

APPENDIX B - EXPLORATORY HOLE LOGS



Trial Pit Log

Trialpit No

HDP01

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338641.22 - 351122.96

Level: 31.96

Date

20/06/2023

Location: Wrexham

Dimensions
(m):

0.2

Depth
1.10

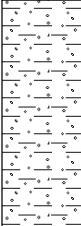
0.2

Scale

1:25

Logged
ER

Client: Net World Sports

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.20	ES		0.30	31.66		MADE GROUND: Soft to firm, dark brown, slightly sandy to sandy, gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, angular to sub angular of mudstone, coal, brick, concrete and rare ceramic.
	0.80	ES		1.10	30.86		MADE GROUND Firm to stiff, dark brown, mottled grey slightly gravelly CLAY. Gravel is fine to coarse, angular to sub angular of mudstone, coal, quartz and sandstone. TILL
							End of pit at 1.10 m

1

2

3

4

5

Remarks: 1) Hand dug pit for geoenvironmental purposes 2) No groundwater ingress encountered 3) Terminated at 1.10m bgl.

Stability: Stable





Trial Pit Log

Trialpit No

HDP02

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338249.17 - 350930.08

Level: 33.20

Date

20/06/2023

Location: Wrexham

Dimensions
(m):

0.2

Depth
1.00

0.2

Scale

1:25

Logged
ER

Client: Net World Sports

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.50	ES		0.20	33.00		Grass over, dark to orangish brown. Slightly gravelly, clayey, fine to coarse SAND. Garvel is fine to coarse, angular to subrounded of mudstone, sandstone and clods of clay. Frequent rootlets throughout. TOPSOIL
				1.00	32.20		Firm to stiff, dark brown, mottled grey, slightly gravelly CLAY . Gravel is fine to coarse, angular to subangular of mudstone, coal, quartz and sandstone. TILL
							End of pit at 1.00 m

1

2

3

4

5

Remarks: 1) Hand dug pit for geoenvironmental purposes 2) No groundwater ingress encountered 3) Terminated at 1.00m bgl

Stability: Stable





Trial Pit Log

Trialpit No

HDP03

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749Co-ords: 338411.88 - 351300319.00
Level: 30.05Date
20/06/2023

Location: Wrexham

Dimensions
(m):

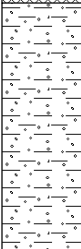
0.2

Client: Net World Sports

Depth
1.10

0.2

Scale
1:25Logged
ER

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.10	ES		0.25	29.80		MADE GROUND: Crops over soft, dark brown, slightly sandy, gravelly CLAY. Sand is fine to coarse, gravel is fine to coarse, angular to subangular of brick, mudstone, sandstone and limestone.
							MADE GROUND POSSIBLE MADE GROUND: Soft, locally firm, orangish brown, mottled grey, gravelly CLAY. Gravel is fine to medium, angular to subangular of mudstone, coal and sandstone (potentially reworked)
				1.10	28.95		POSSIBLE MADE GROUND
							End of pit at 1.10 m

1

2

3

4

5

Remarks: 1) Hand dug pit for geoenvironmental purposes 2) No groundwater ingress encountered 3) Terminated at 1.10m bgl

Stability: Stable





Trial Pit Log

Trialpit No

HDP04

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338168.53 - 351043.49

Level: 35.95

Date

20/06/2023

Location: Wrexham

Dimensions
(m):

0.2

Depth
1.20

0.2

Scale

1:25

Logged
ER

Client: Net World Sports

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	ES		0.38	35.57		MADE GROUND: Grass over dark brown, slightly clayey, gravelly to very gravelly, fine to coarse SAND. Gravel is fine to coarse, angular of mudstone, brick, concrete, limestone and rare cobbles of brick. MADE GROUND	
	0.90	ES		1.20	34.75		MADE GROUND: Stiff, dark brown, slightly gravelly CLAY. Gravel is fine to coarse, angular to subrounded of mudstone, sandstone, quartz and coal. TILL	1
							End of pit at 1.20 m	2
								3
								4
								5

Remarks: 1) Hand dug pit for geoenvironmental purposes 2) No groundwater ingress encountered 3) Terminated at 1.20m bgl

Stability: Stable





Trial Pit Log

Trialpit No

HDP05

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749Co-ords: 338819.56 - 351498.03
Level: 28.90Date
20/06/2023

Location: Wrexham

Dimensions
(m):

0.2

Depth
1.00

0.2

Scale
1:25Logged
ER

Client: Net World Sports

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.25	ES		0.35	28.55		Grass over, soft, dark brown, silty, gravelly CLAY. Gravel is fine to medium, angular to subrounded of mudstone, sandstone and limestone. Frequent rootlets throughout. TOPSOIL	
							Firm, dark brown, slightly silty, slightly gravelly CLAY. Arvel is fine to medium, angular to rounded of mudstone, quartz and coal. TILL	
				1.00	27.90			
							End of pit at 1.00 m	1
								2
								3
								4
								5

Remarks: 1) Hand dug pit for geoenvironmental purposes 2) No groundwater ingress encountered 3) Terminated at 1.00m bgl

Stability: Stable





Trial Pit Log

Trialpit No
HDP06
Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338870.80 - 351241.64
Level: 29.78

Date
20/06/2023

Location: Wrexham

Dimensions (m):

0.2

Depth
1.10

0.2

Scale
1:25

Logged
ER

Client: Net World Sports

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.50	ES		0.20	29.58		Grass over, soft, dark brown, silty, gravelly CLAY. Gravel is fine to medium, angular to subrounded of mudstone, sandstone and limestone. Frequent rootlets throughout. TOPSOIL	
							Firm, dark brown, slightly silty, slightly gravelly CLAY. Gravel is fine to medium, angular to rounded of mudstone, quartz and coal. TILL	
				1.10	28.68		End of pit at 1.10 m	1
								2
								3
								4
								5

Remarks: 1) Hand dug pit for geoenvironmental purposes 2) No groundwater ingress encountered 3) Terminated at 1.10m bgl.

Stability: Stable





Trial Pit Log

Trialpit No

HDP07

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749Co-ords: 338760.51 - 351278.09
Level: 30.21Date
20/06/2023

Location: Wrexham

Dimensions
(m):

0.2

Depth
1.00

0.2

Scale
1:25Logged
ER

Client: Net World Sports

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.20	ES		0.30	29.91		MADE GROUND: Grass over dark, blackish brown, slightly clayey to clayey, gravelly, fine to coarse SAND. Gravel is fine to coarse, angular to subangular of brick, mudstone, coal, clinker, concrete and wood fragments. MADE GROUND POSSIBLE MADE GROUND: Soft, orangish brown, sandy, gravelly CLAY. Gravel is fine to coarse, angular of mudstone, sandstone and coal. (potentially reworked) POSSIBLE MADE GROUND
	0.70	ES		1.00	29.21		
							End of pit at 1.00 m

1

2

3

4

5

Remarks: 1) Hand dug pit for geoenvironmental purposes 2) No groundwater ingress encountered 3) Terminated at 1.00m bgl

Stability: Stable





Trial Pit Log

Trialpit No

HDP08

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords:	338746.33 - 351271.46
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Level: 29.92

Date _____

20/06/2023

Location: Wrexham

Dimensions
(m):

0.2

Depth	1.00
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0.2

Scale

1:25

Logged
ER

Client: Net World Sports

[illegible]

Remarks:	1) Hand dug pit for geoenvironmental purposes 2) No groundwater ingress encountered 3) Terminated at 1.00m bgl
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Stability: Stable





Trial Pit Log

Trialpit No

TP01

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338570.62 - 351104.86

Level: 32.62

Date

05/06/2023

Location: Wrexham

Dimensions
(m):

2

Depth
3.50

0.6

Scale

1:25

Logged
ER

Client: Net World Sports

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.40	ES	HVR=111 HVR=113	0.55	32.07		Crops over, firm, dark brown, silty, sandy CLAY. Sand is fine to medium. Frequent rootlets throughout. TOPSOIL	
	1.10	ES	HVR=124				Stiff to very stiff, dark brown, mottled grey, slightly silty, slightly sandy CLAY. Sand is fine. TILL <u>Grey mottled lenses are silty.</u>	1
	1.50 - 1.80	B	HVR=130					
	2.10	ES	HVR=130 HVR=130					2
	3.10	ES	HVR=130 HVR=130					3
			HVR=130	3.50	29.12		End of pit at 3.50 m	4
								5

Remarks: 1) Trial pit for geoenvironmental purposes. 2) No groundwater ingress encountered 3) Terminated on hard digging.

Stability: Stable





Trial Pit Log

Trialpit No

TP02

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338503.83 - 351209.83

Level: 31.58

Date

05/06/2023

Location: Wrexham

Dimensions
(m):

2

Depth
3.00

0.6

Scale

1:25

Logged
ER

Client: Net World Sports

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.30	ES	HVR=53	0.30	31.28		Crops over, firm, dark brown, silty, sandy CLAY. Sand is fine to medium. Frequent rootlets throughout. TOPSOIL	
	0.50 - 0.90	B	HVR=70				Firm, greyish and yellowish brown, slightly gravelly, sandy, silty CLAY. Gravel is fine to medium, angular to rounded of mudstone, sandstone and coal. Sand is fine to medium. TILL	
	0.90	ES	HVR=119	1.05	30.53		Stiff to very stiff, dark brown, mottled grey, slightly silty, slightly sandy CLAY. Sand is fine. TILL	1
	2.00	ES	HVR=130					2
			HVR=130					
			HVR=130	3.00	28.58			3
							End of pit at 3.00 m	
								4
								5

Remarks: 1) Trial pit for geoenviromental purposes. 2) No groundwater ingress encountered 3) Terminated on hard digging.

