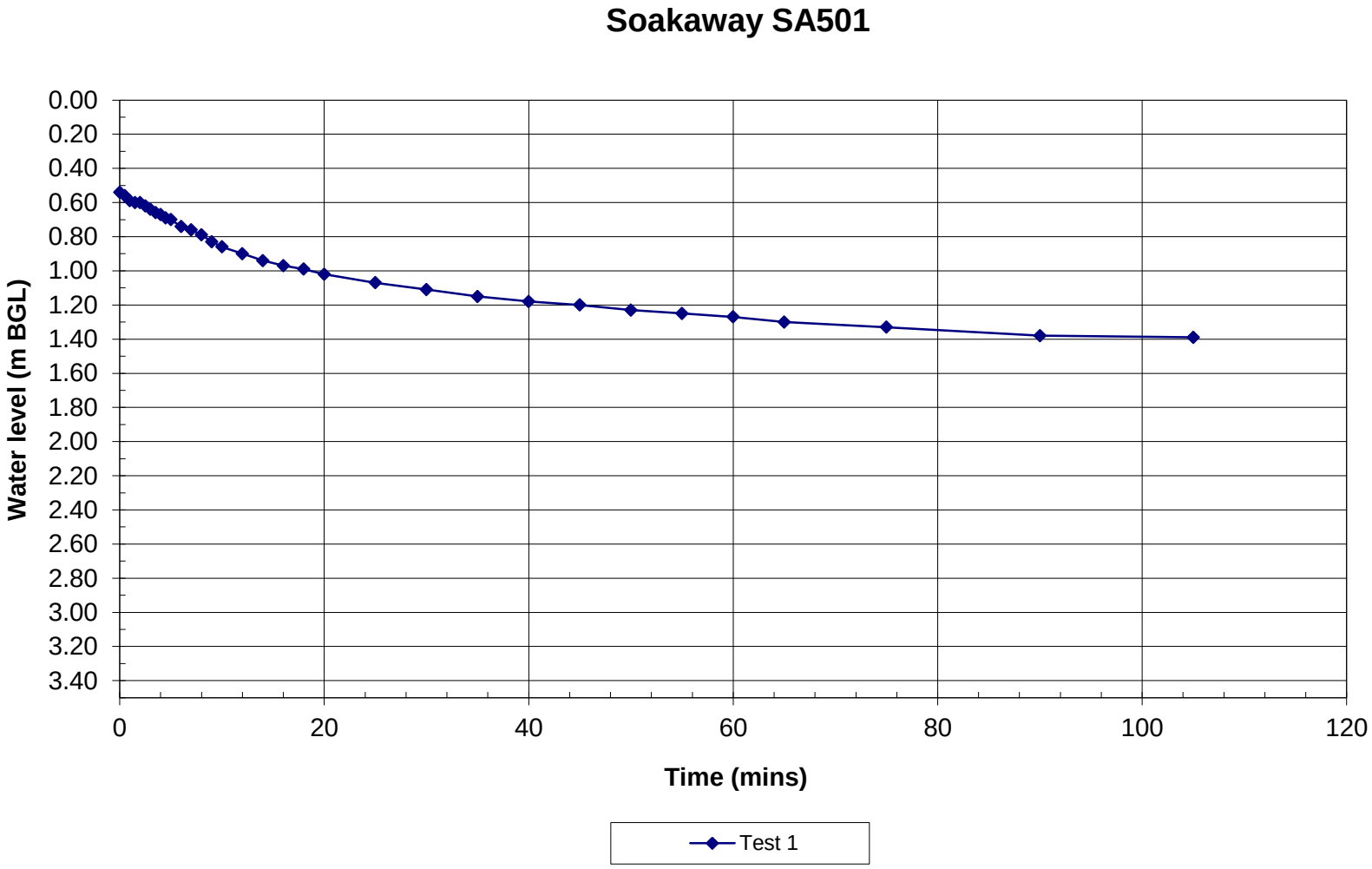
Time (min)	**Depth (m)**

Max. depth (m)	1.50	1.50	
Effective depth (m)	0.54	0.00	0.00
Effective drop (m)	0.96	1.50	0.00
75% effective depth (m)	1.26	1.13	0.00
50% effective depth (m)	1.02	0.75	0.00
25% effective depth (m)	0.78	0.38	0.00
t75 (min)	58.00		
t50 (min)	20.00		
t25 (min)	7.50		
Vp 75-25	0.61	0.96	0.00
ap 50	3.584	4.88	
tp 75-25	50.50	0.00	0.00

Soil infiltration rate (m/s)	**5.66E-05**	**#DIV/0!**	**#DIV/0!**
Soil infiltration rate (mm/hı	**2.04E+02**	**#DIV/0!**	**#DIV/0!**

Notes:

1	Blue cells require input data
2	Infiltration calculated to method in 'BRE Digest 365 (1991) - Soakaway Design'
3	First line of table must be depth at time = 0 sec


Soakaway SA501
Water level (m BGL)
0.00
0.20
0.40
0.60
0.80
1.00
1.20
1.40
1.60
1.80
2.00
2.20
2.40
2.60
2.80
3.00
3.20
3.40
0
20
40
60
80
100
120
Time (mins)
Test 1

WSP Environmental

Project: Bicester Central Land Parcels
Code: 00020861-001
Client: Countryside Properties (Bicester) Ltd

TRIAL PIT SOAKAGE TEST

TEST DATA

Pit reference	**SA506**
Pit depth (m)	1.80
Pit width (m)	0.70
Pit length (m)	1.70
Depth to standing water (m)	

Test 1	
Time (min)	**Depth (m)**
0.0	1.27
0.5	1.31
1.0	1.32
2.5	1.34
3.0	1.37
3.5	1.38
4.0	1.40
9.0	1.55
10.0	1.58
11.0	1.59
12.0	1.60
13.0	1.62
14.0	1.63
15.0	1.64
16.0	1.65
17.0	1.66
18.0	1.66
23.0	1.69
24.0	1.70
26.0	1.72
28.0	1.73
30.0	1.74
35.0	1.78
37.0	1.79
39.0	1.79
42.0	1.80
45.0	1.80

Test 2	
Time (min)	**Depth (m)**
0.0	1.07
0.5	1.10
1.0	1.12
1.5	1.15
2.0	1.17
2.5	1.19
3.0	1.20
7.0	1.33
8.0	1.35
9.0	1.37
10.0	1.38
11.0	1.40
12.0	1.42
16.0	1.48
17.0	1.50
18.0	1.50
19.0	1.51
20.0	1.52
22.0	**1.54**
24.0	1.56
30.0	1.61
32.0	1.62
34.0	1.63
36.0	1.63
38.0	1.65
40.0	1.66
45.0	1.70
50.0	1.72
55.0	1.74
60.0	1.75

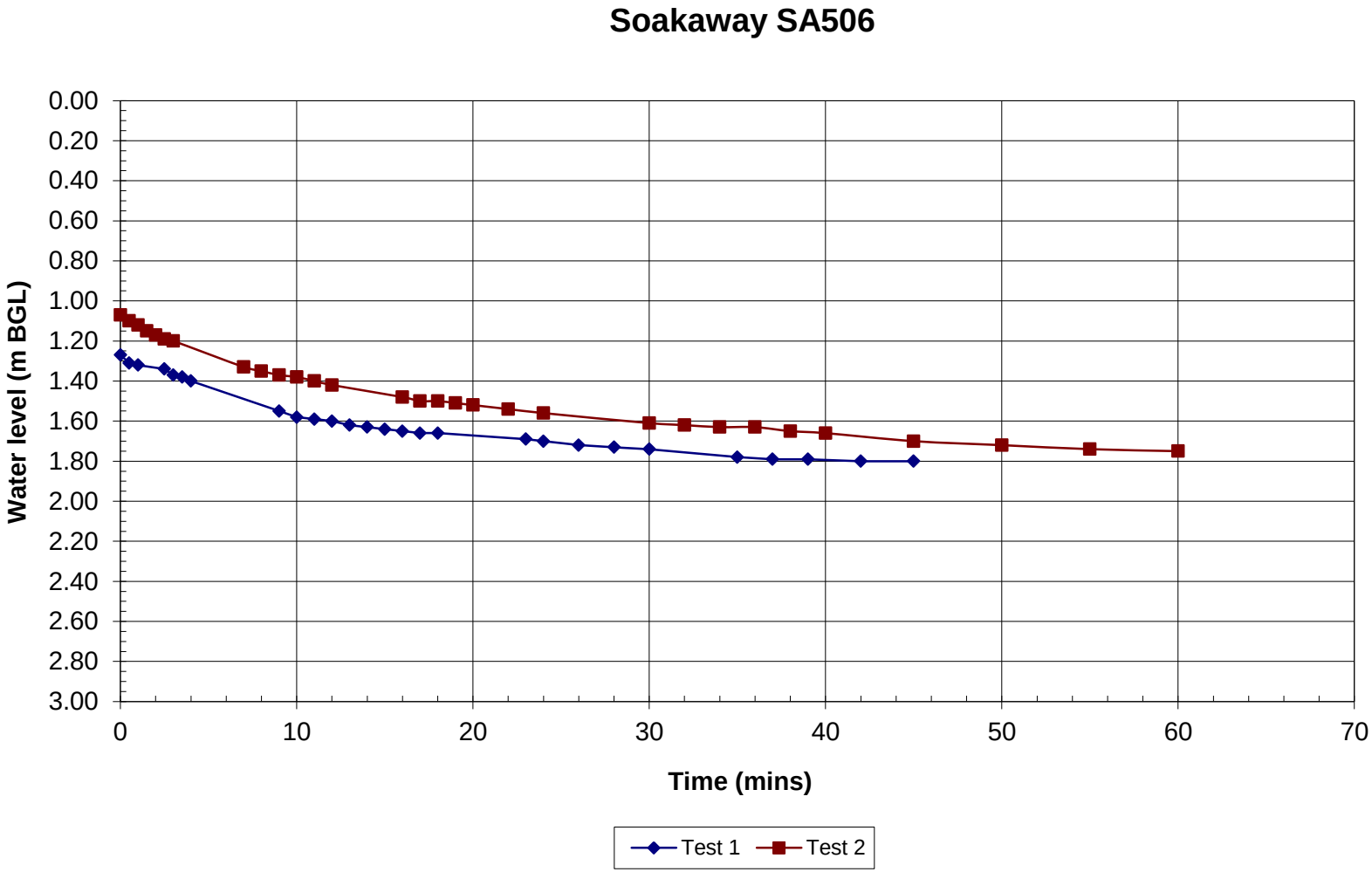
Test 3	
Time (min)	**Depth (m)**

Max. depth (m)	1.80	1.80	
Effective depth (m)	1.27	1.07	0.00
Effective drop (m)	0.53	0.73	0.00
75% effective depth (m)	1.67	1.62	0.00
50% effective depth (m)	1.54	1.44	0.00
25% effective depth (m)	1.40	1.25	0.00
t75 (min)	19.00	32.00	
t50 (min)	8.00	14.00	
t25 (min)	4.00	5.00	
Vp 75-25	0.32	0.43	0.00
ap 50	2.462	2.942	
tp 75-25	15.00	27.00	0.00

Soil infiltration rate (m/s)	**1.42E-04**	**9.11E-05**	**#DIV/0!**
Soil infiltration rate (mm/hr	**5.12E+02**	**3.28E+02**	**#DIV/0!**

Notes:

1	Blue cells require input data
2	Infiltration calculated to method in 'BRE Digest 365 (1991) - Soakaway Design'
3	First line of table must be depth at time = 0 sec


Soakaway SA506
Water level (m BGL)
0.00
0.20
0.40
0.60
0.80
1.00
1.20
1.40
1.60
1.80
2.00
2.20
2.40
2.60
2.80
3.00
0
10
20
30
40
50
60
70
Time (mins)
Test 1
Test 2

WSP Environmental

Project: Bicester Central Land Parcels
Code: 00020861-001
Client: Countryside Properties (Bicester) Ltd

TRIAL PIT SOAKAGE TEST

TEST DATA

Pit reference	**SA515**
Pit depth (m)	0.90
Pit width (m)	0.70
Pit length (m)	2.08
Depth to standing water (m)	0.30

