

Project Name
 Honeywell Lane

Project No.
 38903

Co-ords: -
 Level: 86.85 m AOD

Date
 02/09/2015

Location: Barnsley

Dimensions: 2.00m

Depth
 0.55m

0.60m

Scale
 1:25

Client: Miller Homes

Logged By
 DES

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.10	D					TOPSOIL Brown sand.	
			0.35	86.50		Land drain at 0.25 m bgl.	
			0.50	86.35		Strong orange laminated SANDSTONE recovered as angular cobbles.	
			0.55	86.30		Solid SANDSTONE.	
Trialpit Complete at 0.55 m							
							1
							2
							3
							4

Remarks: Terminated due to solid sandstone encountered.

Groundwater: None encountered.



Project Name
 Honeywell Lane

Project No.
 38903

Co-ords: -
 Level: 86.00 m AOD

Date
 02/09/2015

Location: Barnsley

Dimensions: 2.00m

Scale
 1:25

Client: Miller Homes

Depth
 2.60m

0.60m

Logged By
 DES

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.30	D					TOPSOIL: Dark brown sand.	
			0.65	85.35		MADE GROUND: Reworked sandstone cobbles in brown sand.	1
1.20	D						
			1.40	84.60		Orange friable sandy cobbly CLAY. Cobbles are angular of sandstone.	
2.00	D						2
			2.55	83.45		Solid SANDSTONE.	
			2.60	83.40		Trialpit Complete at 2.60 m	3
							4

Remarks: Terminated due to solid sandstone encountered.

Groundwater: None encountered.



Project Name
 Honeywell Lane

Project No.
 38903

Co-ords: -
 Level: 85.00 m AOD

Date
 02/09/2015

Location: Barnsley

Dimensions: 2.00m

Depth
 4.10m

0.60m

Scale
 1:25

Client: Miller Homes

Logged By
 DES

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description		
Depth (m)	Type	Results						
0.10	D		0.25	84.75		TOPSOIL: Brown sand.		
0.50	D					MADE GROUND: Reworked orange sandstone cobbles in friable clayey clay or sand.		
2.80	D		2.70	82.30			MADE GROUND: Firm dark grey dry friable clay. [Relic topsoil?]	1
			3.05	81.95			Red to orange brown sandy friable CLAY with rare coal fragments.	
3.50	D		3.50	81.50	Orange friable sandy cobbly CLAY. Cobbles are angular of sandstone.	2		
		4.10	80.90					
		Trialpit Complete at 4.10 m					3	
							4	

Remarks: Terminated due to sufficient depth.

Groundwater: None encountered.



Project Name
 Honeywell Lane

Project No.
 38903

Co-ords: -
 Level: 86.62 m AOD

Date
 23/11/2015

Location: Barnsley

Dimensions: 2.00m

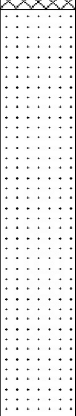
Scale
 1:25

Client: Miller Homes

Depth
 2.20m

0.60m

Logged By
 DES

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.10	D		0.20	86.42		TOPSOIL: Brown sandy clay.	
						MADE GROUND: Reworked coarse angular sandstone cobbles.	
			0.85	85.77		Strong weathered beige SANDSTONE recovered as coarse angular cobbles.	1
1.10	D						
			2.20	84.42		Trialpit Complete at 2.20 m	2
							3
							4

Remarks: Solid at base.

Groundwater: None encountered.



Project Name
 Honeywell Lane

Project No.
 38903

Co-ords: -
 Level: 86.07 m AOD

Date
 23/11/2015

Location: Barnsley

Dimensions: 2.00m

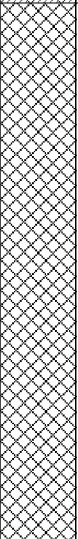
Scale
 1:25

Client: Miller Homes

Depth
 2.25m

0.60m

Logged By
 DES

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.10	D		0.20	85.87		TOPSOIL: Brown sandy clay.	
						MADE GROUND: Reworked coarse angular sandstone cobbles.	
1.10	D						1
			2.00	84.07		Strong weathered beige SANDSTONE recovered as coarse angular cobbles.	2
			2.25	83.82		Trialpit Complete at 2.25 m	
							3
							4

Remarks: Solid at base.

Groundwater: None encountered.



Project Name
 Honeywell Lane

Project No.
 38903

Co-ords: -
 Level: 85.50 m AOD

Date
 23/11/2015

Location: Barnsley

Dimensions: 2.00m

Depth
 4.15m

0.60m

Scale
 1:25

Client: Miller Homes

Logged By
 DES

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.10	D		0.25	85.25		TOPSOIL: Brown sandy clay.	
0.90	D					MADE GROUND: Light brown friable sandy clay with coarse angular sandstone gravel.	1
1.40	D		1.40	84.10		MADE GROUND: Dark brown clay with rare coal fragments and coarse angular sandstone gravel.	
			1.60	83.90		MADE GROUND: Reworked coarse angular sandstone cobbles. Wet at base.	2
2.60	D		2.40	83.10		MADE GROUND: Dark grey friable clay with roots and coal gravel. Slight organic odour. [Relic topsoil?]	
			2.70	82.80		MADE GROUND: Reworked coarse angular sandstone cobbles.	3
			4.15	81.35		Trialpit Complete at 4.15 m	4

Remarks: Terminated at reach of digger.

Groundwater: None encountered.



Project Name
 Honeywell Lane

Project No.
 38903

Co-ords: -
 Level: 87.00 m AOD

Date
 23/11/2015

Location: Barnsley

Dimensions: 2.00m

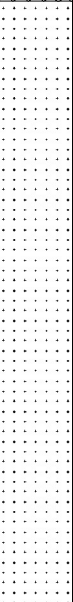
Scale
 1:25

Client: Miller Homes

Depth
 3.10m

0.60m

Logged By
 DES

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.20	D		0.30	86.70		TOPSOIL: Brown sandy clay.	
						MADE GROUND: Reworked friable orange very sandy clay with weathered coarse angular sandstone gravel.	1
1.20	D		1.10	85.90		Moderately weak grey weathered laminated muddy SANDSTONE recovered as coarse angular gravel to rare cobbles in sandy clay.	
			3.10	83.90		Trialpit Complete at 3.10 m	3
							4

Remarks: Solid at base.

Groundwater: None encountered.



Project Name
 Honeywell Lane

Project No.
 38903

Co-ords: -
 Level: 90.31 m AOD

Date
 23/11/2015

Location: Barnsley

Dimensions: 1.00m

Scale
 1:25

Client: Miller Homes

Depth
 1.00m

0.60m

Logged By
 DES

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.15			0.15	90.16		TOPSOIL: Brown sandy clay.	
						Strong beige SANDSTONE recovered as angular cobbles.	
1.00			1.00	89.31		Trialpit Complete at 1.00 m	1
							2
							3
							4

Remarks: Terminated at ground level for rest of the site.

Groundwater: None encountered.



