

Our ref: MN/SH/NL07510/J04

Date: 20 December 2010

Your ref:

Dr Daniel McCrory
Pollution House
Staffordshire Moorlands District Council
Moorlands House
Stockwell Street
Leek, ST13 6HQ

Dear Dan

Blythe Park

The third of the programmed surface water monitoring rounds was undertaken on 24 October 2010 in accordance with the submitted document entitled "Validation Report on Construction Quality Assurance for Remediation of Areas 1, 2 and 3 and associated information" with regard to section 5 Future Monitoring.

Please find attached the result of the laboratory testing (see appendix 1). There have been reductions in arsenic, nickel, selenium, chromium; lead and copper concentrations during this round of monitoring compared with the previous monitoring results (see attached graphs in Appendix 2). Boron levels are shown to increase slightly downstream, with levels below the Environmental Quality Standards (EQS). In this monitoring round, all laboratory results are less than the Environmental Quality Standards (EQS).

The monitoring results generally indicate that no significant changes have occurred in water quality downstream with respect to upstream of the site. Our sampling procedures and sample locations were previously issued to you in our letter dated 25 May 2010.

We trust this is satisfactory, please do not hesitate to contact me should you wish to discuss any of the above items.

Yours Sincerely
for Wardell Armstrong LLP



Maryann Nwankwo
Hydrogeologist
mnwankwo@wardell-armstrong.com

enc: Appendix 1 (results of laboratory testing)
Appendix 2 (graphs of laboratory testing results)
cc: Alistair Brodie (Environment Agency)
Tony Harris (Scentarea)



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ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
INFRASTRUCTURE AND UTILITIES
LAND AND PROPERTY
MINING AND MINERAL PROCESSING
MINERAL ESTATES
WASTE RESOURCE MANAGEMENT

APPENDICES

Appendix 1

Results of Laboratory Testing (July 2010)



ALcontrol Laboratories

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

Wardell Armstrong LLP
Sir Henry Doulton House
Forge Lane
Etruria
Stoke on Trent
Staffordshire
ST1 5BD

Attention: Mary Ann Nwankwo

CERTIFICATE OF ANALYSIS

Date: 02 November 2010
Customer: R_WARDELL_SKT-8
Sample Delivery Group (SDG): 101024-13 Report No.: 102029
Your Reference:
Location: BLYTHE PARK

We received 5 samples on Saturday October 23, 2010 and 5 of these samples were scheduled for analysis which was completed on Tuesday November 02, 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

Business Director - Land, UK & Ireland



Validated

ALcontrol Laboratories Analytical Services

SDG:	101024-13	Customer:	Wardell Armstrong LLP
Job:	H_WARDELL_SKT-8	Attention:	Mary Ann Nwankwo
Client Reference:		Order No.:	1403
Location:	BLYTHE PARK	Report No:	102029

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
2282934	SW1			22/10/2010
2282948	SW2			22/10/2010
2282944	SW3			22/10/2010
2282946	SW3A			22/10/2010
2282939	SW4			22/10/2010

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

Validated

ALcontrol Laboratories Analytical Services

SDG: 101024-13
 Job: H_WARDELL_SKT-8
 Client Reference:
 Location: BLYTHE PARK

Customer: Wardell Armstrong LLP
 Attention: Mary Ann Nwankwo
 Order No.: 1403
 Report No: 102029

LIQUID			2282348	2282349	2282350	2282351	2282352	2282353
Results Legend	Lab Sample No(s)		2282348	2282349	2282350	2282351	2282352	2282353
	Customer Sample Ref.		SW1	SW4	SW3	SW5A	SW2	
	AGS Ref.							
	Depth (m)							
	Container		11 open glass bottle 10 ml	11 open glass bottle 10 ml	11 open glass bottle 10 ml	11 open glass bottle 10 ml	11 open glass bottle 10 ml	11 open glass bottle 10 ml
Anions by Kone (w)	All	NDPs: 0 Tests: 5	X	X	X	X	X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 5	X	X	X	X	X	X
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 5	X	X	X	X	X	X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 5	X	X	X	X	X	X
Mercury Dissolved	All	NDPs: 0 Tests: 5	X	X	X	X	X	X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 5	X	X	X	X	X	X
pH Value	All	NDPs: 0 Tests: 5	X	X	X	X	X	X
Phenols by HPLC (W)	All	NDPs: 0 Tests: 5	X	X	X	X	X	X

Validated

ALcontrol Laboratories Analytical Services

SDG: 101024-13
 Job: H_WARDELL_SKT-8
 Client Reference:
 Location: BLYTHE PARK

Customer: Wardell Armstrong LLP
 Attention: Mary Ann Nwankwo
 Order No.: 1403
 Report No: 102029

Test Completion Dates

Lab Sample No(s)	2282934	2282939	2282944	2282946	2282948
Customer Sample Ref.	SW1	SW1	SW3	SW3A	SW1
AGS Ref.					
Depth					
Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Anions by Kona (W)	26/10/2010	26/10/2010	26/10/2010	26/10/2010	26/10/2010
Dissolved Metals by ICP-MS	26/10/2010	26/10/2010	26/10/2010	26/10/2010	26/10/2010
EPH (DRO) (C10-C40) Aqueous (W)	26/10/2010	26/10/2010	26/10/2010	26/10/2010	26/10/2010
GRO by GC-FID (W)	02/11/2010	02/11/2010	02/11/2010	01/11/2010	01/11/2010
Mercury Dissolved	26/10/2010	26/10/2010	26/10/2010	26/10/2010	26/10/2010
PAH Spec MS - Aqueous (W)	26/10/2010	26/10/2010	26/10/2010	26/10/2010	26/10/2010
pH Value	25/10/2010	25/10/2010	25/10/2010	25/10/2010	25/10/2010
Phenols by HPLC (W)	26/10/2010	26/10/2010	26/10/2010	26/10/2010	26/10/2010

Validated

ALcontrol Laboratories Analytical Services

SDG: 101024-13
 Job: H_WARDELL_SKT-8
 Client Reference:
 Location: BLYTHE PARK

Customer: Wardell Armstrong LLP
 Attention: Mary Ann Nwankwo
 Order No.: 1403
 Report No: 102029

