



Project: **Former Clitheroe Hospital**  
 Location: **Clitheroe**  
 Client: **NHS Property Services Ltd**

Location Details  
 Easting: Northing:  
 Level: Depth: 3.10m  
 Logger: NS Type: TP

Status  
**DRAFT**

Pit Number  
**TP102**  
 Sheet 1 of 1

Hole Information  
 Pit Dimensions: 3.00m x 0.97m  
 Orientation: 90°  
 Shoring: Not required  
 Stability: Stable  
 Plant: Tracked Excavator

Groundwater  
 Strike (m): 2.30  
 Rose To (m): 2.30  
 After (mins): 20  
 Remarks:

Scale: 1:25  
 Checked By: SH  
 Approved By: RAJ  
 Start Date: 01/02/2017  
 Finish Date: 01/02/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing		
						Depth (m)	Ref	Tests / Results
MADE GROUND: Grass over dark brown slightly silty sandy gravelly CLAY with gravel of brick, ceramic, timber and rootlets.						0.20 0.20	D ES	PID 0.20m, 0.0ppm
Firm orangish brown slightly silty slightly sandy slightly gravelly CLAY with low cobble content. Sand is fine to medium. Gravel is angular to sub-rounded fine to medium mudstone, limestone, coal and shale.		0.39				0.50 0.55	ES D	PID 0.50m, 0.0ppm
<i>- Below 2.20m bgl - high cobble content of mudstone.</i>						0.90	D	
						1.00	ES	PID 1.00m, 0.0ppm
Brown clayey very gravelly SAND. Gravel is of fine to coarse angular to sub-angular sandstone.		2.30				2.40	D	
Grey slightly clayey sandy GRAVEL of angular to rounded fine to coarse limestone, mudstone, quartzite, sandstone and shale.		2.80				2.90	D	
EOH at 3.10m - Terminated as possible bedrock encountered.		3.10						

Observations / Remarks  
 1. Groundwater seepage at 2.30m bgl. 2. On completion excavation was backfilled with arisings.

Project Number  
**A094939**



Project: **Former Clitheroe Hospital**  
 Location: **Clitheroe**  
 Client: **NHS Property Services Ltd**

Location Details  
 Easting: Northing:  
 Level: Depth: 2.60m  
 Logger: NS Type: TP

Status  
**DRAFT**

Pit Number  
**TP104**  
 Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:25	
Pit Dimensions 	Orientation: 90°	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: SH	
	Shoring: Not required Stability: Stable to 2.10m bgl. Unstable below. Plant: Tracked Excavator	2.60	2.37	20		Approved By: RAJ	
						Start Date: 01/02/2017	
						Finish Date: 01/02/2017	

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing		
						Depth (m)	Ref	Tests / Results
MADE GROUND: Grass over soft to firm dark brown slightly sandy slightly silty slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to sub-rounded brick, ceramic, sandstone, mudstone and shale.		0.44				0.20	ES	PID 0.20m, 0.0ppm
						0.30	D	
Soft orangish brown slightly gravelly very sandy CLAY. with low cobble content. Sand is fine to medium. Gravel is fine to medium sub-angular to rounded sandstone, limestone, shale, mudstone and coal.		2.30				0.50	ES	PID 0.50m, 0.0ppm
						0.60	D	
						0.90	D	
						1.00	ES	PID 1.00m, 0.0ppm
Greyish brown silty gravelly fine to coarse SAND with low cobble and boulder content. Cobbles of sub-angular to sub-rounded shale, and limestone. Boulders of sub-angular to sub-rounded limestone.		2.60				1.90	D	
						2.40	D	
EOH at 2.60m - Terminated as possible bedrock encountered.								

Observations / Remarks  
 1. Groundwater encountered at 2.60m bgl. 2. On completion excavation was backfilled with arisings. 3. Trial pit unstable below 2.10m bgl.

