



Validation Report

(Area A – Proposed Domestic Houses)

**58-64 STATION ROAD
HAYLING ISLAND, HAMPSHIRE
PO11 0EL**

For : Mr Nigel Slydell

Report Ref: 517 / R05

Dated 07th June 2016

Director : D I Grant BSc (Hons) PhD

Geotechnical & Geoenvironmental Consultants

*Dig-Geotech Limited Registered in England and Wales.
Company Number 5335508. VAT No 871 353 031*

Validation Report

(Area A – Proposed Domestic Houses)

58-64 STATION ROAD
HAYLING ISLAND, HAMPSHIRE
PO11 0EL

Report No 417 / R05. Rev 0

Rev 0	07 06 2016	Report issued

June 2016

Prepared for Mr Nigel Sydel

Filename: C:\Users\David\Documents\Consultancy\517 58-64 Station Rd, Hayling\Reports\Rep
No517_R05 StationRd Area A ValidationReport.doc

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1. INTRODUCTION.

Mr Nigel Sydell (as Keendale Ltd) is nearing completion of a small housing development at 58-64 Station Road, Hayling Island, Hampshire.

A Discovery Strategy & Remediation Statement for the site was prepared by Dig-Geotech Ltd in December 2014 (*Ref 1*).

The works recommended in the Remediation Statement have now been completed and this report is the Validation Report for those works.

2. REMEDIATION WORKS

2.1 Summary of required works

The Discovery Strategy and Remediation Statement were included as Appendix D of the Ground Investigation Report (*Ref 1*).

The suggested works were :

- D1 Discovery Strategy
- D2 Protection of Services Runs
- D3 Removal of Soil in garden areas
- D4 Installation of gases / radon membranes below buildings
- D5 Record Keeping & Reports.

2.2 D1 Discovery Strategy

The site was visited at various times during construction, including excavation of foundations trenches, by Dr David Grant, a geotechnical & geoenvironmental engineer with over 25 years experience. No suspicious materials or made grounds were observed.

No unexpected or suspicious made grounds were reported by site staff. No areas of hydrocarbons impacted soils were observed at site or reported by site staff.

2.3 D2 Protection of services runs

Services trenches were to be over excavated by 50mm and all arisings disposed of offsite. New imported clean granular soils were used as bedding below services and as backfill above. This was to protect future maintenance workers.

2.3 D3 Removal of soil in garden areas.

Low level lead contamination was noted in soils at TP's 2 and 4 at a depth of less than 0.15m.

Excavation of existing soils to 0.25m depth in all domestic garden areas was proposed. Soil samples were to be obtained from the base of the excavation and tested to confirm that there was no residual lead contamination.

Excavated material was removed from site and tickets for removal are enclosed as **Appendix A**.

Soil samples were taken from the exposed surface on 23rd May 2016. The samples were taken shortly after the first batch of topsoil had been imported and placed. Hence the samples were taken from shallow pits dug through the topsoil. The samples were sent to Envirochem Analytical laboratories in Fareham and tested for lead. No elevated concentrations of lead were noted and the exposed surface is considered suitable for a domestic garden. The location of the samples and the laboratory test results are presented as **Appendix B**.

Imported soils were to be topsoil with appropriate certification to show it as suitable for use. **Appendix C** shows sample photographs of the topsoils being imported. **Appendix D** gives details & certificates for the imported soils.

2.4 D4 Installation of gases / radon membranes below buildings

A Visqueen (or similar) membrane was to be placed above the ventilated floor slabs. The appropriate grade of Visqueen was to be a minimum of a Visqueen Gas Barrier membrane if placed above a concrete floor with suitable protection. Installation was to be to manufactures' guidance.

The barrier was installed as required. Photographs of the works taking place are enclosed as **Appendix E**.

2.5 D5 Record keeping & reports

A Completion or Validation report was required i.e this report.

3. CONCLUSIONS

Remediation works for a development at 58-64 Station Road, Hayling Island has been observed & records inspected. The works have been carried out in an organised and appropriate manner. The works have been carried out in accordance with the submitted Remediation Statement (*Ref 1*).

Report prepared by



.....

07 June 2016

D I Grant BSc, PhD

References:

1. Dig-Geotech Ltd (2014). Report in Ground Investigation (Area A – Proposed Domestic Houses) 58-64 Station Road, Hayling Island, Hampshire PO11 0EL. Report No 517/R03. December 2014.

