

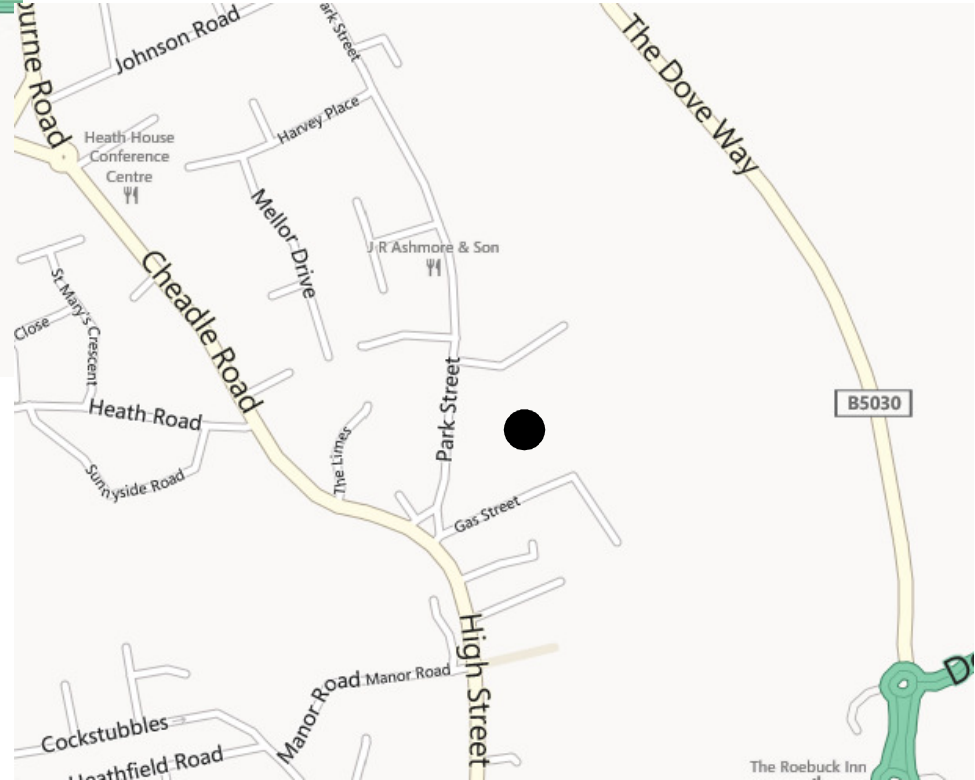
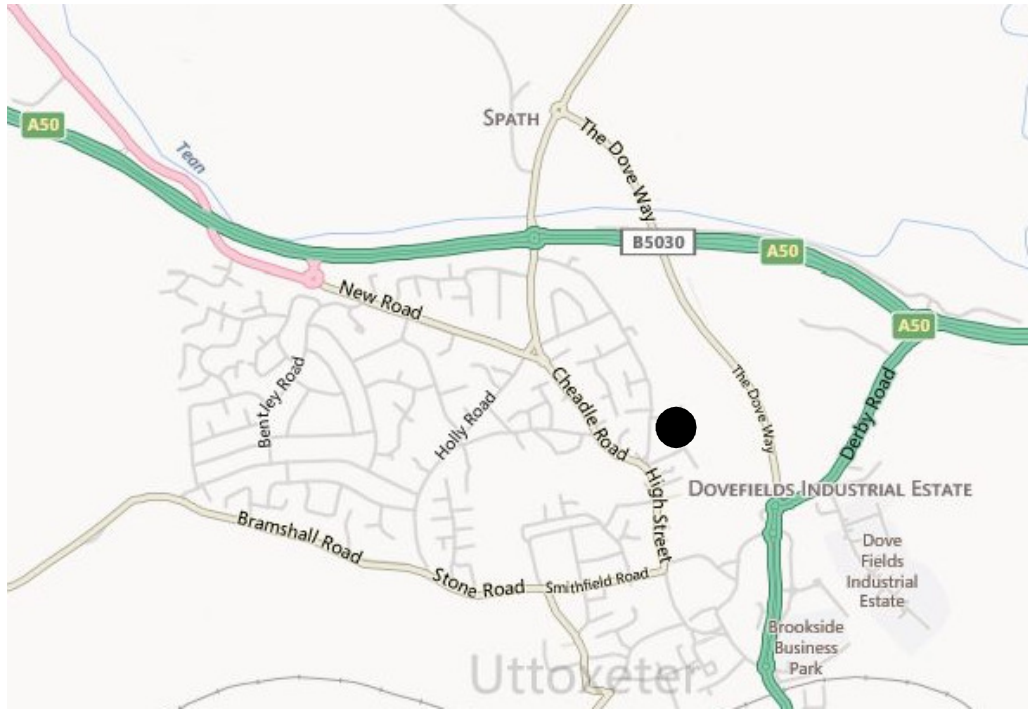
REMEDIATION METHOD STATEMENT

P/2014/01663

Received 07/01/15

APPENDIX A





KEY:

● Approximate Site Location



Scotland Farm, Ockbrook, Derby, DE72 3RX
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TITLE:

Site Location Plan

PROJECT:

Pennycroft Lane, Uttoxeter

PROJECT No:

IV.58.13

DATE:

11/2013

SCALE:

NTS

DRAWN:

RPS

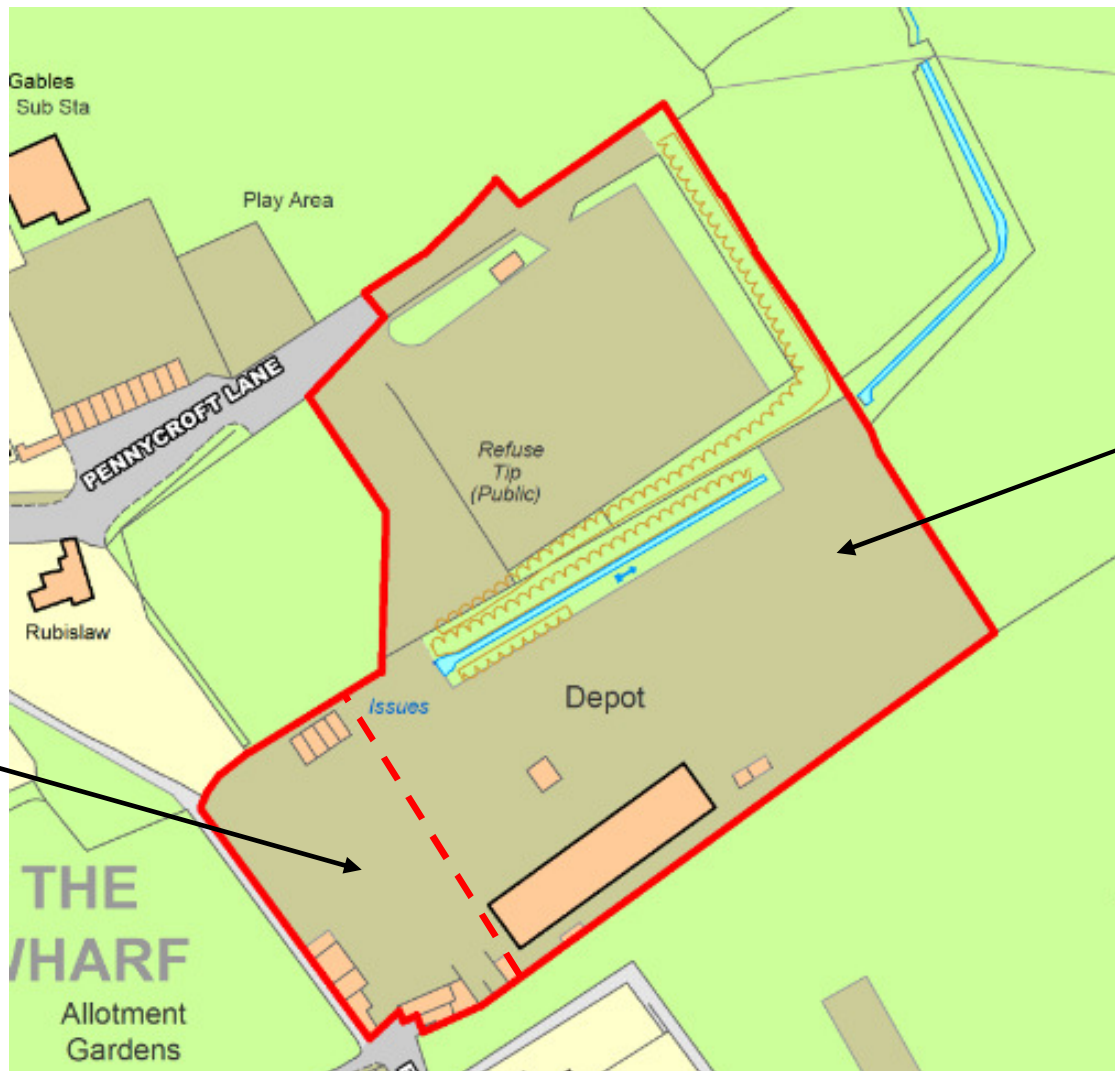
DWG No:

Figure 1

DO NOT SCALE

APPENDIX B






Additional Parcel
(Skip Yard)

Area B

KEY:

 Site Boundary

 Boundary between Phase B and additional parcel of land

DO NOT SCALE



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TITLE:

Site Layout

PROJECT:

Pennycroft Lane, Uttoxeter

PROJECT No:

IV.58.13

DATE:

11/2013

SCALE:

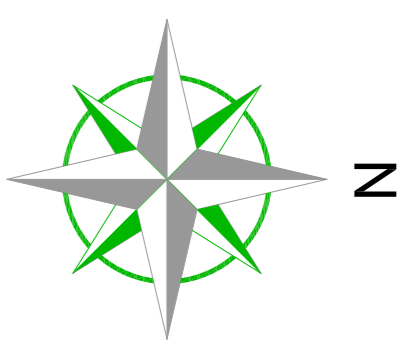
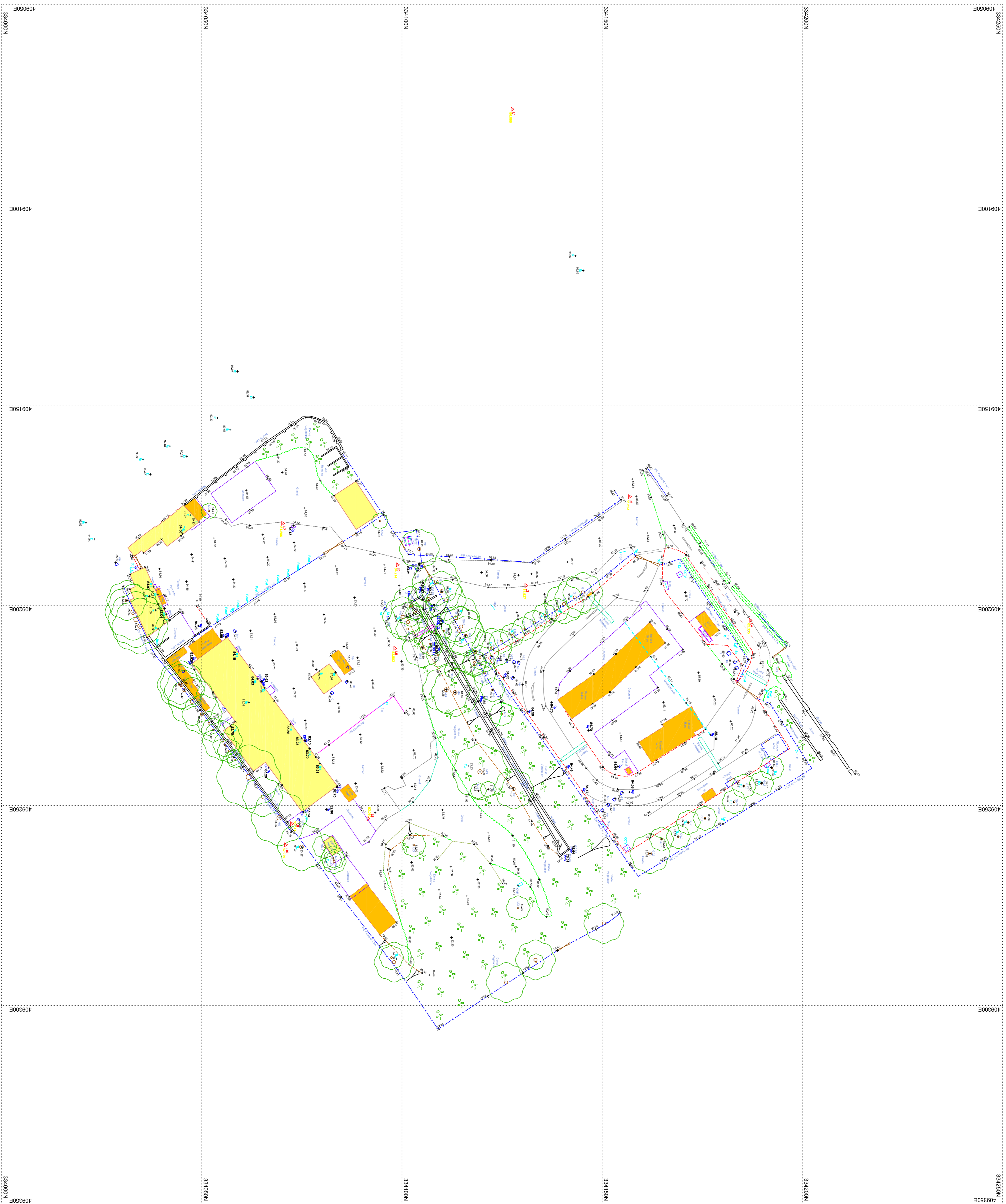
NTS

DRAWN:

RPS

DWG No:

Figure 2



Station Information:

Station	Easting (m)	Northing (m)	Level (m)
L1	408976.112	334272.517	85.088
L2	409172.861	334156.948	85.523
L3	409185.066	334130.976	84.837
L4	409203.751	334186.984	85.375
L5	409189.882	334098.652	84.214
L6	409210.780	334098.240	83.503
L7	409179.551	334070.219	84.206
L8	409253.297	334091.523	83.060
L9	409254.549	334072.444	83.311
L10	409259.810	334070.933	82.979

Note:
 The Client has instructed that the site to be surveyed shall be surveyed to the following specifications:
 The Client Survey shall be to the standard set out below only.
 OS Buildings (Grey) Surveyed Buildings (Yellow)
 OS Railways (Blue) Surveyed Railways (Blue)
 OS Water (Blue) Surveyed Water (Blue)
 OS Other (Green) Surveyed Other (Green)
 OS Fences (Black) Surveyed Fences (Black)
 OS Roads (Black) Surveyed Roads (Black)
 OS Power Lines (Black) Surveyed Power Lines (Black)
 OS Telegraph Lines (Black) Surveyed Telegraph Lines (Black)
 OS Gas Mains (Black) Surveyed Gas Mains (Black)
 OS Sewer Mains (Black) Surveyed Sewer Mains (Black)
 OS Drainage (Black) Surveyed Drainage (Black)
 OS Culverts (Black) Surveyed Culverts (Black)
 OS Ditches (Black) Surveyed Ditches (Black)
 OS Embankments (Black) Surveyed Embankments (Black)
 OS Bridges (Black) Surveyed Bridges (Black)
 OS Trenches (Black) Surveyed Trenches (Black)
 OS Wells (Black) Surveyed Wells (Black)
 OS Pits (Black) Surveyed Pits (Black)
 OS Tunnels (Black) Surveyed Tunnels (Black)
 OS Other (Black) Surveyed Other (Black)
 OS Unknown (Black) Surveyed Unknown (Black)

Legend:

Boundaries

OS Buildings (Grey)
OS Railways (Blue)
OS Water (Blue)
OS Other (Green)
OS Fences (Black)
OS Roads (Black)
OS Power Lines (Black)
OS Telegraph Lines (Black)
OS Gas Mains (Black)
OS Sewer Mains (Black)
OS Drainage (Black)
OS Culverts (Black)
OS Ditches (Black)
OS Embankments (Black)
OS Bridges (Black)
OS Trenches (Black)
OS Wells (Black)
OS Pits (Black)
OS Tunnels (Black)
OS Other (Black)
OS Unknown (Black)

greenhatch group
 Managed Building Surveys
 Topographical Surveys
 Site Signage
 3D Laser Scanning

Rowan House
 Durfield Road
 Little Edon
 Derby
 DE24 0JH
 Tel: (01332) 830044 Fax: (01332) 830055
www.greenhatchgroup.co.uk

CLIENT

EWE
 Associates Ltd
 PROJECT
 Pennycroft Lane,
 Uttoxeter
 ST14 7BW

TITLE
 Topographical
 Survey

SCALE	DATE	DRAWN	QUALITY REF
1:500	28.08.12	LP	GO794

Level datum
 OS (A.M.S. Vertical)

Grid orientation
 OS (A.M.S. Vertical)

Job Number
 17438

Drawing No.
 17438 OGL

Rev.
 0

Comments:
 This plan should only be used for its original purpose. Greenhatch Ltd accepts no responsibility for any errors or omissions on this plan other than those of the original client.
 All dimensions should be checked on site prior to construction (where applicable) has been checked against the original site plan.
 The client is advised to verify the accuracy of the information shown on this plan and to ensure that it is used for its intended purpose only.

DO NOT SCALE

APPENDIX C



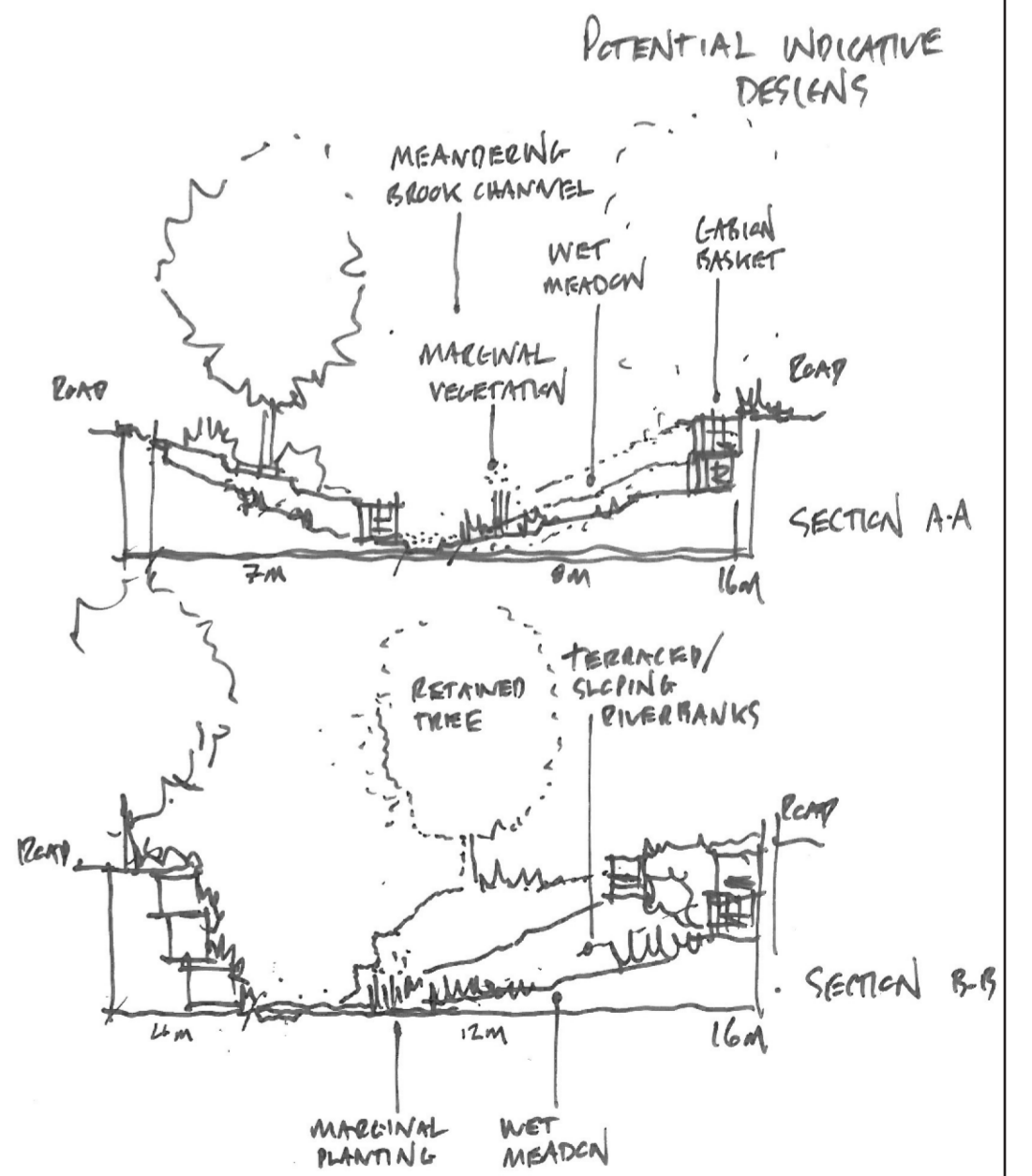
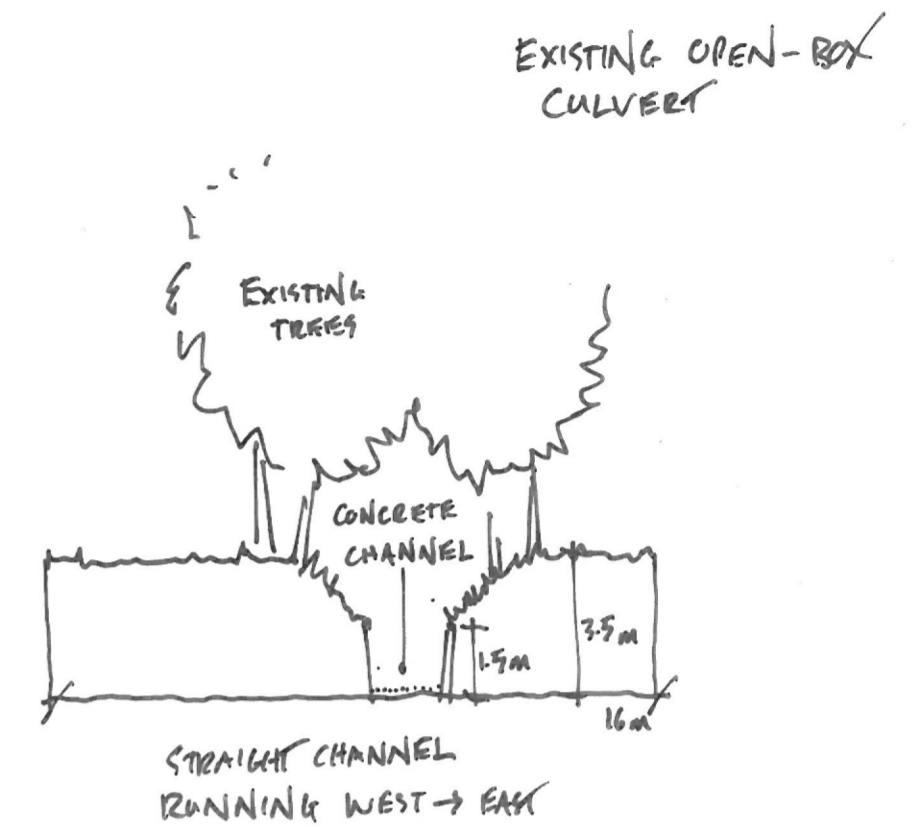


Site Layout
Scale 1:500

1. Brook emerges from underground culvert
2. Brook re-enters underground culvert

Schedule of Accommodation

Dwelling type	Plot Name	Beds	Quantity
2 bedroom Mews	2BM	2	2
2 bedroom house	2B	2	19
3 bedroom house	3B	3	23
4 bedroom house	4B	4	5
Total Units			49







Sections
Scale 1:200 (aprox)

APPENDIX D





KEY:

-  WS Borehole
-  Trial Pit
-  Approximate Location of Historical Gas Holder
-  2010 Exploratory Hole

DO NOT SCALE



Scotland Farm, Ockbrook, Derby, DE72 3RX
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TITLE:

2010 & 2013 Exploratory Hole Location Plan

PROJECT:

Pennycroft Lane, Uttoxeter

PROJECT No:

IV.58.13

DATE:

11/2013

SCALE:

NTS

DRAWN:

RPS

DWG No:

Figure 6

Project Title					The Dove Way, Uttoxeter		Hole Ref.		BH7	
Client					Clowes Securities & ESBC		Project No.		NTE285	
Plant used					Dando Rig		Start Date		End Date	
							07/07/2010		07/07/2010	
Groundwater		Depth (m)	Description of Strata	Level (mAOD)	Legend	Samples		In-situ Testing		
Strike	Well					Type	Depth From To	Depth (m) (SPT Type)	Result	
			MADE GROUND: Dense brick fill - Interpolated from Driller's description.			B	0.20	0.70		
						D	0.50			
		1.70	Medium dense grey and brown fine grained SAND and sub rounded to rounded quartz GRAVEL with occasional cobbles. (Fluvioglacial Deposits) - Interpolated from Driller's description	83.04		D	1.80		1.00 (C)	N=46 (12,12/10,11,12,13)
						B	2.00	2.50	2.00 (C)	N=25 (8,5/5,7,6)
									3.00 (C)	N=25 (6,6/7,6,6,6)
									4.00 (C)	N=30 (8,7/7,8,8,7)
			Stiff red brown clay.			B	4.50	5.00		
						D	4.60		5.00 (C)	N=26 (6,5/6,6,8,6)
									6.20 (S)	N=29 (5,7/8,7,7,7)
		7.20	Weak red brown MUDSTONE. (Mercia Mudstone Formation) - Interpolated from Driller's description.	77.54					7.20 (S)	50 (25/14,16,14,6 for 0mm)
						B	8.00	8.50		
		9.00	End of hole at 9.00 m	75.74					9.00 (S)	50 (25 for 10mm/32,18 for 30mm)

REMARKS

1. Groundwater encountered at approximately 6.2m bgl.
2. No visual or olfactory evidence of contamination.
3. Hole cased to 8.5m bgl.
4. Hole installed with 53mm HDPE Standpiepe with gas tap and raised cover. Response zone between 1.0m bgl and 8.5m bgl.
5. Hole position determined from the site topographical survey plan.
6. Hole level determined from an optical levelling survey.

SOIL SAMPLE TYPE D - 500g to 1kg Disturbed B - 5kg to 20kg Disturbed U - 100mm dia. Undisturbed J - 250ml Amber Glass Jar V - Glass Vial		IN-SITU TESTS SV - Hand Shear Vane HP - Hand Penetrometer N = SPT blows over 300mm S = Split Spoon Sampler C = Solid Cone PID - Photo Ionisation Detector (ppm)		GROUNDWATER ∇ Groundwater strike ▼ Standing groundwater level	
EASTING 409200.00	NORTHING 334125.00	GROUND LEVEL 84.74		 Environmental Division 3-4 Kayes Walk The Lace Market Nottingham NG1 1PY Tel : 0115 9241100 Fax : 0115 9503966	
LOGGED BY RTR	SCALE 1:50	SHEET Sheet 1 of 1			

Project Title					The Dove Way, Uttoxeter		Hole Ref.		BH8	
Client					Clowes Securities & ESBC		Project No.		NTE285	
Plant used					Dando Rig		Start Date		End Date	
							08/07/2010		08/07/2010	
Groundwater		Depth (m)	Description of Strata	Level (mAOD)	Legend	Samples		In-situ Testing		
Strike	Well					Type	Depth From To	Depth (m) (SPT Type)	Result	
		0.30	MADE GROUND: Brick fill - Interpolated from Driller's description.	83.01		B	0.50	1.00		
			MADE GROUND: Fill including frequent concrete boulders - Interpolated from Driller's description.			D				1.00 (C)
		2.30	Medium dense grey and brown fine grained SAND and sub rounded to rounded quartz GRAVEL with occasional cobbles. (Fluvioglacial Deposits) - Interpolated from Driller's description	81.01		B	3.00	3.50	3.00 (C)	N=29 (7,8/7,7,8)
						D				2.00 (C)
		4.10	Weak red brown MUDSTONE. (Mercia Mudstone Formation) - Interpolated from Driller's description.	79.21		B	5.00	5.50	5.00 (S)	50 (25/18,17,15 for 50mm)
						D		6.00		4.00 (C)
		6.50	End of hole at 6.50 m	76.81					6.50 (S)	50 (25/16,15,19 for 50mm)

REMARKS

- Groundwater encountered at approximately 4.1m bgl.
- Slight solvent odour noted between 0.3m bgl and 2.3m bgl.
- Hole cased to 5.0m bgl.
- Hole installed with 53mm HDPE Standpipe with gas tap and raised cover. Response zone between 1.0m bgl and 6.0m bgl.
- Hole position determined from the site topographical survey plan.
- Hole level determined from an optical levelling survey.

SOIL SAMPLE TYPE D - 500g to 1kg Disturbed B - 5kg to 20kg Disturbed U - 100mm dia. Undisturbed J - 250ml Amber Glass Jar V - Glass Vial		IN-SITU TESTS SV - Hand Shear Vane HP - Hand Penetrometer N = SPT blows over 300mm S = Split Spoon Sampler C = Solid Cone PID - Photo Ionisation Detector (ppm)		GROUNDWATER Groundwater strike Standing groundwater level	
EASTING 409258.00	NORTHING 334080.00	GROUND LEVEL 83.31			
LOGGED BY RTR	SCALE 1:50	SHEET Sheet 1 of 1			

BWB CONSULTING

Environmental Division
 3-4 Kayes Walk
 The Lace Market
 Nottingham
 NG1 1PY
 Tel : 0115 9241100
 Fax : 0115 9503966

Project Title					The Dove Way, Uttoxeter		Hole Ref.		BH9	
Client					Clowes Securities & ESBC		Project No.		NTE285	
Plant used					Dando Rig		Start Date		End Date	
							07/07/2010		08/07/2010	
Groundwater		Depth (m)	Description of Strata	Level (mAOD)	Legend	Samples		In-situ Testing		
Strike	Well					Type	Depth From To	Depth (m) (SPT Type)	Result	
		0.30	MADE GROUND: Fine to coarse angular road stone GRAVEL - Interpolated from Driller's description	80.87		B	0.50	1.00		
		0.50	MADE GROUND: Fine to coarse angular brick GRAVEL fill - Interpolated from Driller's description.	80.67		D			1.00 (C) N=1 (1,0/0,0,1,0)	
			Very soft to firm CLAY. (Alluvium) - Interpolated from Driller's description.						2.00 (C) N=10 (1,0/2,3,3,2)	
		2.20	Firm sandy gravelly CLAY. Gravel is rounded fine to coarse quartz. (Alluvium) - interpolated from Driller's description.	78.97		B	2.50	3.00		
						D			3.00 (C) N=16 (2,2/3,3,4,6)	
		3.30	Weak red brown MUDSTONE. (Mercia Mudstone Formation) - Interpolated from Driller's description.	77.87					3.50 (S) N=27 (7,6/7,7,6,7)	
						D	4.50	4.50 (S)	50 (10,10/13,13,12,12 for 50mm)	
		5.30	End of hole at 5.30 m	75.87		B	5.00	5.50		
									5.50 (S) 50 (25 for 60mm/17,14,14,5 for 0m)	

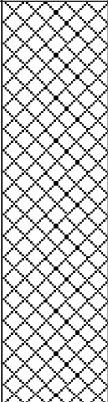
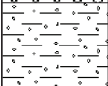

REMARKS




1. Groundwater encountered at approximately 3.3m bgl
2. No visual or olfactory evidence of contamination.
3. Hole cased to 4.5m bgl.
4. Hole installed with 53mm HDPE Standpiepe with gas tap and raised cover. Response zone between 1.0m bgl and 4.5m bgl.
5. Hole position determined from the site topographical survey plan.
6. Hole level determined from an optical levelling survey.

SOIL SAMPLE TYPE D - 500g to 1kg Disturbed B - 5kg to 20kg Disturbed U - 100mm dia. Undisturbed J - 250ml Amber Glass Jar V - Glass Vial		IN-SITU TESTS SV - Hand Shear Vane HP - Hand Penetrometer N = SPT blows over 300mm S = Split Spoon Sampler C = Solid Cone PID - Photo Ionisation Detector (ppm)		GROUNDWATER Groundwater strike Standing groundwater level	
EASTING 409274.00	NORTHING 334135.00	GROUND LEVEL 81.17		Environmental Division 3-4 Kayes Walk The Lace Market Nottingham NG1 1PY Tel : 0115 9241100 Fax : 0115 9503966	
LOGGED BY RTR	SCALE 1:50	SHEET Sheet 1 of 1			

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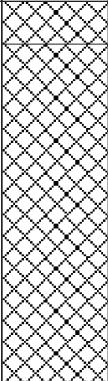

Environmental Division
3-4 Kayes Walk
The Lace Market
Nottingham
NG1 1PY
Tel : 0115 9241100
Fax : 0115 9503966

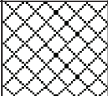
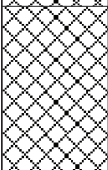
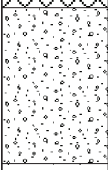

Project Title					The Dove Way, Uttoxeter		Hole Ref.		TP135	
Client					Clowes Securities & ESBC		Project No.		NTE285	
Plant used					JCB 3CX		Start Date		End Date	
							08/07/2010		08/07/2010	
Groundwater		Depth (m)	Description of Strata	Level (mAOD)	Legend	Samples		In-situ Testing		
Strike	Well					Type	Depth From To	Depth (m) (SPT Type)	Result	
			MADE GROUND: Dense vegetation and long grass over dark brown ashy sandy angular to rounded fine to coarse brick, asphalt, concrete, quartz and clinker GRAVEL with roots to 0.5m. Frequent cans, plastics, metal fragments and barbed wire.			DJV	0.90			
		2.90	Soft grey becoming red brown slightly gravelly CLAY. Gravel is rounded fine to coarse quartz. (Fluvioglacial Deposits)	80.30		DJV	3.10			
		3.50	<i>End of hole at 3.50 m</i>	79.70						

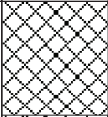
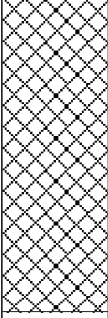

REMARKS 1. No groundwater encountered. 2. No visual or olfactory evidence of contamination. 3. Hole backfilled with arisings on completion. 4. Granular strata very unstable. 5. Hole terminated to hole instability. 6. Hole position and elevation determined from the site topographical survey plan.	SOIL SAMPLE TYPE D - 500g to 1kg Disturbed B - 5kg to 20kg Disturbed U - 100mm dia. Undisturbed J - 250ml Amber Glass Jar V - Glass Vial	IN-SITU TESTS SV - Hand Shear Vane HP - Hand Penetrometer N = SPT blows over 300mm S = Split Spoon Sampler C = Solid Cone PID - Photo Ionisation Detector (ppm)	GROUNDWATER  Groundwater strike  Standing groundwater level	 Environmental Division 3-4 Kayes Walk The Lace Market Nottingham NG1 1PY Tel : 0115 9241100 Fax : 0115 9503966
	EASTING 409294.00	NORTHING 334112.00	GROUND LEVEL 83.20	
	LOGGED BY RTR	SCALE 1:50	SHEET Sheet 1 of 1	

Project Title					The Dove Way, Uttoxeter		Hole Ref.		TP136	
Client					Clowes Securities & ESBC		Project No.		NTE285	
Plant used					JCB 3CX		Start Date		End Date	
							08/07/2010		08/07/2010	
Groundwater		Depth (m)	Description of Strata	Level (mAOD)	Legend	Samples		In-situ Testing		
Strike	Well					Type	Depth From To	Depth (m) (SPT Type)	Result	
		0.60	MADE GROUND: Vegetation over brown sandy angular to rounded fine to coarse limestone, brick and quartz GRAVEL.	81.80		DJV	0.50			
		1.90	MADE GROUND: Brown black sandy angular fine to medium clinker GRAVEL with occasional glass and wood.			DJV	1.00			
		1.90	Soft grey brown CLAY. (Alluvium)	80.50						
		3.00	Orange brown slightly sandy cobbly very gravelly CLAY. Gravel is rounded fine to coarse quartz. (Fluvioglacial Deposits)	79.40						
		3.40	End of hole at 3.40 m	79.00						

REMARKS 1. No groundwater encountered. 2. No visual or olfactory evidence of contamination. 3. Hole backfilled with arisings on completion. 4. Granular strata very unstable. 5. Hole terminated to hole instability. 6. Hole position and elevation determined from the site topographical survey plan.	SOIL SAMPLE TYPE D - 500g to 1kg Disturbed B - 5kg to 20kg Disturbed U - 100mm dia. Undisturbed J - 250ml Amber Glass Jar V - Glass Vial	IN-SITU TESTS SV - Hand Shear Vane HP - Hand Penetrometer N = SPT blows over 300mm S = Split Spoon Sampler C = Solid Cone PID - Photo Ionisation Detector (ppm)	GROUNDWATER Groundwater strike Standing groundwater level	 Environmental Division 3-4 Kayes Walk The Lace Market Nottingham NG1 1PY Tel : 0115 9241100 Fax : 0115 9503966
	EASTING 409264.00	NORTHING 334099.00	GROUND LEVEL 82.40	
	LOGGED BY RTR	SCALE 1:50	SHEET Sheet 1 of 1	

Project Title The Dove Way, Uttoxeter					Hole Ref. TP137				
Client Clowes Securities & ESBC					Project No. NTE285				
Plant used JCB 3CX					Start Date 08/07/2010	End Date 08/07/2010			
Groundwater		Depth (m)	Description of Strata	Level (mAOD)	Legend	Samples		In-situ Testing	
Strike	Well					Type	Depth From To	Depth (m) (SPT Type)	Result
		0.30	MADE GROUND: Grass and vegetation over light grey brown sandy sub angular to angular fine to coarse limestone GRAVEL.	83.20		DJV	0.70		
			MADE GROUND: Brown grey gravelly cobbly fine to coarse grained SAND with ash and clinker in a matrix with occasional very soft blue grey silty clay (blue Billy). Gravel is angular fine to coarse brick, limestone, slag and concrete including large boulder sized slabs. Slight solvent like odour noted.			DJV	2.00		
		2.69 2.70	MADE GROUND: Concrete slab. <i>End of hole at 2.70 m</i>	80.81 80.80					
REMARKS			SOIL SAMPLE TYPE		IN-SITU TESTS		GROUNDWATER		
1. No groundwater encountered. 2. Slight solvent odours and blue billy noted throughout. 3. Hole backfilled with arisings on completion. 4. Granular strata very unstable. 5. Hole terminated to hole instability. 6. Hole position and elevation determined from the site topographical survey plan.			D - 500g to 1kg Disturbed B - 5kg to 20kg Disturbed U - 100mm dia. Undisturbed J - 250ml Amber Glass Jar V - Glass Vial		SV - Hand Shear Vane HP - Hand Penetrometer N = SPT blows over 300mm S = Split Spoon Sampler C = Solid Cone PID - Photo Ionisation Detector (ppm)		☒ Groundwater strike ▼ Standing groundwater level		
			EASTING	NORTHING	GROUND LEVEL				
			409234.00	334114.00	83.50				
LOGGED BY	SCALE	SHEET							
RTR	1:50	Sheet 1 of 1							
					 Environmental Division 3-4 Kayes Walk The Lace Market Nottingham NG1 1PY Tel : 0115 9241100 Fax : 0115 9503966				

Project Title The Dove Way, Uttoxeter					Hole Ref. WS1				
Client Clowes Securities & ESBC					Project No. NTE285				
Plant used GeoTool Window Sampler					Start Date 07/07/2010		End Date 07/07/2010		
Groundwater		Depth (m)	Description of Strata	Level (mAOD)	Legend	Samples		In-situ Testing	
Strike	Well					Type	Depth From	To	Depth (m) (SPT Type)
		0.70	MADE GROUND: Grass over brown slightly clayey gravelly SAND including fragments of plastic and glass. Gravel is angular to rounded fine to medium brick and quartz.	85.30		DJV	0.10	0.70	
		1.90	MADE GROUND: Firm to stiff brown slightly sandy gravelly CLAY. Gravel is angular to rounded fine to medium coal, sandstone and quartz.	84.10		DJV	1.20	1.60	
		3.00	Grey and brown fine to coarse grained SAND and sub rounded to rounded quartz GRAVEL with occasional cobbles. (Fluvioglacial Deposits)	83.00					
			<i>End of hole at 3.00 m</i>						
REMARKS			SOIL SAMPLE TYPE		IN-SITU TESTS		GROUNDWATER		
1. No groundwater encountered. 2. No visual or olfactory evidence of contamination. 3. Hole backfilled with arisings on completion. 4. Hole position and elevation determined from the site topographical survey plan.			D - 500g to 1kg Disturbed B - 5kg to 20kg Disturbed U - 100mm dia. Undisturbed J - 250ml Amber Glass Jar V - Glass Vial		SV - Hand Shear Vane HP - Hand Penetrometer N = SPT blows over 300mm S = Split Spoon Sampler C = Solid Cone PID - Photo Ionisation Detector (ppm)		☒ Groundwater strike ▼ Standing groundwater level		
			EASTING	NORTHING	GROUND LEVEL		 Environmental Division 3-4 Kayes Walk The Lace Market Nottingham NG1 1PY Tel : 0115 9241100 Fax : 0115 9503966		
			409202.00	334174.00	86.00				
			LOGGED BY	SCALE	SHEET				
			RTR	1:50	Sheet 1 of 1				

Project Title The Dove Way, Uttoxeter					Hole Ref. WS2							
Client Clowes Securities & ESBC					Project No. NTE285							
Plant used GeoTool Window Sampler					Start Date 07/07/2010			End Date 07/07/2010				
Groundwater		Depth (m)	Description of Strata	Level (mAOD)	Legend	Samples		In-situ Testing				
Strike	Well					Type	Depth From	To	Depth (m) (SPT Type)	Result		
		0.80	MADE GROUND: Grass over brown slightly clayey gravelly SAND including fragments of glass. Gravel is angular to rounded fine to medium brick, concrete and quartz.	85.20		DJV	0.10	0.80				
			MADE GROUND: Firm locally soft brown slightly sandy gravelly CLAY. Gravel is angular to rounded fine to coarse brick and quartz. No recovery			DJV	1.10	1.50				
		3.00	End of hole at 3.00 m	83.00								
REMARKS			SOIL SAMPLE TYPE			IN-SITU TESTS			GROUNDWATER			
1. No groundwater encountered. 2. No visual or olfactory evidence of contamination. 3. Hole backfilled with arisings on completion. 4. Hole position and elevation determined from the site topographical survey plan.			D - 500g to 1kg Disturbed B - 5kg to 20kg Disturbed U - 100mm dia. Undisturbed J - 250ml Amber Glass Jar V - Glass Vial			SV - Hand Shear Vane HP - Hand Penetrometer N = SPT blows over 300mm S = Split Spoon Sampler C = Solid Cone PID - Photo Ionisation Detector (ppm)			☒ Groundwater strike ▼ Standing groundwater level			
			EASTING 409250.00		NORTHING 334180.00		GROUND LEVEL 86.00			 Environmental Division 3-4 Kayes Walk The Lace Market Nottingham NG1 1PY Tel : 0115 9241100 Fax : 0115 9503966		
			LOGGED BY RTR		SCALE 1:50		SHEET Sheet 1 of 1					

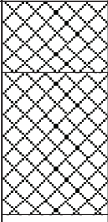



Project Title					The Dove Way, Uttoxeter		Hole Ref.		WS3	
Client					Clowes Securities & ESBC		Project No.		NTE285	
Plant used					GeoTool Window Sampler		Start Date		End Date	
							07/07/2010		07/07/2010	
Groundwater		Depth (m)	Description of Strata	Level (mAOD)	Legend	Samples		In-situ Testing		
Strike	Well					Type	Depth From	To	Depth (m) (SPT Type)	Result
		0.05	MADE GROUND: Asphalt.	85.95		DJV	0.10	0.90		
		0.90	MADE GROUND: Brown and grey sandy angular fine to coarse concrete and brick GRAVEL.	85.10						
		1.10	MADE GROUND: Dark brown and grey gravelly fine to coarse grained SAND. Gravel is angular to rounded fine to coarse quartz and concrete with asphalt fragments.	84.90		DJV	1.20	2.00		
			MADE GROUND: Firm brown sandy gravelly CLAY. Gravel is angular to rounded fine to medium brick and quartz.							
		2.70	Stiff red brown CLAY. (Mercia Mudstone Formation)	83.30						
		3.00	End of hole at 3.00 m	83.00						

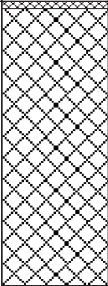

REMARKS
1. No groundwater encountered.
2. No visual or olfactory evidence of contamination.
3. Hole backfilled with arisings on completion.
4. Hole position and elevation determined from the site topographical survey plan.

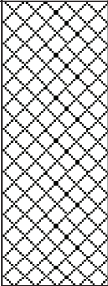
SOIL SAMPLE TYPE D - 500g to 1kg Disturbed B - 5kg to 20kg Disturbed U - 100mm dia. Undisturbed J - 250ml Amber Glass Jar V - Glass Vial		IN-SITU TESTS SV - Hand Shear Vane HP - Hand Penetrometer N = SPT blows over 300mm S = Split Spoon Sampler C = Solid Cone PID - Photo Ionisation Detector (ppm)		GROUNDWATER Groundwater strike Standing groundwater level	
EASTING 409226.00	NORTHING 334151.00	GROUND LEVEL 86.00			
LOGGED BY RTR	SCALE 1:50	SHEET Sheet 1 of 1			




BWB CONSULTING

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Project Title The Dove Way, Uttoxeter					Hole Ref. WS4				
Client Clowes Securities & ESBC					Project No. NTE285				
Plant used GeoTool Window Sampler					Start Date 07/07/2010			End Date 07/07/2010	
Groundwater		Depth (m)	Description of Strata	Level (mAOD)	Legend	Samples		In-situ Testing	
Strike	Well					Type	Depth From To	Depth (m) (SPT Type)	Result
		0.50	MADE GROUND: Short grass and moss over dark brown sandy angular to rounded fine to coarse concrete, limestone and clinker GRAVEL with ash.	84.50		DJV	0.10	0.50	
		1.50	MADE GROUND: Soft to firm brown sandy gravelly CLAY. Gravel is angular to rounded fine to coarse slag and quartz. Slight hydrocarbon odour noted.	83.50		DJV	1.00	1.50	
		2.00	Soft to firm red brown CLAY. (Mercia Mudstone Formation)	83.00					
			<i>End of hole at 2.00 m</i>						
REMARKS			SOIL SAMPLE TYPE		IN-SITU TESTS		GROUNDWATER		
1. No groundwater encountered.			D - 500g to 1kg Disturbed		SV - Hand Shear Vane		☒ Groundwater strike		
2. Slight hydrocarbon odour noted between 0.5m bgl and 1.5m bgl.			B - 5kg to 20kg Disturbed		HP - Hand Penetrometer		▼ Standing groundwater level		
3. Hole backfilled with arisings on completion.			U - 100mm dia. Undisturbed		N = SPT blows over 300mm				
4. Hole position and elevation determined from the site topographical survey plan.			J - 250ml Amber Glass Jar		S = Split Spoon Sampler				
			V - Glass Vial		C = Solid Cone				
			PID - Photo Ionisation Detector (ppm)						
EASTING		NORTHING	GROUND LEVEL		 Environmental Division 3-4 Kayes Walk The Lace Market Nottingham NG1 1PY Tel : 0115 9241100 Fax : 0115 9503966				
409199.00		334064.00	85.00						
LOGGED BY		SCALE	SHEET						
RTR		1:50	Sheet 1 of 1						

Project Title The Dove Way, Uttoxeter					Hole Ref. WS5				
Client Clowes Securities & ESBC					Project No. NTE285				
Plant used GeoTool Window Sampler					Start Date 07/07/2010			End Date 07/07/2010	
Groundwater		Depth (m)	Description of Strata	Level (mAOD)	Legend	Samples		In-situ Testing	
Strike	Well					Type	Depth From	To	Depth (m) (SPT Type)
		0.05	MADE GROUND: Asphalt.	84.45		DJV	0.10	1.00	
		2.00	MADE GROUND: Dark brown clayey sandy angular to rounded fine to coarse brick, slag and quartz	82.50		<i>End of hole at 2.00 m</i>			
REMARKS			SOIL SAMPLE TYPE		IN-SITU TESTS		GROUNDWATER		
1. No groundwater encountered. 2. No visual or olfactory evidence of contamination. 3. Hole backfilled with arisings on completion. 4. Hole position and elevation determined from the site topographical survey plan.			D - 500g to 1kg Disturbed B - 5kg to 20kg Disturbed U - 100mm dia. Undisturbed J - 250ml Amber Glass Jar V - Glass Vial		SV - Hand Shear Vane HP - Hand Penetrometer N = SPT blows over 300mm S = Split Spoon Sampler C = Solid Cone PID - Photo Ionisation Detector (ppm)		☒ Groundwater strike ▼ Standing groundwater level		
			EASTING	NORTHING	GROUND LEVEL		 Environmental Division 3-4 Kayes Walk The Lace Market Nottingham NG1 1PY Tel : 0115 9241100 Fax : 0115 9503966		
			409223.00	334095.00	84.50				
			LOGGED BY	SCALE	SHEET				
			RTR	1:50	Sheet 1 of 1				

Project Title					The Dove Way, Uttoxeter		Hole Ref.		WS6	
Client					Clowes Securities & ESBC		Project No.		NTE285	
Plant used					GeoTool Window Sampler		Start Date		End Date	
					07/07/2010		07/07/2010			
Groundwater		Depth (m)	Description of Strata	Level (mAOD)	Legend	Samples		In-situ Testing		
Strike	Well					Type	Depth From	To	Depth (m) (SPT Type)	Result
			MADE GROUND: Short grass and moss over dark brown and dark grey sandy angular to rounded fine to coarse quartz, brick, slag and clinker GRAVEL with ash.			DJV	0.30	1.00		
		2.00	End of hole at 2.00 m	81.50						

REMARKS 1. No groundwater encountered. 2. No visual or olfactory evidence of contamination. 3. Hole backfilled with arisings on completion. 4. Hole position and elevation determined from the site topographical survey plan.	SOIL SAMPLE TYPE D - 500g to 1kg Disturbed B - 5kg to 20kg Disturbed U - 100mm dia. Undisturbed J - 250ml Amber Glass Jar V - Glass Vial	IN-SITU TESTS SV - Hand Shear Vane HP - Hand Penetrometer N = SPT blows over 300mm S = Split Spoon Sampler C = Solid Cone PID - Photo Ionisation Detector (ppm)	GROUNDWATER  Groundwater strike  Standing groundwater level	 Environmental Division 3-4 Kayes Walk The Lace Market Nottingham NG1 1PY Tel : 0115 9241100 Fax : 0115 9503966
	EASTING 409262.00	NORTHING 334088.00	GROUND LEVEL 83.50	
	LOGGED BY RTR	SCALE 1:50	SHEET Sheet 1 of 1	

Project Title The Dove Way, Uttoxeter					Hole Ref. WS7				
Client Clowes Securities & ESBC					Project No. NTE285				
Plant used GeoTool Window Sampler					Start Date 07/07/2010		End Date 07/07/2010		
Groundwater		Depth (m)	Description of Strata	Level (mAOD)	Legend	Samples		In-situ Testing	
Strike	Well					Type	Depth From	To	Depth (m) (SPT Type)
		0.05	MADE GROUND: Asphalt.	84.85		DJV	1.60	2.00	
		0.40	MADE GROUND: BROWN sandy angular to sub angular fine to coarse granite and concrete GRAVEL.	84.50					
			MADE GROUND: Red brown sandy angular fine to coarse brick GRAVEL.						
		1.60	MADE GROUND: Brown clayey angular fine to coarse quartz GRAVEL.	83.30					
		2.00	End of hole at 2.00 m	82.90					

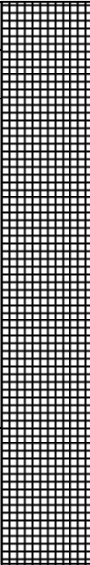

REMARKS
1. No groundwater encountered.
2. No visual or olfactory evidence of contamination.
3. Hole backfilled with arisings on completion.
4. Hole position and elevation determined from the site topographical survey plan.

SOIL SAMPLE TYPE D - 500g to 1kg Disturbed B - 5kg to 20kg Disturbed U - 100mm dia. Undisturbed J - 250ml Amber Glass Jar V - Glass Vial		IN-SITU TESTS SV - Hand Shear Vane HP - Hand Penetrometer N = SPT blows over 300mm S = Split Spoon Sampler C = Solid Cone PID - Photo Ionisation Detector (ppm)		GROUNDWATER ☒ Groundwater strike ▼ Standing groundwater level	
EASTING 409234.00	NORTHING 334114.00	GROUND LEVEL 84.90			
LOGGED BY RTR	SCALE 1:50	SHEET Sheet 1 of 1			

BWB CONSULTING

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Project No:	IV.58.13	Method:	Trial Pit Excavation	Co-ordinates:	N/R
Site:	Pennycroft, Uttoxeter	Plant:	JCB 3CX	Ground Level:	N/R
Client:	East Staffs BC			Start Date:	08.10.13
				Finish Date:	08.10.13

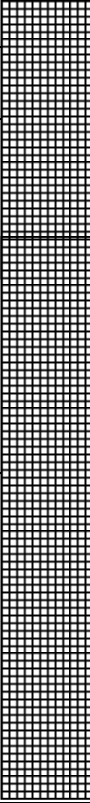
Description of Strata	Depth (m)	Sampling Type & Depth (m)		Legend	U100 / N Value Field / Lab. Testing
MADE GROUND: Roadstone with gravel of brick and tarmac planings.	0.2				
MADE GROUND: whole bricks and concrete.	0.4				
MADE GROUND: Dark brown, sandy fine to coarse GRAVEL of concrete, brick, clinker, coal and brick cobbles. Strong tar odour.	1.0	D/J	1.0		
	1.4	D/J	1.4		
Brickwork obstruction @ 1.4mbgl. Trial pit extended into trench in southerly direction.					
2.0 – 7.0 metres along trench. MADE GROUND: Black, clayey, sandy fine to coarse GRAVEL of ash-clinker, brick, sandstone and limestone. Tar stained and strong odour.	0.4 – 1.4				
Soft reddish brown very sandy CLAY. Slight tar stain and odour noted throughout.	1.6				
Trial Trench terminated at 1.0mbgl & 7m in length					

Key:	Bulk (Bulk Bag)	D. Disturbed	V. 40ml Glass Vial
	W. Water	G. Amber Glass Jar / Bottle	N. 'N' value
	PID. Photo Ionisation Detector (ppm)	T. Plastic Tub	HP. Hand Penetrometer

Contamination Observations During Excavation		PID Monitoring		
Depth Observed	Made ground and perched water within the gas holder contaminated with tar residues.	Depth: PPM:	Depth: PPM:	Depth: PPM:
Seepage at 1.4m along trench				

NOTES:	
Services:	Prior to excavation, the trial pit location was scanned with a Cable Avoidance Tool (CAT).
Backfill:	The trial pit was backfilled on completion with arisings and levelled to existing ground level.
N/R - Not Required All depths in metres below ground level;	N/A - Not Applicable Logged By: RS Approved By: RPS

Project No:	IV.58.13	Method:	Trial Pit Excavation	Co-ordinates:	N/R
Site:	Pennycroft, Uttoxeter	Plant:	JCB 3CX	Ground Level:	N/R
Client:	East Staffs BC			Start Date:	08.10.13
				Finish Date:	08.10.13

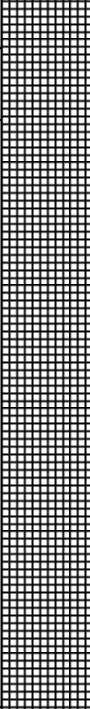
Description of Strata	Depth (m)	Sampling Type & Depth (m)		Legend	U100 / N Value Field / Lab. Testing
MADE GROUND: Roadstone with gravel of brick and tarmac planings.	0.2				
MADE GROUND: whole bricks and concrete.	0.5				
MADE GROUND: Black, clayey, sandy fine to coarse GRAVEL of ash-clinker, brick, sandstone and limestone. Tar stained and strong odour.	1.4				
Trial pit extended into trench at right angles to TPA in westerly direction.					
2.0 – 4.0 metres along trench. MADE GROUND: Black, clayey, sandy fine to coarse GRAVEL of ash-clinker, brick, sandstone and limestone. Tar stained and strong odour	1.4	D/J	1.4 @ 3.0m		
Heavy perched water ingress at 2.2m, filled trench to 1.6mbgl.	2.5				
Trial Trench terminated at 1.0 – 2.5mbgl & 4m in length					

Key:	Bulk (Bulk Bag) W. Water PID. Photo Ionisation Detector (ppm)	D. Disturbed G. Amber Glass Jar / Bottle T. Plastic Tub	V. 40ml Glass Vial N. 'N' value HP. Hand Penetrometer
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Contamination Observations During Excavation		PID Monitoring		
Depth Observed	Observations	Depth: PPM:	Depth: PPM:	Depth: PPM:
Seepage at 1.4 at start of trench. Heavy flow at 4m along trench at 2.2mbgl.	Made ground and perched water within the gas holder contaminated with tar residues.			