Precision Legend		Customer Sample Ref.	SW1	SW2	SW3	SW3A	SW4
#	ISO17018 accredited.	Depth (m)	Water(GWSW)	Water(GWSW)	Water(GWSW)	Water(GWSW)	Water(GWSW)
M	ISO17018 accredited.	Sample Type	22/10/2010	22/10/2010	22/10/2010	22/10/2010	22/10/2010
aq	Aqueous / solid sample.	Date Sampled	23/10/2010	23/10/2010	23/10/2010	23/10/2010	23/10/2010
diss	Distilled / filtered sample.	Date Received	101024-13	101024-13	101024-13	101024-13	101024-13
tot	Total / unfiltered sample.	SDG Ref	2282934	2282948	2282944	2282946	2282939
unit	Subtracted test.	Lab Sample No.(s)					
*	% 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.	ADS Reference					
Component	LOD/Unit	Method					
Arsenic (diss.filt)	<0.12 µg/l	TM152	0.622	0.193	0.273	<0.12	0.488
Boron (diss.filt)	<9.4 µg/l	TM152	67.3	66.9	73.2	75.9	169
Cadmium (diss.filt)	<0.1 µg/l	TM152	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium (diss.filt)	<0.22 µg/l	TM152	3.4	3.85	3.91	4.72	3.86
Copper (diss.filt)	<0.85 µg/l	TM152	1.59	1.62	1.71	1.44	1.51
Lead (diss.filt)	<0.02 µg/l	TM152	0.12	0.117	0.1	0.117	0.098
Nickel (diss.filt)	<0.15 µg/l	TM152	2.2	1.8	1.78	1.66	2.43
Selenium (diss.filt)	<0.39 µg/l	TM152	<0.39	<0.39	<0.39	<0.39	<0.39
Zinc (diss.filt)	<0.41 µg/l	TM152	2.04	2.18	1.78	2	1.84
EPH Range >C10 - C40 (eq)	<46 µg/l	TM172	<46	<46	<46	<46	<46
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01	<0.01	<0.01	<0.01
Sulphate	<3 mg/l	TM184	44.1	43.6	44.8	45.2	45.8
pH	<1 pH Units	TM256	8.1	8.11	8.06	8.12	8.14
Phenols, Total monohydric	<0.015 mg/l	TM259	<0.015	<0.015	<0.015	<0.015	<0.015

Customer: Wardell Armstrong LLP
Attention: Mary Ann Nwankwo
Order No.: 1403
Report No: 102029

[illegible]

Validated

ALcontrol Laboratories Analytical Services

SDG: 101024-13
 Job: H_WARDELL_SKT-8
 Client Reference:
 Location: BLYTHE PARK

Customer: Wardell Armstrong LLP
 Attention: Mary Ann Nwankwo
 Order No.: 1403
 Report No: 102029

PAH Spec MS - Aqueous (W)

#	M	AQ	dis.M	loc.unid	-	15017418 Accredited: 15017418 Accredited: Aqueous filtered sample, Dissolved / filtered sample, Total / unfiltered sample, substracted 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.	Customer Sample Ref.		SW1	SW2	SW3	SW3A	SW4	
							Depth (m)	Sample Type						
									Water(GW/SSW) 22/10/2010 23/10/2010 101024-13 2282934	Water(GW/SSW) 22/10/2010 23/10/2010 101024-13 2282948	Water(GW/SSW) 22/10/2010 23/10/2010 101024-13 2282944	Water(GW/SSW) 22/10/2010 23/10/2010 101024-13 2282948	Water(GW/SSW) 22/10/2010 23/10/2010 101024-13 2282959	
Component							LOD/Units	Method						
Naphthalene (aq)							<0.1 µg/l	TM178	<0.1	<0.1	<0.1	<0.1	<0.1	
Acenaphthene (aq)							<0.015 µg/l	TM178	0.241	0.0765	0.118	0.0551	0.0431	
Acenaphthylene (aq)							<0.011 µg/l	TM178	<0.011	<0.011	<0.011	<0.011	<0.011	
Fluoranthene (aq)							<0.014 µg/l	TM178	<0.014	<0.014	<0.014	<0.014	<0.014	
Anthracene (aq)							<0.015 µg/l	TM178	<0.015	<0.015	<0.015	<0.015	<0.015	
Phenanthrene (aq)							<0.022 µg/l	TM178	<0.022	<0.022	<0.022	<0.022	<0.022	
Fluorene (aq)							<0.014 µg/l	TM178	0.0324	<0.014	<0.014	<0.014	<0.014	
Chrysene (aq)							<0.013 µg/l	TM178	<0.013	<0.013	<0.013	<0.013	<0.013	
Pyrene (aq)							<0.015 µg/l	TM178	<0.015	<0.015	<0.015	<0.015	<0.015	
Benzo(a)anthracene (aq)							<0.017 µg/l	TM178	<0.017	<0.017	<0.017	<0.017	<0.017	
Benzo(b)fluoranthene (aq)							<0.023 µg/l	TM178	<0.023	<0.023	<0.023	<0.023	<0.023	
Benzo(k)fluoranthene (aq)							<0.027 µg/l	TM178	<0.027	<0.027	<0.027	<0.027	<0.027	
Benzo(a)pyrene (aq)							<0.009 µg/l	TM178	<0.009	<0.009	<0.009	<0.009	<0.009	
Dibenzo(a,h)anthracene (aq)							<0.016 µg/l	TM178	<0.016	<0.016	<0.016	<0.016	<0.016	
Benzo(g,h,i)perylene (aq)							<0.016 µg/l	TM178	<0.016	<0.016	<0.016	<0.016	<0.016	
Indeno(1,2,3-cd)pyrene (aq)							<0.014 µg/l	TM178	<0.014	<0.014	<0.014	<0.014	<0.014	
Polyaromatic hydrocarbons, Total USEPA 16 (aq)							<0.1 µg/l	TM178	0.274	<0.1	0.118	<0.1	<0.1	

Table of Results - Appendix

SDG Number : 101024-13

Client : H_WARDELL_SXT

Client Ref :

REPORT KEY

Results expressed as (e.g.) 1.02E-07 is equivalent to 1.02x10⁻⁷

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-C15)

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

Method No	Reference	Description	Wet/Dry Sample	Surrogate Corrected
TM061	Method for the Determination of EPH/Massachusetts Dept. of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM152	Method 31250, ANWA/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		
TM178	Modification: 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) BS EN 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 Analyser		
TM235	The Determination of Hydrocarbon Oils in Waters by Solvent Extraction, Infra red Absorption and Gravimetry 1983, HMSO, London	Determination of Total Petroleum Hydrocarbons (TPH) in Waters By Infra-Red Spectroscopy		
TM245	By GC-FID	Determination of GRO by Healdipice 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		Determination of Phenols in Waters and Leachates by HPLC		

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

Notification of Non-Conforming Work

SDG Number	101024-13	Location	Blythe Park
Client	H_WARDELL_SKT	Order No.	1403
Client Reference		Report No.	102029
Attention	Mary Ann Nwankwo	Date Received	24/10/2010 16:02:47