APPENDICES

Appendix A - Waste soil disposal tickets

David Grant

From: Nigel Slydell [nigelslydell@googlemail.com]
Sent: 25 May 2016 11:13
To: David Grant
Subject: Fwd: L & S WASTE MANAGEMENT
Attachments: image001.jpg; ATT00037.htm; image002.gif; ATT00040.htm; image003.gif; ATT00043.htm; image004.jpg; ATT00046.htm; image005.jpg; ATT00049.htm; KEE004.xls; ATT00052.htm; copier@lswaste.co.uk_20160524_105521.pdf; ATT00055.htm

Hi David
Collection tickets as requested
Nigel

Sent from my iPhone

Begin forwarded message:

From: "Suzy Willis" <suzy@parkgateuk.com>
Date: 24 May 2016 at 15:08:59 BST
To: "Nigel Slydell" <nigelslydell@googlemail.com>
Subject: FW: L & S WASTE MANAGEMENT

FYI

xx

From: Tracy Bentley [<mailto:tracy.bentley@lswaste.co.uk>]
Sent: 24 May 2016 12:04
To: 'Suzy Willis'
Subject: L & S WASTE MANAGEMENT

Hi Suzy

Please find attached that according to the attached spreadsheet only relate to Spoil, thanks.

Kind regards
Tracy Bentley
Credit Controller

**INVOICE**

Page 1 of 1

Keendale Ltd
Apartment 128
1 Gunwarf Quays
Portsmouth
Hampshire
PO1 3RS

Invoice Number	117690
Invoice Date	09/05/2015
Account Number	KEE004

Date	Ticket	Charge Category	Waste	Order No.	Qty	Unit Price	Net Amount
Hayden Garages, Station Road							
07/05/2015	307240	Collect Spoil on Tipper	SPOIL		1.00	275.00	275.00
07/05/2015	307256	Collect Spoil on Tipper	SPOIL		1.00	275.00	275.00

If you have any queries relating to this invoice please e-mail creditcontrol@lswaste.co.uk

VAT Registration Number: 503895927

Payment may be made by BACS to Account 99298384 Sort Code 56.00.64 Nat West, Commercial Road Portsmouth. If you pay by Direct Debit, payment will be taken on or shortly after the 14th of the following month.

Total Net	550.00
VAT @20.0%	110.00
Invoice Total	660.00

L&S Waste Management Limited

Titchfield House
Pegham Industrial Park
Laveys Lane
Fareham
Hampshire
PO15 6SD

Tel: 01329 840002
Fax: 01329 840004

Farlington Redoubt
Portsmouth Hill Road
Portsmouth
Hampshire
PO6 1BW

Tel: 023 9237 7154
Fax: 023 9237 7138

Ashley Crescent
Sholing
Southampton
Hampshire
SO19 9NA

Tel: 023 8044 9823
Fax: 023 8044 9307

**INVOICE**

Page 1 of 1

Keendale Ltd
Apartment 128
1 Gunwarf Quays
Portsmouth
Hampshire
PO1 3RS

Invoice Number	118695
Invoice Date	23/05/2015
Account Number	KEE004

Date	Ticket	Charge Category	Waste	Order No.	Qty	Unit Price	Net Amount
Hayden Garages, Station Road							
18/05/2015	307923	Collect Hardcore on Tipper	HARDCORE		1.00	60.00	60.00
18/05/2015	307925	Collect Hardcore on Tipper	HARDCORE		1.00	60.00	60.00
18/05/2015	307926	Collect Hardcore on Tipper	HARDCORE		1.00	60.00	60.00
18/05/2015	307927	Collect Hardcore on Tipper	HARDCORE		1.00	60.00	60.00
20/05/2015	308523	Collect Spoil on Tipper	SPOIL		1.00	275.00	275.00
20/05/2015	308524	Collect Spoil on Tipper	SPOIL		1.00	275.00	275.00
20/05/2015	308525	Collect Hardcore on Tipper	HARDCORE		1.00	60.00	60.00
20/05/2015	308542	Collect Spoil on Tipper	SPOIL		1.00	275.00	275.00

If you have any queries relating to this invoice please e-mail creditcontrol@lswaste.co.uk

VAT Registration Number: 503895927

Payment may be made by BACS to Account 99298384 Sort Code 56.00.64 Nat West, Commercial Road Portsmouth. If you pay by Direct Debit, payment will be taken on or shortly after the 14th of the following month.

Total Net	1125.00
VAT @20.0%	225.00
Invoice Total	1350.00

L&S Waste Management Limited

Titchfield House
Pegham Industrial Park
Laveys Lane
Fareham
Hampshire
PO15 6SD

Tel: 01329 840002
Fax: 01329 840004

Farlington Redoubt
Portsdown Hill Road
Portsmouth
Hampshire
PO6 1BW

Tel: 023 9237 7154
Fax: 023 9237 7138

Ashley Crescent
Sholing
Southampton
Hampshire
SO19 9NA

Tel: 023 8044 9823
Fax: 023 8044 9307

**INVOICE**

Page 1 of 1

Keendale Ltd
Apartment 128
1 Gunwarf Quays
Portsmouth
Hampshire
PO1 3RS

Invoice Number	120454
Invoice Date	13/06/2015
Account Number	KEE004

Date	Ticket	Charge Category	Waste	Order No.	Qty	Unit Price	Net Amount
Hayden Garages, Station Road							
10/06/2015	313212	Collect Spoil on Tipper	SPOIL		1.00	275.00	275.00
10/06/2015	313213	Collect Spoil on Tipper	SPOIL		1.00	275.00	275.00
10/06/2015	313214	Deliver Type 1-803 on Tipper	TYPE1803		18.52	13.95	258.35
11/06/2015	313587	Deliver Type 1-803 on Tipper	TYPE1803		19.22	13.95	268.12

If you have any queries relating to this invoice please e-mail creditcontrol@lswaste.co.uk

VAT Registration Number: 503895927

Payment may be made by BACS to Account 99298384 Sort Code 56.00.64 Nat West, Commercial Road Portsmouth. If you pay by Direct Debit, payment will be taken on or shortly after the 14th of the following month.