Test 1

Time (min)	**Depth (m)**
0.0	0.30
0.5	0.30
1.0	0.30
2.0	0.30
3.0	0.31
4.0	0.31
5.0	0.32
6.0	0.32
7.0	0.32
8.0	0.33
9.0	0.33
10.0	0.33
15.0	0.37
20.0	0.38
25.0	0.39
30.0	0.40
40.0	0.42
50.0	0.44
60.0	0.46
70.0	0.48
80.0	0.49
90.0	0.50
120.0	0.53
150.0	**0.56**
200.0	0.61
230.0	0.64
260.0	0.65
290.0	0.68
320.0	0.70
350.0	0.73
380.0	0.75

Test 2

Time (min)	**Depth (m)**

Test 3

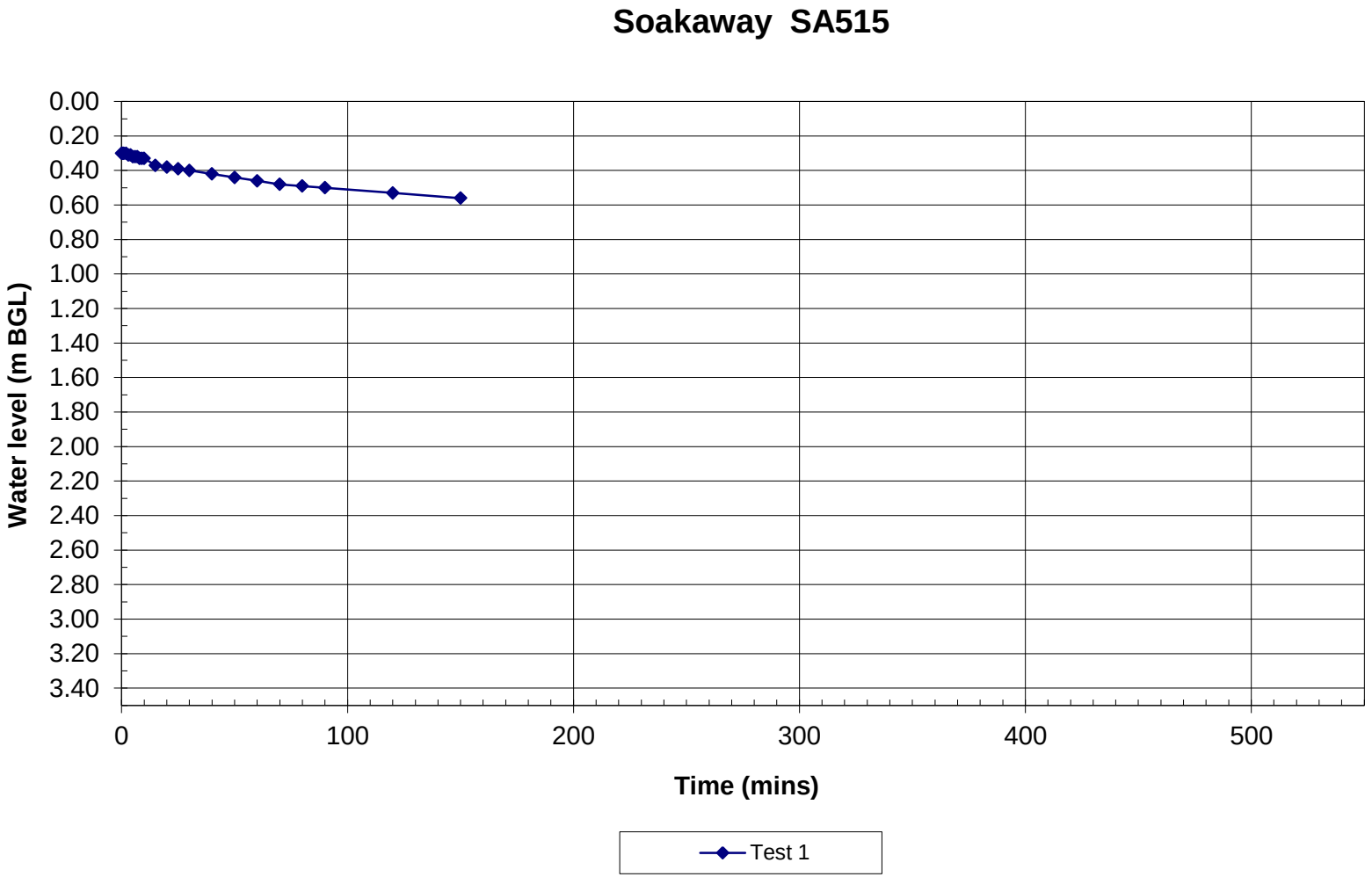
Time (min)	**Depth (m)**

Max. depth (m)	0.90	0.90	
Effective depth (m)	0.30	0.00	0.00
Effective drop (m)	0.60	0.90	0.00
75% effective depth (m)	0.75	0.68	0.00
50% effective depth (m)	0.60	0.45	0.00
25% effective depth (m)	0.45	0.23	0.00
t75 (min)	380.00		
t50 (min)	190.00		
t25 (min)	55.00		
Vp 75-25	0.44	0.66	0.00
ap 50	3.124	3.958	
tp 75-25	325.00	0.00	0.00

Soil infiltration rate (m/s)	**7.17E-06**	**#DIV/0!**	**#DIV/0!**
Soil infiltration rate (mm/hı	**2.58E+01**	**#DIV/0!**	**#DIV/0!**

Notes:

1	Blue cells require input data
2	Infiltration calculated to method in 'BRE Digest 365 (1991) - Soakaway Design'
3	First line of table must be depth at time = 0 sec


Soakaway SA515
Water level (m BGL)
0.00
0.20
0.40
0.60
0.80
1.00
1.20
1.40
1.60
1.80
2.00
2.20
2.40
2.60
2.80
3.00
3.20
3.40
0
100
200
300
400
500
Time (mins)
Test 1

WSP Environmental

Project: Bicester Central Land Parcels
Code: 00020861-001
Client: Countryside Properties (Bicester) Ltd

TRIAL PIT SOAKAGE TEST

TEST DATA

Pit reference	**SA517**
Pit depth (m)	1.60
Pit width (m)	0.70
Pit length (m)	2.00
Depth to standing water (m)	

Test 1

Time (min)	Depth (m)
0.0	0.65
0.5	0.69
1.0	0.74
1.5	0.77
2.0	0.82
2.5	0.84
3.0	0.87
3.5	0.89
4.0	0.91
4.5	0.93
5.0	0.95
6.0	0.99
7.0	1.03
8.0	1.05
9.0	1.08
10.0	**1.11**
12.0	1.16
14.0	1.20
16.0	1.23
18.0	1.25
20.0	1.29
22.0	1.31
24.0	1.32
26.0	1.35
28.0	1.36
30.0	1.38
35.0	1.40
40.0	1.43
50.0	1.48
60.0	1.51
75.0	1.54

Test 2

Time (min)	Depth (m)

Test 3

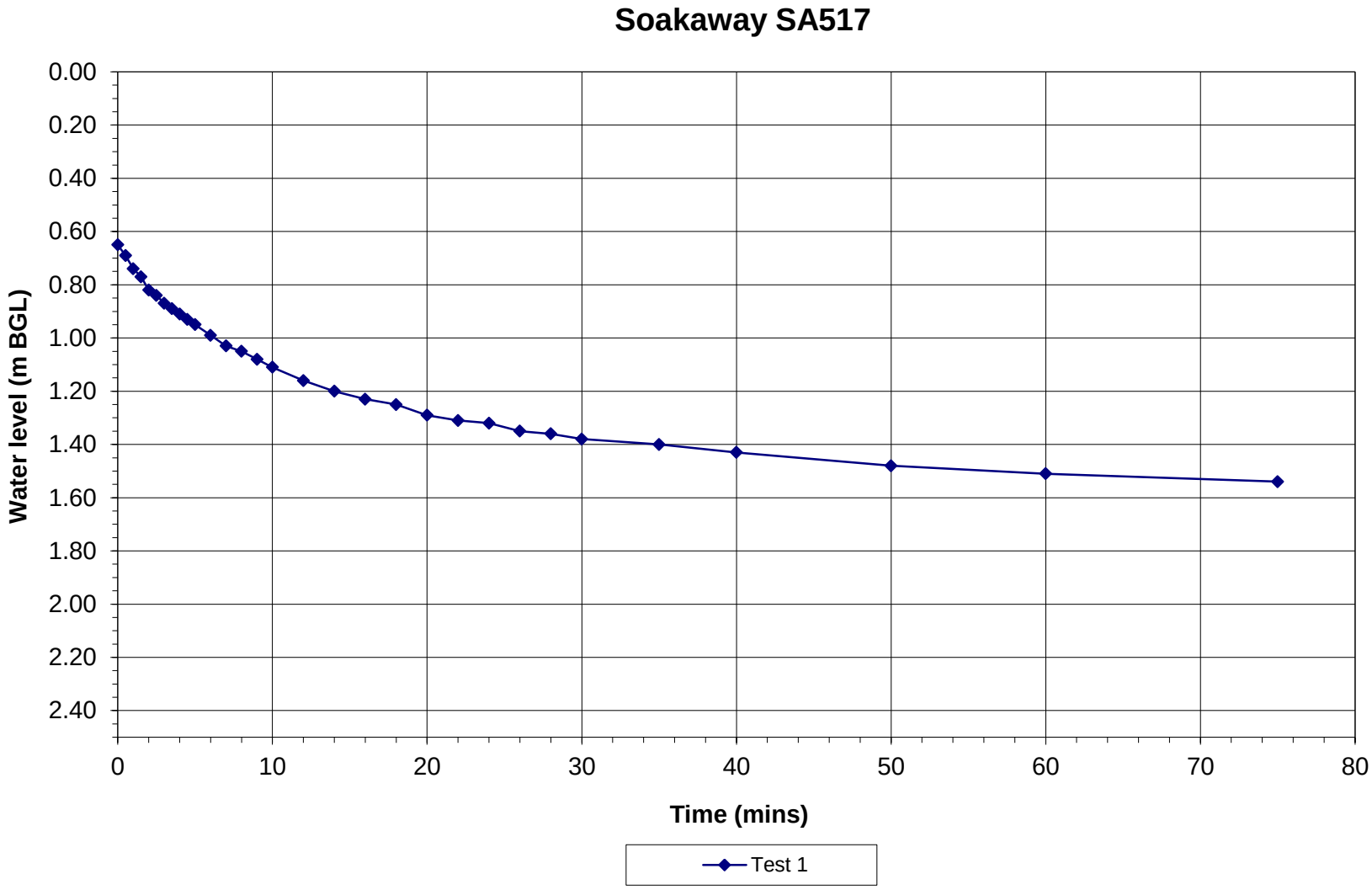
Time (min)	Depth (m)

	Test 1	Test 2	Test 3
Max. depth (m)	1.60	1.60	
Effective depth (m)	0.65	0.00	0.00
Effective drop (m)	0.95	1.60	0.00
75% effective depth (m)	1.36	1.20	0.00
50% effective depth (m)	1.13	0.80	0.00
25% effective depth (m)	0.89	0.40	0.00
t75 (min)	28.00		
t50 (min)	11.00		
t25 (min)	3.50		
Vp 75-25	0.67	1.12	0.00
ap 50	3.965	5.72	
tp 75-25	24.50	0.00	0.00

Soil infiltration rate (m/s)	**1.14E-04**	**#DIV/0!**	**#DIV/0!**
Soil infiltration rate (mm/hı	**4.11E+02**	**#DIV/0!**	**#DIV/0!**

Notes:

1 Blue cells require input data
2 Infiltration calculated to method in 'BRE Digest 365 (1991) - Soakaway Design'
3 First line of table must be depth at time = 0 sec


Soakaway SA517
Water level (m BGL)
0.00
0.20
0.40
0.60
0.80
1.00
1.20
1.40
1.60
1.80
2.00
2.20
2.40
0
10
20
30
40
50
60
70
80
Time (mins)
Test 1

WSP

WSP Environmental

Project: Bicester Central Land Parcels
Code: 00020861-001
Client: Countryside Properties (Bicester) Ltd

TRIAL PIT SOAKAGE TEST

TEST DATA

Pit reference	**SA520**
Pit depth (m)	2.20
Pit width (m)	0.70
Pit length (m)	1.80
Depth to standing water (m)	