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
2282949	SW3A		LIQUID	GRO by GC-FID (W)	Aliphatics >C10-C12	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	Aliphatics >C5-C8	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	Aliphatics >C8-C8	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	Aliphatics >C8-C10	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	Aromatics >EC10-EC12	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	Aromatics >EC5-EC7	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	Aromatics >EC7-EC8	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	Aromatics >EC8-EC10	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	Benzene	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	BTEX, Total	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	Ethylbenzene	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	GRO >C10-C12	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	GRO >C5-C10	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	GRO >C5-C12	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	GRO >C5-C6	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	GRO >C6-C7	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	GRO >C6-C8	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	GRO >C7-C8	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	GRO >C8-C10	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	GRO Surrogate % recovery**	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	m,p,o-Xylene	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	m,p-Xylene	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	Methyl tertiary butyl ether (MTBE)	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	o-Xylene	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	tert-Butyl methyl ether (TAME)	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	Toluene	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	Total Aliphatics >C5-C12	Volatile container not received
2282949	SW3A		LIQUID	GRO by GC-FID (W)	Total Aromatics >EC5-EC12	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	Aliphatics >C10-C12	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	Aliphatics >C5-C8	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	Aliphatics >C8-C8	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	Aliphatics >C8-C10	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	Aromatics >EC10-EC12	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	Aromatics >EC5-EC7	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	Aromatics >EC7-EC8	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	Aromatics >EC8-EC10	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	Benzene	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	BTEX, Total	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	Ethylbenzene	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	GRO >C10-C12	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	GRO >C5-C10	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	GRO >C5-C12	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	GRO >C5-C6	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	GRO >C6-C7	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	GRO >C6-C8	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	GRO >C7-C8	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	GRO >C8-C10	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	GRO Surrogate % recovery**	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	m,p,o-Xylene	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	m,p-Xylene	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	Methyl tertiary butyl ether (MTBE)	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	o-Xylene	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	tert-Butyl methyl ether (TAME)	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	Toluene	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	Total Aliphatics >C5-C12	Volatile container not received
2282950	SW2		LIQUID	GRO by GC-FID (W)	Total Aromatics >EC5-EC12	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	Aliphatics >C10-C12	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	Aliphatics >C5-C8	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	Aliphatics >C8-C8	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	Aliphatics >C8-C10	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	Aromatics >EC10-EC12	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	Aromatics >EC5-EC7	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	Aromatics >EC7-EC8	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	Aromatics >EC8-EC10	Volatile container not received

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
2282951	SW1		LIQUID	GRO by GC-FID (W)	Benzene	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	BTEX, Total	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	Ethylbenzene	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	GRO >C10-C12	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	GRO >C5-C10	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	GRO >C5-C12	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	GRO >C5-C6	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	GRO >C6-C7	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	GRO >C6-C8	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	GRO >C7-C8	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	GRO >C8-C10	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	GRO Surrogate % recovery**	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	m,p,o-Xylene	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	m,p-Xylene	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	Methyl tertiary butyl ether (MTBE)	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	o-Xylene	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	tert-Amyl methyl ether (TAME)	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	Toluene	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	Total Aliphatics >C5-C12	Volatile container not received
2282951	SW1		LIQUID	GRO by GC-FID (W)	Total Aromatics >EC5-EC12	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	Aliphatics >C10-C12	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	Aliphatics >C5-C6	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	Aliphatics >C6-C8	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	Aliphatics >C8-C10	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	Aromatics >EC10-EC12	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	Aromatics >EC5-EC7	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	Aromatics >EC7-EC8	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	Aromatics >EC8-EC10	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	Benzene	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	BTEX, Total	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	Ethylbenzene	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	GRO >C10-C12	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	GRO >C5-C10	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	GRO >C5-C12	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	GRO >C5-C6	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	GRO >C6-C7	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	GRO >C6-C8	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	GRO >C7-C8	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	GRO >C8-C10	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	GRO Surrogate % recovery**	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	m,p,o-Xylene	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	m,p-Xylene	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	Methyl tertiary butyl ether (MTBE)	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	o-Xylene	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	tert-Amyl methyl ether (TAME)	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	Toluene	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	Total Aliphatics >C5-C12	Volatile container not received
2282952	SW4		LIQUID	GRO by GC-FID (W)	Total Aromatics >EC5-EC12	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	Aliphatics >C10-C12	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	Aliphatics >C5-C6	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	Aliphatics >C6-C8	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	Aliphatics >C8-C10	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	Aromatics >EC10-EC12	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	Aromatics >EC5-EC7	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	Aromatics >EC7-EC8	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	Aromatics >EC8-EC10	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	Benzene	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	BTEX, Total	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	Ethylbenzene	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	GRO >C10-C12	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	GRO >C5-C10	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	GRO >C5-C12	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	GRO >C5-C6	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	GRO >C6-C7	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	GRO >C6-C8	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	GRO >C7-C8	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	GRO >C8-C10	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	GRO Surrogate % recovery**	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	m,p,o-Xylene	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	m,p-Xylene	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	Methyl tertiary butyl ether (MTBE)	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	o-Xylene	Volatile container not received

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
2282955	SW3		LIQUID	GRO by GC-FID (W)	tert-Amyl methyl ether (TAME)	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	Toluene	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	Total Aliphatics >C5-C12	Volatile container not received
2282955	SW3		LIQUID	GRO by GC-FID (W)	Total Aromatics >EC5-EC12	Volatile container not received

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 NH_4 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, lubs and volatile jars. All waters and viols 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/unusable 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 monofenols 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 6 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)	GC MS
SVOC	DCM	LIQUID/LIQUID SHAKE	GC MS
FREE SULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PEST OCP/OPP	DCM	LIQUID/LIQUID SHAKE	GC MS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GC MS
PHENOLS MS	DCM	SOLID PHASE EXTRACTION	GC MS
TPH by 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 (ORO)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Min oil)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Cleaned up)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH CWG by GC	D&C	HEXANE:ACETONE	END OVER END	GC-FID
PCB tot / PCB con	D&C	HEXANE:ACETONE	END OVER END	GC-MS
Polyaromatic Hydrocarbons (MS)	WET	HEXANE:ACETONE	Microwave TM218	GC-MS
C8-C40 (C8-C40)EZ Flash	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Polyaromatic Hydrocarbons Rapid GC	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Semi Volatile Organic Compounds	WET	DCM:ACETONE	SONICATE	GC-MS