Total Net	1076.47
VAT @20.0%	215.29
Invoice Total	1291.76

L&S Waste Management Limited

Titchfield House
Pegham Industrial Park
Laveys Lane
Fareham
Hampshire
PO15 6SD

Tel: 01329 840002
Fax: 01329 840004

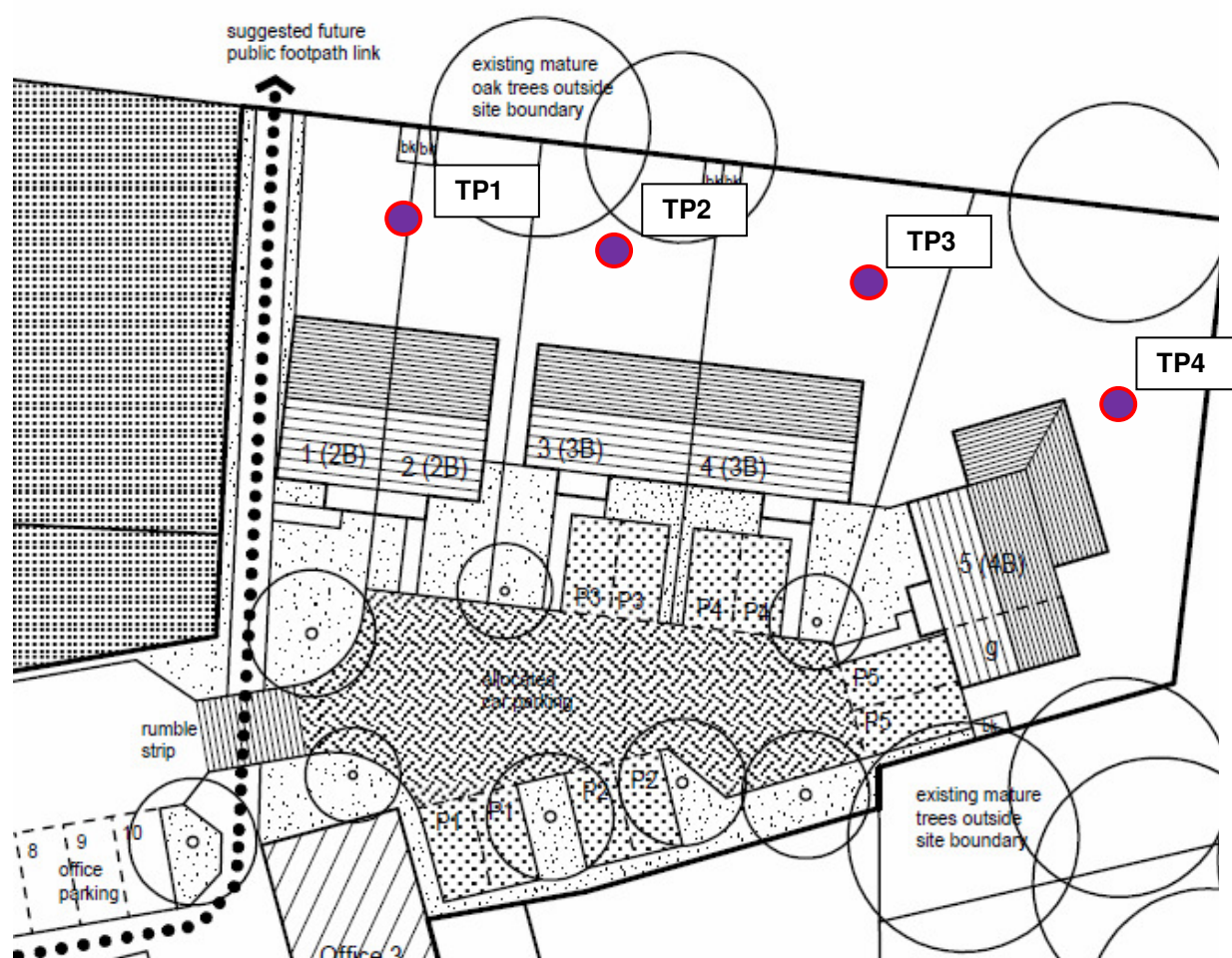
Farlington Redoubt
Portsdown Hill Road
Portsmouth
Hampshire
PO6 1BW

Tel: 023 9237 7154
Fax: 023 9237 7138

Ashley Crescent
Sholing
Southampton
Hampshire
SO19 9NA

Tel: 023 8044 9823
Fax: 023 8044 9307

Appendix B - Domestic gardens – sample locations and laboratory test results





Our Ref: 16-03551
Your Ref:

ENVIROCHEM

Analytical Laboratories Ltd.

