

HOLST & CO. LTD.

SITE INVESTIGATION DEPT.

5-7, NEW YORK ROAD

LEEDS, 2

43029, 96652

SJ49NW-142

Contract No. M.1691/F1217

Borehole No. 12

Location Knowsley

Ground Level

Client Liverpool City Engineer

Date 21st April 1969

BOREHOLE LOG

STRATA	Legend	Depth below Ground Level	Thickness of Strata	Type of Sample	c lb/sq. ft.	φ deg.	m.c. %	γ lb/cu. ft.	N
Topsoil		1'0"	1'0"						
Greyish brown sand Traces of gravel			7'0"	5'0" I					10
		8'0"							
Hard red sandy marl with bands of weathered red sandstone.				10'0" II	2080	23	13.3	143	
			12'0"						
		20'0"							

Water Struck at 4'0"

Maximum Observed Water Level 3'0"

Undisturbed Sample □
Disturbed Sample ○
Water Sample Δ
Penetration Test I

c = Cohesion
φ = Angle of Internal Friction
m.c. = Moisture Content
γ = Bulk Density
N = Standard Penetration Value

Water levels are subject to seasonal or tidal variation and should not be taken as constant

SUB SOIL MANCHESTER Surveys Ltd M29 7LD 0942 883565		Ground Level		Site Reference		Borehole No.		1 1 of 2	
				97/2					
Boring Method Light Cable Percussion			CASING 150mm to depth of 6.0m			Site Knowsley			
						Client John Newton & Partners			

Date	Depth of Casing Below G.L.	Water Level Morning & Evening	Depth of Strata Below G.L.	Description of Strata (all depths given in metres)	Reduced Level	No. & Type of Sample	Penetration of Sampler		Number of Blows	Symbolic Log		
							From	To				
08.01.97			<!-- Vertical scale from 0 to 8.00 --> 1.70 3.50 8.00	Brown sandy clay, sand, brick, ash etc. (MAOE GROUND)		1B	0.50	1.00	13			
					2X	1.35	1.65					
				Medium dense brown silty SAND with gravelly zones		3X	1.95	2.25	25			
					4D 5X	2.40 2.75	3.05	23				
				Very stiff reddish brown very sandy CLAY with a little gravel and sand lenses		6D 7X	3.40 3.65	3.95	45			
								8U	4.30	4.75		
								90	4.85			
								10U	5.50	5.95		
								110	6.05			
								12U	6.50	6.95		
								13D	7.05			
								14U	7.50	7.95		

Sample Key: B.Bulk D.Disturbed U.Open Tube V.Vane W.Water X.Standard Penetration Test

Water Level Observations during boring depths below ground level					Estimated Seepage	Depth of Casing when sealed N.S. - Not Sealed	Water level in Cased/Uncased Borehole on Completion depth below ground level		
depth observed	after 5 mins.	after 10 mins.	after 15 mins.	after 20 mins.			Date	Water Level	Depth of Casing
None									

Water Added to Assist Boring at:

REMARKS
 Time spent excavating by hand - 45 minutes

SUB SOIL Surveys Ltd MANCHESTER M29 7LD 0942 883565		Ground Level		Site Reference 97/2		Borehole No. 1 2 of 2	
		CASING 150mm to depth of 6.0m		Site Knowsley		Client John Newton & Partners	
Boring Method Light Cable Percussion							

Date	Depth of Casing Below G.L.	Water Level Morning & Evening	Depth of Strata Below G.L.	Description of Strata (all depths given in metres)	Reduced Level	No. & Type of Sample	Penetration of Sampler		Number of Blows	Symbolic Log
							From	To		
08.01.97	6.0	Dry	10.90 11.2	Very stiff reddish brown very sandy CLAY with a little gravel and sand lenses		150	8.05			
					160	8.50	8.95			
					170	9.05				
					180	9.50	9.95			
					190	10.05				
					200	10.50	10.90			
					21X	11.05	11.20	89		
			Reddish brown sandy MUDSTONE, weak							

Sample Key: B.Bulk D.Disturbed U.Open Tube V.Vane W.Water X.Standard Penetration Test

Water Level Observations during boring depths below ground level					Estimated Seepage	Depth of Casing when sealed N.S. - Not Sealed	Water level in Cased/Uncased Borehole on Completion depth below ground level		
depth observed	after 5 mins.	after 10 mins.	after 15 mins.	after 20 mins.			Date	Water Level	Depth of Casing

Water Added to Assist Boring at:

REMARKS

SUB SOIL Surveys Ltd	MANCHESTER M29 7LD 0942 883565	Ground Level	Site Reference 97/2	Borehole No. 2 1 of 2
	Casing Method Light Cable Percussion	Casing 150mm to depth of 6.0m	Site Knowsley	Client John Newton & Partners

Date	Depth of Casing Below G.L.	Water Level Morning & Evening	Depth of Strata Below G.L.	Description of Strata (all depths given in metres)	Reduced Level	No. & Type of Sample	Penetration of Sampler		Number of Blows	Symbolic Log
							From	To		
09.01.97			2.60 </							

Sample Key: B.Bulk D.Disturbed U.Open Tube V.Vane W.Water X.Standard Penetration Test

Water Level Observations during boring depths below ground level					Estimated Seepage	Depth of Casing when sealed N.S. - Not Sealed	Water level in Cased/Uncased Borehole on Completion depth below ground level		
depth observed	after 5 mins.	after 10 mins.	after 15 mins.	after 20 mins.			Date	Water Level	Depth of Casing
None									
						10.01.97	5.70	Nil	
Water Added to Assist Boring at:									

REMARKS

Time spent chiselling - 1.25 hrs. Time spent excavating by hand - 30 minutes

SUB SOIL	MANCHESTER Surveys Ltd M29 7LD 0942 883565	Ground Level	Site Reference 97/2	Borehole No. 2 2 of 2

Boring Method Light Cable Percussion	CASING 150mm to depth of 5.0m	Site Knowsley
Client John Newton & Partners		

Date	Depth of Casing Below G.L.	Water Level Morning & Evening	Depth of Strata Below G.L.	Description of Strata (all depths given in metres)	Reduced Level	No. & Type of Sample	Penetration of Sampler		Number of Blows	Symbolic Log			
							From	To					
09.01.97	6.0	Dry	10.70	Very stiff reddish brown sandy CLAY with a little gravel and sand lenses		15C	8.05		50				
						16L	8.50	8.95					
						17C	9.05						
						18L	9.50	9.95					
						19C	10.05						
						20E	10.50	10.90					
			12.15	Reddish brown SANDSTONE, weak to moderately weak or stronger		21C	11.05	11.10		50			
						22C	11.30						
						23C	11.70	11.78				50	SP
						24C	12.00						
						25C	12.10	12.15				50	SP NR

Sample Key: B.Bulk D.Disturbed U.Open Tube V.Vane W.Water X.Standard Penetration Test									
Water Level Observations during boring depths below ground level					Estimated Seepage	Depth of Casing when sealed N.S. - Not Sealed	Water level in Cased/Uncased Borehole on Completion depth below ground level		
depth observed	after 5 mins.	after 10 mins.	after 15 mins.	after 20 mins.			Date	Water Level	Depth of Casing
Water Added to Assist Boring at:									

REMARKS

SUB SOIL Surveys Ltd MANCHESTER M29 7LD 0942 883565	Ground Level	Site Reference 97/2	Borehole No. 3	1 of 2	
	Boring Method Light Cable Percussion	CASING 150mm to depth of 4.5m	Site Knowsley		
	Client John Newton & Partners				