Stability: Stable





Trial Pit Log

Trialpit No

TP03

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749Co-ords: 338597.50 - 351217.44
Level: 30.99Date
05/06/2023

Location: Wrexham

Dimensions
(m):

2

Depth
3.50

0.6

Scale
1:25Logged
ER

Client: Net World Sports

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.25	ES	HVR=47	0.35	30.64		Crops over, firm, dark brown, silty, sandy CLAY. Sand is fine to medium. Frequent rootlets throughout. TOPSOIL	1
	0.50 - 0.70	B	HVR=89				Firm becoming stiff, greyish and yellowish brown, slightly gravelly, sandy, silty CLAY. Gravel is fine to medium, angular to rounded of mudstone and sandstone. Sand is fine to medium. TILL	
	0.95	ES	HVR=123	1.00	29.99		Stiff to very stiff, dark brown, mottled grey, slightly silty, slightly sandy CLAY. Sand is fine. TILL	
	1.40	ES	HVR=130					2
	1.50 - 1.80	B	HVR=130					
			HVR=130					
			HVR=130	3.50	27.49			3
			HVR=130					
			HVR=130					
							End of pit at 3.50 m	4
								5

Remarks: 1) Trial pit for geoenviromental purposes. 2) No groundwater ingress encountered 3) Terminated on hard digging.

Stability: Stable





Trial Pit Log

Trialpit No

TP04

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338454.64 - 351292.86

Level: 30.72

Date

06/06/2023

Location: Wrexham

Dimensions
(m):

2

Depth
3.50

0.6

Scale

1:25

Logged
ER

Client: Net World Sports

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.20	ES	HVR=67	0.25	30.47		Crops over, soft, dark brown, slightly gravelly, sandy, silty CLAY. Gravel is fine to medium, angular to subrounded of mudstone and siltstone. Sand is fine to medium. Frequent rootlets throughout. TOPSOIL	
							Firm, orangish brown to dark brown, slightly gravelly, sandy CLAY. Gravel is fine to coarse, angular to rounded of coal, mudstone, siltstone and sandstone. Sand is fine to medium. TILL	
	0.80	B		0.70	30.02		Orangish brown, slightly gravelly to gravelly, clayey, silty, fine to coarse SAND. Gravel is fine to coarse, angular to rounded of mudstone, coal, quartz and sandstone. TILL <i>Encountered only in northern pit wall.</i>	1
	1.30	ES	HVR=128	1.35	29.37		Stiff, becoming very stiff, dark brown, mottled bluish grey, slightly gravelly CLAY. Gravel is fine to medium, angular to rounded of mudstone, siltstone and coal. TILL	
			HVR=130					2
			HVR=130					
			HVR=130					3
			HVR=130					
				3.50	27.22		End of pit at 3.50 m	4
								5

Remarks: 1) Terminated at 3.50m bgl 2) Trial pit for geoenvironmental purposes. 3) Groundwater seepage at 0.70m bgl in northern pit wall.

Stability: Stable





Trial Pit Log

Trialpit No

TP05

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338275.72 - 350942.72

Level: 33.81

Date

07/06/2023

Location: Wrexham

Dimensions
(m):

2.5

Depth
3.10

0.2

Scale

1:25

Logged
ER

Client: Net World Sports

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES		0.25	33.56		Grass over dark brown, slightly clayey to clayey, silty, gravelly, fine to medium SAND. Gravel is fine to coarse, angular to rounded of mudstone, sandstone and limestone. Frequent rootlets throughout.	
	0.40	B					TOPSOIL	
	0.60	ES		0.70	33.11		Orangish brown, slightly gravelly to gravelly, clayey, fine to medium SAND. Gravel is fine to coarse, angular to subrounded of mudstone and coal.	
			HVR=123				TILL	
							Stiff becoming very stiff, dark brown, mottled bluish grey, slightly gravelly CLAY. Gravel is fine to medium, angular to rounded of mudstone, siltstone and coal.	1
							TILL	
	1.30	ES						2
			HVR=125					
			HVR=125					
			HVR=130					
	2.60	ES						
			HVR=130					
	2.90	B		3.10	30.71			3
			HVR=130					
							End of pit at 3.10 m	
								4
								5

Remarks: 1) Trial pit for geoenvironmental purposes. 2) No groundwater ingress encountered 3) Terminated at 3.10m bgl.

Stability: Stable





Trial Pit Log

Trialpit No

TP06

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749Co-ords: 338251.17 - 350997.05
Level: 34.67Date
07/06/2023

Location: Wrexham

Dimensions
(m):

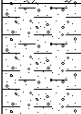
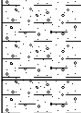
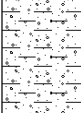
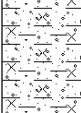
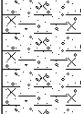
2

Client: Net World Sports

Depth
3.20

0.6

Scale
1:25Logged
ER

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	ES	HVR=71	0.40	34.27		Grass over dark brown, slightly clayey to clayey, silty, gravelly, fine to medium SAND. Gravel is fine to coarse, angular to rounded of mudstone, limestone, sandstone and clods of clay. Frequent rootlets throughout. TOPSOIL	1
	0.80	ES					Firm, light yellowish brown to brown, slightly gravelly, very sandy CLAY. Gravel is fine to coarse, angular to subrounded of mudstone, coal and quartz. Sand is fine to medium. TILL	
	1.00	B	HVR=82	1.05	33.62		Firm, locally stiff, dark reddish brown, mottled grey, gravelly, sandy CLAY. Gravel is fine to coarse, angular to rounded of mudstone, coal, quartz, sandstone and mixed igneous lithologies. Sand is fine to coarse. TILL	
	1.50	B	HVR=85				<i>Occasional pockets of fine to coarse SAND.</i>	2
	1.75	ES	HVR=110	1.80	32.87		Stiff to very stiff, dark reddish brown, mottled bluish grey, slightly sandy, slightly silty, slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular to rounded of mudstone, coal and quartz. TILL	
	2.50	ES						
			HVR=130	3.20	31.47			3
							End of pit at 3.20 m	4
								5

Remarks: 1) Trial pit for geoenvironmental purposes. 2) No groundwater ingress encountered 3) Terminated at 3.20m bgl.

Stability: Stable





Trial Pit Log

Trialpit No

TP07

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338206.91 - 351034.38

Level: 35.43

Date

07/06/2023

Location: Wrexham

Dimensions
(m):

2.5

Depth
3.05

0.6

Scale

1:25

Logged
ER

Client: Net World Sports

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.15	B					Grass over dark brown, slightly clayey to clayey, silty, gravelly, fine to medium SAND. Gravel is fine to coarse, angular to rounded of mudstone, sandstone and limestone. Frequent rootlets throughout.	
	0.30	ES	HVR=118	0.38	35.05		TOPSOIL	
							Stiff, becoming very stiff, dark brown, mottled bluish grey, slightly silty, slightly gravelly CLAY. Gravel of fine to coarse, angular to subrounded of coal, mudstone, quartz and rare igneous lithologies.	
							TILL	
	1.00	ES	HVR=127					1
			HVR=130					
	2.00	ES	HVR=130					2
			HVR=130					
	2.70	B	HVR=130	3.05	32.38			3
							End of pit at 3.05 m	
								4
								5

Remarks: 1) Trial pit for geoenvironmental purposes. 2) No groundwater ingress encountered 3) Terminated at 3.05m bgl.

Stability: Stable





Trial Pit Log

Trialpit No

TP08

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338158.47 - 350940.50

Level: 34.78

Date

07/06/2023

Location: Wrexham

Dimensions
(m):

2

Client: Net World Sports

Depth
3.00

0.6

Scale

1:25

Logged
ER

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	ES					Grass over dark brown, slightly clayey to clayey, silty, gravelly, fine to medium SAND. Gravel is fine to coarse, angular to rounded of mudstone, limestone and clods of clay. Frequent rootlets throughout. TOPSOIL	
			HVR=109	0.40	34.38		Stiff becoming very stiff, dark brown mottled grey, slightly silty, slightly gravelly to gravelly CLAY. Gravel is fine to coarse, angular to subrounded of coal, mudstone, quartz and occasional sandstone.	1
			HVR=117					
	1.30	B						
			HVR=130					
	1.80	ES					<u>Frangible from 1.80m</u>	2
			HVR=130					
			HVR=130					
			HVR=130	3.00	31.78		End of pit at 3.00 m	3
								4
								5

Remarks: 1) Trial pit for geoenvironmental purposes. 2) No groundwater ingress encountered 3) Terminated at 3.00m bgl.

Stability: Stable







Trial Pit Log

Trialpit No

TP10

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338106.44 - 351059.46

Level: 37.79

Date

07/06/2023

Location: Wrexham

Dimensions
(m):

2.1

Depth
3.45

0.2

Scale

1:25

Logged
ER

Client: Net World Sports

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.25	ES		0.32	37.47		Grass over dark brown, slightly clayey, gravelly, silty, fine to medium SAND. Gravel is fine to coarse, angular to rounded of coal, mudstone and quartz. Frequent rootlets throughout. TOPSOIL	
	0.60	ES	HVR=67 HVR=91	0.70	37.09		Firm to stiff, dark brown, sandy, gravelly CLAY. Sand is fine to medium, gravel is fine to coarse, angular to rounded of mudstone, sandstone, coal and quartz. TILL	
			HVR=124				Stiff to very stiff, dark brown, slightly gravelly, friable CLAY. Gravel is fine to coarse, angular to subrounded of mudstone, coal, sandstone and mixed igneous lithologies. TILL	1
	1.50	ES	HVR=120 HVR=130					2
	2.30	B	HVR=130					
			HVR=130					3
	3.20	ES						
				3.45	34.34		End of pit at 3.45 m	4
								5

Remarks: 1) Trial pit for geoenvironmental purposes. 2) No groundwater ingress encountered 3) Terminated at 3.45m bgl.