NOTES:	
Services:	Prior to excavation, the trial pit location was scanned with a Cable Avoidance Tool (CAT).
Backfill:	The trial pit was backfilled on completion with arisings and levelled to existing ground level.
N/R - Not Required All depths in metres below ground level;	N/A - Not Applicable Logged By: RS Approved By: RPS

Project No:	IV.58.13	Method:	Trial Pit Excavation	Co-ordinates:	N/R
Site:	Pennycroft, Uttoxeter	Plant:	JCB 3CX	Ground Level:	N/R
Client:	East Staffs BC			Start Date:	08.10.13
				Finish Date:	08.10.13

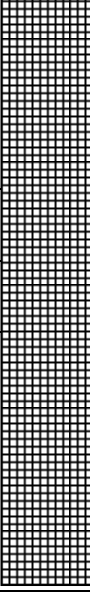


Description of Strata	Depth (m)	Sampling Type & Depth (m)		Legend	U100 / N Value Field / Lab. Testing
MADE GROUND: Roadstone with gravel of brick and tarmac planings.	0.2				
MADE GROUND: whole bricks and concrete.	0.6				
MADE GROUND: Black ashy, gravelly fill of brick, concrete and wood with strong tar odour		D/J	1.0		
Trial pit extended to the east by 5m. Brick wall encountered at 4.5m along trench. Red brown soft sandy CLAY, with slight tar odour noted beyond wall.	2.9	D/J	2.6 @ 5m		
Trial trench terminated at 2.9mbgl and 5m length					

Key:	Bulk (Bulk Bag)	D. Disturbed	V. 40ml Glass Vial
	W. Water	G. Amber Glass Jar / Bottle	N. 'N' value
	PID. Photo Ionisation Detector (ppm)	T. Plastic Tub	HP. Hand Penetrometer

Contamination Observations During Excavation		PID Monitoring		
Depth Observed	Made ground and perched water within the gas holder contaminated with tar residues.	Depth: PPM:	Depth: PPM:	Depth: PPM:
Water ingress at 2.1m				

NOTES:	
Services:	Prior to excavation, the trial pit location was scanned with a Cable Avoidance Tool (CAT).
Backfill:	The trial pit was backfilled on completion with arisings and levelled to existing ground level.
N/R - Not Required	N/A - Not Applicable
All depths in metres below ground level;	Logged By: RPS Approved By: RPS

Project No:	IV.58.13	Method:	Trial Pit Excavation	Co-ordinates:	N/R
Site:	Pennycroft, Uttoxeter	Plant:	JCB 3CX	Ground Level:	N/R
Client:	East Staffs BC			Start Date:	08.10.13
				Finish Date:	08.10.13

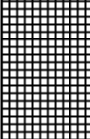
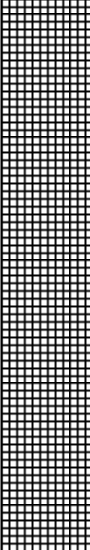


Description of Strata	Depth (m)	Sampling Type & Depth (m)		Legend	U100 / N Value Field / Lab. Testing
		Type	Depth (m)		
MADE GROUND: Brown slightly clayey sand with fill of bricks and waste including plastic, polythene, carpet, road cones, kerbstones, rope etc. Above ground tipping.	+2.0m GL	D/J	+1.0		
MADE GROUND: Tarmac.	0.3				
MADE GROUND: Roadstone with gravel of brick and tarmac planings.	0.6				
MADE GROUND: Sandy clay with gravel of brick, pottery, plastic and asbestos fragments.	1.75				
Grey/black sandy gravelly CLAY with slight tar odour	2.0	D/J	1.8		
Black sandy gravelly soft CLAY	3.0				
Brown slightly clayey sand with much gravel	3.2	D/J	3.2		
Trial Pit terminated at 3.2mbgl					

Key:	Bulk (Bulk Bag)	D. Disturbed	V. 40ml Glass Vial
	W. Water	G. Amber Glass Jar / Bottle	N. 'N' value
	PID. Photo Ionisation Detector (ppm)	T. Plastic Tub	HP. Hand Penetrometer

Contamination Observations During Excavation		PID Monitoring			
Depth Observed	2m high waste spoil at surface. Tarmac underlain by sandy fill to 1.75mbgl. Tar stained clays to 3.0mbgl	Depth: PPM:	Depth: PPM:	Depth: PPM:	
Seepage at 2.0m and strata noted to be damp to base of trial pit.					

NOTES:	
Services:	Prior to excavation, the trial pit location was scanned with a Cable Avoidance Tool (CAT).
Backfill:	The trial pit was backfilled on completion with arisings and levelled to existing ground level. Trial pit stable.
N/R - Not Required	N/A - Not Applicable
All depths in metres below ground level;	Logged By: RPS Approved By: RPS

Project No:	IV.58.13	Method:	Trial Pit Excavation	Co-ordinates:	N/R
Site:	Pennycroft, Uttoxeter	Plant:	JCB 3CX	Ground Level:	N/R
Client:	East Staffs BC			Start Date:	08.10.13
				Finish Date:	08.10.13


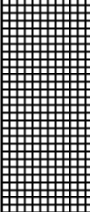

Description of Strata	Depth (m)	Sampling Type & Depth (m)		Legend	U100 / N Value Field / Lab. Testing
MADE GROUND: Fire residues at surface – ash, burnt wood. Black/brown ash with clinker, brick, and roadstone	0.7	D/J	0.4		
MADE GROUND: Black/brown Ash/clinker with sulphurous odour.	2.9	D/J	07.-1.6		
Dark brown stiff slightly sandy CLAY	3.2				
Brown slightly clayey sand with much gravel	3.4				
Trial Pit terminated at 3.4mbgl					

Key:	Bulk (Bulk Bag)	D. Disturbed	V. 40ml Glass Vial
	W. Water	G. Amber Glass Jar / Bottle	N. 'N' value
	PID. Photo Ionisation Detector (ppm)	T. Plastic Tub	HP. Hand Penetrometer

Contamination Observations During Excavation		PID Monitoring		
Depth Observed	Made ground including ash and clinker to 2.9mbg.	Depth: PPM:	Depth: PPM:	Depth: PPM:
Damp from 3.0m.				

NOTES:	
Services:	Prior to excavation, the trial pit location was scanned with a Cable Avoidance Tool (CAT).
Backfill:	The trial pit was backfilled on completion with arisings and levelled to existing ground level. Partial collapse at 3.0m and below.
N/R - Not Required All depths in metres below ground level;	N/A - Not Applicable Logged By: RPS Approved By: RPS

Project No:	IV.58.13	Method:	Trial Pit Excavation	Co-ordinates:	N/R
Site:	Pennycroft, Uttoxeter	Plant:	JCB 3CX	Ground Level:	N/R
Client:	East Staffs BC			Start Date:	08.10.13
				Finish Date:	08.10.13

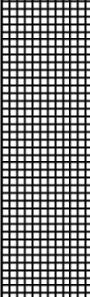
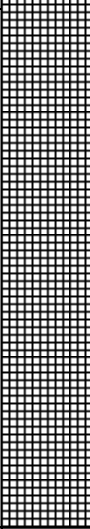

Description of Strata	Depth (m)	Sampling Type & Depth (m)		Legend	U100 / N Value Field / Lab. Testing
MADE GROUND: Red brown roadstone	0.2				
MADE GROUND: Clayey sand with brick, plastic, tiles/pottery and concrete gravel of brick and tarmac planings.	1.7	D/J	1.0		
Brown/yellow slightly clayey sand and gravel with slight tar odour. Damp from 2.5m	3.2	D/J	3.2		
Trial Pit terminated at 3.2mbgl					

Key:	Bulk (Bulk Bag) W. Water PID. Photo Ionisation Detector (ppm)	D. Disturbed G. Amber Glass Jar / Bottle T. Plastic Tub	V. 40ml Glass Vial N. 'N' value HP. Hand Penetrometer
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Contamination Observations During Excavation		PID Monitoring		
Depth Observed	Made ground to 1.7mbgl. Slight tar odour in sand and gravel from 1.7-3.2mbgl. Damp from 2.5m.	Depth: PPM:	Depth: PPM:	Depth: PPM:

NOTES:	
Services:	Prior to excavation, the trial pit location was scanned with a Cable Avoidance Tool (CAT).
Backfill:	The trial pit was backfilled on completion with arisings and levelled to existing ground level. Trial pit stable.
N/R - Not Required All depths in metres below ground level;	N/A - Not Applicable Logged By: RPS Approved By: RPS

Project No:	IV.58.13	Method:	Trial Pit Excavation	Co-ordinates:	N/R
Site:	Pennycroft, Uttoxeter	Plant:	JCB 3CX	Ground Level:	N/R
Client:	East Staffs BC			Start Date:	08.10.13
				Finish Date:	08.10.13


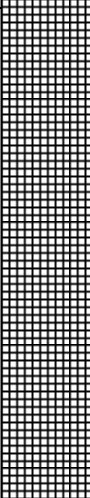
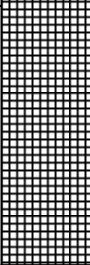

Description of Strata	Depth (m)	Sampling Type & Depth (m)		Legend	U100 / N Value Field / Lab. Testing
MADE GROUND: Slightly clayey sand with gravel of brick and concrete.	0.5	D/J	0.5		
	1.4				
MADE GROUND: Slightly clayey silty sand with waste including brick, plastic, concrete, kerbstones, glass, re-bar and polythene.	3.2	D/J	3.2		
	3.5	D/J	3.4		
Orange brown clayey sand and gravel					
Trial Pit terminated at 3.2mbgl					

Key:	Bulk (Bulk Bag)	D. Disturbed	V. 40ml Glass Vial
	W. Water	G. Amber Glass Jar / Bottle	N. 'N' value
	PID. Photo Ionisation Detector (ppm)	T. Plastic Tub	HP. Hand Penetrometer

Contamination Observations During Excavation		PID Monitoring			
Depth Observed	Made ground 3.2mbgl – waste/fill.	Depth: PPM:	Depth: PPM:	Depth: PPM:	
Damp from 3.2m.					

NOTES:	
Services:	Prior to excavation, the trial pit location was scanned with a Cable Avoidance Tool (CAT).
Backfill:	The trial pit was backfilled on completion with arisings and levelled to existing ground level. Trial pit stable.
N/R - Not Required	N/A - Not Applicable
All depths in metres below ground level;	Logged By: RPS Approved By: RPS

Project No:	IV.58.13	Method:	Trial Pit Excavation	Co-ordinates:	N/R
Site:	Pennycroft, Uttoxeter	Plant:	JCB 3CX	Ground Level:	N/R
Client:	East Staffs BC			Start Date:	08.10.13
				Finish Date:	08.10.13


Description of Strata	Depth (m)	Sampling Type & Depth (m)		Legend	U100 / N Value Field / Lab. Testing
MADE GROUND: Sandy clay with roadstone	0.5				
MADE GROUND: Black brown slightly sandy soft CLAY with gravel of sandstone and ash. Slight tar odour.	2.1	D/J	1.0		
MADE GROUND: Black sandy gravelly soft CLAY with fragments of wood, brick and concrete. Slight tar odour.	3.0				
Brown/orange very sandy clay with occasional fine to coarse gravel	3.2	D/J	3.1		
Trial Pit terminated at 3.2mbgl					

Key:	Bulk (Bulk Bag)	D. Disturbed	V. 40ml Glass Vial
	W. Water	G. Amber Glass Jar / Bottle	N. 'N' value
	PID. Photo Ionisation Detector (ppm)	T. Plastic Tub	HP. Hand Penetrometer

Contamination Observations During Excavation		PID Monitoring		
Depth Observed	Made ground with ash and tar odour to 3.0m.	Depth: PPM:	Depth: PPM:	Depth: PPM:
Seepage at 2.5m.				

NOTES:			
Services:	Prior to excavation, the trial pit location was scanned with a Cable Avoidance Tool (CAT).		
Backfill:	The trial pit was backfilled on completion with arisings and levelled to existing ground level. Trial pit stable.		
N/R - Not Required	N/A - Not Applicable	Logged By:	RPS
All depths in metres below ground level;		Approved By:	RPS

Project No:	IV.58.13	Method:	Hand Dug Pit	Co-ordinates:	N/R
Site:	Pennycroft, Uttoxeter	Plant:	Grafter	Ground Level:	N/R
Client:	East Staffs BC			Start Date:	18.11.13
				Finish Date:	18.11.13


Description of Strata	Depth (m)	Sampling Type & Depth (m)		Legend	U100 / N Value Field / Lab. Testing
MADE GROUND: Tarmac underlain by sandy clay with roadstone, brick and concrete fragments	0.5	D/J	0.3		
Pit terminated at 0.5mbgl					

Key:	Bulk (Bulk Bag)	D. Disturbed	V. 40ml Glass Vial
	W. Water	G. Amber Glass Jar / Bottle	N. 'N' value
	PID. Photo Ionisation Detector (ppm)	T. Plastic Tub	HP. Hand Penetrometer

Contamination Observations During Excavation		PID Monitoring			
Depth Observed	Observations	Depth: PPM:	Depth: PPM:	Depth: PPM:	
Dry	Made ground with tarmac to 0.5m.				

NOTES:	
Services:	Prior to excavation, the trial pit location was scanned with a Cable Avoidance Tool (CAT).
Backfill:	The pit was backfilled on completion with arisings and levelled to existing ground level.
N/R - Not Required	N/A - Not Applicable
All depths in metres below ground level;	Logged By: RPS Approved By: RPS

Project No:	IV.58.13	Method:	Hand Dug Pit	Co-ordinates:	N/R
Site:	Pennycroft, Uttoxeter	Plant:	Grafter	Ground Level:	N/R
Client:	East Staffs BC			Start Date:	18.11.13
				Finish Date:	18.11.13


Description of Strata	Depth (m)	Sampling Type & Depth (m)		Legend	U100 / N Value Field / Lab. Testing
MADE GROUND: Tarmac underlain by red brown gravel of roadstone, brick, tarmac and concrete	0.5	D/J	0.4		
Pit terminated at 0.5mbgl					

Key:	Bulk (Bulk Bag)	D. Disturbed	V. 40ml Glass Vial
	W. Water	G. Amber Glass Jar / Bottle	N. 'N' value
	PID. Photo Ionisation Detector (ppm)	T. Plastic Tub	HP. Hand Penetrometer

Contamination Observations During Excavation		PID Monitoring		
Depth Observed	Observations	Depth: PPM:	Depth: PPM:	Depth: PPM:
Dry	Made ground with brick, tarmac gravel to 0.5m.			

NOTES:	
Services:	Prior to excavation, the trial pit location was scanned with a Cable Avoidance Tool (CAT).
Backfill:	The pit was backfilled on completion with arisings and levelled to existing ground level.
N/R - Not Required	N/A - Not Applicable
All depths in metres below ground level;	Logged By: RPS Approved By: RPS

Project No:	IV.58.13	Method:	Hand Dug Pit	Co-ordinates:	N/R
Site:	Pennycroft, Uttoxeter	Plant:	Grafter	Ground Level:	N/R
Client:	East Staffs BC			Start Date:	18.11.13
				Finish Date:	18.11.13

Description of Strata	Depth (m)	Sampling Type & Depth (m)		Legend	U100 / N Value Field / Lab. Testing
MADE GROUND: Tarmac underlain by black sandy gravel of tarmac, roadstone, brick and concrete.	0.5	D/J	0.25		
Pit terminated at 0.5mbgl					

Key:	Bulk (Bulk Bag)	D. Disturbed	V. 40ml Glass Vial
	W. Water	G. Amber Glass Jar / Bottle	N. 'N' value
	PID. Photo Ionisation Detector (ppm)	T. Plastic Tub	HP. Hand Penetrometer

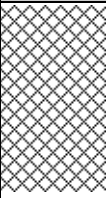

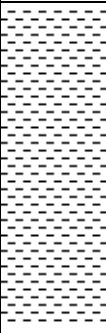
Contamination Observations During Excavation		PID Monitoring		
Depth Observed	Observations	Depth: PPM:	Depth: PPM:	Depth: PPM:
Dry	Made ground with black tarmac, brick, concrete gravel to 0.5m.			

NOTES:	
Services:	Prior to excavation, the trial pit location was scanned with a Cable Avoidance Tool (CAT).
Backfill:	The pit was backfilled on completion with arisings and levelled to existing ground level.
N/R - Not Required	N/A - Not Applicable
All depths in metres below ground level;	Logged By: RPS Approved By: RPS

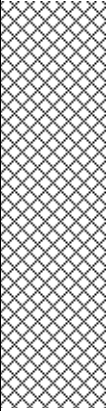
IV 58 13-Pennycroft, Dovecote Lane: WS A

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / Samples
0.00	0.10	MADE GROUND: TARMACADAM with limited dolomite sub-base.		
0.10	0.20	MADE GROUND: Light brown and light grey very sandy GRAVEL.		
0.20	0.80	MADE GROUND: Dark grey clayey, sandy fine to coarse GRAVEL of concrete, limestone, brick, clinker, coal, rare tarmac and many brick cobbles.		0.35-0.70 B
0.80	3.20	MADE GROUND: Dark grey, occasionally clayey, slightly sandy fine to coarse GRAVEL of ash-clinker, some concrete, brick, sandstone and limestone with occasional brick cobbles. Rare wood and tar stain and strong odour noted from 0.80m to base.		0.80-1.00 J2 2.00 J2
		Sample tube refusal at 3.20m		3.20 spt = 25/18/32 n=50/150mm
		End of borehole Water strike and SWL at 0.80m		
Site: Pennycroft, Uttoxeter Client: Ivy House Client Reference: N/A Engineer: GE Site Works Date: 08/10/2013 Plant: Archway Competitor C130 Superheavy		Log Notes: Spt = Standard Penetration test (blows per 300mm n300) HSV = Hand Shear Vane (result in kN/m ²) CBR = California Bearing Ratio by Mexe Cone Penetrometer (result as percentage) LP = Limited Penetration (HSV/CBR) NP = No penetration (HSV/CBR) B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub		

IV 58 13-Pennycroft, Dovecote Lane: WS A1

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / Samples
0.00	0.10	MADE GROUND: TARMACADAM.		
0.10	0.30	MADE GROUND: Dark grey very sandy fine to coarse GRAVEL of concrete, limestone, brick, clinker, coal, rare tarmac and many brick cobbles.		0.10-0.30 B
0.30	0.60	MADE GROUND: Dark grey, slightly sandy fine to coarse GRAVEL of ash-clinker, some concrete, brick, sandstone and limestone. Some possible slag noted.		0.30-0.60 B
0.60	1.40	Light brown, slightly clayey sandstone, limestone and quartz SAND + GRAVEL.		0.80-1.00 J2
				1.00-1.50 B
1.40	3.00	Soft reddish brown very sandy CLAY. Light tar stain and odour noted throughout.		2.00 J
				3.00 J
		End of borehole BH remained open and dry on completion		
Site: Pennycroft, Uttoxeter Client: Ivy House Client Reference: N/A Engineer: GE Site Works Date: 08/10/2013 Plant: Archway Competitor C130 Superheavy		Log Notes: Spt = Standard Penetration test (blows per 300mm n300) HSV = Hand Shear Vane (result in kN/m ²) CBR = California Bearing Ratio by Mexe Cone Penetrometer (result as percentage) LP = Limited Penetration (HSV/CBR) NP = No penetration (HSV/CBR) B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub		

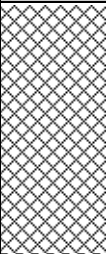
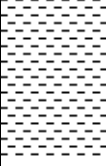
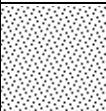
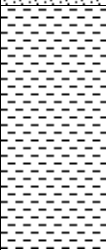
IV 58 13-Pennycroft, Dovecote Lane: WS A2

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / Samples
0.00	0.08	MADE GROUND: TARMACADAM with limited dolomite sub-base.		
0.08	0.28	MADE GROUND: Light brown and light grey very sandy GRAVEL.		0.10-0.20 B
0.28	0.55	MADE GROUND: Dark grey clayey, sandy fine to coarse GRAVEL of concrete, limestone, brick, clinker, coal, rare tarmac and many brick cobbles.		
0.55	2.00	MADE GROUND: Dark grey, occasionally clayey, slightly sandy fine to coarse GRAVEL of ash-clinker, some concrete, brick, sandstone and limestone with occasional brick cobbles. Rare wood and tar stain and strong odour noted from 0.75m to base.		0.60-1.00 B 0.70 J2 1.50 J2
		End of borehole Water strike and SWL at 0.70m Installed 1.00m slotted/1.00m plain pipe		
Site: Pennycroft, Uttoxeter Client: Ivy House Client Reference: N/A Engineer: GE Site Works Date: 08/10/2013 Plant: Archway Competitor C130 Superheavy		Log Notes: Spt = Standard Penetration test (blows per 300mm n300) HSV = Hand Shear Vane (result in kN/m ²) CBR = California Bearing Ratio by Mexe Cone Penetrometer (result as percentage) LP = Limited Penetration (HSV/CBR) NP = No penetration (HSV/CBR) B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub		

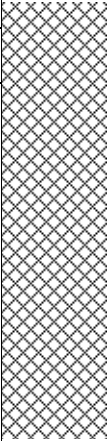
IV 58 13-Pennycroft, Dovecote Lane: WS B

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / Samples
0.00	0.22	MADE GROUND: Dolomite and limestone GRAVEL with some concrete and brick.	[Cross-hatched pattern]	
0.22	0.25	MADE GROUND: Red shale GRAVEL.		
0.45	3.20	MADE GROUND: Dark grey, occasionally clayey, slightly sandy fine to coarse GRAVEL of ash-clinker, some concrete, brick, sandstone and limestone with occasional brick cobbles. Rare wood and tar stain and strong odour noted from 0.75m to base. Possible rare slag noted.		0.25-0.50 J2
		Much concrete gravel below 2.90m Sample tube refusal at 3.20m		1.00 J2 2.00 J2 3.00 J2 3.20 spt = 9/13/21/29 n=50/150mm
		End of borehole Water strike and SWL at 0.75m Installed 2.00m slotted/0.40m plain pipe		
Site: Pennycroft, Uttoxeter Client: Ivy House Client Reference: N/A Engineer: GE Site Works Date: 08/10/2013 Plant: Archway Competitor C130 Superheavy		Log Notes: Spt = Standard Penetration test (blows per 300mm n300) HSV = Hand Shear Vane (result in kN/m ²) CBR = California Bearing Ratio by Mexe Cone Penetrometer (result as percentage) LP = Limited Penetration (HSV/CBR) NP = No penetration (HSV/CBR) B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub		

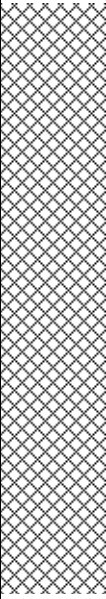
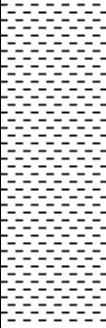

IV 58 13-Pennycroft, Dovecote Lane: WS C

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / Samples
0.00	0.09	MADE GROUND: TARMACADAM.		
0.09	0.16	MADE GROUND: Red and grey fine to coarse red shale GRAVEL with some tarmac and limestone. Sub-base.		0.10-0.16 J2
0.16	0.45	MADE GROUND: Dark brown and red sandy brick FILL with much concrete, clinker and limestone gravel.		
0.45	1.00	MADE GROUND: Dark grey, occasionally clayey, slightly sandy fine to coarse GRAVEL of ash-clinker, some concrete, brick, sandstone and limestone with occasional brick cobbles. Rare wood and light tar stain noted.		0.50-0.70 J2
1.00	1.70	Firm becoming soft reddish brown very sandy CLAY with much limestone, sandstone and sandstone gravel.		
1.70	2.10	Dark grey very clayey, gravelly fine to coarse SAND. Tar stain and smell noted.		1.70-1.90 J2
2.10	3.00	Soft reddish brown sandy CLAY with black tar stain and odour to 2.35m.		2.10-2.30 J2
				2.50-3.00 J2
		End of borehole Borehole remained open and dry on completion Backfilled with arisings		
Site: Pennycroft, Uttoxeter Client: Ivy House Client Reference: N/A Engineer: GE Site Works Date: 08/10/2013 Plant: Archway Competitor C130 Superheavy		Log Notes: Spt = Standard Penetration test (blows per 300mm n300) HSV = Hand Shear Vane (result in kN/m ²) CBR = California Bearing Ratio by Mexe Cone Penetrometer (result as percentage) LP = Limited Penetration (HSV/CBR) NP = No penetration (HSV/CBR) B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub		

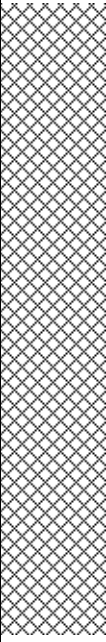
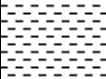

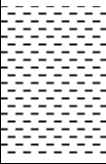
IV 58 13-Pennycroft, Dovecote Lane: WS D

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / Samples
0.00	0.10	MADE GROUND: TARMACADAM.		
0.10	0.28	MADE GROUND: Grey fine sandy to coarse GRAVEL of tarmac, dolomite, limestone, brick and concrete.		0.10-0.28 J2
0.28	1.60	MADE GROUND: Red sandy brick FILL with some brick and concrete gravel. Sample tube refusal at 1.60m		1.00-1.60 B 1.60 spt = 7/18/19/31/25mm n=50/100mm
		End of borehole Borehole remained open and dry on completion Backfilled with arisings		
Site: Pennycroft, Uttoxeter Client: Ivy House Client Reference: N/A Engineer: GE Site Works Date: 08/10/2013 Plant: Archway Competitor C130 Superheavy			Log Notes: Spt = Standard Penetration test (blows per 300mm n300) HSV = Hand Shear Vane (result in kN/m ²) CBR = California Bearing Ratio by Mexe Cone Penetrometer (result as percentage) LP = Limited Penetration (HSV/CBR) NP = No penetration (HSV/CBR) B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub	

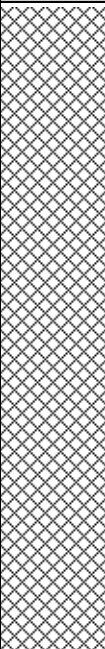
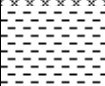

IV 58 13-Pennycroft, Dovecote Lane: WS E

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / Samples
0.00	0.08	MADE GROUND: TARMACADAM.		
0.08	0.27	MADE GROUND: Dolomite sub-base.		
0.27	0.60	MADE GROUND: Grey slightly clayey, very sandy fine to coarse GRAVEL of limestone, brick, concrete, some coal, clinker and slate.		0.30-0.60 B
0.60	2.20	MADE GROUND: Dark brown and brown CLAY FILL with much fine to coarse gravel of brick, limestone, concrete and clinker.		1.00-1.50 B
2.20	3.80	Brown very sandy, slightly gravelly CLAY with black tar stain and odour below 2.80m.		3.00 J
				3.70 B
3.80	3.95	Black slightly clayey limestone and sandstone SAND + GRAVEL. Tar odour noted		3.80 J
		End of borehole Borehole remained open and dry on completion Installed 3.00m slotted/0.90m plain pipe		
Site: Pennycroft, Uttoxeter Client: Ivy House Client Reference: N/A Engineer: GE Site Works Date: 09/10/2013 Plant: Archway Competitor C130 Superheavy		Log Notes: Spt = Standard Penetration test (blows per 300mm n300) HSV = Hand Shear Vane (result in kN/m ²) CBR = California Bearing Ratio by Mexe Cone Penetrometer (result as percentage) LP = Limited Penetration (HSV/CBR) NP = No penetration (HSV/CBR) B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub		

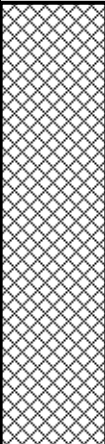

IV 58 13-Pennycroft, Dovecote Lane: WS F

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / Samples
0.00	0.15	MADE GROUND: Limestone GRAVEL over dolomite.		
0.15	0.60	MADE GROUND: Dark grey, very sandy fine to coarse GRAVEL of concrete, clinker, brick and some coal. Brick cobbles noted.		0.20-0.50 B
0.60	0.90	MADE GROUND: Grey concrete SAND + GRAVEL.		
0.90	3.00	MADE GROUND: Brown and dark brown sandy fine to coarse GRAVEL of brick, limestone, concrete and clinker.		1.00-1.50 B
3.00	3.40	Soft grey and brown very sandy CLAY.		3.00-3.40 B
3.40	3.80	Brown limestone and sandstone SAND + GRAVEL.		
3.80	4.45	Stiff reddish brown sandy CLAY.		3.80-4.00 B 4.00 spt = 3/7/5/5/6/7 n=23
		End of borehole Borehole remained open and dry on completion		
Site: Pennycroft, Uttoxeter Client: Ivy House Client Reference: N/A Engineer: GE Site Works Date: 09/10/2013 Plant: Archway Competitor C130 Superheavy		Log Notes: Spt = Standard Penetration test (blows per 300mm n300) HSV = Hand Shear Vane (result in kN/m ²) CBR = California Bearing Ratio by Mexe Cone Penetrometer (result as percentage) LP = Limited Penetration (HSV/CBR) NP = No penetration (HSV/CBR) B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub		

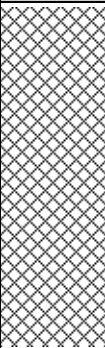
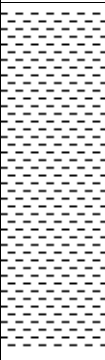
IV 58 13-Pennycroft, Dovecote Lane: WS G

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / Samples
0.00	0.10	MADE GROUND: Turf over topsoil. Brown gravelly SAND.		
0.10	1.70	MADE GROUND: Black ash-clinker FILL with much brick, some limestone, sandstone, concrete and coal.		0.50-1.00 B
1.70	2.00	MADE GROUND: Soft light brown sandy CLAY FILL with much brick gravel.		1.70-2.00 B
2.00	2.40	MADE GROUND: Dark grey clayey limestone and sandstone SAND + GRAVEL with much brick, clinker and concrete. Stain and sheen but no obvious odour.		2.00-2.40 B
2.40	2.70	Soft grey and brown sandy CLAY.		2.40-2.70 B
2.70	3.00	Brown limestone and sandstone SAND + GRAVEL.		
		End of borehole BH remained open and dry on completion		
Site: Pennycroft, Uttoxeter Client: Ivy House Client Reference: N/A Engineer: GE Site Works Date: 10/10/2013 Plant: Archway Competitor C130 Superheavy		Log Notes: Spt = Standard Penetration test (blows per 300mm n300) HSV = Hand Shear Vane (result in kN/m ²) CBR = California Bearing Ratio by Mexe Cone Penetrometer (result as percentage) LP = Limited Penetration (HSV/CBR) NP = No penetration (HSV/CBR) B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub		

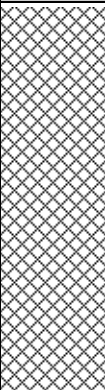
IV 58 13-Pennycroft, Dovecote Lane: WS H

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / Samples
0.00	0.17	MADE GROUND: Turf over topsoil. Brown gravelly fine to coarse SAND.		
0.17	0.30	MADE GROUND: Red clayey, brick FILL with much limestone, sandstone, rare glass and clinker gravel.		
0.30	1.70	MADE GROUND: Dark brown clayey fine to coarse SAND with much fine to coarse gravel of brick, coal, limestone, sandstone and clinker.		1.00 B
1.70	2.70	Dense becoming very dense reddish brown very clayey slightly sandy limestone and sandstone GRAVEL.		2.00 B 2.00 spt = 8/8/7/8/10/10 n=35
		End of borehole Borehole remained open and dry on completion Backfilled with arisings		2.70 spt = 7/9/11/13/17/10/50mm n=50/275mm
Site: Pennycroft, Uttoxeter Client: Ivy House Client Reference: N/A Engineer: GE Site Works Date: 09/10/2013 Plant: Archway Competitor C130 Superheavy		Log Notes: Spt = Standard Penetration test (blows per 300mm n300) HSV = Hand Shear Vane (result in kN/m ²) CBR = California Bearing Ratio by Mexe Cone Penetrometer (result as percentage) LP = Limited Penetration (HSV/CBR) NP = No penetration (HSV/CBR) B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub		

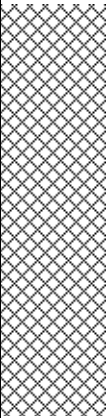

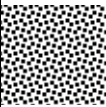
IV 58 13-Pennycroft, Dovecote Lane: WS I

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / Samples
0.00	0.13	MADE GROUND: Turf over topsoil. Brown gravelly SAND.		
0.13	0.70	MADE GROUND: Grey brick, concrete and breeze block FILL with rare possible asbestos tile.		0.20-0.50 B
0.70	1.00	MADE GROUND: Light brown sandy CLAY FILL.		
1.00	1.30	MADE GROUND: Dark grey sandy fine to coarse GRAVEL of clinker, brick, limestone and concrete.		1.00-1.30 B
1.30	1.50	MADE GROUND: Black ash-clinker FILL. Tar stain and odour.		1.30-1.50 B
1.50	3.00	Dark grey very sandy CLAY with much gravel at base. Tar odour and slight stain throughout.		1.50-2.00 B
				2.00-3.00 B
		End of borehole Water strike and SWL at 1.30m Installed 0.20m bentonite/1.80m slotted/1.00m plain pipe		
Site: Pennycroft, Uttoxeter Client: Ivy House Client Reference: N/A Engineer: GE Site Works Date: 10/10/2013 Plant: Archway Competitor C130 Superheavy		Log Notes: Spt = Standard Penetration test (blows per 300mm n300) HSV = Hand Shear Vane (result in kN/m ²) CBR = California Bearing Ratio by Mexe Cone Penetrometer (result as percentage) LP = Limited Penetration (HSV/CBR) NP = No penetration (HSV/CBR) B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub		

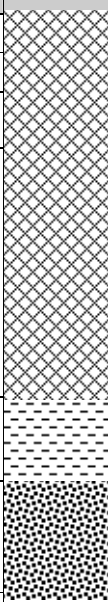
IV 58 13-Pennycroft, Dovecote Lane: WS J

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / Samples
0.00	0.10	MADE GROUND: Turf over topsoil. Reddish brown gravelly fine to coarse SAND.		0.00-0.50 B
0.10	1.30	MADE GROUND: Very dense brown fine to coarse SAND with much fine to coarse gravel of brick, coal, limestone, sandstone and rare clinker. Some possible asbestos tile noted.		0.50-1.00 B 1.00 spt = 11/13/11/39 n=50/150 1.30 spt = 50
		End of borehole Borehole remained open and dry on completion Backfilled with arisings		
Site: Pennycroft, Uttoxeter Client: Ivy House Client Reference: N/A Engineer: GE Site Works Date: 09/10/2013 Plant: Archway Competitor C130 Superheavy		Log Notes: Spt = Standard Penetration test (blows per 300mm n300) HSV = Hand Shear Vane (result in kN/m ²) CBR = California Bearing Ratio by Mexe Cone Penetrometer (result as percentage) LP = Limited Penetration (HSV/CBR) NP = No penetration (HSV/CBR) B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub		

IV 58 13-Pennycroft, Dovecote Lane: WS K

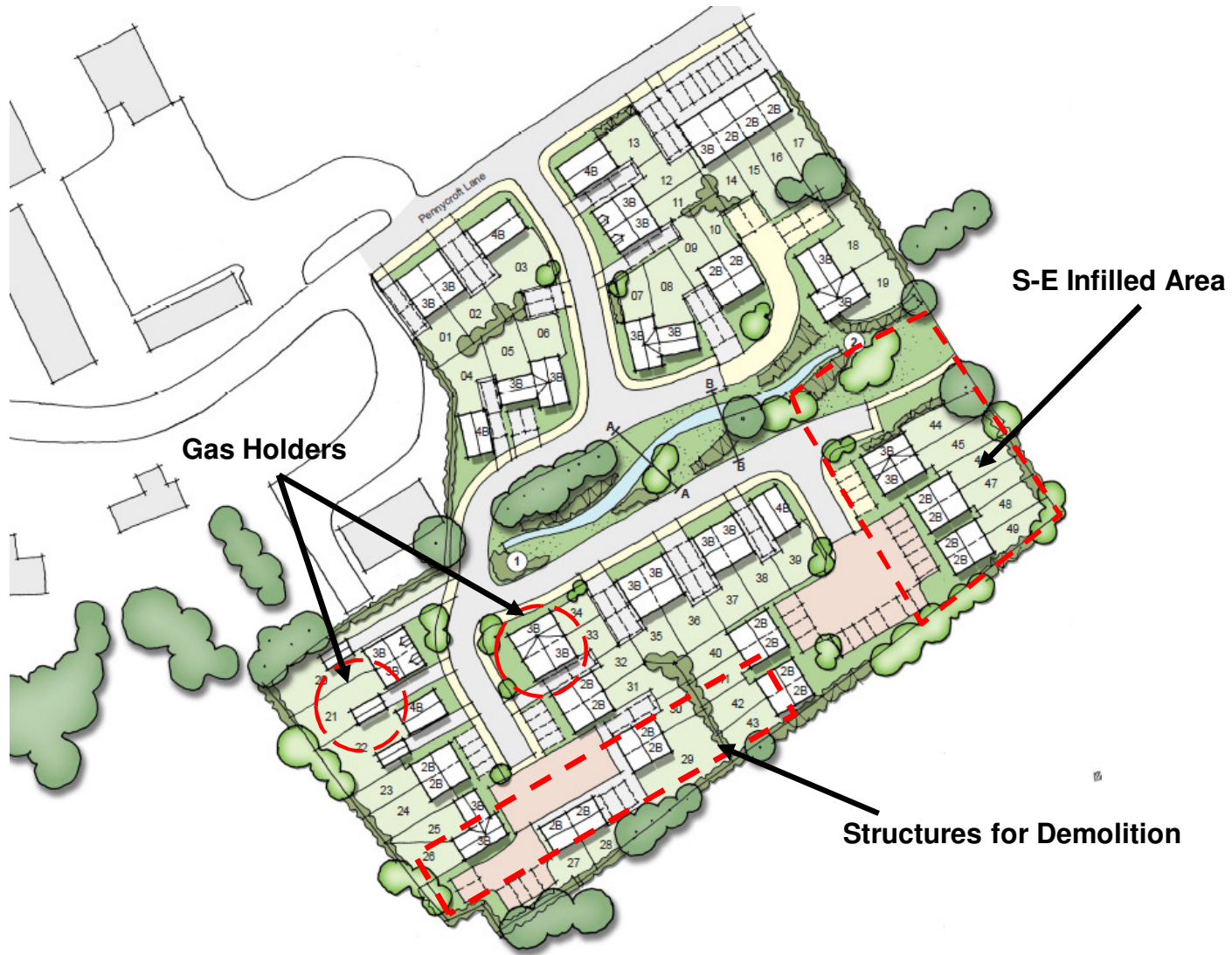
Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / Samples
0.00	0.12	MADE GROUND: TARMACADAM.		
0.12	0.33	MADE GROUND: Tarmac and limestone GRAVEL sub-base.		0.12-0.30 J
0.33	0.45	MADE GROUND: Fine grey limestone COBBLES.		
0.45	0.70	MADE GROUND: Sandy brick FILL with some concrete, limestone and clinker.		
0.70	1.70	MADE GROUND: Brown very sandy CLAY FILL with much limestone, sandstone, rare coal and clinker gravel.		1.00-1.50 B
1.70	2.10	Relic Topsoil. Dark brown organic, slightly clayey fine to coarse SAND.		1.70-2.00 B
2.10	2.50	Dense brown limestone and sandstone SAND + GRAVEL.		
		End of borehole BH remained open and dry on completion Installed 2.00m slotted/0.50m plain pipe		
Site: Pennycroft, Uttoxeter Client: Ivy House Client Reference: N/A Engineer: GE Site Works Date: 10/10/2013 Plant: Archway Competitor C130 Superheavy		Log Notes: Spt = Standard Penetration test (blows per 300mm n300) HSV = Hand Shear Vane (result in kN/m ²) CBR = California Bearing Ratio by Mexe Cone Penetrometer (result as percentage) LP = Limited Penetration (HSV/CBR) NP = No penetration (HSV/CBR) B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub		

IV 58 13-Pennycroft, Dovecote Lane: WS L

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / Samples
0.00	0.12	MADE GROUND: TARMACADAM.		
0.12	0.33	MADE GROUND: Tarmac and limestone GRAVEL sub-base.		0.12-0.30 J
0.45	0.70	MADE GROUND: Sandy brick FILL with some concrete, limestone and clinker.		
0.70	1.70	MADE GROUND: Dark brown and brown CLAY FILL with much fine to coarse gravel of brick, limestone, concrete and clinker.		1.30-1.50 B
1.70	2.10	Soft grey and brown sandy CLAY.		2.0-2.10 B
2.10	2.50	Dense brown limestone and sandstone SAND + GRAVEL.		
		End of borehole BH remained open and dry on completion Installed 2.00m slotted/0.50m plain pipe		
Site: Pennycroft, Uttoxeter Client: Ivy House Client Reference: N/A Engineer: GE Site Works Date: 10/10/2013 Plant: Archway Competitor C130 Superheavy		Log Notes: Spt = Standard Penetration test (blows per 300mm n300) HSV = Hand Shear Vane (result in kN/m ²) CBR = California Bearing Ratio by Mexe Cone Penetrometer (result as percentage) LP = Limited Penetration (HSV/CBR) NP = No penetration (HSV/CBR) B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub		

APPENDIX E





KEY:

DO NOT SCALE



IVY HOUSE
environmental

Scotland Farm, Ockbrook, Derby, DE72 3RX
rps@ivyhousesenv.co.uk • www.ivyhousesenv.co.uk • 01332 820 488

TITLE:

Site Areas –Remedial Strategy

PROJECT:

Pennycroft Lane, Uttoxeter

PROJECT No:

IV.58.13

DATE:

11/2013

SCALE:

NTS

DRAWN:

RPS

DWG No:

APPENDIX F





Richard Sutton
Ivy House Environmental Ltd
Scotland Farm
Ockbrook
Derby
DE72 3RX



QTS Environmental Ltd
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Lenham Heath
Kent
ME17 2JN
t: 01622 850410
russell.jarvis@qtsenvironmental.com

QTS Environmental Report No: 13-17152

Site Reference: Pennycroft, Uttoxeter

Project / Job Ref: IV.58.13

Order No: None Supplied

Sample Receipt Date: 14/10/2013

Sample Scheduled Date: 14/10/2013

Report Issue Number: 1

Reporting Date: 22/10/2013

Authorised by:

Russell Jarvis
Director

On behalf of QTS Environmental Ltd

Authorised by:

Kevin Old
Director

On behalf of QTS Environmental Ltd



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Unit 1, Rose Lane Industrial Estate
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Maidstone
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Soil Analysis Certificate						
QTS Environmental Report No: 13-17152	Date Sampled	09/10/13	09/10/13	09/10/13	09/10/13	09/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WSA1	WSA2	WSB	WSC	WSC
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	2.00	0.70	2.00	2.10 - 2.30	2.50 - 3.00
Reporting Date: 22/10/2013	QTSE Sample No	82473	82474	82475	82476	82477

Determinand	Unit	MDL	Accreditation					
Asbestos Screen ⁽⁵⁾	N/a	N/a	ISO17025			None Detected		
pH	pH Units	N / a	MCERTS			8.7		
Total Cyanide	mg/kg	< 2	NONE			< 2		
Complex Cyanide	mg/kg	< 2	NONE	< 2	< 2		< 2	< 2
Free Cyanide	mg/kg	< 2	NONE	< 2	< 2		< 2	< 2
Thiocyanate as SCN	mg/kg	< 3	NONE	< 3	< 3		< 3	< 3
Total Sulphate as SO ₄	mg/kg	< 200	NONE			7471		
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	NONE			1.38		
Organic Matter	%	< 0.1	NONE			2.5		
Arsenic (As)	mg/kg	< 2	MCERTS	6	24	12	5	< 2
W/S Boron	mg/kg	< 1	NONE	1.9	4.1		3.8	3.6
Cadmium (Cd)	mg/kg	< 0.5	MCERTS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium (Cr)	mg/kg	< 2	MCERTS	20	34	16	51	53
Chromium (hexavalent)	mg/kg	< 2	NONE			< 2		
Copper (Cu)	mg/kg	< 4	MCERTS	12	148	73	16	12
Lead (Pb)	mg/kg	< 3	MCERTS	15	121	35	6	6
Mercury (Hg)	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	18	57	21	51	53
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	52	94	48	61	62
Total Phenols (monohydric)	mg/kg	< 2	NONE			< 2		
EPH (C10 - C40)	mg/kg	< 6	MCERTS	311		358		

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C
 Analysis carried out on the dried sample is corrected for the stone content
 Subcontracted analysis ⁽⁵⁾



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Soil Analysis Certificate						
QTS Environmental Report No: 13-17152	Date Sampled	09/10/13	09/10/13	09/10/13	09/10/13	09/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WSD	WSE	WSG	WSG	WSH
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	1.00 - 1.60	3.70	1.15	2.00 - 2.40	1.00
Reporting Date: 22/10/2013	QTSE Sample No	82478	82479	82480	82481	82482

Determinand	Unit	MDL	Accreditation	09/10/13	09/10/13	09/10/13	09/10/13	09/10/13
Asbestos Screen ⁽⁵⁾	N/a	N/a	ISO17025	None Detected	None Detected			None Detected
pH	pH Units	N / a	MCERTS	7.9	7.2			7.1
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2			< 2
Complex Cyanide	mg/kg	< 2	NONE			< 2	< 2	
Free Cyanide	mg/kg	< 2	NONE			< 2	< 2	
Thiocyanate as SCN	mg/kg	< 3	NONE			< 3	< 3	
Total Sulphate as SO ₄	mg/kg	< 200	NONE	2691	898			2637
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	NONE	0.48	0.21			1.02
Organic Matter	%	< 0.1	NONE	4.3	2			5.1
Arsenic (As)	mg/kg	< 2	MCERTS	3	4	20	26	13
W/S Boron	mg/kg	< 1	NONE			2.1	1.5	
Cadmium (Cd)	mg/kg	< 0.5	MCERTS	1.6	< 0.5	0.5	0.6	0.9
Chromium (Cr)	mg/kg	< 2	MCERTS	14	12	20	12	26
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2			< 2
Copper (Cu)	mg/kg	< 4	MCERTS	12	10	54	40	62
Lead (Pb)	mg/kg	< 3	MCERTS	29	21	256	58	197
Mercury (Hg)	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	10	11	21	17	30
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	58	46	121	59	208
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2			< 2
EPH (C10 - C40)	mg/kg	< 6	MCERTS	901	< 6			116

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C
 Analysis carried out on the dried sample is corrected for the stone content
 Subcontracted analysis ⁽⁵⁾



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Soil Analysis Certificate					
QTS Environmental Report No: 13-17152	Date Sampled	09/10/13			
Ivy House Environmental Ltd	Time Sampled	None Supplied			
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WS7			
Project / Job Ref: IV.58.13	Additional Refs	None Supplied			
Order No: None Supplied	Depth (m)	0.50 - 1.00			
Reporting Date: 22/10/2013	QTSE Sample No	82483			

Determinand	Unit	MDL	Accreditation				
Asbestos Screen ⁽⁵⁾	N/a	N/a	ISO17025	None Detected			
pH	pH Units	N / a	MCERTS	7.5			
Total Cyanide	mg/kg	< 2	NONE	< 2			
Complex Cyanide	mg/kg	< 2	NONE				
Free Cyanide	mg/kg	< 2	NONE				
Thiocyanate as SCN	mg/kg	< 3	NONE				
Total Sulphate as SO ₄	mg/kg	< 200	NONE	1012			
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	NONE	0.25			
Organic Matter	%	< 0.1	NONE	1.3			
Arsenic (As)	mg/kg	< 2	MCERTS	5			
W/S Boron	mg/kg	< 1	NONE				
Cadmium (Cd)	mg/kg	< 0.5	MCERTS	1.3			
Chromium (Cr)	mg/kg	< 2	MCERTS	12			
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2			
Copper (Cu)	mg/kg	< 4	MCERTS	11			
Lead (Pb)	mg/kg	< 3	MCERTS	32			
Mercury (Hg)	mg/kg	< 1	NONE	< 1			
Nickel (Ni)	mg/kg	< 3	MCERTS	11			
Selenium (Se)	mg/kg	< 3	NONE	< 3			
Zinc (Zn)	mg/kg	< 3	MCERTS	114			
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2			
EPH (C10 - C40)	mg/kg	< 6	MCERTS				

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 Analysis carried out on the dried sample is corrected for the stone content
 Subcontracted analysis ⁽⁵⁾



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Soil Analysis Certificate - Speciated PAHs						
QTS Environmental Report No: 13-17152	Date Sampled	09/10/13	09/10/13	09/10/13	09/10/13	09/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WSB	WSD	WSE	WSH	WS7
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	2.00	1.00 - 1.60	3.70	1.00	0.50 - 1.00
Reporting Date: 22/10/2013	QTSE Sample No	82475	82478	82479	82482	82483

Determinand	Unit	MDL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	1.80	0.30	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	0.59	0.33	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	0.69	0.46	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	1.23	0.59	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	5.73	6.43	< 0.1	0.20	0.62
Anthracene	mg/kg	< 0.1	MCERTS	1.49	1.23	< 0.1	< 0.1	0.17
Fluoranthene	mg/kg	< 0.1	MCERTS	6.14	10.20	< 0.1	0.77	1.26
Pyrene	mg/kg	< 0.1	MCERTS	5.50	8.08	< 0.1	0.67	1.01
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	2.02	3.96	< 0.1	0.35	0.56
Chrysene	mg/kg	< 0.1	MCERTS	2.04	4.11	< 0.1	0.32	0.54
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	2.05	4.43	< 0.1	0.47	0.68
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.74	1.95	< 0.1	0.21	0.25
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	1.52	3.27	< 0.1	0.37	0.55
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.92	2.01	< 0.1	0.25	0.38
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	0.16	0.13	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.79	1.80	< 0.1	0.25	0.32
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	33.4	49.3	< 1.6	3.9	6.3

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Soil Analysis Certificate - TPH CWG Banded

QTS Environmental Report No: 13-17152	Date Sampled	09/10/13	09/10/13	09/10/13	09/10/13	09/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WSA2	WSC	WSC	WSG	WSG
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.70	2.10 - 2.30	2.50 - 3.00	1.15	2.00 - 2.40
Reporting Date: 22/10/2013	QTSE Sample No	82474	82476	82477	82480	82481

Determinand	Unit	MDL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 1	NONE	< 1	25	< 1	< 1	< 1
Aliphatic >C10 - C12	mg/kg	< 1	NONE	2	57	< 1	< 1	< 1
Aliphatic >C12 - C16	mg/kg	< 1	NONE	33	177	< 1	11	< 1
Aliphatic >C16 - C21	mg/kg	< 1	NONE	119	154	< 1	59	< 1
Aliphatic >C21 - C34	mg/kg	< 6	NONE	155	109	< 6	136	< 6
Aliphatic (C5 - C34)	mg/kg	< 12	NONE	309	522	< 12	206	< 12
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	0.05	1.87	0.17	0.03	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	2.36	0.06	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 1	NONE	< 1	20	< 1	< 1	< 1
Aromatic >C10 - C12	mg/kg	< 1	NONE	2	31	< 1	< 1	< 1
Aromatic >C12 - C16	mg/kg	< 1	NONE	16	117	< 1	6	< 1
Aromatic >C16 - C21	mg/kg	< 1	NONE	81	159	< 1	55	< 1
Aromatic >C21 - C35	mg/kg	< 6	NONE	156	191	< 6	192	< 6
Aromatic (C5 - C35)	mg/kg	< 12	NONE	254	523	< 12	253	< 12
Total >C5 - C35	mg/kg	< 24	NONE	563	1045	< 24	459	< 24

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



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Soil Analysis Certificate - BTEX / MTBE						
QTS Environmental Report No: 13-17152	Date Sampled	09/10/13	09/10/13	09/10/13	09/10/13	09/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WSA2	WSC	WSC	WSG	WSG
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.70	2.10 - 2.30	2.50 - 3.00	1.15	2.00 - 2.40
Reporting Date: 22/10/2013	QTSE Sample No	82474	82476	82477	82480	82481

Determinand	Unit	MDL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	45	1866	166	33	< 2
Toluene	ug/kg	< 5	MCERTS	10	2357	57	13	< 5
Ethylbenzene	ug/kg	< 10	MCERTS	19	831	13	< 10	< 10
p & m-xylene	ug/kg	< 10	MCERTS	< 10	16098	96	23	< 10
o-xylene	ug/kg	< 10	MCERTS	< 10	2372	37	< 10	< 10

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Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Volatile Organic Compounds (VOC)

QTS Environmental Report No: 13-17152	Date Sampled	09/10/13	09/10/13	09/10/13	09/10/13	09/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WSA1	WSA2	WSB	WSC	WSC
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	2.00	0.70	2.00	2.10 - 2.30	2.50 - 3.00
Reporting Date: 22/10/2013	QTSE Sample No	82473	82474	82475	82476	82477

Determinand	Unit	MDL	Accreditation	09/10/13	09/10/13	09/10/13	09/10/13	09/10/13
Dichlorodifluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Vinyl Chloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chloromethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Chloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromomethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Trichlorofluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethene	ug/kg	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
trans-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
cis-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
2,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chloroform	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,1-Trichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloropropene	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Carbon Tetrachloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Benzene	ug/kg	< 2	MCERTS	11	45	466	1866	166
1,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Trichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromodichloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Dibromomethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
TAME	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
cis-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Toluene	ug/kg	< 5	MCERTS	< 5	10	34	2357	57
trans-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
1,3-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Tetrachloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Dibromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dibromoethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,1,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethyl Benzene	ug/kg	< 10	MCERTS	< 10	19	25	831	13
m,p-Xylene	ug/kg	< 10	MCERTS	< 10	< 10	47	16100	96
o-Xylene	ug/kg	< 10	MCERTS	< 10	< 10	51	2372	37
Styrene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromoform	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Isopropylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	162	< 5
1,1,2,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2,3-Trichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
n-Propylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	253	< 5
Bromobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
2-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,3,5-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	16	1323	12
4-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
tert-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2,4-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	31	3251	35
sec-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
p-Isopropyltoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	118	< 5
1,3-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,4-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
n-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dibromo-3-chloropropane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Hexachlorobutadiene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