12 The Gardens
Broadcut, Fareham
Hampshire
PO16 8SS



Tel: (01329) 287777
Fax: (01329) 287755
www.envirochem.co.uk
lab@envirochem.co.uk

Analysis Report

Client: Dig-Geotech Ltd
South View
2-Easthams Road
Crewkerne
Somerset
TA18 7AQ

Sample Details: 4 soil samples for Soil

Date report issued: 1 June 2016

Number of pages (including this header): 2

Accreditation

All analytes marked **M** have been analysed under the scope of our MCERTS accreditation

All analytes marked **U** have been analysed under the scope of our UKAS accreditation

All analytes marked **m** have been subcontracted and analysed under the scope of their MCERTS accreditation

All analytes marked **u** have been subcontracted and analysed under the scope of their UKAS accreditation

All results labelled with an asterisk (*) are non-conforming due to incorrect sample storage or handling. The result may be invalid.

Signed on behalf of Envirochem by an authorised signatory

Dr Duncan Russell

Technical Manager



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Analytical Laboratories Ltd.

www.envirochem.co.uk

lab@envirochem.co.uk



Client: Dig-Geotech Ltd
Site: 58-64 Hayling Island
Sampled By: Client
Envirochem Job No. 16-03551

Date Sampled: 23 May 2016
Date Received: 23 May 2016
Date Completed: 1 June 2016
Date Issued: 1 June 2016

Lab Sample No. Soil Type Sample Date Sample Time Sample Location / Details				9053 Clay loam 23/05/2016 TP1	9054 Clay loam 23/05/2016 TP2	9055 Clay loam 23/05/2016 TP3	9056 Clay loam 23/05/2016 TP4	Limits		
Determination	Units	Method	Detection Limit					Resid.	Allot.	Comm.
Particle size > 2mm	%	6.16	-	0	0	0	0	---	---	---
lead	mg/kg	6.08	20.0	65.3 M*	40.4 M*	73.5 M*	24.8 M*	500+++	500+++	2000+
lead	%	6.08	0.0010	0.0065	0.0040	0.0074	0.0025	---	---	---

Limits labelled '+' are soil guideline values from Defra 2002 (information taken from: Using Soil Guideline Values: Science Report: SC050021/SGV introduction & www.environment-agency.gov.uk/clea)

Limits labelled '++' are LQM Soil Guideline Values

Limits labelled '++++' are ICRL 59/83 trigger concentrations. These do not differentiate between domestic and allotments

Appendix C - Photographs – topsoil placement





Above & below : Placed topsoil (22 May 2016)



November 2012: General view



Sample hole
through topsoil
(Tp2)



Sample hole
through topsoil
(Tp4)

Appendix D - Imported topsoil certificates

David Grant

From: Nigel Slydell [nigelslydell@googlemail.com]
Sent: 20 May 2016 14:57
To: David Grant
Subject: Fwd: Soil reports
Attachments: image009.jpg; ATT00007.htm; image003.png; ATT00010.htm; image004.png; ATT00013.htm; image010.jpg; ATT00016.htm; image011.jpg; ATT00019.htm; 20mm BS 3882 Feb 2016.PDF; ATT00022.htm; 12 Soil report.PDF; ATT00025.htm

Hi David
Soil Reports....

Sent from my iPhone

Begin forwarded message:

From: "Steve Kew" <steve.kew@lswaste.co.uk>
Date: 20 May 2016 at 14:51:32 BST
To: <Nigelslydell@gmail.com>
Subject: Soil reports

Nigel

Please find attached the two soil reports that you requested.

Kind regards

Steve Kew
Commercial Manager

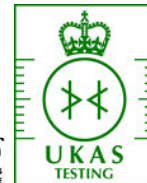


Our Ref: 15-02589

ENVIROCHEM

Analytical Laboratories Ltd.

12 The Gardens
Broadcut, Fareham
Hampshire
PO16 8SS



Tel: (01329) 287777
Fax: (01329) 287755
www.envirochem.co.uk
lab@envirochem.co.uk

Analysis Report

Client: L & S Waste Management Ltd
Laveys Lane,
Pegham Industrial Park,
Fareham
Hampshire,
PO15 6SD

Sample Details: 1 soil sample for Top Soil

Date report issued: 14 December 2015

Number of pages (including this one): 5

Accreditation

All analytes marked **M** have been analysed under the scope of our MCERTS accreditation

All analytes marked **U** have been analysed under the scope of our UKAS accreditation

All analytes marked **m** have been subcontracted and analysed under the scope of their MCERTS accreditation

All analytes marked **u** have been subcontracted and analysed under the scope of their UKAS accreditation

All results labelled with an asterisk (*) are non-conforming due to incorrect sample storage or handling. The result may be invalid.