Project Name
 Honeywell Lane

Project No.
 38903

Co-ords: -
 Level: 85.79 m AOD

Date
 23/11/2015

Location: Barnsley

Dimensions: 2.00m

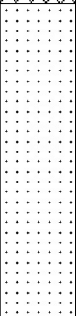
Scale
 1:25

Client: Miller Homes

Depth
 2.35m

0.60m

Logged By
 DES

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.20	D		0.25	85.54		TOPSOIL: Brown sandy clay.	
			0.65	85.14		MADE GROUND: Reworked black clay with coarse angular sandstone gravel and coal fragments.	
0.90	D		1.30	84.49		MADE GROUND: Reworked orange flaggy laminated coarse angular sandstone cobbles.	1
			2.35	83.44		Strong weathered beige SANDSTONE recovered as coarse angular cobbles.	2
Trialpit Complete at 2.35 m							3
							4

Remarks: Solid at base.

Groundwater: None encountered.





GROUND SUPPORT SERVICES (UK) LTD

GEOTECHNICAL AND GROUND SUPPORT FOUNDATION SPECIALISTS

Unit D2B Bryans Close, Harworth Industrial Estate, Harworth, South Yorkshire, DN11 8RY
Phone: 01302 744 322 Email: drillrig@hotmail.com Fax: 01909 540756

Site Investigation Drillers log			Site: <u>Honeywell lane, Barnsley.</u>			Sheet:				
Rig: <u>Casagrande C6.</u>			Crew: <u>J. Stuart, D. Dobbs.</u>			Date: <u>2/9/15.</u>				
Hours on site:				Travelling Time:						
Equipment used:										
BH	Depth	Strata Description	BH	Depth	Strata Description					
5	0.00 - 8.90	Sand Stone	2	0.00 - 1.30	weathered Sand Stone					
	8.90 - 10.10	Grey mudstone		1.30 - 13.80	Sand Stone					
	10.10 - 10.60	Coal		13.80 - 14.20	Coal					
	10.60 - 13.20	Grey mudstone		14.20 - 15.70	Grey mudstone					
	13.20 - 15.40	Sand Stone		15.70 - 18.30	Sand Stone					
	15.40 - 27.60	Grey mudstone		18.30 - 27.40	Grey mudstone					
	27.60 - 30.00	Sand Stone		27.40 - 30.00	Sand Stone					
4	0.00 - 9.70	Sand Stone	1	0.00 - 3.60	weathered Sand Stone					
	9.70 - 11.20	Grey mudstone		3.60 - 9.80	Sand Stone					
	11.20 - 11.80	Coal		9.80 - 15.70	weak Sand Stone					
	11.80 - 13.60	Grey mudstone		15.70 - 17.00	Hard Strata					
	13.60 - 18.90	Sand Stone			no returns					
	18.90 - 26.10	Grey mudstone								
	26.10 - 30.00	Sand Stone								
3	0.00 - 1.70	made Ground								
	1.70 - 3.40	weathered Sand Stone								
	3.40 - 11.80	Sand Stone								
	11.80 - 12.40	Coal								
	12.40 - 18.30	Grey mudstone								
	18.30 - 17.70	Sand Stone								
	17.70 - 26.90	Grey mudstone								
	26.90 - 30.00	Sand Stone								
Casing / Water level details										
BH	Casing Die	Depth	Strike	Water Rise	Sealed	Totals	BH's	Drill	Case	Core
						Today	5	137		
						Previous	—	—		
						To date	5	137		

Signed: J. Stuart Driller

PROJECT:	Honeywell	Job No. 38903	Date 08.09.15
SUBJECT:	Infiltration Test Results and Calculation of Infiltration Rates	Prepared SRI	Checked AJK

Test No. SA1 test 1

Test Pit Dimensions

Length = **1500** mm

Width = **700** mm

Depth = **2550** mm (Total depth)

Plan area = **1.05** m²

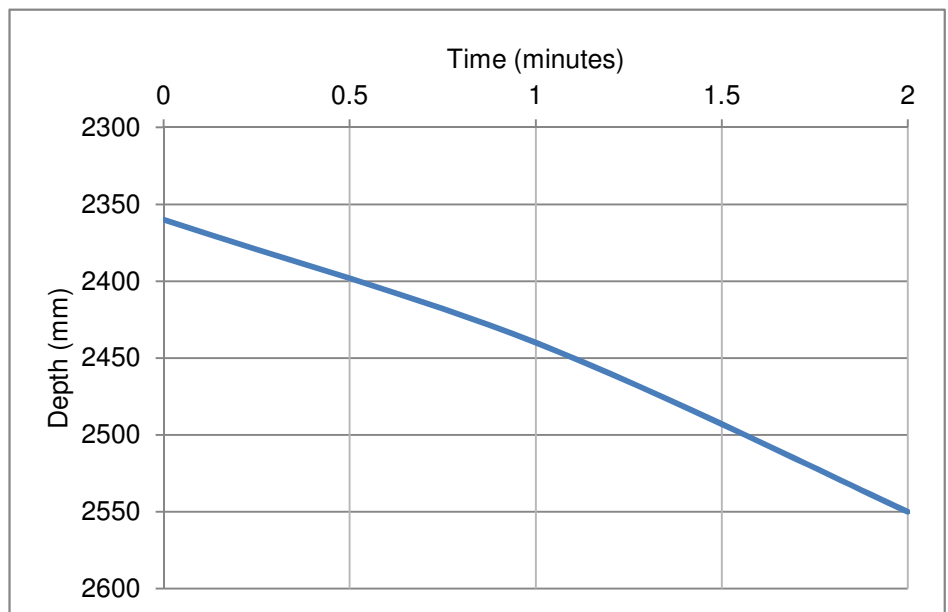
Approximate time to discharge water into the hole:

90 Seconds

Depth to water after completion of pumping:

2360 mm

Time (min)	Depth (mm)
0	2360
1	2440
2	2550



Test Pit Log (TP13)

Depth (m)	Description
0.0-0.3	Topsoil/Made Ground
0.3-1.65	Made Ground: Reworked sandstone cobbles in sandy clay
1.65-1.75	Made Groud: Dry black Clay
1.75-2.5	Sandy cobbly clay.

PROJECT:	Honeywell	Job No. 38903	Date 08.09.15
SUBJECT:	Infiltration Test Results and Calculation of Infiltration Rates	Prepared SRI	Checked AJK

Test No. SA1 test 1

Soil Infiltration Rate in Accordance with BR365

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;

a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **2360 mm** Average water depth: **95 mm**
 Start time = **0 min** Change in water depth: **190 mm**

Final parameters

Depth to water = **2550 mm** Time interval: **2 min**
 End time = **2 min**

Effective Storage Volume of Water in the Trial Pit = **0.1995 m³**
 75% Effective Depth = **2408 mm** from ground level
 25% Effective Depth = **2503 mm** from ground level
 Time at 75% Effective Depth = **1 minutes**
 Time at 25% Effective Depth = **2 minutes**

V_{p75-25} = **0.10 m³**
 a_{p50} = **1.47 m²**
 t_{p75-25} = **90 sec**
 f = **7.5E-04 m/sec**

Average Soakaway Rate = **1.7E-03 m³/sec**
 Average soakaway area = **1.47 m²** (sides + base)

BR365 Soil Infiltration Rate = 7.5E-04 m/sec
Average Infiltration Rate = 1.1E-03 m/sec

PROJECT:	Honeywell	Job No. 38903	Date 08.09.15
SUBJECT:	Infiltration Test Results and Calculation of Infiltration Rates	Prepared SRI	Checked AJK