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

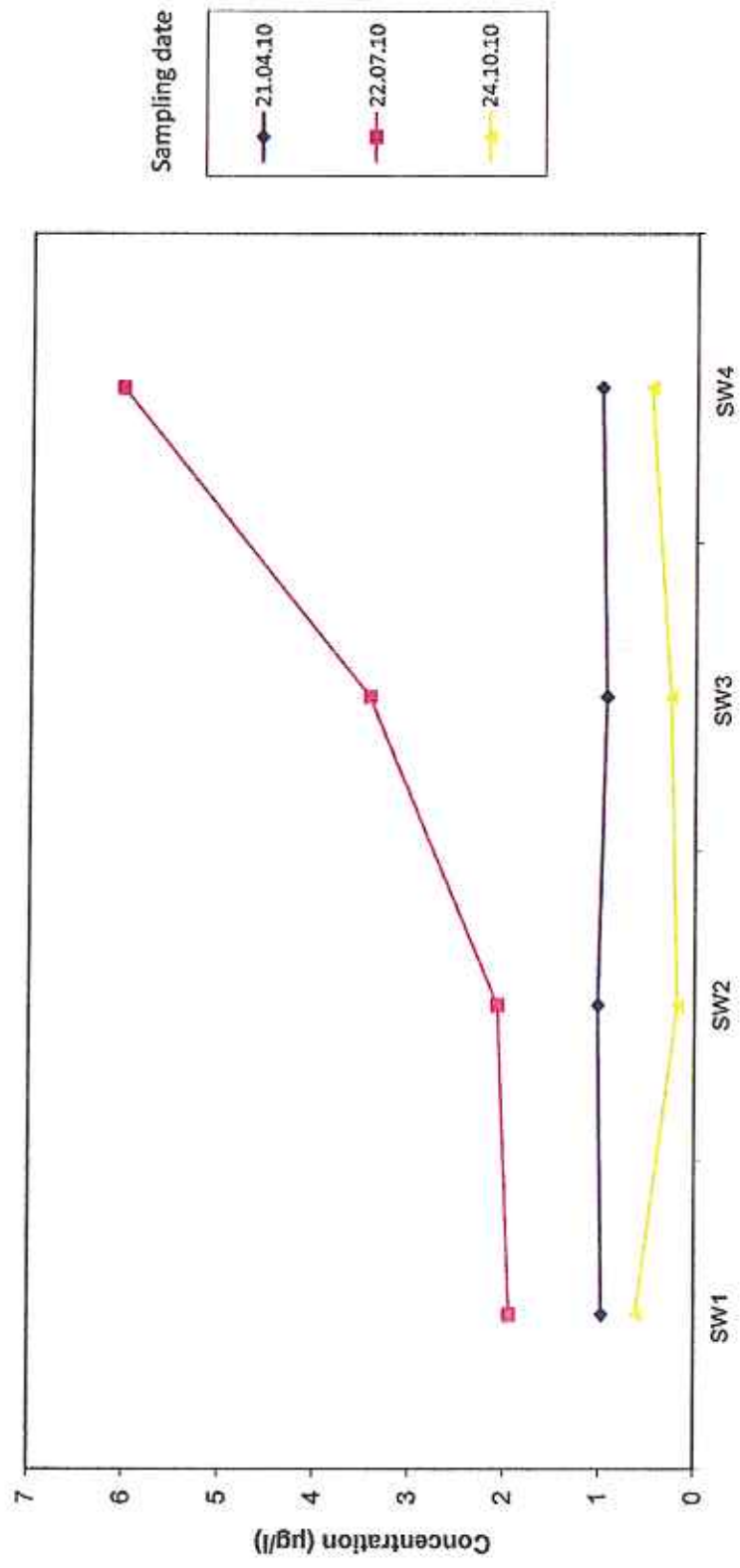
Common Name

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

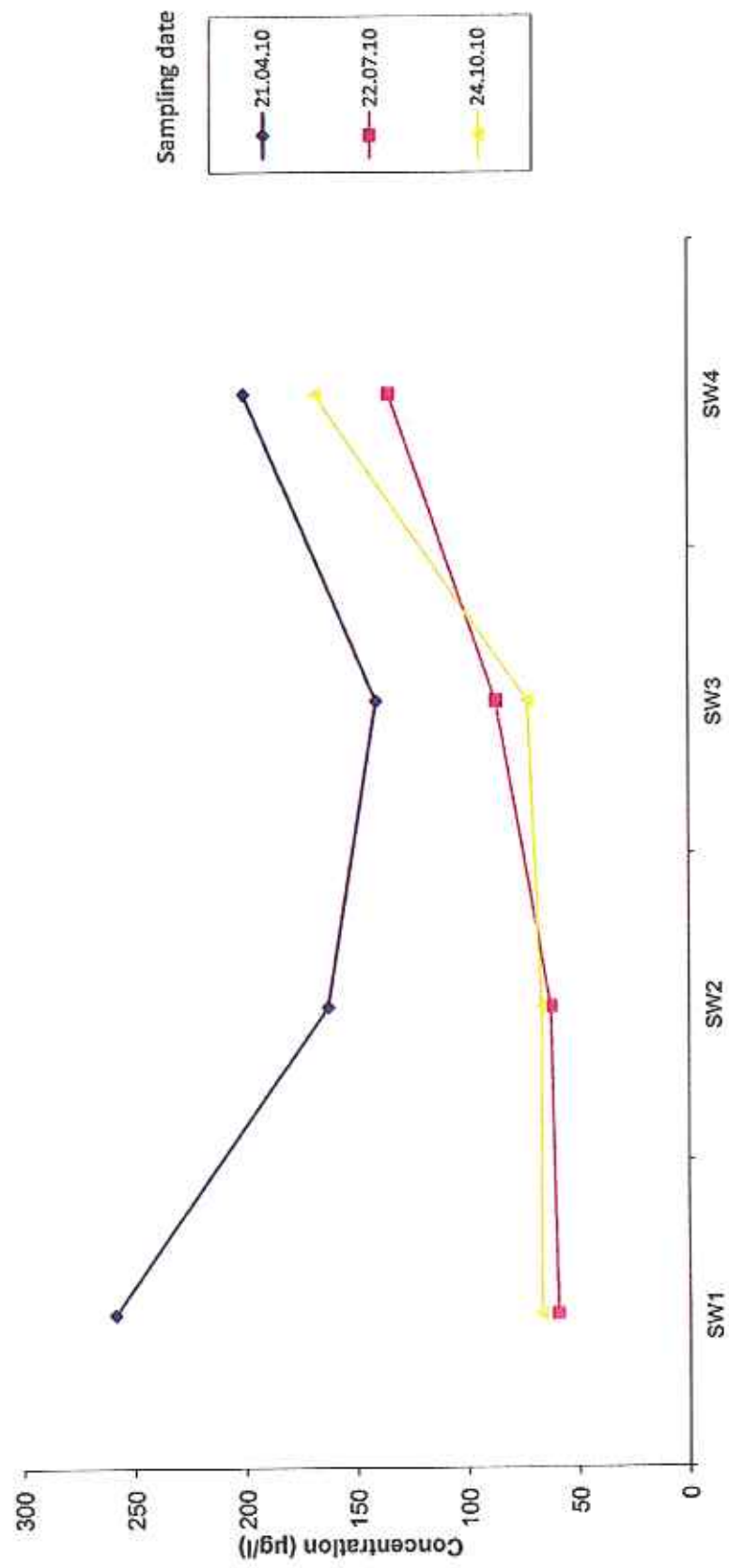
Appendix 2

Graphs of Laboratory Testing Results (April 2010 – July 2010)