Project Number  
**A094939**

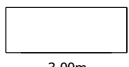


Project: **Former Clitheroe Hospital**  
 Location: **Clitheroe**  
 Client: **NHS Property Services Ltd**

Location Details  
 Easting:                    Northing:  
 Level:                      Depth: 2.90m  
 Logger: NS                Type: TP

Status  
**DRAFT**

Pit Number  
**TP105**  
 Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:25
Pit Dimensions 	Orientation: 90°	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: SH
	Shoring: Not required	2.85	2.85	20		Approved By: RAJ
	Stability: Stable					Start Date: 01/02/2017
	Plant: Tracked Excavator					Finish Date: 01/02/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing		
						Depth (m)	Ref	Tests / Results
MADE GROUND: Soft to firm dark brown slightly gravelly sandy CLAY. Sand is fine to medium. Gravel is fine to medium sub-angular to sub-rounded glass, ceramic, sandstone, coal and mudstone. Frequent rootlets.		0.38				0.20	D	PID 0.20m, 0.0ppm
	0.20					ES		
	0.40					D		
	0.50					ES	PID 0.50m, 0.0ppm	
Firm orangish brown sightly silty slightly gravelly sandy CLAY with low cobble content. Sand is fine to medium. Gravel is sub-angular to sub-rounded fine to coarse coal, shale, mudstone, sandstone and limestone. Cobbles of sub-angular to sub-rounded mudstone and limestone.		2.85 2.90				0.90	D	
	1.80					D		
	2.80					D		
Very hard grey LIMESTONE (possible bedrock). EOH at 2.90m - Terminated as possible bedrock encountered.								

Observations / Remarks  
 1. Groundwater seepage at 2.85m bgl. 2. On completion excavation was backfilled with arisings.

Project Number  
**A094939**



Project: **Former Clitheroe Hospital**  
 Location: **Clitheroe**  
 Client: **NHS Property Services Ltd**

Location Details  
 Easting:                      Northing:  
 Level:                         Depth: 2.10m  
 Logger: NS                    Type: TP

Status  
**DRAFT**

Pit Number  
**TP106**  
 Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:25
Pit Dimensions 	Orientation: 90°	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: SH
	Shoring: Not required	2.10	2.10	20		Approved By: RAJ
	Stability: Stable					Start Date: 01/02/2017
	Plant: Tracked Excavator					Finish Date: 01/02/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing			
						Depth (m)	Ref	Tests / Results	
MADE GROUND: Grass over soft to firm dark brown slightly gravelly silty sandy CLAY. Sand is fine to medium. Gravel is fine to medium sub-angular to sub-rounded limestone, mudstone, brick, coal and shale. Frequent rootlets.		0.38				0.20	D	PID 0.20m, 0.0ppm	
						0.20	ES		
Firm orangish brown slightly gravelly sandy CLAY with medium cobble content. Sand is fine to medium. Gravel is sub-angular to sub-rounded fine to medium sandstone, mudstone, shale and limestone.							0.40	D	PID 0.50m, 0.0ppm
							0.50	ES	
							0.70	D	
						1.00	ES	PID 1.00m, 0.0ppm	
						1.50	D		
						2.00	D		
EOH at 2.10m - Terminated as possible bedrock encountered.		2.10							

Observations / Remarks	
1. Groundwater seepage at 2.10m bgl. 2. On completion excavation was backfilled with arisings.	
	Project Number <b>A094939</b>



Project: **Former Clitheroe Hospital**  
 Location: **Clitheroe**  
 Client: **NHS Property Services Ltd**

Location Details  
 Easting: Northing:  
 Level: Depth: 3.72m  
 Logger: LD Type: WLS  
 Inclination: °

Status  
**DRAFT**

Borehole Number  
**WS101**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater					Scale: 1:25	
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: SH
0.00	1.20	Inspection Pit Window Sampler	Insulated hand tools	DS UK	1.20	200			2.20	-	-	2.20	20		Approved By: RAJ
1.20	3.72		Dynamic Sampling Rig	DS UK	2.00	97									Start Date: 02/02/2017
					3.00	87									Finish Date: 02/02/2017
					3.72	77									

