



Cornwall County Council
The Maintenance Consultancy
Engineering Services Laboratory
Western Group Centre
Radnor Road
Scorrier
Redruth
Cornwall
TR16 5EH

Attention: Roy Penhaligon

CERTIFICATE OF ANALYSIS

Date: 21 May 2010
Customer: H_CORNCOCO_RDR-16
Sample Delivery Group (SDG): 100508-17 **Report No.:** 84527
Your Reference: 6322 / TS OCT 909
Location:

We received 14 samples on Saturday May 08, 2010 and 14 of these samples were scheduled for analysis which was completed on Friday May 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:	100508-17	Customer:	Cornwall County Council
Job:	H_CORNCOCO_RDR-16	Attention:	Roy Penhaligon
Client Reference:	6322 / TS OCT 909	Order No.:	
Location:		Report No:	84527

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Sampled Date
1513598	2305A-1		30/04/2010
1513582	2305A-10		30/04/2010
1513588	2305A-11		30/04/2010
1513595	2305A-12		30/04/2010
1513565	2305A-13		30/04/2010
1513563	2305A-14		30/04/2010
1513580	2305A-2		30/04/2010
1513591	2305A-3		30/04/2010
1513600	2305A-4		30/04/2010
1513577	2305A-5		30/04/2010
1513573	2305A-6		30/04/2010
1513571	2305A-7		30/04/2010
1513602	2305A-8		30/04/2010
1513585	2305A-9		30/04/2010

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

SDG: 100508-17
Job: H_CORNCOCO_RDR-16
Client Reference: 6322 / TS OCT 909
Location:

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Order No.:
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SOLID

Results Legend	Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Container	Total
	<div style="display: flex; justify-content: space-between;"> <div style="width: 15%;"> <p>X Test</p> <p>N No Determination Possible</p> </div> <div style="width: 85%;"></div> </div>				
	1513602	2305A-8		60g VOC	
	1513600	2305A-4		250g Amber Jar 60g VOC	
	1513598	2305A-1		250g Amber Jar 60g VOC	
	1513595	2305A-12		250g Amber Jar 60g VOC	
	1513591	2305A-3		400g Tub 250g Amber Jar	
	1513588	2305A-11		400g Tub	
	1513585	2305A-9		400g Tub	
	1513582	2305A-10		400g Tub	
	1513580	2305A-2		400g Tub	
	1513577	2305A-5		400g Tub	
	1513573	2305A-6		400g Tub	
	1513571	2305A-7		400g Tub	
	1513565	2305A-13		400g Tub	
	1513563	2305A-14		400g Tub	
EPH by FID	All				0
				X	4
GRO BTEX MTBE GC (S)	All				0
				X	4
Metals by iCap-OES (Soil)	Arsenic				0
		X X X X X X X X X X			10
	Copper				0
		X X X X X X X X X X			10
	Lead				0
		X X X X X X X X X X			10
					0
	X X X X X X X X X X				10
					0
	X X X X X X X X X X				10
Organotins on soils*	All				0
				X	4
PAH by GCMS	All				0
				X	4
pH	All				0
	X X X X X X X X X X				10
Sample description	All				0
	X X X X X X X X X X			X	14
Total Organic Carbon	All				0
	X X X X X X X X X X				10

SDG:	100508-17	Customer:	Cornwall County Council
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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
1513563	2305A-14		Light Brown	Sand	0.1 - 2 mm	None
1513565	2305A-13		Light Brown	Sand	0.1 - 2 mm	None
1513571	2305A-7		Light Brown	Sand	0.1 - 2 mm	None
1513573	2305A-6		Light Brown	Sand	0.1 - 2 mm	None
1513577	2305A-5		Light Brown	Sand	0.1 - 2 mm	None
1513580	2305A-2		Light Brown	Sand	0.1 - 2 mm	None
1513582	2305A-10		Light Brown	Sand	0.1 - 2 mm	N/A
1513585	2305A-9		Light Brown	Sand	0.1 - 2 mm	N/A
1513588	2305A-11		Light Brown	Sand	0.1 - 2 mm	N/A
1513591	2305A-3		Light Brown	Sand	0.1 - 2 mm	N/A
1513595	2305A-12		Light Brown	Sand	0.1 - 2 mm	N/A
1513598	2305A-1		Light Brown	Sand	0.1 - 2 mm	N/A
1513600	2305A-4		Light Brown	Sand	0.1 - 2 mm	N/A
1513602	2305A-8		Light Brown	Sand	0.1 - 2 mm	N/A

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.