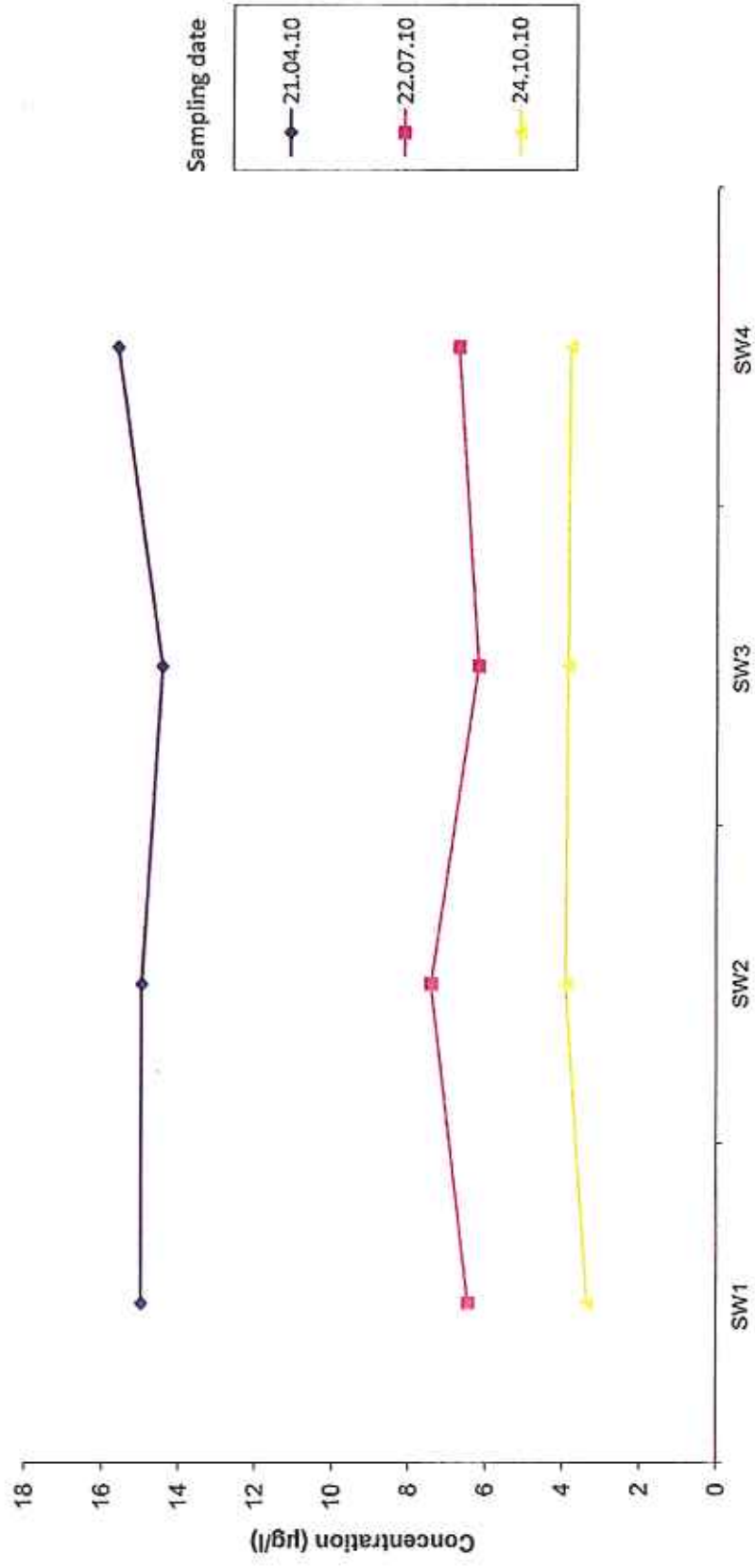
NL07510- Blythe Park, Summary of Laboratory Testing Results
Arsenic



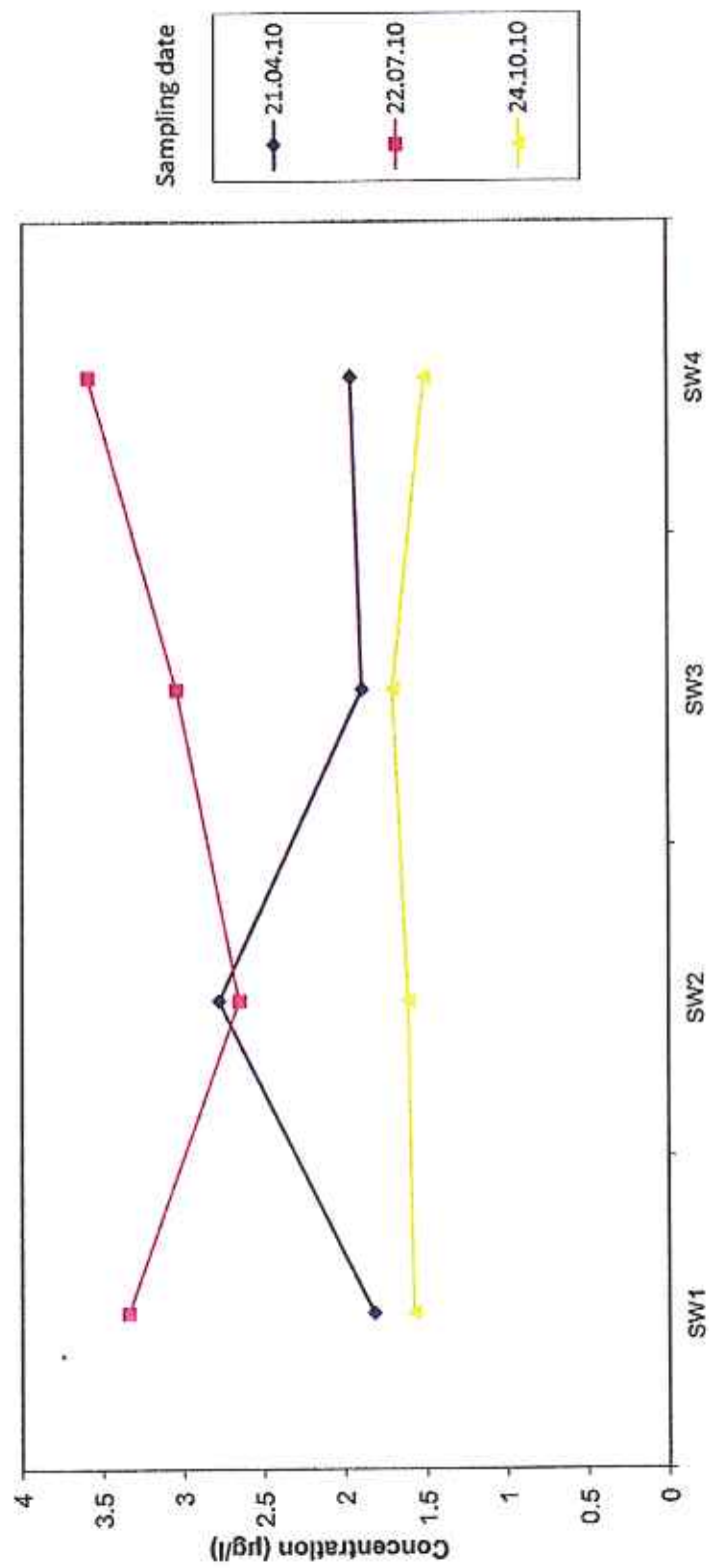
NL07510- Blythe Park, Summary of Laboratory Testing Results
Boron