Stability: Stable





Trial Pit Log

Trialpit No

TP11

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338057.50 - 351144.40

Level: 39.21

Date

07/06/2023

Location: Wrexham

Dimensions
(m):

2

Depth
3.00

0.6

Scale

1:25

Logged
ER

Client: Net World Sports

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES		0.22	38.99		Grass over dark brown, slightly clayey, gravelly, silty, fine to medium SAND. Gravel is fine to coarse, angular to rounded of coal, mudstone and quartz. Frequent rootlets throughout. TOPSOIL	
			HVR=117				Stiff becoming very stiff, dark brown, mottled grey, slightly gravelly, slightly silty, sandy CLAY. Gravel is fine to coarse, angular to rounded of mudstone, coal, sandstone and quartz. Sand is fine to medium. TILL	
	0.95	ES						1
	1.10	B						
			HVR=120					
			HVR=130					
							Slightly sandy from 1.60m	
	1.85	ES						2
			HVR=130					
			HVR=130					
			HVR=130	3.00	36.21		End of pit at 3.00 m	3
								4
								5

Remarks: 1) Trial pit for geoenvironmental purposes. 2) No groundwater ingress encountered 3) Terminated at 3.00m bgl.

Stability: Stable







Trial Pit Log

Trialpit No

TP13

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338643.48 - 351259.03

Level: 30.26

Date

09/06/2023

Location: Wrexham

Dimensions
(m):

2.1

Client: Net World Sports

Depth
3.00

0.6

Scale

1:25

Logged
ER

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.15	ES		0.26	30.00		Crops over dark brown, slightly clayey, gravelly, fine to coarse SAND. Gravel is fine to coarse, angular to subrounded of mudstone, limestone and sandstone. Frequent rootlets throughout. TOPSOIL	
	0.70	ES	HVR=60				MADE GROUND: Firm, dark brown, sandy, gravelly CLAY. Sand is fine to coarse, gravel is fine to coarse, angular to subrounded of mudstone, coal and rare sandstone (reworked) MADE GROUND	
			HVR=14	0.85	29.41		MADE GROUND: Very soft, grey, gravelly, peaty, very silty CLAY. Gravel is fine to coarse, angular to subangular of mudstone and siltstone. Frequent fragments of wood and tree roots. MADE GROUND <i>Strong organic odour at 0.85m to 2.10m</i>	1
	1.45	ES	HVR=17					
	1.90	B	HVR=16	2.10	28.16		Stiff to very stiff, dark brown, mottled grey, slightly sandy CLAY. Sand is fine to medium TILL	2
	2.30	ES	HVR=121					
			HVR=130	3.00	27.26		End of pit at 3.00 m	3
								4
								5

Remarks: 1) Trial pit for geoenvironmental purposes. 2) Groundwater encountered at 0.85m bgl - rapid influx 3) Terminated at 3.00m bgl. 4) Strong organic odour between 0.85m bgl to 2.10m bgl.

Stability: Stable





Trial Pit Log

Trialpit No

TP14

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749Co-ords: 338582.55 - 351248.22
Level: 30.53Date
09/06/2023

Location: Wrexham

Dimensions (m): 2.3

Client: Net World Sports

Depth
1.90

0.6

Scale
1:25Logged
ER

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.20	B					MADE GROUND: Crops over, blackish brown, clayey, sandy, fine to coarse, angular to subangular GRAVEL of brick, mudstone, coal, concrete and clods of clay. MADE GROUND	
	0.40	ES						
	0.80	B	HVR=3	0.59	29.94		MADE GROUND: Very soft, grey, very silty CLAY. Frequent pockets of black, spongy, pseudofibrous to fibrous peat. MADE GROUND	1
	1.10	ES	HVR=16					
	1.80	ES	HVR=6 HVR=123	1.75 1.90	28.78 28.63		Stiff to very stiff, dark brown, mottled grey, slightly sandy CLAY. TILL	2
							End of pit at 1.90 m	3
								4
								5

Remarks: 1) Trial pit for geoenvironmental purposes. 2) Groundwater encountered at 0.70m bgl - slight influx 3) Terminated at pit collapse. 4) Strong organic odour between 0.59m bgl to 1.75m bgl.

Stability: Unstable: East wall collapse





Trial Pit Log

Trialpit No

TP15

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749Co-ords: 338611.53 - 351371.33
Level: 29.66Date
09/06/2023

Location: Wrexham

Dimensions
(m):

2

Depth
4.00

0.6

Scale
1:25Logged
ER

Client: Net World Sports

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.10	ES					Crops over dark brown, slightly gravelly, sandy CLAY. Sand is fine to medium, gravel is fine to coarse, angular to rounded of mixed natural lithologies. Frequent rootlets throughout.
			HVR=63	0.30	29.36		TOPSOIL
	0.50	ES					Firm, brown, locally yellowish brown, sandy, gravelly CLAY. Sand is fine to coarse, gravel is fine to coarse, angular to rounded of mudstone, coal, sandstone and occasional quartz.
			HVR=107	0.55	29.11		TILL
							Stiff to very stiff, dark brown, mottled grey, slightly sandy CLAY. Sand is fine to medium.
							TILL
			HVR=128				
	1.45	ES					
			HVR=130				
			HVR=127				
			HVR=130				
	3.00	B					
			HVR=130				
			HVR=130				
			HVR=130				
			HVR=130	4.00	25.66		End of pit at 4.00 m

Remarks: 1) Trial pit for geoenvironmental purposes. 2) No groundwater ingress encountered 3) Terminated at 4.00m bgl

Stability: Stable





Trial Pit Log

Trialpit No

TP16

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338541.62 - 351182.20

Level: 31.89

Date

09/06/2023

Location: Wrexham

Dimensions
(m):

2.8

Client: Net World Sports

Depth
3.00

0.6

Scale

1:25

Logged
ER

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.35	ES	HVR=53	0.60	31.29		MADE GROUND: Crops over firm, brown, gravelly, sandy CLAY. Sand is fine to coarse, gravel is fine to coarse, angular to subrounded of mixed natural lithologies, brick and rare tile. MADE GROUND	1
			HVR=12				MADE GROUND: Very soft to soft, blackish grey, silty CLAY. Frequent fragments of tree root. MADE GROUND	
	1.05	ES	HVR=31					
	1.50	B	HVR=13	1.90	29.99		Stiff to very stiff, dark brown, mottled grey, slightly sandy CLAY. Sand is fine. TILL	2
	1.95	ES	HVR=123					
	2.00	B	HVR=130					
			HVR=130	3.00	28.89		End of pit at 3.00 m	3
								4
								5

Remarks: 1) Trial pit for geoenvironmental purposes. 2) Groundwater encountered at 0.70m bgl in west pit wall - slight influx 3) Terminated at 3.00m bgl

Stability: Stable





Trial Pit Log

Trialpit No

TP17

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338417.93 - 351292.32

Level: 30.72

Date

09/06/2023

Location: Wrexham

Dimensions
(m):

2

Client: Net World Sports

Depth
3.10

0.6

Scale
1:25Logged
ER

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.30	ES	HVR=89	0.45	30.27		Crops over dark brown, slightly gravelly, clayey to very clayey, fine to medium SAND. Gravel is fine to medium, angular to rounded of mudstone and sandstone. Frequent rootlets throughout. TOPSOIL	
	1.00	ES	HVR=126 HVR=130				Firm becoming very stiff, dark brown, mottled grey, slightly gravelly, slightly silty CLAY. Gravel is fine to medium, angular to rounded of mudstone, siltstone, coal, sandstone and occasional quartz. TILL	1
	2.00	B	HVR=130 HVR=130 HVR=130					2
				3.10	27.62			3
							End of pit at 3.10 m	
								4
								5

Remarks: 1) Trial pit for geoenvironmental purposes. 2) No groundwater ingress encountered 3) Terminated at 3.00m bgl.

Stability: Stable





Borehole Log

Borehole No.

WS01

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338064.21 - 351153.86

Hole Type
WS

Location: Wrexham

Level: 31.73

Scale
1:50

Client: Net World Sports

Dates: 13/06/2023 -

Logged By
ER

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40 1.20	SPTL S	N=19 (2,3/3,5,5,6)	0.40	31.33		Crops over dark brown, very clayey, fine to medium SAND. Frequent rootlets throughout. TOPSOIL	1
		2.00 2.00						Firm to stiff, dark brown, mottled grey, slightly gravelly CLAY. Gravel is fine to medium, angular to rounded of mudstone, coal, rare quartz and igneous lithologies. TILL	
		3.00 3.00							
		4.00 4.00							
		5.00 5.00							
					5.45	26.28		End of borehole at 5.45 m	2
									3
									4
									5
									6
									7
									8
									9
									10

Remarks

1) Hand dug pit to 1.20m bgl for service clearance 2) Terminated at 5.45m bgl 3) No groundwater ingress encountered





Borehole Log

Borehole No.

WS02

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338579.24 - 351248.18

Hole Type
WS

Location: Wrexham

Level: 30.38

Scale
1:50

Client: Net World Sports

Dates: 13/06/2023 -

Logged By
ER

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.60	29.78		MADE GROUND: Dark brown, clayey, sandy, fine to coarse, angular to subangular GRAVEL of mudstone, brick, limestone, terracotta, coal and frequent clods of clay.	
		1.20	SPTL		1.10	29.28		MADE GROUND: Soft, brown, slightly sandy, gravelly CLAY. Sand is fine to medium. Gravel is fine to coarse, angular to subangular of brick, tile, mudstone, limestone and coal.	1
		1.20	S	N=0 (1,0/0,0,0,0)				MADE GROUND	
		2.00	SPTL					MADE GROUND: Very soft, grey, very silty CLAY. Frequent pockets of black, spongy, pseudofibrous to fibrous peat.	2
		2.00	S	N=2 (1,1/1,1,0,0)				MADE GROUND	
					2.60	27.78		Organic odour at 1.10m to 2.60m	
		3.00	SPTL					Firm to stiff, dark brown, mottled grey, slightly gravelly CLAY. Gravel is fine to medium, angular to rounded of mudstone, coal, rare quartz and igneous lithologies.	3
		3.00	S	N=12 (3,3/3,3,3,3)				TILL	
		4.00	SPTL						4
		4.00	S	N=16 (4,4/4,4,4,4)					
		5.00	SPTL						5
		5.00	S	N=23 (5,5/5,6,6,6)					
					5.45	24.93		End of borehole at 5.45 m	6
									7
									8
									9
									10

Remarks

1) Hand dug pit to 1.20m bgl for service clearance. 2) Terminated at 5.45m bgl 3) Groundwater ingress at 1.10m bgl





Borehole Log

Borehole No.