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing		
						Depth (m)	Ref	Tests / Results
MADE GROUND: Soft dark brown slightly sandy slightly gravelly CLAY with rootlets. Sand is fine to coarse. Gravel is fine to coarse mudstone.		0.50				0.40	ES	PID 0.40m, 0.0ppm
Firm brown slightly gravelly sandy CLAY. Gravel is fine to coarse angular to sub-rounded mudstone. Sand is fine to coarse.						1.20	D	SPT(S) 1.20m, N=11 (2,2/2,3,3,3)
						1.40	ES	PID 1.40m, 0.0ppm
- Between 1.80m and 2.00m bgl - Soft						2.00	D	SPT(S) 2.00m, N=12 (2,3/2,3,3,4)
- Below 2.80m bgl - slightly sandy								
- At 3.0m bgl - Stiff						3.00	D	SPT(S) 3.00m, N=20 (2,3/5,4,5,6)
Brownish grey MUDSTONE (possible bedrock). EOH at 3.72m - Terminated as possible bedrock encountered.		3.70 3.72						SPT(S) 3.70m, 50 (25/50,...)

Observations / Remarks	Sampling Runs					Hammer Information		
	From (m)	To (m)	Diam (mm)	Recovery %	Remarks	Serial No.	Energy Ratio %	
1. Inspection pit hand excavated to 1.20m bgl prior to drilling. 2. Groundwater seepage encountered at 2.20m bgl. 3. Upon completion exploratory hole installed with 50mm diameter standpipe to 3.50m bgl.	1.20	2.00	97	100		SM110.44	85	
	2.00	3.00	87	100				
	3.00	3.72	77	100				
	Project Number						<b>A094939</b>	



Project: **Former Clitheroe Hospital**  
 Location: **Clitheroe**  
 Client: **NHS Property Services Ltd**

Location Details  
 Easting: Northing:  
 Level: Depth: 4.45m  
 Logger: LD Type: WLS  
 Inclination: °

Status  
**DRAFT**

Borehole Number  
**WS102**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater				Scale: 1:25		
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth (m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: SH
0.00	1.20	Inspection Pit	Insulated hand tools	DS UK	1.20	200			1.80	-	-	1.80	20		Approved By: RAJ
1.20	4.45	Window Sampler	Dynamic Sampling Rig	DS UK	2.00	97									Start Date: 02/02/2017
					3.00	87									Finish Date: 02/02/2017
					4.45	77									

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing		
						Depth (m)	Ref	Tests / Results
MADE GROUND: Grass over soft dark brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse angular to sub-angular mudstone and glass. Sand is fine to coarse.						0.20	ES	PID 0.20m, 0.8ppm
Soft brown slightly gravelly sandy CLAY. Gravel is fine to coarse sub-angular to rounded mudstone. Sand is fine to coarse.		0.40				0.50	ES	PID 0.50m, 0.2ppm
						1.20	D	SPT(S) 1.20m, N=4 (2,1/1,1,1,1)
						1.50	ES	PID 1.50m, 4.4ppm
<i>At 2.00m bgl - Stiff</i>						2.00	D	SPT(S) 2.00m, N=10 (2,2/2,2,3,3)
<i>At 3.00m bgl - Firm</i>						3.00	D	SPT(S) 3.00m, N=14 (2,2/3,3,3,5)
<i>At 4.00m bgl - Stiff</i>						4.00	D	SPT(S) 4.00m, N=27 (6,6/6,7,8,6)
EOH at 4.45m - Terminated borehole as reached target depth.		4.45						

Observations / Remarks	Sampling Runs				Hammer Information	
	From (m)	To (m)	Diam (mm)	Recovery %	Serial No.	Energy Ratio %
	1. Inspection pit hand excavated to 1.20m bgl prior to drilling. 2. Groundwater seepage encountered at 1.80m bgl. 3. Upon completion exploratory hole installed with 50mm diameter standpipe to 3.00m bgl.	1.20	2.00	97	70	SM110.44
	2.00	3.00	87	70		
	3.00	4.45	77	90		
	Project Number					<b>A094939</b>



Project: **Former Clitheroe Hospital**  
 Location: **Clitheroe**  
 Client: **NHS Property Services Ltd**