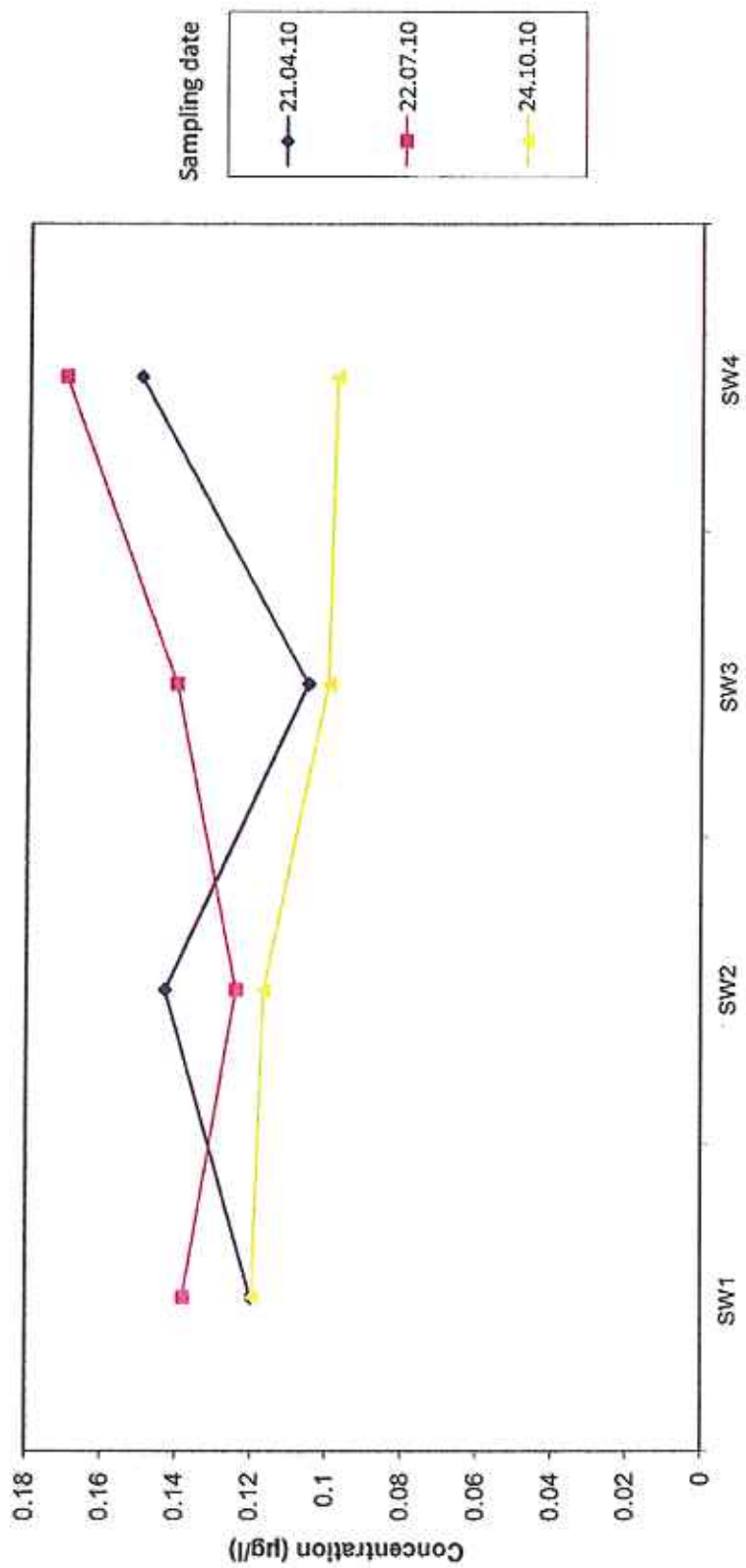
NL07510- Blythe Park, Summary of Laboratory Testing Results
Chromium