Test 1

Time (min)	Depth (m)
0.0	0.66
0.5	0.68
1.0	0.69
1.5	0.71
2.0	0.72
2.5	0.73
3.0	0.75
3.5	0.76
4.0	0.77
4.5	0.77
5.0	0.79
6.0	0.81
9.5	0.86
10.0	0.86
12.0	0.89
14.0	**0.92**
16.0	0.95
19.0	0.98
20.0	0.99
22.0	1.01
24.0	1.04
26.0	1.06
28.0	1.07
30.0	1.09
40.0	1.16
50.0	1.22
60.0	1.29
90.0	1.40
120.0	1.52
150.0	1.60
180.0	1.69

Test 2

Time (min)	Depth (m)

Test 3

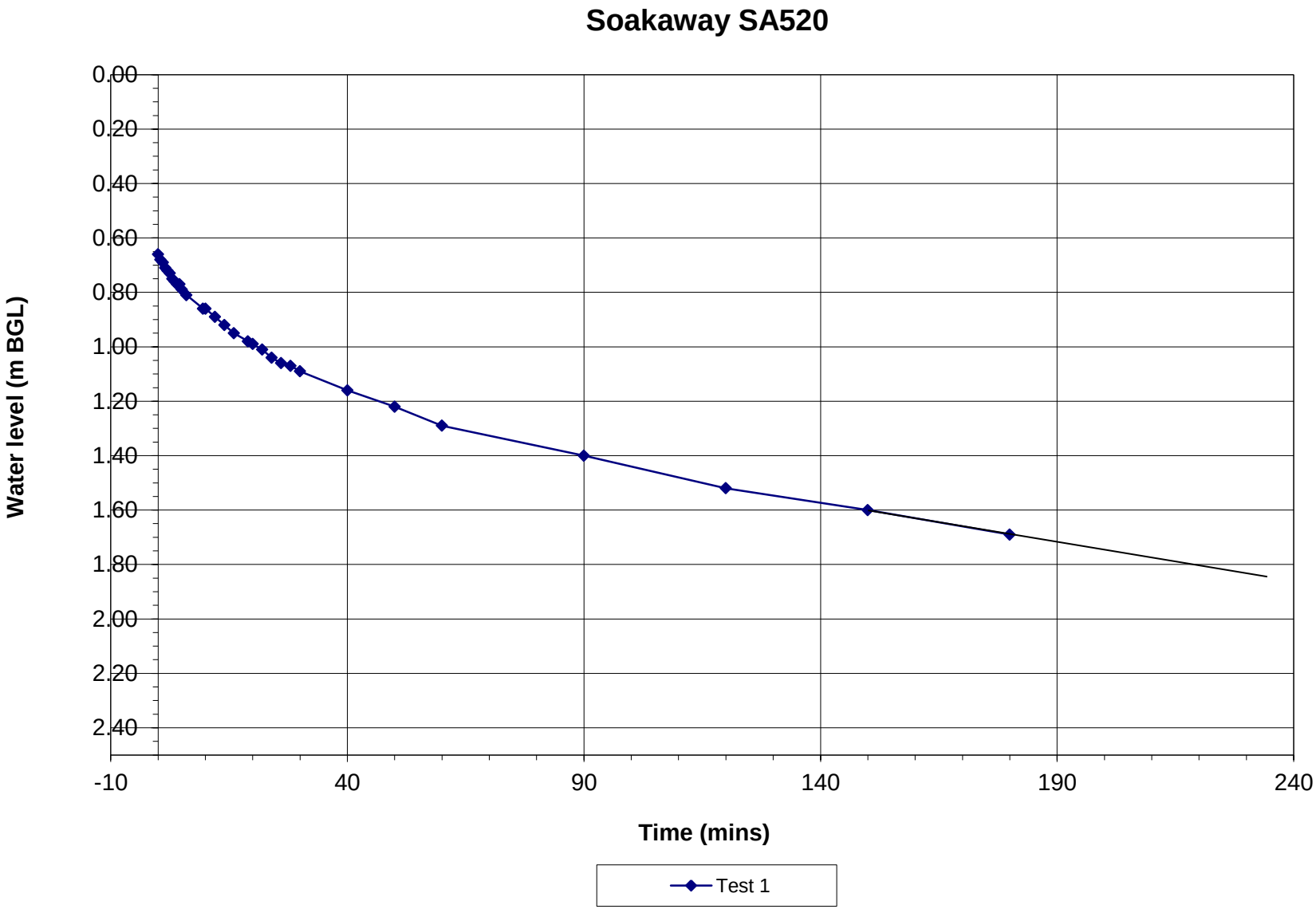
Time (min)	Depth (m)

	Test 1	Test 2	Test 3
Max. depth (m)	2.20	2.20	
Effective depth (m)	0.66	0.00	0.00
Effective drop (m)	1.54	2.20	0.00
75% effective depth (m)	1.82	1.65	0.00
50% effective depth (m)	1.43	1.10	0.00
25% effective depth (m)	1.05	0.55	0.00
t75 (min)	226.00		
t50 (min)	97.50		
t25 (min)	25.00		
Vp 75-25	0.97	1.39	0.00
ap 50	5.11	6.76	
tp 75-25	201.00	0.00	0.00

Soil infiltration rate (m/s)	**1.57E-05**	**#DIV/0!**	**#DIV/0!**
Soil infiltration rate (mm/hr	**5.67E+01**	**#DIV/0!**	**#DIV/0!**

Notes:

1 Blue cells require input data
2 Infiltration calculated to method in 'BRE Digest 365 (1991) - Soakaway Design'
3 First line of table must be depth at time = 0 sec


Soakaway SA520
Water level (m BGL)
0.00
0.20
0.40
0.60
0.80
1.00
1.20
1.40
1.60
1.80
2.00
2.20
2.40
-10
40
90
140
190
240
Time (mins)
Test 1

WSP Environmental

Project: Bicester Central Land Parcels
Code: 00020861-001
Client: Countryside Properties (Bicester) Ltd

TRIAL PIT SOAKAGE TEST

TEST DATA

Pit reference	**SA528**
Pit depth (m)	2.10
Pit width (m)	0.73
Pit length (m)	2.02
Depth to standing water (m)	1.01

Test 1	
Time (min)	**Depth (m)**
0.0	1.01
0.5	1.04
1.0	1.05
2.0	1.05
3.0	1.06
4.0	1.06
5.0	1.07
6.0	1.08
7.0	1.08
8.0	1.09
9.0	1.09
10.0	1.10
15.0	1.14
20.0	1.16
25.0	1.17
30.0	1.18
40.0	1.21
50.0	1.24
60.0	1.27
70.0	1.29
80.0	1.31
90.0	1.34
120.0	1.39
150.0	1.45
180.0	1.50
210.0	1.56
240.0	1.60
270.0	1.65
300.0	1.68
330.0	1.70

Test 2	
Time (min)	**Depth (m)**

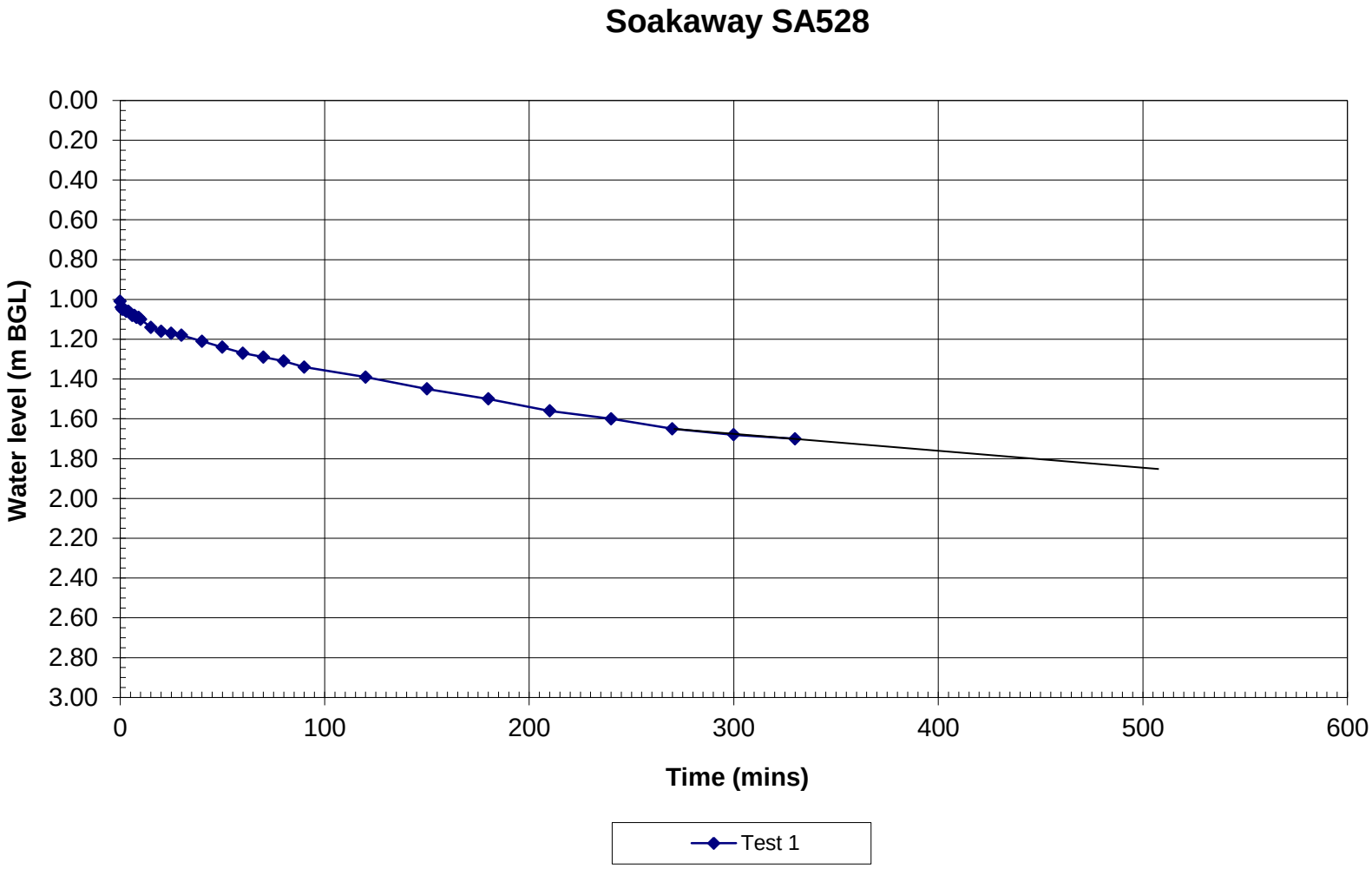
Test 3	
Time (min)	**Depth (m)**

Max. depth (m)	2.10	2.10	
Effective depth (m)	1.01	0.00	0.00
Effective drop (m)	1.09	2.10	0.00
75% effective depth (m)	1.83	1.58	0.00
50% effective depth (m)	1.56	1.05	0.00
25% effective depth (m)	1.28	0.53	0.00
t75 (min)	475.00		
t50 (min)	210.00		
t25 (min)	65.00		
Vp 75-25	0.80	1.55	0.00
ap 50	4.4721	7.2496	
tp 75-25	410.00	0.00	0.00

Soil infiltration rate (m/s)	**7.31E-06**	**#DIV/0!**	**#DIV/0!**
Soil infiltration rate (mm/hı	**2.63E+01**	**#DIV/0!**	**#DIV/0!**

Notes:

1	Blue cells require input data
2	Infiltration calculated to method in 'BRE Digest 365 (1991) - Soakaway Design'
3	First line of table must be depth at time = 0 sec


Soakaway SA528
Water level (m BGL)
0.00
0.20
0.40
0.60
0.80
1.00
1.20
1.40
1.60
1.80
2.00
2.20
2.40
2.60
2.80
3.00
0
100
200
300
400
500
600
Time (mins)
Test 1

WSP Environmental

Project: Bicester Central Land Parcels
Code: 00020861-001
Client: Countryside Properties (Bicester) Ltd

TRIAL PIT SOAKAGE TEST

TEST DATA

Pit reference	**SA531**
Pit depth (m)	2.20
Pit width (m)	0.70
Pit length (m)	1.80
Depth to standing water (m)	