John Newton & Partners

Date	Depth of Casing Below G.L.	Water Level Morning & Evening	Depth of Strata Below G.L.	Description of Strata (all depths given in metres)	Reduced Level	No. & Type of Sample	Penetration of Sampler		Number of Blows	Symbolic Log
							From	To		
10.01.97				Clay with stone, brick, cloth etc. (MADE GROUND)		1B	D.50			
			1.10	Medium dense greyish brown silty SAND		2X	1.35	1.65	10	
			1.90	Firm brown sandy CLAY with a little gravel and greyish zones		3D 4X	1.80 1.95	2.25	11	
			2.40	Very stiff reddish sandy brown CLAY with a little gravel and sand lenses		5U	2.40	2.85		
						60	2.95			
						7U	3.50	3.95		
						80	4.05			
						9U	4.50	4.95		
						100	5.05			
						11U	5.50	5.95		
						120	6.05			
			6.60	Reddish brown MUDSTONE, weak		13U	6.50	6.90		
						140 15X	6.90 7.05	7.35	123	
						160	7.50			
			8.00			17X	8.05	8.28	106	

Sample Key: B.Bulk D.Disturbed U.Open Tube V.Vane W.Water X.Standard Penetration Test

Water Level Observations during boring depths below ground level					Estimated Seepage	Depth of Casing when sealed N.S. - Not Sealed	Water level in Cased/Uncased Borehole on Completion depth below ground level		
depth observed	after 5 mins.	after 10 mins.	after 15 mins.	after 20 mins.			Date	Water Level	Depth of Casing
6.30					On pulling casing				
Water Added to Assist Boring at:									

REMARKS

Time spent chiselling - 1 hrs. Time spent excavating by hand - 30 minutes

SUB SOIL		MANCHESTER M28 7LD 0942 883555	Ground Level	Site Reference 97/2	Borehole No. 3	2 of 2
Boring Method Light Cable Percussion		CASING 150mm to depth of 4.5m		Site Knowsley		
Client John Newton & Partners						

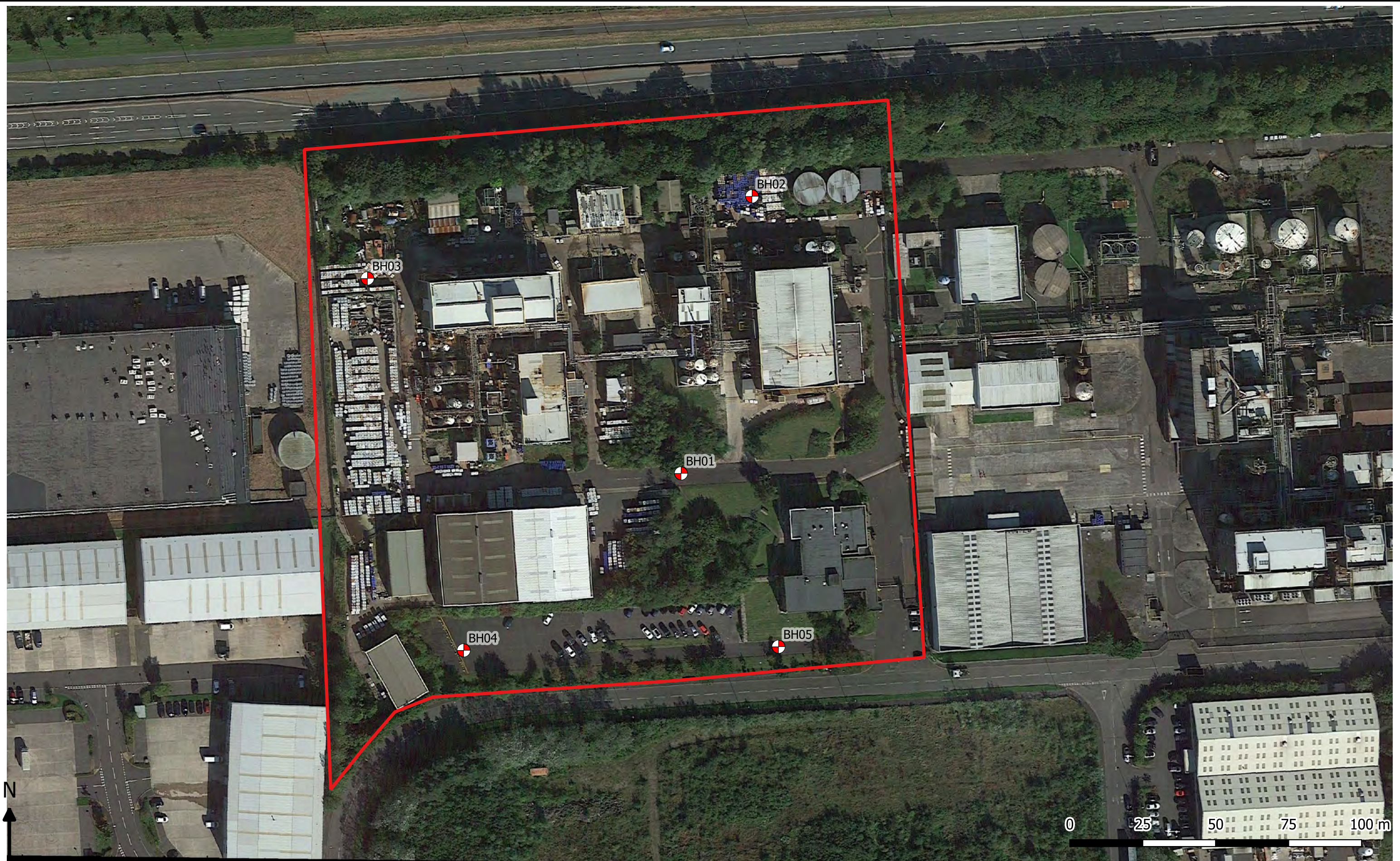
Date	Depth of Casing Below G.L.	Water Level Morning & Evening	Depth of Strata Below G.L.	Description of Strata (all depths given in metres)	Reduced Level	No. & Type of Sample	Penetration of Sampler		Number of Blows	Symbolic Log
							From	To		
10.01.97	4.5		9.05	Reddish brown sandy MUDSTONE and SANDSTONE, weak to moderately weak or stronger		18D	8.6D			
						19X 20W	8.90 6.30	9.05	79	SP NR

Sample Key: B.Bulk D.Disturbed U.Open Tube V.Vane W.Water X.Standard Penetration Test

Water Level Observations during boring depths below ground level					Estimated Seepage	Depth of Casing when sealed N.S. - Not Sealed	Water level in Cased/Uncased Borehole on Completion depth below ground level		
depth observed	after 5 mins.	after 10 mins.	after 15 mins.	after 20 mins.			Date	Water Level	Depth of Casing

Water Added to Assist Boring at:

REMARKS



NOTES:	CLIENT:	PORTWAY REMEDIATION	PROJECT No:	P9656	DATE:	APR 2021	DESIGN/DRAWN:	JB
	PROJECT:	CONTRACT CHEMICALS, KNOWSLEY	DRAWING NUMBER:	001	ISSUE:	FINAL		
	TITLE:	EXPLORATORY HOLE LOCATION PLAN	© GRM Development Solutions Ltd © Crown Copyright. AL 100014100					

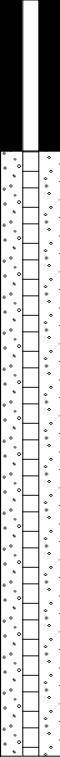


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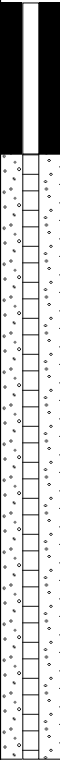
GRM Development Solutions Ltd