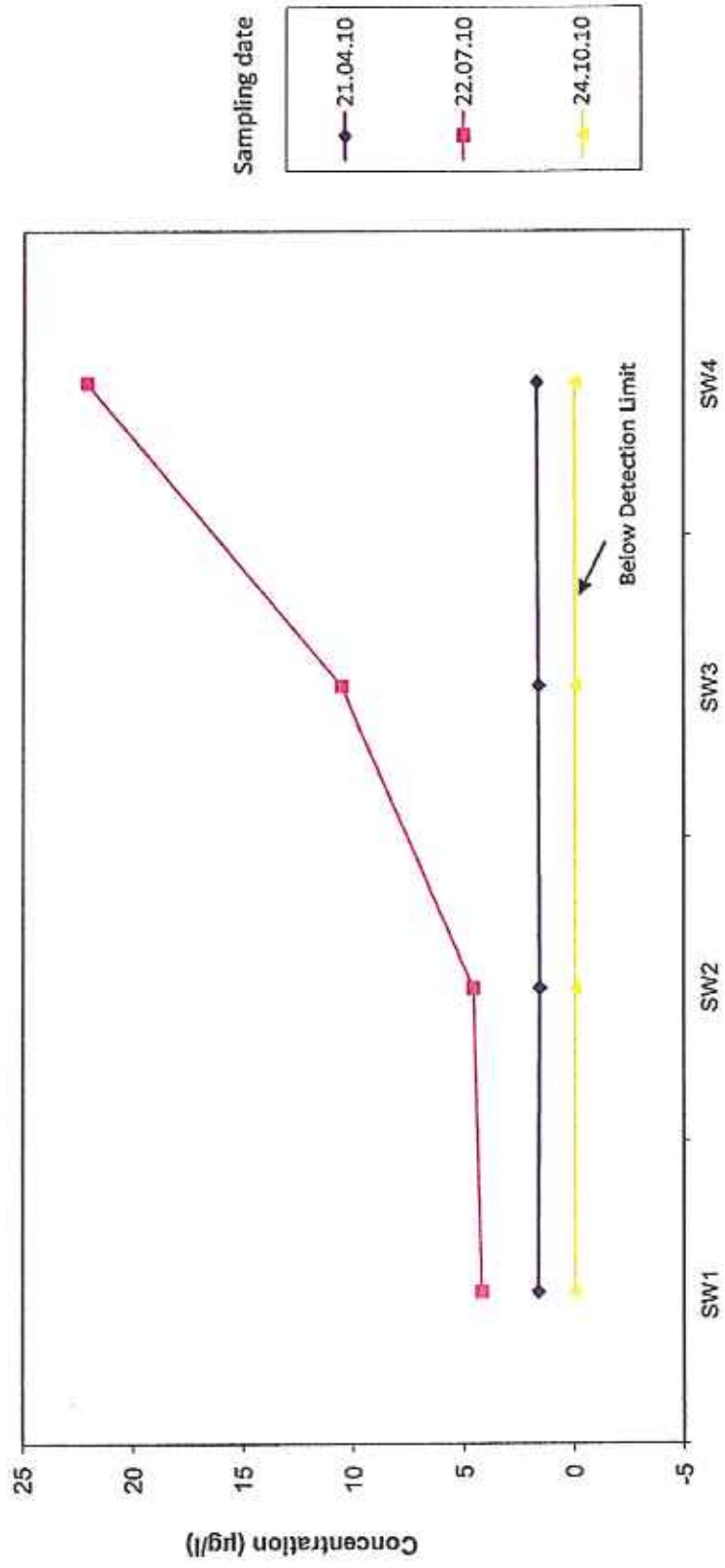
NL07510- Blythe Park, Summary of Laboratory Testing Results
Copper



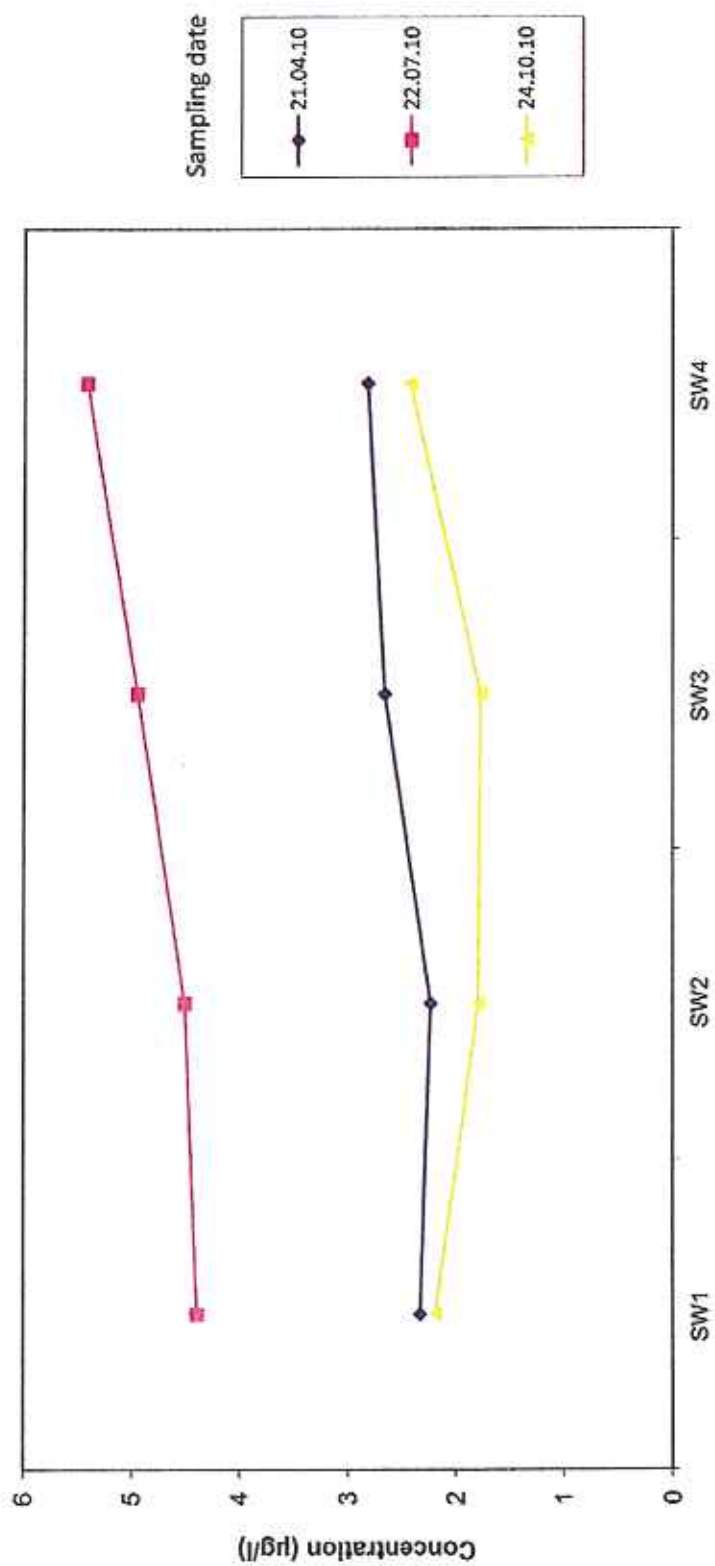
NL07510- Blythe Park, Summary of Laboratory Testing Results
Lead