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Soil Analysis Certificate - Volatile Organic Compounds (VOC)					
QTS Environmental Report No: 13-17152	Date Sampled	09/10/13	09/10/13	09/10/13	
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WSD	WSG	WSG	
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied	
Order No: None Supplied	Depth (m)	1.00 - 1.60	1.15	2.00 - 2.40	
Reporting Date: 22/10/2013	QTSE Sample No	82478	82480	82481	

Determinand	Unit	MDL	Accreditation			
Dichlorodifluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Vinyl Chloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Chloromethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10
Chloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Bromomethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10
Trichlorofluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,1-Dichloroethene	ug/kg	< 5	ISO17025	< 5	< 5	< 5
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5
trans-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,1-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
cis-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
2,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Chloroform	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Bromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,1,1-Trichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,1-Dichloropropene	ug/kg	< 10	MCERTS	< 10	< 10	< 10
Carbon Tetrachloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,2-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Benzene	ug/kg	< 2	MCERTS	9	33	< 2
1,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Trichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Bromodichloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Dibromomethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
TAME	ug/kg	< 5	MCERTS	< 5	< 5	< 5
cis-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Toluene	ug/kg	< 5	MCERTS	6	13	< 5
trans-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,1,2-Trichloroethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10
1,3-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Tetrachloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Dibromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,2-Dibromoethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Chlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,1,1,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Ethyl Benzene	ug/kg	< 10	MCERTS	< 10	< 10	< 10
m,p-Xylene	ug/kg	< 10	MCERTS	< 10	23	< 10
o-Xylene	ug/kg	< 10	MCERTS	< 10	< 10	< 10
Styrene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Bromoform	ug/kg	< 10	MCERTS	< 10	< 10	< 10
Isopropylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,2,3-Trichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
n-Propylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Bromobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
2-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,3,5-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	8	< 5
4-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
tert-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,2,4-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	10	< 5
sec-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
p-Isopropyltoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,3-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,4-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
n-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,2-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,2-Dibromo-3-chloropropane	ug/kg	< 10	MCERTS	< 10	< 10	< 10
Hexachlorobutadiene	ug/kg	< 5	MCERTS	< 5	< 5	< 5

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Soil Analysis Certificate - Semi Volatile Organic Compounds (SVOC)

QTS Environmental Report No: 13-17152	Date Sampled	09/10/13	09/10/13	09/10/13	09/10/13	09/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WSA1	WSA2	WSC	WSC	WSE
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	2.00	0.70	2.10 - 2.30	2.50 - 3.00	3.70
Reporting Date: 22/10/2013	QTSE Sample No	82473	82474	82476	82477	82479

Determinand	Unit	MDL	Accreditation	09/10/13	09/10/13	09/10/13	09/10/13	09/10/13
Phenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Nitrobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
0-Cresol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-chloroethoxy)methane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-chloroethyl)ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	mg/kg	< 0.15	ISO17025	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
Isophorone	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachloroethane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
p-Cresol	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
2,4,6-Trichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	mg/kg	< 0.1	MCERTS	< 0.1	0.3	43.4	< 0.1	< 0.1
Hexachlorocyclopentadiene	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethyl phthalate	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloroaniline	mg/kg	< 0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
4-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	mg/kg	< 0.1	MCERTS	< 0.1	3	15.9	< 0.1	< 0.1
Azobenzene	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibutyl phthalate	mg/kg	< 0.15	ISO17025	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
Carbazole	mg/kg	< 0.1	ISO17025	< 0.1	1.6	3.4	< 0.1	< 0.1
bis(2-ethylhexyl)phthalate	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl butyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

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Soil Analysis Certificate - Semi Volatile Organic Compounds (SVOC)

QTS Environmental Report No: 13-17152	Date Sampled	09/10/13	09/10/13		
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied		
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WSG	WSG		
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied		
Order No: None Supplied	Depth (m)	1.15	2.00 - 2.40		
Reporting Date: 22/10/2013	QTSE Sample No	82480	82481		

Determinand	Unit	MDL	Accreditation				
Phenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
1,2,4-Trichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1		
2-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
Nitrobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
0-Cresol	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
bis(2-chloroethoxy)methane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
bis(2-chloroethyl)ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
2,4-Dichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
2-Chlorophenol	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1		
1,3-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1		
1,4-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1		
1,2-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1		
2,4-Dimethylphenol	mg/kg	< 0.15	ISO17025	< 0.15	< 0.15		
Isophorone	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
Hexachloroethane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
p-Cresol	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15		
2,4,6-Trichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
2,4,5-Trichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
2-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
4-Chloro-3-methylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
2-Methylnaphthalene	mg/kg	< 0.1	MCERTS	0.5	< 0.1		
Hexachlorocyclopentadiene	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
Hexachlorobutadiene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1		
2,6-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Dimethyl phthalate	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
2-Chloronaphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
4-Chloroaniline	mg/kg	< 0.2	NONE	< 0.2	< 0.2		
4-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
4-Chlorophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
3-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
4-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
4-Bromophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Hexachlorobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
2,4-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Diethyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Dibenzofuran	mg/kg	< 0.1	MCERTS	1.1	< 0.1		
Azobenzene	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
Dibutyl phthalate	mg/kg	< 0.15	ISO17025	< 0.15	< 0.15		
Carbazole	mg/kg	< 0.1	ISO17025	0.9	0.2		
bis(2-ethylhexyl)phthalate	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2		
Benzyl butyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Di-n-octyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



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Maidstone
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Tel : 01622 850410



Soil Analysis Certificate - Sample Descriptions	
QTS Environmental Report No: 13-17152	
Ivy House Environmental Ltd	
Site Reference: Pennycroft, Uttoxeter	
Project / Job Ref: IV.58.13	
Order No: None Supplied	
Reporting Date: 22/10/2013	

QTSE Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
82473	WSA1	None Supplied	2.00	10.7	Light brown sandy clay
82474	WSA2	None Supplied	0.70	20	Black sandy gravel
82475	WSB	None Supplied	2.00	21.4	Black sandy gravel
82476	WSC	None Supplied	2.10 - 2.30	18.7	Brown clay
82477	WSC	None Supplied	2.50 - 3.00	19.3	Red clay with rubble
82478	WSD	None Supplied	1.00 - 1.60	9.7	Brown sandy gravel
82479	WSE	None Supplied	3.70	13.5	Brown silt
82480	WSG	None Supplied	1.15	5.9	Brown sandy clay
82481	WSG	None Supplied	2.00 - 2.40	20.4	Brown sandy clay
82482	WSH	None Supplied	1.00	17.8	Brown sandy clay
82483	WS7	None Supplied	0.50 - 1.00	5.8	Light brown clayey sand with rubble and stones

Insufficient sample ^{1/5}
 Unsuitable Sample ^{U/5}



QTS Environmental Ltd
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Soil Analysis Certificate - Methodology & Miscellaneous Information	
QTS Environmental Report No: 13-17152	
Ivy House Environmental Ltd	
Site Reference: Pennycroft, Uttoxeter	
Project / Job Ref: IV.58.13	
Order No: None Supplied	
Reporting Date: 22/10/2013	

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E021
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by turbidimeter	E020
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E023
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E011
Soil	D	Loss on Ignition @ 450°C	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	D	Phosphorus	Determination of phosphorus by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	AR	Sulphide	Determination of sulphide by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia, potassium iodide/iodate followed by ICP-OES	E002
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E011
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E009
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E009
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E010
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E009
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	VPH (C6 - C10)	Determination of hydrocarbons C6-C10 by headspace GC-MS	E001
Soil	AR	EPH TEXAS	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	TPH CWG	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	TPH LQM	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	EPH (with florisis cleanup)	Determination of acetone/hexane extractable hydrocarbons with florisis cleanup step by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	VOCS	Determination of volatile organic compounds by headspace GC-MS	E001

Key

D Dried
AR As Received



Richard Sutton
Ivy House Environmental Ltd
Scotland Farm
Ockbrook
Derby
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QTS Environmental Report No: 13-17089

Site Reference: Pennycroft, Uttoxeter

Project / Job Ref: IV.58.13

Order No: None Supplied

Sample Receipt Date: 10/10/2013

Sample Scheduled Date: 10/10/2013

Report Issue Number: 2

Reporting Date: 20/11/2013

Authorised by:

Russell Jarvis
Director

On behalf of QTS Environmental Ltd

Authorised by:

Kevin Old
Director

On behalf of QTS Environmental Ltd



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Soil Analysis Certificate						
QTS Environmental Report No: 13-17089	Date Sampled	08/10/13	08/10/13	08/10/13	08/10/13	08/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	TPA	TPA	TPB1A	TPG	TPG
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied	+1.00m	None Supplied
Order No: None Supplied	Depth (m)	1.40 @ 4.00	1.00 @ 7.00	2.60 @ 5.00	None Supplied	1.60
Reporting Date: 20/11/2013	QTSE Sample No	82124	82125	82126	82127	82128

Determinand	Unit	MDL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025					Detected
Asbestos Matrix ^(S)	Material Type	N/a	ISO17025					Loose fibres
Asbestos Type ^(S)	PLM Result	N/a	ISO17025					Chrysotile
pH	pH Units	N / a	MCERTS					7.8
Total Cyanide	mg/kg	< 2	NONE					< 2
Complex Cyanide	mg/kg	< 2	NONE	< 2	< 2			< 2
Free Cyanide	mg/kg	< 2	NONE	< 2	< 2			< 2
Thiocyanate as SCN	mg/kg	< 3	NONE	< 3	< 3			< 3
Total Sulphate as SO ₄	mg/kg	< 200	NONE					1995
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	NONE					0.10
Organic Matter	%	< 0.1	NONE					8.5
Arsenic (As)	mg/kg	< 2	MCERTS	2	16			5
W/S Boron	mg/kg	< 1	NONE	1.9	1.7			1.5
Cadmium (Cd)	mg/kg	< 0.5	MCERTS	< 0.5	0.5			2.9
Chromium (Cr)	mg/kg	< 2	MCERTS	49	17			31
Chromium (hexavalent)	mg/kg	< 2	NONE					< 2
Copper (Cu)	mg/kg	< 4	MCERTS	11	54			205
Lead (Pb)	mg/kg	< 3	MCERTS	18	280			594
Mercury (Hg)	mg/kg	< 1	NONE	< 1	1			4.7
Nickel (Ni)	mg/kg	< 3	MCERTS	51	27			26
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3			< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	67	97			439
Total Phenols (monohydric)	mg/kg	< 2	NONE					< 2
EPH (C10 - C40)	mg/kg	< 6	MCERTS			< 6		707

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C
 Analysis carried out on the dried sample is corrected for the stone content
 Subcontracted analysis ^(S)



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Soil Analysis Certificate						
QTS Environmental Report No: 13-17089	Date Sampled	08/10/13	08/10/13	08/10/13	08/10/13	08/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	TPG	TPI	TPI	TPH	TPH
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	3.20	1.00	3.20	0.70 - 1.60	3.40
Reporting Date: 20/11/2013	QTSE Sample No	82129	82130	82131	82132	82133

Determinand	Unit	MDL	Accreditation				
Asbestos Screen ^(S)	N/a	N/a	ISO17025		None Detected		None Detected
Asbestos Matrix ^(S)	Material Type	N/a	NONE				
Asbestos Type ^(S)	PLM Result	N/a	ISO17025				
pH	pH Units	N / a	MCERTS		7.7		7.7
Total Cyanide	mg/kg	< 2	NONE		< 2		< 2
Complex Cyanide	mg/kg	< 2	NONE	< 2			
Free Cyanide	mg/kg	< 2	NONE	< 2			
Thiocyanate as SCN	mg/kg	< 3	NONE	< 3			
Total Sulphate as SO ₄	mg/kg	< 200	NONE		1376		1083
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	NONE		0.08		0.06
Organic Matter	%	< 0.1	NONE		3		2.7
Arsenic (As)	mg/kg	< 2	MCERTS	5	11		6
W/S Boron	mg/kg	< 1	NONE	< 1			
Cadmium (Cd)	mg/kg	< 0.5	MCERTS	< 0.5	0.8		< 0.5
Chromium (Cr)	mg/kg	< 2	MCERTS	8	19		13
Chromium (hexavalent)	mg/kg	< 2	NONE		< 2		< 2
Copper (Cu)	mg/kg	< 4	MCERTS	5	58		74
Lead (Pb)	mg/kg	< 3	MCERTS	14	105		104
Mercury (Hg)	mg/kg	< 1	NONE	< 1	< 1		< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	6	21		22
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3		< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	30	165		61
Total Phenols (monohydric)	mg/kg	< 2	NONE		< 2		< 2
EPH (C10 - C40)	mg/kg	< 6	MCERTS			< 6	200

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C

Analysis carried out on the dried sample is corrected for the stone content

Subcontracted analysis ^(S)



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Soil Analysis Certificate						
QTS Environmental Report No: 13-17089	Date Sampled	08/10/13	08/10/13	08/10/13		
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: Pennycroft, Uttoxeter	TP / BH No	TPJ	TPK	TPK		
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied		
Order No: None Supplied	Depth (m)	0.50	2.10	3.20		
Reporting Date: 20/11/2013	QTSE Sample No	82134	82135	82136		

Determinand	Unit	MDL	Accreditation				
Asbestos Screen ^(S)	N/a	N/a	ISO17025	None Detected			
Asbestos Matrix ^(S)	Material Type	N/a	NONE				
Asbestos Type ^(S)	PLM Result	N/a	ISO17025				
pH	pH Units	N / a	MCERTS	7.1			
Total Cyanide	mg/kg	< 2	NONE	< 2			
Complex Cyanide	mg/kg	< 2	NONE		< 2	< 2	
Free Cyanide	mg/kg	< 2	NONE		< 2	< 2	
Thiocyanate as SCN	mg/kg	< 3	NONE		< 3	< 3	
Total Sulphate as SO ₄	mg/kg	< 200	NONE	777			
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	NONE	0.03			
Organic Matter	%	< 0.1	NONE	4			
Arsenic (As)	mg/kg	< 2	MCERTS	9	32	16	
W/S Boron	mg/kg	< 1	NONE		< 1	< 1	
Cadmium (Cd)	mg/kg	< 0.5	MCERTS	< 0.5	< 0.5	< 0.5	
Chromium (Cr)	mg/kg	< 2	MCERTS	17	26	19	
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2			
Copper (Cu)	mg/kg	< 4	MCERTS	32	117	16	
Lead (Pb)	mg/kg	< 3	MCERTS	95	354	27	
Mercury (Hg)	mg/kg	< 1	NONE	< 1	1.2	< 1	
Nickel (Ni)	mg/kg	< 3	MCERTS	17	20	27	
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3	< 3	
Zinc (Zn)	mg/kg	< 3	MCERTS	118	83	63	
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2			
EPH (C10 - C40)	mg/kg	< 6	MCERTS	50			

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C
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 Subcontracted analysis ^(S)



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Soil Analysis Certificate - Speciated PAHs					
QTS Environmental Report No: 13-17089	Date Sampled	08/10/13	08/10/13	08/10/13	08/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	TPG	TPI	TPH	TPJ
Project / Job Ref: IV.58.13	Additional Refs	+1.00m	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	None Supplied	1.00	0.70 - 1.60	0.50
Reporting Date: 20/11/2013	QTSE Sample No	82127	82130	82132	82134

Determinand	Unit	MDL	Accreditation				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	0.11	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	0.56	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	0.43	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	5.04	0.57	0.68	0.76
Anthracene	mg/kg	< 0.1	MCERTS	1.41	0.18	0.21	0.26
Fluoranthene	mg/kg	< 0.1	MCERTS	11.80	1.75	2.51	2.02
Pyrene	mg/kg	< 0.1	MCERTS	9.51	1.49	2.14	1.69
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	4.84	0.92	1.41	1.29
Chrysene	mg/kg	< 0.1	MCERTS	4.48	0.81	1.13	1.25
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	5.80	1.11	1.82	1.78
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	2.66	0.49	0.57	0.77
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	4.32	0.80	1.42	1.63
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	2.73	0.50	0.90	0.91
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	0.28	< 0.1	0.12	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	2.61	0.48	0.69	0.69
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	56.5	9.1	13.6	13.1

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Soil Analysis Certificate - TPH CWG Banded

QTS Environmental Report No: 13-17089	Date Sampled	08/10/13	08/10/13	08/10/13	08/10/13	08/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	TPA	TPA	TPG	TPG	TPK
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	1.40 @ 4.00	1.00 @ 7.00	1.60	3.20	2.10
Reporting Date: 20/11/2013	QTSE Sample No	82124	82125	82128	82129	82135

Determinand	Unit	MDL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	12.60	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 1	NONE	< 1	69	< 1	< 1	< 1
Aliphatic >C10 - C12	mg/kg	< 1	NONE	< 1	119	9	< 1	< 1
Aliphatic >C12 - C16	mg/kg	< 1	NONE	< 1	606	37	< 1	< 1
Aliphatic >C16 - C21	mg/kg	< 1	NONE	< 1	1716	62	< 1	< 1
Aliphatic >C21 - C34	mg/kg	< 6	NONE	< 6	810	47	< 6	< 6
Aliphatic (C5 - C34)	mg/kg	< 12	NONE	< 12	3331	154	< 12	< 12
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	0.12	11.90	0.06	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	0.48	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 1	NONE	< 1	88	< 1	< 1	< 1
Aromatic >C10 - C12	mg/kg	< 1	NONE	< 1	104	3	< 1	< 1
Aromatic >C12 - C16	mg/kg	< 1	NONE	< 1	238	12	< 1	< 1
Aromatic >C16 - C21	mg/kg	< 1	NONE	< 1	705	35	< 1	< 1
Aromatic >C21 - C35	mg/kg	< 6	NONE	< 6	515	44	< 6	< 6
Aromatic (C5 - C35)	mg/kg	< 12	NONE	< 12	1661	93	< 12	< 12
Total >C5 - C35	mg/kg	< 24	NONE	< 24	4993	248	< 24	< 24

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Soil Analysis Certificate - TPH CWG Banded

QTS Environmental Report No: 13-17089	Date Sampled	08/10/13			
Ivy House Environmental Ltd	Time Sampled	None Supplied			
Site Reference: Pennycroft, Uttoxeter	TP / BH No	TPK			
Project / Job Ref: IV.58.13	Additional Refs	None Supplied			
Order No: None Supplied	Depth (m)	3.20			
Reporting Date: 20/11/2013	QTSE Sample No	82136			

Determinand	Unit	MDL	Accreditation				
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01			
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05			
Aliphatic >C8 - C10	mg/kg	< 1	NONE	< 1			
Aliphatic >C10 - C12	mg/kg	< 1	NONE	< 1			
Aliphatic >C12 - C16	mg/kg	< 1	NONE	< 1			
Aliphatic >C16 - C21	mg/kg	< 1	NONE	< 1			
Aliphatic >C21 - C34	mg/kg	< 6	NONE	< 6			
Aliphatic (C5 - C34)	mg/kg	< 12	NONE	< 12			
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01			
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05			
Aromatic >C8 - C10	mg/kg	< 1	NONE	< 1			
Aromatic >C10 - C12	mg/kg	< 1	NONE	< 1			
Aromatic >C12 - C16	mg/kg	< 1	NONE	< 1			
Aromatic >C16 - C21	mg/kg	< 1	NONE	< 1			
Aromatic >C21 - C35	mg/kg	< 6	NONE	< 6			
Aromatic (C5 - C35)	mg/kg	< 12	NONE	< 12			
Total >C5 - C35	mg/kg	< 24	NONE	< 24			

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



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Soil Analysis Certificate - BTEX / MTBE						
QTS Environmental Report No: 13-17089	Date Sampled	08/10/13	08/10/13	08/10/13	08/10/13	08/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	TPA	TPA	TPG	TPG	TPK
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	1.40 @ 4.00	1.00 @ 7.00	1.60	3.20	2.10
Reporting Date: 20/11/2013	QTSE Sample No	82124	82125	82128	82129	82135

Determinand	Unit	MDL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	121	11887	55	< 2	< 2
Toluene	ug/kg	< 5	MCERTS	12	478	18	< 5	< 5
Ethylbenzene	ug/kg	< 10	MCERTS	16	24871	50	< 10	< 10
p & m-xylene	ug/kg	< 10	MCERTS	18	16134	112	< 10	< 10
o-xylene	ug/kg	< 10	MCERTS	15	13639	83	< 10	< 10

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



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Soil Analysis Certificate - BTEX / MTBE					
QTS Environmental Report No: 13-17089	Date Sampled	08/10/13			
Ivy House Environmental Ltd	Time Sampled	None Supplied			
Site Reference: Pennycroft, Uttoxeter	TP / BH No	TPK			
Project / Job Ref: IV.58.13	Additional Refs	None Supplied			
Order No: None Supplied	Depth (m)	3.20			
Reporting Date: 20/11/2013	QTSE Sample No	82136			

Determinand	Unit	MDL	Accreditation				
Benzene	ug/kg	< 2	MCERTS	< 2			
Toluene	ug/kg	< 5	MCERTS	< 5			
Ethylbenzene	ug/kg	< 10	MCERTS	< 10			
p & m-xylene	ug/kg	< 10	MCERTS	< 10			
o-xylene	ug/kg	< 10	MCERTS	< 10			

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



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Soil Analysis Certificate - Volatile Organic Compounds (VOC)

QTS Environmental Report No: 13-17089	Date Sampled	08/10/13	08/10/13	08/10/13	08/10/13	08/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	TPA	TPA	TPB1A	TPG	TPG
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	1.40 @ 4.00	1.00 @ 7.00	2.60 @ 5.00	1.60	3.20
Reporting Date: 20/11/2013	QTSE Sample No	82124	82125	82126	82128	82129

Determinand	Unit	MDL	Accreditation	08/10/13	08/10/13	08/10/13	08/10/13	08/10/13
Dichlorodifluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Vinyl Chloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chloromethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Chloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromomethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Trichlorofluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethene	ug/kg	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
trans-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
cis-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
2,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chloroform	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,1-Trichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloropropene	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Carbon Tetrachloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Benzene	ug/kg	< 2	MCERTS	121	11890	71	55	< 2
1,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Trichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromodichloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Dibromomethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
TAME	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
cis-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Toluene	ug/kg	< 5	MCERTS	12	478	< 5	18	< 5
trans-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
1,3-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Tetrachloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Dibromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dibromoethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,1,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethyl Benzene	ug/kg	< 10	MCERTS	16	24870	12	50	< 10
m,p-Xylene	ug/kg	< 10	MCERTS	18	16130	< 10	112	< 10
o-Xylene	ug/kg	< 10	MCERTS	15	13640	< 10	83	< 10
Styrene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromoform	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Isopropylbenzene	ug/kg	< 5	MCERTS	< 5	377	< 5	8	< 5
1,1,2,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2,3-Trichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
n-Propylbenzene	ug/kg	< 5	MCERTS	< 5	321	< 5	7	< 5
Bromobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
2-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,3,5-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	316	< 5	177	< 5
4-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
tert-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2,4-Trimethylbenzene	ug/kg	< 5	MCERTS	11	32620	< 5	197	< 5
sec-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
p-Isopropyltoluene	ug/kg	< 5	MCERTS	< 5	149	< 5	8	< 5
1,3-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,4-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
n-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dibromo-3-chloropropane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Hexachlorobutadiene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



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Soil Analysis Certificate - Volatile Organic Compounds (VOC)				
QTS Environmental Report No: 13-17089	Date Sampled	08/10/13	08/10/13	08/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	TPI	TPH	TPK
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	3.20	3.40	2.10
Reporting Date: 20/11/2013	QTSE Sample No	82131	82133	82135

Determinand	Unit	MDL	Accreditation				
Dichlorodifluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Vinyl Chloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Chloromethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10
Chloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Bromomethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10
Trichlorofluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,1-Dichloroethene	ug/kg	< 5	ISO17025	< 5	< 5	< 5	< 5
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
trans-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,1-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
cis-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
2,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Chloroform	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Bromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,1,1-Trichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,1-Dichloropropene	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10
Carbon Tetrachloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,2-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
1,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Trichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Bromodichloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Dibromomethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
TAME	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
cis-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
trans-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10
1,3-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Tetrachloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Dibromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,2-Dibromoethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Chlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,1,1,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Ethyl Benzene	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10
m,p-Xylene	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10
o-Xylene	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10
Styrene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Bromoform	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10
Isopropylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,2,3-Trichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
n-Propylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Bromobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
2-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,3,5-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
4-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
tert-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,2,4-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
sec-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
p-Isopropyltoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,3-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,4-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
n-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,2-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,2-Dibromo-3-chloropropane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10
Hexachlorobutadiene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



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Soil Analysis Certificate - Semi Volatile Organic Compounds (SVOC)

QTS Environmental Report No: 13-17089	Date Sampled	08/10/13	08/10/13	08/10/13	08/10/13	08/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	TPA	TPA	TPB1A	TPG	TPG
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	1.40 @ 4.00	1.00 @ 7.00	2.60 @ 5.00	1.60	3.20
Reporting Date: 20/11/2013	QTSE Sample No	82124	82125	82126	82128	82129

Determinand	Unit	MDL	Accreditation	08/10/13	08/10/13	08/10/13	08/10/13	08/10/13
Phenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Nitrobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
0-Cresol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-chloroethoxy)methane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-chloroethyl)ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	mg/kg	< 0.15	ISO17025	< 0.15	< 0.15	< 0.15	0.26	< 0.15
Isophorone	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachloroethane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
p-Cresol	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
2,4,6-Trichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	mg/kg	< 0.1	MCERTS	0.1	3.5	< 0.1	2.3	< 0.1
Hexachlorocyclopentadiene	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethyl phthalate	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloroaniline	mg/kg	< 0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
4-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.1	< 0.1	< 0.1
Dibenzofuran	mg/kg	< 0.1	MCERTS	0.1	10.3	< 0.1	6.6	0.1
Azobenzene	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibutyl phthalate	mg/kg	< 0.15	ISO17025	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
Carbazole	mg/kg	< 0.1	ISO17025	0.2	4.8	0.1	1.9	0.1
bis(2-ethylhexyl)phthalate	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl butyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



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Soil Analysis Certificate - Semi Volatile Organic Compounds (SVOC)

QTS Environmental Report No: 13-17089	Date Sampled	08/10/13	08/10/13	08/10/13	08/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	TPI	TPH	TPK	TPK
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	3.20	3.40	2.10	3.20
Reporting Date: 20/11/2013	QTSE Sample No	82131	82133	82135	82136

Determinand	Unit	MDL	Accreditation	08/10/13	08/10/13	08/10/13	08/10/13
Phenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Nitrobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
0-Cresol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-chloroethoxy)methane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-chloroethyl)ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	mg/kg	< 0.15	ISO17025	< 0.15	< 0.15	< 0.15	< 0.15
Isophorone	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Hexachloroethane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
p-Cresol	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15	< 0.15	< 0.15
2,4,6-Trichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.2	< 0.1
Hexachlorocyclopentadiene	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Dimethyl phthalate	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloroaniline	mg/kg	< 0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
4-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Diethyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.2	< 0.1
Azobenzene	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Dibutyl phthalate	mg/kg	< 0.15	ISO17025	< 0.15	< 0.15	< 0.15	< 0.15
Carbazole	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	0.2	< 0.1
bis(2-ethylhexyl)phthalate	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl butyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



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Leachate Analysis Certificate					
QTS Environmental Report No: 13-17089	Date Sampled	08/10/13			
Ivy House Environmental Ltd	Time Sampled	None Supplied			
Site Reference: Pennycroft, Uttoxeter	TP / BH No	TPB			
Project / Job Ref: IV.58.13	Additional Refs	None Supplied			
Order No: None Supplied	Depth (m)	1.40 @ 3.00			
Reporting Date: 20/11/2013	QTSE Sample No	82137			

Determinand	Unit	MDL	Accreditation				
Complex Cyanide	ug/l	< 5	NONE	< 5			
Free Cyanide	ug/l	< 5	NONE	< 5			
Thiocyanate as SCN	ug/l	< 10	NONE	< 10			
Arsenic	ug/l	< 10	NONE	< 10			
Boron	ug/l	< 50	NONE	59			
Cadmium	ug/l	< 0.5	NONE	< 0.5			
Chromium	ug/l	< 5	NONE	< 5			
Copper	ug/l	< 10	NONE	< 10			
Lead	ug/l	< 5	NONE	< 5			
Mercury	ug/l	< 0.05	NONE	< 0.05			
Nickel	ug/l	< 7	NONE	< 7			
Selenium	ug/l	< 5	NONE	< 5			
Zinc	ug/l	< 5	NONE	< 5			

Subcontracted analysis ^(S)



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Leachate Analysis Certificate - TPH CWG Banded						
QTS Environmental Report No: 13-17089	Date Sampled	08/10/13				
Ivy House Environmental Ltd	Time Sampled	None Supplied				
Site Reference: Pennycroft, Uttoxeter	TP / BH No	TPB				
Project / Job Ref: IV.58.13	Additional Refs	None Supplied				
Order No: None Supplied	Depth (m)	1.40 @ 3.00				
Reporting Date: 20/11/2013	QTSE Sample No	82137				

Determinand	Unit	MDL	Accreditation				
Aliphatic >C5 - C6	ug/l	< 10	NONE	< 10			
Aliphatic >C6 - C8	ug/l	< 10	NONE	< 10			
Aliphatic >C8 - C10	ug/l	< 10	NONE	< 10			
Aliphatic >C10 - C12	ug/l	< 10	NONE	< 10			
Aliphatic >C12 - C16	ug/l	< 10	NONE	< 10			
Aliphatic >C16 - C21	ug/l	< 10	NONE	< 10			
Aliphatic >C21 - C34	ug/l	< 10	NONE	< 10			
Aliphatic (C5 - C34)	ug/l	< 70	NONE	< 70			
Aromatic >C5 - C7	ug/l	< 10	NONE	43			
Aromatic >C7 - C8	ug/l	< 10	NONE	< 10			
Aromatic >C8 - C10	ug/l	< 10	NONE	21			
Aromatic >C10 - C12	ug/l	< 10	NONE	40			
Aromatic >C12 - C16	ug/l	< 10	NONE	111			
Aromatic >C16 - C21	ug/l	< 10	NONE	72			
Aromatic >C21 - C35	ug/l	< 10	NONE	< 10			
Aromatic (C5 - C35)	ug/l	< 70	NONE	287			
Total >C5 - C35	ug/l	< 140	NONE	287			



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Leachate Analysis Certificate - BTEX / MTBE						
QTS Environmental Report No: 13-17089	Date Sampled	08/10/13				
Ivy House Environmental Ltd	Time Sampled	None Supplied				
Site Reference: Pennycroft, Uttoxeter	TP / BH No	TPB				
Project / Job Ref: IV.58.13	Additional Refs	None Supplied				
Order No: None Supplied	Depth (m)	1.40 @ 3.00				
Reporting Date: 20/11/2013	QTSE Sample No	82137				

Determinand	Unit	MDL	Accreditation				
Benzene	ug/l	< 1	ISO17025	43			
Toluene	ug/l	< 5	ISO17025	< 5			
Ethylbenzene	ug/l	< 5	ISO17025	20			
p & m-xylene	ug/l	< 10	ISO17025	< 10			
o-xylene	ug/l	< 5	ISO17025	< 5			



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Leachate Analysis Certificate - Volatile Organic Compounds (VOC)			
QTS Environmental Report No: 13-17089	Date Sampled	08/10/13	
Ivy House Environmental Ltd	Time Sampled	None Supplied	
Site Reference: Pennycroft, Uttoxeter	TP / BH No	TPB	
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	
Order No: None Supplied	Depth (m)	1.40 @ 3.00	
Reporting Date: 20/11/2013	QTSE Sample No	82137	

Determinand	Unit	MDL	Accreditation				
Dichlorodifluoromethane	ug/l	< 5	ISO17025	< 5			
Vinyl Chloride	ug/l	< 5	ISO17025	< 5			
Chloromethane	ug/l	< 5	ISO17025	< 5			
Chloroethane	ug/l	< 5	ISO17025	< 5			
Bromomethane	ug/l	< 5	ISO17025	< 5			
Trichlorofluoromethane	ug/l	< 5	ISO17025	< 5			
1,1-Dichloroethene	ug/l	< 5	ISO17025	< 5			
MTBE	ug/l	< 10	ISO17025	< 10			
trans-1,2-Dichloroethene	ug/l	< 5	ISO17025	< 5			
1,1-Dichloroethane	ug/l	< 5	ISO17025	< 5			
cis-1,2-Dichloroethene	ug/l	< 5	ISO17025	< 5			
2,2-Dichloropropane	ug/l	< 5	ISO17025	< 5			
Chloroform	ug/l	< 5	ISO17025	< 5			
Bromochloromethane	ug/l	< 10	ISO17025	< 10			
1,1,1-Trichloroethane	ug/l	< 5	ISO17025	< 5			
1,1-Dichloropropene	ug/l	< 5	ISO17025	< 5			
Carbon Tetrachloride	ug/l	< 5	ISO17025	< 5			
1,2-Dichloroethane	ug/l	< 10	ISO17025	< 10			
Benzene	ug/l	< 1	ISO17025	43			
1,2-Dichloropropane	ug/l	< 5	ISO17025	< 5			
Trichloroethene	ug/l	< 5	ISO17025	< 5			
Bromodichloromethane	ug/l	< 5	ISO17025	< 5			
Dibromomethane	ug/l	< 5	ISO17025	< 5			
TAME	ug/l	< 5	ISO17025	< 5			
cis-1,3-Dichloropropene	ug/l	< 5	ISO17025	< 5			
Toluene	ug/l	< 5	ISO17025	< 5			
trans-1,3-Dichloropropene	ug/l	< 5	ISO17025	< 5			
1,1,2-Trichloroethane	ug/l	< 10	ISO17025	< 10			
1,3-Dichloropropane	ug/l	< 5	ISO17025	< 5			
Tetrachloroethene	ug/l	< 5	ISO17025	< 5			
Dibromochloromethane	ug/l	< 5	ISO17025	< 5			
1,2-Dibromoethane	ug/l	< 5	ISO17025	< 5			
Chlorobenzene	ug/l	< 5	ISO17025	< 5			
1,1,1,2-Tetrachloroethane	ug/l	< 5	ISO17025	< 5			
Ethyl Benzene	ug/l	< 5	ISO17025	20			
m,p-Xylene	ug/l	< 10	ISO17025	< 10			
o-Xylene	ug/l	< 5	ISO17025	< 5			
Styrene	ug/l	< 5	ISO17025	< 5			
Bromoform	ug/l	< 10	ISO17025	< 10			
Isopropylbenzene	ug/l	< 5	ISO17025	< 5			
1,1,2,2-Tetrachloroethane	ug/l	< 10	ISO17025	< 10			
1,2,3-Trichloropropane	ug/l	< 5	ISO17025	< 5			
n-Propylbenzene	ug/l	< 5	ISO17025	< 5			
Bromobenzene	ug/l	< 5	ISO17025	< 5			
2-Chlorotoluene	ug/l	< 5	ISO17025	< 5			
1,3,5-Trimethylbenzene	ug/l	< 5	ISO17025	< 5			
4-Chlorotoluene	ug/l	< 5	ISO17025	< 5			
tert-Butylbenzene	ug/l	< 5	ISO17025	< 5			
1,2,4-Trimethylbenzene	ug/l	< 5	ISO17025	< 5			
sec-Butylbenzene	ug/l	< 5	ISO17025	< 5			
p-Isopropyltoluene	ug/l	< 5	ISO17025	< 5			
1,3-Dichlorobenzene	ug/l	< 5	ISO17025	< 5			
1,4-Dichlorobenzene	ug/l	< 5	ISO17025	< 5			
n-Butylbenzene	ug/l	< 5	ISO17025	< 5			
1,2-Dichlorobenzene	ug/l	< 5	ISO17025	< 5			
1,2-Dibromo-3-chloropropane	ug/l	< 10	ISO17025	< 10			
Hexachlorobutadiene	ug/l	< 5	ISO17025	< 5			



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Leachate Analysis Certificate - Semi Volatile Organic Compounds (SVOC)			
QTS Environmental Report No: 13-17089	Date Sampled	08/10/13	
Ivy House Environmental Ltd	Time Sampled	None Supplied	
Site Reference: Pennycroft, Uttoxeter	TP / BH No	TPB	
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	
Order No: None Supplied	Depth (m)	1.40 @ 3.00	
Reporting Date: 20/11/2013	QTSE Sample No	82137	

Determinand	Unit	MDL	Accreditation				
Phenol	ug/l	< 0.1	NONE	< 0.1			
1,2,4-Trichlorobenzene	ug/l	< 0.1	NONE	< 0.1			
2-Nitrophenol	ug/l	< 0.1	NONE	< 0.1			
Nitrobenzene	ug/l	< 0.1	NONE	< 0.1			
0-Cresol	ug/l	< 0.1	NONE	< 0.1			
bis(2-chloroethoxy)methane	ug/l	< 0.1	NONE	< 0.1			
bis(2-chloroethyl)ether	ug/l	< 0.1	NONE	< 0.1			
2,4-Dichlorophenol	ug/l	< 0.1	NONE	< 0.1			
2-Chlorophenol	ug/l	< 0.1	NONE	< 0.1			
1,3-Dichlorobenzene	ug/l	< 0.1	NONE	< 0.1			
1,4-Dichlorobenzene	ug/l	< 0.1	NONE	< 0.1			
1,2-Dichlorobenzene	ug/l	< 0.1	NONE	< 0.1			
2,4-Dimethylphenol	ug/l	< 0.1	NONE	< 0.1			
Isophorone	ug/l	< 0.1	NONE	< 0.1			
Hexachloroethane	ug/l	< 0.1	NONE	< 0.1			
p-Cresol	ug/l	< 0.1	NONE	< 0.1			
2,4,6-Trichlorophenol	ug/l	< 0.1	NONE	< 0.1			
2,4,5-Trichlorophenol	ug/l	< 0.1	NONE	< 0.1			
2-Nitroaniline	ug/l	< 0.1	NONE	< 0.1			
4-Chloro-3-methylphenol	ug/l	< 0.1	NONE	< 0.1			
2-Methylnaphthalene	ug/l	< 0.1	NONE	< 0.1			
Hexachlorocyclopentadiene	ug/l	< 0.1	NONE	< 0.1			
Hexachlorobutadiene	ug/l	< 0.1	NONE	< 0.1			
2,6-Dinitrotoluene	ug/l	< 0.1	NONE	< 0.1			
Dimethyl phthalate	ug/l	< 0.1	NONE	< 0.1			
2-Chloronaphthalene	ug/l	< 0.1	NONE	< 0.1			
4-Chloroaniline	ug/l	< 0.1	NONE	< 0.1			
4-Nitrophenol	ug/l	< 0.1	NONE	< 0.1			
4-Chlorophenyl phenyl ether	ug/l	< 0.1	NONE	< 0.1			
3-Nitroaniline	ug/l	< 0.1	NONE	< 0.1			
4-Nitroaniline	ug/l	< 0.1	NONE	< 0.1			
4-Bromophenyl phenyl ether	ug/l	< 0.1	NONE	< 0.1			
Hexachlorobenzene	ug/l	< 0.1	NONE	< 0.1			
2,4-Dinitrotoluene	ug/l	< 0.1	NONE	< 0.1			
Diethyl phthalate	ug/l	< 0.1	NONE	< 0.1			
Dibenzofuran	ug/l	< 0.1	NONE	13.2			
Azobenzene	ug/l	< 0.1	NONE	< 0.1			
Dibutyl phthalate	ug/l	< 0.1	NONE	< 0.1			
Carbazole	ug/l	< 0.1	NONE	49.1			
bis(2-ethylhexyl)phthalate	ug/l	< 0.1	NONE	< 0.1			
Benzyl butyl phthalate	ug/l	< 0.1	NONE	< 0.1			
Di-n-octyl phthalate	ug/l	< 0.1	NONE	< 0.1			



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Soil Analysis Certificate - Sample Descriptions	
QTS Environmental Report No: 13-17089	
Ivy House Environmental Ltd	
Site Reference: Pennycroft, Uttoxeter	
Project / Job Ref: IV.58.13	
Order No: None Supplied	
Reporting Date: 20/11/2013	

QTSE Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
82124	TPA	None Supplied	1.40 @ 4.00	16.9	Red sandy clay with stones
82125	TPA	None Supplied	1.00 @ 7.00	16.4	Black loamy clay with rubble
82126	TPB1A	None Supplied	2.60 @ 5.00	17.9	Red loamy clay
82127	TPG	+1.00m	None Supplied	9	Brown sandy loam with stones and vegetation
82128	TPG	None Supplied	1.60	25.8	Black loamy gravel
82129	TPG	None Supplied	3.20	13.6	Light brown gravelly clay with stones
82130	TPI	None Supplied	1.00	14.7	Grey loamy gravel with brick and stones
82131	TPI	None Supplied	3.20	13.1	Light brown clayey gravel with stones
82132	TPH	None Supplied	0.70 - 1.60	11.3	Grey loamy gravel with rubble and stones
82133	TPH	None Supplied	3.40	12.5	Grey sandy clay with stones
82134	TPJ	None Supplied	0.50	13.5	Brown sandy loam
82135	TPK	None Supplied	2.10	22.6	Grey loamy gravel with rubble
82136	TPK	None Supplied	3.20	11.3	Red sandy clay

Insufficient sample ^{1/5}
 Unsuitable Sample ^{4/5}



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Soil Analysis Certificate - Methodology & Miscellaneous Information
QTS Environmental Report No: 13-17089
Ivy House Environmental Ltd
Site Reference: Pennycroft, Uttoxeter
Project / Job Ref: IV.58.13
Order No: None Supplied
Reporting Date: 20/11/2013

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E021
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by turbidimeter	E020
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E023
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E011
Soil	D	Loss on Ignition @ 450°C	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	D	Phosphorus	Determination of phosphorus by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	AR	Sulphide	Determination of sulphide by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia, potassium iodide/iodate followed by ICP-OES	E002
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E011
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E009
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E009
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E010
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E009
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	VPH (C6 - C10)	Determination of hydrocarbons C6-C10 by headspace GC-MS	E001
Soil	AR	EPH TEXAS	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	TPH CWG	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	TPH LQM	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	EPH (with florisisl cleanup)	Determination of acetone/hexane extractable hydrocarbons with florisisl cleanup step by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	VOCS	Determination of volatile organic compounds by headspace GC-MS	E001

Key

D Dried
AR As Received



BWB Consulting
3-4 Kayes Walk
The Lace Market
Nottingham
Nottinghamshire
NG1 1PY

Attention: Richard Robinson

CERTIFICATE OF ANALYSIS

Date: 21 July 2010
Customer: H_BWB_NTT-81
Sample Delivery Group (SDG): 100708-104 **Report No.:** 91025
Your Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

We received 49 samples on Thursday July 08, 2010 and 28 of these samples were scheduled for analysis which was completed on Wednesday July 21, 2010. 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.

Asbestos testing - we are not accredited for screening soil samples for asbestos fibres. We are only accredited to identify asbestos fibres in bulk material (ACM).

Approved By:

Iain Swinton

Operations Director - Land UK & Ireland



SDG:	100708-104	Customer:	BWB Consulting
Job:	H_BWB_NTT-81	Attention:	Richard Robinson
Client Reference:	NTE 285	Order No.:	NE09/616
Location:	THE DOVE WAY UTTOXETER	Report No:	91025

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Sampled Date
1795358	TP101	0.20	05/07/2010
1795377	TP101	2.00	05/07/2010
1795474	TP102	1.00	05/07/2010
1795508	TP103	0.50	05/07/2010
1795533	TP103	2.00	05/07/2010
1795553	TP104	0.60	05/07/2010
1795581	TP105	0.70	05/07/2010
1795611	TP105	2.80	05/07/2010
1795655	TP106		05/07/2010
1795636	TP106	0.20	05/07/2010
1795674	TP107	0.60	05/07/2010
1795713	TP107	1.30	05/07/2010
1795808	TP108	0.50	06/07/2010
1795815	TP108	2.20	06/07/2010
1796216	TP110	0.80	07/07/2010
1796239	TP110	2.60	07/07/2010
1796247	TP111	0.40	07/07/2010
1796796	TP111	2.80	07/07/2010
1796270	TP112	0.80	07/07/2010
1796289	TP112	2.80	07/07/2010
1796306	TP113	0.30	07/07/2010
1796353	TP113	3.00	07/07/2010
1796622	TP116	0.20	07/07/2010
1796327	TP116	1.80	07/07/2010
1795825	TP124	0.80	06/07/2010
1795821	TP124	1.80	06/07/2010
1795848	TP125	0.50	06/07/2010
1796508	TP125	1.70	06/07/2010
1796957	TP125	2.20	06/07/2010
1796053	TP126	0.30	06/07/2010
1796418	TP126	2.20	06/07/2010
1796032	TP127	1.10	06/07/2010
1796087	TP127	2.00	06/07/2010
1796743	TP128	0.40	06/07/2010
1796970	TP128	0.50	06/07/2010
1796662	TP128	1.50	06/07/2010
1796720	TP129	0.60	06/07/2010
1796809	TP129	1.80	06/07/2010
1796767	TP130	0.20	06/07/2010
1796471	TP130	1.70	06/07/2010
1796700	TP131	0.75	06/07/2010
1796382	TP131	1.50	06/07/2010
1796784	TP132	0.60	06/07/2010

SDG:	100708-104	Customer:	BWB Consulting
Job:	H_BWB_NTT-81	Attention:	Richard Robinson
Client Reference:	NTE 285	Order No.:	NE09/616
Location:	THE DOVE WAY UTTOXETER	Report No:	91025

1796587	TP133	0.60	06/07/2010
1796440	TP133	1.80	06/07/2010
1796915	WS2	0.10 - 0.80	07/07/2010
1796928	WS2	1.10 - 1.50	07/07/2010

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

SDG: 100708-104
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 91025

SOLID

Results Legend	Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Container
	<p>X Test</p> <p>N No Determination Possible</p>	1796662	TP128	1.50
	1796622	TP116	0.20	250g Amber Jar 1kg Tub
	1796587	TP133	0.80	80g VOC 250g Amber Jar 1kg Tub
	1796508	TP125	1.70	250g Amber Jar 80g VOC
	1796418	TP126	2.20	250g Amber Jar 80g VOC 40g Tub
	1796363	TP113	3.00	250g Amber Jar 40g Tub
	1796327	TP116	1.80	250g Amber Jar 80g VOC
	1796289	TP112	2.80	250g Amber Jar 40g Tub
	1796270	TP112	0.80	250g Amber Jar 80g VOC
	1796247	TP111	0.40	250g Amber Jar 1kg Tub
	1796216	TP110	0.80	250g Amber Jar 1kg Tub
	1796087	TP127	2.00	40g Tub 250g Amber Jar
	1796825	TP124	0.80	250g Amber Jar
	1796821	TP124	1.80	1kg Tub 80g VOC 250g Amber Jar
	1796674	TP107	0.80	40g Tub 250g Amber Jar
	1796636	TP106	0.20	40g Tub 250g Amber Jar
	1796581	TP105	0.70	40g Tub 250g Amber Jar
	1796533	TP103	2.00	40g Tub 250g Amber Jar
	1796474	TP102	1.00	40g Tub 250g Amber Jar
	1796368	TP101	0.20	40g Tub 250g Amber Jar
Anions by Kone (w)	All			
Asbestos Containing Material Screen	All			
Boron Water Soluble	All			
CEN Readings	All			
Cyanide Complex/Free/Total/Thiocyan	All			
Cyanides Complex/Free/Total/Thiocya	Cyanide, Complex			
	Cyanide, Free			
	Cyanide, Total			
Dissolved Metals by ICP-MS	All			
EPH CWG (Aliphatic) GC (S)	All			
EPH CWG (Aromatic) GC (S)	All			
GRO BTEX MTBE GC (S)	All			
Mercury Dissolved	All			
Metals by iCap-OES (Soil)	Arsenic			
	Barium			
	Beryllium			
	Cadmium			
	Chromium			
	Copper			
	Lead			
	Mercury			
	Nickel			
	Selenium			

		Total																				
1795928	WS2	1.10 - 1.50																				
1795915	WS2	0.10 - 0.80																				
1795809	TP129	1.80																				
1795796	TP111	2.80																				
1795784	TP132	0.60																				
1795767	TP130	0.20																				
1795743	TP128	0.40																				
		1.10 - 1.50																				
		0.10 - 0.80																				
		1.80																				
		2.80																				
		0.60																				
		0.20																				
		0.40																				

		Total																			
1796928	WS2	1.10 - 1.50		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			60g VOC	X																	
			20g Amber Jar		X																
			1g TB			X															
1796915	WS2	0.10 - 0.80		20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
			40g Tub	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1796809	TP129	1.80																			
			20g Amber Jar	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
			40g Tub																		
1796796	TP111	2.80																			
			20g Amber Jar	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
			40g Tub																		
1796784	TP132	0.60																			
			20g Amber Jar	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
			80g VOC																		
1796767	TP130	0.20																			
			20g Amber Jar	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
			1g TB																		
1796743	TP128	0.40																			
			20g Amber Jar	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
			1g TB																		

SDG:	100708-104	Customer:	BWB Consulting
Job:	H_BWB_NTT-81	Attention:	Richard Robinson
Client Reference:	NTE 285	Order No.:	NE09/616
Location:	THE DOVE WAY UTTOXETER	Report No:	91025

Sample Descriptions

Grain Sizes:

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

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions
1795358	TP101	0.20	Dark Brown	Sandy Clay	0.1 - 2 mm	Stones
1795474	TP102	1.00	Light Brown	Clay	<0.063 mm	Vegetation
1795533	TP103	2.00	Dark Brown	Sand	0.1 - 2 mm	Stones
1795581	TP105	0.70	Orange	Silty Clay	0.063 - 0.1 mm	N/A
1795636	TP106	0.20	Dark Brown	Silt Loam	0.063 - 0.1 mm	Vegetation
1795674	TP107	0.60	Light Brown	Clay Loam	<0.063 mm	None
1795821	TP124	1.80	Dark Brown	Sand	0.1 - 2 mm	Stones
1795825	TP124	0.80	Dark Brown	Silty Clay	0.063 - 0.1 mm	N/A
1796087	TP127	2.00	Light Brown	Sand	0.1 - 2 mm	Stones
1796216	TP110	0.80	Black	Silt	<0.063 mm	N/A
1796247	TP111	0.40	Dark Brown	Sandy Silt Loam	0.1 - 2 mm	Stones
1796270	TP112	0.80	Dark Brown	Silty Clay	0.063 - 0.1 mm	Stones
1796289	TP112	2.80	Dark Brown	Sandy Clay	0.1 - 2 mm	Stones
1796327	TP116	1.80	Dark Brown	Silty Clay Loam	0.063 - 0.1 mm	Stones
1796353	TP113	3.00	Light Brown	Silty Sand	0.063 - 0.1 mm	Stones
1796418	TP126	2.20	Dark Brown	Sandy Clay	0.063 - 0.1 mm	Stones
1796508	TP125	1.70	Light Brown	Silty Sand	0.063 - 0.1 mm	Stones
1796587	TP133	0.60	Orange	Sand	0.1 - 2 mm	Stones
1796622	TP116	0.20	Light Brown	Clay Loam	0.063 - 0.1 mm	Stones
1796662	TP128	1.50	Dark Brown	Loamy Sand	0.1 - 2 mm	Stones
1796720	TP129	0.60	Light Brown	Clay Loam	0.063 - 0.1 mm	Vegetation
1796743	TP128	0.40	Light Brown	Clay	<0.063 mm	N/A
1796767	TP130	0.20	Light Brown	Silty Sand	0.1 - 2 mm	Brick
1796784	TP132	0.60	Light Brown	Silty Clay	0.063 - 0.1 mm	N/A
1796796	TP111	2.80	Light Brown	Clay Loam	0.063 - 0.1 mm	Stones
1796809	TP129	1.80	Dark Brown	Silt Loam	0.063 - 0.1 mm	Stones
1796915	WS2	0.10 - 0.80	Light Brown	Sandy Silt Loam	0.063 - 0.1 mm	Stones
1796928	WS2	1.10 - 1.50	Dark Brown	Silty Clay	0.063 - 0.1 mm	Stones

SDG:	100708-104	Customer:	BWB Consulting
Job:	H_BWB_NTT-81	Attention:	Richard Robinson
Client Reference:	NTE 285	Order No.:	NE09/616
Location:	THE DOVE WAY UTTOXETER	Report No:	91025

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 occurring 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.