Test No. SA1 test 2

Test Pit Dimensions

Length = **1500** mm

Width = **700** mm

Depth = **2550** mm (Total depth)

Plan area = **1.05** m²

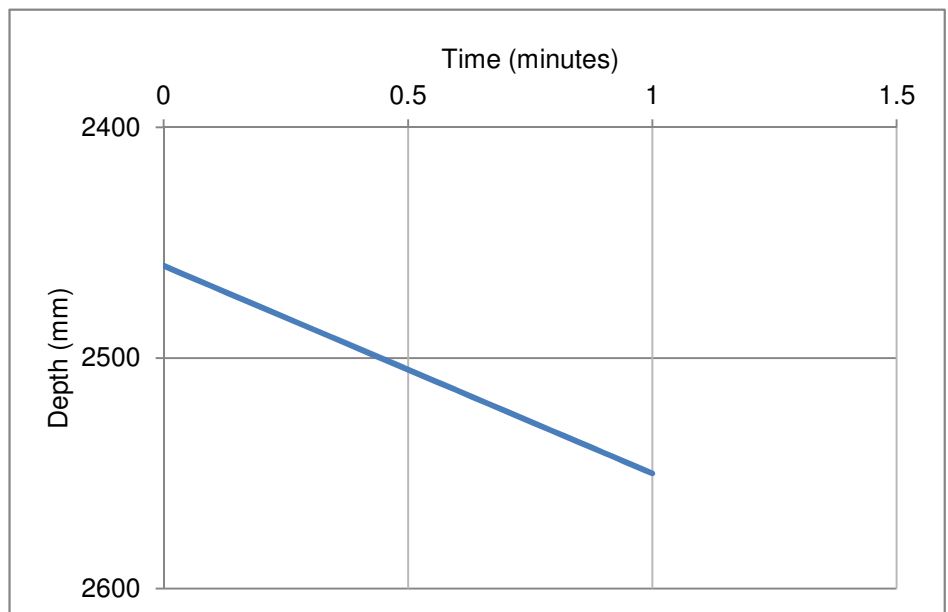
Approximate time to discharge water into the hole:

90 Seconds

Depth to water after completion of pumping:

2460 mm

Time (min)	Depth (mm)
0	2460
1	2550



Test Pit Log (TP13)

Depth (m)	Description
0.0-0.3	Topsoil/Made Ground
0.3-1.65	Made Ground: Reworked sandstone cobbles in sandy clay
1.65-1.75	Made Groud: Dry black Clay
1.75-2.5	Sandy cobbly clay.

PROJECT:	Honeywell	Job No. 38903	Date 08.09.15
SUBJECT:	Infiltration Test Results and Calculation of Infiltration Rates	Prepared SRI	Checked AJK

Test No. SA1 test 2

Soil Infiltration Rate in Accordance with BR365

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;

a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **2460** mm Average water depth: **45** mm
Start time = **0** min Change in water depth: **90** mm

Final parameters

Depth to water = **2550** mm Time interval: **1** min
End time = **1** min

Effective Storage Volume of Water in the Trial Pit = **0.0945** m³
75% Effective Depth = **2483** mm from ground level
25% Effective Depth = **2528** mm from ground level
Time at 75% Effective Depth = **1** minutes
Time at 25% Effective Depth = **0.75** minutes

V_{p75-25} = **0.05** m³
 a_{p50} = **1.25** m²
 t_{p75-25} = **15** sec
 f = **2.5E-03** m/sec

Average Soakaway Rate = **1.6E-03** m³/sec
Average soakaway area = **1.25** m² (sides + base)

BR365 Soil Infiltration Rate = 2.5E-03 m/sec
Average Infiltration Rate = 1.3E-03 m/sec

PROJECT:	Honeywell	Job No. 38903	Date 08.09.15
SUBJECT:	Infiltration Test Results and Calculation of Infiltration Rates	Prepared SRI	Checked AJK

Test No.	SA2 test 1
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Test Pit Dimensions

Length = **1600** mm

Plan area = **1.04 m²**

Width = **650** mm

Depth = **2400** mm (Total depth)

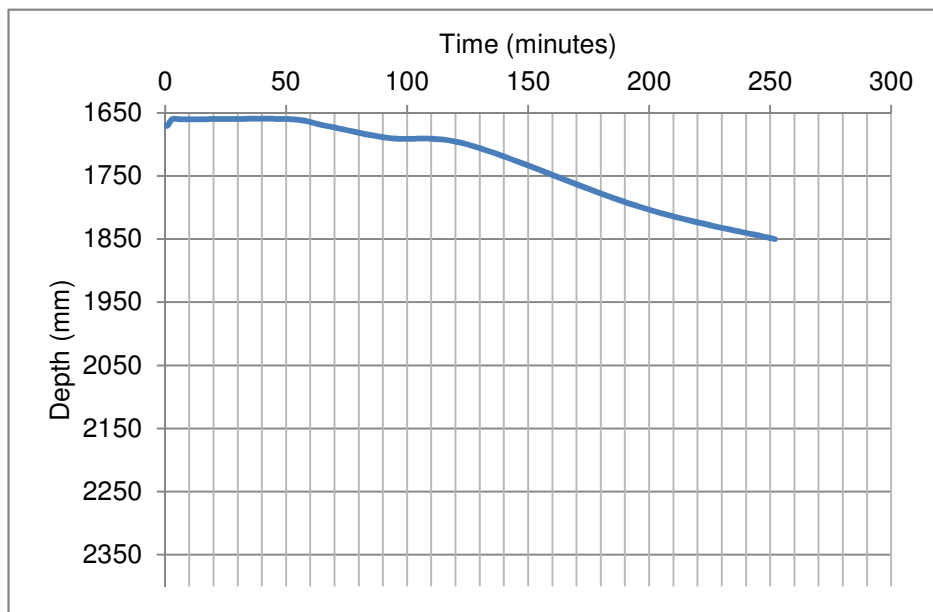
Approximate time to discharge water into the hole:

120 Seconds

Depth to water after completion of pumping:

1670 mm

Time (min)	Depth (mm)
0	1670
1	1670
3	1660
6	1660
8	1660
11	1660
13	1660
52	1660
66	1670
93	1690
125	1700
197	1800
252	1850



Test Pit Log (TP2)

Depth (m)	Description
0.0-0.3	Topsoil
0.3-1.05	Friable sandy clay
1.05-1.7	Weak sandy mudstone
1.7-2.4	Sandy gravelly clay

PROJECT:	Honeywell	Job No. 38903	Date 08.09.15
SUBJECT:	Infiltration Test Results and Calculation of Infiltration Rates	Prepared SRI	Checked AJK

Test No. SA2 test 1

Soil Infiltration Rate in Accordance with BR365

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;

a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **1660** mm Average water depth: **645** mm
Start time = **52** min Change in water depth: **190** mm

Final parameters

Depth to water = **1850** mm Time interval: **200** min
End time = **252** min

Effective Storage Volume of Water in the Trial Pit = **0.7592** m³
75% Effective Depth = **1853** mm from ground level
25% Effective Depth = **2218** mm from ground level
Time at 75% Effective Depth = **n/a** minutes
Time at 25% Effective Depth = **n/a** minutes

V_{p75-25} = **0.38** m³
 a_{p50} = **2.68** m²
 t_{p75-25} = **0** sec
 f = **#DIV/0! m/sec**