WS03

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338545.77 - 351287.12

Hole Type
WS

Location: Wrexham

Level: 30.37

Scale
1:50

Client: Net World Sports

Dates: 13/06/2023 -

Logged By
ER

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description				
		Depth (m)	Type	Results								
					0.35	30.02		Crops over dark brown, very clayey, fine to medium SAND. Frequent rootlets throughout. TOPSOIL				
		1.20 1.20	SPTL S	N=16 (3,3/3,4,4,5)								
		2.00 2.00	SPTL S	N=23 (3,3/3,6,6,8)								
		3.00 3.00	SPTL S	N=19 (3,3/3,5,5,6)								
		4.00 4.00	SPTL S	N=22 (3,3/3,6,6,7)								
		5.00 5.00	SPTL S	N=24 (4,4/5,5,7,7)								
					5.45	24.92						
		End of borehole at 5.45 m										

Remarks

1) Hand dug pit to 1.20m bgl for service clearance. 2) Terminated at 5.45m bgl 3) No groundwater ingress encountered.





Borehole Log

Borehole No.

WS04

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338645.78 - 351266.28

Hole Type
WS

Location: Wrexham

Level: 29.98

Scale
1:50

Client: Net World Sports

Dates: 13/06/2023 -

Logged By
ER

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40			0.40	29.58		MADE GROUND: Crops over dark brown, clayey, sandy, fine to coarse, angular to subangular GRAVEL of mudstone, brick and limestone.	
		0.95			0.95	29.03		MADE GROUND	
		1.00	ES					MADE GROUND: Soft, brown, slightly sandy, gravelly CLAY. Sand is fine to medium. Gravel is fine to coarse, angular to subangular of brick, tile, mudstone, limestone and coal.	1
		1.20	SPTL					MADE GROUND	
		1.20	S	N=2 (1,1/1,0,0,1)				MADE GROUND	
		2.00	SPTL		2.00	27.98		MADE GROUND: Very soft, grey, gravelly, very silty CLAY. Gravel is fine to coarse, angular to subangular of brick and mudstone. Occasional lenses of spongy fibrous peat.	2
		2.00	S	N=12 (3,3/3,3,3,3)				MADE GROUND	
		3.00	SPTL					<i>Organic odour from 0.95m to 2.00m</i> Firm to stiff, dark brown, mottled grey, slightly gravelly CLAY. Gravel is fine to medium, angular to rounded of mudstone, coal, rare quartz and igneous lithologies.	3
		3.00	S	N=16 (3,3/4,4,4,4)				TILL	
		4.00	SPTL						4
		4.00	S	N=12 (1,1/2,2,4,4)					
		5.00	SPTL						5
		5.00	S	N=10 (1,1/2,2,3,3)					
		5.45			5.45	24.53		End of borehole at 5.45 m	6
									7
									8
									9
									10

Remarks

1) Hand dug pit to 1.20m bgl for service clearance. 2) Terminated at 5.45m bgl 3) Groundwater ingress at 1.00m bgl.





Borehole Log

Borehole No.

WS05

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338182.46 - 351179.62

Hole Type
WS

Location: Wrexham

Level: 35.90

Scale
1:50

Client: Net World Sports

Dates: 15/06/2023 -

Logged By
ER

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.27			0.27	35.63		Grass over, dark brown, slightly gravelly, clayey, silty, fine to coarse SAND. Gravel is fine to coarse. angular to subrounded of mudstone and limestone. Frequent rootlets throughout. TOPSOIL Orangish brown, slightly gravelly, slightly silty, clayey, fine to medium SAND. Gravel is fine to coarse, angular to subangular of mudstone, coal, quartz and sandstone with frequent clods of clay. TILL Firm, becoming stiff, dark brown, mottled grey, slightly gravelly, slightly sandy CLAY. Gravel is fine to coarse, angular to subrounded of mudstone and coal with rare igneous lithologies. Sand is fine to medium. TILL	
		0.60			0.60	35.30			
		1.20	SPTL						
		1.20	S	N=17 (2,2/2,4,5,6)					
		2.00	SPTL						
		2.00	S	N=21 (3,3/4,5,6,6)					
		3.00	SPTL						
		3.00	S	N=23 (2,4/5,5,6,7)					
		4.00	SPTL						
		4.00	S	N=22 (4,4/4,6,6,6)					
		5.00	SPTL						
		5.00	S	N=26 (4,4/5,6,7,8)					
					5.45	30.45		End of borehole at 5.45 m	

Remarks

1) Hand dug pit to 1.20m bgl for service clearance. 2) Terminated at 5.45m bgl 3) No groundwater ingress encountered
4) 4.00-5.00m logged from SPTs due to no sampler recovery.





Borehole Log

Borehole No.

WS06

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338053.37 - 350987.98

Hole Type
WS

Location: Wrexham

Level: 37.85

Scale
1:50

Client: Net World Sports

Dates: 15/06/2023 -

Logged By
ER

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40			0.40	37.45		Grass over, dark brown, slightly gravelly, clayey, silty, fine to coarse SAND. Gravel is fine to coarse. angular to subrounded of mudstone and limestone. Frequent rootlets throughout. TOPSOIL	
		1.20 1.20	SPTL S	N=15 (3,3/3,4,4,4)				Firm, becoming stiff, dark brown, mottled grey, slightly gravelly, slightly sandy CLAY. Gravel is fine to coarse, angular to subrounded of mudstone and coal with rare igneous lithologies. Sand is fine to medium. TILL	1
		2.00 2.00	SPTL S	N=19 (4,4/4,5,5,5)					2
		3.00 3.00	SPTL S	N=19 (4,4/4,4,5,6)					3
		4.00 4.00	SPTL S	N=20 (5,5/5,5,5,5)					4
		5.00 5.00	SPTL S	N=27 (4,4/6,6,7,8)					5
					5.45	32.40		End of borehole at 5.45 m	6
									7
									8
									9
									10

Remarks

1) Hand dug pit to 1.20m bgl for service clearance 2) No groundwater ingress encountered 3) Terminated at 5.45m bgl.





Borehole Log

Borehole No.

WS07

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338197.45 - 350934.44

Hole Type
WS

Location: Wrexham

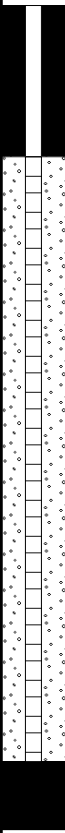
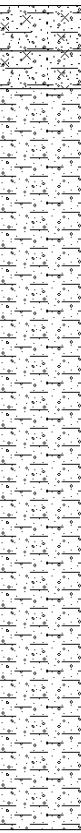
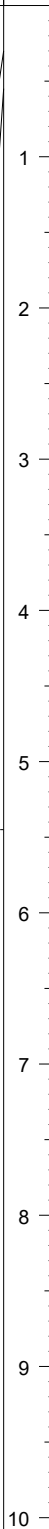
Level: 34.00

Scale
1:50

Client: Net World Sports

Dates: 15/06/2023 -

Logged By
ER

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30			0.30	33.70		Grass over, dark brown, slightly gravelly, clayey, silty, fine to coarse SAND. Gravel is fine to coarse. angular to subrounded of mudstone and limestone. Frequent rootlets throughout. TOPSOIL Orangish brown, slightly gravelly, slightly silty, clayey, fine to medium SAND. Gravel is fine to coarse, angular to subangular of mudstone, coal, quartz and sandstone with frequent clods of clay. TILL Firm, becoming stiff, dark brown, mottled grey, slightly gravelly, slightly sandy CLAY. Gravel is fine to coarse, angular to subrounded of mudstone and coal with rare igneous lithologies. Sand is fine to medium. TILL	
		0.55			0.55	33.45			
		1.20	SPTL						
		1.20	S	N=15 (3,3/3,4,4,4)					
		2.00	SPTL						
		2.00	S	N=19 (4,4/4,5,5,5)					
		3.00	SPTL						
		3.00	S	N=19 (4,4/4,4,5,6)					
		4.00	SPTL						
		4.00	S	N=20 (5,5/5,5,5,5)					
		5.00	SPTL						
		5.00	S	N=27 (4,4/6,6,7,8)					
		5.45			5.45	28.55		End of borehole at 5.45 m	

Remarks

1) Hand dug pit to 1.20m bgl for service clearance 2) Terminated at 5.45m bgl 3) No groundwater ingress encountered.





Borehole Log

Borehole No.

WS08

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338306.42 - 350957.56

Hole Type
WS

Location: Wrexham

Level: 33.88

Scale
1:50

Client: Net World Sports

Dates: 15/06/2023 -

Logged By
ER

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.45			0.45	33.43		Grass over dark, orangish brown, slightly gravelly, slightly clayey, silty, fine to medium SAND. Gravel is fine to coarse, angular to subrounded of mudstone, coal, sandstone and clods of clay. Frequent rootlets throughout. TOPSOIL	
		1.20 1.20	SPTL S	N=15 (3,3/3,4,4,4)				Firm, becoming stiff, dark brown, mottled grey, slightly gravelly, slightly sandy CLAY. Gravel is fine to coarse, angular to subrounded of mudstone and coal with rare igneous lithologies. Sand is fine to medium. TILL	1
		2.00 2.00	SPTL S	N=19 (4,4/4,5,5,5)					2
		3.00 3.00	SPTL S	N=19 (4,4/4,4,5,6)					3
		4.00 4.00	SPTL S	N=20 (5,5/5,5,5,5)					4
		5.00 5.00	SPTL S	N=27 (4,4/6,6,7,8)					5
					5.45	28.43		End of borehole at 5.45 m	6
									7
									8
									9
									10

Remarks

1) Hand dug pit to 1.20m bgl for service clearance 2) Terminated at 5.45m bgl 3) No groundwater ingress encountered.





Borehole Log

Borehole No.