Signed on behalf of Envirochem by an authorised signatory

Dr Duncan Russell

Technical Manager



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Analytical Laboratories Ltd.

www.envirochem.co.uk

lab@envirochem.co.uk



Soil Analysis Report

(Analysed in accordance with BS 3882:2015)

Client: L & S Waste Management Ltd
Sample Lab Reference: Job: 15-02589-Samp. 5882-0
Site Details: Not Supplied
Sample Point: Not Supplied
Date Sampled: 1 December 2015
Date Analysis Started: 2 December 2015
Sample Description: Soil - Loam

Sampled By: Client
Date Received: 2 December 2015
Date Completed: 14 December 2015

Table 1 : Soil Texture (% m/m)

Texture	Method	Sample Result	Multipurpose Topsoil Range	Specific Purpose Range				
				Acidic	Calcareous	Low Fertility	Low Fert. Acidic	Low Fert. Calc.
Clay Content (%)	5.05	20		5 - 35				
Silt Content (%)	5.05	40		0 - 65				
Sand Content (%)	5.05	40		30 - 85				
Soil Texture Class	5.05	Loam		Note: see soil texture triangle in BS3882:2015 for allowed soils				

Table 2 : Soil Organic Matter Content (%)

Clay percentage	Method	Sample Result	Multipurpose Topsoil Range	Specific Purpose Range				
				Acidic	Calcareous	Low Fertility	Low Fert. Acidic	Low Fert. Calc.
Clay (5 - 20 %)	6.07	11.7	3 - 20	3 - 30	3 - 30	2 - 20	2 - 20	2 - 20
Clay (20 - 35 %)	6.07		5 - 20	5 - 30	5 - 30	2 - 20	2 - 20	2 - 20

Table 3 : Maximum Coarse Fragment Content (% (m/m))

Partricle size	Sample Result	Multipurpose Topsoil Range	Specific Purpose Range				
			Acidic	Calcareous	Low Fertility	Low Fert. Acidic	Low Fert. Calc.
> 2 mm	13		0 - 30				
> 20 mm	0		0 - 10				
> 50 mm	0		0				

Table 4 : Chemical Analysis (air-dried, sieved (<2 mm) soil)

Analyte	Method	Sample Result	Multipurpose Topsoil Range	Specific Purpose Range				
				Acidic	Calcareous	Low Fertility	Low Fert. Acidic	Low Fert. Calc.
Soil pH Value M	5.03	7.47	5.5 - 8.5	3.5 - 5.5	7.5 - 9.0	3.5 - 9.0	3.5 - 5.5	7.5 - 9.0
Calcium Carbonate (%)	6.07	5.7	-	-	> 1	-	-	> 1



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Table 5 : Available Plant Nutrient Content

Analyte	Method	Sample Result	Multipurpose Topsoil Range	Specific Purpose Range				
				Acidic	Calcareous	Low Fertility	Low Fert. Acidic	Low Fert. Calc.
Nitrogen (% m/m)		0.30	> 0.15	> 0.15	> 0.15	-	-	-
Extractable Phosphate (mg/l)	6.08	< 3.0	16 - 140	16 - 140	16 - 140	< 20	< 20	< 20
Extractable Potassium (mg/l)	6.08	1570	121 - 1500	121-1500	121-1500	-	-	-
Extractable Magnesium (mg/l)	6.08	371	51 - 600	51 - 600	51 - 600	-	-	-
Carbon:Nitrogen Ratio		22.6	< 20:1	< 20:1	< 20:1	< 35:1	< 35:1	< 35:1
Soil Electrical Conductivity		5690.0	3300	-				
Exchangeable Sodium (%) 1)	6.08	---	< 15					

1) Need be measured only if the electrical conductivity is greater than 2800 us/cm

Table 6 : Phytotoxic Contaminants (by soil pH) (mg/kg) analyses carried out on air dried samples

	Method	Sample	Multipurpose and Specific purpose Topsoils		
Soil pH Range			< 6.0	6.0 - 7.0	> 7.0
Zinc M	6.08	247	< 200	< 200	< 300
Copper M	6.08	63.8	< 100	< 135	< 200
Nickel M	6.08	15.0	< 60	< 75	< 110

Table 7 : Additional Physical characteristics

	Method	Sample
Water Content	6.01	23.6
Total Organic Carbon	6.07	6.8
Visible Contaminants		Glass 1.1% Wood 0.4%

Comments: (including details of weeds and other visible contaminants - all comments are beyond the scope of our accreditation)

Results marked with an asterisk (*) are non conforming due to sampling handling time or conditions. Therefore the result may be invalid.