Average Soakaway Rate = **1.6E-05** m³/sec
Average soakaway area = **3.94** m² (sides + base)

BR365 Soil Infiltration Rate = N/A m/sec
Average Infiltration Rate = 4.2E-06 m/sec

PROJECT:	Honeywell	Job No. 38903	Date 08.09.15
SUBJECT:	Infiltration Test Results and Calculation of Infiltration Rates	Prepared SRI	Checked AJK

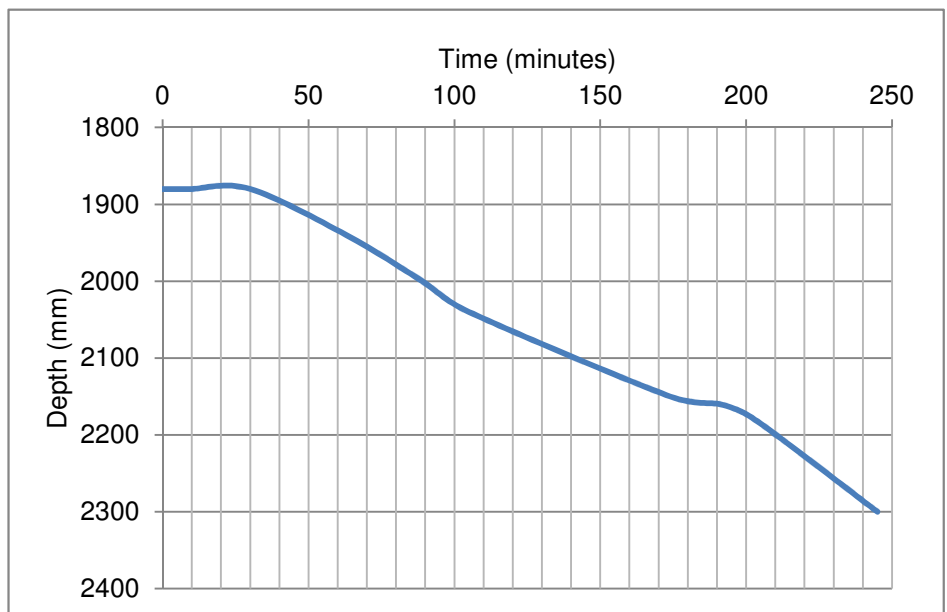
Test No. SA3 test 1

Test Pit Dimensions

Length = **1600 mm** Plan area = **1.12 m²**
 Width = **700 mm**
 Depth = **2400 mm** (Total depth)

Approximate time to discharge water into the hole: **180 Seconds**
 Depth to water after completion of pumping: **1880 mm**

Time (min)	Depth (mm)
0	1880
1	1880
2	1880
4	1880
6	1880
10	1880
30	1880
63	1940
89	2000
105	2040
174	2150
191	2160
203	2180
245	2300



Test Pit Log (TP6)

Depth (m)	Description
0.0-0.3	Topsoil
0.3-0.9	Made Ground: reworked sandstone cobbles
0.9-0.95	Made ground: reworked clay
0.95-2.50	Sandy cobbly clay
2.50-2.55	Sandstone

PROJECT:	Honeywell	Job No. 38903	Date 08.09.15
SUBJECT:	Infiltration Test Results and Calculation of Infiltration Rates	Prepared SRI	Checked AJK

Test No. SA3 test 1

Soil Infiltration Rate in Accordance with BR365

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;

a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **1880 mm** Average water depth: **310 mm**
 Start time = **30 min** Change in water depth: **420 mm**

Final parameters

Depth to water = **2300 mm** Time interval: **215 min**
 End time = **245 min**

Effective Storage Volume of Water in the Trial Pit = **0.5824 m³**
 75% Effective Depth = **2010 mm** from ground level
 25% Effective Depth = **2270 mm** from ground level
 Time at 75% Effective Depth = **90 minutes**
 Time at 25% Effective Depth = **240 minutes**

V_{p75-25} = **0.29 m³**
 a_{p50} = **2.32 m²**
 t_{p75-25} = **9000 sec**
 f = **1.4E-05 m/sec**

Average Soakaway Rate = **3.6E-05 m³/sec**
 Average soakaway area = **2.55 m²** (sides + base)

BR365 Soil Infiltration Rate = 1.4E-05 m/sec
Average Infiltration Rate = 1.4E-05 m/sec

Appendix 4

Chemical Test Results, Chemtest Reports No's. 15-20762 and 15-27797

Table of Assessment Values (Residential with Home-grown Produce)

Geometric Mean and Modified Mean Calculations



Final Report

Report Number: 15-20762 Issue-1

Initial Date of Issue: 15-Sep-2015

Client: Eastwood & Partners

Client Address: St. Andrews House
23 Kingfield Road
Sheffield
South Yorkshire
S11 9AS

Contact(s): Dani Sempers

Project: 38903 - Honeywell Lane, Barnsley

Quotation No.: **Date Received:** 09-Sep-2015

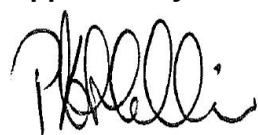
Order No.: AJK/DES/38903 **Date Instructed:** 08-Sep-2015

No. of Samples: 20

Turnaround: (Wkdays) 5 **Results Due Date:** 14-Sep-2015

Date Approved: 15-Sep-2015

Approved By:



Details: Phil Hellier, Project Director

Results Summary - Soil

Project: 38903 - Honeywell Lane, Barnsley

Client: Eastwood & Partners	Chemtest Job No.:				15-20762	15-20762	15-20762	15-20762	15-20762	15-20762	15-20762	15-20762	15-20762
Quotation No.:	Chemtest Sample ID.:				189268	189269	189270	189271	189273	189274	189276	189278	189280
Order No.: AJK/DES/38903	Client Sample Ref.:												
	Client Sample ID.:				TP1	TP1	TP1	TP2	TP2	TP3	TP3	TP4	TP5
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.1	0.7	1.6	0.1	1.1	0.1	1.6	0.1	0.2
	Bottom Depth(m):												
	Date Sampled:				02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15
Determinand	Accred.	SOP	Units	LOD									
ACM Type	U	2192			-	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192			No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.02	10	8.4	12	16	11	8.3	19	11	5.9
Soil Colour	N				Brown	Brown	Brown	Brown	Grey	Brown	Brown	Brown	Brown
Other Material	N				Stones	Stones	NONE	Stones	NONE	Stones	Stones	Stones	Stones
Soil Texture	N				Sand	Sand	Clay	Sand	Clay	Sand	Sand	Sand	Sand
pH	M	2010			4.6	5.8	6.9	5.8	5.7	4.5	6.0	5.0	5.1
Sulphate (2:1 Water Soluble) as SO ₄	M	2120	g/l	0.01		< 0.010	< 0.010		< 0.010		0.012		
Total Sulphur	M	2175	%	0.01		0.050	< 0.010		< 0.010		0.12		
Sulphate (Acid Soluble)	M	2430	%	0.01		0.037	< 0.010		< 0.010		0.053		
Arsenic	M	2450	mg/kg	1	18	14	1.8	20	11	23	17	29	11
Cadmium	M	2450	mg/kg	0.1	0.22	0.19	0.11	0.20	< 0.10	0.26	0.22	0.34	0.13
Chromium	M	2450	mg/kg	1	22	14	18	18	28	22	18	53	15
Copper	M	2450	mg/kg	0.5	39	89	17	51	27	52	43	93	32
Mercury	M	2450	mg/kg	0.1	0.24	0.19	0.11	0.37	< 0.10	0.64	0.24	0.92	0.15
Nickel	M	2450	mg/kg	0.5	26	22	28	24	35	27	24	26	24
Lead	M	2450	mg/kg	0.5	89	74	12	110	12	220	130	130	56
Selenium	M	2450	mg/kg	0.2	0.52	0.33	< 0.20	0.55	< 0.20	0.58	0.41	0.50	0.31
Zinc	M	2450	mg/kg	0.5	83	75	48	81	65	96	80	110	55
Chromium (Hexavalent)	N	2490	mg/kg	0.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	M	2800	mg/kg	0.1	0.12	0.13	< 0.10	< 0.10	< 0.10	< 0.10	0.11	0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.1	0.59	0.57	< 0.10	0.76	< 0.10	0.51	0.49	0.74	0.29
Anthracene	M	2800	mg/kg	0.1	0.16	0.12	< 0.10	0.17	< 0.10	< 0.10	< 0.10	0.11	< 0.10
Fluoranthene	M	2800	mg/kg	0.1	0.95	1.1	< 0.10	1.1	< 0.10	0.66	0.74	1.1	0.51
Pyrene	M	2800	mg/kg	0.1	0.87	0.94	< 0.10	0.89	< 0.10	0.61	0.70	1.1	0.47
Benzo[a]anthracene	M	2800	mg/kg	0.1	0.51	0.49	< 0.10	0.39	< 0.10	0.25	0.33	0.48	0.20
Chrysene	M	2800	mg/kg	0.1	0.52	0.57	< 0.10	0.42	< 0.10	0.35	0.47	0.59	0.25
Benzo[b]fluoranthene	M	2800	mg/kg	0.1	0.65	0.71	< 0.10	0.42	< 0.10	0.37	0.48	0.73	0.32
Benzo[k]fluoranthene	M	2800	mg/kg	0.1	0.21	0.25	< 0.10	0.15	< 0.10	0.10	0.14	0.25	0.10

Results Summary - Soil

Project: 38903 - Honeywell Lane, Barnsley

Client: Eastwood & Partners	Chemtest Job No.:				15-20762	15-20762	15-20762	15-20762	15-20762	15-20762	15-20762	15-20762	15-20762
Quotation No.:	Chemtest Sample ID.:				189268	189269	189270	189271	189273	189274	189276	189278	189280
Order No.: AJK/DES/38903	Client Sample Ref.:												
	Client Sample ID.:				TP1	TP1	TP1	TP2	TP2	TP3	TP3	TP4	TP5
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.1	0.7	1.6	0.1	1.1	0.1	1.6	0.1	0.2
	Bottom Depth(m):												
	Date Sampled:				02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15
Determinand	Accred.	SOP	Units	LOD									
Benzo[a]pyrene	M	2800	mg/kg	0.1	0.47	0.53	< 0.10	0.31	< 0.10	0.27	0.35	0.47	0.25
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.1	0.37	0.44	< 0.10	0.17	< 0.10	0.16	0.18	0.33	0.17
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.1	0.32	0.35	< 0.10	0.15	< 0.10	0.19	0.19	0.33	0.18
Total Of 16 PAH's	N	2800	mg/kg	2	5.7	6.2	< 2.0	4.9	< 2.0	3.5	4.2	6.3	2.7

Results Summary - Soil

Project: 38903 - Honeywell Lane, Barnsley

Client: Eastwood & Partners	Chemtest Job No.:				15-20762	15-20762	15-20762	15-20762	15-20762	15-20762	15-20762	15-20762	15-20762
Quotation No.:	Chemtest Sample ID.:				189281	189282	189284	189285	189286	189287	189288	189289	189290
Order No.: AJK/DES/38903	Client Sample Ref.:												
	Client Sample ID.:				TP5	TP5	TP6	TP6	TP6	TP6	TP7	TP8	TP9
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				1.2	1.7	0.1	0.65	0.93	1.5	0.1	0.1	0.3
	Bottom Depth(m):												
	Date Sampled:				02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15
Determinand	Accred.	SOP	Units	LOD									
ACM Type	U	2192			-	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192			No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.02	12	15	9.0	8.9	13	10	6.5	9.5	14
Soil Colour	N				Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N				Stones	Roots	Stones	Stones	Stones	Stones	Stones	Stones	Roots
Soil Texture	N				Loam	Clay	Sand	Sand	Clay	Clay	Sand	Sand	Sand
pH	M	2010			6.0	5.8	4.4	5.5	4.6	4.5	4.5	4.9	5.7
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.01	< 0.010	0.083		< 0.010	< 0.010	< 0.010			
Total Sulphur	M	2175	%	0.01	0.040	0.12		0.020	0.030	< 0.010			
Sulphate (Acid Soluble)	M	2430	%	0.01	0.018	0.093		0.017	0.032	0.016			
Arsenic	M	2450	mg/kg	1	8.8	19	42	7.1	10	5.1	20	17	25
Cadmium	M	2450	mg/kg	0.1	< 0.10	0.21	0.39	0.13	0.10	0.12	0.81	0.84	0.39
Chromium	M	2450	mg/kg	1	13	25	74	20	20	24	23	22	44
Copper	M	2450	mg/kg	0.5	31	77	55	22	31	22	48	44	54
Mercury	M	2450	mg/kg	0.1	< 0.10	0.18	1.3	0.10	0.10	< 0.10	1.2	0.55	0.34
Nickel	M	2450	mg/kg	0.5	22	29	24	25	25	35	25	27	28
Lead	M	2450	mg/kg	0.5	35	240	110	34	52	16	110	95	120
Selenium	M	2450	mg/kg	0.2	< 0.20	0.36	0.62	< 0.20	< 0.20	< 0.20	0.52	0.40	0.76
Zinc	M	2450	mg/kg	0.5	48	430	95	75	92	99	87	85	110
Chromium (Hexavalent)	N	2490	mg/kg	0.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	M	2800	mg/kg	0.1	< 0.10	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.13	0.15	0.37
Acenaphthylene	N	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.59
Acenaphthene	M	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.18
Fluorene	M	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.60
Phenanthrene	M	2800	mg/kg	0.1	< 0.10	0.47	0.47	< 0.10	< 0.10	< 0.10	0.99	0.63	5.2
Anthracene	M	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.13	0.29	1.2
Fluoranthene	M	2800	mg/kg	0.1	< 0.10	0.51	0.78	< 0.10	< 0.10	< 0.10	1.6	0.98	9.3
Pyrene	M	2800	mg/kg	0.1	< 0.10	0.42	0.74	< 0.10	< 0.10	< 0.10	1.4	0.90	7.6
Benzo[a]anthracene	M	2800	mg/kg	0.1	< 0.10	0.20	0.37	< 0.10	< 0.10	< 0.10	0.58	0.40	4.8
Chrysene	M	2800	mg/kg	0.1	< 0.10	0.26	0.50	< 0.10	< 0.10	< 0.10	0.76	0.58	5.1
Benzo[b]fluoranthene	M	2800	mg/kg	0.1	< 0.10	0.30	0.60	< 0.10	< 0.10	< 0.10	0.86	0.81	5.9
Benzo[k]fluoranthene	M	2800	mg/kg	0.1	< 0.10	< 0.10	0.20	< 0.10	< 0.10	< 0.10	0.30	0.22	2.6