**Location Details**

Easting:                      Northing:  
 Level:                         Depth: 4.01m  
 Logger: LD                    Type: WLS  
    Inclination: °

**Status**

**DRAFT**

**Borehole Number**

**WS103**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing			Groundwater				Scale: 1:25	
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: SH
0.00	1.20	Inspection Pit Window Sampler	Insulated hand tools	DS UK	1.20	200			2.20	-	-	2.20	20		Approved By: RAJ
1.20	4.02		Dynamic Sampling Rig	DS UK	2.00	97									Start Date: 02/02/2017
					3.00	87									Finish Date: 02/02/2017
					4.02	77									

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing		
						Depth (m)	Ref	Tests / Results
MADE GROUND: Grass over Soft dark brown slightly sandy slightly gravelly CLAY. Gravel is angular to sub-rounded fine to coarse mudstone, glass and pottery. Sand is fine to coarse.		0.40				0.20 0.25	ES D	PID 0.20m, 0.2ppm
Firm brown slightly gravelly sandy CLAY. Gravel is fine to coarse angular to sub-rounded mudstone. Sand is fine to coarse.						0.50	ES	PID 0.50m, 0.2ppm
- Between 1.30m and 2.00m bgl - Soft						1.20	D	SPT(S) 1.20m, N=4 (1,1/1,1,1,1)
						1.50	ES	PID 1.50m, 0.0ppm
						2.00	D	SPT(S) 2.00m, N=26 (3,5/6,6,7,7)
						3.00	D	SPT(S) 3.00m, N=18 (3,3/4,4,5,5)
						4.00	D	SPT(S) 4.00m, 50 (25/50,,)
EOH at 4.01m - Terminated borehole as reached target depth.		4.02						

Observations / Remarks	Sampling Runs					Hammer Information		
	From (m)	To (m)	Diam (mm)	Recovery %	Remarks	Serial No.	Energy Ratio %	
1. Inspection pit hand excavated to 1.20m bgl prior to drilling. 2. Groundwater encountered at 2.2m bgl. 3. Upon completion exploratory hole installed with 50mm diameter standpipe to 3.50m bgl.	1.20	2.00	97	100		SM110.44	85	
	2.00	3.00	87	100				
	3.00	4.02	77	100				
	Project Number						<b>A094939</b>	



Project: **Former Clitheroe Hospital**  
 Location: **Clitheroe**  
 Client: **NHS Property Services Ltd**

Location Details  
 Easting: Northing:  
 Level: Depth: 4.45m  
 Logger: LD Type: WLS  
 Inclination: °

Status  
**DRAFT**

Borehole Number  
**WS104**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing			Groundwater				Scale: 1:25	
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: SH
0.00	1.20	Inspection Pit Window Sampler	Insulated hand tools	DS UK	1.20	200			2.20	-	-	2.20	20		Approved By: RAJ
1.20	4.45		Dynamic Sampling Rig	DS UK	2.00	87									Start Date: 02/02/2017
					3.00	77									Finish Date: 02/02/2017
					4.45	67									

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing		
						Depth (m)	Ref	Tests / Results
Grass over TOPSOIL: Dark brown slightly sandy Clay with roots and rootlets. Sand is fine to coarse.		0.20				0.20	ES	PID 0.20m, 0.0ppm
Soft brown slightly gravelly slightly sandy CLAY with gravel of angular to sub-angular fine to coarse mudstone. Sand is fine to coarse.		0.50				0.50	ES	PID 0.50m, 0.0ppm
- Between 1.20m and 3.00m bgl - Firm		1.20				1.20	D	SPT(S) 1.20m, N=8 (2,2/2,2,2,2)
		1.50				1.50	ES	PID 1.50m, 0.0ppm
		2.00				2.00	D	SPT(S) 2.00m, N=12 (1,1/2,4,3,3)
		3.00				3.00	D	SPT(S) 3.00m, N=19 (3,4/4,5,4,6)
		4.00				4.00	D	SPT(S) 4.00m, N=34 (5,6/6,5,13,10)
EOH at 4.45m - Terminated borehole as reached target depth.		4.45						