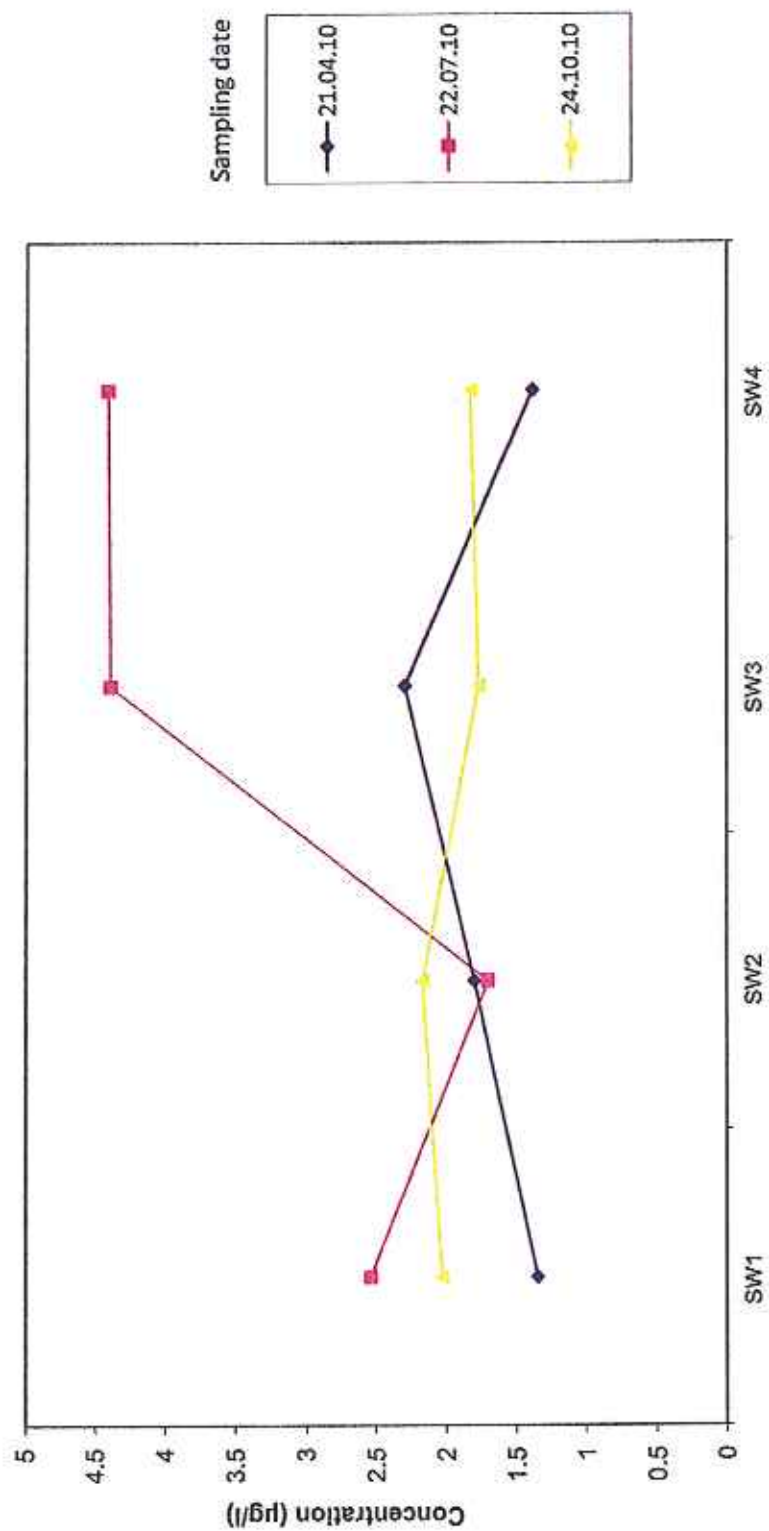
NL07510- Blythe Park, Summary of Laboratory Testing Results
Selenium



NL07510- Blythe Park, Summary of Laboratory Testing Results
Nickel



NL07510- Blythe Park, Summary of Laboratory Testing Results
Zinc



Our ref: MN/CJ/NL07510/ Walk over and water
Sampling/Letter Report/J05

Your ref:

Dr Daniel McCrory
Pollution House
Staffordshire Moorlands District Council
Moorlands House
Stockwell Street
Leek, ST13 6HQ

Dear Dan

Blythe Park

The fourth of the programmed surface water monitoring rounds was undertaken on 25 January 2011 in accordance with the submitted document entitled "Validation Report on Construction Quality Assurance for Remediation of Areas 1, 2 and 3 and associated information" with regard to section 5 Future Monitoring.

Please find attached the results of the laboratory testing (see appendix 1). There has been a reduction in nickel concentrations during this round of monitoring compared with the previous monitoring results (see attached graphs in Appendix 2). Zinc, lead, copper and boron levels are shown to increase slightly downstream, with levels below the Environmental Quality Standards (EQS). In this monitoring round, all laboratory results are less than the Environmental Quality Standards (EQS).

The monitoring results generally indicate that no significant changes have occurred in water quality downstream with respect to upstream of the site. Our sampling procedures and sample locations were previously issued to you in our letter dated 25 May 2010.

We trust this is satisfactory, please do not hesitate to contact me should you wish to discuss any of the above items.

Yours Sincerely
for Wardell Armstrong LLP



Maryann Nwankwo
Hydrogeologist
mnwankwo@wardell-armstrong.com

Enc: Appendix 1 (results of laboratory testing)
Appendix 2 (graphs of laboratory testing results)
cc: Alistair Brodie (Environment Agency)
Tony Harris (Scentarea)



APPENDICES

Appendix 1

Results of Laboratory Testing (July 2010)



Wardell Armstrong LLP
Sir Henry Doulton House
Forge Lane
Eturia
Stoke on Trent
Staffordshire
ST1 5BD

Attention: Mary Ann Nwankwo

CERTIFICATE OF ANALYSIS

Date: 03 February 2011
Customer: H_WARDELL_SKT
Sample Delivery Group (SDG): 110128-4
Your Reference:
Location: Blythe Park
Report No: 114240

We received 4 samples on Friday January 28, 2011 and 4 of these samples were scheduled for analysis which was completed on Thursday February 03, 2011. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

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:

Sonia McWhan
Laboratory Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 110128-4
Job: H_WARDELL_SKT-8
Client Reference:

Location: Blythe Park
Customer: Wardell Armstrong LLP
Attention: Mary Ann Nwankwo

Order Number:
Report Number: 114240
Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
2764496	SW1			25/01/2011
2764497	SW2			25/01/2011
2764498	SW3			25/01/2011
2764499	SW4			25/01/2011

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

SDG: 110128-4
Job: H_WARDELL_SKT-8
Client Reference:

Location: Blythe Park
Customer: Wardell Armstrong LLP
Attention: Mary Ann Nwankwo

Order Number:
Report Number: 114240
Superseded Report:

LIQUID Results Legend X Test N No Determination Possible	Lab Sample No(s)		2764486	2764487	2764488	2764489
	Customer Sample Reference		SW1	SW2	SW3	SW4
	AGS Reference					
	Depth (m)					
	Container		11 green glass bottle 1 plastic	11 green glass bottle 1 plastic	11 green glass bottle 1 plastic	11 green glass bottle 1 plastic
Anions by Kone (w)	All	NDPs: 0 Tests: 4	X	X	X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 4	X	X	X	X
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 4	X	X	X	X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 4	X	X	X	X
Mercury Dissolved	All	NDPs: 0 Tests: 4	X	X	X	X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 4	X	X	X	X
pH Value	All	NDPs: 0 Tests: 4	X	X	X	X
Phenols by HPLC (W)	All	NDPs: 0 Tests: 4	X	X	X	X

Order Number:
Report Number: 114240
Superseded Report:

[illegible]