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Table 8 : Additional metals (all results in mg/kg dry weight)

Analyte	Method	Sample	Soil Guideline Values		
			Residential	Allotment	Commercial
Arsenic M	5.03, 6.08	6.5	32*	43*	640*
Antimony	5.03, 6.08	< 10.0	-	-	-
WS Boron	5.03, 6.08	4.1	-	3	-
Cadmium M	5.03, 6.08	1.8	10*	1.8*	230*
Chromium (total) M	5.03, 6.08	18.8	600***	600***	1000***
Cobalt	5.03, 6.08	5.3	-	-	-
Copper M	5.03, 6.08	63.8	2330**	524**	71700**
Mercury	5.03, 6.08	< 1.00	1.0*	26*	26*
Molybdenum	5.03, 6.08	5.0	-	-	-
Nickel M	5.03, 6.08	15.0	130*	230*	1800*
Lead M	5.03, 6.08	195	500***	500***	2000***
Selenium	5.03, 6.08	< 3.0	350*	120*	13000*
Thallium	5.03, 6.08	< 5.0	-	-	-
Vanadium	5.03, 6.08	22.8	75**	18**	3160**
Zinc M	5.03, 6.08	247	3750**	618**	66500**

All analytes marked **M** have been analysed under the scope of our MCERTS accreditation

Comments: (comments are beyond the scope of our accreditation)

Limits Notes:

'*' are soil guideline values from Defra 2002 (information taken from: Using Soil Guideline Values: Science Report: SC050021/SGC introduction & www.environment-agency.gov.uk/clea)

'**' are LQM Soil Guideline Values

'***' are ICRL 59/83 trigger concentrations. These do not differentiate between domestic and allotments

For antimony values of less than 30mg/kg are typical of uncontaminated soil - as taken from 'Site investigation and materials problems', proc Conference on Reclamation of Contaminated Land, Eastbourne, Oct 79.



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www.envirochem.co.uk

lab@envirochem.co.uk



Table 9: PAH in soil (all results in mg/kg dry weight)

Analyte	Method	Sample	Soil Guideline Values		
			Residential	Allotment	Commercial
PAH (total)	6.05	14.1	---	---	---
Naphthalene	6.05	< 1.0	8.7	23	1100
Acenaphthylene	6.05	< 1.0	850	160	100000
Acenaphthene	6.05	< 1.0	1000	200	100000
Fluorene	6.05	< 1.0	780	160	71000
Phenanthrene	6.05	< 1.0	380	90	23000
Anthracene	6.05	< 1.0	9200	2200	500000
Fluoranthene	6.05	2.0	670	290	23000
Pyrene	6.05	1.8	1600	620	54000
Benz(a)anthracene	6.05	< 1.0	5.9	10	97
Chrysene	6.05	< 1.0	9.3	12	140
Benzo(b)fluoranthene	6.05	1.6	7	13	100
Benzo(k)fluoranthene	6.05	1.7	7	13	100
Benzo(a)pyrene	6.05	1.7	1	2.1	14
Dibenz(a,h)anthracene	6.05	1.4	0.9	2.3	13
Benzo(g,h,i)perylene	6.05	1.2	47	160	660
Indeno(1,2,3-c,d)pyrene	6.05	1.1	4.2	7.1	62

Comments: (comments are beyond the scope of UKAS accreditation)

Limits are soil guideline values from Defra 2002 (information taken from: Using Soil Guideline Values: Science Report: SC050021/SGV introduction & www.environment-agency.gov.uk/clea)

Table 10: TPH in soil (all results in mg/kg dry weight)

Analyte	Method	Sample	Soil Guideline Values		
			Residential	Allotment	Commercial
TPH total (C10 - C40)	6.04	791	---	---	---
TPH aromatic (C8 - C10)	6.04	< 10.0	151	51	18000
TPH aromatic (C10 - C12)	6.04	< 10.0	346	74	34500
TPH aromatic (C12 - C16)	6.04	17.0	593	130	37800
TPH aromatic (C16 - C21)	6.04	75.0	770	260	1600
TPH aromatic (C21 - C40)	6.04	167	1230	1600	28000
TPH aliphatic (C8 - C10)	6.04	< 10.0	110	1700	12000
TPH aliphatic (C10 - C12)	6.04	< 10.0	540	7300	49000
TPH aliphatic (C12 - C16)	6.04	44.0	3000	13000	91000
TPH aliphatic (C16 - C21)	6.04	185	76000	270000	1800000
TPH aliphatic (C21 - C40)	6.04	280	76000	270000	1800000