WS09

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338221.28 - 351072.89

Hole Type
WS

Location: Wrexham

Level: 35.64

Scale
1:50

Client: Net World Sports

Dates: 16/06/2023 -

Logged By
ER

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40			0.40	35.24		Grass over, dark brown, slightly gravelly, clayey, silty, fine to coarse SAND. Gravel is fine to coarse. angular to subrounded of mudstone and limestone. Frequent rootlets throughout. TOPSOIL	
		1.20 1.20	SPTL S	N=14 (2,2/3,3,4,4)				Firm, becoming stiff, dark brown, mottled grey, slightly gravelly, slightly silty CLAY. Gravel is fine to coarse, angular to rounded of mudstone, coal and mixed igneous lithologies. TILL	1
		2.00 2.00	SPTL S	N=19 (3,3/3,5,5,6)					2
		3.00 3.00	SPTL S	N=16 (2,3/3,3,5,5)					3
		4.00 4.00	SPTL S	N=12 (3,3/3,3,3,3)				<i>Mottled grey areas are very silty from 4.00m to 4.55m bgl</i>	4
		5.00 5.00	SPTL S	N=21 (3,3/5,5,5,6)					5
					5.45	30.19		End of borehole at 5.45 m	6
									7
									8
									9
									10

Remarks

1) Hand dug pit to 1.20m bgl for service clearance 2) Terminated at 5.45m bgl 3) No groundwater ingress encountered





Borehole Log

Borehole No.

WS10

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338757.83 - 351386.79

Hole Type
WS

Location: Wrexham

Level: 29.66

Scale
1:50

Client: Net World Sports

Dates: 16/06/2023 -

Logged By
ER

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.48			0.48	29.18		Grass over, soft, dark brown, slightly gravelly, slightly sandy, silty CLAY. Gravel is fine to coarse, angular to subangular of mudstone, sandstone and quartz. Sand is fine to medium. Frequent rootlets throughout. TOPSOIL	
		1.20 1.20 1.50	SPTL S ES	N=15 (2,3/3,3,4,5)				Stiff, dark brown, mottled grey, slightly gravelly CLAY. Gravel is fine to medium, angular to subrounded of mudstone, sandstone, coal and occasional mixed igneous lithologies. TILL	1
		2.00 2.00	SPTL S	N=20 (3,3/4,5,5,6)					2
		3.00 3.00	SPTL S	N=20 (4,6/5,5,5,5)					3
		4.00 4.00	SPTL S	N=22 (3,4/5,5,6,6)					4
		5.00 5.00	SPTL S	N=22 (4,4/4,5,6,7)					5
		5.45			5.45	24.21		End of borehole at 5.45 m	6
									7
									8
									9
									10

Remarks

1) Hand dug pit to 1.20m bgl for service clearance 2) Terminated at 5.45m bgl 3) No groundwater ingress encountered.





Borehole Log

Borehole No.

WS11

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338818.86 - 351306.24

Hole Type
WS

Location: Wrexham

Level: 30.20

Scale
1:50

Client: Net World Sports

Dates: 16/06/2023 -

Logged By
ER

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40			0.40	29.80		Grass over, soft, dark brown, slightly gravelly, slightly sandy, silty CLAY. Gravel is fine to coarse, angular to subangular of mudstone, sandstone and quartz. Sand is fine to medium. Frequent rootlets throughout. TOPSOIL	
		1.20 1.20	SPTL S	N=14 (2,2/3,3,4,4)				Firm, becoming stiff, dark brown, mottled bluish grey, slightly gravelly, slightly sandy CLAY. Sand is fine to medium, gravel is fine to medium, angular to subrounded of mudstone, sandstone and coal TILL	1
		2.00 2.00	SPTL S	N=20 (2,4/4,5,5,6)					2
		3.00 3.00 3.20	SPTL S ES	N=22 (3,4/4,5,6,7)					3
		4.00 4.00	SPTL S	N=19 (4,4/4,5,5,5)					4
		5.00 5.00	SPTL S	N=23 (4,5/5,5,6,7)					5
					5.45	24.75		End of borehole at 5.45 m	6
									7
									8
									9
									10

Remarks

1) Hand dug pit to 1.20m bgl for service clearance 2) Terminated at 5.45m bgl 3) No groundwater ingress encountered





Borehole Log

Borehole No.

WS12

Sheet 1 of 1

Project Name: Bryn Lane Outline Planning

Project No.
TE1749

Co-ords: 338751.68 - 351338.27

Hole Type
WS

Location: Wrexham

Level: 29.88

Scale
1:50

Client: Net World Sports

Dates: 16/06/2023 -

Logged By
ER

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.42			0.42	29.46		Grass over, soft, dark brown, slightly gravelly, slightly sandy, silty CLAY. Gravel is fine to coarse, angular to subangular of mudstone, sandstone and quartz. Sand is fine to medium. Frequent rootlets throughout. TOPSOIL	
		0.80	ES						
		1.20	SPTL						1
		1.20	S	N=19 (3,3/4,5,5,5)				Stiff, dark brown, mottled grey, slightly gravelly, slightly sandy CLAY. Gravel is fine to coarse, angular to subrounded of mudstone, coal. sandstone and mixed igneous lithologies. Sand is fine to medium.	
		2.00	SPTL						2
		2.00	S	N=20 (4,4/4,4,5,7)					
		3.00	SPTL						3
		3.00	S	N=20 (2,2/4,4,6,6)					
		4.00	SPTL						4
		4.00	S	N=17 (3,3/3,4,5,5)					
		5.00	SPTL						5
		5.00	S	N=16 (3,3/3,4,4,5)					
					5.45	24.43		End of borehole at 5.45 m	6
									7
									8
									9
									10

Remarks

1) Hand dug pit to 1.20m bgl for service clearance 2) Terminated at 5.45m bgl 3) No groundwater ingress encountered. 4) No install.



APPENDIX C - GEOENVIRONMENTAL SOIL LABORATORY RESULTS

Tier Environmental
Suite 414, Chadwick House
Warrington Rd
Birchwood
Warrington
United Kingdom
WA3 6AE



4225



Attention : Alex Preston

Date : 21st June, 2023

Your reference : TE1749

Our reference : Test Report 23/9033 Batch 1

Location : Bryn Lane Outline

Date samples received : 5th June, 2023

Status : Final Report

Issue : 1

Ten samples were received for analysis on 5th June, 2023 of which four 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.

Authorised By:



Liza Klebe

Project Co-ordinator

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Tier Environmental
Reference: TE1749
Location: Bryn Lane Outline
Contact: Alex Preston
EMT Job No: 23/9033

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-4	29-32	33-36	37-40							Please see attached notes for all abbreviations and acronyms		
Sample ID	TP01	TP03	TP03	TP03									
Depth	0.40	0.25	0.95	1.40									
COC No / misc													
Containers	V J T	V J T	V J T	V J T									
Sample Date	05/06/2023	05/06/2023	05/06/2023	05/06/2023									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	05/06/2023	05/06/2023	05/06/2023	05/06/2023							LOD/LOR	Units	Method No.
Arsenic #	11.6	-	-	10.1							<0.5	mg/kg	TM30/PM15
Cadmium #	<0.1	-	-	<0.1							<0.1	mg/kg	TM30/PM15
Chromium #	51.9	-	-	52.1							<0.5	mg/kg	TM30/PM15
Copper #	19	-	-	25							<1	mg/kg	TM30/PM15
Lead #	48	-	-	13							<5	mg/kg	TM30/PM15
Mercury #	0.2	-	-	0.1							<0.1	mg/kg	TM30/PM15
Nickel #	35.3	-	-	43.4							<0.7	mg/kg	TM30/PM15
Selenium #	1	-	-	2							<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	336	-	-	640							<50	mg/kg	TM50/PM29
Zinc #	83	-	-	78							<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	<0.04	-	-	<0.04							<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	-	-	<0.03							<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	-	-	<0.05							<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	-	-	<0.04							<0.04	mg/kg	TM4/PM8
Phenanthrene #	<0.03	-	-	<0.03							<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	-	-	<0.04							<0.04	mg/kg	TM4/PM8
Fluoranthene #	<0.03	-	-	<0.03							<0.03	mg/kg	TM4/PM8
Pyrene #	<0.03	-	-	<0.03							<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	<0.06	-	-	<0.06							<0.06	mg/kg	TM4/PM8
Chrysene #	<0.02	-	-	<0.02							<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	<0.07	-	-	<0.07							<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04	-	-	<0.04							<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	<0.04	-	-	<0.04							<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	-	-	<0.04							<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	-	-	<0.04							<0.04	mg/kg	TM4/PM8
PAH 16 Total	<0.6	-	-	<0.6							<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	<0.05	-	-	<0.05							<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	<0.02	-	-	<0.02							<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	89	-	-	88							<0	%	TM4/PM8

Element Materials Technology

Client Name: Tier Environmental
Reference: TE1749
Location: Bryn Lane Outline
Contact: Alex Preston
EMT Job No: 23/9033