SDG:	100708-104	Customer:	BWB Consulting
Job:	H_BWB_NTT-81	Attention:	Richard Robinson
Client Reference:	NTE 285	Order No.:	NE09/616
Location:	THE DOVE WAY UTTOXETER	Report No:	91025

Test Completion dates

SDG reference: 100708-104

Lab Sample No(s)	1795358	1795474	1795533	1795581	1795636	1795674	1795821	1795825	1796087	1796216	1796247	1796270
Customer Sample Ref.	TP101	TP102	TP103	TP105	TP106	TP107	TP124	TP124	TP127	TP110	TP111	TP112
Depth	0.20	1.00	2.00	0.70	0.20	0.60	1.80	0.80	2.00	0.80	0.40	0.80
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Anions by Kone (w)			15/07/2010						15/07/2010		16/07/2010	
Asbestos Containing Material Screen										14/07/2010		
Boron Water Soluble	14/07/2010	14/07/2010		14/07/2010	15/07/2010	15/07/2010		16/07/2010		16/07/2010		
CEN Readings			16/07/2010						16/07/2010		16/07/2010	
Cyanide Comp/Free/Total/Thiocyanate	14/07/2010	15/07/2010	16/07/2010	14/07/2010	15/07/2010	15/07/2010		16/07/2010	16/07/2010	15/07/2010	16/07/2010	
Dissolved Metals by ICP-MS			16/07/2010						16/07/2010		16/07/2010	
EPH CWG (Aliphatic) GC (S)							20/07/2010					19/07/2010
EPH CWG (Aromatic) GC (S)							20/07/2010					19/07/2010
GRO BTEX MTBE GC (S)							19/07/2010					20/07/2010
Mercury Dissolved			16/07/2010						16/07/2010		16/07/2010	
Metals by iCap-OES (Soil)	15/07/2010	15/07/2010		15/07/2010	16/07/2010	15/07/2010		15/07/2010		15/07/2010		
Moisture Meter			14/07/2010						14/07/2010		14/07/2010	
PAH by GCMS	14/07/2010	14/07/2010		14/07/2010	15/07/2010	15/07/2010		15/07/2010		16/07/2010		
pH	14/07/2010	14/07/2010		14/07/2010	15/07/2010	15/07/2010		15/07/2010		14/07/2010		
pH Value			15/07/2010						15/07/2010		16/07/2010	
Phenols by HPLC (S)	14/07/2010	14/07/2010		15/07/2010	15/07/2010	15/07/2010		16/07/2010		15/07/2010		
Sample description	13/07/2010	13/07/2010	13/07/2010	13/07/2010	14/07/2010	14/07/2010	14/07/2010	14/07/2010	13/07/2010	14/07/2010	13/07/2010	14/07/2010
Total Organic Carbon	15/07/2010	15/07/2010		15/07/2010	15/07/2010	15/07/2010		19/07/2010		19/07/2010		
Total Sulphur	15/07/2010	15/07/2010		14/07/2010	15/07/2010	15/07/2010		16/07/2010		16/07/2010		
TPH c6-40 Value of soil	15/07/2010	15/07/2010		15/07/2010	16/07/2010	16/07/2010		16/07/2010		16/07/2010		
TPH CWG GC (S)							21/07/2010					20/07/2010
VOC MS (S)												20/07/2010
Water Soluble Sulphate 2:1	14/07/2010	14/07/2010		14/07/2010	15/07/2010	15/07/2010		15/07/2010		15/07/2010		

1796289	1796327	1796353	1796418	1796508	1796587	1796622	1796662	1796720	1796743	1796767	1796784	1796796	1796809	1796915
TP112	TP116	TP113	TP126	TP125	TP133	TP116	TP128	TP129	TP128	TP130	TP132	TP111	TP129	WS2
2.80	1.80	3.00	2.20	1.70	0.60	0.20	1.50	0.60	0.40	0.20	0.60	2.80	1.80	0.10 - 0.80
SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
16/07/2010					15/07/2010						16/07/2010			
											14/07/2010			
16/07/2010		16/07/2010	15/07/2010		15/07/2010	16/07/2010	16/07/2010			16/07/2010	15/07/2010	15/07/2010	16/07/2010	16/07/2010
16/07/2010					16/07/2010						16/07/2010			
16/07/2010		15/07/2010	16/07/2010		16/07/2010	15/07/2010	15/07/2010			15/07/2010	16/07/2010	15/07/2010	16/07/2010	16/07/2010
16/07/2010					16/07/2010						16/07/2010			
	16/07/2010		16/07/2010	16/07/2010	16/07/2010			20/07/2010			16/07/2010			
	16/07/2010		16/07/2010	16/07/2010	16/07/2010			20/07/2010			16/07/2010			
	21/07/2010		19/07/2010	20/07/2010	19/07/2010			20/07/2010			20/07/2010			
16/07/2010					16/07/2010						16/07/2010			
15/07/2010		15/07/2010	15/07/2010		15/07/2010	16/07/2010	16/07/2010			15/07/2010	15/07/2010	15/07/2010	16/07/2010	15/07/2010
14/07/2010					14/07/2010						14/07/2010			
15/07/2010		15/07/2010	15/07/2010		15/07/2010	16/07/2010	16/07/2010			15/07/2010	15/07/2010	15/07/2010	15/07/2010	15/07/2010
14/07/2010		15/07/2010	15/07/2010		15/07/2010	15/07/2010	15/07/2010			14/07/2010	14/07/2010	15/07/2010	15/07/2010	15/07/2010
16/07/2010					15/07/2010						16/07/2010			
15/07/2010		16/07/2010	15/07/2010		15/07/2010	16/07/2010	16/07/2010			15/07/2010	15/07/2010	15/07/2010	16/07/2010	15/07/2010
13/07/2010	14/07/2010	14/07/2010	14/07/2010	14/07/2010	13/07/2010	14/07/2010	14/07/2010	14/07/2010	14/07/2010	14/07/2010	13/07/2010	14/07/2010	14/07/2010	14/07/2010
19/07/2010		19/07/2010	19/07/2010		19/07/2010	19/07/2010	19/07/2010			19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010
16/07/2010		16/07/2010	15/07/2010		15/07/2010	16/07/2010	16/07/2010			16/07/2010	15/07/2010	15/07/2010	16/07/2010	16/07/2010
16/07/2010		16/07/2010	16/07/2010		16/07/2010	16/07/2010	16/07/2010			16/07/2010	16/07/2010	16/07/2010	16/07/2010	16/07/2010
	21/07/2010		19/07/2010	20/07/2010	19/07/2010			20/07/2010			20/07/2010			
15/07/2010		15/07/2010	15/07/2010		15/07/2010	16/07/2010	16/07/2010			15/07/2010	15/07/2010	15/07/2010	16/07/2010	15/07/2010

1796928
WS2
1.10 - 1.50
SOLID
16/07/2010
16/07/2010
20/07/2010
20/07/2010
19/07/2010
15/07/2010
20/07/2010
15/07/2010
15/07/2010
14/07/2010
19/07/2010
16/07/2010
16/07/2010
20/07/2010
15/07/2010

SDG: 100708-104
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 91025

Results Legend		Customer Sample Ref.	TP101	TP102	TP103	TP105	TP106	TP107
#	ISO17025 accredited.	Depth (m)	0.20	1.00	2.00	0.70	0.20	0.60
M	mCERTS accredited.	Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.	Date Sampled	05/07/2010	05/07/2010	05/07/2010	05/07/2010	05/07/2010	05/07/2010
diss.filt	Dissolved / filtered sample.	Date Received	08/07/2010	08/07/2010	08/07/2010	08/07/2010	08/07/2010	08/07/2010
tot.unfilt	Total / unfiltered sample.	SDG Ref	100708-104	100708-104	100708-104	100708-104	100708-104	100708-104
*	subcontracted test.	Lab Sample No.(s)	1795358	1795474	1795533	1795581	1795636	1795674
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.							
Component	LOD/Units	Method						
Moisture	%	PM114			15.4			
Moisture content ratio	%	PM114			18.2			
Dry matter content ratio	%	PM114			84.6			
Phenols, Total monohydric	<0.22 mg/kg	TM062 (S)	<0.22	<0.22		<0.22	<0.22	<0.22
Sulphate, 2:1 water soluble	<0.003 g/l	TM098	0.0046	0.0342		0.0218	0.008	0.0324
Sulphur, Total	<0.02 %	TM132	0.07	0.03		0.02	0.05	<0.02
Fraction Organic Carbon (FOC)	<0.002 -	TM132	0.0519	0.0065		0.0063	0.0593	0.0072
pH	1 pH Units	TM133	7.48	6.56		7.18	6.01	7.71
Cyanide, Total	<1 mg/kg	TM153	1.52	<1		<1	<1	<1
Cyanide, Free	<1 mg/kg	TM153	<1	<1		<1	<1	<1
Cyanide, Complex	<1 mg/kg	TM153	1.45	<1		<1	<1	<1
TPH >C6-C40	<10 mg/kg	TM154	2120	55.2		48	299	215
Arsenic	<0.6 mg/kg	TM181	16.4	12.5		15.2	18.2	10
Barium	<0.6 mg/kg	TM181	499	328		380	446	311
Beryllium	<0.01 mg/kg	TM181	1.74	1.54		1.59	2.46	1.5
Cadmium	<0.02 mg/kg	TM181	1.17	<0.02		<0.02	0.685	<0.02
Chromium	<0.9 mg/kg	TM181	39.1	39.6		37.3	34.2	37.8
Copper	<1.4 mg/kg	TM181	80.9	19.5		18.4	74.7	15.6
Lead	<0.7 mg/kg	TM181	255	19.8		24	191	19.5
Mercury	<0.14 mg/kg	TM181	<0.14	<0.14		<0.14	<0.14	<0.14
Nickel	<0.2 mg/kg	TM181	33.7	32.2		36.5	32.2	28.7
Selenium	<1 mg/kg	TM181	1.65	1.93		1.46	1.58	1.23
Vanadium	<0.2 mg/kg	TM181	47.4	49.4		48	45.4	46.4
Zinc	<1.9 mg/kg	TM181	339	130		118	323	104
Boron, water soluble	<1 mg/kg	TM222	1.73	<1		<1	1.14	1.16

SDG 100708-104
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 91025

PAH by GCMS

Results Legend		Customer Sample Ref.	TP101	TP102	TP105	TP106	TP107
#	ISO17025 accredited.						
M	mCERTS accredited.						
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 the individual compounds within the samples are not corrected for this recovery.						
		Depth (m)	0.20	1.00	0.70	0.20	0.60
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
		Date Sampled	05/07/2010	05/07/2010	05/07/2010	05/07/2010	05/07/2010
		Date Received	08/07/2010	08/07/2010	08/07/2010	08/07/2010	08/07/2010
		SDG Ref	100708-104	100708-104	100708-104	100708-104	100708-104
		Lab Sample No.(s)	1795358	1795474	1795581	1795636	1795674
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	100	95.2	98.1	93.2	96.8
Acenaphthene-d10 % recovery**	%	TM218	97.7	93.5	95.3	91.3	95.6
Phenanthrene-d10 % recovery**	%	TM218	97.3	92.3	93.5	91.1	94.9
Chrysene-d12 % recovery**	%	TM218	93.5	85.8	88	85.9	87.8
Perylene-d12 % recovery**	%	TM218	98.6	89.8	90	86.4	84.4
Naphthalene	<9 µg/kg	TM218	180	<9	<9	47.3	<9
			M	M	M	M	M
Acenaphthylene	<12 µg/kg	TM218	296	<12	<12	37.3	<12
			M	M	M	M	M
Acenaphthene	<8 µg/kg	TM218	98	<8	<8	33.9	<8
			M	M	M	M	M
Fluorene	<10 µg/kg	TM218	110	<10	<10	25.5	<10
			M	M	M	M	M
Phenanthrene	<15 µg/kg	TM218	1730	<15	<15	633	<15
			M	M	M	M	M
Anthracene	<16 µg/kg	TM218	643	<16	<16	163	<16
			M	M	M	M	M
Fluoranthene	<17 µg/kg	TM218	6260	44	<17	1510	<17
			M	M	M	M	M
Pyrene	<15 µg/kg	TM218	5510	39	<15	1230	<15
			M	M	M	M	M
Benzo(a)anthracene	<14 µg/kg	TM218	3450	18.2	<14	652	<14
			M	M	M	M	M
Chrysene	<10 µg/kg	TM218	3000	24.9	<10	631	<10
			M	M	M	M	M
Benzo(b)fluoranthene	<15 µg/kg	TM218	5270	45.1	<15	971	<15
			M	M	M	M	M
Benzo(k)fluoranthene	<14 µg/kg	TM218	2170	21.5	<14	299	<14
			M	M	M	M	M
Benzo(a)pyrene	<15 µg/kg	TM218	4430	31.6	<15	649	<15
			M	M	M	M	M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	3330	24.9	<18	416	<18
			M	M	M	M	M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	811	<23	<23	120	<23
			M	M	M	M	M
Benzo(g,h,i)perylene	<24 µg/kg	TM218	3890	30.3	<24	472	<24
			M	M	M	M	M
Polyaromatic hydrocarbons, Total USEPA 16	<118 µg/kg	TM218	41200	280	<118	7890	<118
			M	M	M	M	M

SDG 100708-104
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 91025

Results Legend		Customer Sample Ref.	TP110	TP111	TP111	TP112	TP113
#	ISO17025 accredited.						
M	mCERTS accredited.						
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 the individual compounds within the samples are not corrected for this recovery.						
		Depth (m)	0.80	0.40	2.80	2.80	3.00
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
		Date Sampled	07/07/2010	07/07/2010	07/07/2010	07/07/2010	07/07/2010
		Date Received	08/07/2010	08/07/2010	08/07/2010	08/07/2010	08/07/2010
		SDG Ref	100708-104	100708-104	100708-104	100708-104	100708-104
		Lab Sample No.(s)	1796216	1796247	1796796	1796289	1796353
Component	LOD/Units	Method					
Moisture	%	PM114		16.7		21.2	
Moisture content ratio	%	PM114		20.1		27	
Dry matter content ratio	%	PM114		83.3		78.8	
Asbestos Containing Material Screen	-	TM001	No ACM Detected				
Phenols, Total monohydric	<0.22 mg/kg	TM062 (S)	<0.22		<0.22	<0.22	<0.22
Sulphate, 2:1 water soluble	<0.003 g/l	TM098	0.0439		0.0741	0.0293	0.08
Sulphur, Total	<0.02 %	TM132	0.16		0.05	0.03	0.03
Fraction Organic Carbon (FOC)	<0.002 -	TM132	0.154		0.00899	0.00434	0.00456
pH	1 pH Units	TM133	7.59		7.1	6.98	7.17
Cyanide, Total	<1 mg/kg	TM153	<1		<1	<1	<1
Cyanide, Free	<1 mg/kg	TM153	<1		<1	<1	<1
Cyanide, Complex	<1 mg/kg	TM153	<1		<1	<1	<1
TPH >C6-C40	<10 mg/kg	TM154	538		126	815	114
Arsenic	<0.6 mg/kg	TM181	7.38		10.1	10.5	7.45
Barium	<0.6 mg/kg	TM181	307		262	236	73.9
Beryllium	<0.01 mg/kg	TM181	0.75		1.26	0.858	0.642
Cadmium	<0.02 mg/kg	TM181	0.151		0.0373	<0.02	<0.02
Chromium	<0.9 mg/kg	TM181	9.08		29.9	24.2	12
Copper	<1.4 mg/kg	TM181	22.1		23.4	15.7	12.2
Lead	<0.7 mg/kg	TM181	11.9		67.3	20	19.7
Mercury	<0.14 mg/kg	TM181	<0.14		<0.14	<0.14	<0.14
Nickel	<0.2 mg/kg	TM181	10.5		26.3	24.3	10.9
Selenium	<1 mg/kg	TM181	<1		1.32	1.28	<1
Vanadium	<0.2 mg/kg	TM181	7.28		37.4	27.8	18.3
Zinc	<1.9 mg/kg	TM181	48.8		156	66.6	48.6
Boron, water soluble	<1 mg/kg	TM222	1.52		4.19	4.31	1.23

SDG: 100708-104
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 91025

PAH by GCMS

Results Legend		Customer Sample Ref.	TP110	TP111	TP112	TP113		
#	ISO17025 accredited.							
M	mCERTS accredited.							
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 the individual compounds within the samples are not corrected for this recovery.							
Component	LOD/Units	Method	Depth (m)	Sample Type	Date Sampled	Date Received	SDG Ref	Lab Sample No.(s)
Naphthalene-d8 % recovery**	%	TM218	0.80	Soil/Solid	07/07/2010	08/07/2010	100708-104	1796216
Acenaphthene-d10 % recovery**	%	TM218	2.80	Soil/Solid	07/07/2010	08/07/2010	100708-104	1796796
Phenanthrene-d10 % recovery**	%	TM218	2.80	Soil/Solid	07/07/2010	08/07/2010	100708-104	1796289
Chrysene-d12 % recovery**	%	TM218	3.00	Soil/Solid	07/07/2010	08/07/2010	100708-104	1796353
Perylene-d12 % recovery**	%	TM218						
Naphthalene	<9 µg/kg	TM218	1820	#	<9	M	17.3	M
Acenaphthylene	<12 µg/kg	TM218	16.8	#	<12	M	<12	M
Acenaphthene	<8 µg/kg	TM218	31.3	#	<8	M	90.7	M
Fluorene	<10 µg/kg	TM218	52.1	#	<10	M	149	M
Phenanthrene	<15 µg/kg	TM218	1820	#	34.8	M	457	M
Anthracene	<16 µg/kg	TM218	182	#	<16	M	131	M
Fluoranthene	<17 µg/kg	TM218	1120	#	102	M	108	M
Pyrene	<15 µg/kg	TM218	953	#	86.3	M	121	M
Benzo(a)anthracene	<14 µg/kg	TM218	476	#	48.8	M	35.4	M
Chrysene	<10 µg/kg	TM218	456	#	48.3	M	36.3	M
Benzo(b)fluoranthene	<15 µg/kg	TM218	740	#	45.8	M	29.8	M
Benzo(k)fluoranthene	<14 µg/kg	TM218	172	#	21.7	M	<14	M
Benzo(a)pyrene	<15 µg/kg	TM218	397	#	29.5	M	22	M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	206	#	<18	M	<18	M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	73.8	#	<23	M	<23	M
Benzo(g,h,i)perylene	<24 µg/kg	TM218	629	#	<24	M	<24	M
Polyaromatic hydrocarbons, Total USEPA 16	<118 µg/kg	TM218	9140	#	417	M	1200	M

SDG 100708-104
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 91025

TPH CWG (S)

Results Legend		Customer Sample Ref.	TP112				
#	ISO17025 accredited.	Depth (m)	0.80	Sample Type	Soil/Solid	Date Sampled	07/07/2010
M	mCERTS accredited.	Date Received	08/07/2010	SDG Ref	100708-104	Lab Sample No.(s)	1796270
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 the individual compounds within the samples are not corrected for this recovery.						
Component	LOD/Units	Method					
GRO Surrogate % recovery**	%	TM089	11				
GRO >C5-C12	<44 µg/kg	TM089	665				
Benzene	<10 µg/kg	TM089	<10	M			
Ethylbenzene	<3 µg/kg	TM089	<3	M			
Toluene	<2 µg/kg	TM089	<2	M			
m,p-Xylene	<6 µg/kg	TM089	<6	M			
o-Xylene	<3 µg/kg	TM089	<3	M			
m,p,o-Xylene	<10 µg/kg	TM089	<10	M			
BTEX, Total	<10 µg/kg	TM089	<10	M			
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	#			
Aliphatics >C5-C6	<10 µg/kg	TM089	26.7				
Aliphatics >C6-C8	<10 µg/kg	TM089	14.1				
Aliphatics >C8-C10	<10 µg/kg	TM089	119				
Aliphatics >C10-C12	<10 µg/kg	TM089	124				
Aromatics >C6-C7	<10 µg/kg	TM089	<10				
Aromatics >C7-C8	<10 µg/kg	TM089	<10				
Aromatics >EC8-EC10	<10 µg/kg	TM089	178				
Aromatics >EC10-EC12	<10 µg/kg	TM089	186				
Total Aliphatics >C5-C12	<10 µg/kg	TM089	283				
Total Aromatics >C6-C12	<10 µg/kg	TM089	364				
Aliphatics >C12-C16	<100 µg/kg	TM173	332000				
Aliphatics >C16-C21	<100 µg/kg	TM173	4170000				
Aliphatics >C16-C35	<100 µg/kg	TM173	17900000				
Aliphatics >C21-C35	<100 µg/kg	TM173	13700000				
Aliphatics >C35-C44	<100 µg/kg	TM173	672000				
Aromatics >EC12-EC16	<100 µg/kg	TM173	18300				
Aromatics >EC16-EC21	<100 µg/kg	TM173	338000				
Aromatics >EC21-EC35	<100 µg/kg	TM173	1390000				
Aromatics >EC35-EC44	<100 µg/kg	TM173	176000				
Aromatics >EC40-EC44	<100 µg/kg	TM173	66400				
Total Aliphatics >C12-C44	<100 µg/kg	TM173	18900000				
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	1930000				
Total Aliphatics >C5-35	<100 µg/kg	TM173	18200000				
Total Aliphatics >C5-C44	<100 µg/kg	TM173	18900000				
Total Aromatics >C5-35	<100 µg/kg	TM173	1750000				
Total Aromatics >C6-C44	<100 µg/kg	TM173	1930000				
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	20000000				
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	20800000				

SDG 100708-104
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 91025

VOC MS (S)

Results Legend		Customer Sample Ref.	TP112					
#	ISO17025 accredited.	Depth (m) 0.80 Sample Type Soil/Solid Date Sampled 07/07/2010 Date Received 08/07/2010 SDG Ref 100708-104 Lab Sample No.(s) 1796270	0.80					
M	mCERTS accredited.							
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 the individual compounds within the samples are not corrected for this recovery.							
Component	LOD/Units		Method					
Dibromofluoromethane**	%		TM116	101				
Toluene-d8**	%		TM116	75.6				
4-Bromofluorobenzene**	%	TM116	149					
Dichlorodifluoromethane	<4 µg/kg	TM116	<40	M				
Chloromethane	<7 µg/kg	TM116	<70	#				
Vinyl Chloride	<10 µg/kg	TM116	<100	#				
Bromomethane	<13 µg/kg	TM116	<130	M				
Chloroethane	<14 µg/kg	TM116	<140	M				
Trichlorofluoromethane	<6 µg/kg	TM116	<60	M				
1,1-Dichloroethene	<10 µg/kg	TM116	<100	#				
Carbon Disulphide	<7 µg/kg	TM116	95	M				
Dichloromethane	<10 µg/kg	TM116	<100	#				
Methyl Tertiary Butyl Ether	<11 µg/kg	TM116	<110	M				
trans-1-2-Dichloroethene	<11 µg/kg	TM116	<110	M				
1,1-Dichloroethane	<8 µg/kg	TM116	<80	M				
cis-1-2-Dichloroethene	<5 µg/kg	TM116	<50	M				
2,2-Dichloropropane	<12 µg/kg	TM116	<120	M				
Bromochloromethane	<14 µg/kg	TM116	<140	M				
Chloroform	<8 µg/kg	TM116	<80	M				
1,1,1-Trichloroethane	<7 µg/kg	TM116	<70	M				
1,1-Dichloropropene	<11 µg/kg	TM116	<110	M				
Carbontetrachloride	<14 µg/kg	TM116	<140	M				
1,2-Dichloroethane	<5 µg/kg	TM116	<50	M				
Benzene	<9 µg/kg	TM116	<90	M				
Trichloroethene	<9 µg/kg	TM116	<90	M				
1,2-Dichloropropane	<12 µg/kg	TM116	<120	M				
Dibromomethane	<9 µg/kg	TM116	<90	M				
Bromodichloromethane	<7 µg/kg	TM116	<70	M				
cis-1-3-Dichloropropene	<14 µg/kg	TM116	<140	M				
Toluene	<5 µg/kg	TM116	<50	M				
trans-1-3-Dichloropropene	<14 µg/kg	TM116	<140					
1,1,2-Trichloroethane	<10 µg/kg	TM116	<100	M				
1,3-Dichloropropane	<7 µg/kg	TM116	<70	#				
Tetrachloroethene	<5 µg/kg	TM116	<50	M				
Dibromochloromethane	<13 µg/kg	TM116	<130	M				
1,2-Dibromoethane	<12 µg/kg	TM116	<120	M				
Chlorobenzene	<5 µg/kg	TM116	<50	M				
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<100	M				
Ethylbenzene	<4 µg/kg	TM116	<40	M				

SDG 100708-104
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 91025

VOC MS (S)

Results Legend		Customer Sample Ref.	TP112					
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s)	0.80					
M	mCERTS accredited.		Soil/Solid					
aq	Aqueous / settled sample.		07/07/2010					
diss.filt	Dissolved / filtered sample.		08/07/2010					
tot.unfilt	Total / unfiltered sample.		100708-104					
*	subcontracted test.		1796270					
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.							
Component	LOD/Units		Method					
p/m-Xylene	<14 µg/kg		TM116	<140	#			
o-Xylene	<10 µg/kg		TM116	<100	M			
Styrene	<10 µg/kg	TM116	<100	M				
Bromoform	<10 µg/kg	TM116	<100	M				
Isopropylbenzene	<5 µg/kg	TM116	<50	M				
1.1.2.2-Tetrachloroethane	<10 µg/kg	TM116	<100	#				
1.2.3-Trichloropropane	<17 µg/kg	TM116	<170	M				
Bromobenzene	<10 µg/kg	TM116	<100	M				
Propylbenzene	<11 µg/kg	TM116	<110	M				
2-Chlorotoluene	<9 µg/kg	TM116	<90	M				
1.3.5-Trimethylbenzene	<8 µg/kg	TM116	<80	#				
4-Chlorotoluene	<12 µg/kg	TM116	<120	M				
tert-Butylbenzene	<12 µg/kg	TM116	<120	#				
1.2.4-Trimethylbenzene	<9 µg/kg	TM116	<90	#				
sec-Butylbenzene	<10 µg/kg	TM116	<100	M				
4-Isopropyltoluene	<11 µg/kg	TM116	<110	M				
1.3-Dichlorobenzene	<6 µg/kg	TM116	<60	M				
1.4-Dichlorobenzene	<5 µg/kg	TM116	<50	M				
n-Butylbenzene	<10 µg/kg	TM116	<100	M				
1.2-Dichlorobenzene	<12 µg/kg	TM116	<120	M				
1.2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<140	M				
Tert-amyl methyl ether	<15 µg/kg	TM116	<150					
1.2.4-Trichlorobenzene	<6 µg/kg	TM116	<60	#				
Hexachlorobutadiene	<12 µg/kg	TM116	<120	M				
Naphthalene	<13 µg/kg	TM116	<130	M				
1.2.3-Trichlorobenzene	<6 µg/kg	TM116	<60	M				

SDG: 100708-104
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 91025

Results Legend		Customer Sample Ref.	TP116	TP124	TP126				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s)	TP116	TP124	TP126				
M	mCERTS accredited.		0.20	0.80	2.20				
aq	Aqueous / settled sample.		Soil/Solid	Soil/Solid	Soil/Solid				
diss.filt	Dissolved / filtered sample.		07/07/2010	06/07/2010	06/07/2010				
tot.unfilt	Total / unfiltered sample.		08/07/2010	08/07/2010	08/07/2010				
*	subcontracted test.		100708-104	100708-104	100708-104				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.		1796622	1795825	1796418				
Component	LOD/Units		Method						
Phenols, Total monohydric	<0.22 mg/kg		TM062 (S)	<0.22 M	<0.22 M	<0.22 M			
Sulphate, 2:1 water soluble	<0.003 g/l		TM098	0.19 M	0.117 M	0.062 M			
Sulphur, Total	<0.02 %	TM132	0.07 #	0.14 #	0.05 #				
Fraction Organic Carbon (FOC)	<0.002 -	TM132	0.0238 #	0.0326 #	0.00288 #				
pH	1 pH Units	TM133	8.15 M	6.5 M	6.51 M				
Cyanide, Total	<1 mg/kg	TM153	<1 M	<1 M	<1 M				
Cyanide, Free	<1 mg/kg	TM153	<1	<1	<1				
Cyanide, Complex	<1 mg/kg	TM153	<1	<1	<1				
TPH >C6-C40	<10 mg/kg	TM154	1530 #	493 #	<10 #				
Arsenic	<0.6 mg/kg	TM181	13 M	7.89 M	11.1 M				
Barium	<0.6 mg/kg	TM181	291 #	291 #	47.5 #				
Beryllium	<0.01 mg/kg	TM181	1.49 M	0.814 M	0.641 M				
Cadmium	<0.02 mg/kg	TM181	0.386 M	0.306 M	<0.02 M				
Chromium	<0.9 mg/kg	TM181	26.2 M	20.6 M	14 M				
Copper	<1.4 mg/kg	TM181	42.7 M	20.8 M	14.2 M				
Lead	<0.7 mg/kg	TM181	63.7 M	13.1 M	14.8 M				
Mercury	<0.14 mg/kg	TM181	<0.14 M	<0.14 M	<0.14 M				
Nickel	<0.2 mg/kg	TM181	22 M	15.7 M	13.3 M				
Selenium	<1 mg/kg	TM181	1.05 #	<1 #	<1 #				
Vanadium	<0.2 mg/kg	TM181	36.5 #	24 #	31.1 #				
Zinc	<1.9 mg/kg	TM181	137 M	92.2 M	52 M				
Boron, water soluble	<1 mg/kg	TM222	<1 M	<1 M	<1 M				

SDG: 100708-104
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 91025

PAH by GCMS

Results Legend		Customer Sample Ref.	TP116	TP124	TP126		
#	ISO17025 accredited.						
M	mCERTS accredited.						
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 the individual compounds within the samples are not corrected for this recovery.						
		Depth (m)	0.20	0.80	2.20		
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid		
		Date Sampled	07/07/2010	06/07/2010	06/07/2010		
		Date Received	08/07/2010	08/07/2010	08/07/2010		
		SDG Ref	100708-104	100708-104	100708-104		
		Lab Sample No.(s)	1796622	1795825	1796418		
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	95.5	112	103		
Acenaphthene-d10 % recovery**	%	TM218	93.4	108	98.9		
Phenanthrene-d10 % recovery**	%	TM218	93.3	106	94.8		
Chrysene-d12 % recovery**	%	TM218	89.5	102	90.1		
Perylene-d12 % recovery**	%	TM218	90.3	98.6	88.7		
Naphthalene	<9 µg/kg	TM218	78.4	<9	103		
			M	M	M		
Acenaphthylene	<12 µg/kg	TM218	46.8	<12	35.3		
			M	M	M		
Acenaphthene	<8 µg/kg	TM218	15.6	<8	9.53		
			M	M	M		
Fluorene	<10 µg/kg	TM218	17.3	<10	12.6		
			M	M	M		
Phenanthrene	<15 µg/kg	TM218	287	<15	21.4		
			M	M	M		
Anthracene	<16 µg/kg	TM218	105	<16	<16		
			M	M	M		
Fluoranthene	<17 µg/kg	TM218	1400	<17	29.4		
			M	M	M		
Pyrene	<15 µg/kg	TM218	1470	<15	23.7		
			M	M	M		
Benzo(a)anthracene	<14 µg/kg	TM218	857	<14	16.6		
			M	M	M		
Chrysene	<10 µg/kg	TM218	869	<10	15.1		
			M	M	M		
Benzo(b)fluoranthene	<15 µg/kg	TM218	1430	<15	<15		
			M	M	M		
Benzo(k)fluoranthene	<14 µg/kg	TM218	527	<14	<14		
			M	M	M		
Benzo(a)pyrene	<15 µg/kg	TM218	1270	<15	<15		
			M	M	M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	815	<18	<18		
			M	M	M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	216	<23	<23		
			M	M	M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	988	<24	<24		
			M	M	M		
Polyaromatic hydrocarbons, Total USEPA 16	<118 µg/kg	TM218	10400	<118	267		
			M	M	M		

SDG 100708-104
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 91025

TPH CWG (S)

Results Legend		Customer Sample Ref.	TP116	TP124	TP125	TP126		
#	ISO17025 accredited.							
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
dis.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 the individual compounds within the samples are not corrected for this recovery.							
		Depth (m)	1.80	1.80	1.70	2.20		
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
		Date Sampled	07/07/2010	06/07/2010	06/07/2010	06/07/2010		
		Date Received	08/07/2010	08/07/2010	08/07/2010	08/07/2010		
		SDG Ref	100708-104	100708-104	100708-104	100708-104		
		Lab Sample No.(s)	1796327	1795821	1796508	1796418		
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	35	61	125	115		
GRO >C5-C12	<44 µg/kg	TM089	3510	<44	<44	<44		
Benzene	<10 µg/kg	TM089	<10	<10	<10	<10		
Ethylbenzene	<3 µg/kg	TM089	13.5	<3	<3	<3		
Toluene	<2 µg/kg	TM089	<2	<2	<2	<2		
m,p-Xylene	<6 µg/kg	TM089	101	<6	<6	<6		
o-Xylene	<3 µg/kg	TM089	62.1	<3	<3	<3		
m,p,o-Xylene	<10 µg/kg	TM089	163	<10	<10	<10		
BTEX, Total	<10 µg/kg	TM089	177	<10	<10	<10		
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5	<5		
Aliphatics >C5-C6	<10 µg/kg	TM089	40.3	<10	<10	<10		
Aliphatics >C6-C8	<10 µg/kg	TM089	73.1	<10	<10	<10		
Aliphatics >C8-C10	<10 µg/kg	TM089	354	<10	<10	<10		
Aliphatics >C10-C12	<10 µg/kg	TM089	935	<10	<10	<10		
Aromatics >C6-C7	<10 µg/kg	TM089	<10	<10	<10	<10		
Aromatics >C7-C8	<10 µg/kg	TM089	<10	<10	<10	<10		
Aromatics >EC8-EC10	<10 µg/kg	TM089	709	<10	<10	<10		
Aromatics >EC10-EC12	<10 µg/kg	TM089	1400	<10	<10	<10		
Total Aliphatics >C5-C12	<10 µg/kg	TM089	1400	<10	<10	<10		
Total Aromatics >C6-C12	<10 µg/kg	TM089	2110	<10	<10	<10		
Aliphatics >C12-C16	<100 µg/kg	TM173	77100	<100	16400	<100		
Aliphatics >C16-C21	<100 µg/kg	TM173	434000	<100	150000	<100		
Aliphatics >C16-C35	<100 µg/kg	TM173	2120000	520	641000	<100		
Aliphatics >C21-C35	<100 µg/kg	TM173	1690000	520	492000	<100		
Aliphatics >C35-C44	<100 µg/kg	TM173	650000	<100	24300	<100		
Aromatics >EC12-EC16	<100 µg/kg	TM173	18800	<100	3340	<100		
Aromatics >EC16-EC21	<100 µg/kg	TM173	103000	<100	16800	<100		
Aromatics >EC21-EC35	<100 µg/kg	TM173	398000	7540	64300	<100		
Aromatics >EC35-EC44	<100 µg/kg	TM173	134000	1330	9440	<100		
Aromatics >EC40-EC44	<100 µg/kg	TM173	48800	412	3440	<100		
Total Aliphatics >C12-C44	<100 µg/kg	TM173	2850000	520	682000	<100		
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	654000	8860	93800	<100		
Total Aliphatics >C5-35	<100 µg/kg	TM173	2200000	520	658000	<100		
Total Aliphatics >C5-C44	<100 µg/kg	TM173	2850000	520	682000	<100		
Total Aromatics >C5-35	<100 µg/kg	TM173	521000	7540	84400	<100		
Total Aromatics >C6-C44	<100 µg/kg	TM173	656000	8860	93800	<100		
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	2720000	8060	742000	<100		
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	3510000	9380	776000	<100		

SDG 100708-104
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 91025

Results Legend		Customer Sample Ref.	TP127	TP128	TP128	TP129	TP130
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s)	2.00	0.40	1.50	1.80	0.20
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.		06/07/2010	06/07/2010	06/07/2010	06/07/2010	06/07/2010
diss.filt	Dissolved / filtered sample.		08/07/2010	08/07/2010	08/07/2010	08/07/2010	08/07/2010
tot.unfilt	Total / unfiltered sample.		100708-104	100708-104	100708-104	100708-104	100708-104
*	subcontracted test.		1796087	1796743	1796662	1796809	1796767
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.						
Component	LOD/Units	Method					
Moisture	%	PM114	16.1				11.2
Moisture content ratio	%	PM114	19.1				12.6
Dry matter content ratio	%	PM114	83.9				88.8
Asbestos Containing Material Screen	-	TM001					No ACM Detected
Phenols, Total monohydric	<0.22 mg/kg	TM062 (S)		<0.22 M	<0.22 M	<0.22 M	<0.22 M
Sulphate, 2:1 water soluble	<0.003 g/l	TM098		0.0269 M	0.561 M	0.112 M	0.0078 M
Sulphur, Total	<0.02 %	TM132		0.02 #	1.02 #	0.37 #	0.03 #
Fraction Organic Carbon (FOC)	<0.002 -	TM132		0.00503 #	0.0196 #	0.00456 #	0.0247 #
pH	1 pH Units	TM133		6.72 M	5.92 M	5.37 M	7.06 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M
Cyanide, Complex	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M
TPH >C6-C40	<10 mg/kg	TM154		<10 #	249 #	158 #	265 #
Arsenic	<0.6 mg/kg	TM181		11 M	14 M	15.8 M	9.06 M
Barium	<0.6 mg/kg	TM181		343 #	54.7 #	69.3 #	211 #
Beryllium	<0.01 mg/kg	TM181		1.29 M	0.441 M	0.287 M	0.751 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.208 M	<0.02 M	0.296 M
Chromium	<0.9 mg/kg	TM181		35.6 M	7.93 M	6.17 M	17.9 M
Copper	<1.4 mg/kg	TM181		18.4 M	7.86 M	7.64 M	28.3 M
Lead	<0.7 mg/kg	TM181		14.2 M	6.16 M	4.65 M	84.1 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		29 M	21.4 M	10.1 M	14 M
Selenium	<1 mg/kg	TM181		1.84 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		41.8 #	13.3 #	9.05 #	23.9 #
Zinc	<1.9 mg/kg	TM181		108 M	43.4 M	20.4 M	100 M
Boron, water soluble	<1 mg/kg	TM222		<1 M	<1 M	<1 M	<1 M

SDG: 100708-104
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 91025

PAH by GCMS

Results Legend		Customer Sample Ref.	TP128	TP128	TP129	TP130		
#	ISO17025 accredited.							
M	mCERTS accredited.							
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 the individual compounds within the samples are not corrected for this recovery.							
Component	LOD/Units	Method	Depth (m)	Sample Type	Date Sampled	Date Received	SDG Ref	Lab Sample No.(s)
Naphthalene-d8 % recovery**	%	TM218	0.40	Soil/Solid	06/07/2010	08/07/2010	100708-104	1796743
Acenaphthene-d10 % recovery**	%	TM218	1.50	Soil/Solid	06/07/2010	08/07/2010	100708-104	1796662
Phenanthrene-d10 % recovery**	%	TM218	1.80	Soil/Solid	06/07/2010	08/07/2010	100708-104	1796809
Chrysene-d12 % recovery**	%	TM218	0.20	Soil/Solid	06/07/2010	08/07/2010	100708-104	1796767
Perylene-d12 % recovery**	%	TM218						
Naphthalene	<9 µg/kg	TM218	<9	M	<9	M	<9	M
Acenaphthylene	<12 µg/kg	TM218	<12	M	<12	M	<12	M
Acenaphthene	<8 µg/kg	TM218	<8	M	<8	M	<8	M
Fluorene	<10 µg/kg	TM218	<10	M	<10	M	<10	M
Phenanthrene	<15 µg/kg	TM218	<15	M	<15	M	<15	M
Anthracene	<16 µg/kg	TM218	<16	M	<16	M	<16	M
Fluoranthene	<17 µg/kg	TM218	<17	M	<17	M	<17	M
Pyrene	<15 µg/kg	TM218	<15	M	<15	M	<15	M
Benzo(a)anthracene	<14 µg/kg	TM218	<14	M	<14	M	<14	M
Chrysene	<10 µg/kg	TM218	<10	M	<10	M	16.1	M
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	M	<15	M	20.4	M
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	M	<14	M	<14	M
Benzo(a)pyrene	<15 µg/kg	TM218	<15	M	<15	M	<15	M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	M	<18	M	<18	M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	M	<23	M	<23	M
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	M	<24	M	<24	M
Polyaromatic hydrocarbons, Total USEPA 16	<118 µg/kg	TM218	<118	M	<118	M	<118	M

SDG 100708-104
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 91025

TPH CWG (S)

Results Legend		Customer Sample Ref.	TP129				
#	ISO17025 accredited.						
M	mCERTS accredited.						
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 the individual compounds within the samples are not corrected for this recovery.						
Component	LOD/Units	Method	Depth (m)	Sample Type	Date Sampled	Date Received	SDG Ref
GRO Surrogate % recovery**	%	TM089	0.60	Soil/Solid	06/07/2010	08/07/2010	100708-104
GRO >C5-C12	<44 µg/kg	TM089					1796720
Benzene	<10 µg/kg	TM089					
Ethylbenzene	<3 µg/kg	TM089					
Toluene	<2 µg/kg	TM089					
m,p-Xylene	<6 µg/kg	TM089					
o-Xylene	<3 µg/kg	TM089					
m,p,o-Xylene	<10 µg/kg	TM089					
BTEX, Total	<10 µg/kg	TM089					
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089					
Aliphatics >C5-C6	<10 µg/kg	TM089					
Aliphatics >C6-C8	<10 µg/kg	TM089					
Aliphatics >C8-C10	<10 µg/kg	TM089					
Aliphatics >C10-C12	<10 µg/kg	TM089					
Aromatics >C6-C7	<10 µg/kg	TM089					
Aromatics >C7-C8	<10 µg/kg	TM089					
Aromatics >EC8-EC10	<10 µg/kg	TM089					
Aromatics >EC10-EC12	<10 µg/kg	TM089					
Total Aliphatics >C5-C12	<10 µg/kg	TM089					
Total Aromatics >C6-C12	<10 µg/kg	TM089					
Aliphatics >C12-C16	<100 µg/kg	TM173					
Aliphatics >C16-C21	<100 µg/kg	TM173					
Aliphatics >C16-C35	<100 µg/kg	TM173					
Aliphatics >C21-C35	<100 µg/kg	TM173					
Aliphatics >C35-C44	<100 µg/kg	TM173					
Aromatics >EC12-EC16	<100 µg/kg	TM173					
Aromatics >EC16-EC21	<100 µg/kg	TM173					
Aromatics >EC21-EC35	<100 µg/kg	TM173					
Aromatics >EC35-EC44	<100 µg/kg	TM173					
Aromatics >EC40-EC44	<100 µg/kg	TM173					
Total Aliphatics >C12-C44	<100 µg/kg	TM173					
Total Aromatics >EC12-EC44	<100 µg/kg	TM173					
Total Aliphatics >C5-35	<100 µg/kg	TM173					
Total Aliphatics >C5-C44	<100 µg/kg	TM173					
Total Aromatics >C5-35	<100 µg/kg	TM173					
Total Aromatics >C6-C44	<100 µg/kg	TM173					
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173					
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173					

SDG: 100708-104
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 91025

Results Legend		Customer Sample Ref.	TP132	TP133	WS2	WS2
#	ISO17025 accredited.	Depth (m)	0.60	0.60	0.10 - 0.80	1.10 - 1.50
M	mCERTS accredited.	Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.	Date Sampled	06/07/2010	06/07/2010	07/07/2010	07/07/2010
diss.filt	Dissolved / filtered sample.	Date Received	08/07/2010	08/07/2010	08/07/2010	08/07/2010
tot.unfilt	Total / unfiltered sample.	SDG Ref	100708-104	100708-104	100708-104	100708-104
*	subcontracted test.	Lab Sample No.(s)	1796784	1796587	1796915	1796928
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.					
Component	LOD/Units	Method				
Moisture	%	PM114		5.76		
Moisture content ratio	%	PM114		6.11		
Dry matter content ratio	%	PM114		94.2		
Phenols, Total monohydric	<0.22 mg/kg	TM062 (S)	<0.22 M	<0.22 M	<0.22 M	<0.22 M
Sulphate, 2:1 water soluble	<0.003 g/l	TM098	0.0219 M	0.0097 M	0.0141 M	0.131 M
Sulphur, Total	<0.02 %	TM132	<0.02 #	<0.02 #	0.05 #	0.09 #
Fraction Organic Carbon (FOC)	<0.002 -	TM132	0.00398 #	0.00217 #	0.0168 #	0.0515 #
pH	1 pH Units	TM133	7.21 M	5.81 M	8.28 M	8.7 M
Cyanide, Total	<1 mg/kg	TM153	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153	<1	<1	<1	<1
Cyanide, Complex	<1 mg/kg	TM153	<1	<1	<1	<1
TPH >C6-C40	<10 mg/kg	TM154	<10 #	11.9 #	510 #	436 #
Arsenic	<0.6 mg/kg	TM181	10.7 M	9.39 M	8.91 M	10 M
Barium	<0.6 mg/kg	TM181	253 #	53.9 #	284 #	255 #
Beryllium	<0.01 mg/kg	TM181	0.92 M	0.374 M	0.848 M	0.698 M
Cadmium	<0.02 mg/kg	TM181	<0.02 M	<0.02 M	0.334 M	0.214 M
Chromium	<0.9 mg/kg	TM181	19.2 M	11.5 M	19.9 M	13.5 M
Copper	<1.4 mg/kg	TM181	11.3 M	12 M	25.7 M	24.4 M
Lead	<0.7 mg/kg	TM181	10.6 M	30.8 M	99.5 M	103 M
Mercury	<0.14 mg/kg	TM181	<0.14 M	<0.14 M	<0.14 M	0.202 M
Nickel	<0.2 mg/kg	TM181	20.8 M	8.97 M	18.7 M	13.9 M
Selenium	<1 mg/kg	TM181	1.03 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181	26.1 #	21 #	27.1 #	20.6 #
Zinc	<1.9 mg/kg	TM181	55.6 M	37.7 M	118 M	100 M
Boron, water soluble	<1 mg/kg	TM222	<1 M	<1 M	<1 M	<1 M

SDG: 100708-104
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 91025

PAH by GCMS

Results Legend		Customer Sample Ref.	TP132	TP133	WS2	WS2			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s)	0.60	0.60	0.10 - 0.80	1.10 - 1.50			
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid			
aq	Aqueous / settled sample.		06/07/2010	06/07/2010	07/07/2010	07/07/2010			
diss.filt	Dissolved / filtered sample.		08/07/2010	08/07/2010	08/07/2010	08/07/2010			
tot.unfilt	Total / unfiltered sample.		100708-104	100708-104	100708-104	100708-104			
*	subcontracted test.		1796784	1796587	1796915	1796928			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.								
Component	LOD/Units		Method						
Naphthalene-d8 % recovery**	%		TM218	102	102	98.9	106		
Acenaphthene-d10 % recovery**	%		TM218	103	102	96.7	104		
Phenanthrene-d10 % recovery**	%	TM218	99.4	99.9	92.3	100			
Chrysene-d12 % recovery**	%	TM218	95.6	94.8	88.7	94.4			
Perylene-d12 % recovery**	%	TM218	91.1	90.5	85.5	90.6			
Naphthalene	<9 µg/kg	TM218	<9	<9	61.8	25.2	M	M	
Acenaphthylene	<12 µg/kg	TM218	<12	<12	129	14.3	M	M	
Acenaphthene	<8 µg/kg	TM218	<8	<8	70.5	22.1	M	M	
Fluorene	<10 µg/kg	TM218	<10	<10	65.2	14.8	M	M	
Phenanthrene	<15 µg/kg	TM218	<15	30.7	1040	82.2	M	M	
Anthracene	<16 µg/kg	TM218	<16	<16	349	31.1	M	M	
Fluoranthene	<17 µg/kg	TM218	<17	33.7	3050	184	M	M	
Pyrene	<15 µg/kg	TM218	<15	28.2	2570	158	M	M	
Benzo(a)anthracene	<14 µg/kg	TM218	<14	20.4	1720	130	M	M	
Chrysene	<10 µg/kg	TM218	<10	17.3	1320	98.7	M	M	
Benzo(b)fluoranthene	<15 µg/kg	TM218	22.6	24.3	2460	174	M	M	
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	<14	833	62.2	M	M	
Benzo(a)pyrene	<15 µg/kg	TM218	<15	15.9	1860	112	M	M	
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	<18	1100	71.1	M	M	
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23	298	<23	M	M	
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	<24	1240	88.2	M	M	
Polyaromatic hydrocarbons, Total USEPA 16	<118 µg/kg	TM218	<118	171	18200	1270	M	M	

SDG 100708-104
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 91025

TPH CWG (S)

Results Legend		Customer Sample Ref.	TP132	TP133	WS2		
#	ISO17025 accredited.	Depth (m)	0.60	0.60	1.10 - 1.50		
M	mCERTS accredited.	Sample Type	Soil/Solid	Soil/Solid	Soil/Solid		
aq	Aqueous / settled sample.	Date Sampled	06/07/2010	06/07/2010	07/07/2010		
dis.filt	Dissolved / filtered sample.	Date Received	08/07/2010	08/07/2010	08/07/2010		
tot.unfilt	Total / unfiltered sample.	SDG Ref	100708-104	100708-104	100708-104		
*	subcontracted test.	Lab Sample No.(s)	1796784	1796587	1796928		
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.						
Component	LOD/Units	Method					
GRO Surrogate % recovery**	%	TM089	117	118	33		
GRO >C5-C12	<44 µg/kg	TM089	<44	<44	607		
Benzene	<10 µg/kg	TM089	<10	<10	<10		
Ethylbenzene	<3 µg/kg	TM089	<3	<3	<3		
Toluene	<2 µg/kg	TM089	<2	<2	<2		
m,p-Xylene	<6 µg/kg	TM089	<6	<6	<6		
o-Xylene	<3 µg/kg	TM089	<3	<3	<3		
m,p,o-Xylene	<10 µg/kg	TM089	<10	<10	<10		
BTEX, Total	<10 µg/kg	TM089	<10	<10	<10		
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5		
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	50.5		
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	<10	202		
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	<10	50.1		
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	<10	88.1		
Aromatics >C6-C7	<10 µg/kg	TM089	<10	<10	<10		
Aromatics >C7-C8	<10 µg/kg	TM089	<10	<10	<10		
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	<10	75.2		
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10	132		
Total Aliphatics >C5-C12	<10 µg/kg	TM089	<10	<10	390		
Total Aromatics >C6-C12	<10 µg/kg	TM089	<10	<10	207		
Aliphatics >C12-C16	<100 µg/kg	TM173	<100	<100	7750		
Aliphatics >C16-C21	<100 µg/kg	TM173	<100	<100	17000		
Aliphatics >C16-C35	<100 µg/kg	TM173	<100	<100	137000		
Aliphatics >C21-C35	<100 µg/kg	TM173	<100	<100	120000		
Aliphatics >C35-C44	<100 µg/kg	TM173	<100	<100	45600		
Aromatics >EC12-EC16	<100 µg/kg	TM173	<100	<100	7310		
Aromatics >EC16-EC21	<100 µg/kg	TM173	<100	<100	20800		
Aromatics >EC21-EC35	<100 µg/kg	TM173	<100	<100	119000		
Aromatics >EC35-EC44	<100 µg/kg	TM173	<100	<100	52700		
Aromatics >EC40-EC44	<100 µg/kg	TM173	<100	<100	21200		
Total Aliphatics >C12-C44	<100 µg/kg	TM173	<100	<100	191000		
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	<100	<100	200000		
Total Aliphatics >C5-35	<100 µg/kg	TM173	<100	<100	145000		
Total Aliphatics >C5-C44	<100 µg/kg	TM173	<100	<100	191000		
Total Aromatics >C5-35	<100 µg/kg	TM173	<100	<100	148000		
Total Aromatics >C6-C44	<100 µg/kg	TM173	<100	<100	200000		
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	<100	<100	293000		
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	<100	<100	391000		

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference	NTE 285	Client Location	THE DOVE WAY UTTOXETER
Mass Sample taken (kg)	0.207	Moisture Content Ratio (%)	18.2
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	84.6
Particle Size <4mm	>95%		

Case			
SDG	100708-104		
Lab Sample Number(s)	1795533		
Sampled Date	05-Jul-2010		
Customer Sample Ref.	TP103		
Depth (m)	2.00		

Solid Waste Analysis

Total Organic Carbon (%)	-	-	-
Loss on Ignition (%)	-	-	-
Sum of BTEX (mg/kg)	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-
Mineral Oil (mg/kg)	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-
pH (pH Units)	-	-	-
ANC to pH 6 (mol/kg)	-	-	-
ANC to pH 4 (mol/kg)	-	-	-

Eluate Analysis	Concⁿ in 2:1 eluate C₂	2:1 concⁿ leached A₂	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l	mg/kg			
Arsenic	0.00224	0.00448	-	-	-
Barium	0.043	0.086	-	-	-
Cadmium	0.000152	0.000304	-	-	-
Chromium	0.00152	0.00304	-	-	-
Copper	0.00315	0.0063	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00002	-	-	-
Molybdenum	-	-	-	-	-
Nickel	0.0182	0.0364	-	-	-
Lead	0.000793	0.00159	-	-	-
Antimony	-	-	-	-	-
Selenium	0.00172	0.00344	-	-	-
Zinc	0.00599	0.012	-	-	-
Chloride	-	-	-	-	-
Fluoride	-	-	-	-	-
Sulphate (soluble)	109	218	-	-	-
Total Dissolved Solids	-	-	-	-	-
Total Monohydric Phenols (W)	-	-	-	-	-
Dissolved Organic Carbon	-	-	-	-	-

Leach Test Information

Date Prepared	14-Jul-2010
pH (pH Units)	7.14
Conductivity (µS/cm)	262.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.318
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference	NTE 285	Client Location	THE DOVE WAY UTTOXETER
Mass Sample taken (kg)	0.207	Moisture Content Ratio (%)	18.2
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	84.6
Particle Size <4mm	>95%		

Case			
SDG	100708-104		
Lab Sample Number(s)	1795533		
Sampled Date	05-Jul-2010		
Customer Sample Ref.	TP103		
Depth (m)	2.00		

Solid Waste Analysis

Total Organic Carbon (%)	-	-	-
Loss on Ignition (%)	-	-	-
Sum of BTEX (mg/kg)	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-
Mineral Oil (mg/kg)	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-
pH (pH Units)	-	-	-
ANC to pH 6 (mol/kg)	-	-	-
ANC to pH 4 (mol/kg)	-	-	-

Eluate Analysis	Concⁿ in 2:1 eluate C₂	2:1 concⁿ leached A₂	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l	mg/kg			
Beryllium	0.00035	0.0007	-	-	-
Boron	0.0816	0.163	-	-	-
pH	7	14	-	-	-
Total Cyanide (W)	<0.05	<0.1	-	-	-
Vanadium	0.00504	0.0101	-	-	-

Leach Test Information

Date Prepared	14-Jul-2010
pH (pH Units)	7.14
Conductivity (µS/cm)	262.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.318
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference	NTE 285	Client Location	THE DOVE WAY UTTOXETER
Mass Sample taken (kg)	0.209	Moisture Content Ratio (%)	19.1
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	83.9
Particle Size <4mm	>95%		

Case			
SDG	100708-104		
Lab Sample Number(s)	1796087		
Sampled Date	06-Jul-2010		
Customer Sample Ref.	TP127		
Depth (m)	2.00		
Solid Waste Analysis			
Total Organic Carbon (%)	-	-	-
Loss on Ignition (%)	-	-	-
Sum of BTEX (mg/kg)	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-
Mineral Oil (mg/kg)	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-
pH (pH Units)	-	-	-
ANC to pH 6 (mol/kg)	-	-	-
ANC to pH 4 (mol/kg)	-	-	-

Eluate Analysis	Concⁿ in 2:1 eluate C₂	2:1 concⁿ leached A₂	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l	mg/kg			
Arsenic	0.00217	0.00434	-	-	-
Barium	0.0535	0.107	-	-	-
Cadmium	<0.0001	<0.0002	-	-	-
Chromium	0.00146	0.00292	-	-	-
Copper	0.00259	0.00518	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00002	-	-	-
Molybdenum	-	-	-	-	-
Nickel	0.00289	0.00578	-	-	-
Lead	0.00112	0.00224	-	-	-
Antimony	-	-	-	-	-
Selenium	0.000859	0.00172	-	-	-
Zinc	0.00606	0.0121	-	-	-
Chloride	-	-	-	-	-
Fluoride	-	-	-	-	-
Sulphate (soluble)	20.5	41	-	-	-
Total Dissolved Solids	-	-	-	-	-
Total Monohydric Phenols (W)	-	-	-	-	-
Dissolved Organic Carbon	-	-	-	-	-

Leach Test Information

Date Prepared	14-Jul-2010
pH (pH Units)	7.77
Conductivity (µS/cm)	1.83
Temperature (°C)	20.60
Volume Leachant (Litres)	0.317
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

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Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference	NTE 285	Client Location	THE DOVE WAY UTTOXETER
Mass Sample taken (kg)	0.209	Moisture Content Ratio (%)	19.1
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	83.9
Particle Size <4mm	>95%		

Case			
SDG	100708-104		
Lab Sample Number(s)	1796087		
Sampled Date	06-Jul-2010		
Customer Sample Ref.	TP127		
Depth (m)	2.00		

Solid Waste Analysis

Total Organic Carbon (%)	-	-	-
Loss on Ignition (%)	-	-	-
Sum of BTEX (mg/kg)	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-
Mineral Oil (mg/kg)	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-
pH (pH Units)	-	-	-
ANC to pH 6 (mol/kg)	-	-	-
ANC to pH 4 (mol/kg)	-	-	-

Eluate Analysis	Concⁿ in 2:1 eluate C₂	2:1 concⁿ leached A₂	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l	mg/kg			
Beryllium	0.000097	0.000194	-	-	-
Boron	<0.0094	<0.0188	-	-	-
pH	6.6	13	-	-	-
Total Cyanide (W)	<0.05	<0.1	-	-	-
Vanadium	0.00204	0.00408	-	-	-