Certificate of Analysis

Client: F.A.O CAMERON LEWIS
(G 19) THE WOODHORN GROUP LTD
OVING
CHICHESTER
W SUSSEX
PO20 2BX

Originator: TANGMERE STOCK
TOPSOIL

Lab ID: 94974 - 25689
Sample ID: BS3882 TOPSOIL 20MM
Sample Weight: 1035g

Date Received: 28/01/2016
Date Reported: 10/02/2016

BS 3882 : 2015 SPECIFICATION FOR TOPSOIL Multipurpose Grade

				Compliant with range (Y/N)					
				Multi-P	Acid	Calc	Low-F	Low-F Acid	Low-F Calc
Texture:	Clay	% w/w	18						
	Silt	% w/w	16						
	Sand	% w/w	66						
	Textural Class		Sandy Loam	Y	Y	Y	Y	Y	Y
				<i>See area of permitted soil textural classes in Fig. 1.</i>					
Organic Matter:		% w/w	6.4	Y	Y	Y	Y	Y	Y
Coarse	>2 mm	% w/w	2.5	Y	Y	Y	Y	Y	Y
Fragment	>20 mm	% w/w	0.0	Y	Y	Y	Y	Y	Y
Content:	>50 mm	% w/w	0.0	Y	Y	Y	Y	Y	Y
Soil pH:			7.3	Y	N	N	Y	N	N
Carbonate:		% w/w	<1			N			N
Available	Nitrogen	% w/w	0.23	Y	Y	Y			
Plant	Phosphorus	mg/l	29.0 (3)*	Y	Y	Y	N	N	N
Nutrients:	Potassium	mg/l	997.7 (6)*	Y	Y	Y			
	Magnesium	mg/l	300.8 (5)*	Y	Y	Y			
Carbon:Nitrogen Ratio:		:1	16.1	Y	Y	Y	Y	Y	Y
Exchangeable Sodium Percentage:		%	5.6						
Phytotoxic	Total Zinc	mg/kg	54.3	Y	Y	Y	Y	Y	Y
Contaminants:	Total Copper	mg/kg	11.7	Y	Y	Y	Y	Y	Y
	Total Nickel	mg/kg	22.7	Y	Y	Y	Y	Y	Y
Visible	> 2mm	% w/w	0.00	Y	Y	Y	Y	Y	Y
Contaminants:	Plastics	% w/w	0.00	Y	Y	Y	Y	Y	Y
	Number of Sharps		0	Y	Y	Y	Y	Y	Y
Additional	Available Sodium	mg/l	168.9						
Analysis:	Available Calcium	mg/l	1454.0						
	Conductivity	uS/cm	2705	Y					
Compliance:				Y	N	N	N	N	N

Results are expressed on a dry matter basis.

* Soil indices from RB209

Released by:

Darren Whitbread

Date: 10/02/2016

DECLARATION:

I certify that this sample has been analysed by NRM Ltd. in accordance with BS 3882 Specification for Topsoil (2015).

NRM Coopers Bridge, Braziers Lane, Bracknell, Berkshire RG42 6NS

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Analytical Report

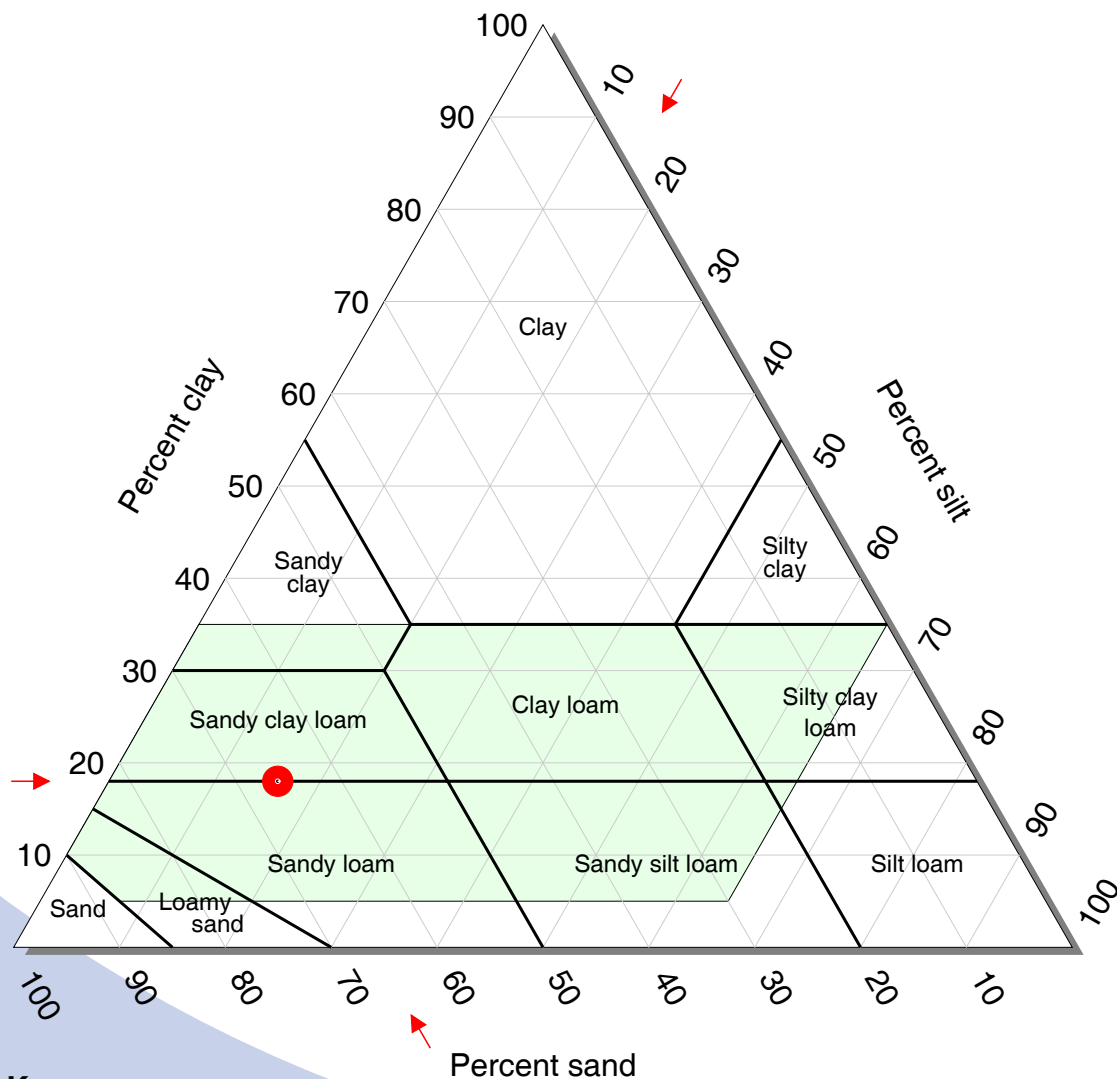
Client: F.A.O CAMERON LEWIS
(G 19) THE WOODHORN GROUP LTD
OVING
CHICHESTER
W SUSSEX
PO20 2BX