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-4	29-32	33-36	37-40							Please see attached notes for all abbreviations and acronyms		
Sample ID	TP01	TP03	TP03	TP03									
Depth	0.40	0.25	0.95	1.40									
COC No / misc													
Containers	V J T	V J T	V J T	V J T									
Sample Date	05/06/2023	05/06/2023	05/06/2023	05/06/2023									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	05/06/2023	05/06/2023	05/06/2023	05/06/2023							LOD/LOR	Units	Method No.
Pesticides													
Organophosphorus Pesticides													
Azinphos ethyl	<10	<10	-	-							<10	ug/kg	TM42/PM8
Azinphos methyl	<10	<10	-	-							<10	ug/kg	TM42/PM8
Carbophenothion	<10	<10	-	-							<10	ug/kg	TM42/PM8
Chlorfenvinphos	<10	<10	-	-							<10	ug/kg	TM42/PM8
Chlorpyrifos	<10	<10	-	-							<10	ug/kg	TM42/PM8
Chlorpyrifos-methyl	<10	<10	-	-							<10	ug/kg	TM42/PM8
Diazinon	<10	<10	-	-							<10	ug/kg	TM42/PM8
Dichlorvos	<10	<10	-	-							<10	ug/kg	TM42/PM8
Disulfoton	<10	<10	-	-							<10	ug/kg	TM42/PM8
Dimethoate	<10	<10	-	-							<10	ug/kg	TM42/PM8
Ethion	<10	<10	-	-							<10	ug/kg	TM42/PM8
Ethyl Parathion (Parathion)	<10	<10	-	-							<10	ug/kg	TM42/PM8
Etrimphos	<10	<10	-	-							<10	ug/kg	TM42/PM8
Fenitrothion	<10	<10	-	-							<10	ug/kg	TM42/PM8
Fenthion	<10	<10	-	-							<10	ug/kg	TM42/PM8
Malathion	<10	<10	-	-							<10	ug/kg	TM42/PM8
Methyl Parathion	<10	<10	-	-							<10	ug/kg	TM42/PM8
Mevinphos	<10	<10	-	-							<10	ug/kg	TM42/PM8
Phosalone	<10	<10	-	-							<10	ug/kg	TM42/PM8
Pirimiphos Methyl	<10	<10	-	-							<10	ug/kg	TM42/PM8
Propetamphos	<10	<10	-	-							<10	ug/kg	TM42/PM8
Triazophos	<10	<10	-	-							<10	ug/kg	TM42/PM8
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL) #	<0.1	-	-	-							<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL) #	<0.1	-	-	-							<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	<0.1	-	-	-							<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL) #	<0.2	-	-	-							<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL) #	<4	-	-	-							<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL) #	<7	-	-	-							<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL) #	<7	-	-	-							<7	mg/kg	TM5/PM8/PM16
>C35-C40 (EH_CU_1D_AL)	<7	-	-	-							<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-40 (EH+HS_CU_1D_AL)	<26	-	-	-							<26	mg/kg	TM5/PM8/PM16/PM12/PM10

Element Materials Technology

Client Name: Tier Environmental
Reference: TE1749
Location: Bryn Lane Outline
Contact: Alex Preston
EMT Job No: 23/9033

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-4	29-32	33-36	37-40							Please see attached notes for all abbreviations and acronyms		
Sample ID	TP01	TP03	TP03	TP03									
Depth	0.40	0.25	0.95	1.40									
COC No / misc													
Containers	V J T	V J T	V J T	V J T									
Sample Date	05/06/2023	05/06/2023	05/06/2023	05/06/2023									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	05/06/2023	05/06/2023	05/06/2023	05/06/2023							LOD/LOR	Units	Method No.
TPH CWG													
Aromatics													
>C5-EC7 (HS_1D_AR) #	<0.1	-	-	-							<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR) #	<0.1	-	-	-							<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR) #	<0.1	-	-	-							<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR) #	<0.2	-	-	-							<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR) #	<4	-	-	-							<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR) #	<7	-	-	-							<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR) #	<7	-	-	-							<7	mg/kg	TM5/PM8/PM16
>EC35-EC40 (EH_CU_1D_AR)	<7	-	-	-							<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-40 (EH+HS_CU_1D_AR)	<26	-	-	-							<26	mg/kg	TM5/PM8/PM16/PM12/PM10
Total aliphatics and aromatics(C5-40) (EH+HS_CU_1D_Total)	<52	-	-	-							<52	mg/kg	TM5/PM8/PM16/PM12/PM10
MTBE #	<5	-	-	-							<5	ug/kg	TM36/PM12
Benzene #	<5	-	-	-							<5	ug/kg	TM36/PM12
Toluene #	<5	-	-	-							<5	ug/kg	TM36/PM12
Ethylbenzene #	<5	-	-	-							<5	ug/kg	TM36/PM12
m/p-Xylene #	<5	-	-	-							<5	ug/kg	TM36/PM12
o-Xylene #	<5	-	-	-							<5	ug/kg	TM36/PM12
Total Phenols HPLC	<0.15	-	-	<0.15							<0.15	mg/kg	TM26/PM21B
Natural Moisture Content	24.7	24.2	-	18.2							<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	-	-	<0.3							<0.3	mg/kg	TM38/PM20
Ortho Phosphate as PO4	<0.3	-	<0.3	-							<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	0.0030	-	-	0.1991							<0.0015	g/l	TM38/PM20
Total Organic Carbon #	1.44	-	-	0.25							<0.02	%	TM21/PM24
pH #	7.26	-	-	8.51							<0.01	pH units	TM73/PM11
Asbestos Type*	NAD	-	-	-								None	Subcontracted

Client Name: Tier Environmental

Reference: TE1749

Location: Bryn Lane Outline

Contact: Alex Preston

[illegible]

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 23/9033

SOILS and ASH

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. Asbestos samples are retained for 6 months.

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. Limits of detection for analyses carried out on as received samples are not moisture content corrected. 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. Ash samples are dried at 37°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.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

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.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overestimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

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.

STACK EMISSIONS

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 for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

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

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

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 requirement of our Accreditation Body 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.

Laboratory records are kept for a period of no less than 6 years.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

Customer Provided Information

Sample ID and depth is information provided by the customer.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) 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.
>>	Results above quantitative calibration range. The result should be considered the minimum value and is indicative only. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology 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

HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis.
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

EMT Job No: 23/9033

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/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 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of 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 8270D v5:2014 method for the solvent extraction and determination of 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
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 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. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21B	As Received samples are extracted in Methanol: Water (60:40) by reciprocal shaker.			AR	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	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		AD	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

EMT Job No: 23/9033

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/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 v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013	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.			AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013	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		AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013	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
TM42	Modified US EPA method 8270D v5:2014. Pesticides and herbicides by GC-MS	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	A hot hydrochloric acid digest is performed on a dried and ground sample, and the resulting liquor is analysed.	Yes		AD	Yes
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. 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		AR	No
Subcontracted	See attached subcontractor report for accreditation status and provider.					AR	

Tier Environmental
Suite 414, Chadwick House
Warrington Rd
Birchwood
Warrington
United Kingdom
WA3 6AE



4225



Attention : Alex Preston

Date : 21st June, 2023

Your reference : TE1749

Our reference : Test Report 23/9033 Batch 2

Location : Bryn Lane Outline

Date samples received : 8th June, 2023

Status : Final Report

Issue : 1

Twenty seven samples were received for analysis on 8th June, 2023 of which seven 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.

Authorised By:



Liza Klebe

Project Co-ordinator

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Tier Environmental
Reference: TE1749
Location: Bryn Lane Outline
Contact: Alex Preston
EMT Job No: 23/9033

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	41-44	65-68	93-96	113-116	117-120	129-132	141-144				Please see attached notes for all abbreviations and acronyms		
Sample ID	TP04	TP06	TP08	TP10	TP10	TP11	TP12						
Depth	0.20	0.20	0.20	0.25	0.60	0.10	0.25						
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T						
Sample Date	06/06/2023	07/06/2023	07/06/2023	07/06/2023	07/06/2023	07/06/2023	07/06/2023						
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
Batch Number	2	2	2	2	2	2	2						
Date of Receipt	08/06/2023	08/06/2023	08/06/2023	08/06/2023	08/06/2023	08/06/2023	08/06/2023				LOD/LOR	Units	Method No.
Arsenic #	-	10.7	10.3	10.6	-	-	9.8				<0.5	mg/kg	TM30/PM15
Cadmium #	-	<0.1	<0.1	<0.1	-	-	<0.1				<0.1	mg/kg	TM30/PM15
Chromium #	-	55.8	50.9	53.5	-	-	51.6				<0.5	mg/kg	TM30/PM15
Copper #	-	22	9	22	-	-	23				<1	mg/kg	TM30/PM15
Lead #	-	57	56	55	-	-	13				<5	mg/kg	TM30/PM15
Mercury #	-	0.2	0.2	0.2	-	-	0.2				<0.1	mg/kg	TM30/PM15
Nickel #	-	30.5	28.0	28.9	-	-	44.5				<0.7	mg/kg	TM30/PM15
Selenium #	-	<1	2	1	-	-	2				<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	-	707	236	813	-	-	902				<50	mg/kg	TM50/PM25
Zinc #	-	113	89	108	-	-	75				<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	-	<0.04	<0.04	<0.04	-	-	<0.04				<0.04	mg/kg	TM4/PM8
Acenaphthylene	-	<0.03	<0.03	<0.03	-	-	<0.03				<0.03	mg/kg	TM4/PM8
Acenaphthene #	-	<0.05	<0.05	<0.05	-	-	<0.05				<0.05	mg/kg	TM4/PM8
Fluorene #	-	<0.04	<0.04	<0.04	-	-	<0.04				<0.04	mg/kg	TM4/PM8
Phenanthrene #	-	<0.03	<0.03	<0.03	-	-	<0.03				<0.03	mg/kg	TM4/PM8
Anthracene #	-	<0.04	<0.04	<0.04	-	-	<0.04				<0.04	mg/kg	TM4/PM8
Fluoranthene #	-	0.06	<0.03	0.06	-	-	<0.03				<0.03	mg/kg	TM4/PM8
Pyrene #	-	0.05	<0.03	0.05	-	-	<0.03				<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	-	<0.06	<0.06	<0.06	-	-	<0.06				<0.06	mg/kg	TM4/PM8
Chrysene #	-	<0.02	<0.02	<0.02	-	-	<0.02				<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	-	<0.07	<0.07	<0.07	-	-	<0.07				<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	-	<0.04	<0.04	<0.04	-	-	<0.04				<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	-	<0.04	<0.04	<0.04	-	-	<0.04				<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	-	<0.04	<0.04	<0.04	-	-	<0.04				<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	-	<0.04	<0.04	<0.04	-	-	<0.04				<0.04	mg/kg	TM4/PM8
PAH 16 Total	-	<0.6	<0.6	<0.6	-	-	<0.6				<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-	<0.05	<0.05	<0.05	-	-	<0.05				<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	-	<0.02	<0.02	<0.02	-	-	<0.02				<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	-	93	80	92	-	-	91				<0	%	TM4/PM8
				</									