		GRM Development Solutions Ltd Laurus House, First Avenue, Centrum 100, Burton-on-Trent, DE14 2WH Tel (HQ): 01283 551249 Email: info@grm-uk.com		Cable-Percussion Borehole			Borehole No. BH01 Sheet 1 of 1	
Site Name: Contract Chemicals, Knowsley							Ground Level (mAOD)	
Client: Portway Remediation					GRM Project Ref: P9656		Coordinates 342986 E 396708 N	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.10		Black TARMACADAM/ASPHALT. MADE GROUND		
		0.50	ES		0.50		Dense, dark brown, sandy GRAVEL. Gravel is fine to coarse, angular to subangular limestone. Sand is fine to coarse. MADE GROUND		
		1.80	ES		1.80		Firm, brown mottled orangish-brown and black, very sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded sandstone and brick. MADE GROUND	1	
		2.50	ES		2.10		Loose to medium dense, greyish-brown, clayey SAND. Sand is fine to coarse. GLACIAL DEPOSITS	2	
		2.60	ES		2.60		Soft, approximately low strength, grey and reddish-brown, very sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular to rounded quartzite and sandstone. GLACIAL DEPOSITS		
		3.50	ES				Dense, reddish-brown, clayey, slightly gravelly SAND. Sand is fine to coarse. Gravel is fine to medium, subrounded to rounded quartzite. GLACIAL DEPOSITS	3	
							Water strike at 3.90m - rising to 2.0m in 20 minutes.	4	
					5.00		End of Borehole at 5.000m	5	
								6	
								7	
								8	
								9	

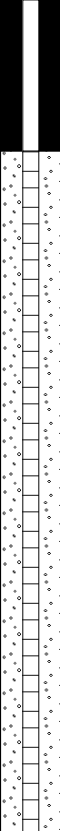
Crew: DMW Drilling Ltd.		Logger: JB		Chiselling Details		
Equipment: Cable percussion drilling rig				Depth Top	Duration	Remarks
Groundwater Remarks: Damp strata at 0.40m. Water strike at 3.90m, rising to 2.0m in 20 minutes.				Casing Diameter by Depth		
				Depth Base	Diameter	Remarks
General Remarks:						
Hole Started: 08/04/2021		Hole Complete: 08/04/2021		Version: FINAL		Scale: 1:50

		GRM Development Solutions Ltd Laurus House, First Avenue, Centrum 100, Burton-on-Trent, DE14 2WH Tel (HQ): 01283 551249 Email: info@grm-uk.com		Cable-Percussion Borehole			Borehole No. BH02 Sheet 1 of 1	
Site Name: Contract Chemicals, Knowsley							Ground Level (mAOD)	
Client: Portway Remediation					GRM Project Ref: P9656		Coordinates 343011 E 396803 N	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20		Very hard, dark grey CONCRETE. MADE GROUND		
		0.60	ES				Medium dense, dark brown, reddish-brown and black, clayey, very gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded concrete and quartzite. MADE GROUND	1	
		1.20	ES		1.00		Medium dense, reddish-brown, slightly clayey, slightly gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse, subangular to rounded sandstone. GLACIAL DEPOSITS		
		2.00	ES		1.70 1.90		Firm, approximately medium strength, reddish-brown, very sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to medium, subrounded to rounded quartzite. GLACIAL DEPOSITS	2	
		3.00	ES		2.50		Medium dense, reddish-brown mottled dark greyish-brown, clayey, silty, slightly gravelly SAND. Sand is fine to coarse. Gravel is fine to medium, subrounded to rounded quartzite. Moderate hydrocarbon aroma. GLACIAL DEPOSITS	3	
		3.50	ES				Firm, approximately medium strength, reddish-brown, sandy CLAY. Sand is fine to coarse. GLACIAL DEPOSITS		
							Becoming soft, approximately low strength and very sandy at 3.50m. Water strike at 3.50m. Gravel of limestone recovered below 3.50m, but thought to be Made Ground material falling down outside of casing.	4	
					4.30		Firm to stiff, approximately medium to high strength, reddish-brown, sandy CLAY. Sand is fine to coarse. GLACIAL DEPOSITS		
		5.00	ES		5.00		End of Borehole at 5.000m	5	
								6	
							7		
							8		
							9		

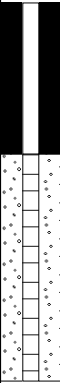
Crew: DMW Drilling Ltd.		Logger: JB		Chiselling Details		
Equipment: Cable percussion drilling rig				Depth Top	Duration	Remarks
Groundwater Remarks: Water strike at 3.50m.				Casing Diameter by Depth		
				Depth Base	Diameter	Remarks
General Remarks:						
Hole Started: 08/04/2021		Hole Complete: 08/04/2021		Version: FINAL		Scale: 1:50

		GRM Development Solutions Ltd Laurus House, First Avenue, Centrum 100, Burton-on-Trent, DE14 2WH Tel (HQ): 01283 551249 Email: info@grm-uk.com		Cable-Percussion Borehole			Borehole No. BH03	
Site Name: Contract Chemicals, Knowsley							Sheet 1 of 1 Ground Level (mAOD)	
Client: Portway Remediation					GRM Project Ref: P9656		Coordinates 342879 E 396774 N	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	ES		0.25		Very hard, light grey CONCRETE with 5mm steel reinforcement on a 30cm grid. Plastic membrane at base.		
		0.60	ES		0.60		MADE GROUND Dense, brown, sandy GRAVEL. Gravel is fine to coarse, angular to subangular limestone. Sand is fine to coarse.	1	
		1.50	ES		1.50		MADE GROUND Firm to stiff, reddish-brown and brown, sandy, gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded limestone and quartzite. Rare plastic fragments.	2	
		2.50	ES				MADE GROUND Soft to firm, approximately low to medium strength, very sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to medium, subangular to rounded sandstone and quartzite.	3	
		3.50	ES		3.70		GLACIAL DEPOSITS <i>Becoming stiff, approximately high strength at 1.50m. With sand pockets from 2.50m.</i>	4	
		4.00	ES		4.20		<i>Becoming soft, approximately low strength at 3.20m.</i> <i>Becoming laminated and silty at 3.60m.</i> Loose, reddish-brown, very silty, slightly gravelly SAND. Sand is fine to coarse. Gravel is fine to medium, subrounded to rounded quartzite.	5	
							GLACIAL DEPOSITS <i>Water strike at 4.0m - rising to 3.0m in 20 minutes.</i> Very stiff, approximately very high strength, brown, silty, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to medium, subangular to rounded quartzite and sandstone.	6	
					5.60		GLACIAL DEPOSITS	7	
							End of Borehole at 5.600m	8	
								9	

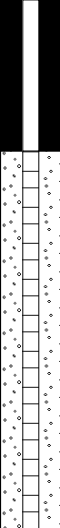
Crew: DMW Drilling Ltd.		Logger: JB		Chiselling Details		
Equipment: Cable percussion drilling rig		Depth Top	Duration	Remarks		
Groundwater Remarks: Water strike at 4.0m - rising to 3.0m in 20 minutes.		5.30	00:45			
General Remarks:		Casing Diameter by Depth				
		Depth Base	Diameter	Remarks		
Hole Started: 08/04/2021		Hole Complete: 09/04/2021		Version: FINAL		Scale: 1:50