Test 1

Time (min)	**Depth (m)**
0.0	0.64
0.5	0.67
1.0	0.70
1.5	0.72
2.0	0.73
2.5	0.75
3.0	0.77
3.5	0.79
4.0	0.80
4.5	0.82
5.0	0.82
6.0	0.85
7.0	0.88
8.0	0.91
9.0	0.93
10.0	**0.96**
12.0	1.01
14.0	1.04
16.0	1.09
18.0	1.13
20.0	1.17
22.0	1.21
24.0	1.24
26.0	1.29
28.0	1.32
30.0	1.35
34.0	1.42
40.0	1.50
50.0	1.64
60.0	1.75
70.0	1.84
90.0	2.00
100.0	2.09

Test 2

Time (min)	**Depth (m)**
0.0	0.83
0.5	0.84
1.0	0.85
1.5	0.85
2.0	0.86
2.5	0.87
3.0	0.87
3.5	0.88
4.0	0.88
4.5	0.89
5.0	0.90
6.0	**0.91**
7.0	**0.92**
8.0	0.94
9.0	0.95
10.0	0.96
18.0	1.04
20.0	1.07
25.0	1.11
30.0	1.15
35.0	1.19
40.0	1.23
45.0	1.26
60.0	1.35
75.0	1.44
105.0	1.57

Test 3

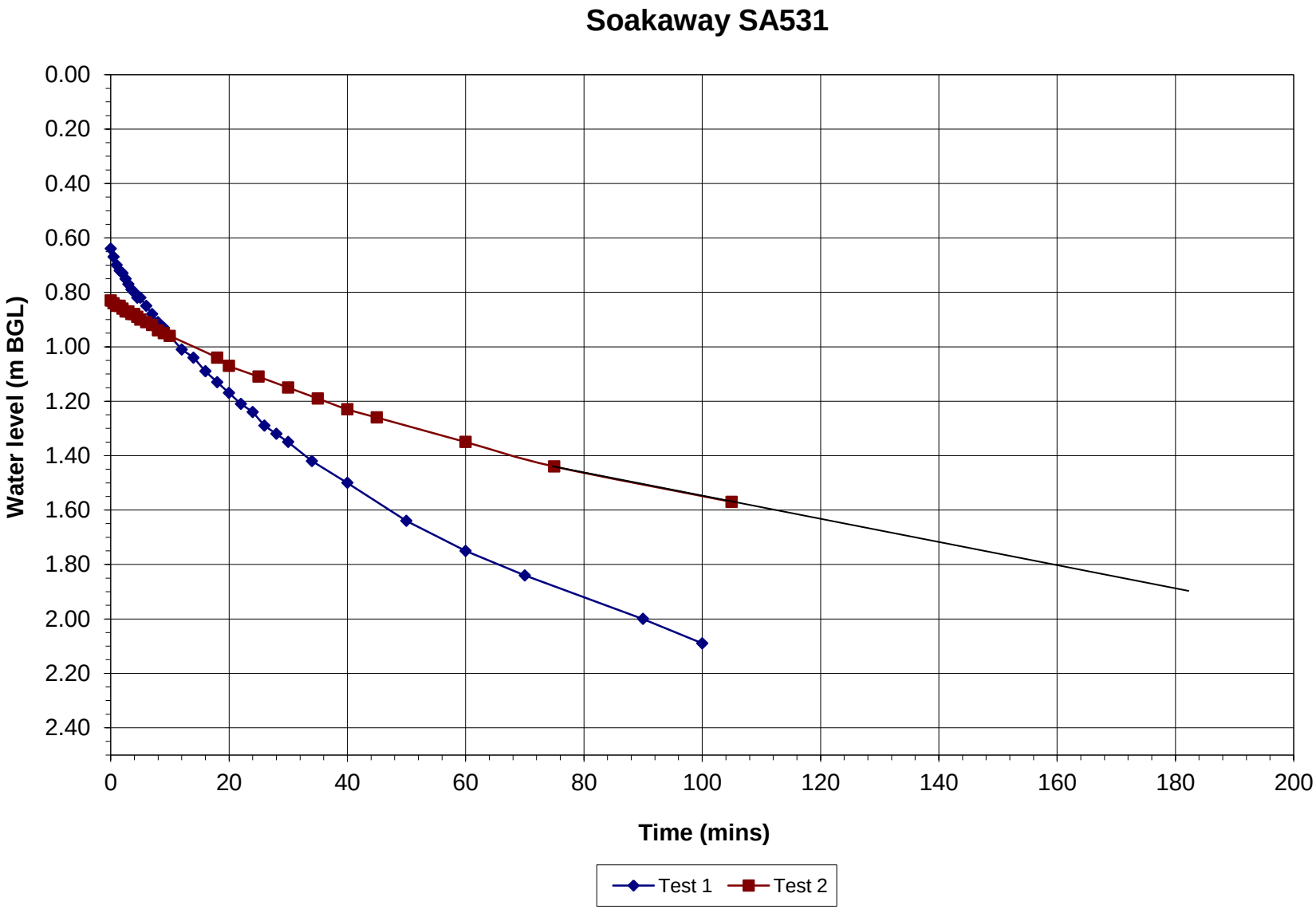
Time (min)	**Depth (m)**

Max. depth (m)	2.20	2.20	
Effective depth (m)	0.64	0.83	0.00
Effective drop (m)	1.56	1.37	0.00
75% effective depth (m)	1.81	1.86	0.00
50% effective depth (m)	1.42	1.52	0.00
25% effective depth (m)	1.03	1.17	0.00
t75 (min)	55.40	174.00	
t50 (min)	34.00	87.30	
t25 (min)	13.50	32.50	
Vp 75-25	0.98	0.86	0.00
ap 50	5.16	4.685	
tp 75-25	41.90	141.50	0.00

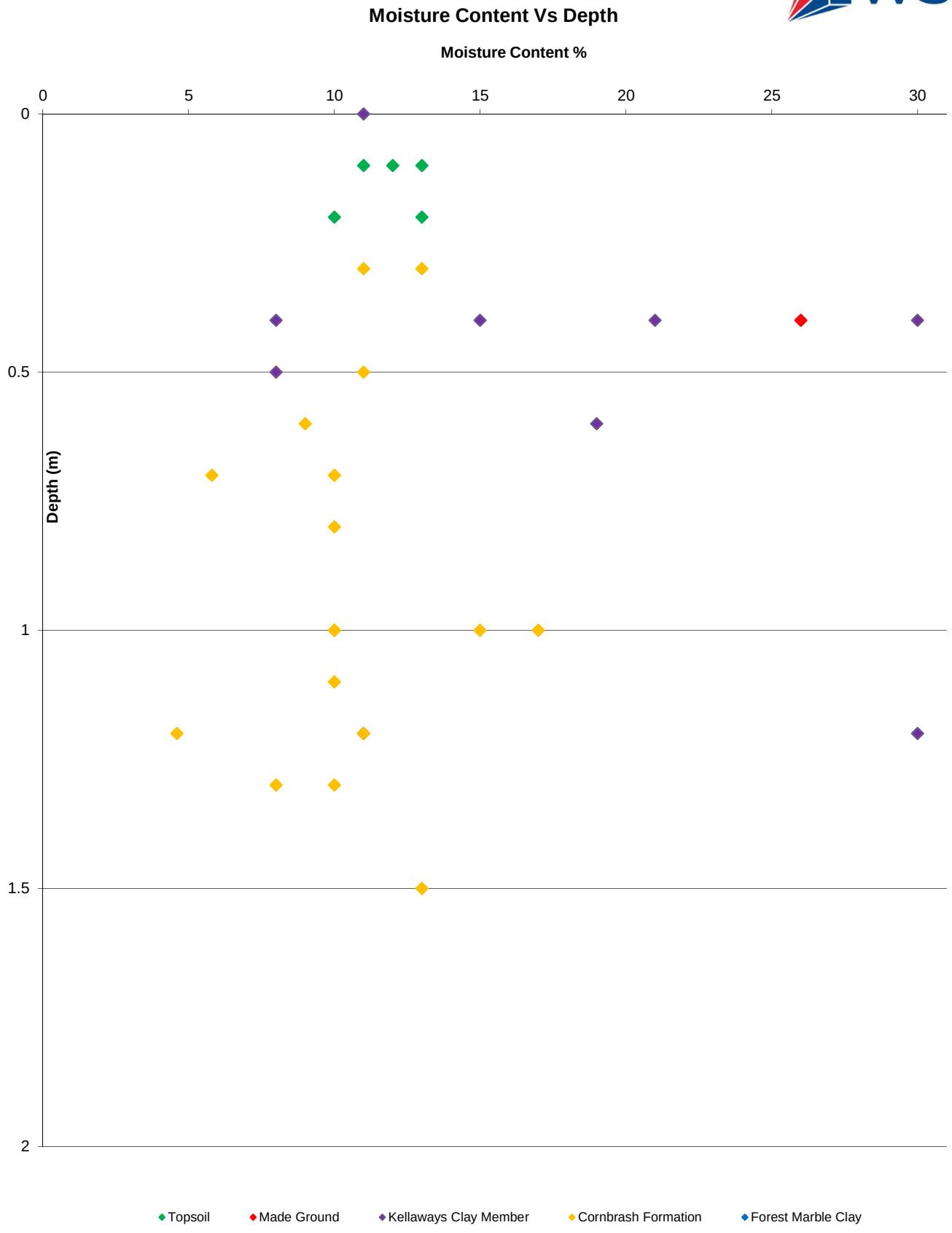
Soil infiltration rate (m/s)	**7.58E-05**	**2.17E-05**	**#DIV/0!**
Soil infiltration rate (mm/hr	**2.73E+02**	**7.81E+01**	**#DIV/0!**

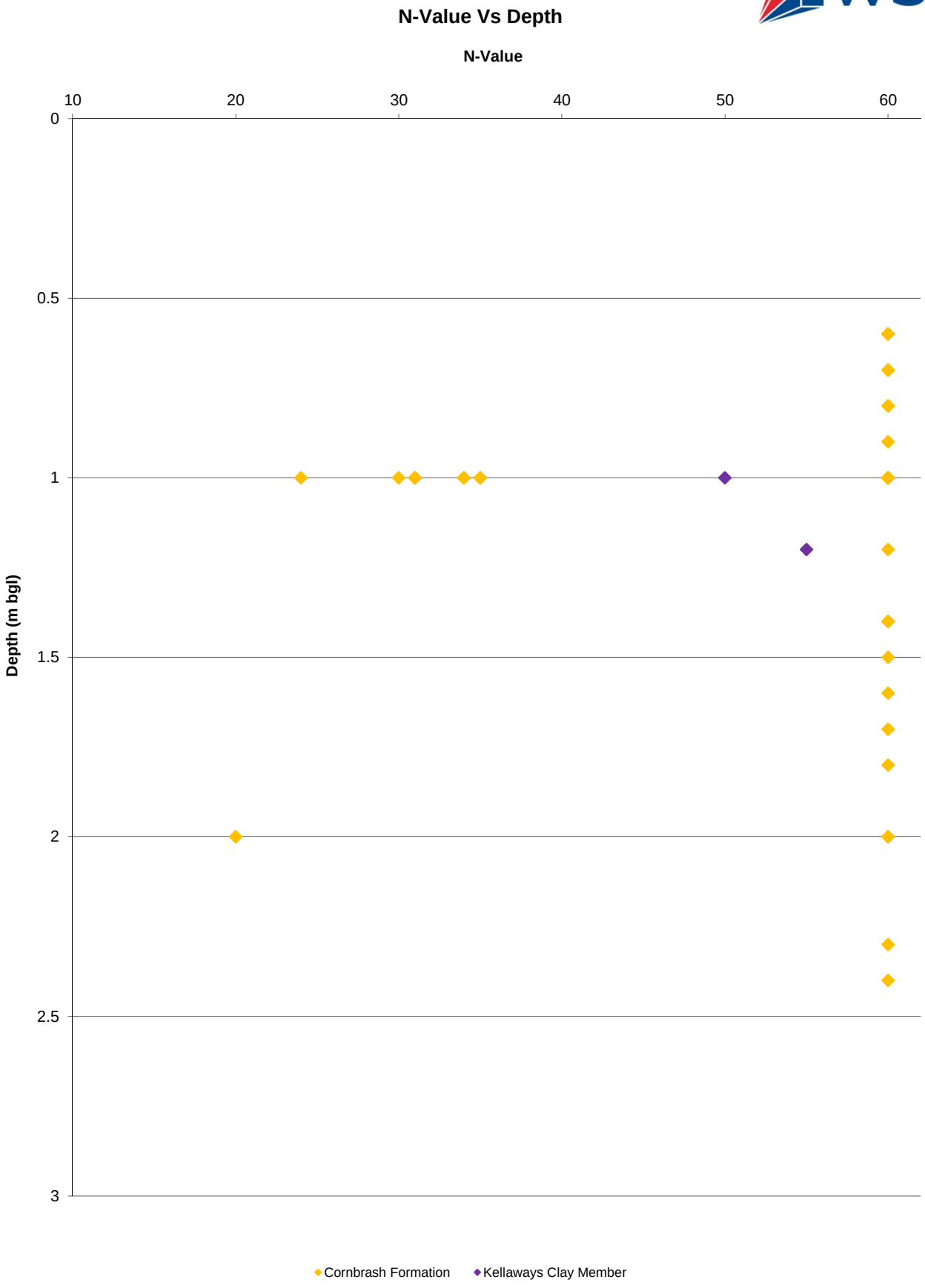
Notes:

1	Blue cells require input data
2	Infiltration calculated to method in 'BRE Digest 365 (1991) - Soakaway Design'
3	First line of table must be depth at time = 0 sec

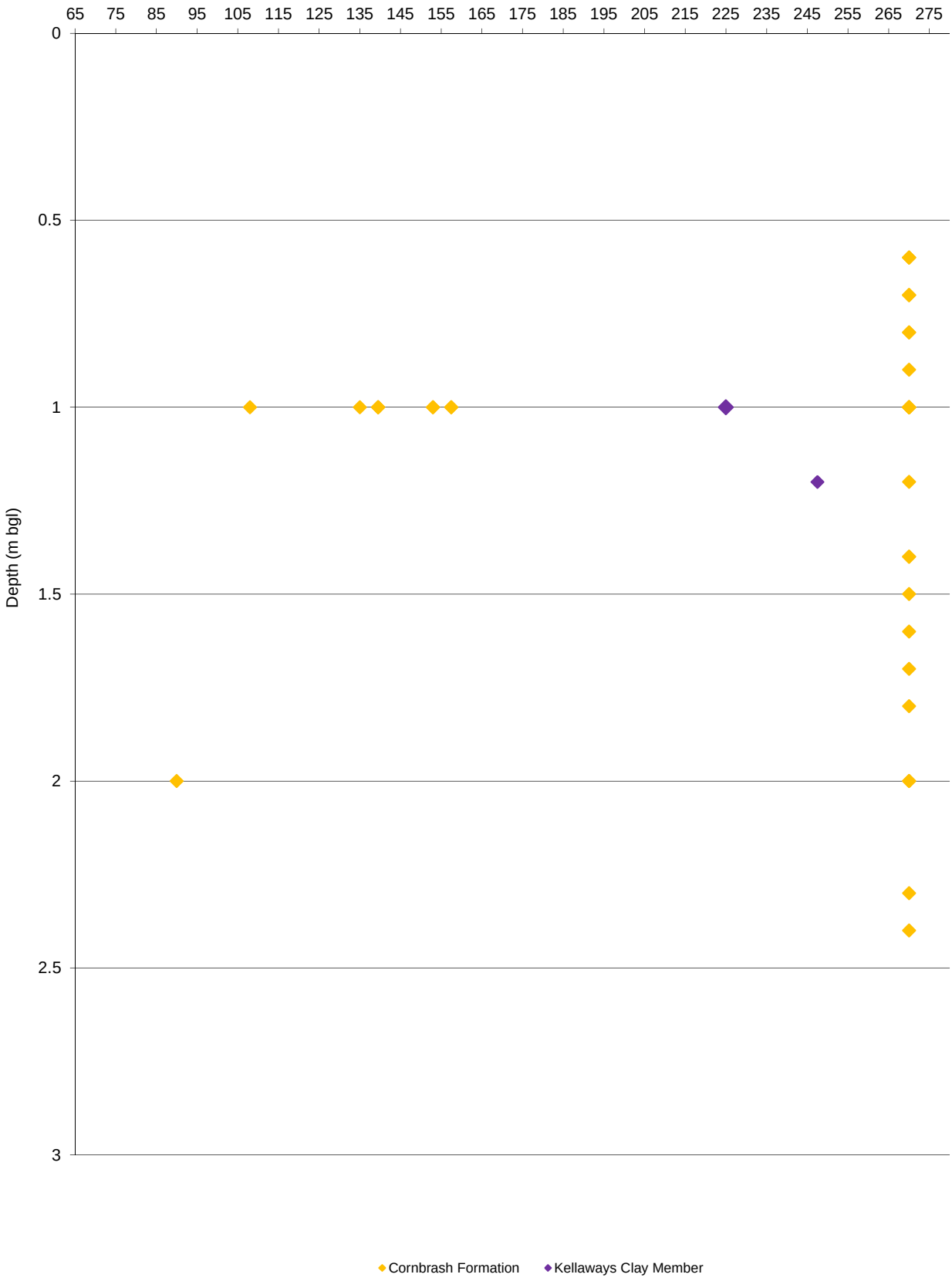

Soakaway SA531
Water level (m BGL)
0.00
0.20
0.40
0.60
0.80
1.00
1.20
1.40
1.60
1.80
2.00
2.20
2.40
0
20
40
60
80
100
120
140
160
180
200
Time (mins)
Test 1
Test 2

APPENDIX G GEOTECHNICAL RESULT PLOTS

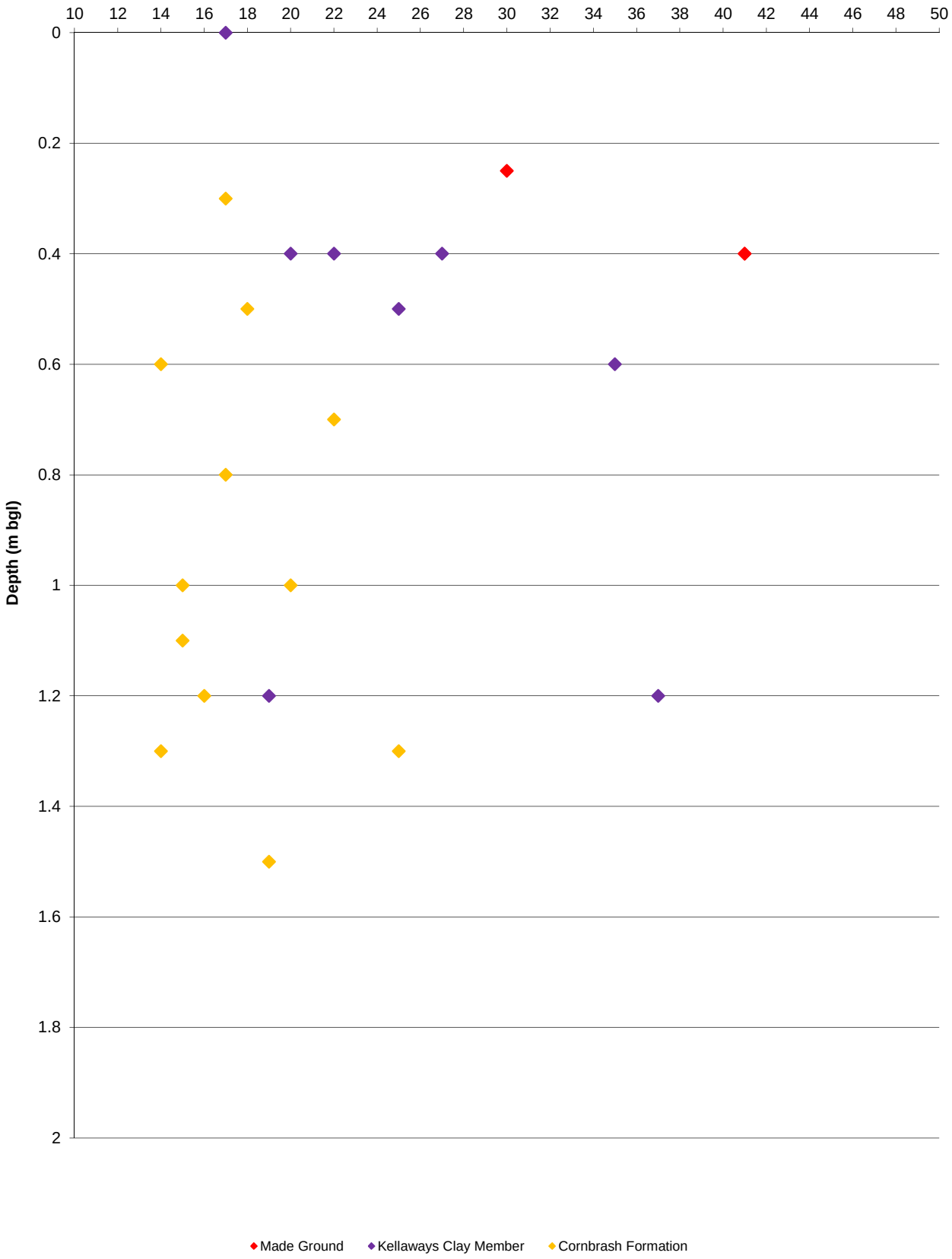

Moisture Content Vs Depth
Moisture Content %
0
5
10
15
20
25
30
0
0.5
1
1.5
2
Depth (m)
Topsoil
Made Ground
Kellaways Clay Member
Cornbrash Formation
Forest Marble Clay


N-Value Vs Depth
N-Value
10
20
30
40
50
60
0
0.5
1
1.5
2
2.5
3
Depth (m bgl)
Cornbrash Formation
Kellaways Clay Member

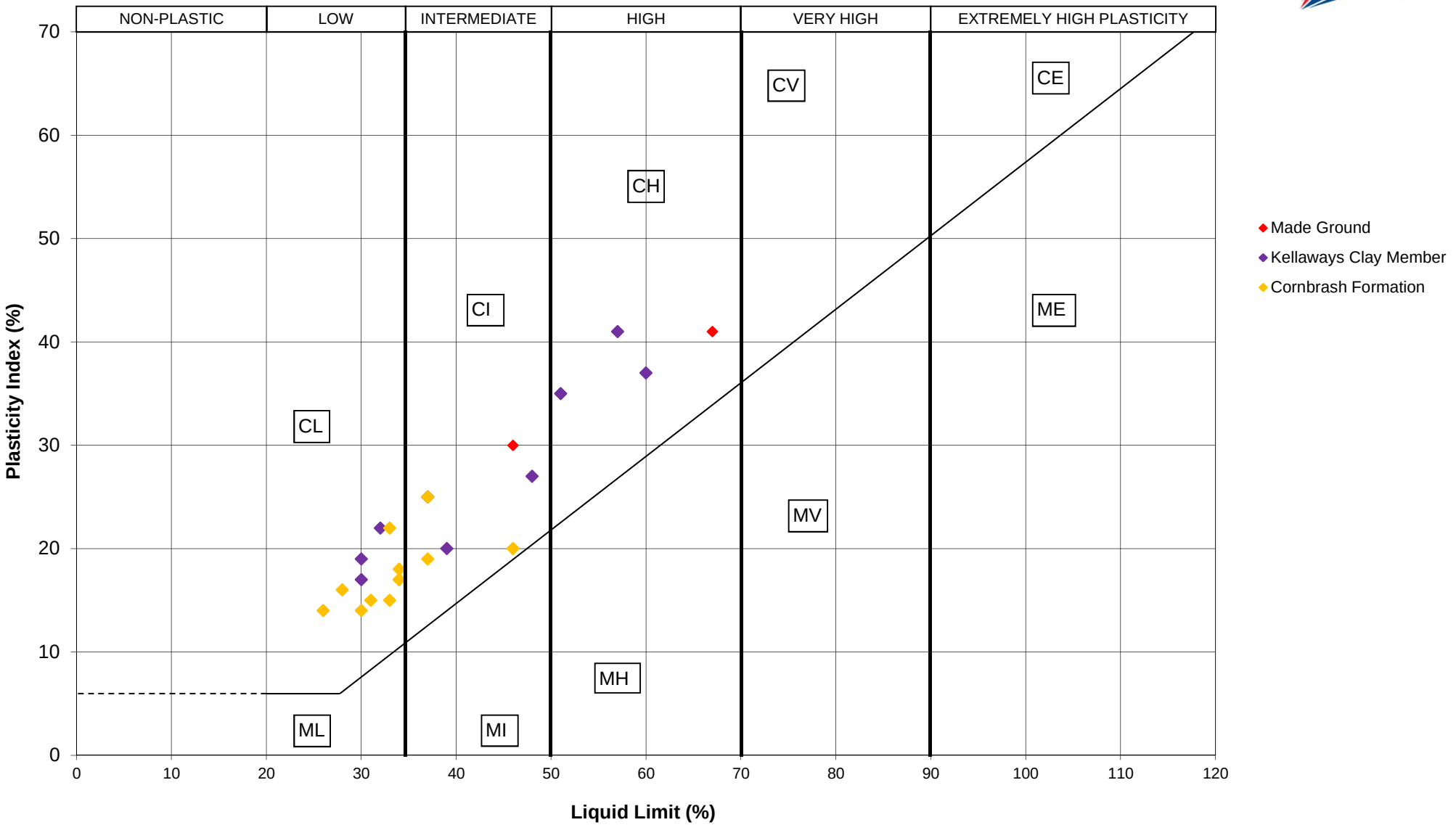
Undrained Shear Strength (from SPT's) Vs Depth