Leach Test Information

Date Prepared	14-Jul-2010
pH (pH Units)	7.77
Conductivity (µS/cm)	1.83
Temperature (°C)	20.60
Volume Leachant (Litres)	0.317
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

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Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference	NTE 285	Client Location	THE DOVE WAY UTTOXETER
Mass Sample taken (kg)	0.210	Moisture Content Ratio (%)	20.1
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	83.3
Particle Size <4mm	>95%		

Case			
SDG	100708-104		
Lab Sample Number(s)	1796247		
Sampled Date	07-Jul-2010		
Customer Sample Ref.	TP111		
Depth (m)	0.40		

Solid Waste Analysis

Total Organic Carbon (%)	-	-	-
Loss on Ignition (%)	-	-	-
Sum of BTEX (mg/kg)	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-
Mineral Oil (mg/kg)	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-
pH (pH Units)	-	-	-
ANC to pH 6 (mol/kg)	-	-	-
ANC to pH 4 (mol/kg)	-	-	-

Eluate Analysis	Concⁿ in 2:1 eluate C₂	2:1 concⁿ leached A₂	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l	mg/kg			
Arsenic	0.000861	0.00172	-	-	-
Barium	0.0927	0.185	-	-	-
Cadmium	0.000112	0.000224	-	-	-
Chromium	0.00393	0.00786	-	-	-
Copper	0.00792	0.0158	-	-	-
Mercury Dissolved (CVAF)	0.0000261	0.0000522	-	-	-
Molybdenum	-	-	-	-	-
Nickel	0.00478	0.00956	-	-	-
Lead	0.000335	0.00067	-	-	-
Antimony	-	-	-	-	-
Selenium	0.00117	0.00234	-	-	-
Zinc	0.00627	0.0125	-	-	-
Chloride	-	-	-	-	-
Fluoride	-	-	-	-	-
Sulphate (soluble)	47	94	-	-	-
Total Dissolved Solids	-	-	-	-	-
Total Monohydric Phenols (W)	-	-	-	-	-
Dissolved Organic Carbon	-	-	-	-	-

Leach Test Information

Date Prepared	14-Jul-2010
pH (pH Units)	8.02
Conductivity (µS/cm)	372.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.315
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

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Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference	NTE 285	Client Location	THE DOVE WAY UTTOXETER
Mass Sample taken (kg)	0.210	Moisture Content Ratio (%)	20.1
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	83.3
Particle Size <4mm	>95%		

Case			
SDG	100708-104		
Lab Sample Number(s)	1796247		
Sampled Date	07-Jul-2010		
Customer Sample Ref.	TP111		
Depth (m)	0.40		

Solid Waste Analysis

Total Organic Carbon (%)	-	-	-
Loss on Ignition (%)	-	-	-
Sum of BTEX (mg/kg)	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-
Mineral Oil (mg/kg)	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-
pH (pH Units)	-	-	-
ANC to pH 6 (mol/kg)	-	-	-
ANC to pH 4 (mol/kg)	-	-	-

Eluate Analysis	Concⁿ in 2:1 eluate C₂	2:1 concⁿ leached A₂	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l	mg/kg			
Beryllium	<0.00007	<0.00014	-	-	-
Boron	0.217	0.434	-	-	-
pH	8.5	17	-	-	-
Total Cyanide (W)	<0.05	<0.1	-	-	-
Vanadium	0.00176	0.00352	-	-	-

Leach Test Information

Date Prepared	14-Jul-2010
pH (pH Units)	8.02
Conductivity (µS/cm)	372.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.315
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

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Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference	NTE 285	Client Location	THE DOVE WAY UTTOXETER
Mass Sample taken (kg)	0.222	Moisture Content Ratio (%)	27.0
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	78.8
Particle Size <4mm	>95%		

Case			
SDG	100708-104		
Lab Sample Number(s)	1796289		
Sampled Date	07-Jul-2010		
Customer Sample Ref.	TP112		
Depth (m)	2.80		

Solid Waste Analysis

Total Organic Carbon (%)	0.434	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	6.98	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Concⁿ in 2:1 eluate C₂	2:1 concⁿ leached A₂	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l	mg/kg			
Arsenic	0.00429	0.00858	-	-	-
Barium	0.0735	0.147	-	-	-
Cadmium	<0.0001	<0.0002	-	-	-
Chromium	0.00715	0.0143	-	-	-
Molybdenum	-	-	-	-	-
Nickel	0.00814	0.0163	-	-	-
Lead	0.00386	0.00772	-	-	-
Antimony	-	-	-	-	-
Selenium	0.00418	0.00836	-	-	-
Zinc	0.0352	0.0704	-	-	-
Chloride	-	-	-	-	-
Fluoride	-	-	-	-	-
Sulphate (soluble)	49.1	98.2	-	-	-
Total Dissolved Solids	-	-	-	-	-
Total Monohydric Phenols (W)	-	-	-	-	-
Dissolved Organic Carbon	-	-	-	-	-
Copper	0.0112	0.0224	-	-	-
Mercury Dissolved (CVAF)	0.0000248	0.0000496	-	-	-

Leach Test Information

Date Prepared	14-Jul-2010
pH (pH Units)	7.39
Conductivity (µS/cm)	200.00
Temperature (°C)	20.40
Volume Leachant (Litres)	0.303
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference	NTE 285	Client Location	THE DOVE WAY UTTOXETER
Mass Sample taken (kg)	0.222	Moisture Content Ratio (%)	27.0
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	78.8
Particle Size <4mm	>95%		

Case			
SDG	100708-104		
Lab Sample Number(s)	1796289		
Sampled Date	07-Jul-2010		
Customer Sample Ref.	TP112		
Depth (m)	2.80		

Solid Waste Analysis

Total Organic Carbon (%)	0.434	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	6.98	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Concⁿ in 2:1 eluate C₂	2:1 concⁿ leached A₂	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l	mg/kg			
Beryllium	0.000264	0.000528	-	-	-
Boron	1.12	2.24	-	-	-
pH	7.9	16	-	-	-
Total Cyanide (W)	<0.05	<0.1	-	-	-
Vanadium	0.0096	0.0192	-	-	-

Leach Test Information

Date Prepared	14-Jul-2010
pH (pH Units)	7.39
Conductivity (µS/cm)	200.00
Temperature (°C)	20.40
Volume Leachant (Litres)	0.303
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference	NTE 285	Client Location	THE DOVE WAY UTTOXETER
Mass Sample taken (kg)	0.186	Moisture Content Ratio (%)	6.11
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	94.2
Particle Size <4mm	>95%		

Case			
SDG	100708-104		
Lab Sample Number(s)	1796587		
Sampled Date	06-Jul-2010		
Customer Sample Ref.	TP133		
Depth (m)	0.60		

Solid Waste Analysis

Total Organic Carbon (%)	0.217	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	<0.01	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	5.81	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Concⁿ in 2:1 eluate C₂	2:1 concⁿ leached A₂	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l	mg/kg			
Arsenic	0.00273	0.00546	-	-	-
Barium	0.0299	0.0598	-	-	-
Cadmium	0.000131	0.000262	-	-	-
Chromium	0.00204	0.00408	-	-	-
Copper	0.0107	0.0214	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00002	-	-	-
Molybdenum	-	-	-	-	-
Nickel	0.00463	0.00926	-	-	-
Lead	0.00629	0.0126	-	-	-
Antimony	-	-	-	-	-
Selenium	<0.00039	<0.00078	-	-	-
Zinc	0.0275	0.055	-	-	-
Chloride	-	-	-	-	-
Fluoride	-	-	-	-	-
Sulphate (soluble)	28.3	56.6	-	-	-
Total Dissolved Solids	-	-	-	-	-
Total Monohydric Phenols (W)	-	-	-	-	-
Dissolved Organic Carbon	-	-	-	-	-

Leach Test Information

Date Prepared	14-Jul-2010
pH (pH Units)	7.71
Conductivity (µS/cm)	93.30
Temperature (°C)	20.80
Volume Leachant (Litres)	0.339
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference	NTE 285	Client Location	THE DOVE WAY UTTOXETER
Mass Sample taken (kg)	0.186	Moisture Content Ratio (%)	6.11
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	94.2
Particle Size <4mm	>95%		

Case			
SDG	100708-104		
Lab Sample Number(s)	1796587		
Sampled Date	06-Jul-2010		
Customer Sample Ref.	TP133		
Depth (m)	0.60		

Solid Waste Analysis

Total Organic Carbon (%)	0.217	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	<0.01	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	5.81	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Concⁿ in 2:1 eluate C₂	2:1 concⁿ leached A₂	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l	mg/kg			
Beryllium	0.000093	0.000186	-	-	-
Boron	<0.0094	<0.0188	-	-	-
pH	6.7	13	-	-	-
Total Cyanide (W)	<0.05	<0.1	-	-	-
Vanadium	0.00547	0.0109	-	-	-

Leach Test Information

Date Prepared	14-Jul-2010
pH (pH Units)	7.71
Conductivity (µS/cm)	93.30
Temperature (°C)	20.80
Volume Leachant (Litres)	0.339
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference	NTE 285	Client Location	THE DOVE WAY UTTOXETER
Mass Sample taken (kg)	0.197	Moisture Content Ratio (%)	12.6
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	88.8
Particle Size <4mm	>95%		

Case			
SDG	100708-104		
Lab Sample Number(s)	1796767		
Sampled Date	06-Jul-2010		
Customer Sample Ref.	TP130		
Depth (m)	0.20		

Solid Waste Analysis

Total Organic Carbon (%)	2.47	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	7.06	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Concⁿ in 2:1 eluate C₂	2:1 concⁿ leached A₂	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l	mg/kg			
Arsenic	0.00173	0.00346	-	-	-
Barium	0.0963	0.193	-	-	-
Cadmium	0.00015	0.0003	-	-	-
Chromium	0.00586	0.0117	-	-	-
Copper	0.0189	0.0378	-	-	-
Mercury Dissolved (CVAF)	0.0000356	0.0000712	-	-	-
Molybdenum	-	-	-	-	-
Nickel	0.00559	0.0112	-	-	-
Lead	0.00111	0.00222	-	-	-
Antimony	-	-	-	-	-
Selenium	0.00211	0.00422	-	-	-
Zinc	0.00526	0.0105	-	-	-
Chloride	-	-	-	-	-
Fluoride	-	-	-	-	-
Sulphate (soluble)	16.5	33	-	-	-
Total Dissolved Solids	-	-	-	-	-
Total Monohydric Phenols (W)	-	-	-	-	-
Dissolved Organic Carbon	-	-	-	-	-

Leach Test Information

Date Prepared	14-Jul-2010
pH (pH Units)	8.11
Conductivity (µS/cm)	415.00
Temperature (°C)	20.40
Volume Leachant (Litres)	0.328
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference	NTE 285	Client Location	THE DOVE WAY UTTOXETER
Mass Sample taken (kg)	0.197	Moisture Content Ratio (%)	12.6
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	88.8
Particle Size <4mm	>95%		

Case			
SDG	100708-104		
Lab Sample Number(s)	1796767		
Sampled Date	06-Jul-2010		
Customer Sample Ref.	TP130		
Depth (m)	0.20		

Solid Waste Analysis

Total Organic Carbon (%)	2.47	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	7.06	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Concⁿ in 2:1 eluate C₂	2:1 concⁿ leached A₂	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	mg/l	mg/kg			
Beryllium	<0.00007	<0.00014	-	-	-
Boron	<0.0094	<0.0188	-	-	-
pH	8.6	17	-	-	-
Total Cyanide (W)	<0.05	<0.1	-	-	-
Vanadium	0.00316	0.00632	-	-	-

Leach Test Information

Date Prepared	14-Jul-2010
pH (pH Units)	8.11
Conductivity (µS/cm)	415.00
Temperature (°C)	20.40
Volume Leachant (Litres)	0.328
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcers Certification does not apply to leachates

Table of Results - Appendix

SDG Number : 100708-104

Client : BWB Consulting

Client Ref : NTE 285

REPORT KEY

NDP		#	ISO 17025 Accredited	*	Subcontracted Test	M	Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03x10 ⁻⁷
No Determination Possible							MCERTS Accredited
NFD		PFD	Possible Fibres Detected	»	Result previously reported (Incremental reports only)	EC	Equivalent Carbon (Aromatics C8-C35)
No Fibres Detected							

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

Method No	Reference	Description	Wet/Dry Sample ¹
PM001		Preparation of Samples for Metals Analysis	Dry
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material	Wet
PM114		Leaching Procedure for CEN Two Stage Batch Test 2:1/8:1 Cumulative	
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step	
TM001	In - house Method	Determination of asbestos containing material by screening on solids	
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC	Wet
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)	
TM098	Method 4500E, AWWA/APHA, 20th Ed., 1999	Determination of Sulphate using the Kone Analyser	Dry
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	Dry
TM133	BS 1377: Part 3 1990; BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter	Wet
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS	
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	Wet
TM154	In - house Method	Determination of Petroleum Hydrocarbons by EZ Flash GC-FID in the Carbon range C6- C40	Wet
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID	Dry
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES	Dry
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry	
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers	Dry
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546	Wet
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer	Dry
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate	
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter	

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

APPENDIX

APPENDIX

1. Results are expressed on a dry weight basis (dried at 35°C) 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. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.
12. Results relate only to the items tested
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 Dimethylphenol, 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 14).
17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.
19. 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 the major 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.

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)	GS 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 INFRA RED (IR)	TCE	LIQUID/LIQUID EXTRACTION	HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID EXTRACTION	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GC FID

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
Solvent Extractable Matter	D&C	DCM	SOX THERM	GRAVIMETRIC
Cyclohexane Ext. Matter	D&C	CYCLOHEXANE	SOX THERM	GRAVIMETRIC
Thin Layer Chromatography	D&C	DCM	SOX THERM	IATROSCAN
Elemental Sulphur	D&C	DCM	SOX THERM	HPLC
Phenols by GCMS	WET	DCM	SOX THERM	GC-MS
Herbicides	D&C	HEXANE:ACETONE	SOX THERM	GC-MS
Pesticides	D&C	HEXANE:ACETONE	SOX THERM	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 (C6-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

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', 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).

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 MDHS 100.

The identification of asbestos containing materials 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.

Asbestos Type

Common Name

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



BWB Consulting
3-4 Kayes Walk
The Lace Market
Nottingham
Nottinghamshire
NG1 1PY

Attention: Richard Robinson

CERTIFICATE OF ANALYSIS

Date: 11 August 2010
Customer: H_BWB_NTT-84
Sample Delivery Group (SDG): 100712-18 **Report No.:** 93287
Your Reference:
Location: THE DOVE WAY-NTE285

We received 34 samples on Monday July 12, 2010 and 25 of these samples were scheduled for analysis which was completed on Wednesday August 11, 2010. 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.

Asbestos testing - we are not accredited for screening soil samples for asbestos fibres. We are only accredited to identify asbestos fibres in bulk material (ACM).

Approved By:

Iain Swinton

Operations Director - Land UK & Ireland



SDG:	100712-18	Customer:	BWB Consulting
Job:	H_BWB_NTT-84	Attention:	Richard Robinson
Client Reference:		Order No.:	NE09/616
Location:	THE DOVE WAY-NTE285	Report No:	93287

Received Sample Overview



Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
1804942	TP107		2.50	08/07/2010
1804805	TP109		0.70	08/07/2010
1804927	TP109		2.50	08/07/2010
1805000	TP114		0.50	08/07/2010
1805031	TP114		0.60	07/07/2010
1805048	TP116		0.90	08/07/2010
1805082	TP117		0.50	08/07/2010
1805100	TP117		1.80	08/07/2010
1939155	TP118		3.00	08/07/2010
1805350	TP119		0.50	08/07/2010
1805365	TP119		3.20	08/07/2010
1805387	TP120		0.80	08/07/2010
1805409	TP120		1.50	08/07/2010
1805433	TP120		3.00	08/07/2010
1805519	TP121		0.20	07/07/2010
1805459	TP121		0.90	07/07/2010
1805492	TP121		1.50	07/07/2010
1805510	TP123		0.20	07/07/2010
1805546	TP123		2.00	07/07/2010
1805575	TP134		0.30	08/07/2010
1805596	TP135		0.90	08/07/2010
1805613	TP135		3.10	08/07/2010
1805646	TP136		0.50	08/07/2010
1805675	TP136		1.00	08/07/2010
1805701	TP137		0.70	08/07/2010
1805736	TP137		2.00	08/07/2010
1805932	WS3		0.10 - 0.90	07/07/2010
1806100	WS3		1.20 - 2.00	07/07/2010
1806152	WS4		0.10 - 0.50	07/07/2010
1806221	WS4		1.00 - 1.50	07/07/2010
1806285	WS5		0.10 - 1.00	07/07/2010
1806302	WS6		0.30 - 1.00	07/07/2010
1806359	WS7		0.10 - 0.40	07/07/2010
1806335	WS7		1.60 - 2.00	07/07/2010

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

SDG: 100712-18
Job: H_BWB_NTT-84
Client Reference:
Location: THE DOVE WAY-NTE285

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 93287

SOLID

Results Legend  Test  No Determination Possible	Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Container	
		1805100	WS3		1.20 - 2.00	1kg TUB
		1805932	WS3		0.10 - 0.90	20g Amber Jar
		1805736	TP137		2.00	40g Tub
		1805701	TP137		0.70	20g Amber Jar
	1805675	TP136		1.00	40g Tub	
	1805646	TP136		0.50	20g Amber Jar	
	1805613	TP135		3.10	40g Tub	
	1805596	TP135		0.90	20g Amber Jar	
	1805575	TP134		0.30	40g Tub	
	1805546	TP123		2.00	40g Tub	
	1805459	TP121		0.90	20g Amber Jar	
	1805433	TP120		3.00	40g Tub	
	1805387	TP120		0.80	20g Amber Jar	
	1805365	TP119		3.20	40g Tub	
	1805350	TP119		0.50	20g Amber Jar	
	1805100	TP117		1.80	40g Tub	
	1805082	TP117		0.50	20g Amber Jar	
	1805000	TP114		0.50	40g Tub	
	1804927	TP109		2.50	80g VOC	
Anions by Kone (w)	All					
Asbestos Containing Material Screen	All					
Boron Water Soluble	All					
CEN Readings	All					
Cyanide Complex/Free/Total/Thiocyan	All					
Cyanides Complex/Free/Total/Thiocya	Cyanide, Complex					
	Cyanide, Free					
	Cyanide, Total					
Dissolved Metals by ICP-MS	All					
EPH CWG (Aliphatic) GC (S)	All					
EPH CWG (Aromatic) GC (S)	All					
GRO BTEX MTBE GC (S)	All					
Mercury Dissolved	All					
Metals by iCap-OES (Soil)	Arsenic					
	Barium					
	Beryllium					
	Cadmium					
	Chromium					
	Copper					

	Total													
1939155	TP118	3.00	40g Tub											0
1805335	WS7	1.80 - 2.00	20g Amber Jar											10
1805302	WS6	0.30 - 1.00	60g VOC											0
1805295	WS5	0.10 - 1.00	40g Tub											6
1805221	WS4	1.00 - 1.50	20g Amber Jar	X										0
			60g VOC											21
			40g Tub											0
			20g Amber Jar											10
			60g VOC											0
			40g Tub											10
			20g Amber Jar											0
			60g VOC											21
			40g Tub											0
			20g Amber Jar	X										21
			60g VOC											0
			40g Tub											21
			20g Amber Jar											0
			60g VOC											21
			40g Tub											0
			20g Amber Jar											21
			60g VOC											0
			40g Tub											21
			20g Amber Jar	X										0
			60g VOC											21
			40g Tub											0
			20g Amber Jar											21
			60g VOC											0
			40g Tub											21

SDG: 100712-18
Job: H_BWB_NTT-84
Client Reference:
Location: THE DOVE WAY-NTE285

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 93287

Sample ID	TP	Depth (m)	Volume
1806100	WIS3	1.20 - 2.00	1kg TUB
1805932	WIS3	0.10 - 0.90	250g Amber Jar
1805736	TP137	2.00	250g Amber Jar
1805701	TP137	0.70	400g TUB
1805675	TP136	1.00	250g Amber Jar
1805646	TP136	0.50	400g TUB
1805613	TP135	3.10	250g Amber Jar
1805596	TP135	0.90	85g VOC
1805575	TP134	0.30	400g TUB
1805546	TP123	2.00	400g TUB
1805459	TP121	0.90	250g Amber Jar
1805433	TP120	3.00	400g TUB
1805387	TP120	0.80	250g Amber Jar
1805365	TP119	3.20	400g TUB
1805350	TP119	0.50	85g VOC
1805100	TP117	1.80	400g TUB
1805082	TP117	0.50	250g Amber Jar
1805000	TP114	0.50	250g Amber Jar
1804927	TP109	2.50	85g VOC

Parameter	Method	1806100	1805932	1805736	1805701	1805675	1805646	1805613	1805596	1805575	1805546	1805459	1805433	1805387	1805365	1805350	1805100	1805082	1805000	1804927	
Metals by iCap-OES (Soil)	Lead	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	Mercury	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Nickel	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Selenium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Vanadium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Zinc	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	PAH by GCMS	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
pH	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
pH Value	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Phenols by HPLC (S)	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Sample description	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Total Organic Carbon	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Total Sulphur	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
TPH C6-C40 Value of soil	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
TPH CWG GC (S)	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
VOC MS (S)	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Soluble Sulphate 2:1	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

SDG: 100712-18
Job: H_BWB_NTT-84
Client Reference:
Location: THE DOVE WAY-NTE285

Customer: BWB Consulting
Attention: Richard Robinson
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Sample Descriptions

Grain Sizes:

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

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions
1804927	TP109	2.50	Dark Brown	Sand	0.1 - 2 mm	Stones
1805000	TP114	0.50	Dark Brown	Silt Loam	0.063 - 0.1 mm	Stones
1805082	TP117	0.50	Dark Brown	Silty Clay	0.063 - 0.1 mm	N/A
1805100	TP117	1.80	Dark Brown	Silty Clay	0.063 - 0.1 mm	Stones
1805350	TP119	0.50	Dark Brown	Sandy Loam	0.1 - 2 mm	Stones
1805365	TP119	3.20	Dark Brown	Silty Clay	0.063 - 0.1 mm	Stones
1805387	TP120	0.80	Dark Brown	Silty Clay	0.063 - 0.1 mm	Stones
1805433	TP120	3.00	Light Brown	Silty Sand	0.063 - 0.1 mm	Stones
1805459	TP121	0.90	Dark Brown	Silty Sand	0.063 - 0.1 mm	Stones
1805546	TP123	2.00	Dark Brown	Clay	<0.063 mm	N/A
1805575	TP134	0.30	Light Brown	Silty Clay	0.063 - 0.1 mm	Stones
1805596	TP135	0.90	Dark Brown	Sandy Loam	0.1 - 2 mm	Stones
1805613	TP135	3.10	Light Brown	Silty Clay	0.063 - 0.1 mm	None
1805646	TP136	0.50	Dark Brown	Sandy Clay Loam	0.1 - 2 mm	Stones
1805675	TP136	1.00	Dark Brown	Silty Sand	0.063 - 0.1 mm	Stones
1805701	TP137	0.70	Dark Brown	Sandy Loam	0.1 - 2 mm	Stones
1805736	TP137	2.00	Dark Brown	Silty Clay	0.063 - 0.1 mm	None
1805932	WS3	0.10 - 0.90	Dark Brown	Sandy Loam	0.1 - 2 mm	Stones
1806100	WS3	1.20 - 2.00	Dark Brown	Silty Clay	0.063 - 0.1 mm	Stones
1806152	WS4	0.10 - 0.50	Dark Brown	Sandy Loam	0.1 - 2 mm	Stones
1806221	WS4	1.00 - 1.50	Dark Brown	Sandy Clay	0.1 - 2 mm	Stones
1806285	WS5	0.10 - 1.00	Dark Brown	Sandy Loam	0.1 - 2 mm	Stones
1806302	WS6	0.30 - 1.00	Dark Brown	Sandy Loam	0.1 - 2 mm	Stones
1806335	WS7	1.60 - 2.00	Dark Brown	Sand	0.1 - 2 mm	Stones
1939155	TP118	3.00	Light Brown	Sandy Clay	0.1 - 2 mm	Stones

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 occurring 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.

SDG: 100712-18
 Job: H_BWB_NTT-84
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 Location: THE DOVE WAY-NTE285

Customer: BWB Consulting
 Attention: Richard Robinson
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Test Completion dates

SDG reference: 100712-18

Lab Sample No(s)	1804927	1805000	1805082	1805100	1805350	1805365	1805387	1805433	1805459	1805546	1805575	1805596
Customer Sample Ref.	TP109	TP114	TP117	TP117	TP119	TP119	TP120	TP120	TP121	TP123	TP134	TP135
Depth	2.50	0.50	0.50	1.80	0.50	3.20	0.80	3.00	0.90	2.00	0.30	0.90
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Anions by Kone (w)				19/07/2010		20/07/2010			19/07/2010	20/07/2010	19/07/2010	
Asbestos Containing Material Screen		16/07/2010				16/07/2010					16/07/2010	
Boron Water Soluble		20/07/2010	20/07/2010		20/07/2010	20/07/2010	20/07/2010	20/07/2010		20/07/2010		20/07/2010
CEN Readings				19/07/2010		20/07/2010			19/07/2010	20/07/2010	19/07/2010	
Cyanide Comp/Free/Total/Thiocyanate		19/07/2010	19/07/2010	20/07/2010	19/07/2010	21/07/2010	19/07/2010	19/07/2010	20/07/2010	21/07/2010	20/07/2010	19/07/2010
Dissolved Metals by ICP-MS				21/07/2010		21/07/2010			21/07/2010	21/07/2010	21/07/2010	
EPH CWG (Aliphatic) GC (S)	20/07/2010				20/07/2010		21/07/2010					20/07/2010
EPH CWG (Aromatic) GC (S)	20/07/2010				20/07/2010		21/07/2010					20/07/2010
GRO by GC-FID (S)	20/07/2010				20/07/2010		20/07/2010					20/07/2010
Mercury Dissolved				20/07/2010		20/07/2010			20/07/2010	20/07/2010	20/07/2010	
Metals by iCap-OES (Soil)		21/07/2010	19/07/2010		20/07/2010	19/07/2010	19/07/2010	19/07/2010		19/07/2010		20/07/2010
Moisture Meter				17/07/2010		16/07/2010			16/07/2010	16/07/2010	17/07/2010	
PAH by GCMS		19/07/2010	19/07/2010		19/07/2010	20/07/2010	19/07/2010	19/07/2010		19/07/2010		19/07/2010
pH		19/07/2010	16/07/2010		19/07/2010	16/07/2010	19/07/2010	19/07/2010		16/07/2010		16/07/2010
pH Value				20/07/2010		20/07/2010			20/07/2010	20/07/2010	20/07/2010	
Phenols by HPLC (S)		19/07/2010	19/07/2010		19/07/2010	19/07/2010	21/07/2010	21/07/2010		19/07/2010		19/07/2010
Sample description	16/07/2010	16/07/2010	16/07/2010	16/07/2010	16/07/2010	16/07/2010	16/07/2010	16/07/2010	16/07/2010	16/07/2010	16/07/2010	16/07/2010
Total Organic Carbon		19/07/2010	19/07/2010		19/07/2010	19/07/2010	19/07/2010	19/07/2010		19/07/2010		19/07/2010
Total Sulphur		19/07/2010	19/07/2010		19/07/2010	19/07/2010	19/07/2010	19/07/2010		19/07/2010		19/07/2010
TPH c6-40 Value of soil		20/07/2010	20/07/2010		20/07/2010	20/07/2010	20/07/2010	20/07/2010		20/07/2010		20/07/2010
TPH CWG GC (S)	21/07/2010				21/07/2010		21/07/2010					21/07/2010
VOC MS (S)												
Water Soluble Sulphate 2:1		20/07/2010	20/07/2010		20/07/2010	20/07/2010	20/07/2010	20/07/2010		20/07/2010		20/07/2010

1805613	1805646	1805675	1805701	1805736	1805932	1806100	1806152	1806221	1806285	1806302	1806335	1939155
TP135	TP136	TP136	TP137	TP137	WS3	WS3	WS4	WS4	WS5	WS6	WS7	TP118
3.10	0.50	1.00	0.70	2.00	0.10 - 0.90	1.20 - 2.00	0.10 - 0.50	1.00 - 1.50	0.10 - 1.00	0.30 - 1.00	1.60 - 2.00	3.00
SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
20/07/2010				19/07/2010	19/07/2010		19/07/2010			19/07/2010		
	16/07/2010				16/07/2010					16/07/2010		
20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010
20/07/2010				19/07/2010	19/07/2010		19/07/2010			19/07/2010		
21/07/2010	19/07/2010	19/07/2010	19/07/2010	20/07/2010	20/07/2010	19/07/2010	20/07/2010	19/07/2010	19/07/2010	20/07/2010	19/07/2010	19/07/2010
21/07/2010				21/07/2010	21/07/2010		21/07/2010			21/07/2010		
			20/07/2010					21/07/2010		21/07/2010	21/07/2010	
			20/07/2010					21/07/2010		21/07/2010	21/07/2010	
			20/07/2010					20/07/2010		20/07/2010	20/07/2010	
20/07/2010				20/07/2010	20/07/2010		20/07/2010			20/07/2010		
20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010
16/07/2010				17/07/2010	16/07/2010		16/07/2010			16/07/2010		
19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010
16/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	16/07/2010
20/07/2010				20/07/2010	20/07/2010		20/07/2010			20/07/2010		
20/07/2010	21/07/2010	21/07/2010	21/07/2010	21/07/2010	19/07/2010	21/07/2010	19/07/2010	21/07/2010	21/07/2010	19/07/2010	21/07/2010	19/07/2010
16/07/2010	16/07/2010	16/07/2010	16/07/2010	16/07/2010	16/07/2010	16/07/2010	16/07/2010	16/07/2010	16/07/2010	16/07/2010	16/07/2010	16/07/2010
19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010
19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010
20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010
			21/07/2010					21/07/2010		21/07/2010	21/07/2010	
			20/07/2010									
20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010	20/07/2010

SDG: 100712-18
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Location: THE DOVE WAY-NTE285

Customer: BWB Consulting
Attention: Richard Robinson
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Results Legend		Customer Sample Ref.	TP114	TP117	TP117	TP118	TP119
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	TP114	TP117	TP117	TP118	TP119
M	mCERTS accredited.		0.50	0.50	1.80	3.00	0.50
aq	Aqueous / settled sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
diss.filt	Dissolved / filtered sample.		08/07/2010	08/07/2010	08/07/2010	08/07/2010	08/07/2010
tot.unfilt	Total / unfiltered sample.		12/07/2010	12/07/2010	12/07/2010	12/07/2010	12/07/2010
*	subcontracted test.		100712-18	100712-18	100712-18	100712-18	100712-18
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.		1805000	1805082	1805100	1939155	1805350
Component	LOD/Units	Method					
Moisture	%	PM114			26.2		
Moisture content ratio	%	PM114			35.4		
Dry matter content ratio	%	PM114			73.9		
Asbestos Containing Material Screen	-	TM001	No ACM Detected				No ACM Detected
Phenols, Total monohydric	<0.22 mg/kg	TM062 (S)	<0.22	<0.22		<0.22	<0.22
Sulphate, 2:1 water soluble	<0.003 g/l	TM098	0.463	0.0109		0.125	1.49
Sulphur, Total	<0.02 %	TM132	0.318	0.031		0.033	0.237
Fraction Organic Carbon (FOC)	<0.002 -	TM132	0.147	0.0178		0.00372	0.122
pH	1 pH Units	TM133	4.93	6.59		7.16	7.52
Cyanide, Total	<1 mg/kg	TM153	3.51	<1		<1	<1
Cyanide, Free	<1 mg/kg	TM153	<1	<1		<1	<1
Cyanide, Complex	<1 mg/kg	TM153	2.89	<1		<1	<1
TPH >C6-C40	<10 mg/kg	TM154	2370	121		<10	1970
Arsenic	<0.6 mg/kg	TM181	22.2	9.76		6.27	42.9
Barium	<0.6 mg/kg	TM181	675	262		99.2	251
Beryllium	<0.01 mg/kg	TM181	1.97	1.39		0.632	5.26
Cadmium	<0.02 mg/kg	TM181	22.2	0.618		0.333	0.991
Chromium	<0.9 mg/kg	TM181	104	34.6		12.3	33.4
Copper	<1.4 mg/kg	TM181	468	35.6		11.8	187
Lead	<0.7 mg/kg	TM181	339	64.2		18.2	379
Mercury	<0.14 mg/kg	TM181	1.82	<0.14		<0.14	<0.14
Nickel	<0.2 mg/kg	TM181	57.1	31.5		13.1	69.9
Selenium	<1 mg/kg	TM181	9.95	1.5		<1	1.98
Vanadium	<0.2 mg/kg	TM181	24	36.2		16.6	41.7
Zinc	<1.9 mg/kg	TM181	388	192		62	542
Boron, water soluble	<1 mg/kg	TM222	4.03	<1		1.45	6.71

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Customer: BWB Consulting
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PAH by GCMS

Results Legend		Customer Sample Ref.	TP114	TP117	TP118	TP119		
#	ISO17025 accredited.							
M	mCERTS accredited.							
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 the individual compounds within the samples are not corrected for this recovery.							
		Depth (m)	0.50	0.50	3.00	0.50		
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
		Date Sampled	08/07/2010	08/07/2010	08/07/2010	08/07/2010		
		Date Received	12/07/2010	12/07/2010	12/07/2010	12/07/2010		
		SDG Ref	100712-18	100712-18	100712-18	100712-18		
		Lab Sample No.(s)	1805000	1805082	1939155	1805350		
		AGS Reference						
Component	LOD/Units	Method						
Naphthalene-d8 % recovery**	%	TM218	107	103	110	112		
Acenaphthene-d10 % recovery**	%	TM218	109	100	112	113		
Phenanthrene-d10 % recovery**	%	TM218	111	104	115	117		
Chrysene-d12 % recovery**	%	TM218	97.2	85.8	101	99.9		
Perylene-d12 % recovery**	%	TM218	105	87.4	115	108		
Naphthalene	<9 µg/kg	TM218	516	<9	<9	828		
Acenaphthylene	<12 µg/kg	TM218	64.4	<12	<12	204		
Acenaphthene	<8 µg/kg	TM218	21.4	<8	<8	2540		
Fluorene	<10 µg/kg	TM218	23.9	<10	<10	3120		
Phenanthrene	<15 µg/kg	TM218	580	51.5	22.7	6370		
Anthracene	<16 µg/kg	TM218	191	<16	<16	6380		
Fluoranthene	<17 µg/kg	TM218	705	89.7	42.3	28900		
Pyrene	<15 µg/kg	TM218	550	76.2	35.5	21400		
Benzo(a)anthracene	<14 µg/kg	TM218	449	54.3	31.5	8380		
Chrysene	<10 µg/kg	TM218	431	63.9	22.4	7090		
Benzo(b)fluoranthene	<15 µg/kg	TM218	1550	77.8	38.6	8880		
Benzo(k)fluoranthene	<14 µg/kg	TM218	410	29.8	15.3	3750		
Benzo(a)pyrene	<15 µg/kg	TM218	458	38.4	27.9	7310		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	728	33.8	<18	3770		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	166	<23	<23	1020		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	766	48	<24	4430		
Polyaromatic hydrocarbons, Total USEPA 16	<118 µg/kg	TM218	7610	563	236	114000		

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TPH CWG (S)

Results Legend		Customer Sample Ref.	TP109	TP119			
#	ISO17025 accredited.						
M	mCERTS accredited.						
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 the individual compounds within the samples are not corrected for this recovery.						
		Depth (m)	2.50	0.50			
		Sample Type	Soil/Solid	Soil/Solid			
		Date Sampled	08/07/2010	08/07/2010			
		Date Received	12/07/2010	12/07/2010			
		SDG Ref	100712-18	100712-18			
		Lab Sample No.(s)	1804927	1805350			
		AGS Reference					
Component	LOD/Units	Method					
GRO Surrogate % recovery**	%	TM089	74	68			
GRO >C5-C12	<44 µg/kg	TM089	185	716			
Benzene	<10 µg/kg	TM089	<10	<10			
Ethylbenzene	<3 µg/kg	TM089	<3	<3			
Toluene	<2 µg/kg	TM089	<2	<2			
m,p-Xylene	<6 µg/kg	TM089	<6	<6			
o-Xylene	<3 µg/kg	TM089	<3	<3			
m,p,o-Xylene	<10 µg/kg	TM089	<10	<10			
BTEX, Total	<10 µg/kg	TM089	<10	<10			
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5			
Aliphatics >C5-C6	<10 µg/kg	TM089	10.6	16.1			
Aliphatics >C6-C8	<10 µg/kg	TM089	13	22.4			
Aliphatics >C8-C10	<10 µg/kg	TM089	40.6	40.6			
Aliphatics >C10-C12	<10 µg/kg	TM089	18.6	223			
Aromatics >C6-C7	<10 µg/kg	TM089	<10	<10			
Aromatics >C7-C8	<10 µg/kg	TM089	<10	<10			
Aromatics >EC8-EC10	<10 µg/kg	TM089	60.9	60.9			
Aromatics >EC10-EC12	<10 µg/kg	TM089	27.9	335			
Total Aliphatics >C5-C12	<10 µg/kg	TM089	82.8	302			
Total Aromatics >C6-C12	<10 µg/kg	TM089	88.8	396			
Aliphatics >C12-C16	<100 µg/kg	TM173	11500	18500			
Aliphatics >C16-C21	<100 µg/kg	TM173	4610	63900			
Aliphatics >C16-C35	<100 µg/kg	TM173	207000	410000			
Aliphatics >C21-C35	<100 µg/kg	TM173	202000	346000			
Aliphatics >C35-C44	<100 µg/kg	TM173	118000	149000			
Aromatics >EC12-EC16	<100 µg/kg	TM173	3020	23200			
Aromatics >EC16-EC21	<100 µg/kg	TM173	3370	153000			
Aromatics >EC21-EC35	<100 µg/kg	TM173	24200	448000			
Aromatics >EC35-EC44	<100 µg/kg	TM173	24500	155000			
Aromatics >EC40-EC44	<100 µg/kg	TM173	12800	64000			
Total Aliphatics >C12-C44	<100 µg/kg	TM173	336000	578000			
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	55100	780000			
Total Aliphatics >C5-35	<100 µg/kg	TM173	218000	429000			
Total Aliphatics >C5-C44	<100 µg/kg	TM173	336000	578000			
Total Aromatics >C5-35	<100 µg/kg	TM173	30700	625000			
Total Aromatics >C6-C44	<100 µg/kg	TM173	55200	780000			
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	249000	1050000			
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	391000	1360000			

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Results Legend		Customer Sample Ref.	TP119	TP120	TP120	TP121	TP123	TP134
#	ISO17025 accredited.							
M	mCERTS accredited.							
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 the individual compounds within the samples are not corrected for this recovery.							
		Depth (m)	3.20	0.80	3.00	0.90	2.00	0.30
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
		Date Sampled	08/07/2010	08/07/2010	08/07/2010	07/07/2010	07/07/2010	08/07/2010
		Date Received	12/07/2010	12/07/2010	12/07/2010	12/07/2010	12/07/2010	12/07/2010
		SDG Ref	100712-18	100712-18	100712-18	100712-18	100712-18	100712-18
		Lab Sample No.(s)	1805365	1805387	1805433	1805459	1805546	1805575
		AGS Reference						
Component	LOD/Units	Method						
Moisture	%	PM114	15.3			20.7	16.2	10.1
Moisture content ratio	%	PM114	18.1			26.2	19.3	11.2
Dry matter content ratio	%	PM114	84.7			79.3	83.8	90
Asbestos Containing Material Screen	-	TM001						No ACM Detected
Phenols, Total monohydric	<0.22 mg/kg	TM062 (S)	<0.22	<0.22	2.1		<0.22	
Sulphate, 2:1 water soluble	<0.003 g/l	TM098	0.348	1.3	0.0652		0.0421	
Sulphur, Total	<0.02 %	TM132	0.078	0.931	0.02		0.02	
Fraction Organic Carbon (FOC)	<0.002 -	TM132	0.0163	0.0524	0.00223		0.00444	
pH	1 pH Units	TM133	7.41	7.69	7.79		7.21	
Cyanide, Total	<1 mg/kg	TM153	<1	<1	<1		<1	
Cyanide, Free	<1 mg/kg	TM153	<1	<1	<1		<1	
Cyanide, Complex	<1 mg/kg	TM153	<1	<1	<1		<1	
TPH >C6-C40	<10 mg/kg	TM154	275	13800	<10		<10	
Arsenic	<0.6 mg/kg	TM181	12.6	6.69	6.31		7.55	
Barium	<0.6 mg/kg	TM181	127	524	57.3		158	
Beryllium	<0.01 mg/kg	TM181	0.767	7.11	0.469		0.772	
Cadmium	<0.02 mg/kg	TM181	0.415	<0.02	0.198		0.488	
Chromium	<0.9 mg/kg	TM181	28.2	38.9	7.58		22.2	
Copper	<1.4 mg/kg	TM181	133	20.4	7.72		16.3	
Lead	<0.7 mg/kg	TM181	47.9	23.5	14.4		21.8	
Mercury	<0.14 mg/kg	TM181	<0.14	<0.14	<0.14		<0.14	
Nickel	<0.2 mg/kg	TM181	27.5	12	9.64		24	
Selenium	<1 mg/kg	TM181	<1	3.44	<1		1.58	
Vanadium	<0.2 mg/kg	TM181	19.6	39	14.3		23.5	
Zinc	<1.9 mg/kg	TM181	99.5	103	35.1		97.5	
Boron, water soluble	<1 mg/kg	TM222	1.08	3.79	1.95		3.59	

SDG: 100712-18
Job: H_BWB_NTT-84
Client Reference:
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Customer: BWB Consulting
Attention: Richard Robinson
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PAH by GCMS

Results Legend		Customer Sample Ref.	TP119	TP120	TP120	TP123		
#	ISO17025 accredited.							
M	mCERTS accredited.							
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 the individual compounds within the samples are not corrected for this recovery.							
		Depth (m)	3.20	0.80	3.00	2.00		
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
		Date Sampled	08/07/2010	08/07/2010	08/07/2010	07/07/2010		
		Date Received	12/07/2010	12/07/2010	12/07/2010	12/07/2010		
		SDG Ref	100712-18	100712-18	100712-18	100712-18		
		Lab Sample No.(s)	1805365	1805387	1805433	1805546		
		AGS Reference						
Component	LOD/Units	Method						
Naphthalene-d8 % recovery**	%	TM218	107	102	104	101		
Acenaphthene-d10 % recovery**	%	TM218	106	102	105	99.6		
Phenanthrene-d10 % recovery**	%	TM218	110	105	110	104		
Chrysene-d12 % recovery**	%	TM218	91.5	91.8	99.6	91.4		
Perylene-d12 % recovery**	%	TM218	97	98.9	116	104		
Naphthalene	<9 µg/kg	TM218	104	244	13.3	<9		
			M	M	M	M		
Acenaphthylene	<12 µg/kg	TM218	16.3	2130	23.5	<12		
			M	M	M	M		
Acenaphthene	<8 µg/kg	TM218	38	65500	212	<8		
			M	M	M	M		
Fluorene	<10 µg/kg	TM218	61.3	12100	89.3	<10		
			M	M	M	M		
Phenanthrene	<15 µg/kg	TM218	220	9080	877	<15		
			M	M	M	M		
Anthracene	<16 µg/kg	TM218	68.1	5400	165	<16		
			M	M	M	M		
Fluoranthene	<17 µg/kg	TM218	529	17900	1360	<17		
			M	M	M	M		
Pyrene	<15 µg/kg	TM218	413	13300	1110	<15		
			M	M	M	M		
Benzo(a)anthracene	<14 µg/kg	TM218	167	3030	472	<14		
			M	M	M	M		
Chrysene	<10 µg/kg	TM218	169	3100	436	<10		
			M	M	M	M		
Benzo(b)fluoranthene	<15 µg/kg	TM218	193	2440	523	<15		
			M	M	M	M		
Benzo(k)fluoranthene	<14 µg/kg	TM218	77.1	1170	182	<14		
			M	M	M	M		
Benzo(a)pyrene	<15 µg/kg	TM218	163	2190	507	<15		
			M	M	M	M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	99.2	865	239	<18		
			M	M	M	M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	314	57	<23		
			M	M	M	M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	126	1350	287	<24		
			M	M	M	M		
Polyaromatic hydrocarbons, Total USEPA 16	<118 µg/kg	TM218	2440	140000	6550	<118		
			M	M	M	M		

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TPH CWG (S)

Results Legend		Customer Sample Ref.	TP120				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.80				
M	mCERTS accredited.		Soil/Solid				
aq	Aqueous / settled sample.		08/07/2010				
diss.filt	Dissolved / filtered sample.		12/07/2010				
tot.unfilt	Total / unfiltered sample.		100712-18				
*	subcontracted test.		1805387				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.						
Component	LOD/Units	Method					
GRO Surrogate % recovery**	%	TM089	17				
GRO >C5-C12	<44 µg/kg	TM089	812				
Benzene	<10 µg/kg	TM089	<10				
Ethylbenzene	<3 µg/kg	TM089	<3				
Toluene	<2 µg/kg	TM089	<2				
m,p-Xylene	<6 µg/kg	TM089	<6				
o-Xylene	<3 µg/kg	TM089	<3				
m,p,o-Xylene	<10 µg/kg	TM089	<10				
BTEX, Total	<10 µg/kg	TM089	<10				
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5				
Aliphatics >C5-C6	<10 µg/kg	TM089	11.8				
Aliphatics >C6-C8	<10 µg/kg	TM089	<10				
Aliphatics >C8-C10	<10 µg/kg	TM089	154				
Aliphatics >C10-C12	<10 µg/kg	TM089	157				
Aromatics >C6-C7	<10 µg/kg	TM089	<10				
Aromatics >C7-C8	<10 µg/kg	TM089	<10				
Aromatics >EC8-EC10	<10 µg/kg	TM089	232				
Aromatics >EC10-EC12	<10 µg/kg	TM089	236				
Total Aliphatics >C5-C12	<10 µg/kg	TM089	323				
Total Aromatics >C6-C12	<10 µg/kg	TM089	467				
Aliphatics >C12-C16	<100 µg/kg	TM173	203000				
Aliphatics >C16-C21	<100 µg/kg	TM173	200000				
Aliphatics >C16-C35	<100 µg/kg	TM173	2040000				
Aliphatics >C21-C35	<100 µg/kg	TM173	1840000				
Aliphatics >C35-C44	<100 µg/kg	TM173	1720000				
Aromatics >EC12-EC16	<100 µg/kg	TM173	206000				
Aromatics >EC16-EC21	<100 µg/kg	TM173	258000				
Aromatics >EC21-EC35	<100 µg/kg	TM173	1130000				
Aromatics >EC35-EC44	<100 µg/kg	TM173	1100000				
Aromatics >EC40-EC44	<100 µg/kg	TM173	504000				
Total Aliphatics >C12-C44	<100 µg/kg	TM173	3960000				
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	2690000				
Total Aliphatics >C5-35	<100 µg/kg	TM173	2240000				
Total Aliphatics >C5-C44	<100 µg/kg	TM173	3960000				
Total Aromatics >C5-35	<100 µg/kg	TM173	1600000				
Total Aromatics >C6-C44	<100 µg/kg	TM173	2700000				
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	3840000				
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	6660000				

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Results Legend		Customer Sample Ref.	TP135	TP135	TP136	TP136	TP137	TP137
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.90	3.10	0.50	1.00	0.70	2.00
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.		08/07/2010	08/07/2010	08/07/2010	08/07/2010	08/07/2010	08/07/2010
diss.filt	Dissolved / filtered sample.		12/07/2010	12/07/2010	12/07/2010	12/07/2010	12/07/2010	12/07/2010
tot.unfilt	Total / unfiltered sample.		100712-18	100712-18	100712-18	100712-18	100712-18	100712-18
*	subcontracted test.		1805596	1805613	1805646	1805675	1805701	1805736
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.							
Component	LOD/Units	Method						
Moisture	%	PM114		27.8				33.5
Moisture content ratio	%	PM114		38.5				50.4
Dry matter content ratio	%	PM114		72.2				66.5
Asbestos Containing Material Screen	-	TM001	No ACM Detected					
Phenols, Total monohydric	<0.22 mg/kg	TM062 (S)	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Sulphate, 2:1 water soluble	<0.003 g/l	TM098	0.163	0.209	1.4	0.728	0.0309	0.357
Sulphur, Total	<0.02 %	TM132	0.105	0.052	0.234	0.568	1.07	
Fraction Organic Carbon (FOC)	<0.002 -	TM132	0.0384	0.00987	0.0497	0.233	0.341	0.169
pH	1 pH Units	TM133	7.93	5.61	7.72	5.76	8.33	3.71
Cyanide, Total	<1 mg/kg	TM153	17.2	21	162	267	17.1	22100
Cyanide, Free	<1 mg/kg	TM153	<1	<1	<1	5.12	<1	<1
Cyanide, Complex	<1 mg/kg	TM153	16.9	20.7	163	262	16.3	22200
TPH >C6-C40	<10 mg/kg	TM154	896	97	1830	1210	773	8970
Arsenic	<0.6 mg/kg	TM181	10	8.5	12.6	21.2	3.85	50.8
Barium	<0.6 mg/kg	TM181	357	183	221	251	195	12.3
Beryllium	<0.01 mg/kg	TM181	0.918	0.844	1.21	1.27	1.43	2.12
Cadmium	<0.02 mg/kg	TM181	2.95	0.146	0.419	0.181	0.547	4.11
Chromium	<0.9 mg/kg	TM181	15.8	41.6	14.5	21.1	10.5	82.2
Copper	<1.4 mg/kg	TM181	63.6	28.4	34.1	66.5	92.9	79.6
Lead	<0.7 mg/kg	TM181	94.9	48.6	81.2	128	19.4	325
Mercury	<0.14 mg/kg	TM181	<0.14	<0.14	<0.14	0.246	<0.14	0.671
Nickel	<0.2 mg/kg	TM181	14.4	30.2	19.1	25.2	21.5	53.6
Selenium	<1 mg/kg	TM181	1.62	1.77	1.02	1.74	<1	<10
Vanadium	<0.2 mg/kg	TM181	24.5	38.5	24.2	39	27.5	39.5
Zinc	<1.9 mg/kg	TM181	265	86	55.2	64.6	29.6	328
Boron, water soluble	<1 mg/kg	TM222	3.27	2.4	1.82	1.9	1.19	1.11

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PAH by GCMS

Results Legend		Customer Sample Ref.	TP135	TP135	TP136	TP136	TP137	TP137
#	ISO17025 accredited.							
M	mCERTS accredited.							
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 the individual compounds within the samples are not corrected for this recovery.							
		Depth (m)	0.90	3.10	0.50	1.00	0.70	2.00
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
		Date Sampled	08/07/2010	08/07/2010	08/07/2010	08/07/2010	08/07/2010	08/07/2010
		Date Received	12/07/2010	12/07/2010	12/07/2010	12/07/2010	12/07/2010	12/07/2010
		SDG Ref	100712-18	100712-18	100712-18	100712-18	100712-18	100712-18
		Lab Sample No.(s)	1805596	1805613	1805646	1805675	1805701	1805736
		AGS Reference						
Component	LOD/Units	Method						
Naphthalene-d8 % recovery**	%	TM218	107	111	107	114	110	106
Acenaphthene-d10 % recovery**	%	TM218	108	110	107	114	109	99.6
Phenanthrene-d10 % recovery**	%	TM218	109	113	111	115	110	103
Chrysene-d12 % recovery**	%	TM218	92.7	95.2	96.5	96.2	92.3	87.4
Perylene-d12 % recovery**	%	TM218	103	105	99.8	98.8	95.5	87.4
Naphthalene	<9 µg/kg	TM218	168	<9	1210	2670	592	44700
Acenaphthylene	<12 µg/kg	TM218	307	<12	3490	3350	608	6420
Acenaphthene	<8 µg/kg	TM218	60.8	<8	600	609	52.5	2170
Fluorene	<10 µg/kg	TM218	100	<10	2600	748	179	12800
Phenanthrene	<15 µg/kg	TM218	1140	<15	23700	7630	2320	193000
Anthracene	<16 µg/kg	TM218	474	<16	8220	2780	677	21400
Fluoranthene	<17 µg/kg	TM218	2950	32.4	40300	17500	5310	242000
Pyrene	<15 µg/kg	TM218	2490	28.1	32700	14800	5110	178000
Benzo(a)anthracene	<14 µg/kg	TM218	1490	28.8	20100	11100	2500	65500
Chrysene	<10 µg/kg	TM218	1290	16.3	16700	10400	2140	63200
Benzo(b)fluoranthene	<15 µg/kg	TM218	2010	26.3	23400	21300	3490	71200
Benzo(k)fluoranthene	<14 µg/kg	TM218	768	<14	8650	8090	1280	27100
Benzo(a)pyrene	<15 µg/kg	TM218	1570	<15	17000	9860	2480	31900
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	979	<18	9360	9900	1700	29500
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	276	<23	3060	2740	440	7180
Benzo(g,h,i)perylene	<24 µg/kg	TM218	1210	<24	10000	10800	2080	31500
Polyaromatic hydrocarbons, Total USEPA 16	<118 µg/kg	TM218	17300	132	221000	134000	30900	1030000

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TPH CWG (S)

Results Legend		Customer Sample Ref.	TP135	TP137			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.90	0.70			
M	mCERTS accredited.		Soil/Solid	Soil/Solid			
aq	Aqueous / settled sample.		08/07/2010	08/07/2010			
diss.filt	Dissolved / filtered sample.		12/07/2010	12/07/2010			
tot.unfilt	Total / unfiltered sample.		100712-18	100712-18			
*	subcontracted test.		1805596	1805701			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.						
Component	LOD/Units	Method					
GRO Surrogate % recovery**	%	TM089	53	51			
GRO >C5-C12	<44 µg/kg	TM089	107	4190			
Benzene	<10 µg/kg	TM089	<10	<10			
Ethylbenzene	<3 µg/kg	TM089	<3	24.4	M	M	
Toluene	<2 µg/kg	TM089	<2	199	M	M	
m,p-Xylene	<6 µg/kg	TM089	<6	271	M	M	
o-Xylene	<3 µg/kg	TM089	<3	248	M	M	
m,p,o-Xylene	<10 µg/kg	TM089	<10	518	M	M	
BTEX, Total	<10 µg/kg	TM089	<10	741	M	M	
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	#	#	
Aliphatics >C5-C6	<10 µg/kg	TM089	11.4	22.7			
Aliphatics >C6-C8	<10 µg/kg	TM089	10.4	87.2			
Aliphatics >C8-C10	<10 µg/kg	TM089	15.7	309			
Aliphatics >C10-C12	<10 µg/kg	TM089	13	1030			
Aromatics >C6-C7	<10 µg/kg	TM089	<10	<10			
Aromatics >C7-C8	<10 µg/kg	TM089	<10	199			
Aromatics >EC8-EC10	<10 µg/kg	TM089	23.6	1010			
Aromatics >EC10-EC12	<10 µg/kg	TM089	19.5	1540			
Total Aliphatics >C5-C12	<10 µg/kg	TM089	50.5	1450			
Total Aromatics >C6-C12	<10 µg/kg	TM089	43	2740			
Aliphatics >C12-C16	<100 µg/kg	TM173	11900	9490			
Aliphatics >C16-C21	<100 µg/kg	TM173	20500	17900			
Aliphatics >C16-C35	<100 µg/kg	TM173	107000	47900			
Aliphatics >C21-C35	<100 µg/kg	TM173	86800	30100			
Aliphatics >C35-C44	<100 µg/kg	TM173	42600	7000			
Aromatics >EC12-EC16	<100 µg/kg	TM173	57300	11000			
Aromatics >EC16-EC21	<100 µg/kg	TM173	227000	25500			
Aromatics >EC21-EC35	<100 µg/kg	TM173	507000	53100			
Aromatics >EC35-EC44	<100 µg/kg	TM173	209000	21700			
Aromatics >EC40-EC44	<100 µg/kg	TM173	87400	9410			
Total Aliphatics >C12-C44	<100 µg/kg	TM173	162000	64400			
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	1000000	111000			
Total Aliphatics >C5-35	<100 µg/kg	TM173	119000	58900			
Total Aliphatics >C5-C44	<100 µg/kg	TM173	162000	65900			
Total Aromatics >C5-35	<100 µg/kg	TM173	791000	92400			
Total Aromatics >C6-C44	<100 µg/kg	TM173	1000000	114000			
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	910000	151000			
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	1160000	180000			