Element Materials Technology

Client Name: Tier Environmental
Reference: TE1749
Location: Bryn Lane Outline
Contact: Alex Preston
EMT Job No: 23/9033

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	41-44	65-68	93-96	113-116	117-120	129-132	141-144				Please see attached notes for all abbreviations and acronyms		
Sample ID	TP04	TP06	TP08	TP10	TP10	TP11	TP12						
Depth	0.20	0.20	0.20	0.25	0.60	0.10	0.25						
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T						
Sample Date	06/06/2023	07/06/2023	07/06/2023	07/06/2023	07/06/2023	07/06/2023	07/06/2023						
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
Batch Number	2	2	2	2	2	2	2						
Date of Receipt	08/06/2023	08/06/2023	08/06/2023	08/06/2023	08/06/2023	08/06/2023	08/06/2023				LOD/LOR	Units	Method No.
Pesticides													
Organophosphorus Pesticides													
Azinphos ethyl	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
Azinphos methyl	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
Carbophenothion	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
Chlorfenvinphos	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
Chlorpyrifos	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
Chlorpyrifos-methyl	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
Diazinon	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
Dichlorvos	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
Disulfoton	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
Dimethoate	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
Ethion	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
Ethyl Parathion (Parathion)	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
Etrimphos	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
Fenitrothion	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
Fenthion	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
Malathion	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
Methyl Parathion	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
Mevinphos	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
Phosalone	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
Pirimiphos Methyl	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
Propetamphos	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
Triazophos	-	<10	<10	<10	-	-	<10				<10	ug/kg	TM42/PM8
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL) #	<0.1	<0.1	<0.1	<0.1	-	-	<0.1				<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL) #	<0.1	<0.1	<0.1	<0.1	-	-	<0.1				<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	<0.1	<0.1	<0.1	<0.1	-	-	<0.1				<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL) #	<0.2	<0.2	<0.2	<0.2	-	-	<0.2				<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL) #	<4	<4	<4	<4	-	-	<4				<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL) #	<7	<7	<7	<7	-	-	<7				<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL) #	<7	35	<7	44	-	-	<7				<7	mg/kg	TM5/PM8/PM16
>C35-C40 (EH_CU_1D_AL)	<7	<7	<7	<7	-	-	<7				<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-40 (EH+HS_CU_1D_AL)	<26	35	<26	44	-	-	<26				<26	mg/kg	TM5/PM8/PM16/PM12/PM15

Element Materials Technology

Client Name: Tier Environmental
Reference: TE1749
Location: Bryn Lane Outline
Contact: Alex Preston
EMT Job No: 23/9033

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	41-44	65-68	93-96	113-116	117-120	129-132	141-144				Please see attached notes for all abbreviations and acronyms		
Sample ID	TP04	TP06	TP08	TP10	TP10	TP11	TP12						
Depth	0.20	0.20	0.20	0.25	0.60	0.10	0.25						
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T						
Sample Date	06/06/2023	07/06/2023	07/06/2023	07/06/2023	07/06/2023	07/06/2023	07/06/2023						
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
Batch Number	2	2	2	2	2	2	2						
Date of Receipt	08/06/2023	08/06/2023	08/06/2023	08/06/2023	08/06/2023	08/06/2023	08/06/2023				LOD/LOR	Units	Method No.
TPH CWG													
Aromatics													
>C5-EC7 (HS_1D_AR) #	<0.1	<0.1	<0.1	<0.1	-	-	<0.1				<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR) #	<0.1	<0.1	<0.1	<0.1	-	-	<0.1				<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR) #	<0.1	<0.1	<0.1	<0.1	-	-	<0.1				<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR) #	<0.2	<0.2	<0.2	<0.2	-	-	<0.2				<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR) #	<4	<4	<4	<4	-	-	<4				<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR) #	<7	<7	<7	<7	-	-	<7				<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR) #	<7	<7	<7	<7	-	-	<7				<7	mg/kg	TM5/PM8/PM16
>EC35-EC40 (EH_CU_1D_AR)	<7	<7	<7	<7	-	-	<7				<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-40 (EH+HS_CU_1D_AR)	<26	<26	<26	<26	-	-	<26				<26	mg/kg	TM5/PM8/PM16/PM12/PM10
Total aliphatics and aromatics(C5-40) (EH+HS_CU_1D_Total)	<52	<52	<52	<52	-	-	<52				<52	mg/kg	TM5/PM8/PM16/PM12/PM10
MTBE #	<5	<5	<5	<5	-	-	<5				<5	ug/kg	TM36/PM12
Benzene #	<5	<5	<5	<5	-	-	<5				<5	ug/kg	TM36/PM12
Toluene #	<5	<5	<5	<5	-	-	<5				<5	ug/kg	TM36/PM12
Ethylbenzene #	<5	<5	<5	<5	-	-	<5				<5	ug/kg	TM36/PM12
m/p-Xylene #	<5	<5	<5	<5	-	-	<5				<5	ug/kg	TM36/PM12
o-Xylene #	<5	<5	<5	<5	-	-	<5				<5	ug/kg	TM36/PM12
Total Phenols HPLC	-	<0.15	<0.15	<0.15	-	-	<0.15				<0.15	mg/kg	TM26/PM21B
Natural Moisture Content	22.6	16.4	13.8	14.9	-	-	18.6				<0.1	%	PM4/PM0
Hexavalent Chromium #	-	<0.3	<0.3	<0.3	-	-	<0.3				<0.3	mg/kg	TM38/PM20
Ortho Phosphate as PO4	-	<0.3	<0.3	-	<0.3	-	<0.3				<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	-	0.0135	0.0154	0.0047	-	-	0.3414				<0.0015	g/l	TM38/PM20
Total Organic Carbon #	-	2.48	0.68	2.83	-	-	0.31				<0.02	%	TM21/PM24
pH #	-	7.52	7.73	7.11	-	-	7.69				<0.01	pH units	TM73/PM11
Asbestos Type*	NAD	NAD	NAD	NAD	-	NAD	NAD					None	Subcontracted

Client Name: Tier Environmental

Reference: TE1749

Location: Bryn Lane Outline

Contact: Alex Preston

[illegible]

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 23/9033

SOILS and ASH

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. Asbestos samples are retained for 6 months.

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. Limits of detection for analyses carried out on as received samples are not moisture content corrected. 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. Ash samples are dried at 37°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.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

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.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overestimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

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.

STACK EMISSIONS

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 for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

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

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

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 requirement of our Accreditation Body 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.

Laboratory records are kept for a period of no less than 6 years.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

Customer Provided Information

Sample ID and depth is information provided by the customer.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) 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.
>>	Results above quantitative calibration range. The result should be considered the minimum value and is indicative only. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology 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

HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis.
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

EMT Job No: 23/9033

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/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 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of 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 8270D v5:2014 method for the solvent extraction and determination of 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
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 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. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21B	As Received samples are extracted in Methanol: Water (60:40) by reciprocal shaker.			AR	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	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		AD	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

EMT Job No: 23/9033

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/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 v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013	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.			AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013	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		AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013	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
TM42	Modified US EPA method 8270D v5:2014. Pesticides and herbicides by GC-MS	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	A hot hydrochloric acid digest is performed on a dried and ground sample, and the resulting liquor is analysed.	Yes		AD	Yes
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. 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		AR	No
Subcontracted	See attached subcontractor report for accreditation status and provider.					AR	

Tier Environmental
Suite 414, Chadwick House
Warrington Rd
Birchwood
Warrington
United Kingdom
WA3 6AE



4225



Attention : Alex Preston

Date : 21st June, 2023

Your reference : TE1749

Our reference : Test Report 23/9033 Batch 3

Location : Bryn Lane Outline

Date samples received : 9th June, 2023

Status : Final Report

Issue : 1

Fifteen samples were received for analysis on 9th June, 2023 of which nine 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.

Authorised By:



Liza Klebe

Project Co-ordinator

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Tier Environmental
Reference: TE1749
Location: Bryn Lane Outline
Contact: Alex Preston
EMT Job No: 23/9033

Report : Solid

Solids: V=60g VOC jar. J=250g glass jar. T=plastic tub

EMT Sample No.	149-152	153-156	157-160	165-168	169-172	177-180	189-192	201-204	205-208		Please see attached notes for all abbreviations and acronyms		
Sample ID	TP13	TP13	TP13	TP14	TP14	TP15	TP16	TP17	TP17				
Depth	0.15	0.70	1.45	0.40	1.10	0.10	0.35	0.30	1.00				
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T				
Sample Date	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	3	3	3	3	3	3	3	3	3				
Date of Receipt	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023		LOD/LOR	Units	Method No.
Arsenic #	-	11.4	9.7	7.9	9.4	-	10.0	-	13.2		<0.5	mg/kg	TM30/PM15
Cadmium #	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1		<0.1	mg/kg	TM30/PM15
Chromium #	-	48.3	51.7	38.9	71.6	-	43.6	-	49.9		<0.5	mg/kg	TM30/PM15
Copper #	-	24	20	23	22	-	14	-	25		<1	mg/kg	TM30/PM15
Lead #	-	12	29	35	18	-	50	-	13		<5	mg/kg	TM30/PM15
Mercury #	-	<0.1	<0.1	<0.1	0.2	-	0.2	-	<0.1		<0.1	mg/kg	TM30/PM15
Nickel #	-	44.9	32.7	28.0	52.5	-	27.7	-	45.7		<0.7	mg/kg	TM30/PM15
Selenium #	-	1	<1	2	1	-	1	-	1		<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	-	1177	620	1398	355	-	381	-	527		<50	mg/kg	TM50/PM25
Zinc #	-	78	92	89	115	-	74	-	78		<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	-	<0.04	<0.04	<0.04	<0.04	-	<0.04	-	<0.04		<0.04	mg/kg	TM4/PM8
Acenaphthylene	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	-	<0.03		<0.03	mg/kg	TM4/PM8
Acenaphthene #	-	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05		<0.05	mg/kg	TM4/PM8
Fluorene #	-	<0.04	<0.04	<0.04	<0.04	-	<0.04	-	<0.04		<0.04	mg/kg	TM4/PM8
Phenanthrene #	-	<0.03	<0.03	0.05	<0.03	-	<0.03	-	<0.03		<0.03	mg/kg	TM4/PM8
Anthracene #	-	<0.04	<0.04	<0.04	<0.04	-	<0.04	-	<0.04		<0.04	mg/kg	TM4/PM8
Fluoranthene #	-	<0.03	<0.03	0.08	<0.03	-	<0.03	-	<0.03		<0.03	mg/kg	TM4/PM8
Pyrene #	-	<0.03	<0.03	0.07	<0.03	-	<0.03	-	<0.03		<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	-	<0.06	<0.06	<0.06	<0.06	-	<0.06	-	<0.06		<0.06	mg/kg	TM4/PM8
Chrysene #	-	<0.02	<0.02	0.06	<0.02	-	<0.02	-	<0.02		<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	-	<0.07	<0.07	0.11	<0.07	-	<0.07	-	<0.07		<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	-	<0.04	<0.04	0.06	<0.04	-	<0.04	-	<0.04		<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	-	<0.04	<0.04	<0.04	<0.04	-	<0.04	-	<0.04		<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	-	<0.04	<0.04	<0.04	<0.04	-	<0.04	-	<0.04		<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	-	<0.04	<0.04	<0.04	<0.04	-	<0.04	-	<0.04		<0.04	mg/kg	TM4/PM8
PAH 16 Total	-	<0.6	<0.6	<0.6	<0.6	-	<0.6	-	<0.6		<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-	<0.05	<0.05	0.08	<0.05	-	<0.05	-	<0.05		<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	-	<0.02	<0.02	0.03	<0.02	-	<0.02	-	<0.02		<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	-	78	97	88	97	-	95	-	89		<0	%	TM4/PM8