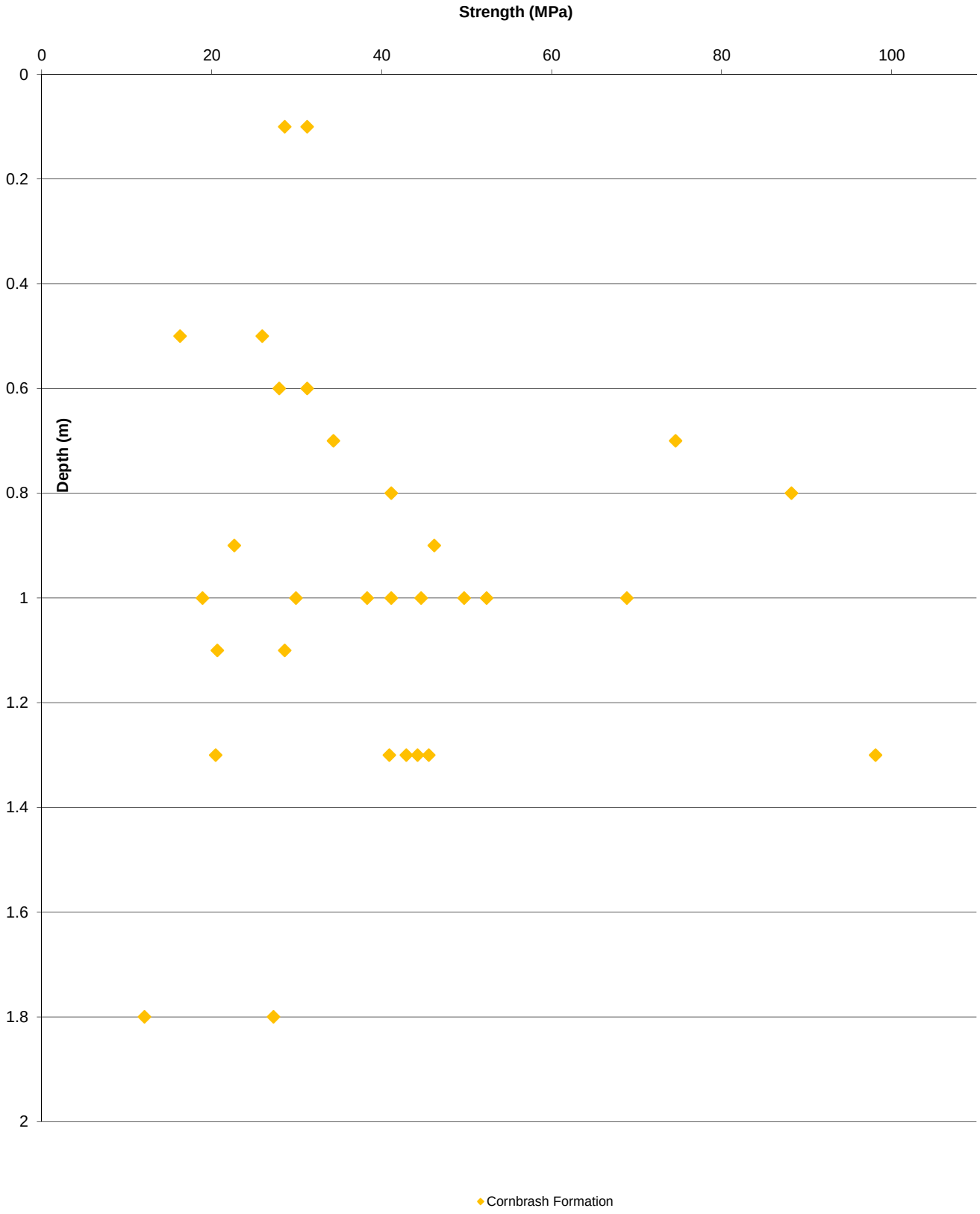
Plasticity Index Vs Depth



Plasticity Chart (After BS5930:1999)



Corrected Unconfined Compressive Strength Vs Depth



APPENDIX H RISK ASSESSMENT APPROACH

Summary of Risk Assessment Approach

The following section provides a summary of the approach adopted by our risk assessment team including the context and the derivation of the screening criteria used. This document does not seek to present an exhaustive listing nor detailed understanding of the UK contaminated land regime and its assessment. The reader is instead directed towards appropriate source materials for a greater understanding, it is however intended to provide herein an overview of our general assumptions and practices that we have followed.

ANALYSIS PROTOCOLS

In selecting a laboratory testing suite contaminants must have the potential to be present on a site following an understanding of its current or former industrial use. They should also be likely to be present at a perceived concentration that may cause harm, whereby "harm" is defined under Part 2A legislation. The purpose of this criterion is to exclude substances and unnecessary costs in the testing for analytes that are rarely found or are unlikely to be present at harmful concentrations.

In selecting an analyte we therefore assume that it is:

- Likely to occur at the target site in sufficient concentrations to cause harm or pollution; and,
- Known or suspected to pose significant risk to humans (death, serious injury, cancer or other disease, genetic mutation, birth defects or the impairment of reproductive functions); or,
- Known or suspected to pose a significant risk in the water environment, or likely to cause other adverse impacts in the water environment, as a result of their presence on land; or,
- Known or suspected to pose a significant risk to ecosystems as a result of their presence on land; or,
- Known or suspected to have a significant effect on buildings or building materials; or,
- Known or suspected to be persistent and mobile in soils or have tendency to bio-accumulate through exposure of sensitive organisms.

The following documents will have been used where available to assist in informing our selection;

- The available desk study/preliminary risk assessment reports available for the site to proffer an understanding of site history, waste, chemical storage and poor management practices that may have resulted in the potential for depleted land quality;
- CLR 8 'Priority Contaminants for the Assessment of Land' (Environment Agency 2002a). This document identifies priority contaminants, selected on the basis that they are likely to be present on many current or former sites affected by industrial or waste management activity in the UK in sufficient concentrations to cause harm; and
- The Department of the Environment's Industry Profiles (DoE 1995-95) which describe specific industrial processes and those chemicals that are commonly found on a given industrial land use type.

APPROACH TO THE ASSESSMENT OF HUMAN HEALTH RISKS

Our approach is consistent with that established in the publication *Model Procedures for the Management of Land Contamination (CLR11)* (Environment Agency 2004a). This establishes a tiered approach including:

- Preliminary Risk Assessment (e.g. the establishment of potential pollutant linkages);
- Generic Quantitative Risk Assessment (GQRA) (e.g. the comparison of contaminant concentrations against Soil Guideline Values (SGV) or other Generic Assessment Criteria (GAC)); and
- Detailed Quantitative Risk Assessment (DQRA) (e.g. the comparison of contaminant concentrations against site specific assessment criteria).

Generic Quantitative Risk Assessment (GQRA) is described in outline here. Detailed Quantitative Risk Assessment (DQRA) where applicable will have been defined in detail of main body reporting.

Generic Quantitative Risk Assessment – Human Health

In order to undertake a GQRA, contaminant concentrations need to be compared to appropriate generic assessment criteria. Current UK industry practice is to use, as first preference, UK SGVs which are generic assessment criteria published by the Environment Agency and derived using the Contaminated Land Exposure Assessment model (CLEA).

The CLEA model provides an approach for the assessment of chronic risks to human health from concentrations of a substance within soil; where appropriate.

The current version of the model (V1.06) was published in September 2009 and, following its publication, a number of SGVs have also been produced. However, the SGVs published to date are limited to only a small number of contaminants. Consequently, where published SGV do not exist, other GAC can be used including:

- GAC prepared in accordance with the CLEA V1.06 model by authoritative bodies (e.g. Chartered Institute of Environmental Health (CIEH), Environment Industries Commission (EIC)); or in their absence,
- WSP in-house GAC prepared in accordance with the CLEA V1.06 model and associated documents.

The approach adopted by WSP has been to generate GAC for chronic risks to human health using CLEA V1.06. In generating GAC, input parameters consistent with Environment Agency publications have been adopted by WSP including:

- Environment Agency (2009a), *Human Health Toxicological Assessment of Contaminants in Soil*, Report SC050021/SR2, January 2009;
- Environment Agency (2009b), *CLEA Software (Version 1.04) Handbook (and Software)*, Report SC050021/SR4, January 2009; and
- Environment Agency (2009c), *Updated Technical Background to the CLEA Model*, Report SC050021/SR3, January 2009.

Toxicological data for respective contaminants have been selected following Environment Agency guidance. Where UK guidance is available (i.e. existing published TOX (toxicological) reports respective Health Criteria Values (HCV) have been adopted. Where no UK TOX reports are available the following references have been used (given in order of preference);

- Published UK toxicity reviews to derive HCV within Nathanial *et. al*, 2009 and EIC/CL:AIRE 2009;
- Other appropriate UK sources;
- Authoritative European sources;
- International Organisations (e.g. World Health Organisation); or
- Appropriate, authoritative US sources (e.g. USEPA).

Fate and transport characteristics for the contaminants for which GAC have been derived have included the following hierarchy of data sources;

- Environment Agency (2008a), *Compilation of Data for Priority Organic Pollutants*, Report SC050021/SR7, November 2008;
- Defra/Environment Agency sources (e.g. Environment Agency, *Review of the Fate and Transport of Selected Contaminants in the Soil Environment, Draft Technical Report P5- 079/TR1* (Environment Agency 2003a));
- Published fate and transport reviews to derive HCV within Nathanial *et. al*, 2009 and EIC/CL:AIRE 2009;
- Other UK Government documents;
- European data sources;
- International data sources; (e.g. World Health Organisation); or
- Other international sources (e.g. USEPA).

Where appropriate and where sufficient data is available, values have been adjusted to reflect a UK soil temperature of 10ºC (e.g. K_{aw}).

In generating GAC, the default CLEA assumptions have been applied to a range of likely human health exposure models and associated critical age receptor groups including:

- Residential with Plant Uptake;
- Residential without Plant Uptake;

- Allotments;
- Parks;
- Open Spaces; and,
- Commercial/Industrial.

Additional land use scenarios have been considered within the context of a DQRA, for example, a residential care home land use.

Please also observe that GAC for organic substances have not been limited to their theoretical soil saturation although the theoretical soil saturation limit is provided and can be considered by our risk assessors in their assessment. Petroleum hydrocarbon fractions are, where appropriate, addressed based on Hazard Index and so are additionally not limited to soil saturation within their assessment.

Our default soil type under a GQRA has been established as a Sandy Loam with a default pH of 7; Soil Organic Matter of 1%, 3% and 6%.

Cyanides

The primary risk to human receptors from free cyanide in soils is an acute risk (i.e. a single dose could have a lethal affect as opposed to adverse affects from cumulative intake (chronic affect)).