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VOC MS (S)

Results Legend		Customer Sample Ref.	TP137					
#	ISO17025 accredited.	Depth (m) 0.70 Sample Type Soil/Solid Date Sampled 08/07/2010 Date Received 12/07/2010 SDG Ref 100712-18 Lab Sample No.(s) 1805701 AGS Reference						
M	mCERTS accredited.							
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 the individual compounds within the samples are not corrected for this recovery.							
Component	LOD/Units		Method					
Dibromofluoromethane**	%		TM116	113				
Toluene-d8**	%		TM116	97.8				
4-Bromofluorobenzene**	%	TM116	117					
Dichlorodifluoromethane	<4 µg/kg	TM116	<4					
Chloromethane	<7 µg/kg	TM116	<7					
Vinyl Chloride	<10 µg/kg	TM116	<10					
Bromomethane	<13 µg/kg	TM116	<13					
Chloroethane	<14 µg/kg	TM116	<14					
Trichlorofluoromethane	<6 µg/kg	TM116	<6					
1.1-Dichloroethene	<10 µg/kg	TM116	<10					
Carbon Disulphide	<7 µg/kg	TM116	<7					
Dichloromethane	<10 µg/kg	TM116	<10					
Methyl Tertiary Butyl Ether	<11 µg/kg	TM116	<11					
trans-1-2-Dichloroethene	<11 µg/kg	TM116	<11					
1.1-Dichloroethane	<8 µg/kg	TM116	<8					
cis-1-2-Dichloroethene	<5 µg/kg	TM116	<5					
2.2-Dichloropropane	<12 µg/kg	TM116	<12					
Bromochloromethane	<14 µg/kg	TM116	<14					
Chloroform	<8 µg/kg	TM116	<8					
1.1.1-Trichloroethane	<7 µg/kg	TM116	<7					
1.1-Dichloropropene	<11 µg/kg	TM116	<11					
Carbontetrachloride	<14 µg/kg	TM116	<14					
1.2-Dichloroethane	<5 µg/kg	TM116	<5					
Benzene	<9 µg/kg	TM116	34.8					
Trichloroethene	<9 µg/kg	TM116	<9					
1.2-Dichloropropane	<12 µg/kg	TM116	<12					
Dibromomethane	<9 µg/kg	TM116	<9					
Bromodichloromethane	<7 µg/kg	TM116	<7					
cis-1-3-Dichloropropene	<14 µg/kg	TM116	<14					
Toluene	<5 µg/kg	TM116	634					
trans-1-3-Dichloropropene	<14 µg/kg	TM116	<14					
1.1.2-Trichloroethane	<10 µg/kg	TM116	<10					
1.3-Dichloropropane	<7 µg/kg	TM116	<7					
Tetrachloroethene	<5 µg/kg	TM116	<5					
Dibromochloromethane	<13 µg/kg	TM116	<13					
1.2-Dibromoethane	<12 µg/kg	TM116	<12					
Chlorobenzene	<5 µg/kg	TM116	<5					
1.1.1.2-Tetrachloroethane	<10 µg/kg	TM116	<10					
Ethylbenzene	<4 µg/kg	TM116	69.4					

SDG: 100712-18
Job: H_BWB_NTT-84
Client Reference:
Location: THE DOVE WAY-NTE285

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 93287

VOC MS (S)

Results Legend		Customer Sample Ref.	TP137					
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.70					
M	mCERTS accredited.		Soil/Solid					
aq	Aqueous / settled sample.		08/07/2010					
diss.filt	Dissolved / filtered sample.		12/07/2010					
tot.unfilt	Total / unfiltered sample.		100712-18					
*	subcontracted test.		1805701					
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.							
Component	LOD/Units		Method					
p/m-Xylene	<14 µg/kg		TM116	572	#			
o-Xylene	<10 µg/kg		TM116	397	M			
Styrene	<10 µg/kg	TM116	<10	M				
Bromoform	<10 µg/kg	TM116	<10	M				
Isopropylbenzene	<5 µg/kg	TM116	<5	M				
1.1.2.2-Tetrachloroethane	<10 µg/kg	TM116	<10	#				
1.2.3-Trichloropropane	<17 µg/kg	TM116	<17	M				
Bromobenzene	<10 µg/kg	TM116	<10	M				
Propylbenzene	<11 µg/kg	TM116	20.3	M				
2-Chlorotoluene	<9 µg/kg	TM116	<9	M				
1.3.5-Trimethylbenzene	<8 µg/kg	TM116	112	#				
4-Chlorotoluene	<12 µg/kg	TM116	<12	M				
tert-Butylbenzene	<12 µg/kg	TM116	<12	#				
1.2.4-Trimethylbenzene	<9 µg/kg	TM116	353	#				
sec-Butylbenzene	<10 µg/kg	TM116	<10	M				
4-Isopropyltoluene	<11 µg/kg	TM116	<11	M				
1.3-Dichlorobenzene	<6 µg/kg	TM116	<6	M				
1.4-Dichlorobenzene	<5 µg/kg	TM116	<5	M				
n-Butylbenzene	<10 µg/kg	TM116	<10	M				
1.2-Dichlorobenzene	<12 µg/kg	TM116	<12	M				
1.2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14	M				
Tert-amyl methyl ether	<15 µg/kg	TM116	<15					
1.2.4-Trichlorobenzene	<6 µg/kg	TM116	<6	#				
Hexachlorobutadiene	<12 µg/kg	TM116	<12	M				
Naphthalene	<13 µg/kg	TM116	170	M				
1.2.3-Trichlorobenzene	<6 µg/kg	TM116	<6	M				

SDG: 100712-18
Job: H_BWB_NTT-84
Client Reference:
Location: THE DOVE WAY-NTE285

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 93287

Results Legend		Customer Sample Ref.	WS3	WS3	WS4	WS4	WS5	WS6
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.10 - 0.90	1.20 - 2.00	0.10 - 0.50	1.00 - 1.50	0.10 - 1.00	0.30 - 1.00
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.		07/07/2010	07/07/2010	07/07/2010	07/07/2010	07/07/2010	07/07/2010
diss.filt	Dissolved / filtered sample.		12/07/2010	12/07/2010	12/07/2010	12/07/2010	12/07/2010	12/07/2010
tot.unfilt	Total / unfiltered sample.		100712-18	100712-18	100712-18	100712-18	100712-18	100712-18
*	subcontracted test.		1805932	1806100	1806152	1806221	1806285	1806302
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.							
Component	LOD/Units	Method						
Moisture	%	PM114	6.8		11.4			11
Moisture content ratio	%	PM114	7.3		12.8			12.3
Dry matter content ratio	%	PM114	93.2		88.7			89
Asbestos Containing Material Screen	-	TM001	No ACM Detected					No ACM Detected
Phenols, Total monohydric	<0.22 mg/kg	TM062 (S)	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Sulphate, 2:1 water soluble	<0.003 g/l	TM098	0.0772	0.198	0.0868	0.298	0.0341	0.0922
Sulphur, Total	<0.02 %	TM132	0.238	0.112	0.152	0.54	0.274	0.312
Fraction Organic Carbon (FOC)	<0.002 -	TM132	0.0155	0.0211	0.0925	0.0386	0.197	0.236
pH	1 pH Units	TM133	8.52	7.85	8.11	6.81	8.44	8.11
Cyanide, Total	<1 mg/kg	TM153	3.74	8.06	6.9	194	10.8	17.1
Cyanide, Free	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1
Cyanide, Complex	<1 mg/kg	TM153	3.77	9.15	6.83	194	10.4	16.5
TPH >C6-C40	<10 mg/kg	TM154	3710	1170	2640	1080	789	3090
Arsenic	<0.6 mg/kg	TM181	2.21	11.4	6.28	9.33	18.9	14.2
Barium	<0.6 mg/kg	TM181	364	182	246	212	340	247
Beryllium	<0.01 mg/kg	TM181	3.22	0.723	0.953	1.25	1.61	3
Cadmium	<0.02 mg/kg	TM181	0.726	0.768	2.93	0.389	0.31	0.737
Chromium	<0.9 mg/kg	TM181	28	15.9	13.7	35.1	21.2	19.8
Copper	<1.4 mg/kg	TM181	14.8	38	36.3	27	88.8	94.4
Lead	<0.7 mg/kg	TM181	18.1	146	41	123	121	119
Mercury	<0.14 mg/kg	TM181	<0.14	0.147	<0.14	<0.14	<0.14	<0.14
Nickel	<0.2 mg/kg	TM181	3.94	14.7	19.7	33	45.6	36.6
Selenium	<1 mg/kg	TM181	1.48	<1	<1	1.56	<10	2.01
Vanadium	<0.2 mg/kg	TM181	45.2	24.3	28.4	33.3	47.4	45.6
Zinc	<1.9 mg/kg	TM181	50.3	132	65.7	83.7	79.4	88.3
Boron, water soluble	<1 mg/kg	TM222	1	2.64	<1	1.68	<1	1.37

SDG: 100712-18
Job: H_BWB_NTT-84
Client Reference:
Location: THE DOVE WAY-NTE285

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 93287

PAH by GCMS

Results Legend		Customer Sample Ref.	WS3	WS3	WS4	WS4	WS5	WS6
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.10 - 0.90	1.20 - 2.00	0.10 - 0.50	1.00 - 1.50	0.10 - 1.00	0.30 - 1.00
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.		07/07/2010	07/07/2010	07/07/2010	07/07/2010	07/07/2010	07/07/2010
diss.filt	Dissolved / filtered sample.		12/07/2010	12/07/2010	12/07/2010	12/07/2010	12/07/2010	12/07/2010
tot.unfilt	Total / unfiltered sample.		100712-18	100712-18	100712-18	100712-18	100712-18	100712-18
*	subcontracted test.		1805932	1806100	1806152	1806221	1806285	1806302
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.							
Component	LOD/Units	Method						
Naphthalene-d8 % recovery**	%	TM218	105	111	103	110	109	55.6
Acenaphthene-d10 % recovery**	%	TM218	103	111	102	110	109	56
Phenanthrene-d10 % recovery**	%	TM218	106	114	102	113	112	58.5
Chrysene-d12 % recovery**	%	TM218	91.8	97	84.7	102	99.2	51.5
Perylene-d12 % recovery**	%	TM218	102	106	89.4	113	107	54.7
Naphthalene	<9 µg/kg	TM218	140	261	657	412	1350	3160
Acenaphthylene	<12 µg/kg	TM218	694	610	1010	1430	2860	1450
Acenaphthene	<8 µg/kg	TM218	1340	210	283	407	336	2970
Fluorene	<10 µg/kg	TM218	933	412	309	1740	696	3760
Phenanthrene	<15 µg/kg	TM218	7480	2960	5460	11000	10500	106000
Anthracene	<16 µg/kg	TM218	2710	1490	2060	4320	4400	23400
Fluoranthene	<17 µg/kg	TM218	11500	13300	16800	23300	28900	178000
Pyrene	<15 µg/kg	TM218	12500	10700	14400	18000	25400	132000
Benz(a)anthracene	<14 µg/kg	TM218	4160	6320	7280	12400	17700	64100
Chrysene	<10 µg/kg	TM218	3760	5840	6660	8760	14600	62200
Benzo(b)fluoranthene	<15 µg/kg	TM218	12100	8740	11200	11100	24900	84600
Benzo(k)fluoranthene	<14 µg/kg	TM218	4040	3430	4340	3990	9000	29300
Benzo(a)pyrene	<15 µg/kg	TM218	11100	7090	8600	8620	19000	52100
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	7260	4310	6240	3470	12900	36600
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	1700	1210	1550	1310	3570	8900
Benzo(g,h,i)perylene	<24 µg/kg	TM218	10500	5150	7560	3390	14100	42600
Polyaromatic hydrocarbons, Total USEPA 16	<118 µg/kg	TM218	91900	72100	94400	114000	190000	830000

SDG 100712-18
Job: H_BWB_NTT-84
Client Reference:
Location: THE DOVE WAY-NTE285

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 93287

TPH CWG (S)

Results Legend		Customer Sample Ref.	WS4	WS6			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	1.00 - 1.50	0.30 - 1.00			
M	mCERTS accredited.		Soil/Solid	Soil/Solid			
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 the individual compounds within the samples are not corrected for this recovery.						
Component	LOD/Units	Method					
GRO Surrogate % recovery**	%	TM089	68	27			
GRO >C5-C12	<44 µg/kg	TM089	486	142			
Benzene	<10 µg/kg	TM089	12	<10			
Ethylbenzene	<3 µg/kg	TM089	<3	<3			
Toluene	<2 µg/kg	TM089	<2	<2			
m,p-Xylene	<6 µg/kg	TM089	<6	<6			
o-Xylene	<3 µg/kg	TM089	<3	<3			
m,p,o-Xylene	<10 µg/kg	TM089	<10	<10			
BTEX, Total	<10 µg/kg	TM089	12	<10			
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5			
Aliphatics >C5-C6	<10 µg/kg	TM089	16.2	13			
Aliphatics >C6-C8	<10 µg/kg	TM089	219	23.9			
Aliphatics >C8-C10	<10 µg/kg	TM089	45.3	14.9			
Aliphatics >C10-C12	<10 µg/kg	TM089	50.3	21.6			
Aromatics >C6-C7	<10 µg/kg	TM089	12	<10			
Aromatics >C7-C8	<10 µg/kg	TM089	<10	<10			
Aromatics >EC8-EC10	<10 µg/kg	TM089	67.9	22.4			
Aromatics >EC10-EC12	<10 µg/kg	TM089	75.4	32.4			
Total Aliphatics >C5-C12	<10 µg/kg	TM089	331	73.4			
Total Aromatics >C6-C12	<10 µg/kg	TM089	155	54.8			
Aliphatics >C12-C16	<100 µg/kg	TM173	19700	15900			
Aliphatics >C16-C21	<100 µg/kg	TM173	28200	25700			
Aliphatics >C16-C35	<100 µg/kg	TM173	85600	95000			
Aliphatics >C21-C35	<100 µg/kg	TM173	57400	69200			
Aliphatics >C35-C44	<100 µg/kg	TM173	23900	38800			
Aromatics >EC12-EC16	<100 µg/kg	TM173	38700	25200			
Aromatics >EC16-EC21	<100 µg/kg	TM173	345000	663000			
Aromatics >EC21-EC35	<100 µg/kg	TM173	800000	1070000			
Aromatics >EC35-EC44	<100 µg/kg	TM173	191000	279000			
Aromatics >EC40-EC44	<100 µg/kg	TM173	66400	97800			
Total Aliphatics >C12-C44	<100 µg/kg	TM173	129000	150000			
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	1370000	2040000			
Total Aliphatics >C5-35	<100 µg/kg	TM173	106000	111000			
Total Aliphatics >C5-C44	<100 µg/kg	TM173	130000	150000			
Total Aromatics >C5-35	<100 µg/kg	TM173	1180000	1760000			
Total Aromatics >C6-C44	<100 µg/kg	TM173	1370000	2040000			
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	1290000	1870000			
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	1500000	2190000			

SDG: 100712-18
Job: H_BWB_NTT-84
Client Reference:
Location: THE DOVE WAY-NTE285

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 93287

Results Legend		Customer Sample Ref.	WS7				
#	ISO17025 accredited.	Depth (m) 1.60 - 2.00 Sample Type Soil/Solid Date Sampled 07/07/2010 Date Received 12/07/2010 SDG Ref 100712-18 Lab Sample No.(s) 1806335 AGS Reference					
M	mCERTS accredited.						
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 the individual compounds within the samples are not corrected for this recovery.						
Component	LOD/Units		Method				
Phenols, Total monohydric	<0.22 mg/kg		TM062 (S)	<0.22			M
Sulphate, 2:1 water soluble	<0.003 g/l		TM098	1.44			M
Sulphur, Total	<0.02 %	TM132	0.526			#	
Fraction Organic Carbon (FOC)	<0.002 -	TM132	0.00446			#	
pH	1 pH Units	TM133	7.75			M	
Cyanide, Total	<1 mg/kg	TM153	18.4			M	
Cyanide, Free	<1 mg/kg	TM153	<1				
Cyanide, Complex	<1 mg/kg	TM153	18.4				
TPH >C6-C40	<10 mg/kg	TM154	<10			#	
Arsenic	<0.6 mg/kg	TM181	44.2			M	
Barium	<0.6 mg/kg	TM181	65.3			#	
Beryllium	<0.01 mg/kg	TM181	0.686			M	
Cadmium	<0.02 mg/kg	TM181	0.124			M	
Chromium	<0.9 mg/kg	TM181	28.4			M	
Copper	<1.4 mg/kg	TM181	13.6			M	
Lead	<0.7 mg/kg	TM181	32.2			M	
Mercury	<0.14 mg/kg	TM181	<0.14			M	
Nickel	<0.2 mg/kg	TM181	19			M	
Selenium	<1 mg/kg	TM181	1.39			#	
Vanadium	<0.2 mg/kg	TM181	29			#	
Zinc	<1.9 mg/kg	TM181	50.2			M	
Boron, water soluble	<1 mg/kg	TM222	<1			M	

SDG: 100712-18
Job: H_BWB_NTT-84
Client Reference:
Location: THE DOVE WAY-NTE285

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No.: 93287

PAH by GCMS

Results Legend		Customer Sample Ref.				
#	ISO17025 accredited.	WS7				
M	mCERTS accredited.					
aq	Aqueous / settled sample.	Depth (m)	1.60 - 2.00			
diss.filt	Dissolved / filtered sample.	Sample Type	Soil/Solid			
tot.unfilt	Total / unfiltered sample.	Date Sampled	07/07/2010			
*	subcontracted test.	Date Received	12/07/2010			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	SDG Ref	100712-18			
		Lab Sample No.(s)	1806335			
		AGS Reference				
Component	LOD/Units	Method				
Naphthalene-d8 % recovery**	%	TM218	113			
Acenaphthene-d10 % recovery**	%	TM218	113			
Phenanthrene-d10 % recovery**	%	TM218	115			
Chrysene-d12 % recovery**	%	TM218	102			
Perylene-d12 % recovery**	%	TM218	112			
Naphthalene	<9 µg/kg	TM218	12.5	M		
Acenaphthylene	<12 µg/kg	TM218	<12	M		
Acenaphthene	<8 µg/kg	TM218	<8	M		
Fluorene	<10 µg/kg	TM218	<10	M		
Phenanthrene	<15 µg/kg	TM218	58.6	M		
Anthracene	<16 µg/kg	TM218	<16	M		
Fluoranthene	<17 µg/kg	TM218	105	M		
Pyrene	<15 µg/kg	TM218	74.8	M		
Benz(a)anthracene	<14 µg/kg	TM218	62.4	M		
Chrysene	<10 µg/kg	TM218	71.4	M		
Benzo(b)fluoranthene	<15 µg/kg	TM218	116	M		
Benzo(k)fluoranthene	<14 µg/kg	TM218	40.3	M		
Benzo(a)pyrene	<15 µg/kg	TM218	39.2	M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	28.9	M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	33.1	M		
Polyaromatic hydrocarbons, Total USEPA 16	<118 µg/kg	TM218	643	M		

SDG 100712-18
Job: H_BWB_NTT-84
Client Reference:
Location: THE DOVE WAY-NTE285

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/616
Report No: 93287

TPH CWG (S)

Results Legend		Customer Sample Ref.	WS7						
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	1.60 - 2.00 Soil/Solid 07/07/2010 12/07/2010 100712-18 1806335						
M	mCERTS accredited.								
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 the individual compounds within the samples are not corrected for this recovery.								
Component	LOD/Units			Method					
GRO Surrogate % recovery**	%			TM089	126				
GRO >C5-C12	<44 µg/kg			TM089	<44				
Benzene	<10 µg/kg	TM089	<10						
Ethylbenzene	<3 µg/kg	TM089	<3						
Toluene	<2 µg/kg	TM089	<2						
m,p-Xylene	<6 µg/kg	TM089	<6						
o-Xylene	<3 µg/kg	TM089	<3						
m,p,o-Xylene	<10 µg/kg	TM089	<10						
BTEX, Total	<10 µg/kg	TM089	<10						
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5						
Aliphatics >C5-C6	<10 µg/kg	TM089	<10						
Aliphatics >C6-C8	<10 µg/kg	TM089	<10						
Aliphatics >C8-C10	<10 µg/kg	TM089	<10						
Aliphatics >C10-C12	<10 µg/kg	TM089	<10						
Aromatics >C6-C7	<10 µg/kg	TM089	<10						
Aromatics >C7-C8	<10 µg/kg	TM089	<10						
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10						
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10						
Total Aliphatics >C5-C12	<10 µg/kg	TM089	<10						
Total Aromatics >C6-C12	<10 µg/kg	TM089	<10						
Aliphatics >C12-C16	<100 µg/kg	TM173	1410						
Aliphatics >C16-C21	<100 µg/kg	TM173	1370						
Aliphatics >C16-C35	<100 µg/kg	TM173	5180						
Aliphatics >C21-C35	<100 µg/kg	TM173	3800						
Aliphatics >C35-C44	<100 µg/kg	TM173	1670						
Aromatics >EC12-EC16	<100 µg/kg	TM173	2100						
Aromatics >EC16-EC21	<100 µg/kg	TM173	13800						
Aromatics >EC21-EC35	<100 µg/kg	TM173	26700						
Aromatics >EC35-EC44	<100 µg/kg	TM173	8900						
Aromatics >EC40-EC44	<100 µg/kg	TM173	3540						
Total Aliphatics >C12-C44	<100 µg/kg	TM173	8260						
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	51500						
Total Aliphatics >C5-35	<100 µg/kg	TM173	6590						
Total Aliphatics >C5-C44	<100 µg/kg	TM173	8260						
Total Aromatics >C5-35	<100 µg/kg	TM173	42600						
Total Aromatics >C6-C44	<100 µg/kg	TM173	51500						
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	49200						
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	59800						

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference		Client Location	THE DOVE WAY-NTE285
Mass Sample taken (kg)	0.237	Moisture Content Ratio (%)	35.4
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	73.9
Particle Size <4mm	>95%		

Case			
SDG	100712-18		
Lab Sample Number(s)	1805100		
Sampled Date	08-Jul-2010		
Customer Sample Ref.	TP117		
Depth (m)	1.80		

Solid Waste Analysis

Total Organic Carbon (%)	-	-	-
Loss on Ignition (%)	-	-	-
Sum of BTEX (mg/kg)	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-
Mineral Oil (mg/kg)	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-
pH (pH Units)	-	-	-
ANC to pH 6 (mol/kg)	-	-	-
ANC to pH 4 (mol/kg)	-	-	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l) C ₂		2:1 conc ⁿ leached (mg/kg) A ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
Arsenic	0.00176	<0.00012	0.00352	<0.0012	-
Barium	0.0487	<0.00003	0.0974	<0.0003	-
Cadmium	0.000209	<0.0001	0.000418	<0.001	-
Chromium	0.00184	<0.00022	0.00368	<0.0022	-
Copper	0.00858	<0.00085	0.0172	<0.0085	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.00002	<0.0001	-
Molybdenum	-	-	-	-	-
Nickel	0.00313	<0.00015	0.00626	<0.0015	-
Lead	0.00248	<0.00002	0.00496	<0.0002	-
Antimony	-	-	-	-	-
Selenium	0.000887	<0.00039	0.00177	<0.0039	-
Zinc	0.0121	<0.00041	0.0242	<0.0041	-
Chloride	-	-	-	-	-
Fluoride	-	-	-	-	-
Sulphate (soluble)	90	<3	180	<3	-
Total Dissolved Solids	-	-	-	-	-
Total Monohydric Phenols (W)	-	-	-	-	-
Dissolved Organic Carbon	-	-	-	-	-

Leach Test Information

Date Prepared	17-Jul-2010
pH (pH Units)	7.10
Conductivity (µS/cm)	267.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.288
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference		Client Location	THE DOVE WAY-NTE285
Mass Sample taken (kg)	0.237	Moisture Content Ratio (%)	35.4
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	73.9
Particle Size <4mm	>95%		

Case				
SDG	100712-18			
Lab Sample Number(s)	1805100			
Sampled Date	08-Jul-2010			
Customer Sample Ref.	TP117			
Depth (m)	1.80			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l) C ₂		2:1 conc ⁿ leached (mg/kg) A ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
Beryllium	0.000081	<0.00007	0.000162	<0.0007	- - -
Boron	0.301	<0.0094	0.602	<0.094	- - -
pH	7.5	<0.001	15	<0.01	- - -
Total Cyanide (W)	<0.05	<0.05	<0.1	<0.05	- - -
Vanadium	0.00182	<0.00024	0.00364	<0.0024	- - -

Leach Test Information

Date Prepared	17-Jul-2010
pH (pH Units)	7.10
Conductivity (µS/cm)	267.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.288
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

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Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference		Client Location	THE DOVE WAY-NTE285
Mass Sample taken (kg)	0.207	Moisture Content Ratio (%)	18.1
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	84.7
Particle Size <4mm	>95%		

Case				
SDG	100712-18			
Lab Sample Number(s)	1805365			
Sampled Date	08-Jul-2010			
Customer Sample Ref.	TP119			
Depth (m)	3.20			
Solid Waste Analysis				
Total Organic Carbon (%)	1.63	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	7.41	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l) C ₂		2:1 conc ⁿ leached (mg/kg) A ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
Arsenic	0.00236	<0.00012	0.00472	<0.0012	-
Barium	0.0737	<0.00003	0.147	<0.0003	-
Cadmium	<0.0001	<0.0001	<0.0002	<0.001	-
Chromium	0.00279	<0.00022	0.00558	<0.0022	-
Copper	0.00502	<0.00085	0.01	<0.0085	-
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.00002	<0.0001	-
Molybdenum	-	-	-	-	-
Nickel	0.0146	<0.00015	0.0292	<0.0015	-
Lead	0.000404	<0.00002	0.000808	<0.0002	-
Antimony	-	-	-	-	-
Selenium	0.00167	<0.00039	0.00334	<0.0039	-
Zinc	0.00989	<0.00041	0.0198	<0.0041	-
Chloride	-	-	-	-	-
Fluoride	-	-	-	-	-
Sulphate (soluble)	1080	<15	2160	<15	-
Total Dissolved Solids	-	-	-	-	-
Total Monohydric Phenols (W)	-	-	-	-	-
Dissolved Organic Carbon	-	-	-	-	-

Leach Test Information

Date Prepared	16-Jul-2010
pH (pH Units)	7.67
Conductivity (µS/cm)	1,850.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.318
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference		Client Location	THE DOVE WAY-NTE285
Mass Sample taken (kg)	0.207	Moisture Content Ratio (%)	18.1
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	84.7
Particle Size <4mm	>95%		

Case			
SDG	100712-18		
Lab Sample Number(s)	1805365		
Sampled Date	08-Jul-2010		
Customer Sample Ref.	TP119		
Depth (m)	3.20		

Solid Waste Analysis

Total Organic Carbon (%)	1.63	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	7.41	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l) C ₂		2:1 conc ⁿ leached (mg/kg) A ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
Beryllium	<0.00007	<0.00007	<0.00014	<0.0007	-
Boron	0.793	<0.0094	1.59	<0.094	-
pH	8.1	<0.001	16	<0.01	-
Total Cyanide (W)	<0.05	<0.05	<0.1	<0.05	-
Vanadium	0.00131	<0.00024	0.00262	<0.0024	-

Leach Test Information

Date Prepared	16-Jul-2010
pH (pH Units)	7.67
Conductivity (µS/cm)	1,850.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.318
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

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CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference		Client Location	THE DOVE WAY-NTE285
Mass Sample taken (kg)	0.220	Moisture Content Ratio (%)	26.2
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	79.3
Particle Size <4mm	>95%		

Case			
SDG	100712-18		
Lab Sample Number(s)	1805459		
Sampled Date	07-Jul-2010		
Customer Sample Ref.	TP121		
Depth (m)	0.90		

Solid Waste Analysis

Total Organic Carbon (%)	-	-	-
Loss on Ignition (%)	-	-	-
Sum of BTEX (mg/kg)	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-
Mineral Oil (mg/kg)	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-
pH (pH Units)	-	-	-
ANC to pH 6 (mol/kg)	-	-	-
ANC to pH 4 (mol/kg)	-	-	-

Eluate Analysis	Concⁿ in 2:1 eluate (mg/l) C ₂		2:1 concⁿ leached (mg/kg) A ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
Arsenic	0.00118	<0.00012	0.00236	<0.0012	-
Barium	0.0774	<0.00003	0.155	<0.0003	-
Cadmium	0.000184	<0.0001	0.000368	<0.001	-
Chromium	0.0117	<0.00022	0.0234	<0.0022	-
Copper	0.0172	<0.00085	0.0344	<0.0085	-
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.00002	<0.0001	-
Molybdenum	-	-	-	-	-
Nickel	0.00375	<0.00015	0.0075	<0.0015	-
Lead	0.00103	<0.00002	0.00206	<0.0002	-
Antimony	-	-	-	-	-
Selenium	0.00101	<0.00039	0.00202	<0.0039	-
Zinc	0.0111	<0.00041	0.0222	<0.0041	-
Chloride	-	-	-	-	-
Fluoride	-	-	-	-	-
Sulphate (soluble)	74.4	<3	149	<3	-
Total Dissolved Solids	-	-	-	-	-
Total Monohydric Phenols (W)	-	-	-	-	-
Dissolved Organic Carbon	-	-	-	-	-

Leach Test Information

Date Prepared	16-Jul-2010
pH (pH Units)	8.13
Conductivity (µS/cm)	413.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.304
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

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Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference		Client Location	THE DOVE WAY-NTE285
Mass Sample taken (kg)	0.220	Moisture Content Ratio (%)	26.2
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	79.3
Particle Size <4mm	>95%		

Case			
SDG	100712-18		
Lab Sample Number(s)	1805459		
Sampled Date	07-Jul-2010		
Customer Sample Ref.	TP121		
Depth (m)	0.90		

Solid Waste Analysis

Total Organic Carbon (%)	-	-	-	-	-	-
Loss on Ignition (%)	-	-	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-	-	-
pH (pH Units)	-	-	-	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-	-	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l) C ₂		2:1 conc ⁿ leached (mg/kg) A ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Beryllium	<0.00007	<0.00007	<0.00014	<0.0007	-	-	-
Boron	0.343	<0.0094	0.686	<0.094	-	-	-
pH	8.4	<0.001	17	<0.01	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.1	<0.05	-	-	-
Vanadium	0.00168	<0.00024	0.00336	<0.0024	-	-	-

Leach Test Information

Date Prepared	16-Jul-2010
pH (pH Units)	8.13
Conductivity (µS/cm)	413.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.304
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

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Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference		Client Location	THE DOVE WAY-NTE285
Mass Sample taken (kg)	0.209	Moisture Content Ratio (%)	19.3
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	83.8
Particle Size <4mm	>95%		

Case				
SDG	100712-18			
Lab Sample Number(s)	1805546			
Sampled Date	07-Jul-2010			
Customer Sample Ref.	TP123			
Depth (m)	2.00			
Solid Waste Analysis				
Total Organic Carbon (%)	0.444	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	7.21	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l) C ₂		2:1 conc ⁿ leached (mg/kg) A ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
Arsenic	0.00168	<0.00012	0.00336	<0.0012	-
Barium	0.0758	<0.00003	0.152	<0.0003	-
Cadmium	<0.0001	<0.0001	<0.0002	<0.001	-
Chromium	0.00274	<0.00022	0.00548	<0.0022	-
Copper	0.00765	<0.00085	0.0153	<0.0085	-
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.00002	<0.0001	-
Molybdenum	-	-	-	-	-
Nickel	0.00293	<0.00015	0.00586	<0.0015	-
Lead	0.000655	<0.00002	0.00131	<0.0002	-
Antimony	-	-	-	-	-
Selenium	0.00142	<0.00039	0.00284	<0.0039	-
Zinc	0.00749	<0.00041	0.015	<0.0041	-
Chloride	-	-	-	-	-
Fluoride	-	-	-	-	-
Sulphate (soluble)	43.2	<3	86.4	<3	-
Total Dissolved Solids	-	-	-	-	-
Total Monohydric Phenols (W)	-	-	-	-	-
Dissolved Organic Carbon	-	-	-	-	-

Leach Test Information

Date Prepared	16-Jul-2010
pH (pH Units)	7.64
Conductivity (µS/cm)	165.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.316
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference		Client Location	THE DOVE WAY-NTE285
Mass Sample taken (kg)	0.209	Moisture Content Ratio (%)	19.3
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	83.8
Particle Size <4mm	>95%		

Case			
SDG	100712-18		
Lab Sample Number(s)	1805546		
Sampled Date	07-Jul-2010		
Customer Sample Ref.	TP123		
Depth (m)	2.00		

Solid Waste Analysis

Total Organic Carbon (%)	0.444	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	7.21	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l) C ₂		2:1 conc ⁿ leached (mg/kg) A ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
Beryllium	0.000092	<0.00007	0.000184	<0.0007	-
Boron	0.922	<0.0094	1.84	<0.094	-
pH	8	<0.001	16	<0.01	-
Total Cyanide (W)	<0.05	<0.05	<0.1	<0.05	-
Vanadium	0.00331	<0.00024	0.00662	<0.0024	-

Leach Test Information

Date Prepared	16-Jul-2010
pH (pH Units)	7.64
Conductivity (µS/cm)	165.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.316
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

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Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference		Client Location	THE DOVE WAY-NTE285
Mass Sample taken (kg)	0.194	Moisture Content Ratio (%)	11.2
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	90.0
Particle Size <4mm	>95%		

Case			
SDG	100712-18		
Lab Sample Number(s)	1805575		
Sampled Date	08-Jul-2010		
Customer Sample Ref.	TP134		
Depth (m)	0.30		

Solid Waste Analysis

Total Organic Carbon (%)	-	-	-
Loss on Ignition (%)	-	-	-
Sum of BTEX (mg/kg)	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-
Mineral Oil (mg/kg)	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-
pH (pH Units)	-	-	-
ANC to pH 6 (mol/kg)	-	-	-
ANC to pH 4 (mol/kg)	-	-	-

Eluate Analysis	Concⁿ in 2:1 eluate (mg/l) C ₂		2:1 concⁿ leached (mg/kg) A ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
Arsenic	0.00586	<0.00012	0.0117	<0.0012	-
Barium	0.0127	<0.00003	0.0254	<0.0003	-
Cadmium	0.000129	<0.0001	0.000258	<0.001	-
Chromium	0.00237	<0.00022	0.00474	<0.0022	-
Copper	0.0159	<0.00085	0.0318	<0.0085	-
Mercury Dissolved (CVAf)	0.0000372	<0.00001	0.0000744	<0.0001	-
Molybdenum	-	-	-	-	-
Nickel	0.00241	<0.00015	0.00482	<0.0015	-
Lead	0.00157	<0.00002	0.00314	<0.0002	-
Antimony	-	-	-	-	-
Selenium	0.00195	<0.00039	0.0039	<0.0039	-
Zinc	0.00408	<0.00041	0.00816	<0.0041	-
Chloride	-	-	-	-	-
Fluoride	-	-	-	-	-
Sulphate (soluble)	<3	<3	<6	<3	-
Total Dissolved Solids	-	-	-	-	-
Total Monohydric Phenols (W)	-	-	-	-	-
Dissolved Organic Carbon	-	-	-	-	-

Leach Test Information

Date Prepared	16-Jul-2010
pH (pH Units)	8.35
Conductivity (µS/cm)	251.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.330
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference		Client Location	THE DOVE WAY-NTE285
Mass Sample taken (kg)	0.194	Moisture Content Ratio (%)	11.2
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	90.0
Particle Size <4mm	>95%		

Case			
SDG	100712-18		
Lab Sample Number(s)	1805575		
Sampled Date	08-Jul-2010		
Customer Sample Ref.	TP134		
Depth (m)	0.30		

Solid Waste Analysis

Total Organic Carbon (%)	-	-	-	-	-
Loss on Ignition (%)	-	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-	-
pH (pH Units)	-	-	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l) C ₂		2:1 conc ⁿ leached (mg/kg) A ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
Beryllium	0.000143	<0.00007	0.000286	<0.0007	-
Boron	0.0419	<0.0094	0.0838	<0.094	-
pH	8.5	<0.001	17	<0.01	-
Total Cyanide (W)	<0.05	<0.05	<0.1	<0.05	-
Vanadium	0.00471	<0.00024	0.00942	<0.0024	-

Leach Test Information

Date Prepared	16-Jul-2010
pH (pH Units)	8.35
Conductivity (µS/cm)	251.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.330
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

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Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference		Client Location	THE DOVE WAY-NTE285
Mass Sample taken (kg)	0.242	Moisture Content Ratio (%)	38.5
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	72.2
Particle Size <4mm	>95%		

Case				
SDG	100712-18			
Lab Sample Number(s)	1805613			
Sampled Date	08-Jul-2010			
Customer Sample Ref.	TP135			
Depth (m)	3.10			
Solid Waste Analysis				
Total Organic Carbon (%)	0.987	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	5.61	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l) C ₂		2:1 conc ⁿ leached (mg/kg) A ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
Arsenic	0.00381	<0.00012	0.00762	<0.0012	-
Barium	0.0418	<0.00003	0.0836	<0.0003	-
Cadmium	<0.0001	<0.0001	<0.0002	<0.001	-
Chromium	0.0024	<0.00022	0.0048	<0.0022	-
Copper	0.00658	<0.00085	0.0132	<0.0085	-
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.00002	<0.0001	-
Molybdenum	-	-	-	-	-
Nickel	0.00226	<0.00015	0.00452	<0.0015	-
Lead	0.00254	<0.00002	0.00508	<0.0002	-
Antimony	-	-	-	-	-
Selenium	0.00188	<0.00039	0.00376	<0.0039	-
Zinc	0.0166	<0.00041	0.0332	<0.0041	-
Chloride	-	-	-	-	-
Fluoride	-	-	-	-	-
Sulphate (soluble)	234	<3	468	<3	-
Total Dissolved Solids	-	-	-	-	-
Total Monohydric Phenols (W)	-	-	-	-	-
Dissolved Organic Carbon	-	-	-	-	-

Leach Test Information

Date Prepared	16-Jul-2010
pH (pH Units)	6.24
Conductivity (µS/cm)	459.00
Temperature (°C)	16.60
Volume Leachant (Litres)	0.283
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference		Client Location	THE DOVE WAY-NTE285
Mass Sample taken (kg)	0.242	Moisture Content Ratio (%)	38.5
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	72.2
Particle Size <4mm	>95%		

Case			
SDG	100712-18		
Lab Sample Number(s)	1805613		
Sampled Date	08-Jul-2010		
Customer Sample Ref.	TP135		
Depth (m)	3.10		

Solid Waste Analysis

Total Organic Carbon (%)	0.987	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	5.61	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l) C ₂		2:1 conc ⁿ leached (mg/kg) A ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
Beryllium	0.000083	<0.00007	0.000166	<0.0007	-
Boron	0.667	<0.0094	1.33	<0.094	-
pH	7.3	<0.001	15	<0.01	-
Total Cyanide (W)	0.25	<0.05	0.5	<0.05	-
Vanadium	0.00164	<0.00024	0.00328	<0.0024	-

Leach Test Information

Date Prepared	16-Jul-2010
pH (pH Units)	6.24
Conductivity (µS/cm)	459.00
Temperature (°C)	16.60
Volume Leachant (Litres)	0.283
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

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CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference		Client Location	THE DOVE WAY-NTE285
Mass Sample taken (kg)	0.264	Moisture Content Ratio (%)	50.4
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	66.5
Particle Size <4mm	>95%		

Case			
SDG	100712-18		
Lab Sample Number(s)	1805736		
Sampled Date	08-Jul-2010		
Customer Sample Ref.	TP137		
Depth (m)	2.00		

Solid Waste Analysis

Total Organic Carbon (%)	16.9	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	3.71	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l) C ₂		2:1 conc ⁿ leached (mg/kg) A ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
Arsenic	0.00339	<0.00012	0.00678	<0.0012	-
Barium	0.0338	<0.00003	0.0676	<0.0003	-
Cadmium	<0.0001	<0.0001	<0.0002	<0.001	-
Chromium	0.000715	<0.00022	0.00143	<0.0022	-
Copper	0.00594	<0.00085	0.0119	<0.0085	-
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.00002	<0.0001	-
Molybdenum	-	-	-	-	-
Nickel	0.0014	<0.00015	0.0028	<0.0015	-
Lead	0.00155	<0.00002	0.0031	<0.0002	-
Antimony	-	-	-	-	-
Selenium	0.000833	<0.00039	0.00167	<0.0039	-
Zinc	0.0155	<0.00041	0.031	<0.0041	-
Chloride	-	-	-	-	-
Fluoride	-	-	-	-	-
Sulphate (soluble)	404	<3	808	<3	-
Total Dissolved Solids	-	-	-	-	-
Total Monohydric Phenols (W)	-	-	-	-	-
Dissolved Organic Carbon	-	-	-	-	-

Leach Test Information

Date Prepared	16-Jul-2010
pH (pH Units)	6.28
Conductivity (µS/cm)	803.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.262
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

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Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference		Client Location	THE DOVE WAY-NTE285
Mass Sample taken (kg)	0.264	Moisture Content Ratio (%)	50.4
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	66.5
Particle Size <4mm	>95%		

Case			
SDG	100712-18		
Lab Sample Number(s)	1805736		
Sampled Date	08-Jul-2010		
Customer Sample Ref.	TP137		
Depth (m)	2.00		

Solid Waste Analysis

Total Organic Carbon (%)	16.9	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	3.71	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l) C ₂		2:1 conc ⁿ leached (mg/kg) A ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
Beryllium	<0.00007	<0.00007	<0.00014	<0.0007	-
Boron	0.104	<0.0094	0.208	<0.094	-
pH	6.7	<0.001	13	<0.01	-
Total Cyanide (W)	2.36	<0.05	4.72	<0.05	-
Vanadium	0.000799	<0.00024	0.0016	<0.0024	-

Leach Test Information

Date Prepared	16-Jul-2010
pH (pH Units)	6.28
Conductivity (µS/cm)	803.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.262
Volume of Eluate VE1 (Litres)	

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CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference		Client Location	THE DOVE WAY-NTE285
Mass Sample taken (kg)	0.188	Moisture Content Ratio (%)	7.30
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	93.2
Particle Size <4mm	>95%		

Case				
SDG	100712-18			
Lab Sample Number(s)	1805932			
Sampled Date	07-Jul-2010			
Customer Sample Ref.	WS3			
Depth (m)	0.10 - 0.90			
Solid Waste Analysis				
Total Organic Carbon (%)	1.55	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	8.52	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l) C ₂		2:1 conc ⁿ leached (mg/kg) A ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
Arsenic	0.00581	<0.00012	0.0116	<0.0012	-
Barium	0.0726	<0.00003	0.145	<0.0003	-
Cadmium	<0.0001	<0.0001	<0.0002	<0.001	-
Chromium	0.00353	<0.00022	0.00706	<0.0022	-
Copper	0.018	<0.00085	0.036	<0.0085	-
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.00002	<0.0001	-
Molybdenum	-	-	-	-	-
Nickel	0.00545	<0.00015	0.0109	<0.0015	-
Lead	0.000735	<0.00002	0.00147	<0.0002	-
Antimony	-	-	-	-	-
Selenium	0.00702	<0.00039	0.014	<0.0039	-
Zinc	0.00418	<0.00041	0.00836	<0.0041	-
Chloride	-	-	-	-	-
Fluoride	-	-	-	-	-
Sulphate (soluble)	257	<3	514	<3	-
Total Dissolved Solids	-	-	-	-	-
Total Monohydric Phenols (W)	-	-	-	-	-
Dissolved Organic Carbon	-	-	-	-	-

Leach Test Information

Date Prepared	16-Jul-2010
pH (pH Units)	7.99
Conductivity (µS/cm)	708.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.337
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

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Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference		Client Location	THE DOVE WAY-NTE285
Mass Sample taken (kg)	0.188	Moisture Content Ratio (%)	7.30
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	93.2
Particle Size <4mm	>95%		

Case			
SDG	100712-18		
Lab Sample Number(s)	1805932		
Sampled Date	07-Jul-2010		
Customer Sample Ref.	WS3		
Depth (m)	0.10 - 0.90		

Solid Waste Analysis

Total Organic Carbon (%)	1.55	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	8.52	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l) C ₂		2:1 conc ⁿ leached (mg/kg) A ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
Beryllium	<0.00007	<0.00007	<0.00014	<0.0007	-
Boron	0.396	<0.0094	0.792	<0.094	-
pH	8.4	<0.001	17	<0.01	-
Total Cyanide (W)	0.09	<0.05	0.18	<0.05	-
Vanadium	0.013	<0.00024	0.026	<0.0024	-

Leach Test Information

Date Prepared	16-Jul-2010
pH (pH Units)	7.99
Conductivity (µS/cm)	708.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.337
Volume of Eluate VE1 (Litres)	

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CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference		Client Location	THE DOVE WAY-NTE285
Mass Sample taken (kg)	0.197	Moisture Content Ratio (%)	12.8
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	88.7
Particle Size <4mm	>95%		

Case				
SDG	100712-18			
Lab Sample Number(s)	1806152			
Sampled Date	07-Jul-2010			
Customer Sample Ref.	WS4			
Depth (m)	0.10 - 0.50			
Solid Waste Analysis				
Total Organic Carbon (%)	9.25	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	8.11	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l) C ₂		2:1 conc ⁿ leached (mg/kg) A ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
Arsenic	0.00263	<0.00012	0.00526	<0.0012	-
Barium	0.0615	<0.00003	0.123	<0.0003	-
Cadmium	0.000347	<0.0001	0.000694	<0.001	-
Chromium	0.00581	<0.00022	0.0116	<0.0022	-
Copper	0.0126	<0.00085	0.0252	<0.0085	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.00002	<0.0001	-
Molybdenum	-	-	-	-	-
Nickel	0.00407	<0.00015	0.00814	<0.0015	-
Lead	0.00194	<0.00002	0.00388	<0.0002	-
Antimony	-	-	-	-	-
Selenium	0.00241	<0.00039	0.00482	<0.0039	-
Zinc	0.00236	<0.00041	0.00472	<0.0041	-
Chloride	-	-	-	-	-
Fluoride	-	-	-	-	-
Sulphate (soluble)	66	<3	132	<3	-
Total Dissolved Solids	-	-	-	-	-
Total Monohydric Phenols (W)	-	-	-	-	-
Dissolved Organic Carbon	-	-	-	-	-

Leach Test Information

Date Prepared	16-Jul-2010
pH (pH Units)	8.24
Conductivity (µS/cm)	341.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.328
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference		Client Location	THE DOVE WAY-NTE285
Mass Sample taken (kg)	0.197	Moisture Content Ratio (%)	12.8
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	88.7
Particle Size <4mm	>95%		

Case			
SDG	100712-18		
Lab Sample Number(s)	1806152		
Sampled Date	07-Jul-2010		
Customer Sample Ref.	WS4		
Depth (m)	0.10 - 0.50		

Solid Waste Analysis

Total Organic Carbon (%)	9.25	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	8.11	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Concⁿ in 2:1 eluate (mg/l) C ₂		2:1 concⁿ leached (mg/kg) A ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
Beryllium	<0.00007	<0.00007	<0.00014	<0.0007	- - -
Boron	0.0531	<0.0094	0.106	<0.094	- - -
pH	8.5	<0.001	17	<0.01	- - -
Total Cyanide (W)	1.24	<0.05	2.48	<0.05	- - -
Vanadium	0.0031	<0.00024	0.0062	<0.0024	- - -

Leach Test Information

Date Prepared	16-Jul-2010
pH (pH Units)	8.24
Conductivity (µS/cm)	341.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.328
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

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CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference		Client Location	THE DOVE WAY-NTE285
Mass Sample taken (kg)	0.197	Moisture Content Ratio (%)	12.3
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	89.0
Particle Size <4mm	>95%		

Case				
SDG	100712-18			
Lab Sample Number(s)	1806302			
Sampled Date	07-Jul-2010			
Customer Sample Ref.	WS6			
Depth (m)	0.30 - 1.00			
Solid Waste Analysis				
Total Organic Carbon (%)	23.6	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	<0.01	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	8.11	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l) C ₂		2:1 conc ⁿ leached (mg/kg) A ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
Arsenic	0.0011	<0.00012	0.0022	<0.0012	-
Barium	0.0336	<0.00003	0.0672	<0.0003	-
Cadmium	<0.0001	<0.0001	<0.0002	<0.001	-
Chromium	0.00297	<0.00022	0.00594	<0.0022	-
Copper	0.00486	<0.00085	0.00972	<0.0085	-
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.00002	<0.0001	-
Molybdenum	-	-	-	-	-
Nickel	0.00196	<0.00015	0.00392	<0.0015	-
Lead	0.000045	<0.00002	0.00009	<0.0002	-
Antimony	-	-	-	-	-
Selenium	0.0037	<0.00039	0.0074	<0.0039	-
Zinc	0.00142	<0.00041	0.00284	<0.0041	-
Chloride	-	-	-	-	-
Fluoride	-	-	-	-	-
Sulphate (soluble)	97.8	<3	196	<3	-
Total Dissolved Solids	-	-	-	-	-
Total Monohydric Phenols (W)	-	-	-	-	-
Dissolved Organic Carbon	-	-	-	-	-

Leach Test Information

Date Prepared	16-Jul-2010
pH (pH Units)	7.59
Conductivity (µS/cm)	384.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.328
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

CEN 2:1 ONE STAGE BATCH TEST

REF-CEN12457-3

Client Reference		Client Location	THE DOVE WAY-NTE285
Mass Sample taken (kg)	0.197	Moisture Content Ratio (%)	12.3
Mass of dry sample (kg)	0.175	Dry Matter Content Ratio (%)	89.0
Particle Size <4mm	>95%		

Case			
SDG	100712-18		
Lab Sample Number(s)	1806302		
Sampled Date	07-Jul-2010		
Customer Sample Ref.	WS6		
Depth (m)	0.30 - 1.00		

Solid Waste Analysis

Total Organic Carbon (%)	23.6	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	<0.01	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	8.11	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l) C ₂		2:1 conc ⁿ leached (mg/kg) A ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
Beryllium	<0.00007	<0.00007	<0.00014	<0.0007	-
Boron	0.0885	<0.0094	0.177	<0.094	-
pH	8.3	<0.001	17	<0.01	-
Total Cyanide (W)	1.89	<0.05	3.78	<0.05	-
Vanadium	0.00179	<0.00024	0.00358	<0.0024	-

Leach Test Information

Date Prepared	16-Jul-2010
pH (pH Units)	7.59
Conductivity (µS/cm)	384.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.328
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates

Table of Results - Appendix

SDG Number : 100712-18

Client : BWB Consulting

Client Ref :

REPORT KEY

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

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

Method No	Reference	Description	Wet/Dry Sample ¹
PM001		Preparation of Samples for Metals Analysis	Dry
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material	Wet
PM114		Leaching Procedure for CEN Two Stage Batch Test 2:1/8:1 Cumulative	
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step	
TM001	In - house Method	Determination of asbestos containing material by screening on solids	
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC	Wet
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)	
TM098	Method 4500E, AWWA/APHA, 20th Ed., 1999	Determination of Sulphate using the Kone Analyser	Dry
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	Dry
TM133	BS 1377: Part 3 1990; BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter	Wet
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS	
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	Wet
TM154	In - house Method	Determination of Petroleum Hydrocarbons by EZ Flash GC-FID in the Carbon range C6- C40	Wet
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID	Dry
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES	Dry
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry	
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers	Dry
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546	Wet
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer	Dry
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate	
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter	

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

Notification of NDPs (No determination possible)

SDG Number	100712-18	Location	THE DOVE WAY-NTE285
Client	H_BWB_NTT	Order No.	NE09/616
Client Reference		Report No.	53069-1
Attention	Richard Robinson	Date Received	12/07/2010 08:34:21

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
1805736	TP137	2.00	Total Sulphur	Sample unsuitable for analysis

APPENDIX

APPENDIX

1. Results are expressed on a dry weight basis (dried at 35°C) 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. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.
12. Results relate only to the items tested
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 Dimethylphenol, 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 14).
17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.
19. 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 the major 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.

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)	GS 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 INFRA RED (IR)	TCE	LIQUID/LIQUID EXTRACTION	HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID EXTRACTION	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GC FID

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
Thin Layer Chromatography	D&C	DCM	SOXTHERM	IATROSCAN
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 (C6-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

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', 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).

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 MDHS 100.

The identification of asbestos containing materials 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.

Asbestos Type

Common Name

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

APPENDIX G





BWB Consulting
3-4 Kayes Walk
The Lace Market
Nottingham
Nottinghamshire
NG1 1PY

Attention: Richard Robinson

CERTIFICATE OF ANALYSIS

Date: 09 August 2010
Customer: H_BWB_NTT-81
Sample Delivery Group (SDG): 100719-5 **Report No.:** 92959
Your Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

We received 12 samples on Monday July 19, 2010 and 12 of these samples were scheduled for analysis which was completed on Monday August 09, 2010. 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.

Asbestos testing - we are not accredited for screening soil samples for asbestos fibres. We are only accredited to identify asbestos fibres in bulk material (ACM).