Observations / Remarks	Sampling Runs				Hammer Information	
	From (m)	To (m)	Diam (mm)	Recovery %	Serial No.	Energy Ratio %
1. Inspection pit hand excavated to 1.20m bgl prior to drilling. 2. Groundwater encountered at 2.2m bgl. 3. Upon completion exploratory hole installed with 50mm diameter standpipe to 4.00m bgl.	1.20	2.00	87	100	SM110.44	85
	2.00	3.00	77	80		
	3.00	4.45	67	80		
	Project Number <b>A094939</b>					





Project: **Former Clitheroe Hospital**  
 Location: **Clitheroe**  
 Client: **NHS Property Services Ltd**

Location Details  
 Easting: Northing:  
 Level: Depth: 2.82m  
 Logger: LD Type: WLS  
 Inclination: °

Status  
**DRAFT**

Borehole Number  
**WS105**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater					Scale: 1:25	
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: SH
0.00	1.20	Inspection Pit Window Sampler	Insulated hand tools	DS UK	1.20	200									Approved By: RAJ
1.20	2.82		Dynamic Sampling Rig	DS UK	2.00	97									Start Date: 02/02/2017
					2.82	87									Finish Date: 02/02/2017

Strata Description				Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing		
									Depth (m)	Ref	Tests / Results
Grass over TOPSOIL: Firm dark brown slightly sandy Clay with rootlets. Sand is fine to coarse.					0.20				0.20	ES	PID 0.20m, 0.0ppm
Firm brown slightly sandy slightly gravelly CLAY. Gravel is sub-angular to angular fine to coarse mudstone. Sand is fine to coarse.					0.50				0.50	D	
<i>Between 2.00m and 2.82m bgl - Very stiff</i>					1.20				1.20	D	SPT(S) 1.20m, N=8 (1,1/1,1,3,3)
					1.50				1.50	ES	PID 1.50m, 0.0ppm
EOH at 2.82m - Terminated as possible bedrock encountered.					2.00				2.00	D	SPT(S) 2.00m, N=33 (5,6/5,6,10,12)
					2.82				2.80m	D	SPT(S) 2.80m, 50 (25/50,,)

Observations / Remarks	Sampling Runs					Hammer Information	
	From (m)	To (m)	Diam (mm)	Recovery %	Remarks	Serial No.	Energy Ratio %
	1. Inspection pit hand excavated to 1.20m bgl prior to drilling. 2. Groundwater was not observed. 3. Upon completion exploratory hole installed with 50mm diameter standpipe to 2.50m bgl.	1.20	2.00	97	100		SM110.44
	2.00	2.82	87	90		Project Number <b>A094939</b>	



Project: **Former Clitheroe Hospital**  
 Location: **Clitheroe**  
 Client: **NHS Property Services Ltd**

Location Details  
 Easting: Northing:  
 Level: Depth: 4.45m  
 Logger: LD Type: WLS  
 Inclination: °

Status  
**DRAFT**

Borehole Number  
**WS106**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing			Groundwater				Scale: 1:25	
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: SH
0.00	1.20	Inspection Pit	Insulated hand tools	DS UK	1.20	200									Approved By: RAJ
1.20	4.45	Window Sampler	Dynamic Sampling Rig	DS UK	2.00	97									Start Date: 02/02/2017
					3.00	87									Finish Date: 02/02/2017
					4.45	77									

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing		
						Depth (m)	Ref	Tests / Results
MADE GROUND: Asphalt								
MADE GROUND: Greyish black sandy angular LIMESTONE. Sand is fine to coarse.		0.15				0.20	ES	PID 0.20m, 0.3ppm
Firm brown slightly gravelly sandy CLAY. Gravel is angular to sub-angular fine to coarse mudstone. Sand is fine to coarse.  - At 1.20m bgl - Soft  Between 2.00m and 4.45m bgl - Stiff		0.40				0.50	ES	PID 0.50m, 0.4ppm
						1.20	D	SPT(S) 1.20m, N=6 (1,1/2,1,1,2)
						1.50	ES	PID 1.50m, 0.0ppm
						2.00	D	SPT(S) 2.00m, N=20 (3,2/4,6,4,6)
						3.00	D	SPT(S) 3.00m, N=26 (7,5/5,6,10)
								SPT(S) 4.00m, N=17 (3,3/5,4,4,4)
EOH at 4.45m - Terminated borehole as reached target depth.		4.45						