There is no current UK guidance available for calculating acute risks from free cyanide, therefore an in-house methodology has been used to derive an acute GAC of 60 mg/kg for all exposure scenarios. The value is given for Free or Easily Liberatable Cyanide but should be used to assess Total Cyanide in the absence of cyanide speciation. In cases where the Total Cyanide exceeds the GAC then analysis for Free or Easily Liberatable Cyanide should be completed.

Open Spaces Land Use

The existing CLEA model does not explicitly consider an Open Spaces land use and, in many cases, an assessor typically applies a residential end use model and associated Generic Assessment Criteria. This approach however can lead to unnecessary remediation as the values derived for a residential end use consider exposure pathways and characteristics which are not representative of an Open Spaces land use, for example indoor air inhalation of contaminant vapours and the ingestion of food grown on site.

The Open Spaces land use category developed by WSP is considered to be appropriate for areas generally larger than local parks which are visited less frequently and are typically a distance from residential areas (e.g. a nature reserve).

WSP have developed a set of Generic Assessment Criteria for Open Spaces end use through the development of a Conceptual Site Model for Open Space which considers the relevant exposure pathways and receptor characteristics. These criteria are considered suitably sensitive to apply to a wide range of Open Space areas. The Conceptual Site Model adopted may be described as follows:

- The soil ingestion and dermal exposure pathways are active;
- The inhalation of outdoor dusts and vapours pathways are active;
- The soil is a typical sandy loam type;
- The critical receptor is a female child between the ages of 0-6 years (i.e. based on a standard residential receptor) who visits the site on three occasions a fortnight and spends 3 hours on the site on each visit (the exception being during the first year of life when exposure frequency is set at 50% of the number of visits and duration).
- Fifty per cent of the time spent on site is involved in moderate intensity activity and fifty per cent in passive activity;

A detailed breakdown of the chosen modelling characteristics can be provided on request. It should be noted that Open Space criteria are not considered appropriate for use for a School Playing Fields scenario where formal and regular sports take place or for a Parks land use where visits will tend to be far more frequent.

Parks Land Use

The existing CLEA model does not explicitly consider a Parks land use and, in many cases, an assessor typically applies a residential end use model and associated Generic Assessment Criteria. This approach however can lead to unnecessary remediation as the values derived for a residential end use consider exposure pathways and characteristics which are not representative of a an Parks land use, for example indoor air inhalation of contaminant vapours and the ingestion of food grown on site.

The Parks land use is considered to be appropriate for local parks and open areas typically located adjacent to residential housing and more frequently used than in an Open Spaces scenario.

WSP have developed a set of Generic Assessment Criteria for Parks end use through the development of a Conceptual Site Model for Parks which considers the relevant exposure pathways and receptor characteristics. These criteria are considered suitably sensitive to apply to a wide range of Open Space areas. The Conceptual Site Model adopted may be described as follows:

- The soil ingestion and dermal exposure pathways are active;
- The inhalation of outdoor dusts and vapours pathways are active;
- The soil is a typical sandy loam type;
- The critical receptor is a female child between the ages of 0-6 years (i.e. based on a standard residential receptor) who visits the site on five days a week and typically spends 1.5 hours on the site on each visit with two weeks holiday a year
- Two-thirds of the time spent on site is involved in moderate intensity activity and one-third in passive activity;

A detailed breakdown of the chosen modelling characteristics can be provided on request. It should be noted that Parks criteria are not considered appropriate for use for a School Playing Fields scenario where formal and regular sports take place.

Groundwater to Indoor Air (Human Health)

The CLEA model does not explicitly consider the potential for chronic impact to Human Health from indoor inhalation of concentrations of volatile vapours from dissolved phase contamination. The potential exists for this to be an important exposure route for a limited number of highly volatile contaminants. GAC have been calculated for volatile contaminants for volatilisation from groundwater using an in-house implementation of the Johnson and Ettinger model (WSP In-house Groundwater Model V1.1). The WSP model is based upon the Johnson and Ettinger model described in the CLEA guidance has been adapted to account for a dissolved phase source through consideration of (a) partitioning from groundwater to soil vapour, and, (b) transport through the capillary zone.

The WSP spreadsheet implementation also includes checks to ensure that values generated do not exceed the pure phase solubility of a substance within water.

The target concentration in air is set based upon the Inhalation TDI or ID determined for the substance either from published Environment Agency or other sources.

TDI or ID values are usually presented in units of µg/kg bw^{-1} day-1 in which case the values are converted into µg/m^3 based on an adult inhaling 20m^3 per day and weighing 70kg (Table 3.3 SR2 (Environment Agency 2009a)). Where appropriate the TDI is adjusted to take account of the MDI.

In the absence of UK guidelines, our exposure scenario conservatively considers a groundwater source 1.0m below the base of any building i.e. a very shallow aquifer, corresponding with the depth of a soil source as adopted in the generic scenario in the CLEA model. Our default soil type under a GQRA has been established as a Sandy Loam with the characteristics detailed below.

Parameters Applied within the derivation of WSP groundwater GAC

Parameter	Definition (Units)	Value	Source
θ_a	air filled soil porosity (cm^3cm^{-3})	0.2	Environment Agency (2009c), Table 4.4 (Sandy Loam)
θ_w	water filled soil porosity(cm^3cm^{-3})	0.33	Environment Agency (2009c), Table 4.4 (Sandy Loam)
θ_T	total air and water filled soil porosity(cm^3cm^{-3})	0.53	Environment Agency (2009c), Table 4.4 (Sandy Loam)
θ_r	Residual soil water content cm^3/cm^3	0.12	Environment Agency (2009c), Table 4.4 (Sandy Loam)
θ_s	Saturated soil water content cm^3/cm^3	0.387	USEPA (2004), *User's Guide for Evaluating Subsurface Vapor Intrusion into Buildings*, Table 4 (Sandy Loam)
α_1	Point of inflection in the water retention curve where d θ_{w_C} / d h is maximal, cm^{-1}	0.0689	Environment Agency (2009c), Table 4.4 (Sandy Loam)

Parameter	Definition (Units)	Value	Source
N	van Genuchten curve shape parameter, dimensionless	1.4708	Calculated from Equation 4.1 Environment Agency (2009c), Table 4.4 (Sandy Loam)
M	van Genuchten curve shape parameter, dimensionless	0.3201	Environment Agency (2009c), Table 4.4 (Sandy Loam)
R	Mean inter-particle pore radius **(cm)**	0.006	USEPA (2004), *User's Guide for Evaluating Subsurface Vapor Intrusion into Buildings*, Table 4 (Sandy Loam)

Building specific parameters have been considered for all of the generic building types as defined in the CLEA (2009a) report:

Building Parameters

	Units	Small Terraced	Justification (based on Environment Agency 2009c)	Office (pre 1970)	Justification (based on Environment Agency 2009c)
A_B	cm^2	280000	Table 4.21 (No basement)	4240000	Table 4.21 (No basement)
L_T	cm	115	Assumes source is 1 m below the building	115	Assumes source is 1m below the building
Q_S	$cm^3\ s^{-1}$	25	Section 10.3, p131	150	Section 10.3, p131
L_{crack}	cm	15	Table 4.21	15	Table 4.21
A_{crack}	cm^2	423.3	Table 4.21	1647.3	Table 4.21
H	m	4.8	Table 4.21	9.6	Table 4.21
A_{foot}	m^2	28	Table 4.21	424	Table 4.21
Ex	hr^{-1}	0.5	Table 4.21	1	Table 4.21

The required contaminant specific inputs for each contaminant have been obtained from published Environment Agency sources as detailed in the table below or obtained from a literature review as described in SR7 (Environment Agency 2008).

Contaminant Specific Parameter Sources

Parameter	Units	Source/Justification
D_{air}	$m^2\ s^{-1}$	Environment Agency (2008), Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values, Ref. SC050021/SR7
D_{water}	$m^2\ s^{-1}$	Environment Agency (2008), Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values, Ref. SC050021/SR7
K_{aw}	unitless	Environment Agency (2008), Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values, Ref. SC050021/SR7
S	µg/l	Environment Agency (2008), Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values, Ref. SC050021/SR7

For many contaminants, no risk is calculated at concentrations below the pure phase solubility of the contaminant. Caution is applied when Non-Aqueous Phase Liquids (NAPL) are likely to be present, either where these have been detected during monitoring or where the concentration of a

component in a mixture exceeds 10% of its calculated effective solubility. In such cases a separate assessment of the generation of volatile vapours from NAPL via modelling or a soil vapour survey may be required.

Finally, is important to note that the values we calculate are only applicable to Human Health and cannot be used to determine the potential risks to the water environment.

STATISTICAL ASSESSMENT

The data collected on site can be subject to statistical analysis using the techniques published by CL:AIRE and the Chartered Institute of Environmental Health (CIEH) in the guidance document '*Guidance on Comparing Soil Contamination Data with Critical Concentrations*' (CL:ARE, 2008) as part of the package of improved UK guidance highlighted in DEFRA discussion paper *Assessing risks from contamination – a proportionate approach. Soil Guidance Values: the Way Forward* (CLAN 06/2006).

In identifying realistic hazards to human health then exposure areas must be first identified as the area across which a critical receptor is likely to be active. The application of individual or average concentrations within an exposure area, derived from a limited number of samples, may not be representative of actual risk. Consequently, to be representative of uncertainty and risk, an appropriate Upper Confidence Limit of the mean for each exposure area should be applied within the assessment of risk in the context of assessment for planning purposes. However, this approach is only appropriate where non-targeted sampling has been undertaken and sufficient samples have been collected from the same population.

The approach to assessment can be summarised as follows:

1. Compare the recorded concentrations directly against appropriate applicable Generic Assessment Criteria to identify those contaminants which require further consideration as they record concentrations in excess of or near to the applied Generic Assessment Criteria, these will be considered contaminants of concern;
2. Identify whether it is appropriate to undertake any statistical testing on the contaminants of concern (i.e. consider whether sampling was non targeted and whether there are sufficient samples from the appropriate population to make the assessment meaningful). It should be noted that in a large proportion of investigations it is not appropriate to adopt statistical techniques;
3. Where appropriate, prepare a histogram of the data using ProUCL to potentially identify the nature of the distribution;
4. Undertake analysis of the data using ProUCL to determine the type of distribution and most appropriate test to calculate a 95% Upper Confidence Limit (UCL95);
5. Undertake analysis of the data using ProUCL to determine whether the highest value represents an outlier, and, if so, remove this outlier and re-run the statistical tests to determine the type of distribution and most appropriate test to calculate a 95% Upper Confidence Limit (UCL95);
6. Once a satisfactory UCL95 has been determined then this will be compared again to the applied Generic Assessment Criteria to determine the potential significance of the recorded concentrations.

This approach is considered to be appropriate within the Planning Context, however a different approach is adopted where assessments are to be undertaken for Part 2A purposes.

Part 2A and Planning

Planning investigations assume a guilty until proven innocent approach, or "the mean concentration of a contaminant in soil at the site exceeds the assessment criteria until significantly proven otherwise".

Based on the CIEH guidance, under Part 2A the key question will usually be "can we confidently say that the level of contamination on the site is high relative to the appropriate measure of risk".

In Part 2A contaminated land investigations, the issue is therefore framed assuming an innocent until proven guilty approach, or "the mean concentration of a contaminant in soil at the site does not exceed the assessment criteria until significantly proven otherwise".

Under Part 2A therefore the tests applied are required to determine if the 95th Lower Confidence Limit of the true population mean falls above the applied screening criteria. If it is identified that the 95th Lower Confidence Limit of the true mean concentration does not fall above the applied screening criteria then a further test can be applied to determine if the true mean concentration falls below the applied screening criteria on the balance of probabilities. The CIEH guidance emphasizes that "*In all cases, the significance tests should be applied only if the regulator is satisfied that all sampling and testing has been carried out according to good technical practice and that the data are representative of the land under scrutiny at an appropriate scale."*

Averaging Zones

Where appropriate, averaging zones based on previous / current spatial land use, soil type, proposed site end uses or other distinguishing features have been considered. All soil samples across the site have been considered as a single averaging area as potential exposure for users is considered relatively uniform across the site.

Sample Depths

At the generic assessment stage, it should be assumed that all pathways contained within the generic model applied will be active. In reality, unless a contaminant is volatile (e.g. organic), exposure by direct contact will likely be mitigated by the depth of the contaminant or available surface cover. As a rule of thumb, direct contact with contaminants at greater than 600mm depth or under hardstanding is highly unlikely to occur unless the ground is to be disturbed through removal of surfacing or earthworks.