		GRM Development Solutions Ltd Laurus House, First Avenue, Centrum 100, Burton-on-Trent, DE14 2WH Tel (HQ): 01283 551249 Email: info@grm-uk.com		Cable-Percussion Borehole			Borehole No. BH04 Sheet 1 of 1	
Site Name: Contract Chemicals, Knowsley							Ground Level (mAOD)	
Client: Portway Remediation					GRM Project Ref: P9656		Coordinates 342912 E 396647 N	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.10		Black TARMAACADAM/ASPHALT. MADE GROUND		
		0.40	ES		0.30		Dense, light brownish-grey, sandy GRAVEL. Gravel is fine to coarse, angular to subangular limestone. Sand is fine to coarse.		
		0.80	ES		0.70		MADE GROUND Soft to firm, reddish-brown mottled brown and dark brown, sandy, gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded limestone and concrete.	1	
		1.50	ES		1.50		MADE GROUND Medium dense, brown and dark brown SAND. Sand is fine to coarse.		
		2.00	ES		2.00		GLACIAL DEPOSITS Medium dense, light brown, clayey, gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular sandstone and quartzite.	2	
					2.40		GLACIAL DEPOSITS Firm, approximately medium strength, reddish-brown mottled light brown, silty, slightly sandy CLAY. Sand is fine to coarse.	3	
				2.60			GLACIAL DEPOSITS Strong, reddish-brown mottled light brown, silty SANDSTONE. CHESTER FORMATION End of Borehole at 2.600m	4	
								5	
								6	
								7	
								8	
								9	

Crew: DMW Drilling Ltd.		Logger: JB		Chiselling Details											
Equipment: Cable percussion drilling rig		Groundwater Remarks: No groundwater encountered.		<table border="1"> <tr> <th>Depth Top</th> <th>Duration</th> <th>Remarks</th> </tr> <tr> <td>2.40</td> <td>00:20</td> <td></td> </tr> </table>			Depth Top	Duration	Remarks	2.40	00:20				
							Depth Top	Duration	Remarks						
2.40	00:20														
General Remarks:				<table border="1"> <tr> <th colspan="3">Casing Diameter by Depth</th> </tr> <tr> <th>Depth Base</th> <th>Diameter</th> <th>Remarks</th> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>			Casing Diameter by Depth			Depth Base	Diameter	Remarks			
				Casing Diameter by Depth											
Depth Base	Diameter	Remarks													
Hole Started: 09/04/2021		Hole Complete: 09/04/2021		Version: FINAL		Scale: 1:50									

		GRM Development Solutions Ltd Laurus House, First Avenue, Centrum 100, Burton-on-Trent, DE14 2WH Tel (HQ): 01283 551249 Email: info@grm-uk.com		Cable-Percussion Borehole			Borehole No. BH05 Sheet 1 of 1	
Site Name: Contract Chemicals, Knowsley							Ground Level (mAOD)	
Client: Portway Remediation					GRM Project Ref: P9656		Coordinates 343020 E 396648 N	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.10		Black TARMACADAM/ASPHALT.		
					0.50		MADE GROUND Dense, light grey, sandy GRAVEL. Gravel is fine to coarse, angular to subangular limestone. Sand is fine to coarse.		
					0.90		MADE GROUND Dense, reddish-brown and brown, very clayey, gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular brick and concrete. Rare fragments of wood.	1	
					1.20		MADE GROUND		
					1.50		MADE GROUND Medium dense, brown and dark brown, gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular brick, concrete, glass and wood.	2	
					2.50		MADE GROUND Stiff, approximately high strength, reddish-brown, silty, slightly sandy, gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular to rounded sandstone and quartzite.	3	
					3.50		GLACIAL DEPOSITS Firm to stiff, approximately medium to high strength, reddish-brown, very silty, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to medium, subangular sandstone.	4	
					3.80		CHESTER FORMATION Strong, reddish-brown, silty, fine to medium SANDSTONE.	5	
							CHESTER FORMATION	6	
							End of Borehole at 3.500m	7	
							8		
							9		

Crew: DMW Drilling Ltd.		Logger: JB		Chiselling Details		
Equipment: Cable percussion drilling rig		Depth Top	Duration	Remarks		
Groundwater Remarks: No groundwater encountered.		3.50	00:45			
General Remarks:		Casing Diameter by Depth				
		Depth Base	Diameter	Remarks		
Hole Started: 09/04/2021		Hole Complete: 09/04/2021		Version: FINAL		Scale: 1:50



Appendix B – Exploratory Hole Logs



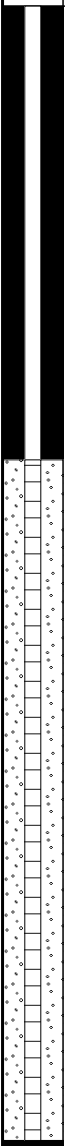
NOTES:

CLIENT:	KNwsley Redevelopments Ltd
PROJECT:	Contract Chemicals, Knowsley
TITLE:	Exploratory Hole Location Plan

PROJECT No:	GJ224	DATE:	January 2021	DESIGN/DRAWN:	TDSR
DRAWING NUMBER:	01	ISSUE:	Final		

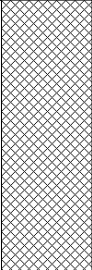
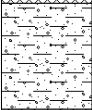
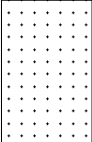


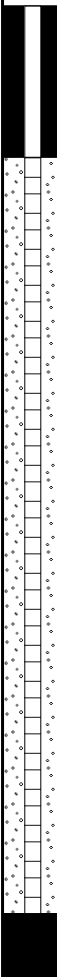
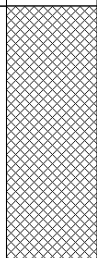
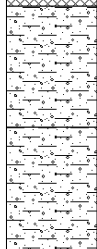
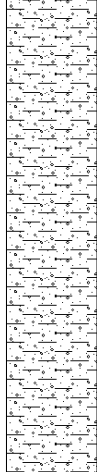
G&J Geoenvironmental Consultants Ltd