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Test Completion dates

SDG reference: 100508-17

Lab Sample No(s)	1513563	1513565	1513571	1513573	1513577	1513580	1513582	1513585	1513588	1513591	1513595	1513598
Customer Sample Ref.	2305A-14	2305A-13	2305A-7	2305A-6	2305A-5	2305A-2	2305A-10	2305A-9	2305A-11	2305A-3	2305A-12	2305A-1
Depth												
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
EPH by FID											13/05/2010	13/05/2010
GRO BTEX MTBE GC (S)											12/05/2010	12/05/2010
Metals by iCap-OES (Soil)	12/05/2010	12/05/2010	12/05/2010	12/05/2010	12/05/2010	12/05/2010	12/05/2010	12/05/2010	12/05/2010	13/05/2010		
Organotins on soils*											21/05/2010	21/05/2010
PAH by GCMS											12/05/2010	12/05/2010
pH	11/05/2010	11/05/2010	11/05/2010	11/05/2010	11/05/2010	11/05/2010	11/05/2010	11/05/2010	11/05/2010	11/05/2010		
Sample description	11/05/2010	11/05/2010	11/05/2010	11/05/2010	11/05/2010	11/05/2010	11/05/2010	11/05/2010	11/05/2010	11/05/2010	11/05/2010	11/05/2010
Total Organic Carbon	12/05/2010	12/05/2010	12/05/2010	12/05/2010	12/05/2010	12/05/2010	12/05/2010	12/05/2010	12/05/2010	12/05/2010		

1513600	1513602
2305A-4	2305A-8
SOLID	SOLID
13/05/2010	13/05/2010
20/05/2010	12/05/2010
21/05/2010	21/05/2010
12/05/2010	12/05/2010
11/05/2010	11/05/2010

SDG: 100508-17
Job: H_CORNCOCO_RDR-16
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Results Legend		Customer Sample Ref.	2305A-1	2305A-10	2305A-11	2305A-12	2305A-13	2305A-14
#	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)						
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
		Date Sampled	30/04/2010	30/04/2010	30/04/2010	30/04/2010	30/04/2010	30/04/2010
		Date Received	08/05/2010	08/05/2010	08/05/2010	08/05/2010	08/05/2010	08/05/2010
		SDG Ref	100508-17	100508-17	100508-17	100508-17	100508-17	100508-17
		Lab Sample No.(s)	1513598	1513582	1513588	1513595	1513565	1513563
Component	LOD/Units	Method						
EPH Surrogate % recovery**	%	TM061	121			121		
EPH Range >C10 - C40	<35 mg/kg	TM061	<35	M		39	M	
Organic Carbon, Total	<0.2 %	TM132		<0.2 #	<0.2 #		<0.2 #	<0.2 #
pH	1 pH Units	TM133		9.32 M	9.31 M		9.08 M	9.55 M
Arsenic	<0.6 mg/kg	TM181		27.9 M	29.8 M		28.9 M	26.1 M
Copper	<1.4 mg/kg	TM181		20.3 M	25.2 M		21.8 M	22.1 M
Lead	<0.7 mg/kg	TM181		6.69 M	6.88 M		6.47 M	6.07 M
Nickel	<0.2 mg/kg	TM181		2.41 M	2.63 M		2.42 M	2.61 M
Zinc	<1.9 mg/kg	TM181		35.3 M	38.1 M		37.2 M	38 M

SDG: 100508-17
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 Location:

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PAH by GCMS

Results Legend		Customer Sample Ref.	2305A-1	2305A-12				
#	ISO17025 accredited.							
M	mCERTS accredited.							
aq	Aqueous / settled sample.	Depth (m)						
diss.filt	Dissolved / filtered sample.	Sample Type	Soil/Solid	Soil/Solid				
tot.unfilt	Total / unfiltered sample.	Date Sampled	30/04/2010	30/04/2010				
*	subcontracted test.	Date Received	08/05/2010	08/05/2010				
**	% 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	100508-17	100508-17				
		Lab Sample No.(s)	1513598	1513595				
Component	LOD/Units	Method						
Naphthalene-d8 % recovery**	%	TM218	93.6	93.7				
Acenaphthene-d10 % recovery**	%	TM218	94	94.6				
Phenanthrene-d10 % recovery**	%	TM218	92.2	92.6				
Chrysene-d12 % recovery**	%	TM218	83.3	84				
Perylene-d12 % recovery**	%	TM218	74.5	76				
Naphthalene	<9 µg/kg	TM218	<9	<9				
Acenaphthylene	<12 µg/kg	TM218	<12	<12				
Acenaphthene	<8 µg/kg	TM218	<8	<8				
Fluorene	<10 µg/kg	TM218	<10	<10				
Phenanthrene	<15 µg/kg	TM218	<15	<15				
Anthracene	<16 µg/kg	TM218	<16	<16				
Fluoranthene	<17 µg/kg	TM218	<17	<17				
Pyrene	<15 µg/kg	TM218	<15	<15				
Benzo(a)anthracene	<14 µg/kg	TM218	<14	<14				
Chrysene	<10 µg/kg	TM218	<10	<10				
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	<15				
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	<14				
Benzo(a)pyrene	<15 µg/kg	TM218	<15	<15				
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	<18				
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23				
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	<24				
Polyaromatic hydrocarbons, Total USEPA 16	<118 µg/kg	TM218	<118	<118				

SDG: 100508-17
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Results Legend		Customer Sample Ref.	2305A-2	2305A-3	2305A-4	2305A-5	2305A-6	2305A-7
#	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)						
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
		Date Sampled	30/04/2010	30/04/2010	30/04/2010	30/04/2010	30/04/2010	30/04/2010
		Date Received	08/05/2010	08/05/2010	08/05/2010	08/05/2010	08/05/2010	08/05/2010
		SDG Ref	100508-17	100508-17	100508-17	100508-17	100508-17	100508-17
		Lab Sample No.(s)	1513580	1513591	1513600	1513577	1513573	1513571
Component	LOD/Units	Method						
EPH Surrogate % recovery**	%	TM061			121			
EPH Range >C10 - C40	<35 mg/kg	TM061			<35			
Organic Carbon, Total	<0.2 %	TM132	<0.2	<0.2		<0.2	<0.2	<0.2
pH	1 pH Units	TM133	9.04	9.23		9.16	9.29	9.15
Arsenic	<0.6 mg/kg	TM181	29.6	27.4		28.2	30.4	27.2
Copper	<1.4 mg/kg	TM181	21.4	21.5		20.8	22.2	20.7
Lead	<0.7 mg/kg	TM181	7.12	7.66		7.22	6.81	7.05
Nickel	<0.2 mg/kg	TM181	2.64	2.55		2.4	2.72	3.12
Zinc	<1.9 mg/kg	TM181	39.8	36.1		36.6	39.3	37.9

SDG: 100508-17
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 Client Reference: 6322 / TS OCT 909
 Location:

Customer: Cornwall County Council
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PAH by GCMS

Results Legend		Customer Sample Ref.				
#	ISO17025 accredited.	2305A-4				
M	mCERTS accredited.					
aq	Aqueous / settled sample.	Depth (m)				
diss.filt	Dissolved / filtered sample.	Sample Type	Soil/Solid			
tot.unfilt	Total / unfiltered sample.	Date Sampled	30/04/2010			
*	subcontracted test.	Date Received	08/05/2010			
**	% 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	100508-17			
		Lab Sample No.(s)	1513600			
Component	LOD/Units	Method				
Naphthalene-d8 % recovery**	%	TM218	94.7			
Acenaphthene-d10 % recovery**	%	TM218	95.4			
Phenanthrene-d10 % recovery**	%	TM218	93.4			
Chrysene-d12 % recovery**	%	TM218	83.7			
Perylene-d12 % recovery**	%	TM218	75.3			
Naphthalene	<9 µg/kg	TM218	<9	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	<15	M		
Anthracene	<16 µg/kg	TM218	<16	M		
Fluoranthene	<17 µg/kg	TM218	<17	M		
Pyrene	<15 µg/kg	TM218	<15	M		
Benz(a)anthracene	<14 µg/kg	TM218	<14	M		
Chrysene	<10 µg/kg	TM218	<10	M		
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	M		
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	M		
Benzo(a)pyrene	<15 µg/kg	TM218	<15	M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	M		
Polyaromatic hydrocarbons, Total USEPA 16	<118 µg/kg	TM218	<118	M		