Approved By:

Iain Swinton

Operations Director - Land UK & Ireland



SDG:	100719-5	Customer:	BWB Consulting
Job:	H_BWB_NTT-81	Attention:	Richard Robinson
Client Reference:	NTE 285	Order No.:	NE09/619
Location:	THE DOVE WAY UTTOXETER	Report No:	92959

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
1836076	BH1			15/07/2010
1835995	BH2			15/07/2010
1836005	BH3			15/07/2010
1836110	BH4			15/07/2010
1836201	BH5			15/07/2010
1836009	BH6			15/07/2010
1836214	BH7			15/07/2010
1836172	BH8			15/07/2010
1836164	BH9			15/07/2010
1836045	BROOK-DOWN			15/07/2010
1836018	BROOK-MID			15/07/2010
1836224	BROOK-UP			15/07/2010

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

SDG: 100719-5
 Job: H_BWB_NTT-81
 Client Reference: NTE 285
 Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
 Attention: Richard Robinson
 Order No.: NE09/619
 Report No.: 92959

LIQUID

Results Legend	Lab Sample No(s)	1835995	1836005	1836009	1836018	1836045	1836076	1836110	1836164
	Customer Sample Ref.	BH2	BH3	BH6	BROOK-MI D	BROOK-D OWN	BH1	BH4	BH9
	AGS Ref.								
	Depth (m)								
	Container	1 green glass bottle tipastic H2SO4 NaOH Vial	1 green glass bottle tipastic H2SO4 NaOH Vial	1 green glass bottle tipastic H2SO4 NaOH Vial	1 green glass bottle tipastic H2SO4 NaOH Vial	1 green glass bottle tipastic H2SO4 NaOH Vial	1 green glass bottle tipastic H2SO4 NaOH Vial	1 green glass bottle tipastic H2SO4 NaOH Vial	1 green glass bottle tipastic H2SO4 NaOH Vial
Ammonium	All	X	X	X	X	X	X	X	X
Anions by Kone (w)	All	X	X	X	X	X	X	X	X
Conductivity (at 20 deg.C)	All	X	X	X	X	X	X	X	X
Cyanide Comp/Free/Total/Thiocyanate	All								
Cyanide Complex/Free/Total/Thiocyan	All			X				X	
Dissolved Metals by ICP-MS	All	X	X	X	X	X	X	X	X
EPH (DRO) (C10-C40) Aqueous (W)	All	X	X	X	X	X	X	X	X
EPH CWG (Aliphatic) Aqueous GC (W)	All	X	X	X	X	X	X	X	X
EPH CWG (Aromatic) Aqueous GC (W)	All	X	X	X	X	X	X	X	X
GRO BTEX MTBE GC (W)	All		X	X		X	X		X
GRO by GC-FID (W)	All				X			X	
Mercury Dissolved	All	X	X	X	X	X	X	X	X
PAH Spec MS - Aqueous (W)	All	X	X	X	X	X	X	X	X
pH Value	All	X	X	X	X	X	X	X	X
Phenols by HPLC (W)	All		X	X	X	X	X	X	X
TPH CWG (W)	All	X	X	X	X	X	X	X	X

Total													
1836224	BROOK-UP				Vial								
										0			
					NaOH					12			
					H2SO4								
					11 plastic					0			
					1 green glass bottle					12			
					Vial								
					NaOH								
					H2SO4								
					11 plastic								
					1 green glass bottle								
					Vial								
					NaOH								
					H2SO4								
					1 green glass bottle								
					Vial								
					NaOH								

SDG: 100719-5
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/619
Report No: 92959

Test Completion dates

SDG reference: 100719-5

Lab Sample No(s)	1835995	1836005	1836009	1836018	1836045	1836076	1836110	1836164	1836172	1836201	1836214	1836224
Customer Sample Ref.	BH2	BH3	BH6	BROOK-MID	BROOK-DOWN	BH1	BH4	BH9	BH8	BH5	BH7	BROOK-UP
Depth												
Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Ammonium	19/07/2010	19/07/2010	02/08/2010	20/07/2010	20/07/2010	19/07/2010	02/08/2010	20/07/2010	20/07/2010	02/08/2010	19/07/2010	20/07/2010
Anions by Kone (w)	21/07/2010	21/07/2010	03/08/2010	21/07/2010	21/07/2010	21/07/2010	03/08/2010	21/07/2010	21/07/2010	03/08/2010	21/07/2010	21/07/2010
Conductivity (at 20 deg.C)	20/07/2010	20/07/2010	02/08/2010	20/07/2010	20/07/2010	20/07/2010	02/08/2010	20/07/2010	20/07/2010	02/08/2010	20/07/2010	20/07/2010
Cyanide	20/07/2010	20/07/2010	02/08/2010	20/07/2010	20/07/2010	20/07/2010	02/08/2010	20/07/2010	20/07/2010	02/08/2010	20/07/2010	20/07/2010
Dissolved Metals by ICP-MS	21/07/2010	21/07/2010	02/08/2010	21/07/2010	21/07/2010	21/07/2010	02/08/2010	23/07/2010	23/07/2010	02/08/2010	21/07/2010	23/07/2010
EPH (DRO) (C10-C40) Aqueous (W)	20/07/2010	21/07/2010	02/08/2010	20/07/2010	20/07/2010	21/07/2010	02/08/2010	20/07/2010	20/07/2010	09/08/2010	20/07/2010	20/07/2010
EPH CWG (Aliphatic) Aqueous GC	22/07/2010	22/07/2010	03/08/2010	22/07/2010	22/07/2010	22/07/2010	03/08/2010	22/07/2010	22/07/2010	09/08/2010	22/07/2010	22/07/2010
EPH CWG (Aromatic) Aqueous GC	22/07/2010	22/07/2010	03/08/2010	22/07/2010	22/07/2010	22/07/2010	03/08/2010	22/07/2010	22/07/2010	09/08/2010	22/07/2010	22/07/2010
GRO by GC-FID (W)	22/07/2010	22/07/2010	05/08/2010	22/07/2010	22/07/2010	22/07/2010	05/08/2010	26/07/2010	22/07/2010	05/08/2010	22/07/2010	22/07/2010
Mercury Dissolved	21/07/2010	21/07/2010	03/08/2010	21/07/2010	21/07/2010	21/07/2010	02/08/2010	21/07/2010	21/07/2010	03/08/2010	21/07/2010	21/07/2010
PAH Spec MS - Aqueous (W)	21/07/2010	21/07/2010	04/08/2010	21/07/2010	21/07/2010	21/07/2010	04/08/2010	21/07/2010	21/07/2010	04/08/2010	21/07/2010	21/07/2010
pH Value	20/07/2010	20/07/2010	02/08/2010	20/07/2010	20/07/2010	20/07/2010	02/08/2010	20/07/2010	20/07/2010	02/08/2010	20/07/2010	20/07/2010
Phenols by HPLC (W)	22/07/2010	22/07/2010	02/08/2010	22/07/2010	22/07/2010	22/07/2010	02/08/2010	22/07/2010	22/07/2010	02/08/2010	22/07/2010	22/07/2010
TPH CWG (W)	22/07/2010	22/07/2010	05/08/2010	22/07/2010	22/07/2010	22/07/2010	05/08/2010	26/07/2010	22/07/2010	09/08/2010	22/07/2010	22/07/2010

SDG: 100719-5
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/619
Report No.: 92959

Results Legend		Customer Sample Ref.	BH1	BH2	BH3	BH4	BH5	BH6
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
M	mCERTS accredited.							
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 the individual compounds within the samples are not corrected for this recovery.							
Component	LOD/Units	Method						
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	0.266	17.5	23.1	12.1	0.566	<0.2
			#	#	#	#	#	#
Conductivity @ 20 deg.C	<0.014 mS/cm	TM120	1.22	1.6	1.16	1.28	0.529	0.603
			#	#	#	#	#	#
Arsenic (diss.filt)	<0.12 µg/l	TM152	2.88	1.17	1.79	0.775	0.608	0.931
			#	#	#	#	#	#
Barium (diss.filt)	<0.03 µg/l	TM152	54.8	159	429	67.5	52.9	90.7
			#	#	#	#	#	#
Beryllium (diss.filt)	<0.07 µg/l	TM152	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
			#	#	#	#	#	#
Boron (diss.filt)	<9.4 µg/l	TM152	405	1540	1180	477	564	52.1
			#	#	#	#	#	#
Cadmium (diss.filt)	<0.1 µg/l	TM152	0.128	0.119	<0.1	0.63	0.189	<0.1
			#	#	#	#	#	#
Chromium (diss.filt)	<0.22 µg/l	TM152	6.52	13.6	12.9	10.1	4.12	6.54
			#	#	#	#	#	#
Copper (diss.filt)	<0.85 µg/l	TM152	1.68	2.68	1.12	5.54	1.49	1.64
			#	#	#	#	#	#
Lead (diss.filt)	<0.02 µg/l	TM152	0.027	0.05	<0.02	0.37	0.288	0.136
			#	#	#	#	#	#
Nickel (diss.filt)	<0.15 µg/l	TM152	11.6	17	12.4	8.6	6.37	0.949
			#	#	#	#	#	#
Selenium (diss.filt)	<0.39 µg/l	TM152	0.423	1.03	1.3	1.42	0.586	1.82
			#	#	#	#	#	#
Vanadium (diss.filt)	<0.24 µg/l	TM152	2.14	4.28	4.2	3.41	1.39	1.5
			#	#	#	#	#	#
Zinc (diss.filt)	<0.41 µg/l	TM152	3.73	2.08	4.2	2.62	2.68	1.72
			#	#	#	#	#	#
EPH Range >C10 - C40 (aq)	<46 µg/l	TM172	52.3	<46	84.4	<46	382	54.9
			#	#	#	#	#	#
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
			#	#	#	#	#	#
Sulphate	<3 mg/l	TM184	230	413	51.3	178	74	56.7
			#	#	#	#	#	#
Cyanide, Total	<0.05 mg/l	TM227	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
			#	#	#	#	#	#
pH	<1 pH Units	TM256	7.67	7.78	7.85	7.99	8.32	8.46
			#	#	#	#	#	#
Phenols, Total monohydric	<0.015 mg/l	TM259	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
			#	#	#	#	#	#

SDG: 100719-5
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/619
Report No.: 92959

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample Ref.	BH1	BH2	BH3	BH4	BH5	BH6
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
dis.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 the individual compounds within the samples are not corrected for this recovery.							
Component	LOD/Units	Method						
Naphthalene (aq)	<0.1 µg/l	TM178	<0.1	<0.1	<0.1			
Acenaphthene (aq)	<0.015 µg/l	TM178	0.81	<0.015	0.02			
Naphthalene (aq)	<0.1 µg/l	TM178				<0.1	<0.1	<0.1
Acenaphthene (aq)	<0.015 µg/l	TM178				<0.015	<0.015	<0.015
Acenaphthylene (aq)	<0.011 µg/l	TM178	<0.011	<0.011	<0.011			
Acenaphthylene (aq)	<0.011 µg/l	TM178				<0.011	<0.011	<0.011
Fluoranthene (aq)	<0.014 µg/l	TM178	0.84	0.02	<0.014			
Anthracene (aq)	<0.015 µg/l	TM178	0.5	<0.015	<0.015			
Fluoranthene (aq)	<0.014 µg/l	TM178				0.0272	0.037	0.022
Anthracene (aq)	<0.015 µg/l	TM178				<0.015	<0.015	<0.015
Phenanthrene (aq)	<0.022 µg/l	TM178	3.16	0.04	0.03			
Fluorene (aq)	<0.014 µg/l	TM178	0.7	<0.014	<0.014			
Phenanthrene (aq)	<0.022 µg/l	TM178				<0.022	<0.022	<0.022
Chrysene (aq)	<0.013 µg/l	TM178	0.07	<0.013	<0.013			
Fluorene (aq)	<0.014 µg/l	TM178				<0.014	<0.014	<0.014
Chrysene (aq)	<0.013 µg/l	TM178				0.0228	<0.013	<0.013
Pyrene (aq)	<0.015 µg/l	TM178	0.57	<0.015	<0.015			
Benzo(a)anthracene (aq)	<0.017 µg/l	TM178	0.06	<0.017	<0.017			
Pyrene (aq)	<0.015 µg/l	TM178				0.0271	0.0391	0.0202
Benzo(a)anthracene (aq)	<0.017 µg/l	TM178				<0.017	0.0241	<0.017
Benzo(b)fluoranthene (aq)	<0.023 µg/l	TM178	0.04	<0.023	<0.023			
Benzo(b)fluoranthene (aq)	<0.023 µg/l	TM178				<0.023	0.0389	<0.023
Benzo(k)fluoranthene (aq)	<0.027 µg/l	TM178	<0.027	<0.027	<0.027			
Benzo(a)pyrene (aq)	<0.009 µg/l	TM178	0.03	<0.009	<0.009			
Benzo(k)fluoranthene (aq)	<0.027 µg/l	TM178				<0.027	<0.027	<0.027
Benzo(a)pyrene (aq)	<0.009 µg/l	TM178				0.0231	0.0405	0.0109
Dibenzo(a,h)anthracene (aq)	<0.016 µg/l	TM178	<0.016	<0.016	<0.016			
Benzo(g,h,i)perylene (aq)	<0.016 µg/l	TM178	0.03	<0.016	<0.016			
Dibenzo(a,h)anthracene (aq)	<0.016 µg/l	TM178				<0.016	<0.016	<0.016
Benzo(g,h,i)perylene (aq)	<0.016 µg/l	TM178				0.0256	0.033	<0.016
Indeno(1,2,3-cd)pyrene (aq)	<0.014 µg/l	TM178	0.02	<0.014	<0.014			
Indeno(1,2,3-cd)pyrene (aq)	<0.014 µg/l	TM178				0.0191	0.0281	<0.014
Polyaromatic hydrocarbons, Total USEPA 16 (aq)	<0.1 µg/l	TM178	6.83	<0.1	<0.1			
Polyaromatic hydrocarbons, Total USEPA 16 (aq)	<0.1 µg/l	TM178				0.152	0.241	<0.1
Naphthalene-d8	%	TM178				100	100	100
Acenaphthene-d10	%	TM178				100	100	100
Phenanthrene-d10	%	TM178				100	100	100
Chrysene-d12	%	TM178				100	100	100
Perylene-d12	%	TM178				100	100	100

SDG: 100719-5
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/619
Report No.: 92959

TPH CWG (W)

Results Legend		Customer Sample Ref.	BH1	BH2	BH3	BH4	BH5	BH6
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
dis.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 the individual compounds within the samples are not corrected for this recovery.							
Component	LOD/Units	Method						
Total Aliphatics >C5-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	148	<10
Total Aromatics >C6-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	170	<10
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	318	<10
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	39	<10
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	109	<10
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	170	<10
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	148	<10
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	170	<10
Total Aliphatics & Aromatics >C12-C35 (Aqueous)	<10 µg/l	TM174	<10	<10	<10	<10	318	<10
GRO Surrogate % recovery**	%	TM245	94	90	91			
GRO >C5-C12	<50 µg/l	TM245	<50	<50	<50			
Benzene	<7 µg/l	TM245	<7	<7	<7			
Ethylbenzene	<5 µg/l	TM245	<5	<5	<5			
Toluene	<4 µg/l	TM245	<4	<4	<4			
m,p-Xylene	<8 µg/l	TM245	<8	<8	<8			
o-Xylene	<3 µg/l	TM245	<3	<3	<3			
m,p,o-Xylene	<10 µg/l	TM245	<10	<10	<10			
BTEX, Total	<10 µg/l	TM245	<10	<10	<10			
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3	<3	<3			
Aliphatics >C5-C6	<10 µg/l	TM245	<10	<10	<10			
Aliphatics >C6-C8	<10 µg/l	TM245	<10	<10	<10			
Aliphatics >C8-C10	<10 µg/l	TM245	<10	<10	<10			
Aliphatics >C10-C12	<10 µg/l	TM245	<10	<10	<10			
Aromatics >C6-C7	<10 µg/l	TM245	<10	<10	<10			
Aromatics >C7-C8	<10 µg/l	TM245	<10	<10	<10			
Aromatics >EC8-EC10	<10 µg/l	TM245	<10	<10	<10			
Aromatics >EC10-EC12	<10 µg/l	TM245	<10	<10	<10			
Total Aliphatics >C5-C12	<10 µg/l	TM245	<10	<10	<10			
Total Aromatics >C6-C12	<10 µg/l	TM245	<10	<10	<10			
GRO Surrogate % recovery**	%	TM245				94	99	101
Benzene	<7 µg/l	TM245				<7	<7	<7
Toluene	<4 µg/l	TM245				<4	<4	<4
Ethylbenzene	<5 µg/l	TM245				<5	<5	<5
m,p-Xylene	<8 µg/l	TM245				<8	<8	<8
o-Xylene	<3 µg/l	TM245				<3	<3	<3
m,p,o-Xylene	<10 µg/l	TM245				<10	<10	<10

ALcontrol Laboratories Analytical Services

SDG: 100719-5
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/619
Report No.: 92959

TPH CWG (W)

Results Legend		Customer Sample Ref.	BH1	BH2	BH3	BH4	BH5	BH6
#	ISO17025 accredited.							
M	mCERTS accredited.							
aq	Aqueous / settled sample.	Depth (m)						
dis.filt	Dissolved / filtered sample.	Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
tot.unfilt	Total / unfiltered sample.	Date Sampled	15/07/2010	15/07/2010	15/07/2010	15/07/2010	15/07/2010	15/07/2010
*	subcontracted test.	Date Received	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	SDG Ref	100719-5	100719-5	100719-5	100719-5	100719-5	100719-5
		Lab Sample No.(s)	1836076	1835995	1836005	1836110	1836201	1836009
		AGS Reference						
Component	LOD/Units	Method						
BTEX, Total	<10 µg/l	TM245				<10	<10	<10
						#	#	#
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245				<3	<3	<3
						#	#	#
GRO >C5-C12	<50 µg/l	TM245				<50	<50	<50
						#	#	#
Aliphatics >C5-C6	<10 µg/l	TM245				<10	<10	<10
Aliphatics >C6-C8	<10 µg/l	TM245				<10	<10	<10
Aliphatics >C8-C10	<10 µg/l	TM245				<10	<10	<10
Aliphatics >C10-C12	<10 µg/l	TM245				<10	<10	<10
Total Aliphatics >C5-C12	<10 µg/l	TM245				<10	<10	<10
Aromatics >C6-C7	<10 µg/l	TM245				<10	<10	<10
Aromatics >C7-C8	<10 µg/l	TM245				<10	<10	<10
Aromatics >EC8-EC10	<10 µg/l	TM245				<10	<10	<10
Aromatics >EC10-EC12	<10 µg/l	TM245				<10	<10	<10
Total Aromatics >C6-C12	<10 µg/l	TM245				<10	<10	<10

SDG: 100719-5
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/619
Report No.: 92959

Results Legend		Customer Sample Ref.	BH7	BH8	BH9	BROOK-DOWN	BROOK-MID	BROOK-UP
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
M	mCERTS accredited.							
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 the individual compounds within the samples are not corrected for this recovery.							
Component	LOD/Units	Method						
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	0.803	13.9	15.6	1.87	0.769	1.03
			#	#	#	#	#	#
Conductivity @ 20 deg.C	<0.014 mS/cm	TM120	0.699	1.78	1.55	0.597	0.194	0.449
			#	#	#	#	#	#
Arsenic (diss.filt)	<0.12 µg/l	TM152	1.13	1.8	1.98	1.85	1.17	1.27
			#	#	#	#	#	#
Barium (diss.filt)	<0.03 µg/l	TM152	44.6	54.4	86.8	56.2	21.7	47.9
			#	#	#	#	#	#
Beryllium (diss.filt)	<0.07 µg/l	TM152	<0.07	<0.07	<0.07	<0.07	0.091	<0.07
			#	#	#	#	#	#
Boron (diss.filt)	<9.4 µg/l	TM152	110	217	149	90.4	31.5	49.3
			#	#	#	#	#	#
Cadmium (diss.filt)	<0.1 µg/l	TM152	0.38	0.26	0.104	<0.1	0.122	<0.1
			#	#	#	#	#	#
Chromium (diss.filt)	<0.22 µg/l	TM152	6.24	6.61	9.28	5.06	1.59	3.52
			#	#	#	#	#	#
Copper (diss.filt)	<0.85 µg/l	TM152	0.875	6.22	3.61	1.62	5.83	4.55
			#	#	#	#	#	#
Lead (diss.filt)	<0.02 µg/l	TM152	<0.02	0.051	0.108	1.98	1.28	1.97
			#	#	#	#	#	#
Nickel (diss.filt)	<0.15 µg/l	TM152	5.14	9.35	7.43	4.3	1.18	2.58
			#	#	#	#	#	#
Selenium (diss.filt)	<0.39 µg/l	TM152	0.961	8.05	5.81	0.766	0.674	0.727
			#	#	#	#	#	#
Vanadium (diss.filt)	<0.24 µg/l	TM152	4.17	2.93	2.93	2.24	3.27	2.68
			#	#	#	#	#	#
Zinc (diss.filt)	<0.41 µg/l	TM152	1.02	4.77	12.9	22.7	25.1	19.2
			#	#	#	#	#	#
EPH Range >C10 - C40 (aq)	<46 µg/l	TM172	<46	823	1880	191	405	235
			#	#	#	#	#	#
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
			#	#	#	#	#	#
Sulphate	<3 mg/l	TM184	85.4	412	366	42.1	15.3	34.3
			#	#	#	#	#	#
Cyanide, Total	<0.05 mg/l	TM227	<0.05	1.63	0.957	<0.05	<0.05	<0.05
			#	#	#	#	#	#
pH	<1 pH Units	TM256	8.09	7.97	7.65	8.5	7.95	8.26
			#	#	#	#	#	#
Phenols, Total monohydric	<0.015 mg/l	TM259	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
			#	#	#	#	#	#

SDG: 100719-5
 Job: H_BWB NTT-81
 Client Reference: NTE 285
 Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
 Attention: Richard Robinson
 Order No.: NE09/619
 Report No: 92959

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample Ref.	BH7	BH8	BH9	BROOK-DOWN	BROOK-MID	BROOK-UP
#	ISO17025 accredited.							
M	mCERTS accredited.	Depth (m)						
aq	Aqueous / settled sample.	Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
diss.filt	Dissolved / filtered sample.	Date Sampled	15/07/2010	15/07/2010	15/07/2010	15/07/2010	15/07/2010	15/07/2010
tot.unfilt	Total / unfiltered sample.	Date Received	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010	19/07/2010
*	subcontracted test.	SDG Ref	100719-5	100719-5	100719-5	100719-5	100719-5	100719-5
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	Lab Sample No.(s)	1836214	1836172	1836164	1836045	1836018	1836224
		AGS Reference						
Component	LOD/Units	Method						
Naphthalene (aq)	<0.1 µg/l	TM178	<0.1	0.48	<0.5	<0.1	<0.1	<0.1
Acenaphthene (aq)	<0.015 µg/l	TM178	0.02	1.72	0.38	0.03	0.03	0.02
Acenaphthylene (aq)	<0.011 µg/l	TM178	<0.011	6.2	0.18	<0.011	<0.011	<0.011
Fluoranthene (aq)	<0.014 µg/l	TM178	0.12	14.2	11.2	0.08	0.13	0.04
Anthracene (aq)	<0.015 µg/l	TM178	0.02	4.61	0.99	<0.015	<0.015	<0.015
Phenanthrene (aq)	<0.022 µg/l	TM178	0.07	5.24	3.49	0.06	0.05	0.05
Fluorene (aq)	<0.014 µg/l	TM178	<0.014	3.48	0.29	0.03	0.02	0.02
Chrysene (aq)	<0.013 µg/l	TM178	0.04	4.81	4.02	<0.013	0.03	<0.013
Pyrene (aq)	<0.015 µg/l	TM178	0.12	13.4	10	0.06	0.1	0.03
Benzo(a)anthracene (aq)	<0.017 µg/l	TM178	0.05	6.1	4.88	<0.017	0.02	<0.017
Benzo(b)fluoranthene (aq)	<0.023 µg/l	TM178	0.07	6.58	8.21	<0.023	0.05	<0.023
Benzo(k)fluoranthene (aq)	<0.027 µg/l	TM178	0.03	2.72	3.01	<0.027	<0.027	<0.027
Benzo(a)pyrene (aq)	<0.009 µg/l	TM178	0.04	5.65	6.63	<0.009	0.03	<0.009
Dibenzo(a,h)anthracene (aq)	<0.016 µg/l	TM178	<0.016	0.92	1.07	<0.016	<0.016	<0.016
Benzo(g,h,i)perylene (aq)	<0.016 µg/l	TM178	0.03	3.44	4.8	<0.016	0.03	<0.016
Indeno(1,2,3-cd)pyrene (aq)	<0.014 µg/l	TM178	0.02	3.22	4.23	<0.014	0.02	<0.014
Polyaromatic hydrocarbons, Total USEPA 16 (aq)	<0.1 µg/l	TM178	0.63	82.8	63.5	0.26	0.51	0.16

Validated

ALcontrol Laboratories Analytical Services

SDG: 100719-5
Job: H_BWB_NTT-81
Client Reference: NTE 285
Location: THE DOVE WAY UTTOXETER

Customer: BWB Consulting
Attention: Richard Robinson
Order No.: NE09/619
Report No.: 92959

TPH CWG (W)

Results Legend		Customer Sample Ref.	BH7	BH8	BH9	BROOK-DOWN	BROOK-MID	BROOK-UP
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
M	mCERTS accredited.							
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 the individual compounds within the samples are not corrected for this recovery.							
Component	LOD/Units	Method						
Total Aliphatics >C5-C35 (aq)	<10 µg/l	TM174	<10	<10	329	<10	<10	<10
Total Aromatics >C6-C35 (aq)	<10 µg/l	TM174	<10	317	635	<10	<10	<10
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	<10	317	964	<10	<10	<10
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10	28	<10	<10	<10	<10
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10	<10	22	<10	<10	<10
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10	75	31	<10	<10	<10
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10	<10	307	<10	<10	<10
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	<10	214	604	<10	<10	<10
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10	<10	329	<10	<10	<10
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	<10	317	635	<10	<10	<10
Total Aliphatics & Aromatics >C12-C35 (Aqueous)	<10 µg/l	TM174	<10	317	964	<10	<10	<10
GRO Surrogate % recovery**	%	TM245	96	101	89	87	96	103
GRO >C5-C12	<50 µg/l	TM245	<50	<50	<50	<50	<50	<50
Benzene	<7 µg/l	TM245	<7	#	#	#	#	#
Ethylbenzene	<5 µg/l	TM245	<5	#	#	#	#	#
Toluene	<4 µg/l	TM245	<4	#	#	#	#	#
m,p-Xylene	<8 µg/l	TM245	<8	#	#	#	#	#
o-Xylene	<3 µg/l	TM245	<3	#	#	#	#	#
m,p,o-Xylene	<10 µg/l	TM245	<10	#	#	#	#	#
BTEX, Total	<10 µg/l	TM245	<10	#	#	#	#	#
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3	#	#	#	#	#
Aliphatics >C5-C6	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >C6-C7	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >C7-C8	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >EC10-EC12	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Total Aliphatics >C5-C12	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Total Aromatics >C6-C12	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10

Table of Results - Appendix

SDG Number : 100719-5

Client : BWB Consulting

Client Ref : NTE 285

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
TM061	Method for the Determination of EPH, Massachusetts Dept. of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)	
TM099	BS 2690: Part 7:1968 / BS 6068: Part 2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser	
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter	
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS	
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters	
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID	
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters	
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry	
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers	
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate	
TM245	By GC-FID	Determination of GRO by Headspace in waters	
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter	
TM259			

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

APPENDIX

APPENDIX

1. Results are expressed on a dry weight basis (dried at 35°C) 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. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.
12. Results relate only to the items tested
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 Dimethylphenol, 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 14).
17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.
19. 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 the major 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.

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)	GS 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 INFRA RED (IR)	TCE	LIQUID/LIQUID EXTRACTION	HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID EXTRACTION	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GC FID

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
Solvent Extractable Matter	D&C	DCM	SOX THERM	GRAVIMETRIC
Cyclohexane Ext. Matter	D&C	CYCLOHEXANE	SOX THERM	GRAVIMETRIC
Thin Layer Chromatography	D&C	DCM	SOX THERM	IATROSCAN
Elemental Sulphur	D&C	DCM	SOX THERM	HPLC
Phenols by GCMS	WET	DCM	SOX THERM	GC-MS
Herbicides	D&C	HEXANE:ACETONE	SOX THERM	GC-MS
Pesticides	D&C	HEXANE:ACETONE	SOX THERM	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 (C6-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

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', 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).

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 MDHS 100.

The identification of asbestos containing materials 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.

Asbestos Type

Common Name

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



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QTS Environmental Report No: 13-17439

Site Reference: Pennycroft, Uttoxeter

Project / Job Ref: IV.58.13

Order No: None Supplied

Sample Receipt Date: 28/10/2013

Sample Scheduled Date: 28/10/2013

Report Issue Number: 1

Reporting Date: 05/11/2013

Authorised by:

Russell Jarvis
Director

On behalf of QTS Environmental Ltd

Authorised by:

Kevin Old
Director

On behalf of QTS Environmental Ltd



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Maidstone
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Water Analysis Certificate						
QTS Environmental Report No: 13-17439	Date Sampled	25/10/13	25/10/13	25/10/13	25/10/13	25/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WSA2	BWBBH7	WSB	WSL	WSE
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 05/11/2013	QTSE Sample No	83843	83844	83845	83846	83847

Determinand	Unit	MDL	Accreditation					
pH	pH Units	N / a	ISO17025	7.8	7.1	7.9	6.9	7.2
Total Cyanide	ug/l	< 5	NONE	< 5	< 5	< 5	< 5	< 5
Complex Cyanide	ug/l	< 5	NONE	< 5	< 5	< 5	< 5	< 5
Free Cyanide	ug/l	< 5	NONE	< 5	< 5	< 5	< 5	< 5
Thiocyanate as SCN	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Sulphate as SO ₄	mg/l	< 1	NONE	985	99	1250	541	163
Total Organic Carbon (TOC)	mg/l	< 0.1	NONE	6.2	1.8	29	9.9	10.1
Arsenic (dissolved)	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Cadmium (dissolved)	ug/l	< 0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium (dissolved)	ug/l	< 5	NONE	< 5	5	< 5	< 5	< 5
Chromium (hexavalent)	ug/l	< 5	NONE	< 5	< 5	< 5	< 5	< 5
Copper (dissolved)	ug/l	< 10	NONE	< 10	< 10	< 10	13	< 10
Lead (dissolved)	ug/l	< 5	NONE	< 5	< 5	< 5	< 5	< 5
Mercury (dissolved)	ug/l	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	ug/l	< 7	NONE	< 7	< 7	< 7	< 7	< 7
Selenium (dissolved)	ug/l	< 5	NONE	< 5	< 5	< 5	< 5	< 5
Zinc (dissolved)	ug/l	< 5	NONE	8	< 5	< 5	5	23
Total Phenols	ug/l	< 0.5	NONE	0.5	< 0.5	37.8	< 0.5	< 0.5

Subcontracted analysis ⁽⁵⁾



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Water Analysis Certificate					
QTS Environmental Report No: 13-17439	Date Sampled	25/10/13			
Ivy House Environmental Ltd	Time Sampled	None Supplied			
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WS1			
Project / Job Ref: IV.58.13	Additional Refs	None Supplied			
Order No: None Supplied	Depth (m)	None Supplied			
Reporting Date: 05/11/2013	QTSE Sample No	83848			

Determinand	Unit	MDL	Accreditation				
pH	pH Units	N / a	ISO17025	7.2			
Total Cyanide	ug/l	< 5	NONE	< 5			
Complex Cyanide	ug/l	< 5	NONE	< 5			
Free Cyanide	ug/l	< 5	NONE	< 5			
Thiocyanate as SCN	ug/l	< 10	NONE	< 10			
Sulphate as SO ₄	mg/l	< 1	NONE	36			
Total Organic Carbon (TOC)	mg/l	< 0.1	NONE	8.5			
Arsenic (dissolved)	ug/l	< 10	NONE	< 10			
Cadmium (dissolved)	ug/l	< 0.5	NONE	< 0.5			
Chromium (dissolved)	ug/l	< 5	NONE	< 5			
Chromium (hexavalent)	ug/l	< 5	NONE	< 5			
Copper (dissolved)	ug/l	< 10	NONE	< 10			
Lead (dissolved)	ug/l	< 5	NONE	< 5			
Mercury (dissolved)	ug/l	< 0.05	NONE	< 0.05			
Nickel (dissolved)	ug/l	< 7	NONE	< 7			
Selenium (dissolved)	ug/l	< 5	NONE	< 5			
Zinc (dissolved)	ug/l	< 5	NONE	< 5			
Total Phenols	ug/l	< 0.5	NONE	< 0.5			

Subcontracted analysis ⁽⁵⁾



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Water Analysis Certificate - Speciated PAH						
QTS Environmental Report No: 13-1	Date Sampled	25/10/13	25/10/13	25/10/13	25/10/13	25/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WSA2	BWBBH7	WSB	WSL	WSE
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 05/11/2013	QTSE Sample No	83843	83844	83845	83846	83847

Determinand	Unit	MDL	Accreditation					
Naphthalene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	ug/l	< 0.01	NONE	11.61	< 0.01	8.38	< 0.01	< 0.01
Acenaphthene	ug/l	< 0.01	NONE	8.77	< 0.01	5.82	< 0.01	< 0.01
Fluorene	ug/l	< 0.01	NONE	3.61	< 0.01	4.95	< 0.01	< 0.01
Phenanthrene	ug/l	< 0.01	NONE	< 0.01	< 0.01	3.86	< 0.01	< 0.01
Anthracene	ug/l	< 0.01	NONE	1.19	< 0.01	1.09	< 0.01	< 0.01
Fluoranthene	ug/l	< 0.01	NONE	4.84	< 0.01	1.63	< 0.01	< 0.01
Pyrene	ug/l	< 0.01	NONE	3.12	< 0.01	1.02	< 0.01	< 0.01
Benzo(a)anthracene	ug/l	< 0.01	NONE	0.39	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	ug/l	< 0.01	NONE	0.23	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	ug/l	< 0.01	NONE	0.28	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total EPA-16 PAHs	ug/l	< 0.01	NONE	34.04	< 0.01	26.75	< 0.01	< 0.01



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Water Analysis Certificate - Speciated PAH					
QTS Environmental Report No: 13-1	Date Sampled	25/10/13			
Ivy House Environmental Ltd	Time Sampled	None Supplied			
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WSI			
Project / Job Ref: IV.58.13	Additional Refs	None Supplied			
Order No: None Supplied	Depth (m)	None Supplied			
Reporting Date: 05/11/2013	QTSE Sample No	83848			

Determinand	Unit	MDL	Accreditation				
Naphthalene	ug/l	< 0.01	NONE	< 0.01			
Acenaphthylene	ug/l	< 0.01	NONE	0.39			
Acenaphthene	ug/l	< 0.01	NONE	0.90			
Fluorene	ug/l	< 0.01	NONE	1.91			
Phenanthrene	ug/l	< 0.01	NONE	2.07			
Anthracene	ug/l	< 0.01	NONE	0.55			
Fluoranthene	ug/l	< 0.01	NONE	1.24			
Pyrene	ug/l	< 0.01	NONE	0.82			
Benzo(a)anthracene	ug/l	< 0.01	NONE	0.20			
Chrysene	ug/l	< 0.01	NONE	0.14			
Benzo(b)fluoranthene	ug/l	< 0.01	NONE	0.22			
Benzo(k)fluoranthene	ug/l	< 0.01	NONE	< 0.01			
Benzo(a)pyrene	ug/l	< 0.01	NONE	< 0.01			
Indeno(1,2,3-cd)pyrene	ug/l	< 0.01	NONE	< 0.01			
Dibenz(a,h)anthracene	ug/l	< 0.01	NONE	< 0.01			
Benzo(ghi)perylene	ug/l	< 0.01	NONE	< 0.01			
Total EPA-16 PAHs	ug/l	< 0.01	NONE	8.44			



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Water Analysis Certificate - TPH CWG Banded					
QTS Environmental Report No: 13-17439	Date Sampled	25/10/13	25/10/13	25/10/13	25/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WSA2	BWBBH7	WSB	WSL
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 05/11/2013	QTSE Sample No	83843	83844	83845	83846

Determinand	Unit	MDL	Accreditation						
Aliphatic >C5 - C6	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic >C6 - C8	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic >C8 - C10	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic >C10 - C12	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic >C12 - C16	ug/l	< 10	NONE	11	< 10	< 10	< 10	< 10	< 10
Aliphatic >C16 - C21	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic >C21 - C34	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	ug/l	< 70	NONE	< 70	< 70	< 70	< 70	< 70	< 70
Aromatic >C5 - C7	ug/l	< 10	NONE	< 10	< 10	384	< 10	< 10	< 10
Aromatic >C7 - C8	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic >C8 - C10	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic >C10 - C12	ug/l	< 10	NONE	< 10	< 10	18	< 10	< 10	< 10
Aromatic >C12 - C16	ug/l	< 10	NONE	80	< 10	58	< 10	< 10	< 10
Aromatic >C16 - C21	ug/l	< 10	NONE	37	< 10	35	< 10	< 10	< 10
Aromatic >C21 - C35	ug/l	< 10	NONE	20	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C35)	ug/l	< 70	NONE	138	< 70	496	< 70	< 70	< 70
Total >C5 - C35	ug/l	< 140	NONE	149	< 140	496	< 140	< 140	< 140



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Tel : 01622 850410

Water Analysis Certificate - TPH CWG Banded					
QTS Environmental Report No: 13-17439	Date Sampled	25/10/13			
Ivy House Environmental Ltd	Time Sampled	None Supplied			
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WSI			
Project / Job Ref: IV.58.13	Additional Refs	None Supplied			
Order No: None Supplied	Depth (m)	None Supplied			
Reporting Date: 05/11/2013	QTSE Sample No	83848			

Determinand	Unit	MDL	Accreditation				
Aliphatic >C5 - C6	ug/l	< 10	NONE	< 10			
Aliphatic >C6 - C8	ug/l	< 10	NONE	< 10			
Aliphatic >C8 - C10	ug/l	< 10	NONE	< 10			
Aliphatic >C10 - C12	ug/l	< 10	NONE	< 10			
Aliphatic >C12 - C16	ug/l	< 10	NONE	< 10			
Aliphatic >C16 - C21	ug/l	< 10	NONE	< 10			
Aliphatic >C21 - C34	ug/l	< 10	NONE	< 10			
Aliphatic (C5 - C34)	ug/l	< 70	NONE	< 70			
Aromatic >C5 - C7	ug/l	< 10	NONE	< 10			
Aromatic >C7 - C8	ug/l	< 10	NONE	< 10			
Aromatic >C8 - C10	ug/l	< 10	NONE	< 10			
Aromatic >C10 - C12	ug/l	< 10	NONE	< 10			
Aromatic >C12 - C16	ug/l	< 10	NONE	24			
Aromatic >C16 - C21	ug/l	< 10	NONE	16			
Aromatic >C21 - C35	ug/l	< 10	NONE	< 10			
Aromatic (C5 - C35)	ug/l	< 70	NONE	< 70			
Total >C5 - C35	ug/l	< 140	NONE	< 140			



QTS Environmental Ltd
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Water Analysis Certificate - BTEX / MTBE						
QTS Environmental Report No: 13-17439	Date Sampled	25/10/13	25/10/13	25/10/13	25/10/13	25/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WSA2	BWBBH7	WSB	WSL	WSE
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 05/11/2013	QTSE Sample No	83843	83844	83845	83846	83847

Determinand	Unit	MDL	Accreditation						
Benzene	ug/l	< 1	ISO17025	< 1	< 1	384	< 1	< 1	< 1
Toluene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5	< 5
p & m-xylene	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10	< 10
o-xylene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5	< 5



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Water Analysis Certificate - BTEX / MTBE						
QTS Environmental Report No: 13-17439	Date Sampled	25/10/13				
Ivy House Environmental Ltd	Time Sampled	None Supplied				
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WSI				
Project / Job Ref: IV.58.13	Additional Refs	None Supplied				
Order No: None Supplied	Depth (m)	None Supplied				
Reporting Date: 05/11/2013	QTSE Sample No	83848				

Determinand	Unit	MDL	Accreditation				
Benzene	ug/l	< 1	ISO17025	< 1			
Toluene	ug/l	< 5	ISO17025	< 5			
Ethylbenzene	ug/l	< 5	ISO17025	< 5			
p & m-xylene	ug/l	< 10	ISO17025	< 10			
o-xylene	ug/l	< 5	ISO17025	< 5			



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Water Analysis Certificate - Volatile Organic Compounds (VOC)

QTS Environmental Report No: 13-17439	Date Sampled	25/10/13	25/10/13	25/10/13	25/10/13	25/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WSA2	BWBBH7	WSB	WSL	WSE
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 05/11/2013	QTSE Sample No	83843	83844	83845	83846	83847

Determinand	Unit	MDL	Accreditation	25/10/13	25/10/13	25/10/13	25/10/13	25/10/13
Dichlorodifluoromethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Vinyl Chloride	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Chloromethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Chloroethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Bromomethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Trichlorofluoromethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
MTBE	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
trans-1,2-Dichloroethene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
cis-1,2-Dichloroethene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
2,2-Dichloropropane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Chloroform	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Bromochloromethane	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
1,1,1-Trichloroethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,1-Dichloropropene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Carbon Tetrachloride	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,2-Dichloroethane	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
Benzene	ug/l	< 1	ISO17025	< 1	< 1	384	< 1	< 1
1,2-Dichloropropane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Trichloroethene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Bromodichloromethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Dibromomethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
TAME	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
cis-1,3-Dichloropropene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Toluene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
trans-1,3-Dichloropropene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
1,3-Dichloropropane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Tetrachloroethene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Dibromochloromethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,2-Dibromoethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Chlorobenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,1,1,2-Tetrachloroethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Ethyl Benzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
m,p-Xylene	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
o-Xylene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Styrene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Bromoform	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
Isopropylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
1,2,3-Trichloropropane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
n-Propylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Bromobenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
2-Chlorotoluene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,3,5-Trimethylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
4-Chlorotoluene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
tert-Butylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,2,4-Trimethylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
sec-Butylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
p-Isopropyltoluene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,3-Dichlorobenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,4-Dichlorobenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
n-Butylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,2-Dichlorobenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,2-Dibromo-3-chloropropane	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
Hexachlorobutadiene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5



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Water Analysis Certificate - Volatile Organic Compounds (VOC)			
QTS Environmental Report No: 13-17439	Date Sampled	25/10/13	
Ivy House Environmental Ltd	Time Sampled	None Supplied	
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WSI	
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	
Order No: None Supplied	Depth (m)	None Supplied	
Reporting Date: 05/11/2013	QTSE Sample No	83848	

Determinand	Unit	MDL	Accreditation				
Dichlorodifluoromethane	ug/l	< 5	ISO17025	< 5			
Vinyl Chloride	ug/l	< 5	ISO17025	< 5			
Chloromethane	ug/l	< 5	ISO17025	< 5			
Chloroethane	ug/l	< 5	ISO17025	< 5			
Bromomethane	ug/l	< 5	ISO17025	< 5			
Trichlorofluoromethane	ug/l	< 5	ISO17025	< 5			
1,1-Dichloroethene	ug/l	< 5	ISO17025	< 5			
MTBE	ug/l	< 10	ISO17025	< 10			
trans-1,2-Dichloroethene	ug/l	< 5	ISO17025	< 5			
1,1-Dichloroethane	ug/l	< 5	ISO17025	< 5			
cis-1,2-Dichloroethene	ug/l	< 5	ISO17025	< 5			
2,2-Dichloropropane	ug/l	< 5	ISO17025	< 5			
Chloroform	ug/l	< 5	ISO17025	< 5			
Bromochloromethane	ug/l	< 10	ISO17025	< 10			
1,1,1-Trichloroethane	ug/l	< 5	ISO17025	< 5			
1,1-Dichloropropene	ug/l	< 5	ISO17025	< 5			
Carbon Tetrachloride	ug/l	< 5	ISO17025	< 5			
1,2-Dichloroethane	ug/l	< 10	ISO17025	< 10			
Benzene	ug/l	< 1	ISO17025	< 1			
1,2-Dichloropropane	ug/l	< 5	ISO17025	< 5			
Trichloroethene	ug/l	< 5	ISO17025	< 5			
Bromodichloromethane	ug/l	< 5	ISO17025	< 5			
Dibromomethane	ug/l	< 5	ISO17025	< 5			
TAME	ug/l	< 5	ISO17025	< 5			
cis-1,3-Dichloropropene	ug/l	< 5	ISO17025	< 5			
Toluene	ug/l	< 5	ISO17025	< 5			
trans-1,3-Dichloropropene	ug/l	< 5	ISO17025	< 5			
1,1,2-Trichloroethane	ug/l	< 10	ISO17025	< 10			
1,3-Dichloropropane	ug/l	< 5	ISO17025	< 5			
Tetrachloroethene	ug/l	< 5	ISO17025	< 5			
Dibromochloromethane	ug/l	< 5	ISO17025	< 5			
1,2-Dibromoethane	ug/l	< 5	ISO17025	< 5			
Chlorobenzene	ug/l	< 5	ISO17025	< 5			
1,1,1,2-Tetrachloroethane	ug/l	< 5	ISO17025	< 5			
Ethyl Benzene	ug/l	< 5	ISO17025	< 5			
m,p-Xylene	ug/l	< 10	ISO17025	< 10			
o-Xylene	ug/l	< 5	ISO17025	< 5			
Styrene	ug/l	< 5	ISO17025	< 5			
Bromoform	ug/l	< 10	ISO17025	< 10			
Isopropylbenzene	ug/l	< 5	ISO17025	< 5			
1,1,2,2-Tetrachloroethane	ug/l	< 10	ISO17025	< 10			
1,2,3-Trichloropropane	ug/l	< 5	ISO17025	< 5			
n-Propylbenzene	ug/l	< 5	ISO17025	< 5			
Bromobenzene	ug/l	< 5	ISO17025	< 5			
2-Chlorotoluene	ug/l	< 5	ISO17025	< 5			
1,3,5-Trimethylbenzene	ug/l	< 5	ISO17025	< 5			
4-Chlorotoluene	ug/l	< 5	ISO17025	< 5			
tert-Butylbenzene	ug/l	< 5	ISO17025	< 5			
1,2,4-Trimethylbenzene	ug/l	< 5	ISO17025	< 5			
sec-Butylbenzene	ug/l	< 5	ISO17025	< 5			
p-Isopropyltoluene	ug/l	< 5	ISO17025	< 5			
1,3-Dichlorobenzene	ug/l	< 5	ISO17025	< 5			
1,4-Dichlorobenzene	ug/l	< 5	ISO17025	< 5			
n-Butylbenzene	ug/l	< 5	ISO17025	< 5			
1,2-Dichlorobenzene	ug/l	< 5	ISO17025	< 5			
1,2-Dibromo-3-chloropropane	ug/l	< 10	ISO17025	< 10			
Hexachlorobutadiene	ug/l	< 5	ISO17025	< 5			



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Water Analysis Certificate - Semi Volatile Organic Compounds (SVOC)						
QTS Environmental Report No: 13-17439	Date Sampled	25/10/13	25/10/13	25/10/13	25/10/13	25/10/13
Ivy House Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WSA2	BWBH7	WSB	WSL	WSE
Project / Job Ref: IV.58.13	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 05/11/2013	QTSE Sample No	83843	83844	83845	83846	83847

Determinand	Unit	MDL	Accreditation					
Phenol	ug/l	< 0.1	NONE	0.5	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitrophenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Nitrobenzene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
0-Cresol	ug/l	< 0.1	NONE	< 0.1	< 0.1	1.2	< 0.1	< 0.1
bis(2-chloroethoxy)methane	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-chloroethyl)ether	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	36.6	< 0.1	< 0.1
Isophorone	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachloroethane	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
p-Cresol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethyl phthalate	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloroaniline	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenyl phenyl ether	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenyl phenyl ether	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethyl phthalate	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	ug/l	< 0.1	NONE	5.2	< 0.1	3.3	< 0.1	< 0.1
Azobenzene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibutyl phthalate	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	ug/l	< 0.1	NONE	< 0.1	< 0.1	5.1	< 0.1	< 0.1
bis(2-ethylhexyl)phthalate	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl butyl phthalate	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octyl phthalate	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1



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Water Analysis Certificate - Semi Volatile Organic Compounds (SVOC)					
QTS Environmental Report No: 13-17439	Date Sampled	25/10/13			
Ivy House Environmental Ltd	Time Sampled	None Supplied			
Site Reference: Pennycroft, Uttoxeter	TP / BH No	WSI			
Project / Job Ref: IV.58.13	Additional Refs	None Supplied			
Order No: None Supplied	Depth (m)	None Supplied			
Reporting Date: 05/11/2013	QTSE Sample No	83848			

Determinand	Unit	MDL	Accreditation				
Phenol	ug/l	< 0.1	NONE	< 0.1			
1,2,4-Trichlorobenzene	ug/l	< 0.1	NONE	< 0.1			
2-Nitrophenol	ug/l	< 0.1	NONE	< 0.1			
Nitrobenzene	ug/l	< 0.1	NONE	< 0.1			
0-Cresol	ug/l	< 0.1	NONE	< 0.1			
bis(2-chloroethoxy)methane	ug/l	< 0.1	NONE	< 0.1			
bis(2-chloroethyl)ether	ug/l	< 0.1	NONE	< 0.1			
2,4-Dichlorophenol	ug/l	< 0.1	NONE	< 0.1			
2-Chlorophenol	ug/l	< 0.1	NONE	< 0.1			
1,3-Dichlorobenzene	ug/l	< 0.1	NONE	< 0.1			
1,4-Dichlorobenzene	ug/l	< 0.1	NONE	< 0.1			
1,2-Dichlorobenzene	ug/l	< 0.1	NONE	< 0.1			
2,4-Dimethylphenol	ug/l	< 0.1	NONE	< 0.1			
Isophorone	ug/l	< 0.1	NONE	< 0.1			
Hexachloroethane	ug/l	< 0.1	NONE	< 0.1			
p-Cresol	ug/l	< 0.1	NONE	< 0.1			
2,4,6-Trichlorophenol	ug/l	< 0.1	NONE	< 0.1			
2,4,5-Trichlorophenol	ug/l	< 0.1	NONE	< 0.1			
2-Nitroaniline	ug/l	< 0.1	NONE	< 0.1			
4-Chloro-3-methylphenol	ug/l	< 0.1	NONE	< 0.1			
2-Methylnaphthalene	ug/l	< 0.1	NONE	< 0.1			
Hexachlorocyclopentadiene	ug/l	< 0.1	NONE	< 0.1			
Hexachlorobutadiene	ug/l	< 0.1	NONE	< 0.1			
2,6-Dinitrotoluene	ug/l	< 0.1	NONE	< 0.1			
Dimethyl phthalate	ug/l	< 0.1	NONE	< 0.1			
2-Chloronaphthalene	ug/l	< 0.1	NONE	< 0.1			
4-Chloroaniline	ug/l	< 0.1	NONE	< 0.1			
4-Nitrophenol	ug/l	< 0.1	NONE	< 0.1			
4-Chlorophenyl phenyl ether	ug/l	< 0.1	NONE	< 0.1			
3-Nitroaniline	ug/l	< 0.1	NONE	< 0.1			
4-Nitroaniline	ug/l	< 0.1	NONE	< 0.1			
4-Bromophenyl phenyl ether	ug/l	< 0.1	NONE	< 0.1			
Hexachlorobenzene	ug/l	< 0.1	NONE	< 0.1			
2,4-Dinitrotoluene	ug/l	< 0.1	NONE	< 0.1			
Diethyl phthalate	ug/l	< 0.1	NONE	< 0.1			
Dibenzofuran	ug/l	< 0.1	NONE	2.3			
Azobenzene	ug/l	< 0.1	NONE	< 0.1			
Dibutyl phthalate	ug/l	< 0.1	NONE	< 0.1			
Carbazole	ug/l	< 0.1	NONE	1.5			
bis(2-ethylhexyl)phthalate	ug/l	< 0.1	NONE	< 0.1			
Benzyl butyl phthalate	ug/l	< 0.1	NONE	< 0.1			
Di-n-octyl phthalate	ug/l	< 0.1	NONE	< 0.1			

APPENDIX H



R&D Publication 20 Remedial Targets Worksheet, Release 3.2



Level 3 - Groundwater

See Note

Input Parameters (using pull down menu)

Variable	Value	Unit	Source
Contaminant	Cyanide		from Level 1
Target Concentration	C _T 5.00E-02	mg/l	from Level 1

Select analytical solution (click on brown cell below, then on pull-down menu)

Ogata Banks	Equations in HRA publication
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Approach for simulating vertical dispersion: Simulate vertical dispersion in 1 direction

Select nature of decay rate (click on brown cell below, then on pull-down menu)

Approach for simulating degradation of pollutants: Apply degradation rate to dissolved pollutants only

Variable	Value	Unit	Source of parameter value
Initial contaminant concentration in groundwater at plume core	C ₀ 1.63E+00	mg/l	Site Data
Half life for degradation of contaminant in water	t _{1/2} 9.00E+99	days	assumed
Calculated decay rate	λ 7.70E-101	days ⁻¹	
Width of plume in aquifer at source (perpendicular to flow)	Sz 5.30E+01	m	Site Data
Plume thickness at source	Sy 1.46E+00	m	Site Data
Saturated aquifer thickness	da 1.57E+00	m	Site Data
Bulk density of aquifer materials	p 9.40E-01	g/cm ³	CLEA
Effective porosity of aquifer	n 2.00E-01	fraction	CLEA
Hydraulic gradient	i 9.60E-02	fraction	Site Data
Hydraulic conductivity of aquifer	K 1.95E+00	m/d	Site Data
Distance to compliance point	x 5.00E+01	m	Site Data
Distance (lateral) to compliance point perpendicular to flow direction	z 2.00E+01	m	Site Data
Distance (depth) to compliance point perpendicular to flow direction	y 5.00E-01	m	Site Data
Time since pollutant entered groundwater	t 1.00E+100	days	time variant options only
<i>Parameters values determined from options</i>			
Partition coefficient	Kd 9.90E+00	l/kg	see options
Longitudinal dispersivity	ax 5.00E+00	m	see options
Transverse dispersivity	az 5.00E-01	m	see options
Vertical dispersivity	ay 5.00E-02	m	see options

Calculated Parameters

Variable	Value	Unit
Groundwater flow velocity	v 6.48E-01	m/d
Retardation factor	Rf 4.75E+01	fraction
Decay rate used	λ 1.62E-102	d ⁻¹
Rate of contaminant flow due to retardation	U 1.36E-02	m/d
Contaminant concentration at distance x, assuming one-way vertical dispersion	C _{2D} 6.37E-01	mg/l
Attenuation factor (one way vertical dispersion, CO/CED)	AF 2.55E+00	

Select Method for deriving Partition Co-efficient (using pull down menu)

User specified value for partition coefficient

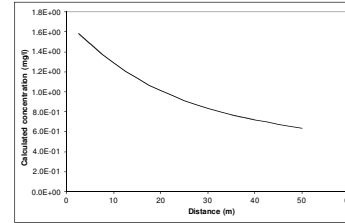
Variable	Value	Unit
Soil water partition coefficient	Kd 9.90E+00	l/kg
Fraction of organic carbon in aquifer	foc	fraction
Organic carbon partition coefficient	K _{oc}	l/kg
Sorption coefficient for related species	K _{oc,r}	l/kg
Sorption coefficient for ionised species	K _{oc,i}	l/kg
pH value	pH	
acid dissociation constant	pKa	
Fraction of organic carbon in aquifer	foc	fraction
Soil water partition coefficient	Kd 9.90E+00	l/kg

Define dispersivity (click brown cell and use pull down list)

Dispersivities 10%, 1%, 0.1% of pathway length

Variable	Enter value	Calc value Xu & Eckstein	Unit
Longitudinal dispersivity	ax 5.00E+00	5.00E+00	m
Transverse dispersivity	az 5.00E-01	5.00E-01	m
Vertical dispersivity	ay 5.00E-02	5.00E-02	m

Note values of dispersivity must be > 0
For calculated value, assumes ax = 0.1 * x, az = 0.01 * x, ay = 0.001 * x
Xu & Eckstein (1995) report ax = 0.83(log₁₀x)^{0.414}; az = ax/10, ay = ax/100 are assumed



Note graph assumes plume disperses vertically in one direction only. An alternative solution assuming the centre of the plume is located at the mid-depth of the aquifer is presented in the calculation sheets.

Note

This sheet calculates the Level 3 remedial target for groundwater, based on the distance to the receptor or compliance located down hydraulic gradient of the source. Three solution methods are included, the preferred option is Ogata Banks.

By setting a long travel time it will give the steady state solution, which should be used to calculate remedial targets.

The measured groundwater concentration should be compared with the Level 3 remedial target to determine the need for further action. Note if contaminant is not subject to first order degradation, then set half life as 9.0E+99.