Originator: TANGMERE STOCK
TOPSOIL

Lab ID: 94974 - 25689
Sample ID: BS3882 TOPSOIL 20MM
Sample Weight: 1035g

Date Received: 28/01/2016
Date Reported: 10/02/2016

Fig. 1. Textural Class: Sandy Loam (compliant)



Key

 Area within which texture of topsoil is required to fall.



Analytical Report

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Lab ID: 94974 - 25689
Sample ID: BS3882 TOPSOIL 20MM
Sample Weight: 1035g

Date Received: 28/01/2016
Date Reported: 10/02/2016

		Unit	Result
Additional Analysis:	Hot Water Soluble Boron	mg/l	1.5
	Total Lead	mg/kg	30.8
	Total Arsenic	mg/kg	7.5
	Total Cadmium	mg/kg	0.12
	Total Mercury	mg/kg	<0.02
	Total Selenium	mg/kg	0.13
	Soil Density	g/l	869
	Total Chromium	mg/kg	33.2
	Dry Matter (Fresh)	% w/w	76.0
	Total Sulphate	mg/kg	888
	Total Phenols Index	mg/kg	<1
	TPH [C5-C44]	mg/kg	111
	Aliphatic TPH >C10-C12	mg/kg	<4
	Aliphatic TPH >C12-C16	mg/kg	<4
	Aliphatic TPH >C16-C21	mg/kg	5.2
	Aliphatic TPH >C21-C35	mg/kg	47.5
	Aromatic TPH >C10-C12	mg/kg	<4
	Aromatic TPH >C12-C16	mg/kg	6.2
	Aromatic TPH >C16-C21	mg/kg	7.6
	Aromatic TPH >C21-C35	mg/kg	35.8
	Aliphatic TPH >C5-C6	mg/kg	<0.2
	Aliphatic TPH >C6-C8	mg/kg	<0.4
	Aliphatic TPH >C8-C10	mg/kg	<4
	Aromatic TPH >C5-C7	mg/kg	<0.02
	Aromatic TPH >C7-C8	mg/kg	<0.02
	Aromatic TPH >C8-C10	mg/kg	<0.02
	Aliphatic TPH >C35-C44	mg/kg	<12
	Aromatic TPH >C35-C44	mg/kg	8.1
	Organic Matter WB	% w/w	6.0
	PAH EPA16	mg/kg	4.4
	Total Cyanide	mg/kg	<1
	Naphthalene	mg/kg	<0.05
	Acenaphthylene	mg/kg	<0.05
	Acenaphthene	mg/kg	<0.05
	Fluorene	mg/kg	<0.05
	Phenanthrene	mg/kg	0.2
	Anthracene	mg/kg	<0.05
	Fluoranthene	mg/kg	0.7
	Pyrene	mg/kg	0.6
	Benzo[a]anthracene	mg/kg	0.5



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Date Reported: 10/02/2016

		Unit	Result
Additional Analysis:	Chrysene	mg/kg	0.8
	Benzo[b]fluoranthene	mg/kg	0.4
	Benzo[k]fluoranthene	mg/kg	0.3
	Benzo[a]pyrene	mg/kg	0.4
	Indeno[1,2,3-cd]pyrene	mg/kg	0.2
	Dibenzo[a,h]anthracene	mg/kg	<0.1
	Benzo[g,h,i]perylene	mg/kg	0.3

Results are expressed on a dry matter basis unless otherwise specified.

Released by: *Darren Whitbread*

Date: 10/02/2016

Appendix E - Photographs – gases membrane installation







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