Groundwater Data

It is not considered appropriate to undertake statistical analysis on groundwater data based on an absence of UK guidance on such an approach and US guidance on completing such assessments.

Application of GAC and SGV for Human Health

In the application of GAC (and SGV) to a site the user must recognise the limitations of CLEA model. Specifically these relate to the absence of certain pollutant considerations such as risks to services, of fire and explosion, aesthetics, institutional perception, groundwater, surface waters, ecotoxicological risk and risks to buildings (amongst others).

CLAN 2/05 prepared by Defra provides guidance to Local Authorities on the application of Soil Guideline Values and equivalent screens for the determination of contaminated land under Part 2A of the Environmental Protection Act 1990. This document states that should a Local Authority choose to apply SGV and equivalent values in determining land under Part 2A then:

> '*the authority would have to make a firm and deliberate judgement about whether the estimated contaminant intake, in comparison to an SGV (and the HCV on which it is based), "would represent an* ***unacceptable*** *intake or direct bodily contact…". Such a judgement might be subject to scrutiny in the event of any subsequent appeal, so should be appropriately recorded.'*

SGV's and equivalent GACs mark the concentration of a substance in soil at or below which human exposure can be considered to represent a 'tolerable' or 'minimal' level of risk for long term exposure. Given the definition of Health Criteria Values set out in Environment Agency Publication SC050021/SR2 (2008), and the nature of the CLEA methodology (where contaminated land is land where the intake of a substance would represent an unacceptable intake), CLAN 2/05 states that it

> *'should be a matter for careful consideration by Local Authorities whether concentrations of substances in soil equal to, or not significantly greater than, an SGV would meet the legal test set out in Table B in Chapter A of the statutory guidance to Part 2A'*

There exists a wide body of opinion that SGV concentrations (or equivalent GAC) would not necessarily satisfy the legal test for Part 2A determination. A key question is how far above an SGV the relevant soil concentration would have to be to meet the '*unacceptable intake'* test.

Contemporary discussions suggest that defining '*probably unacceptable'*

- For threshold substances basing guidance on the Lowest Observed Adverse Effect Level (LOEL) rather than the No Observed Adverse Effect Level (NOAL) and/or making allowance for the range in the general population of responsiveness to harmful effects of chemicals.
- For non-threshold substances defining an annual risk of fatal cancer of 1 in 10,000 following similar methodologies applied within the nuclear industry.

Unfortunately, resolving either of the above is far more complicated than it would at first appear. As a consequence, identifying 'unacceptable' for Part 2A definition continues to be a protracted yet priority focus for government. Consultation currently suggests that in defining the term 'unacceptable' then screening concentrations may be upwards of an order of magnitude higher for some contaminants than the existing SGV.

Whilst it remains at the discretion of the Local Authority as to whether Part 2A designation should be applied, in light of the above discussion WSP has made its recommendations based primarily on our assessment of the site conditions with respect to contemporary regulations and guidance; however, we offer that the emerging legislative context as discussed above should be included in the clients consideration.

GENERIC QUANTITATIVE RISK ASSESSMENT - CONTROLLED WATERS

An assessment of plausible pollutant linkages with respect to the pollution of Controlled Waters is presented, consistent with UK guidance.

The guidance identifies that for the pollution of the water environment to occur; poisonous, noxious, polluting or solid waste matter must be entering such waters or must be considered more likely than not to enter the water environment in the future. Implicit in this definition is that substances must have the potential to cause detriment or damage to water quality or the environment. The assessment of whether the pollution of the water environment is likely to occur in the future requires consideration of those contaminants at source, which are present in a mobile form, at such concentration that they will reach a receptor at concentrations considered to be poisonous, noxious, polluting or solid waste matter.

Assessment Approach – England and Wales

In England and Wales, no specific detailed guidance has been produced to date on the approach to be adopted following the publication of Directions and other legislation. Until such time as detailed guidance is provided, the approach to be adopted at the GQRA level, assessment typically comprises the following:

- Consideration of soil concentrations of organic substances in the context of soil saturation to determine the potential for migration under gravity;
- Comparison of soil leachate/pore water concentrations against appropriate GAC; and
- Comparison of groundwater concentrations against appropriate GAC.

This approach is equivalent to Tier 1 / Level 1 Assessment as undertaken using ConSim (2009) / Environment Agency Remedial Targets Methodology V3.1 (2006).

Pollutant types, receptors and assessment points are defined in summary below:

Pollutant Type	Receptor	Assessment Point	Assessment limit
Hazardous (List 1)	Groundwater	Base of unsaturated zone	Drinking Water Standard
Non-hazardous (List 2)	Domestic groundwater Abstraction	Abstracted water	Drinking Water Standard
Non-hazardous (List 2)	Surface Water	In Surface Water after Dilution	Environmental Quality Standard
Non-hazardous (List 2)	Groundwater Resource	In strata and ~50m from source boundary	Drinking Water Standard taking into account of up gradient concentrations.

Effectively, for the majority of sites, contaminant concentrations are compared to both drinking water standards and environmental quality standards to identify the need for further consideration/DQRA.

The ideal remediation standard from the regulatory perspective is natural background quality, namely, there should be no significant deterioration in the water quality at the receptor (that is, it should not be detectable against natural background variations). This data may be obtained from up hydraulic gradient locations or regional datasets. The Environment Agency has published information on the baseline condition of several aquifers, it is recognised, however, that such data is rarely available and remediation to such a standard is often not technically achievable or cost effective. For this reason target concentrations utilised as GAC may be based on water quality standards that are appropriate for the intended use or to ensure that objectives for a groundwater or associated water body are met. In England and Wales, the standards selected (as appropriate) include the following:

- **Drinking Water Standards:** The Water Supply (Water Quality) Regulations: 2001 (WSR) (as amended);
- **EQS:** Environmental Quality Standards, The River Basin District Typology, Standards and Groundwater Threshold Values (Water Framework Directive) (England and Wales) Directions 2010;

Secondary sources for GAC include:

- The Private Water Supplies Regulations 2009/2010 (England/Wales);
- European Drinking Water Standards, (Council Directive 98/83/EC);
- World Health Organisation, Guidelines for Drinking Water Quality, Second Addendum to the Third Edition, Volume 1 2008; and

- United States Environmental Protection Agency (USEPA) Region Three, Six and Nine Human Health Medium Specific Risk Based Screening Levels for soils and tap water with dermal exposure routes, which have been derived using human health exposure models consistent with the ASTM Risk Based Corrective Action, approach (ASTM, E1739-95, 1995).

Priority is given to UK standards, however, where data is not available for a specific substance, additional standards such as those published by the WHO or USEPA are used.

Consideration is also given by WSP to River Basin Management Plans required as part of the WFD that have been published and provide surface and groundwater quality classifications, unit descriptions, and future quality targets for specific River Basins.

Petroleum Hydrocarbons

Despite Mineral Oils/Hydrocarbons being a List I (Hazardous) substance there exists no current guidance on the assessment of hydrocarbon fractions in relation to the water environment. At the time of writing, it is understood that the Environment Agency is in the process of producing guidance on this issue. In the meantime, negotiation at a local level will be undertaken to agree the assessment approach.

ECOLOGICAL RISK ASSESSMENT

Where a statutory ecological receptor is identified on, or in proximity to the site, an assessment in accordance with current Environment Agency Ecological Risk Assessment (ERA) Framework will be undertaken. The frameworks is currently in development (http://www.environment-agency.gov.uk/research/planning/40375.aspx)

EXCEEDANCES

Where a GAC is exceeded further work and/or remediation is normally required. For moderate exceedances further work may include progression to a Detailed Quantitative Risk Assessment (DQRA) which is likely to require further data collection. The outcome of the DQRA may be that the risk is not significant or, if the risk is identified as being significant, the generation of site-specific remedial targets.

Where significant exceedances of GAC are identified or there is evidence of potential acute risks remedial measures may be immediately required.

SELECTED REFERENCES

The following key references have been considered (this list is not exhaustive):

CL:AIRE / CIEH (2008), *Guidance on Comparing Soil Contamination Data with a Critical Concentration,* May 2008;

CL:AIRE / EIC (2009), *The Soil Generic Assessment Criteria for Human Health,* December 2009.

Environment Agency & Defra (2002), *R&D Publication CLR8 Priority Contaminants for the Assessment of Land;*

Environment Agency (2003), *Review of fate & transport of selected contaminants in the Environment, Report P5-079-TR1;*

Environment Agency (2004), *Model Procedures for the Management of Land Contamination,* September 2004, ISBN: 1844322955;

Environment Agency (2008a), *Compilation of Data for Priority Organic Pollutants*, Report SC050021/SR7, November 2008;

Environment Agency (2009a), *Human Health Toxicological Assessment of Contaminants in Soil*, Report SC050021/SR2, January 2009;

Environment Agency (2009b), *CLEA Software (Version 1.04) Handbook (and Software)*, Report SC050021/SR4, January 2009;

Environment Agency (2009c), *Updated Technical Background to the CLEA Model*, Report SC050021/SR3, January 2009;

Environment Agency (2009d), *A Review of Body Weight and Height Data Used in the CLEA Model*, Report SC050021/Final Technical Review 1, January 2009;

Nathanial *et. al.*, (2009), *The LQM/CIEH Generic Assessment Criteria for Human Health Risk Assessment (2nd edition),* Land Quality Press, Nottingham, ISBN 0-9547474-7-X

USEPA (2004), *User's Guide for Evaluating Subsurface Vapor Intrusion into Buildings*

APPENDIX I NOTES FOR LIMITATIONS

Notes on Limitations

For

Geo-Environmental and Geotechnical Consultancy Services

General

WSP Environmental Limited has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from WSP Environmental Limited; a charge may be levied against such approval.

WSP Environmental Limited accepts no responsibility or liability for:

a) the consequences of this document being used for any purpose or project other than for which it was commissioned, and

b) this document to any third party with whom an agreement has not been executed.

Phase I Environmental Audits

The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources (including the Client), together with (where appropriate) a brief walk over inspection of the site and meetings and discussions with relevant authorities and other interested parties. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only to the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, WSP Environmental Limited reserves the right to review such information and, if warranted, to modify the opinions accordingly.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site.

Phase II Environmental Audits

The investigation of the site has been carried out to provide sufficient information concerning the type and degree of contamination, and ground and groundwater conditions to allow a reasonable risk assessment to be made. The objectives of the investigation have been limited to establishing the risks associated with potential human targets, building materials, the environment (including adjacent land), and to surface and groundwater.

The amount of exploratory work and chemical testing undertaken has necessarily been restricted by the short timescale available, and the locations of exploratory holes have been restricted to the areas unoccupied by the building(s) on the site and by buried services. A more comprehensive investigation may be required if the site is to be redeveloped as, in addition to risk assessment, a number of important engineering and environmental issues may need to be resolved.

For these reasons if costs have been included in relation to site remediation these must be considered as tentative only and must, in any event, be confirmed by a qualified quantity surveyor.

The exploratory holes undertaken, which investigate only a small volume of the ground in relation to the size of the site, can only provide a general indication of site conditions. The number of sampling points and the methods of sampling and testing do not preclude the existence of localised "hotspots" of contamination where concentrations may be significantly higher than those actually encountered.

The risk assessment and opinions provided, inter alia, take in to consideration currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values.

Geo-environmental Investigations

The investigation of the site has been carried out to provide sufficient information concerning the type and degree of contamination, geotechnical characteristics, and ground and groundwater conditions to provide a reasonable assessment of the environmental risks together with engineering and development implications.

If costs have been included in relation to site remediation these must be confirmed by a qualified quantity surveyor.

The exploratory holes undertaken, which investigate only a small volume of the ground in relation to the size of the site, can only provide a general indication of site conditions. The opinions provided and recommendations given in this report are based on the ground conditions apparent at the site of each of the exploratory holes. There may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation and which have therefore not been taken into account in this report.

The comments made on groundwater conditions are based on observations made at the time that site work was carried out. It should be noted that groundwater levels will vary owing to seasonal, tidal and weather related effects.

The scope of the investigation was selected on the basis of the specific development proposed by the Client and may be inappropriate to another form of development or scheme.

The risk assessment and opinions provided, inter alia, take in to consideration currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values.