Observations / Remarks	Sampling Runs					Hammer Information	
	From (m)	To (m)	Diam (mm)	Recovery %	Remarks	Serial No.	Energy Ratio %
1. Inspection pit hand excavated to 1.20m bgl prior to drilling. 2. Groundwater was not observed. 3. Upon completion exploratory hole installed with 50mm diameter standpipe to 2.50m bgl.	1.20	2.00	97	100		SM110.44	85
	2.00	3.00	87	100			
	3.00	4.45	77	100			
	Project Number						<b>A094939</b>



## **Appendix C – Geo-chemical Laboratory Test Results**



# Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

Unit 3 Deeside Point  
Zone 3  
Deeside Industrial Park  
Deeside  
CH5 2UA

WYG  
Quay West at MediaCityUK  
Trafford Wharf Road  
Trafford Park  
Manchester  
M17 1HH

Tel: +44 (0) 1244 833780

Fax: +44 (0) 1244 833781



**Attention :** Sara Hegewald  
**Date :** 15th February, 2017  
**Your reference :** A094939  
**Our reference :** Test Report 17/3294 Batch 1  
**Location :** Clitheroe Community Hospital  
**Date samples received :** 2nd February, 2017  
**Status :** Final report  
**Issue :** 1

Sixteen samples were received for analysis on 2nd February, 2017 of which six were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

## Compiled By:

**Bruce Leslie**  
Project Co-ordinator















**Client Name:** WYG  
**Reference:** A094939  
**Location:** Clitheroe Community Hospital  
**Contact:** Sara Hegewald

**Note:**

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:



Ryan Butterworth  
 Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/3294	1	TP101A	0.20	11	07/02/2017	General Description (Bulk Analysis)	soil/stones
					07/02/2017	Asbestos Fibres	NAD
					07/02/2017	Asbestos Fibres (2)	NAD
					07/02/2017	Asbestos ACM	NAD
					07/02/2017	Asbestos ACM (2)	NAD
					07/02/2017	Asbestos Type	NAD
					07/02/2017	Asbestos Type (2)	NAD
					07/02/2017	Asbestos Level Screen	NAD
17/3294	1	TP102	0.20	17	07/02/2017	General Description (Bulk Analysis)	soil/stones
					07/02/2017	Asbestos Fibres	NAD
					07/02/2017	Asbestos Fibres (2)	NAD
					07/02/2017	Asbestos ACM	NAD
					07/02/2017	Asbestos ACM (2)	NAD
					07/02/2017	Asbestos Type	NAD
					07/02/2017	Asbestos Type (2)	NAD
					07/02/2017	Asbestos Level Screen	NAD
17/3294	1	TP104	0.20	26	07/02/2017	General Description (Bulk Analysis)	soil/stones
					07/02/2017	Asbestos Fibres	NAD
					07/02/2017	Asbestos Fibres (2)	NAD
					07/02/2017	Asbestos ACM	NAD
					07/02/2017	Asbestos ACM (2)	NAD
					07/02/2017	Asbestos Type	NAD
					07/02/2017	Asbestos Type (2)	NAD
					07/02/2017	Asbestos Level Screen	NAD
17/3294	1	TP106	0.20	41	07/02/2017	General Description (Bulk Analysis)	soil/stones
					07/02/2017	Asbestos Fibres	NAD
					07/02/2017	Asbestos Fibres (2)	NAD
					07/02/2017	Asbestos ACM	NAD
					07/02/2017	Asbestos ACM (2)	NAD
					07/02/2017	Asbestos Type	NAD
					07/02/2017	Asbestos Type (2)	NAD
					07/02/2017	Asbestos Level Screen	NAD



# NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/3294

## SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

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Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

## DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

## SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

## DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

## BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

## NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

Please include all sections of this report if it is reproduced

**ABBREVIATIONS and ACRONYMS USED**

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 17/3294

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes

JE Job No: 17/3294

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.			AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.			AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes		AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes



JE Job No: 17/3294

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	Yes

JE Job No: 17/3294

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes	Yes	AD	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM0	No preparation is required.	Yes		AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.			AR	Yes
NONE	No Method Code	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.				
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.			AR	
TM15_A	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes



# Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

Unit 3 Deeside Point  
Zone 3  
Deeside Industrial Park  
Deeside  
CH5 2UA

WYG  
Quay West at MediaCityUK  
Trafford Wharf Road  
Trafford Park  
Manchester  
M17 1HH

Tel: +44 (0) 1244 833780

Fax: +44 (0) 1244 833781



4225



**Attention :** Sara Hegewald  
**Date :** 15th February, 2017  
**Your reference :** A094939  
**Our reference :** Test Report 17/3294 Batch 2  
**Location :** Clitheroe Community Hospital  
**Date samples received :** 4th February, 2017  
**Status :** Final report  
**Issue :** 1

Eleven samples were received for analysis on 4th February, 2017 of which six were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

## Compiled By:

**Bruce Leslie**  
Project Co-ordinator















**Client Name:** WYG  
**Reference:** A094939  
**Location:** Clitheroe Community Hospital  
**Contact:** Sara Hegewald

**Note:**

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

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Signed on behalf of Jones Environmental Laboratory:



Ryan Butterworth  
 Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/3294	2	WS101	0.40	50	08/02/2017	<b>General Description (Bulk Analysis)</b>	soil/stones
					08/02/2017	<b>Asbestos Fibres</b>	NAD
					08/02/2017	<b>Asbestos Fibres (2)</b>	NAD
					08/02/2017	<b>Asbestos ACM</b>	NAD
					08/02/2017	<b>Asbestos ACM (2)</b>	NAD
					08/02/2017	<b>Asbestos Type</b>	NAD
					08/02/2017	<b>Asbestos Type (2)</b>	NAD
					08/02/2017	<b>Asbestos Level Screen</b>	NAD
17/3294	2	WS102	0.20	54	08/02/2017	<b>General Description (Bulk Analysis)</b>	soil/stones
					08/02/2017	<b>Asbestos Fibres</b>	NAD
					08/02/2017	<b>Asbestos Fibres (2)</b>	NAD
					08/02/2017	<b>Asbestos ACM</b>	NAD
					08/02/2017	<b>Asbestos ACM (2)</b>	NAD
					08/02/2017	<b>Asbestos Type</b>	NAD
					08/02/2017	<b>Asbestos Type (2)</b>	NAD
					08/02/2017	<b>Asbestos Level Screen</b>	NAD
17/3294	2	WS103	0.20	59	08/02/2017	<b>General Description (Bulk Analysis)</b>	soil/stones
					08/02/2017	<b>Asbestos Fibres</b>	NAD
					08/02/2017	<b>Asbestos Fibres (2)</b>	NAD
					08/02/2017	<b>Asbestos ACM</b>	NAD
					08/02/2017	<b>Asbestos ACM (2)</b>	NAD
					08/02/2017	<b>Asbestos Type</b>	NAD
					08/02/2017	<b>Asbestos Type (2)</b>	NAD
					08/02/2017	<b>Asbestos Level Screen</b>	NAD
17/3294	2	WS106	0.20	70	08/02/2017	<b>General Description (Bulk Analysis)</b>	soil/stones
					08/02/2017	<b>Asbestos Fibres</b>	NAD
					08/02/2017	<b>Asbestos Fibres (2)</b>	NAD
					08/02/2017	<b>Asbestos ACM</b>	NAD
					08/02/2017	<b>Asbestos ACM (2)</b>	NAD
					08/02/2017	<b>Asbestos Type</b>	NAD
					08/02/2017	<b>Asbestos Type (2)</b>	NAD
					08/02/2017	<b>Asbestos Level Screen</b>	NAD



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JE Job No.: 17/3294

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## BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

## NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

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