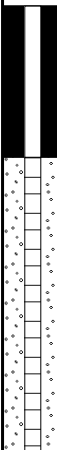
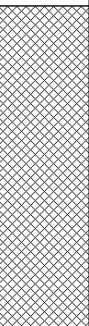
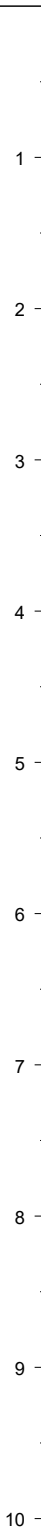
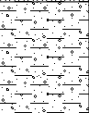
		G&J Geoenvironmental 35-37 High Street, Barrow upon Soar, Loughborough, LE12 8PY		Borehole Log			Borehole No. BH101 Sheet 1 of 1		
Project Name: Contract Chemicals, Knowsley		Project No. GJ224		Co-ords: 343031E - 396679N		Hole Type CP			
Location: Penrhyn Road, Knowsley, Merseyside				Level: 29.83 m AOD		Scale 1:50			
Client: Knowsley Redevelopments Ltd				Dates: 16/11/2021		Logged By AW			
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00 - 0.50	B			29.83		Soft reddish brown very sandy CLAY. Sand is fine to medium. Gravel is fine to medium angular to subrounded of sandstone, brick and quartzite. MADE GROUND	1
		0.50 0.50	D ES						
		1.20 - 1.65	SPTL S	N=8 (1,1/2,2,2,2)	1.60	28.23		Soft reddish brown very sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subrounded of sandstone. MADE GROUND	2
		1.20 1.60	S D						
		2.00 - 2.45	SPTL S	N=8 (1,1/1,2,3,2)				Firm reddish brown very sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subangular to subrounded of quartzite and mudstone. GLACIAL TILL	3
		2.00	S S						
		3.00 - 3.45	SPTL S	N=13 (1,2/2,3,4,4)	3.00	26.83		Very stiff reddish brown very sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subangular to rounded of sandstone and occasional quartzite GLACIAL TILL	4
		3.00 - 3.50 3.00	B S						
		4.00 - 4.45	U	Ublow=75 90% Recovery	4.50	25.33		Dense to very dense reddish brown very clayey slightly gravelly SAND. Sand is fine to medium. Gravel is fine to medium angular to subangular of sandstone. WEATHERED CHESTER FORMATION	5
		4.50	D						
		5.00 - 5.45	SPTL S	N=40 (6,6/9,10,10,11)				Dense to very dense reddish brown very clayey slightly gravelly SAND. Sand is fine to medium. Gravel is fine to medium angular to subangular of sandstone. WEATHERED CHESTER FORMATION	6
		5.00	S S						
	6.00 - 6.45	SPTL S	N=50 (6,9/50 for 285mm)	6.50	23.33		Dense to very dense reddish brown very clayey slightly gravelly SAND. Sand is fine to medium. Gravel is fine to medium angular to subangular of sandstone. WEATHERED CHESTER FORMATION	7	
	6.00 - 6.50 6.00	D S							
	7.50	SPTL S	N=50 (7,7/50 for 275mm)	7.95			Dense to very dense reddish brown very clayey slightly gravelly SAND. Sand is fine to medium. Gravel is fine to medium angular to subangular of sandstone. WEATHERED CHESTER FORMATION	8	
	7.95	S							
							End of Borehole at 7.95m		9
									10

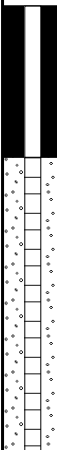
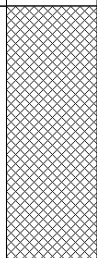
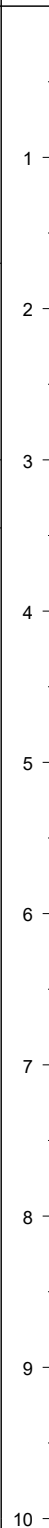
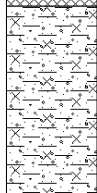
Remarks

1) Advanced using a Dando 2000 Cable Percussive drilling rig. 2) Groundwater encountered at 4.2m begl rising to 3.90m begl on completion of borehole.


		G&J Geoenvironmental 35-37 High Street, Barrow upon Soar, Loughborough, LE12 8PY		Borehole Log			Borehole No. BH102 Sheet 1 of 1			
Project Name:		Contract Chemicals, Knowsley		Project No. GJ224		Co-ords: 342914E - 396653N		Hole Type CP		
Location:		Penrhyn Road, Knowsley, Merseyside				Level: 27.84 m AOD		Scale 1:50		
Client:		Knowsley Redevelopments Ltd				Dates: 16/11/2021		Logged By AW		
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.20 0.20 0.50 - 1.00	D ES B			27.84		Loose to medium dense dark brown clayey slightly gravelly SAND. Sand is fine to medium. Gravel is fine to medium subangular to subrounded of sandstone and brick fragments. MADE GROUND	1	
		1.20 - 1.65 1.20	SPTL S S	N=8 (1,1/1,2,2,3)						
		1.80 2.00 - 2.45	D U	Ublow=60 100% Recovery	1.80	26.04				
		2.50 2.50 - 3.00	D B		2.50	25.34				
		3.00 - 3.45 3.00	SPTL S S	50 (25 for 115mm/50 for 245mm)	3.45			3		
		End of Borehole at 3.45m							4	
									5	
									6	
									7	
									8	
									9	
									10	
Remarks 1) Advanced using a Dando 2000 Cable Percussive drilling rig. 2) No groundwater encountered.										

		G&J Geoenvironmental 35-37 High Street, Barrow upon Soar, Loughborough, LE12 8PY		Borehole Log			Borehole No. BH103 Sheet 1 of 1			
Project Name: Contract Chemicals, Knowsley		Project No. GJ224		Co-ords: 342975E - 396721N		Hole Type CP				
Location: Penrhyn Road, Knowsley, Merseyside				Level: 29.62 m AOD		Scale 1:50				
Client: Knowsley Redevelopments Ltd				Dates: 17/11/2021		Logged By AW				
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.50 0.50 0.50	B D ES			29.62		Soft to firm reddish brown sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subrounded of sandstone, quartzite, brick and concrete. MADE GROUND	1	
		1.20 - 1.65 1.20 1.70	SPTL S S D	N=12 (2,2/2,3,3,4)	1.70	27.92				
		2.00 - 2.45 2.50	U D	Ublow=44 100% Recovery	2.50	27.12		Stiff reddish brown sandy to very sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subrounded to rounded sandstone. GLACIAL TILL	2	
		3.00 - 3.45 3.00	SPTL S S	N=32 (4,4/5,7,10,10)						
		4.00 - 4.45 4.00	SPTL S S	N=40 (5,7/10,10,11,9)				Very stiff reddish brown very sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subrounded to rounded occasionally angular of sandstone, quartzite and mudstone. GLACIAL TILL	3	
		5.00 - 5.45 5.00 - 5.50 5.00	SPTL S B S	N=55 (6,6/55 for 285mm)						
		6.00 - 6.45 6.00	SPTL S S	N=50 (7,8/50 for 275mm)	6.45			End of Borehole at 6.45m	6	
										7
										8
									9	
									10	
Remarks 1) Advanced using a Dando 2000 Cable Percussive drilling rig. 2) No groundwater encountered.										

		G&J Geoenvironmental 35-37 High Street, Barrow upon Soar, Loughborough, LE12 8PY		Borehole Log			Borehole No. BH104 Sheet 1 of 1		
Project Name: Contract Chemicals, Knowsley		Project No. GJ224		Co-ords: 342900E - 396738N		Hole Type CP			
Location: Penrhyn Road, Knowsley, Merseyside				Level: 29.08 m AOD		Scale 1:50			
Client: Knowsley Redevelopments Ltd				Dates: 17/11/2021		Logged By AW			
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20 0.20 0.50 - 1.00	D ES B			29.08		Soft to firm reddish brown very sandy CLAY. Sand is fine to medium. Gravel is fine to medium subangular to subrounded of sandstone, quartzite and brick fragments. Strong solvent odor. MADE GROUND	
		1.20 - 1.65 1.20	SPTL S S	N=12 (2,2/2,3,5,2)					
		2.00 - 2.45 2.00 2.50 - 3.00	SPTL S S B	N=26 (3,5/6,6,7,7)	2.20	26.88		Stiff to very stiff reddish brown very sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subangular to subrounded of sandstone and quartzite. GLACIAL TILL	
		3.00 - 3.45 3.00	SPTL S S	50 (25 for 125mm/50 for 285mm)	3.00 3.45	26.08			
		End of Borehole at 3.45m							
Remarks 1) Advanced using a Dando 2000 Cable Percussive drilling rig. 2) Groundwater encountered at 2.20m begl and rose to 1.10m on copletion of borehole.									
									