Results Summary - Soil

Project: 38903 - Honeywell Lane, Barnsley

Client: Eastwood & Partners	Chemtest Job No.:				15-20762	15-20762	15-20762	15-20762	15-20762	15-20762	15-20762	15-20762	15-20762
Quotation No.:	Chemtest Sample ID.:				189281	189282	189284	189285	189286	189287	189288	189289	189290
Order No.: AJK/DES/38903	Client Sample Ref.:												
	Client Sample ID.:				TP5	TP5	TP6	TP6	TP6	TP6	TP7	TP8	TP9
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				1.2	1.7	0.1	0.65	0.93	1.5	0.1	0.1	0.3
	Bottom Depth(m):												
	Date Sampled:				02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15	02-Sep-15
Determinand	Accred.	SOP	Units	LOD									
Benzo[a]pyrene	M	2800	mg/kg	0.1	< 0.10	0.17	0.41	< 0.10	< 0.10	< 0.10	0.63	0.42	5.0
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.1	< 0.10	0.15	0.32	< 0.10	< 0.10	< 0.10	0.32	0.28	3.3
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.88
Benzo[g,h,i]perylene	M	2800	mg/kg	0.1	< 0.10	0.16	0.35	< 0.10	< 0.10	< 0.10	0.33	0.23	2.6
Total Of 16 PAH's	N	2800	mg/kg	2	< 2.0	2.7	4.7	< 2.0	< 2.0	< 2.0	8.0	5.9	55

Project: 38903 - Honeywell Lane, Barnsley

Client: Eastwood & Partners	Chemtest Job No.:				15-20762	15-20762
Quotation No.:	Chemtest Sample ID.:				189293	189295
Order No.: AJK/DES/38903	Client Sample Ref.:					
	Client Sample ID.:				TP10	TP10
	Sample Type:				SOIL	SOIL
	Top Depth (m):				0.1	2.8
	Bottom Depth(m):					
	Date Sampled:				02-Sep-15	02-Sep-15
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192			-	-
Asbestos Identification	U	2192			No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.02	8.5	15
Soil Colour	N				Brown	Brown
Other Material	N				Stones	Stones
Soil Texture	N				Sand	Clay
pH	M	2010			5.9	5.9
Sulphate (2:1 Water Soluble) as SO ₄	M	2120	g/l	0.01		< 0.010
Total Sulphur	M	2175	%	0.01		0.050
Sulphate (Acid Soluble)	M	2430	%	0.01		0.043
Arsenic	M	2450	mg/kg	1	18	16
Cadmium	M	2450	mg/kg	0.1	1.3	0.18
Chromium	M	2450	mg/kg	1	37	21
Copper	M	2450	mg/kg	0.5	45	42
Mercury	M	2450	mg/kg	0.1	0.27	0.25
Nickel	M	2450	mg/kg	0.5	27	25
Lead	M	2450	mg/kg	0.5	94	74
Selenium	M	2450	mg/kg	0.2	0.44	0.31
Zinc	M	2450	mg/kg	0.5	93	83
Chromium (Hexavalent)	N	2490	mg/kg	0.5	< 0.50	< 0.50
Naphthalene	M	2800	mg/kg	0.1	0.14	0.14
Acenaphthylene	N	2800	mg/kg	0.1	0.23	< 0.10
Acenaphthene	M	2800	mg/kg	0.1	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.1	0.22	< 0.10
Phenanthrene	M	2800	mg/kg	0.1	3.2	0.75
Anthracene	M	2800	mg/kg	0.1	0.72	0.17
Fluoranthene	M	2800	mg/kg	0.1	7.2	0.98
Pyrene	M	2800	mg/kg	0.1	6.4	0.91
Benzo[a]anthracene	M	2800	mg/kg	0.1	3.7	0.42
Chrysene	M	2800	mg/kg	0.1	4.1	0.53
Benzo[b]fluoranthene	M	2800	mg/kg	0.1	4.6	0.71
Benzo[k]fluoranthene	M	2800	mg/kg	0.1	1.9	0.20

Project: 38903 - Honeywell Lane, Barnsley

Client: Eastwood & Partners	Chemtest Job No.:				15-20762	15-20762
Quotation No.:	Chemtest Sample ID.:				189293	189295
Order No.: AJK/DES/38903	Client Sample Ref.:					
	Client Sample ID.:				TP10	TP10
	Sample Type:				SOIL	SOIL
	Top Depth (m):				0.1	2.8
	Bottom Depth(m):					
	Date Sampled:				02-Sep-15	02-Sep-15
Determinand	Accred.	SOP	Units	LOD		
Benzo[a]pyrene	M	2800	mg/kg	0.1	4.0	0.42
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.1	2.9	0.35
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.1	0.58	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.1	2.0	0.28
Total Of 16 PAH's	N	2800	mg/kg	2	42	5.9

Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
- < "less than"
- > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVCOs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at our Coventry laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container

Sample Retention and Disposal

All soil samples will be retained for a period of 60 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.co.uk



Final Report

Report No.: 15-27797-1

Initial Date of Issue: 01-Dec-2015

Client Eastwood & Partners

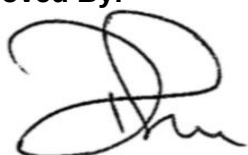
Client Address: St. Andrews House
23 Kingfield Road
Sheffield
South Yorkshire
S11 9AS

Contact(s): Dani Sempers

Project 38903 - Honeywell Lane, Barnsley -
Second Day of Trial Pits

Quotation No.:		Date Received:	26-Nov-2015
Order No.:	AJK/DES/38903	Date Instructed:	26-Nov-2015
No. of Samples:	8	Target Date:	02-Dec-2015
Turnaround (Wkdays):	5	Results Due:	02-Dec-2015
Date Approved:	01-Dec-2015		

Approved By:



Details: Darrell Hall, Laboratory Director

**Project: 38903 - Honeywell Lane, Barnsley - Second Day
of Trial Pits**

Client: Eastwood & Partners	Chemtest Job No.:				15-27797	15-27797	15-27797	15-27797	15-27797	15-27797	15-27797	15-27797
Quotation No.:	Chemtest Sample ID.:				224541	224543	224544	224545	224546	224549	224551	224552
Order No.: AJK/DES/38903	Client Sample Ref.:											
	Client Sample ID.:				TP11	TP12	TP12	TP13	TP13	TP14	TP15	TP15
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.10	0.10	1.10	0.10	0.90	0.20	0.20	0.90
	Bottom Depth (m):											
	Date Sampled:				23-Nov-2015	23-Nov-2015	23-Nov-2015	23-Nov-2015	23-Nov-2015	23-Nov-2015	23-Nov-2015	23-Nov-2015
Determinand	Accred.	SOP	Units	LOD								
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	12	15	11	20	12	17	17	12
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones, Roots	Stones, Roots	Stones	Stones, Roots	Stones	Roots	Stones, Roots	Stones
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		N/A	4.6	4.4	6.0	4.3	6.1	4.8	4.8	6.0
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010			< 0.010		< 0.010			< 0.010
Total Sulphur	M	2175	%	0.010			0.022		0.016			0.026
Sulphate (Acid Soluble)	M	2430	%	0.010			< 0.010		< 0.010			< 0.010
Arsenic	M	2450	mg/kg	1.0	22	20	6.1	23	7.8	49	19	4.2
Cadmium	M	2450	mg/kg	0.10	0.76	0.83	< 0.10	0.15	< 0.10	0.22	0.27	< 0.10
Chromium	M	2450	mg/kg	1.0	16	12	4.5	13	7.5	44	8.1	4.4
Copper	M	2450	mg/kg	0.50	49	42	16	48	18	50	78	15
Mercury	M	2450	mg/kg	0.10	0.27	2.4	< 0.10	0.71	< 0.10	0.61	0.13	< 0.10
Nickel	M	2450	mg/kg	0.50	23	25	19	21	19	21	21	19
Lead	M	2450	mg/kg	0.50	88	76	14	110	19	130	83	9.3
Selenium	M	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Zinc	M	2450	mg/kg	0.50	96	70	41	73	55	78	76	20
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	M	2800	mg/kg	0.10	0.22	0.26	< 0.10	0.22	< 0.10	0.41	0.39	0.24
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	0.39	0.27	< 0.10	0.63	< 0.10	0.28	0.25	0.13
Anthracene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	M	2800	mg/kg	0.10	0.24	0.37	< 0.10	0.63	< 0.10	0.33	0.50	< 0.10
Pyrene	M	2800	mg/kg	0.10	0.14	0.25	< 0.10	0.46	< 0.10	0.30	0.31	< 0.10
Benzo[a]anthracene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

**Project: 38903 - Honeywell Lane, Barnsley - Second Day
of Trial Pits**

Client: Eastwood & Partners	Chemtest Job No.:				15-27797	15-27797	15-27797	15-27797	15-27797	15-27797	15-27797	15-27797
Quotation No.:	Chemtest Sample ID.:				224541	224543	224544	224545	224546	224549	224551	224552
Order No.: AJK/DES/38903	Client Sample Ref.:											
	Client Sample ID.:				TP11	TP12	TP12	TP13	TP13	TP14	TP15	TP15
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.10	0.10	1.10	0.10	0.90	0.20	0.20	0.90
	Bottom Depth (m):											
	Date Sampled:				23-Nov-2015	23-Nov-2015	23-Nov-2015	23-Nov-2015	23-Nov-2015	23-Nov-2015	23-Nov-2015	23-Nov-2015
Determinand	Accred.	SOP	Units	LOD								
Total Of 16 PAH's	N	2800	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
- < "less than"
- > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at our Coventry laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container

Sample Retention and Disposal

All soil samples will be retained for a period of 60 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.co.uk

Inorganic Compounds	Human Health - Residential with Homegrown Produce (mg/kg)
Arsenic	37
Cadmium	11
Chromium (III)	910
Chromium (VI)	6
Lead	200
Mercury	1.2
Nickel	180
Selenium	250
Copper	2400
Zinc	3700

Organic Compounds	Human Health - Residential with Homegrown Produce (mg/kg)		
	1% SOM	2.5% SOM	6% SOM
Naphthalene	2.3	5.6	13
Acenaphthene	210	510	1100
Acenaphthylene	170	420	920
Fluorene	170	400	860
Phenanthrene	95	220	440
Anthracene	2400	5400	11000
Fluoranthene	280	560	890
Pyrene	620	1200	2000
Benzo(a)anthracene	7.2	11	13
Chrysene	15	22	27
Benzo(b)fluoranthene	2.6	3.3	3.7
Benzo(k)fluoranthene	77	93	10
Benzo(a)pyrene	2.2	2.7	3.0
Dibenz(a,h)anthracene	0.24	0.28	0.3
Indeno(1,2,3-cd)pyrene	27	36	41
Benzo(g,h,i)perylene	320	340	350
Benzene	0.087	0.17	0.37
Toluene	130	290	660
Ethylbenzene	47	110	260
o-Xylene	60	140	330
m-Xylene	59	140	320
p-Xylene	56	130	310

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Prepared	KDL	Checked	CAT	Date	07.12.15	Job No	38903
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EOP Eastwood&Partners CONSULTING ENGINEERS St Andrew's House 23 Kingfield Road Sheffield S11 9AS Tel: (0114) 255 4554 Fax: (0114) 255 4330	MILLER HOMES HONEYWELL LANE, BARNSELY ASSESSMENT CRITERIA – RESIDENTIAL WITH HOMEGROWN PRODUCE
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Contaminant	Phytotoxicity			
	pH 5.0 to 5.5	pH 5.5 to 6.0	pH 6.0 to 6.5	pH >7.0
Arsenic	50			
Cadmium	3			
Chromium	400			
Lead	300			
Mercury	1			
Nickel	50	60	75	110
Copper	80	100	135	200
Zinc	200	200	200	300

The assessment concentration for lead is the Category 4 Screening Level produced by Contaminated Land: Applications in Real Environments (CL:AIRE) and outlined in Appendix H of their report SP1010. The others have been taken from Nathanail, C. P., McCaffrey, C., Gillett, A., Ogden, R., and Nathanail, J., 2015, *'The LQM/CIEH S4ULs for Human Health Risk Assessment'*, Land Quality Press, Nottingham. The metals/metalloids are based on a sandy loam soil and 6% soil organic matter. The assessment values are not intended to be applied to individual sample results where materials are similar, as the levels of contaminants will have a natural variability across the site. Instead, the modified mean value should be compared with the assessment concentration.

The assessment values for phytotoxicity are the levels at which plant growth is thought to be affected. They are taken from the maximum permissible and advisable concentrations in soil after application of soil sludge given in the *'The Code of Good Agricultural Practice for the Protection of Soil'*, MAFF, 1998.

The assessment of sulphate, water soluble sulphate, elemental sulphur and sulphide is to determine the aggressive nature of the ground with respect to concrete and consequently the results are compared with BRE Special Digest 1:2005 *'Concrete in Aggressive Ground'*.

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Prepared	KDL	Checked	CAT	Date	07.12.15	Job No	38903
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TPH Fraction	Intended Land Use Residential (mg/kg)		
	1% SOM	2.5% SOM	6% SOM
Aliphatic EC 5-6	42	78	160
Aliphatic EC >6-8	100	230	530
Aliphatic EC >8-10	27	65	150
Aliphatic EC >10-12	130 (48) ^{vap}	330 (118) ^{vap}	760 (283) ^{vap}
Aliphatic EC >12-16	1100 (24) ^{sol}	2400 (59) ^{sol}	4,300 (142) ^{sol}
Aliphatic EC >16-35	65,000 (8.48) ^{f, sol}	92,000 (21) ^{f, sol}	110,000 ^f
Aliphatic EC >35-44	65,000 (8.48) ^{f, sol}	92,000 (21) ^{f, sol}	110,000 ^f
Aromatic EC 5-7	70	140	300
Aromatic EC >7-8	130	290	660
Aromatic EC >8-10	34	83	190
Aromatic EC >10-12	74	180	380
Aromatic EC >12-16	140	330	660
Aromatic EC >16-21	260 ^f	540 ^f	930 ^f
Aromatic EC >21-35	1,100 ^f	1,500 ^f	1,700 ^f
Aromatic EC >35-44	1,100 ^f	1,500 ^f	1,700 ^f

^f oral, dermal, and inhalation exposure compared with oral HCV

^{sol} S4UL presented exceeds the solubility saturation limit, which is presented in brackets

^{vap} S4UL presented exceed the vapour saturation limit, which is presented in brackets

The assessment criteria for each of the petroleum hydrocarbon fractions have been taken from Nathanail, C. P., McCaffrey, C., Gillett, A., Ogden, R., and Nathanail, J., 2015, *'The LQM/CIEH S4ULs for Human Health Risk Assessment'*, Land Quality Press, Nottingham. These are also all based on a sandy loam soil.