This worksheet should be used if pollutant transport and degradation is best described by a first order reaction. If degradation is best described by an electron limited degradation such as oxidation by O₂, NO₃, SO₄ etc than an alternative solution should be used

Calculated concentrations for distance-concentration graph

Distance	Concentration
0	1.6E+00
2.5	1.59E+00
5.0	1.48E+00
7.5	1.38E+00
10.0	1.29E+00
12.5	1.21E+00
15.0	1.13E+00
17.5	1.07E+00
20.0	1.01E+00
22.5	9.59E-01
25.0	9.14E-01
27.5	8.73E-01
30.0	8.36E-01
32.5	8.03E-01
35.0	7.73E-01
37.5	7.45E-01
40.0	7.20E-01
42.5	6.97E-01
45.0	6.75E-01
47.5	6.55E-01
50.0	6.37E-01

Site being assessed:	Pennycroft
Completed by:	R Sutton
Date:	10.12.13
Version:	1

Remedial Targets

Remedial Target	Value	Unit	Notes
Remedial Target	1.28E-01	mg/l	For comparison with measured groundwater concentration.
Ogata Banks	Warning plume offset		
Distance to compliance point	50	m	
Concentration of contaminant at compliance point	6.37E-01	mg/l	Ogata Banks
after	1.0E+100	days	

Care should be used when calculating remedial targets using the time variant options as this may result in an overestimate of the remedial target. The recommended value for time when calculating the remedial target is 9.9E+99.



Hydrogeological risk assessment for land contamination

Remedial Targets Worksheet , Release 3.2

First released: 2006. Version 3.2: January 2013

This worksheet has been produced in combination with the document 'Remedial Targets Methodology: Hydrogeological risk assessment for land contamination (Environment Agency 2006).

Users of this worksheet should always refer to the User Manual to the Remedial Targets Methodology and to relevant guidance on UK legislation and policy, in order to understand how this procedure should be applied in an appropriate context.

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The calculation of equations in this worksheet has been independently checked by Entec (UK) Ltd on behalf of the Environment Agency.

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IMPORTANT: To enable MS Excel worksheet, click Tools, Add Ins, Analysis Tool Pak and Analysis Tool Pak-VBA (to calculate error functions).

Details to be completed for each assessment

Site Name:	Pennycroft		
Site Address:	Uttoxeter		
Completed by:	R Sutton		
Date:	10.12.13	Version:	1
Contaminant	Benzo(a)pyrene		
Target Concentration (C_T)	0.0001	mg/l	Origin of C_T: UKDWS

This worksheet can be used to determine remedial targets for soils (Worksheets Level 1 Soil, Level 2 and Level 3 Soil) or to determine remedial targets for groundwater (Level 3 Groundwater). For Level 3, parameter values must be entered separately dependent on whether the assessment is for soil or groundwater. For soil, remedial targets are calculated as either mg/kg (for comparison with soil measurements) or mg/l (for comparison with leaching tests or pore water concentrations).

Site details entered on this page are automatically copied to Level 1, 2 and 3 Worksheets.

Worksheet options are identified by brown background and employ a pull-down menus. Data entry are identified as blue background.

Data origin / justification should be noted in cells coloured yellow and fully documented in subsequent reports.

Data carried forward from an earlier worksheet are identified by a light green background

It is recommended that a copy of the original worksheet is saved (all data fields in the original copy are blank).

The spreadsheet also includes a porosity calculation worksheet, a soil impact calculation worksheet and a worksheet that performs some simple hydrogeological calculations.

Remedial Targets Worksheet , Release 3.2



Level 1 - Soil

Select the method of calculating the soil water Partition Co-efficient by using the pull down menu below

Calculate for non-polar organic chemicals

Contaminant	Benzo(a)pyrene
Target concentration	C _T 0.0001 mg/l

Input Parameters

Standard entry

Entry if specify partition coefficient (option)

Entry for non-polar organic chemicals (option)

Entry for ionic organic chemicals (option)

Variable	Value	Unit	Source of parameter value
Water filled soil porosity	0.510E-01	fraction	CLEA - DEFAULT
Air filled soil porosity	1.20E-01	fraction	CLEA - DEFAULT
Bulk density of soil zone material	9.40E-01	g/cm ³	CLEA - DEFAULT
Henry's Law constant	4.54E-07	dimensionless	LQM
Soil water partition coefficient		l/kg	RAIS
Fraction of organic carbon (in soil)	2.09E-01	fraction	
Organic carbon partition coefficient	6.01E+00	l/kg	
Sorption coefficient for neutral species		l/kg	
Sorption coefficient for ionised species		l/kg	
pH value		pH units	
Acid dissociation constant			
Fraction of organic carbon (in soil)		fraction	

This sheet calculates the Level 1 remedial target for soils(mg/kg) based on a selected target concentration and theoretical calculation of soil water partitioning. Three options are included for determining the partition coefficient. The measured soil concentration as mg/kg should be compared with the Level 1 remedial target to determine the need for further action.

Soil water partition coefficient used in Level Assessment Kd 1.26E+00 l/kg Calculated value

Level 1 Remedial Target

Level 1 Remedial Target	1.80E-04	mg/kg	(for comparison with soil analyses)
	or		
	0.0001	mg/l	(for comparison with leachate test results)

Site being assessed:	Pennycroft
Completed by:	R Sutton
Date:	10.12.13
Version:	1

Remedial Targets Worksheet , Release 3.2



Level 2 - Soil

Contaminant Target concentration **C_T** **Benzo(a)pyrene** from Level 1
0.0001 mg/l from Level 1

This sheet calculates the Level 2 remedial target for soils (mg/kg) or for pore water (mg/l).

The measured soil concentration as mg/kg or pore water concentration should be compared with the Level 2 remedial target to determine the need for further action. Equations presented in 'Hydrogeological risk assessment for land contamination' (Environment Agency 2006)

Input Parameters	Variable	Value	Unit	Source of parameter value
<i>Standard entry</i>	Infiltration	2.04E-04	m/d	60% hardstanding, 0.3mm/day
	Area of contaminant source	7.47E+03	m ²	Site Area Not used in calculation
<i>Entry for groundwater flow below site</i>	Length of contaminant source in direction of groundwater flow	1.41E+02	m	Site Data
	Saturated aquifer thickness	1.57E+00	m	Site Data
	Hydraulic Conductivity of aquifer in which dilution occurs	1.35E+00	m/d	Site Data
	Hydraulic gradient of water table	9.60E-02	fraction	Site Data
	Width of contaminant source perpendicular to groundwater flow	5.30E+01	m	Site Data Not used in calculation
	Background concentration of contaminant in groundwater beneath site	0.00E+00	mg/l	Site Data
		Calculate		
	Enter mixing zone thickness	Mz	m	
	Calculated mixing zone thickness	1.57E+00	m	

Calculated Parameters

Dilution Factor	DF	8.08E+00		
Level 2 Remedial Target		8.08E-04	mg/l	For comparison with measured pore water concentration. This assumes Level 1 Remedial Target is based on Target Concentration
		or		
		1.45E-03	mg/kg	For comparison with measured soil concentration. This assumes Level 1 Remedial Target calculated from soil-water

Additional option

Calculation of impact on receptor

Concentration of contaminant in contaminated discharge (entering receptor)	Cc	0.00E+00	mg/l	
Calculated concentration within receptor (dilution only)		0.00E+00	mg/l	0

Site being assessed:	Pennycroft
Completed by:	R Sutton
Date:	10.12.13
Version:	1

Remedial Targets Worksheet , Release 3.2

Level 3 - Soil

See Note



Input Parameters	Variable	Value	Unit	Source
Contaminant		Benz(a)pyrene		from Level 1
Target Concentration	Ct	0.0001	mg/l	from Level 1
Dilution Factor	DF	8.00E+00		from Level 2

Enter method of defining partition co-efficient (using pull down list)
 User specified value for partition coefficient

Select analytical solution (click on brown cell below, then on pull-down menu)

Ogata Banks	Equations in HRA publication
-------------	------------------------------

Select nature of decay rate (click on brown cell below, then on pull-down menu)

Approach for simulating degradation of pollutants: Apply degradation rate to dissolved pollutants only

Enter if specify partition coefficient (option)
 Soil water partition coefficient Kd 0.00E+00 l/kg

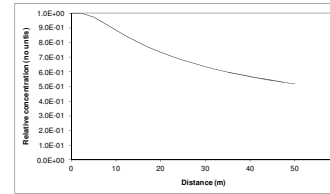
Entry for non-polar organic chemicals (option)
 Fraction of organic carbon in aquifer f_{oc} fraction

Entry for ionic organic chemicals (option)
 Sorption coefficient for related species K_{oc,ion} l/kg

Acid dissociation constant pKa pH

Fraction of organic carbon in aquifer f_{oc} fraction

Soil water partition coefficient Kd 0.00E+00 l/kg



Note: 'Relative concentration' is the ratio of calculated concentration at a given position compared to the source concentration. The calculations assume plume disperses from the top of the aquifer. An alternative solution assuming the centre of the plume is located at the mid-depth of the aquifer is presented in the calculation sheets.

Calculated (relative) concentrations for distance-concentration graph

Distance	Relative concentration (No units)	Concentration mg/l
0	1.0E+00	6.79E-01
2.5	9.98E-01	6.77E-01
5.0	9.74E-01	6.61E-01
7.5	9.30E-01	6.31E-01
10.0	8.84E-01	6.00E-01
12.5	8.40E-01	5.70E-01
15.0	8.00E-01	5.43E-01
17.5	7.65E-01	5.19E-01
20.0	7.33E-01	4.98E-01
22.5	7.05E-01	4.78E-01
25.0	6.80E-01	4.61E-01
27.5	6.57E-01	4.46E-01
30.0	6.36E-01	4.31E-01
32.5	6.16E-01	4.18E-01
35.0	5.99E-01	4.06E-01
37.5	5.83E-01	3.95E-01
40.0	5.68E-01	3.85E-01
42.5	5.54E-01	3.76E-01
45.0	5.41E-01	3.67E-01
47.5	5.29E-01	3.59E-01
50.0	5.18E-01	3.51E-01

Variable	Value	Unit	Source of parameter value
Soil concentration as mg/kg			
Enter soil concentration	9.98	mg/kg	
Half life for degradation of contaminant in water	9.00E+99	days	
Calculated decay rate	7.70E-101	days ⁻¹	calculated
Width of plume in aquifer at source	5.30E+01	m	from Level 2
Plume thickness in aquifer at source	1.57E+00	m	from Level 2
Bulk density of aquifer materials	9.40E-01	g/cm ³	CLEA
Effective porosity of aquifer	2.00E-01	fraction	Assumed
Hydraulic gradient	1.10E-01	fraction	from Level 2 (adjusted)
Hydraulic conductivity of saturated aquifer	1.35E+00	m/d	from Level 2
Distance to compliance point	5.00E+01	m	Default
Distance (lateral) to compliance point perpendicular to flow direction		m	
Distance (depth) to compliance point perpendicular to flow direction		m	
Time since pollutant entered groundwater	1.00E+99	days	time variant options only
Partition coefficient	0.00E+00	l/kg	see options
Longitudinal dispersivity	5.000	m	see options
Transverse dispersivity	0.500	m	see options
Vertical dispersivity	0.050	m	see options

Define dispersivity (click brown cell and use pull down list)
 Dispersivities 10%, 1%, 0.1% of pathway length

	Enter value	Calc value	Xu & Eckstein
Longitudinal dispersivity	ax	5.00E+00	2.89E+00 m
Transverse dispersivity	az	0.00E+00	5.00E-01 m
Vertical dispersivity	ay	0.00E+00	5.00E-02 m

Note values of dispersivity must be > 0
 Xu & Eckstein (1995) report ax = 0.83(log₁₀)^{2.14}; az = ax/10, ay = ax/100 are assumed

Note
 This worksheet should be used if pollutant transport and degradation is best described by a first order reaction. If degradation is best described by an electron limited degradation such as oxidation by O₂, NO₃⁻, SO₄²⁻ etc than an alternative solution should be used

This sheet calculates the Level 3 remedial target for soils(mg/kg) or for pore water (mg/l), based on the distance to the receptor or compliance located down hydraulic gradient of the source. Three solution methods are included, the preferred option is Ogata Banks. By setting a long travel time (e.g. 9E99) it will give the steady state solution, which should always be used when calculating remedial targets.

The measured soil concentration as mg/kg or pore water concentration should be compared with the Level 3 remedial target to determine the need for further action.

Note if contaminant is not subject to first order degradation, then set half life as 9.9E+99.

Site being assessed:	Pennycroft
Completed by:	R Sutton
Date:	10.12.13
Version:	1

Calculated Parameters	Variable	Value	Unit
Groundwater flow velocity	v	7.40E-01	m/d
Retardation factor	Rf	1.00E+00	fraction
Decay rate used	λ	7.70E-101	d ⁻¹
Hydraulic gradient used in aquifer flow down-gradient	i	1.10E-01	fraction
Rate of contaminant flow due to retardation	u	7.40E-01	m/d
Ratio of Compliance Point to Source Concentration	C ₂₀ /C ₀	5.18E-01	fraction
Attenuation factor (C ₂₀ /C ₀)	AF	1.93E+00	fraction
Calculated soil leachate concentration	C ₀	5.48E+00	mg/l

Remedial Targets

Level 3 Remedial Target	1.56E-03	mg/l	For comparison with measured pore water concentration.
Ogata Banks	or		This assumes Level 1 Remedial Target is based on Target Concentration.
Distance to compliance point	2.81E-03	mg/kg	For comparison with measured soil concentration. This assumes Level 1 Remedial Target calculated from soil-water partitioning equation.
Ratio of Compliance Point to Source Concentration	C ₂₀ /C ₀	5.18E-01	fraction

Care should be used when calculating remedial targets using the time variant options as this may result in an overestimate of the remedial target. The recommended value for time when calculating the remedial target is 9.9E+99

R&D Publication 20 Remedial Targets Worksheet, Release 3.2



Level 3 - Groundwater

See Note

Input Parameters (using pull down menu)

Contaminant	Benzo(a)pyrene	From Level 1
Target Concentration	1.00E-04	mg/l

Select analytical solution (click on brown cell below, then on pull-down menu)

Ogata Banks Equations in HRA publication

Approach for simulating vertical dispersion: Simulate vertical dispersion in 1 direction

Select nature of decay rate (click on brown cell below, then on pull-down menu)

Approach for simulating degradation of pollutants: Apply degradation rate to dissolved pollutants only

Variable	Value	Unit	Source of parameter value
Initial contaminant concentration in groundwater at plume core	6.30E-03	mg/l	Site Data
Half life for degradation of contaminant in water	9.00E+99	days	assumed
Calculated decay rate	7.70E-101	days ⁻¹	
Width of plume in aquifer at source (perpendicular to flow)	5.30E+01	m	Site Data
Plume thickness at source	1.46E+00	m	Site Data
Saturated aquifer thickness	1.57E+00	m	Site Data
Bulk density of aquifer materials	9.40E-01	g/cm ³	C/EA
Effective porosity of aquifer	2.00E-01	fraction	C/EA
Hydraulic gradient	9.60E-02	fraction	Site Data
Hydraulic conductivity of aquifer	1.95E+00	m/d	Site Data
Distance to compliance point	5.00E+01	m	Site Data
Distance (lateral) to compliance point perpendicular to flow direction	2.00E+01	m	Site Data
Distance (depth) to compliance point perpendicular to flow direction	5.00E-01	m	Site Data
Time since pollutant entered groundwater	1.00E+100	days	time variant options only
Parameters values determined from options			
Partition coefficient	1.26E+00	l/kg	see options
Longitudinal dispersivity	5.00E+00	m	see options
Transverse dispersivity	5.00E-01	m	see options
Vertical dispersivity	5.00E-02	m	see options

Calculated Parameters

Variable	Value	Unit
Groundwater flow velocity	6.48E-01	m/d
Retardation factor	6.90E+00	fraction
Decay rate used	1.12E-101	d ⁻¹
Rate of contaminant flow due to retardation	9.39E-02	m/d
Contaminant concentration at distance x, assuming one-way vertical dispersion	2.46E-03	mg/l
Attenuation factor (one way vertical dispersion, CO/CED)	2.56E+00	

Select Method for deriving Partition Co-efficient (using pull down menu)

Calculate for non-polar organic chemicals

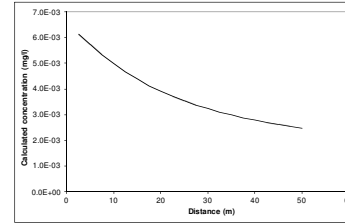
Soil water partition coefficient	Kd	l/kg
Entry for non-polar organic chemicals (option)	foc	2.09E-01
Fraction of organic carbon in aquifer	foc	6.01E+00
Organic carbon partition coefficient	Koc	l/kg
Entry for ionic organic chemicals (option)	K _{ow,0}	l/kg
Sorption coefficient for related species	K _{oc,0}	l/kg
Sorption coefficient for ionised species	K _{oc,i}	l/kg
pH value	pH	
acid dissociation constant	pKa	
Fraction of organic carbon in aquifer	foc	
Soil water partition coefficient	Kd	1.26E+00

Define dispersivity (click brown cell and use pull down list)

Dispersivities 10%, 1%, 0.1% of pathway length

Variable	Enter value	Calc value Xu & Eckstein	Unit
Longitudinal dispersivity	ax	5.00E+00	m
Transverse dispersivity	az	5.00E-01	m
Vertical dispersivity	ay	5.00E-02	m

Note values of dispersivity must be > 0
For calculated value, assumes ax = 0.1 * x, az = 0.01 * x, ay = 0.001 * x
Xu & Eckstein (1995) report ax = 0.83(log₁₀x)²⁺¹⁴; az = ax/10, ay = ax/100 are assumed



Note graph assumes plume disperses vertically in one direction only. An alternative solution assuming the centre of the plume is located at the mid-depth of the aquifer is presented in the calculation sheets.

Note

This sheet calculates the Level 3 remedial target for groundwater, based on the distance to the receptor or compliance located down hydraulic gradient of the source. Three solution methods are included, the preferred option is Ogata Banks.

By setting a long travel time it will give the steady state solution, which should be used to calculate remedial targets.

The measured groundwater concentration should be compared with the Level 3 remedial target to determine the need for further action. Note if contaminant is not subject to first order degradation, then set half life as 9.0E+99.

This worksheet should be used if pollutant transport and degradation is best described by a first order reaction. If degradation is best described by an electron limited degradation such as oxidation by O₂, NO₃, SO₄ etc than an alternative solution should be used

Calculated concentrations for distance-concentration graph

Ogata Banks
From calculation sheet

Distance	Concentration
0	6.3E-03
2.5	6.13E-03
5.0	5.72E-03
7.5	5.34E-03
10.0	4.98E-03
12.5	4.66E-03
15.0	4.38E-03
17.5	4.13E-03
20.0	3.90E-03
22.5	3.71E-03
25.0	3.53E-03
27.5	3.37E-03
30.0	3.23E-03
32.5	3.10E-03
35.0	2.99E-03
37.5	2.88E-03
40.0	2.78E-03
42.5	2.69E-03
45.0	2.61E-03
47.5	2.53E-03
50.0	2.46E-03

Site being assessed: Pennycroft
Completed by: R Sutton
Date: 10.12.13
Version: 1

Remedial Targets

Remedial Target	Value	Unit	Notes
Remedial Target	2.56E-04	mg/l	For comparison with measured groundwater concentration.
Ogata Banks	Warning plume offset		
Distance to compliance point	50	m	
Concentration of contaminant at compliance point	2.46E-03	mg/l	Ogata Banks
alter	1.0E+100	days	

Care should be used when calculating remedial targets using the time variant options as this may result in an overestimate of the remedial target. The recommended value for time when calculating the remedial target is 9.9E+99.



Hydrogeological risk assessment for land contamination

Remedial Targets Worksheet , Release 3.2

First released: 2006. Version 3.2: January 2013

This worksheet has been produced in combination with the document 'Remedial Targets Methodology: Hydrogeological risk assessment for land contamination (Environment Agency 2006).

Users of this worksheet should always refer to the User Manual to the Remedial Targets Methodology and to relevant guidance on UK legislation and policy, in order to understand how this procedure should be applied in an appropriate context.

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The calculation of equations in this worksheet has been independently checked by Entec (UK) Ltd on behalf of the Environment Agency.

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IMPORTANT: To enable MS Excel worksheet, click Tools, Add -Ins, Analysis Tool Pak and Analysis Tool Pak-VBA (to calculate error functions).

Details to be completed for each assessment

Site Name:	Pennycroft		
Site Address:	Uttoxeter		
Completed by:	R Sutton		
Date:	10.12.13	Version:	1
Contaminant	Benzene		
Target Concentration (C_T)	0.001	mg/l	Origin of C_T: UKDWS

This worksheet can be used to determine remedial targets for soils (Worksheets Level 1 Soil, Level 2 and Level 3 Soil) or to determine remedial targets for groundwater (Level 3 Groundwater). For Level 3, parameter values must be entered separately dependent on whether the assessment is for soil or groundwater. For soil, remedial targets are calculated as either mg/kg (for comparison with soil measurements) or mg/l (for comparison with leaching tests or pore water concentrations).

Site details entered on this page are automatically copied to Level 1, 2 and 3 Worksheets.

Worksheet options are identified by brown background and employ a pull-down menus. Data entry are identified as blue background.

Data origin / justification should be noted in cells coloured yellow and fully documented in subsequent reports.

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It is recommended that a copy of the original worksheet is saved (all data fields in the original copy are blank).

The spreadsheet also includes a porosity calculation worksheet, a soil impact calculation worksheet and a worksheet that performs some simple hydrogeological calculations.

Remedial Targets Worksheet , Release 3.2

Level 1 - Soil



Select the method of calculating the soil water Partition Co-efficient by using the pull down menu below

Calculate for non-polar organic chemicals

Contaminant	Benzene
Target concentration	C _T 0.001 mg/l

Input Parameters

Standard entry

Entry if specify partition coefficient (option)

Entry for non-polar organic chemicals (option)

Entry for ionic organic chemicals (option)

Variable	Value	Unit	Source of parameter value
Water filled soil porosity	0.510E-01	fraction	CLEA - DEFAULT
Air filled soil porosity	1.20E-01	fraction	CLEA - DEFAULT
Bulk density of soil zone material	9.40E-01	g/cm ³	CLEA - DEFAULT
Henry's Law constant	1.16E-01	dimensionless	LQM
Soil water partition coefficient		l/kg	
Fraction of organic carbon (in soil)	2.09E-01	fraction	Site data
Organic carbon partition coefficient	1.83E+00	l/kg	LQM
Sorption coefficient for neutral species		l/kg	
Sorption coefficient for ionised species		l/kg	
pH value		pH units	
Acid dissociation constant			
Fraction of organic carbon (in soil)		fraction	

This sheet calculates the Level 1 remedial target for soils(mg/kg) based on a selected target concentration and theoretical calculation of soil water partitioning. Three options are included for determining the partition coefficient. The measured soil concentration as mg/kg should be compared with the Level 1 remedial target to determine the need for further action.

Soil water partition coefficient used in Level Assessment Kd 3.82E-01 l/kg Calculated value

Level 1 Remedial Target

Level 1 Remedial Target	9.40E-04	mg/kg	(for comparison with soil analyses)
	or		
	0.001	mg/l	(for comparison with leachate test results)

Site being assessed:	Pennycroft
Completed by:	R Sutton
Date:	10.12.13
Version:	1

Remedial Targets Worksheet , Release 3.2



Level 2 - Soil

Contaminant Target concentration	C _T	Benzene	from Level 1
		0.001	mg/l from Level 1

This sheet calculates the Level 2 remedial target for soils (mg/kg) or for pore water (mg/l).

The measured soil concentration as mg/kg or pore water concentration should be compared with the Level 2 remedial target to determine the need for further action. Equations presented in 'Hydrogeological risk assessment for land contamination' (Environment Agency 2006)

Input Parameters	Variable	Value	Unit	Source of parameter value
<i>Standard entry</i>	Infiltration	2.04E-04	m/d	60% hardstanding, 0.3mm/day
	Area of contaminant source	7.47E+03	m ²	Site Area Not used in calculation
<i>Entry for groundwater flow below site</i>	Length of contaminant source in direction of groundwater flow	1.41E+02	m	Site Data
	Saturated aquifer thickness	1.57E+00	m	Site Data
	Hydraulic Conductivity of aquifer in which dilution occurs	1.35E+00	m/d	Site Data
	Hydraulic gradient of water table	9.60E-02	fraction	Site Data
	Width of contaminant source perpendicular to groundwater flow	5.30E+01	m	Site Data Not used in calculation
	Background concentration of contaminant in groundwater beneath site	0.00E+00	mg/l	Site Data
		Calculate		
	Enter mixing zone thickness		m	
	Calculated mixing zone thickness	1.57E+00	m	

Calculated Parameters

Dilution Factor	DF	8.08E+00		
Level 2 Remedial Target		8.08E-03	mg/l	For comparison with measured pore water concentration. This assumes Level 1 Remedial Target is based on Target Concentration
		7.59E-03	mg/kg	For comparison with measured soil concentration. This assumes Level 1 Remedial Target calculated from soil-water

Additional option

Calculation of impact on receptor

Concentration of contaminant in contaminated discharge (entering receptor)	C _c	0.00E+00	mg/l	
Calculated concentration within receptor (dilution only)		0.00E+00	mg/l	0

Site being assessed:	Pennycroft
Completed by:	R Sutton
Date:	10.12.13
Version:	1

Remedial Targets Worksheet , Release 3.2

Level 3 - Soil

See Note



Input Parameters	Variable	Value	Unit	Source
Contaminant		Benzene		from Level 1
Target Concentration	Ct	0.001	mg/l	from Level 1
Dilution Factor	DF	8.08E+00		from Level 2

Enter method of defining partition co-efficient (using pull down list)
User specified value for partition coefficient

Select analytical solution (click on brown cell below, then on pull-down menu)

Ogata Banks	Equations in HRA publication
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Select nature of decay rate (click on brown cell below, then on pull-down menu)

Approach for simulating degradation of pollutants: Apply degradation rate to dissolved pollutants only

Variable	Value	Unit	Source of parameter value
Soil concentration as mg/kg			
Enter soil concentration	11.887	mg/kg	
Half life for degradation of contaminant in water	9.00E+99	days	
Calculated decay rate	7.70E-101	days ⁻¹	calculated
Width of plume in aquifer at source	5.30E+01	m	from Level 2
Plume thickness in aquifer at source	1.57E+00	m	from Level 2
Bulk density of aquifer materials	9.40E-01	g/cm ³	CLEA
Effective porosity of aquifer	2.00E-01	fraction	Assumed
Hydraulic gradient	1.10E-01	fraction	from Level 2 (adjusted)
Hydraulic conductivity of saturated aquifer	1.35E+00	m/d	from Level 2
Distance to compliance point	5.00E+01	m	Default
Distance (lateral) to compliance point perpendicular to flow direction		m	
Distance (depth) to compliance point perpendicular to flow direction		m	
Time since pollutant entered groundwater	1.00E+99	days	time variant options only
Parameters values determined from options			
Partition coefficient	Kd	0.00E+00	l/kg see options
Longitudinal dispersivity	ax	5.000	m see options
Transverse dispersivity	ay	0.500	m see options
Vertical dispersivity	ay	0.050	m see options

Parameter values should be checked against Level 1 and 2

Calculated Parameters

Variable	Value	Unit
Groundwater flow velocity	7.40E-01	m/d
Retardation factor	1.00E+00	fraction
Decay rate used	7.70E-101	d ⁻¹
Hydraulic gradient used in aquifer flow down-gradient	1.10E-01	fraction
Rate of contaminant flow due to retardation	7.40E-01	m/d
Ratio of Compliance Point to Source Concentration	5.18E-01	fraction
Attenuation factor (C ₀ /C ₁)	1.93E+00	fraction
Calculated soil leachate concentration	1.26E+01	mg/l

Remedial Targets

Level 3 Remedial Target	Value	Unit	Notes
Ogata Banks	1.56E-02	mg/l	For comparison with measured pore water concentration. This assumes Level 1 Remedial Target is based on Target Concentration.
Distance to compliance point	50	m	For comparison with measured soil concentration. This assumes Level 1 Remedial Target calculated from soil-water partitioning equation.
Ratio of Compliance Point to Source Concentration	C ₀ /C ₁	5.18E-01	fraction

Enter method of defining partition co-efficient (using pull down list)

User specified value for partition coefficient

Enter method of defining partition co-efficient (using pull down list)

User specified value for partition coefficient

Enter method of defining partition co-efficient (using pull down list)

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User specified value for partition coefficient

Enter method of defining partition co-efficient (using pull down list)

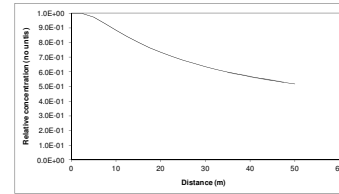
User specified value for partition coefficient

Enter method of defining partition co-efficient (using pull down list)

User specified value for partition coefficient

Enter method of defining partition co-efficient (using pull down list)

User specified value for partition coefficient



Note: 'Relative concentration' is the ratio of calculated concentration at a given position compared to the source concentration. The calculations assume plume disperses from the top of the aquifer. An alternative solution assuming the centre of the plume is located at the mid-depth of the aquifer is presented in the calculation sheets.

Calculated (relative) concentrations for distance-concentration graph

Distance	Relative concentration (No units)	Concentration mg/l
0	1.0E+00	1.57E+00
2.5	9.98E-01	1.56E+00
5.0	9.74E-01	1.52E+00
7.5	9.30E-01	1.46E+00
10.0	8.84E-01	1.38E+00
12.5	8.40E-01	1.32E+00
15.0	8.00E-01	1.25E+00
17.5	7.65E-01	1.20E+00
20.0	7.33E-01	1.15E+00
22.5	7.05E-01	1.10E+00
25.0	6.80E-01	1.06E+00
27.5	6.57E-01	1.03E+00
30.0	6.36E-01	9.95E-01
32.5	6.16E-01	9.65E-01
35.0	5.99E-01	9.38E-01
37.5	5.83E-01	9.12E-01
40.0	5.68E-01	8.89E-01
42.5	5.54E-01	8.67E-01
45.0	5.41E-01	8.47E-01
47.5	5.29E-01	8.28E-01
50.0	5.18E-01	8.10E-01

This sheet calculates the Level 3 remedial target for soils (mg/kg) or for pore water (mg/l), based on the distance to the receptor or compliance located down hydraulic gradient of the source. Three solution methods are included, the preferred option is Ogata Banks. By setting a long travel time (e.g. 9E99) it will give the steady state solution, which should always be used when calculating remedial targets.

The measured soil concentration as mg/kg or pore water concentration should be compared with the Level 3 remedial target to determine the need for further action.

Note if contaminant is not subject to first order degradation, then set half life as 9.9E+99.

Site being assessed:	Pennycroft
Completed by:	R Sutton
Date:	10.12.13
Version:	1

R&D Publication 20 Remedial Targets Worksheet, Release 3.2



Level 3 - Groundwater

See Note

Input Parameters (using pull down menu)

Variable	Value	Unit	Source
Contaminant	Benzene		from Level 1
Target Concentration	C _T 1.00E-03	mg/l	from Level 1

Select analytical solution (click on brown cell below, then on pull-down menu)

Ogata Banks	Equations in HRA publication
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Approach for simulating vertical dispersion: Simulate vertical dispersion in 1 direction

Select nature of decay rate (click on brown cell below, then on pull-down menu)

Approach for simulating degradation of pollutants: Apply degradation rate to dissolved pollutants only

Variable	Value	Unit	Source of parameter value
Initial contaminant concentration in groundwater at plume core	C ₀ 3.84E-01	mg/l	Site Data
Half life for degradation of contaminant in water	t _{1/2} 9.00E+99	days	assumed
Calculated decay rate	λ 7.70E-101	days ⁻¹	
Width of plume in aquifer at source (perpendicular to flow)	Sz 5.30E+01	m	Site Data
Plume thickness at source	Sy 1.46E+00	m	Site Data
Saturated aquifer thickness	da 1.57E+00	m	Site Data
Bulk density of aquifer materials	p 9.40E-01	g/cm ³	CLEA
Effective porosity of aquifer	n 2.00E-01	fraction	CLEA
Hydraulic gradient	i 9.60E-02	fraction	Site Data
Hydraulic conductivity of aquifer	K 1.95E+00	m/d	Site Data
Distance to compliance point	x 5.00E+01	m	Site Data
Distance (lateral) to compliance point perpendicular to flow direction	z 2.00E+01	m	Site Data
Distance (depth) to compliance point perpendicular to flow direction	y 5.00E-01	m	Site Data
Time since pollutant entered groundwater	t 1.00E+100	days	time variant options only
<i>Parameters values determined from options</i>			
Partition coefficient	Kd 3.82E-01	l/kg	see options
Longitudinal dispersivity	ax 5.00E+00	m	see options
Transverse dispersivity	az 5.00E-01	m	see options
Vertical dispersivity	ay 5.00E-02	m	see options

Calculated Parameters

Variable	Value	Unit
Groundwater flow velocity	v 6.48E-01	m/d
Retardation factor	Rf 2.80E+00	fraction
Decay rate used	λ 2.75E-101	d ⁻¹
Rate of contaminant flow due to retardation	U 2.32E-01	m/d
Contaminant concentration at distance x, assuming one-way vertical dispersion	C _{2D} 1.50E-01	mg/l
Attenuation factor (one way vertical dispersion, CO/CED)	AF 2.56E+00	

Remedial Targets

Remedial Target	Value	Unit	Notes
Remedial Target	2.56E-03	mg/l	For comparison with measured groundwater concentration.
Ogata Banks	Warning plume offset		
Distance to compliance point	50	m	
Concentration of contaminant at compliance point after	C _{ED} /C ₀ 1.50E-01	mg/l	Ogata Banks
	1.0E+100	days	

Care should be used when calculating remedial targets using the time variant options as this may result in an overestimate of the remedial target. The recommended value for time when calculating the remedial target is 9.9E+99.

Select Method for deriving Partition Co-efficient (using pull down menu)

Calculate for non-polar organic chemicals

Entry if specify partition coefficient (option)

Soil water partition coefficient	Kd		l/kg
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Entry for non-polar organic chemicals (option)

Fraction of organic carbon in aquifer	foc	2.09E-01	fraction
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Entry for ionic organic chemicals (option)

Organic carbon partition coefficient	K _{oc}	1.83E+00	l/kg
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Entry for ionic organic chemicals (option)

Sorption coefficient for related species	K _{ow,0}		l/kg
Sorption coefficient for ionised species	K _{ow,i}		l/kg
pH value	pH		
acid dissociation constant	pKa		
Fraction of organic carbon in aquifer	foc		fraction
Soil water partition coefficient	Kd	3.82E-01	l/kg

Define dispersivity (click brown cell and use pull down list)

Dispersivities 10%, 1%, 0.1% of pathway length

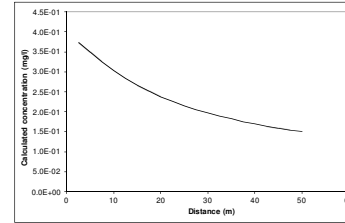
Enter value	Calc value	Xu & Eckstein	Unit
ax	5.00E+00	5.00E+00	m
az	5.00E-01	5.00E-01	m
ay	5.00E-02	5.00E-02	m

Longitudinal dispersivity

Transverse dispersivity

Vertical dispersivity

Note values of dispersivity must be > 0
For calculated value, assumes ax = 0.1 * x, az = 0.01 * z, ay = 0.001 * y
Xu & Eckstein (1995) report ax = 0.83(log₁₀x)^{2+1.1}; az = ax/10, ay = ax/100 are assumed



Note graph assumes plume disperses vertically in one direction only. An alternative solution assuming the centre of the plume is located at the mid-depth of the aquifer is presented in the calculation sheets.

Note

This sheet calculates the Level 3 remedial target for groundwater, based on the distance to the receptor or compliance located down hydraulic gradient of the source. Three solution methods are included, the preferred option is Ogata Banks.

By setting a long travel time it will give the steady state solution, which should be used to calculate remedial targets.

The measured groundwater concentration should be compared with the Level 3 remedial target to determine the need for further action. Note if contaminant is not subject to first order degradation, then set half life as 9.0E+99.

This worksheet should be used if pollutant transport and degradation is best described by a first order reaction. If degradation is best described by an electron limited degradation such as oxidation by O₂, NO₃, SO₄ etc than an alternative solution should be used

Calculated concentrations for distance-concentration graph

Ogata Banks	mg/l
From calculation sheet	
Distance	Concentration
0	3.8E-01
2.5	3.73E-01
5.0	3.49E-01
7.5	3.25E-01
10.0	3.04E-01
12.5	2.84E-01
15.0	2.67E-01
17.5	2.51E-01
20.0	2.38E-01
22.5	2.26E-01
25.0	2.15E-01
27.5	2.06E-01
30.0	1.97E-01
32.5	1.89E-01
35.0	1.82E-01
37.5	1.76E-01
40.0	1.70E-01
42.5	1.64E-01
45.0	1.59E-01
47.5	1.54E-01
50.0	1.50E-01

Site being assessed:	Pennycroft
Completed by:	R Sutton
Date:	10.12.13
Version:	1



Hydrogeological risk assessment for land contamination

Remedial Targets Worksheet , Release 3.2

First released: 2006. Version 3.2: January 2013

This worksheet has been produced in combination with the document 'Remedial Targets Methodology: Hydrogeological risk assessment for land contamination (Environment Agency 2006).

Users of this worksheet should always refer to the User Manual to the Remedial Targets Methodology and to relevant guidance on UK legislation and policy, in order to understand how this procedure should be applied in an appropriate context.

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The calculation of equations in this worksheet has been independently checked by Entec (UK) Ltd on behalf of the Environment Agency.

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IMPORTANT: To enable MS Excel worksheet, click Tools, Add Ins, Analysis Tool Pak and Analysis Tool Pak-VBA (to calculate error functions).

Details to be completed for each assessment

Site Name:	Pennycroft		
Site Address:	Uttoxeter		
Completed by:	R Sutton		
Date:	10.12.13	Version:	1
Contaminant	Cyanide		
Target Concentration (C_T)	0.05	mg/l	Origin of C_T: UKDWS

This worksheet can be used to determine remedial targets for soils (Worksheets Level 1 Soil, Level 2 and Level 3 Soil) or to determine remedial targets for groundwater (Level 3 Groundwater). For Level 3, parameter values must be entered separately dependent on whether the assessment is for soil or groundwater. For soil, remedial targets are calculated as either mg/kg (for comparison with soil measurements) or mg/l (for comparison with leaching tests or pore water concentrations).

Site details entered on this page are automatically copied to Level 1, 2 and 3 Worksheets.

Worksheet options are identified by brown background and employ a pull-down menus. Data entry are identified as blue background.

Data origin / justification should be noted in cells coloured yellow and fully documented in subsequent reports.

Data carried forward from an earlier worksheet are identified by a light green background

It is recommended that a copy of the original worksheet is saved (all data fields in the original copy are blank).

The spreadsheet also includes a porosity calculation worksheet, a soil impact calculation worksheet and a worksheet that performs some simple hydrogeological calculations.

Remedial Targets Worksheet , Release 3.2



Level 1 - Soil

Select the method of calculating the soil water Partition Co-efficient by using the pull down menu below

User specified value for partition coefficient

Contaminant	Cyanide
Target concentration	C _T 0.05 mg/l

Input Parameters

Standard entry

Variable	Value	Unit	Source of parameter value
Water filled soil porosity	0.51	fraction	CLEA - DEFAULT
Air filled soil porosity	0.49	fraction	CLEA - DEFAULT
Bulk density of soil zone material	2.65	g/cm ³	CLEA - DEFAULT
Henry's Law constant	1.00E+00	dimensionless	LQM

This sheet calculates the Level 1 remedial target for soils(mg/kg) based on a selected target concentration and theoretical calculation of soil water partitioning. Three options are included for determining the partition coefficient. The measured soil concentration as mg/kg should be compared with the Level 1 remedial target to determine the need for further action.

Entry if specify partition coefficient (option)

Soil water partition coefficient	K _d	9.90E+00	l/kg	RAIS
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Entry for non-polar organic chemicals (option)

Fraction of organic carbon (in soil)	f _{oc}		fraction	
Organic carbon partition coefficient	K _{oc}		l/kg	

Entry for ionic organic chemicals (option)

Sorption coefficient for neutral species	K _{oc,n}		l/kg	
Sorption coefficient for ionised species	K _{oc,i}		l/kg	
pH value	pH		pH units	
Acid dissociation constant	pKa			
Fraction of organic carbon (in soil)	f _{oc}		fraction	

Soil water partition coefficient used in Level Assessment K_d 9.90E+00 l/kg Specified value

Level 1 Remedial Target

Level 1 Remedial Target	5.22E-01	mg/kg	(for comparison with soil analyses)
	or		
	0.05	mg/l	(for comparison with leachate test results)

Site being assessed:	Pennycroft
Completed by:	R Sutton
Date:	10.12.13
Version:	1

Remedial Targets Worksheet , Release 3.2



Level 2 - Soil

Contaminant Target concentration C_T **Cyanide** 0.05 mg/l from Level 1

This sheet calculates the Level 2 remedial target for soils (mg/kg) or for pore water (mg/l).

The measured soil concentration as mg/kg or pore water concentration should be compared with the Level 2 remedial target to determine the need for further action. Equations presented in 'Hydrogeological risk assessment for land contamination' (Environment Agency 2006)

Input Parameters	Variable	Value	Unit	Source of parameter value
<i>Standard entry</i>	Infiltration	2.04E-04	m/d	60% hardstanding, 0.3mm/day
	Area of contaminant source	7.47E+03	m ²	Site Area Not used in calculation
<i>Entry for groundwater flow below site</i>	Length of contaminant source in direction of groundwater flow	1.41E+02	m	Site Data
	Saturated aquifer thickness	1.57E+00	m	Site Data
	Hydraulic Conductivity of aquifer in which dilution occurs	1.35E+00	m/d	Site Data
	Hydraulic gradient of water table	9.60E-02	fraction	Site Data
	Width of contaminant source perpendicular to groundwater flow	5.30E+01	m	Site Data Not used in calculation
	Background concentration of contaminant in groundwater beneath site	0.00E+00	mg/l	Site Data
		Calculate		
	Enter mixing zone thickness		m	
	Calculated mixing zone thickness	1.57E+00	m	

Calculated Parameters

Dilution Factor	DF	8.08E+00		
Level 2 Remedial Target		4.04E-01	mg/l	For comparison with measured pore water concentration. This assumes Level 1 Remedial Target is based on Target Concentration
		4.22E+00	mg/kg	For comparison with measured soil concentration. This assumes Level 1 Remedial Target calculated from soil-water

Additional option

Calculation of impact on receptor

Concentration of contaminant in contaminated discharge (entering receptor)	Cc	0.00E+00	mg/l	
Calculated concentration within receptor (dilution only)		0.00E+00	mg/l	0

Site being assessed:	Pennycroft
Completed by:	R Sutton
Date:	10.12.13
Version:	1

Remedial Targets Worksheet , Release 3.2

Level 3 - Soil

See Note



Input Parameters	Variable	Value	Unit	Source
Contaminant	Cyanide			from Level 1
Target Concentration	Ct	0.05	mg/l	from Level 1
Dilution Factor	DF	8.00E+00		from Level 2

Enter method of defining partition co-efficient (using pull down list)
 User specified value for partition coefficient

Select analytical solution (click on brown cell below, then on pull-down menu)

Ogata Banks	Equations in HRA publication
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Enter if specify partition coefficient (option)

Soil water partition coefficient Kd 0.00E+00 l/kg

Entry for non-polar organic chemicals (option)

Fraction of organic carbon in aquifer f_{oc}

Organic carbon partition coefficient K_{oc}

Entry for ionic organic chemicals (option)

Sorption coefficient for related species K_{oc,i}

Sorption coefficient for ionised species K_{oc,i}

pH value pH

Acid dissociation constant pKa

Fraction of organic carbon in aquifer f_{oc}

Soil water partition coefficient Kd 0.00E+00 l/kg

Select nature of decay rate (click on brown cell below, then on pull-down menu)

Approach for simulating degradation of pollutants:

Apply degradation rate to dissolved pollutants only

Define dispersivity (click brown cell and use pull down list)

Dispersivities 10%, 1%, 0.1% of pathway length

Variable	Value	Unit	Source of parameter value
Enter soil concentration	22100	mg/kg	Soil concentration as mg/kg
Enter half life for degradation of contaminant in water	9.00E+99	days	
Calculated decay rate	7.70E-101	days ⁻¹	calculated
Width of plume in aquifer at source	5.30E+01	m	from Level 2
Plume thickness in aquifer at source	1.57E+00	m	from Level 2
Bulk density of aquifer materials	9.40E-01	g/cm ³	CLEA
Effective porosity of aquifer	2.00E-01	fraction	Assumed
Hydraulic gradient	1.10E-01	fraction	from Level 2 (adjusted)
Hydraulic conductivity of saturated aquifer	1.35E+00	m/d	from Level 2
Distance to compliance point	5.00E+01	m	Default
Distance (lateral) to compliance point perpendicular to flow direction		m	
Distance (depth) to compliance point perpendicular to flow direction		m	
Time since pollutant entered groundwater	1.00E+99	days	time variant options only
Partition coefficient	0.00E+00	l/kg	see options
Longitudinal dispersivity	5.000	m	see options
Transverse dispersivity	0.500	m	see options
Vertical dispersivity	0.050	m	see options

Parameter values should be checked against Level 1 and 2

Calculated Parameters

Variable	Value	Unit
Groundwater flow velocity	7.40E-01	m/d
Retardation factor	1.00E+00	fraction
Decay rate used	7.70E-101	d ⁻¹
Hydraulic gradient used in aquifer flow down-gradient	1.10E-01	fraction
Rate of contaminant flow due to retardation	7.40E-01	m/d
Ratio of Compliance Point to Source Concentration	5.18E-01	fraction
Attenuation factor (C ₀ /C _s)	1.93E+00	fraction
Calculated soil leachate concentration	2.12E+03	mg/l

Remedial Targets

Remedial Target	Value	Unit	Notes
Level 3 Remedial Target	7.80E-01	mg/l	For comparison with measured pore water concentration.
Ogata Banks	8.15E+00	mg/kg	This assumes Level 1 Remedial Target is based on Target Concentration.
Distance to compliance point	50	m	assumes Level 1 Remedial Target calculated from soil-water partitioning equation.
Ratio of Compliance Point to Source Concentration	C ₀ /C _s	5.18E-01	fraction

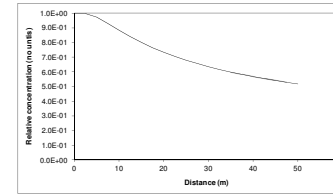
Care should be used when calculating remedial targets using the time variant options as this may result in an overestimate of the remedial target. The recommended value for time when calculating the remedial target is 9.9E+99

Note

This worksheet should be used if pollutant transport and degradation is best described by a first order reaction. If degradation is best described by an electron limited degradation such as oxidation by O₂, NO₃⁻, SO₄²⁻ etc than an alternative solution should be used

Note values of dispersivity must be > 0

Xu & Eckstein (1995) report ax = 0.83/(log₁₀X)²⁺¹⁴; az = ax/10, ay = ax/100 are assumed



Note: 'Relative concentration' is the ratio of calculated concentration at a given position compared to the source concentration. The calculations assume plume disperses from the top of the aquifer. An alternative solution assuming the centre of the plume is located at the mid-depth of the aquifer is presented in the calculation sheets.

Calculated (relative) concentrations for distance-concentration graph

Distance	Relative concentration (No units)	Concentration mg/l
0	1.0E+00	2.62E+02
2.5	9.98E-01	2.62E+02
5.0	9.74E-01	2.55E+02
7.5	9.30E-01	2.44E+02
10.0	8.84E-01	2.32E+02
12.5	8.40E-01	2.20E+02
15.0	8.00E-01	2.10E+02
17.5	7.65E-01	2.00E+02
20.0	7.33E-01	1.92E+02
22.5	7.05E-01	1.85E+02
25.0	6.80E-01	1.78E+02
27.5	6.57E-01	1.72E+02
30.0	6.36E-01	1.67E+02
32.5	6.16E-01	1.62E+02
35.0	5.99E-01	1.57E+02
37.5	5.83E-01	1.53E+02
40.0	5.68E-01	1.49E+02
42.5	5.54E-01	1.45E+02
45.0	5.41E-01	1.42E+02
47.5	5.29E-01	1.39E+02
50.0	5.18E-01	1.36E+02

This sheet calculates the Level 3 remedial target for soils(mg/kg) or for pore water (mg/l), based on the distance to the receptor or compliance located down hydraulic gradient of the source. Three solution methods are included, the preferred option is Ogata Banks. By setting a long travel time (e.g. 9E99) it will give the steady state solution, which should always be used when calculating remedial targets.

The measured soil concentration as mg/kg or pore water concentration should be compared with the Level 3 remedial target to determine the need for further action.

Note if contaminant is not subject to first order degradation, then set half life as 9.9E+99.

Site being assessed:	Pennycroft
Completed by:	R Sutton
Date:	10.12.13
Version:	1

CLEA Software Version 1.06

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Report generated 17-Dec-13

Report title 6% SOM Resi Without Plants TAC

Created by R SUTTON at IVY HOUSE ENVIRONMENTAL LTD



RESULTS

IV.58.13.TAC_Resi_Without_Plant_Uptake_6%_SOM

CLEA Software Version 1.06

Report generated 17/12/2013

Report title 6% SOM Resi Without Plants TAC

Created by R SUTTON at IVY HOUSE ENVIRONMENTAL LTD



BASIC SETTINGS

Land Use Residential with homegrown produce

Building Small terraced house

Receptor Female (res)

Start age class 1

End age class 6

Exposure Duration 6 years

Soil Sandy loam

Exposure Pathways

Direct soil and dust ingestion

Consumption of homegrown produce

Soil attached to homegrown produce

Dermal contact with indoor dust

Dermal contact with soil

Inhalation of indoor dust

Inhalation of soil dust

Inhalation of indoor vapour

Inhalation of outdoor vapour



Receptor Female (res)

Age Class	Body weight (kg)	Body height (m)	Inhalation rate (m ³ day ⁻¹)	Max exposed skin factor			Consumption rates (g FW kg ⁻¹ BW day ⁻¹)					
				Indoor (m ² m ⁻²)	Outdoor (m ² m ⁻²)	Total skin area (m ²)	Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
1	5.60	0.7	8.5	0.32	0.26	3.43E-01	7.12	10.69	16.03	1.83	2.23	3.82
2	9.80	0.8	13.3	0.33	0.26	4.84E-01	6.85	3.30	5.46	3.96	0.54	11.96
3	12.70	0.9	12.7	0.32	0.25	5.82E-01	6.85	3.30	5.46	3.96	0.54	11.96
4	15.10	0.9	12.2	0.35	0.28	6.36E-01	6.85	3.30	5.46	3.96	0.54	11.96
5	16.90	1.0	12.2	0.35	0.28	7.04E-01	3.74	1.77	3.38	1.85	0.16	4.26
6	19.70	1.1	12.2	0.33	0.26	7.94E-01	3.74	1.77	3.38	1.85	0.16	4.26
7	22.10	1.2	12.4	0.22	0.15	8.73E-01	3.74	1.77	3.38	1.85	0.16	4.26
8	25.30	1.2	12.4	0.22	0.15	9.36E-01	3.74	1.77	3.38	1.85	0.16	4.26
9	27.50	1.3	12.4	0.22	0.15	1.01E+00	3.74	1.77	3.38	1.85	0.16	4.26
10	31.40	1.3	12.4	0.22	0.15	1.08E+00	3.74	1.77	3.38	1.85	0.16	4.26
11	35.70	1.4	12.4	0.22	0.14	1.19E+00	3.74	1.77	3.38	1.85	0.16	4.26
12	41.30	1.4	13.4	0.22	0.14	1.29E+00	3.74	1.77	3.38	1.85	0.16	4.26
13	47.20	1.5	13.4	0.22	0.14	1.42E+00	3.74	1.77	3.38	1.85	0.16	4.26
14	51.20	1.6	13.4	0.22	0.14	1.52E+00	3.74	1.77	3.38	1.85	0.16	4.26
15	56.70	1.6	13.4	0.21	0.14	1.60E+00	3.74	1.77	3.38	1.85	0.16	4.26
16	59.00	1.6	13.4	0.21	0.14	1.63E+00	3.74	1.77	3.38	1.85	0.16	4.26
17	70.00	1.6	14.8	0.33	0.27	1.78E+00	2.94	1.40	1.79	1.61	0.22	2.97
18	70.90	1.6	12.0	0.33	0.27	1.80E+00	2.94	1.40	1.79	1.61	0.22	2.97

**Building** Small terraced house**Soil** Sandy loam

Building footprint (m ²)	2.80E+01
Living space air exchange rate (hr ⁻¹)	5.00E-01
Living space height (above ground, m)	4.80E+00
Living space height (below ground, m)	0.00E+00
Pressure difference (soil to enclosed space, Pa)	3.10E+00
Foundation thickness (m)	1.50E-01
Floor crack area (cm ²)	4.23E+02
Dust loading factor (µg m ⁻³)	5.00E+01

Porosity, Total (cm ³ cm ⁻³)	5.30E-01
Porosity, Air-Filled (cm ³ cm ⁻³)	2.00E-01
Porosity, Water-Filled (cm ³ cm ⁻³)	3.30E-01
Residual soil water content (cm ³ cm ⁻³)	1.20E-01
Saturated hydraulic conductivity (cm s ⁻¹)	3.56E-03
van Genuchten shape parameter <i>m</i> (dimensionless)	3.20E-01
Bulk density (g cm ⁻³)	1.21E+00
Threshold value of wind speed at 10m (m s ⁻¹)	7.20E+00
Empirical function (F _x) for dust model (dimensionless)	1.22E+00
Ambient soil temperature (K)	2.83E+02
Soil pH	7.00E+00
Soil Organic Matter content (%)	6.00E+00
Fraction of organic carbon (g g ⁻¹)	3.48E-02
Effective total fluid saturation (unitless)	5.12E-01
Intrinsic soil permeability (cm ²)	4.75E-08
Relative soil air permeability (unitless)	6.42E-01
Effective air permeability (cm ²)	3.05E-08

**Soil - Vapour Model**

Depth to top of source (no building) (cm)	750
Depth to top of source (beneath building) (cm)	750
Default soil gas ingress rate?	Yes
Soil gas ingress rate (cm ³ s ⁻¹)	2.50E+01
Building ventilation rate (cm ³ s ⁻¹)	1.87E+04
Averaging time surface emissions (yr)	6
Finite vapour source model?	No
Thickness of contaminated layer (cm)	150

Air Dispersion Model

Mean annual windspeed at 10m (m s ⁻¹)	5.00
Air dispersion factor at height of 0.8m *	2400.00
Air dispersion factor at height of 1.6m *	0.00
Fraction of site cover (m ² m ⁻²)	0.75

* Air dispersion factor in g m⁻² s⁻¹ per kg m⁻³**Soil - Plant Model**

	Dry weight conversion factor	Homegrown fraction		Soil loading factor	Preparation correction factor
	g DW g ⁻¹ FW	Average	High		
	g DW g ⁻¹ FW	dimensionless		g g ⁻¹ DW	dimensionless
Green vegetables	0.096	0.05	0.33	1.00E-03	2.00E-01
Root vegetables	0.103	0.06	0.40	1.00E-03	1.00E+00
Tuber vegetables	0.210	0.02	0.13	1.00E-03	1.00E+00
Herbaceous fruit	0.058	0.06	0.40	1.00E-03	6.00E-01
Shrub fruit	0.166	0.09	0.60	1.00E-03	6.00E-01
Tree fruit	0.157	0.04	0.27	1.00E-03	6.00E-01

Gardener type Average