		G&J Geoenvrionmental 35-37 High Street, Barrow upon Soar, Loughborough, LE12 8PY		Borehole Log			Borehole No. BH105 Sheet 1 of 1		
Project Name: Contract Chemicals, Knowsley		Project No. GJ224		Co-ords: 343028E - 396786N		Hole Type CP			
Location: Penrhyn Road, Knowsley, Merseyside				Level: 30.03 m AOD		Scale 1:50			
Client: Knowsley Redevelopments Ltd				Dates: 18/11/2021		Logged By			
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20 0.20 0.50 - 1.00	D ES B			30.03		Soft dark grey very sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subangular of sandstone, brick and concrete. MADE GROUND	
		1.20 - 1.65 1.20	SPTL S S	N=6 (1,1/1,2,1,2)	1.70	28.33			
		2.00 - 2.45 2.00 - 2.50 2.00	SPTL S B S	N=36 (6,7/7,9,9,11)				Firm to stiff, becoming very stiff, reddish brown very sandy silty, gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subangular to subrounded of sandstone. GLACIAL TILL	
		3.00 - 3.45 3.00	SPTL S S	N=50 (8,10/50 for 265mm)	3.00 3.45	27.03			
								Weak reddish brown fine grained thinly bedded SANDSTONE. CHESTER FORMATION	
End of Borehole at 3.45m									
Remarks 1) Advanced using a Dando 2000 Cable Percussive drilling rig. 2) No groundwater encountered.									
									

Trial Pit Log

TrialPit No
TP101
Sheet 1 of 1

Project Name: Contract Chemicals, Knowsley

Project No.
GJ224

Co-ords: 342881.19 - 396731.48
Level: 29.16

Date
15/11/2021

Location: Penrhyn Road, Knowsley, Merseyside

Dimensions (m):	2.50
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Scale
1:25

Client: Knowsley Redevelopments Ltd

Depth
2.20

0.70

2.50

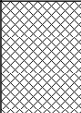
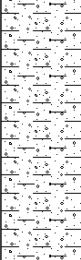
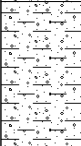
Logged
AW

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.50 - 0.60 0.50 - 0.60 0.50 - 0.60 1.00 1.20 - 1.30 1.30 - 1.40 1.30 - 1.40	B D ES D B D ES		0.30	28.86		Loose to medium dense reddish brown slightly clayey gravelly SAND. Sand is fine to medium. Gravel is fine to medium subangular to subrounded of concrete, brick and sandstone. MADE GROUND	1
				0.80	28.36		Loose dark grey gravelly SAND. Sand is fine to medium. Gravel is fine to medium subangular to subrounded of concrete and brick fragments. Strong solvent odor. MADE GROUND	
				1.20	27.96		Firm to stiff dark brown sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subangular to rounded of sandstone, brick and plastic. Strong solvent odor. MADE GROUND	
				2.20	26.96		Firm reddish brown mottled grey sandy slightly gravelly to gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subrounded to rounded of sandstone and mudstone. GLACIAL TILL	
				End of Pit at 2.20m				
							3	
							4	
							5	

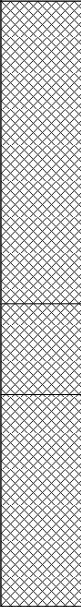
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Stability: Sides generally stable.



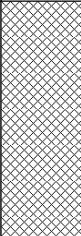
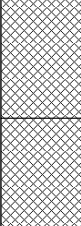
		G&J Geoenvironmental 35-37 High Street, Barrow upon Soar, Loughborough, LE12 8PY		Trial Pit Log			TrialPit No TP102 Sheet 1 of 1		
Project Name: Contract Chemicals, Knowsley				Project No. GJ224		Co-ords: 342896.47 - 396767.93 Level: 29.35		Date 15/11/2021	
Location: Penrhyn Road, Knowsley, Merseyside						Dimensions (m): 2.50 0.70		Scale 1:25	
Client: Knowsley Redevelopments Ltd						Depth 1.80		Logged AW	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
▼	0.20 - 0.30	D		0.40	28.95		Loose reddish brown gravelly SAND. Sand is fine to medium. Gravel is fine to medium subrounded to rounded of sandstone and brick fragments. MADE GROUND		
	0.20 - 0.30	ES							
	0.50 - 0.60	D		1.30	28.05		Firm to stiff reddish brown sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subrounded to rounded of quartzite and sandstone. GLACIAL TILL		
	1.40 - 1.50	B		1.80	27.55		Firm to stiff reddish brown sandy to slightly sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subangular to subrounded of mudstone. GLACIAL TILL		
	End of Pit at 1.80m								
Remarks: 1) Excavated using a tracked 360 excavator. 2) Slight water ingress at 0.2m begl.									
Stability: Sides generally stable.									



		G&J Geoenvironmental 35-37 High Street, Barrow upon Soar, Loughborough, LE12 8PY		Trial Pit Log			TrialPit No TP103 Sheet 1 of 1		
Project Name: Contract Chemicals, Knowsley				Project No. GJ224		Co-ords: 342939.08 - 396774.39 Level: 29.70		Date 15/11/2021	
Location: Penrhyn Road, Knowsley, Merseyside						Dimensions (m): 0.70 2.50		Scale 1:25	
Client: Knowsley Redevelopments Ltd						Depth 2.00		Logged AW	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.50 - 0.60	B D ES		1.00	28.70		Firm reddish brown very sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subangular to subrounded of quartzite, mudstone and occasional concrete. strong solvent odor. MADE GROUND		
	0.50 - 0.60								
	0.50 - 0.60								
	1.20 - 1.30	B		1.30	28.40		Firm light grey very sandy very gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subangular of sandstone and occasional brick fragments. Solvent odor. MADE GROUND		
				2.00	27.70		Firm to stiff reddish brown sandy gravelly to slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subangular to subrounded of sandstone and quartzite. Reworked natural deposits. MADE GROUND		
							End of Pit at 2.00m		
Remarks: 1) Excavated using a tracked 360 excavator. 2) No ground water encountered.									
Stability: Sides generally stable.									





		G&J Geoenvironmental 35-37 High Street, Barrow upon Soar, Loughborough, LE12 8PY		Trial Pit Log			TrialPit No TP105 Sheet 1 of 1	
Project Name: Contract Chemicals, Knowsley		Project No. GJ224					Co-ords: 342969.31 - 396733.31 Level: 29.97	
Location: Penrhyn Road, Knowsley, Merseyside					Dimensions (m): 0.70 2.90		Scale 1:25	
Client: Knowsley Redevelopments Ltd					Depth 2.20		Logged AW	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.70 - 0.80	B		0.80	29.17		Firm to stiff reddish brown sandy to slightly sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subrounded of sandstone, quartzite, concrete, wood and brick fragments. Solvent odor. MADE GROUND	1
	0.70 - 0.80	D						
	0.70 - 0.80	ES						
	0.90 - 1.00	D						
	0.90 - 1.00	ES				Firm dark brown very sandy sightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subangular of brick, sandstone and wood fragments. containing frequent rootlets. Possible topsoil material. MADE GROUND		
1.50 - 1.60	B		1.20	28.77		Firm to stiff light reddish brown sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subangular of sandstone, wood and brick fragments. MADE GROUND	2	
			1.60	28.37		... Brick foundation encountered between 1.55m and 1.60m begl. Firm light reddish brown very sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular sandstone lithorelicts. WEATHERED CHESTER FORMATION		
			2.20	27.77				End of Pit at 2.20m
								3
								4
								5

Remarks: 1) Excavated using a tracked 360 excavator. 2) No ground water encountered.

Stability: Sides generally stable.