Within the Environment Agency Science Report P5-080/TR3, Askari, K. & Pollard, S., 2005 *'The UK Approach for Evaluating Human Health Risks from Petroleum Hydrocarbons in Soils'* it is stated that the assessment values should not be considered individually; instead the potential additive effects should be calculated. This is achieved by calculating an individual Hazard Quotient (HQ) for each fraction. The HQ is the proportion of the assessment concentration represented by the recorded concentration. The HQs are then added together to form a Hazard Index (HI) and where this exceeds unity a potential significant risk to human health may exist.

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Prepared	KDL	Checked	CAT	Date	07.12.15	Job No	38903
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 Eastwood & Partners CONSULTING ENGINEERS St Andrew's House 23 Kingfield Road Sheffield S11 9AS Tel: (0114) 255 4554 Fax: (0114) 255 4330	MILLER HOMES HONEYWELL LANE, BARNSELY ASSESSMENT CRITERIA – RESIDENTIAL WITH HOMEGROWN PRODUCE
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PROJECT: Honeywell Lane, Barnsley	Job No. 38903	Date 02.12.15
SUBJECT: Mean Value Test for Lead in Topsoil	Prepared DES	Checked AJK
	Sheet No.	

The method uses the geometric mean rather than the arithmetic mean which is used for other contaminants.

Sample Log sample

results mg/kg

results

Calculations based on log results

89	1.949 TP1	Number of results : n	15
110	2.041 TP2	Mean : X =	2.014
220	2.342 TP3	Standard deviation : s	0.132
130	2.114 TP4	T value : t =	1.761
56	1.748 TP5	Corrected mean (95% confidence) =	
110	2.041 TP6	= X + t * s / n ^{0.5} =	2.074
110	2.041 TP7		

Final results

95	1.978 TP8		
120	2.079 TP9	Mean : X =	103 mg/kg
94	1.973 TP10		

88	1.944 TP11	Corrected mean (95% confidence) :	118.56 mg/kg
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76	1.881 TP12
-----------	------------

110	2.041 TP13
------------	------------

130	2.114 TP14
------------	------------

83	1.919 TP15
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PROJECT: Honeywell Lane, Barnsley	Job No. 38903	Date 02.12.15
SUBJECT: Arsenic Modified Mean - Topsoil	Prepared DES	Checked AJK

Sample results

		Log x = y
18.00	TP1	1.255
20.00	TP2	1.301
23.00	TP3	1.362
29.00	TP4	1.462
11.00	TP5	1.041
42.00	TP6	1.623
20.00	TP7	1.301
17.00	TP8	1.230
25.00	TP9	1.398
18.00	TP10	1.255
22.00	TP11	1.342
20.00	TP12	1.301
23.00	TP13	1.362
49.00	TP14	1.690
19.00	TP15	1.279

Number of results : n = 15
Mean : $\bar{X}$ = 23.73
Standard deviation : s = 9.79
T value : t = 1.761

Corrected mean (95% confidence)

$= \bar{X} + t * s / n^{0.5} = 28.19$

Max value = 49.00

log xm = ym = 1.690

Number of results : N = 15
Mean y = 1.347

Standard deviation of y 0.157

T = (ym-ya) / S = 2.186

Tcrit (fom table A1.3) = 2.245

Result probably not an outlier

PROJECT: Honeywell Lane, Barnsley	Job No. 38903	Date 02.12.15
SUBJECT: Benzo(a)pyrene Modified Mean - Topsoil	Prepared DES	Checked AJK

Sample results

		Log x = y
0.47	TP1	-0.328
0.31	TP2	-0.509
0.27	TP3	-0.569
0.47	TP4	-0.328
0.25	TP5	-0.602
0.41	TP6	-0.387
0.63	TP7	-0.201
0.42	TP8	-0.377
5.00	TP9	0.699
4.00	TP10	0.602
0.10	TP11	-1.000
0.10	TP12	-1.000
0.10	TP13	-1.000
0.10	TP14	-1.000
0.10	TP15	-1.000

Number of results : n = 15
Mean : X = 0.85
Standard deviation : s = 1.50
T value : t = 1.761

Corrected mean (95% confidence)

= X + t * s / n^0.5 = 1.53

Max value = 5.00

log xm = ym = 0.699

Number of results : N = 15
Mean y = -0.467

Standard deviation of y 0.540

T = (ym-ya) / S = 2.160

Tcrit (fom table A1.3) = 2.245

Result probably not an outlier

PROJECT: Honeywell Lane, Barnsley	Job No. 38903	Date 02.12.15
SUBJECT: Dibenz(a,h)anthracene Modified Mean - Topsoil	Prepared DES	Checked AJK

Sample results

		Log x = y
0.10	TP1	-1.000
0.10	TP2	-1.000
0.10	TP3	-1.000
0.10	TP4	-1.000
0.10	TP5	-1.000
0.10	TP6	-1.000
0.10	TP7	-1.000
0.10	TP8	-1.000
0.88	TP9	-0.056
0.58	TP10	-0.237
0.10	TP11	-1.000
0.10	TP12	-1.000
0.10	TP13	-1.000
0.10	TP14	-1.000
0.10	TP15	-1.000

Number of results : n = 15
Mean : X = 0.18
Standard deviation : s = 0.23
T value : t = 1.761

Corrected mean (95% confidence)

= X + t * s / n^{0.5} = 0.29

Max value = 0.88

log xm = ym = -0.056

Number of results : N = 15
Mean y = -0.886

Standard deviation of y 0.302

T = (ym-ya) / S = 2.747

Tcrit (fom table A1.3) = 2.245

Result probably an outlier

PROJECT: Honeywell Lane, Barnsley	Job No. 38903	Date 02.12.15
SUBJECT: Mercury Modified Mean - Topsoil	Prepared DES	Checked AJK

Sample results

Log x = y

0.24	TP1	-0.620
0.37	TP2	-0.432
0.64	TP3	-0.194
0.92	TP4	-0.036
0.15	TP5	-0.824
1.30	TP6	0.114
1.20	TP7	0.079
0.55	TP8	-0.260
0.34	TP9	-0.469
0.27	TP10	-0.569
0.27	TP11	-0.569
2.40	TP12	0.380
0.71	TP13	-0.149
0.61	TP14	-0.215
0.13	TP15	-0.886

Number of results : n = 15
Mean : X = 0.67
Standard deviation : s = 0.60
T value : t = 1.761

Corrected mean (95% confidence)

= X + t * s / n^{0.5} = 0.95

Max value = 2.40

log xm = ym = 0.380

Number of results : N = 15

Mean y = -0.310

Standard deviation of y 0.359

T = (ym-ya) / S = 1.925

Tcrit (fom table A1.3) = 2.245

Result probably not an outlier