SDG: 100508-17
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PAH by GCMS

Results Legend		Customer Sample Ref.	2305A-8				
#	ISO17025 accredited.						
M	mCERTS accredited.						
aq	Aqueous / settled sample.	Depth (m)					
diss.filt	Dissolved / filtered sample.	Sample Type	Soil/Solid				
tot.unfilt	Total / unfiltered sample.	Date Sampled	30/04/2010				
*	subcontracted test.	Date Received	08/05/2010				
**	% 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	100508-17				
		Lab Sample No.(s)	1513602				
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	92.8				
Acenaphthene-d10 % recovery**	%	TM218	93.1				
Phenanthrene-d10 % recovery**	%	TM218	91				
Chrysene-d12 % recovery**	%	TM218	81.1				
Perylene-d12 % recovery**	%	TM218	72.5				
Naphthalene	<9 µg/kg	TM218	<9				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	<15				M
Anthracene	<16 µg/kg	TM218	<16				M
Fluoranthene	<17 µg/kg	TM218	<17				M
Pyrene	<15 µg/kg	TM218	<15				M
Benzo(a)anthracene	<14 µg/kg	TM218	<14				M
Chrysene	<10 µg/kg	TM218	<10				M
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15				M
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14				M
Benzo(a)pyrene	<15 µg/kg	TM218	<15				M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18				M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23				M
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24				M
Polyaromatic hydrocarbons, Total USEPA 16	<118 µg/kg	TM218	<118				M

Table of Results - Appendix

SDG Number : 100508-17

Client : Cornwall County Council

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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
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
SUB		Subcontracted Test	Wet
TM061	Method for the Determination of EPH, Massachusetts Dept. of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)	Dry
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)	
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
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES	Dry
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546	Wet

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

**Extractable Petroleum Hydrocarbons (EPH) By GC-FID
EPH (DRO) (C10-C40)**

SDG Number	100508-17	Client	H_CORNCOCO_RDR		
Matrix (Units)	mg/kg	Client Ref	6322 / TS OCT 909		
Sample No	Customer Sample Ref.	Depth	Matrix	EPH	Interpretation
1526755	2305A-12		SOLID	39.0	Possible PAHS
1526730	2305A-1		SOLID	<35.0	No Identification Possible
1526725	2305A-4		SOLID	<35.0	No Identification Possible
1527870	2305A-8		SOLID	<35.0	No Identification Possible

Extractable Petroleum Hydrocarbons (formally Diesel Range Organics) :- Any compound extractable in n-hexane within the carbon range C10-C40, includes Aliphatic (Min Oil), Aromatic (PAHs) and naturally occurring compounds.

Analytical Report

ALcontrol Hawarden
Unit7-8, Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden, Deeside
Flintshire, CH5 3US

Report No: 10-17754/1
Date Received: 12/05/2010
Date Tested: 13/05/2010 to 20/05/2010
Date Issued: 20/05/2010
Page: 1 of 2

For the attention of: Alcontrol Chester (Schedulers)

By email

4 soil samples received from ALcontrol Hawarden (O/N: 144186; Project: 100508-17) in 100ml amber glass jars were analysed as shown below. Analytical methods employed are available on request. Results are reported on an as received basis unless otherwise specified.

Laboratory reference	169605 1523570	169606 1523585	169607 1523597
dibutyltin [1002-53-5] mg/kg Sn	< 0.02	< 0.02	< 0.02
tetrabutyltin [1461-25-2] mg/kg Sn	< 0.02	< 0.02	< 0.02
tributyltin [56573-85-4] mg/kg Sn	< 0.02	< 0.02	< 0.02
triphenyltin [668-34-8] mg/kg Sn	< 0.05	< 0.05	< 0.05

Report No: 10-17754/1
Date Received: 12/05/2010
Date Tested: 13/05/2010 to 20/05/2010
Date Issued: 20/05/2010
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Laboratory reference			169608 1523606
dibutyltin	[1002-53-5]	mg/kg Sn	< 0.02
tetrabutyltin	[1461-25-2]	mg/kg Sn	< 0.02
tributyltin	[56573-85-4]	mg/kg Sn	< 0.02
triphenyltin	[668-34-8]	mg/kg Sn	< 0.05



Robin T R Macdonald
Operational Director

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	-