		G&J Geoenvironmental 35-37 High Street, Barrow upon Soar, Loughborough, LE12 8PY		Trial Pit Log			TrialPit No TP106 Sheet 1 of 1	
Project Name: Contract Chemicals, Knowsley		Project No. GJ224					Co-ords: 342972.18 - 396770.33 Level: 30.03	
Location: Penrhyn Road, Knowsley, Merseyside					Dimensions (m): 2.90 0.70		Scale 1:25	
Client: Knowsley Redevelopments Ltd					Depth 2.00		Logged AW	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.30 - 0.40 0.30 - 0.40	D ES		1.10	28.93		Firm to stiff reddish brown sandy, locally very sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subangular to rounded of sandstone, concrete and brick fragments. Solvent odor. MADE GROUND	1
	0.80 - 1.00	B					Firm to stiff locally soft, reddish brown sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular sandstone and mudstone. Strong hydrocarbon odor. MADE GROUND	
	1.80 - 1.90	B		1.70	28.33		Loose to medium dense light brown gravelly SAND. Sand is fine to medium. Gravel is fine to medium subangular sandstone. WEATHERED CHESTER FORMATION	2
				2.20	27.83		End of Pit at 2.00m	
								3
								4
								5

Remarks: 1) Excavated using a tracked 360 excavator. 2) Groundwater encountered at 1.60m begl and filled base of pit.

Stability: Major side wall collapse.



Project Name: Contract Chemicals, Knowsley

Project No.
GJ224

Co-ords: 342988.92 - 396780.36
Level: 29.94

Date
15/11/2021

Location: Penrhyn Road, Knowsley, Merseyside

Dimensions (m): 0 1.80

Scale
1:25

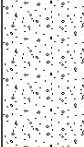
Client: Knowsley Redevelopments Ltd

Depth
1.50

0.70

1.80

Logged
AW

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.20	29.74		Firm reddish brown very sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subangular of sandstone, concrete and brick fragments. MADE GROUND
	0.40 - 0.50 0.50 - 0.60 0.50 - 0.60	B D ES					Very loose to loose light brown mottled grey gravelly clayey SAND. Sand is fine. Gravel is fine to medium angular sandstone. Hydrocarbon odor. Very wet. MADE GROUND
	1.20 - 1.30	B		1.00	28.94		Loose to medium dense reddish brown gravelly SAND. Sand is fine to medium. Gravel is fine to medium subangular to rounded of sandstone. WEATHERED CHESTER FORMATION
				1.50	28.44		End of Pit at 1.50m

Remarks:	1) Excavated using a tracked 360 excavator. 2) Groundwater encountered at 0.2m begl.
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Stability: Sides unstable.



Trial Pit Log

TrialPit No
TP108
Sheet 1 of 1

Project Name: Contract Chemicals, Knowsley

Project No.
GJ224

Co-ords: 343018.59 - 396784.24
Level: 30.04

Date
15/11/2021

Location: Penrhyn Road, Knowsley, Merseyside

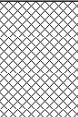
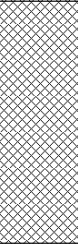
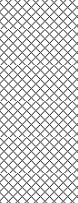
Dimensions (m):	2.50
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Scale
1:25

Client: Knowsley Redevelopments Ltd

Depth
2.00

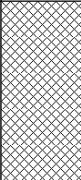
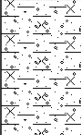
Logged
AW

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.20 - 0.30	B		0.40	29.64		Firm reddish brown sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subangular to subrounded of quartzite, sandstone, and occasional brick and concrete fragments. MADE GROUND
	0.50 - 0.60 0.50 - 0.60	D ES					Firm to stiff dark grey sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subrounded of quartzite and brick fragments. Strong solvent/hydrocarbon odor. MADE GROUND
				1.20	28.84		Loose to medium dense light grey sandy GRAVEL. Sand is fine to medium. Gravel is fine to medium subangular to subrounded of sandstone, brick and concrete. MADE GROUND
				1.90	28.14		Extremely weak weathered dark reddish brown fine grained thinly bedded SANDSTONE. Recovered as sandy gravel. CHESTER FORMATION End of Pit at 2.00m
				2.00	28.04		

Remarks:	1) Excavated using a tracked 360 excavator. 2) Groundwater encountered at 1.2m begl.
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Stability: Sides generally stable.



		G&J Geoenvironmental 35-37 High Street, Barrow upon Soar, Loughborough, LE12 8PY		Trial Pit Log			TrialPit No TP109 Sheet 1 of 1	
Project Name: Contract Chemicals, Knowsley		Project No. GJ224					Co-ords: 342887.14 - 396666.93 Level: 28.00	
Location: Penrhyn Road, Knowsley, Merseyside					Dimensions (m): 2.30 0.70		Scale 1:25	
Client: Knowsley Redevelopments Ltd					Depth 2.20		Logged AW	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.20 - 0.30	D		0.60	27.40		Firm dark brown very sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subangular of sandstone, quartzite, brick and concrete. MADE GROUND	1
	0.20 - 0.30	ES					Firm to stiff dark greyish black very sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subangular of sandstone, brick, concrete and dressed stone blocks. MADE GROUND	
	0.40 - 0.50	B						
	1.20 - 1.30	B		1.70	26.30		Firm to stiff reddish brown silty, slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subangular mudstone. WEATHERED CHESTER FORMATION	2
1.20 - 1.30	D							
	1.20 - 1.30	ES						
	1.90 - 2.00	B		2.20	25.80		End of Pit at 2.20m	3
								4
								5

Remarks: 1) Excavated using a tracked 360 excavator. 2) Groundwater encountered at 1.70m begl

Stability: Sides generally stable.



Project Name: Contract Chemicals, Knowsley

Project No.
GJ224

Co-ords: 343036.09 - 396809.84
Level: 30.97

Date
18/11/2021

Location: Penrhyn Road, Knowsley, Merseyside

Dimensions (m):	2.50
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Scale
1:25

Client: Knowsley Redevelopments Ltd

Depth
1.80

0.70

2.50

Logged
AW

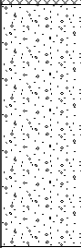
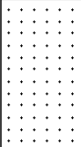
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.40 - 0.45 0.40 - 0.45 0.50	D ES D		0.30	30.67		Loose reddish brown slightly clayey gravelly SAND. Sand is fine to medium. Gravel is fine to medium subangular to subrounded of sandstone and mudstone. MADE GROUND
				0.50	30.47		Loose light grey sandy GRAVEL. Sand is fine to medium. Gravel is fine to medium subangular to subrounded of limestone and sandstone. MADE GROUND
	0.90 - 1.00	B					Loose to medium dense reddish brown slightly clayey very gravelly SAND. Sand is fine to medium. Gravel is fine to medium angular sandstone lithorelicts. WEATHERED CHESTER FORMATION
				1.40	29.57		Extremely weak dark reddish brown thinly bedded SANDSTONE. Recovered as a sandy gravel. CHESTER FORMATION
				1.60	29.37		Weak light yellow fine to medium grained thinly bedded SANDSTONE. Recovered as sandy gravel. CHESTER FORMATION
				1.80	29.17		End of Pit at 1.80m

[illegible]

Stability: Sides generally stable.