Element Materials Technology

Client Name: Tier Environmental
Reference: TE1749
Location: Bryn Lane Outline
Contact: Alex Preston
EMT Job No: 23/9033

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	149-152	153-156	157-160	165-168	169-172	177-180	189-192	201-204	205-208		Please see attached notes for all abbreviations and acronyms		
Sample ID	TP13	TP13	TP13	TP14	TP14	TP15	TP16	TP17	TP17				
Depth	0.15	0.70	1.45	0.40	1.10	0.10	0.35	0.30	1.00				
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T				
Sample Date	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	3	3	3	3	3	3	3	3	3				
Date of Receipt	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023		LOD/LOR	Units	Method No.
Pesticides													
Organophosphorus Pesticides													
Azinphos ethyl	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
Azinphos methyl	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
Carbophenothion	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
Chlorfenvinphos	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
Chlorpyrifos	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
Chlorpyrifos-methyl	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
Diazinon	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
Dichlorvos	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
Disulfoton	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
Dimethoate	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
Ethion	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
Ethyl Parathion (Parathion)	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
Etrimphos	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
Fenitrothion	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
Fenthion	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
Malathion	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
Methyl Parathion	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
Mevinphos	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
Phosalone	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
Pirimiphos Methyl	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
Propetamphos	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
Triazophos	-	<10	-	<10	-	-	-	-	<10		<10	ug/kg	TM42/PM8
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL) #	-	<0.1	<0.1	<0.1	-	-	<0.1	-	<0.1		<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL) #	-	<0.1	<0.1	<0.1	-	-	<0.1	-	<0.1		<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	-	<0.1	<0.1	<0.1	-	-	<0.1	-	<0.1		<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL) #	-	<0.2	<0.2	<0.2	-	-	<0.2	-	<0.2		<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL) #	-	<4	<4	<4	-	-	<4	-	<4		<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL) #	-	<7	<7	<7	-	-	<7	-	<7		<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL) #	-	<7	<7	<7	-	-	<7	-	<7		<7	mg/kg	TM5/PM8/PM16
>C35-C40 (EH_CU_1D_AL)	-	<7	<7	<7	-	-	<7	-	<7		<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-40 (EH+HS_CU_1D_AL)	-	<26	<26	<26	-	-	<26	-	<26		<26	mg/kg	TM5/PM8/PM16/PM12/PM10

Element Materials Technology

Client Name: Tier Environmental
Reference: TE1749
Location: Bryn Lane Outline
Contact: Alex Preston
EMT Job No: 23/9033

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	149-152	153-156	157-160	165-168	169-172	177-180	189-192	201-204	205-208		Please see attached notes for all abbreviations and acronyms		
Sample ID	TP13	TP13	TP13	TP14	TP14	TP15	TP16	TP17	TP17				
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COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T				
Sample Date	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	3	3	3	3	3	3	3	3	3				
Date of Receipt	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023		LOD/LOR	Units	Method No.
TPH CWG													
Aromatics													
>C5-EC7 (HS_1D_AR) #	-	<0.1	<0.1	<0.1	-	-	<0.1	-	<0.1		<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR) #	-	<0.1	<0.1	<0.1	-	-	<0.1	-	<0.1		<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR) #	-	<0.1	<0.1	<0.1	-	-	<0.1	-	<0.1		<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR) #	-	<0.2	<0.2	<0.2	-	-	<0.2	-	<0.2		<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR) #	-	<4	<4	<4	-	-	<4	-	<4		<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR) #	-	<7	<7	<7	-	-	<7	-	<7		<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR) #	-	<7	40	<7	-	-	17	-	<7		<7	mg/kg	TM5/PM8/PM16
>EC35-EC40 (EH_CU_1D_AR)	-	<7	<7	<7	-	-	9	-	<7		<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-40 (EH+HS_CU_1D_AR)	-	<26	40	<26	-	-	26	-	<26		<26	mg/kg	TM5/PM8/PM16/PM12/PM10
Total aliphatics and aromatics(C5-40) (EH+HS_CU_1D_Total)	-	<52	<52	<52	-	-	<52	-	<52		<52	mg/kg	TM5/PM8/PM16/PM12/PM10
MTBE #	-	<5	<5	<5	-	-	<5	-	<5		<5	ug/kg	TM36/PM12
Benzene #	-	<5	<5	<5	-	-	<5	-	<5		<5	ug/kg	TM36/PM12
Toluene #	-	<5	<5	<5	-	-	<5	-	<5		<5	ug/kg	TM36/PM12
Ethylbenzene #	-	<5	<5	<5	-	-	<5	-	<5		<5	ug/kg	TM36/PM12
m/p-Xylene #	-	<5	<5	<5	-	-	<5	-	<5		<5	ug/kg	TM36/PM12
o-Xylene #	-	<5	<5	<5	-	-	<5	-	<5		<5	ug/kg	TM36/PM12
Total Phenols HPLC	-	<0.15	<0.15	<0.15	<0.15	-	<0.15	-	<0.15		<0.15	mg/kg	TM26/PM21B
Natural Moisture Content	-	16.9	42.1	19.6	77.0	-	23.5	-	17.6		<0.1	%	PM4/PM0
Hexavalent Chromium #	-	<0.3	<0.3	<0.3	<0.3	-	<0.3	-	<0.3		<0.3	mg/kg	TM38/PM20
Ortho Phosphate as PO4	-	<0.3	-	0.5	-	-	-	-	<0.3		<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	-	0.4678	0.0563	0.0665	0.0174	-	0.0371	-	0.1211		<0.0015	g/l	TM38/PM20
Total Organic Carbon #	-	0.23	2.10	1.75	1.15	-	1.30	-	0.23		<0.02	%	TM21/PM24
Calorific Value	-	-	-	-	<1	-	-	-	-		<1	MJ/kg	TM21/PM24
pH #	-	8.63	7.86	8.22	7.26	-	7.96	-	8.84		<0.01	pH units	TM73/PM11
Asbestos Type*	NAD	NAD	NAD	NAD	-	NAD	-	NAD	-			None	Subcontracted

Client Name: Tier Environmental

Reference: TE1749

Location: Bryn Lane Outline

Contact: Alex Preston

[illegible]

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 23/9033

SOILS and ASH

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. Asbestos samples are retained for 6 months.

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. Limits of detection for analyses carried out on as received samples are not moisture content corrected. 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. Ash samples are dried at 37°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.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

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.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overestimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

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.

STACK EMISSIONS

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 for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

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

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

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 requirement of our Accreditation Body 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.

Laboratory records are kept for a period of no less than 6 years.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

Customer Provided Information

Sample ID and depth is information provided by the customer.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) 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.
>>	Results above quantitative calibration range. The result should be considered the minimum value and is indicative only. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology 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

HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis.
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

EMT Job No: 23/9033

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/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 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of 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 8270D v5:2014 method for the solvent extraction and determination of 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
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 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. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.			AD	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 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. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21B	As Received samples are extracted in Methanol: Water (60:40) by reciprocal shaker.			AR	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEPA 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	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		AD	Yes

EMT Job No: 23/9033

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/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 v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GC/FID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GC/FID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	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.			AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	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		AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	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
TM42	Modified US EPA method 8270D v5:2014. Pesticides and herbicides by GC-MS	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	A hot hydrochloric acid digest is performed on a dried and ground sample, and the resulting liquor is analysed.	Yes		AD	Yes
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. 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		AR	No
Subcontracted	See attached subcontractor report for accreditation status and provider.					AR	

Tier Environmental
Suite 414, Chadwick House
Warrington Rd
Birchwood
Warrington
United Kingdom
WA3 6AE



4225



Attention : Adrian Read
Date : 27th June, 2023
Your reference : TE1749
Our reference : Test Report 23/9033 Batch 4
Location : Bryn Lane Outline
Date samples received : 19th June, 2023
Status : Final Report
Issue : 1

Nine samples were received for analysis on 19th June, 2023 of which nine 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.

Authorised By:



Liza Klebe

Project Co-ordinator

Please include all sections of this report if it is reproduced

Matrix : Solid

[illegible]

Client Name: Tier Environmental

Reference: TE1749

Location: Bryn Lane Outline

Contact: Adrian Read

[illegible]

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.