		G&J Geoenvironmental 35-37 High Street, Barrow upon Soar, Loughborough, LE12 8PY		Trial Pit Log			TrialPit No TP112 Sheet 1 of 1		
Project Name: Contract Chemicals, Knowsley				Project No. GJ224		Co-ords: 343053.75 - 396776.79 Level: 30.65		Date 18/11/2021	
Location: Penrhyn Road, Knowsley, Merseyside						Dimensions (m): 2.50 0.70		Scale 1:25	
Client: Knowsley Redevelopments Ltd						Depth 2.20		Logged AW	

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼	0.20 - 0.30	D		0.14	30.51		Loose to medium dense light grey sandy GRAVEL. Sand is fine to medium. Gravel is fine to medium angular to subangular limestone. MADE GROUND Firm to stiff reddish brown very sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subangular to subrounded of sandstone, quartzite and mudstone. MADE GROUND	1
	0.20 - 0.30	ES						
	0.50 - 0.60	B		0.90	29.75		Loose to medium dense reddish brown gravelly SAND. Sand is fine to medium. Gravel is fine to medium angular sandstone WEATHERED CHESTER FORMATION	
	1.10 - 1.30	B						
				1.70	28.95		Extremely weak weathered reddish brown clayey fine grained SANDSTONE. Recovered as sandy clayey gravel. CHESTER FORMATION	2
				2.20	28.45		End of Pit at 2.20m	3
								4
								5

Remarks: 1) Excavated using a tracked 360 excavator. 2) Groundwater encountered at 0.4m begl.

Stability: Sides generally stable.



Project Name: Contract Chemicals, Knowsley

Project No.
GJ224

Co-ords: 343013.95 - 396647.97
Level: 29.63

Date
18/11/2021

Location: Penrhyn Road, Knowsley, Merseyside

Dimensions (m): 2.50

Scale
1:25

Client: Knowsley Redevelopments Ltd

Depth
0.80

Logged
AW

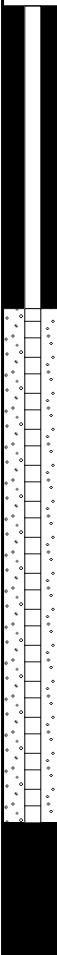
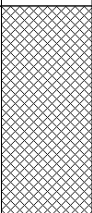
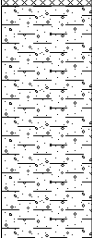
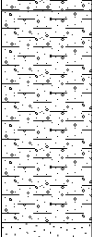
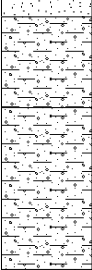
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Remarks: 1) Excavated using a tracked 360 excavator. 2) Groundwater encountered at 0.7m bgl and flooded base of trial pit.

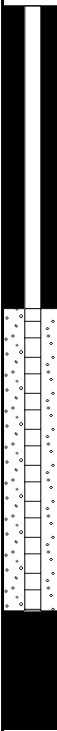
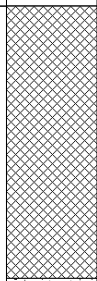
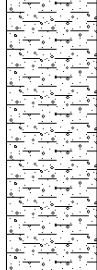
Stability: Sides slightly unstable.



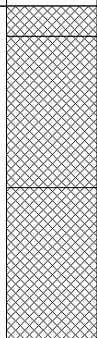
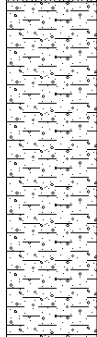


		G&J Geoenvironmental 35-37 High Street, Barrow upon Soar, Loughborough, LE12 8PY		Borehole Log			Borehole No. WS101 Sheet 1 of 1				
Project Name: Contract Chemicals, Knowsley		Project No. GJ224		Co-ords: 342878E - 396770N		Hole Type WLS					
Location: Penrhyn Road, Knowsley, Merseyside				Level: 29.43 m AOD		Scale 1:25					
Client: Knowsley Redevelopments Ltd				Dates: 16/11/2021		Logged By AW					
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
		0.30 - 0.40 0.30 - 0.40	D ES			29.43		Firm to stiff dark grey locally very sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subangular of sandstone, quartzite, brick and concrete. MADE GROUND			
		0.80 - 0.90 0.80 - 0.90	D ES		0.70	28.73					Firm light reddish brown sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subangular to subrounded of sandstone and mudstone. GLACIAL TILL
		1.00	S	N=9 (1,2/2,2,2,3)					Stiff reddish brown sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subrounded to rounded of sandstone. GLACIAL TILL		
		1.60 - 1.70	D		1.50	27.93				Loose to medium dense reddish brown SAND. Sand is fine to medium. recovered wet. GLACIAL TILL Very stiff reddish brown sandy to very sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subrounded to rounded of sandstone and mudstone. GLACIAL TILL Very stiff reddish brown very sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subrounded to rounded of sandstone and quartzite. GLACIAL TILL	
		2.00	S	N=33 (4,5/5,8,10,10)	2.20 2.30	27.23 27.13					
		2.70	S	50 (10,12/50 for 285mm)	2.60	26.83					
					3.14		End of Borehole at 3.14m			3	
									4		
									5		
Remarks 1) Advanced using a Premier 110 drilling rig. 2) Groundwater encountered at 1.0m begl.											

 G&J GeoEnvironmental 35-37 High Street, Barrow upon Soar, Loughborough, LE12 8PY		Borehole Log				Borehole No. WS102 Sheet 1 of 1	
Project Name: Contract Chemicals, Knowsley		Project No. GJ224		Co-ords: 342904E - 396800N		Hole Type WLS	
Location: Penrhyn Road, Knowsley, Merseyside				Level: 30.69 m AOD		Scale 1:25	
Client: Knowsley Redevelopments Ltd				Dates: 16/11/2021		Logged By AW	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30 - 0.40 0.30 - 0.40	D ES		30.69		Firm to stiff dark brownish red sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium occasionally coarse angular of brick, concrete, and sandstone. MADE GROUND <i>... Containing brick and concrete cobbles between 0.1m and 0.2m begl.</i>		
	1.00	S	N=8 (2,1/2,2,2,2)	0.90	29.79		Firm reddish brown mottled grey, sandy, locally very sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium of subrounded of sandstone and mudstone. GLACIAL TILL		1
	1.90 - 2.00 2.00	D S	N=50 (2,2/50 for 240mm)	1.80	28.89		Stiff reddish brown slightly sandy slightly gravelly to gravelly CLAY. Sand is fine to medium. Gravel is fine angular mudstone. WEATHERED CHESTER FORMATION		2
				2.10	28.59		Dense light reddish brown slightly gravelly SAND. Sand is fine to medium. Gravel is fine to medium subrounded of sandstone. WEATHERED CHESTER FORMATION		
				2.39			End of Borehole at 2.39m	3	
								4	
								5	

Remarks 1) Advanced using a Premier 110 drilling rig. 2) No groundwater encountered.		
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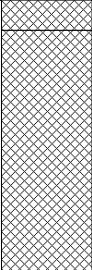
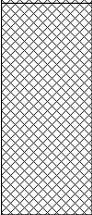
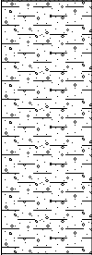
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Project Name: Contract Chemicals, Knowsley		Project No. GJ224		Co-ords: 342925E - 396803N		Hole Type WLS				
Location: Penrhyn Road, Knowsley, Merseyside				Level: 30.39 m AOD		Scale 1:25				
Client: Knowsley Redevelopments Ltd				Dates: 16/11/2021		Logged By AW				
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.10 - 0.50	D	ES	0.10	30.39		Firm to stiff dark reddish brown sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subangular of sandstone, brick and concrete. MADE GROUND	1	
		0.40 - 0.50			0.60	29.79				Firm dark grey brown very sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subangular to subrounded of sandstone, brick and concrete. MADE GROUND
		0.80 - 0.90	D	S	N=14 (2,2/3,3,4,4)	1.10	29.29		Firm to stiff reddish brown sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subangular of sandstone, concrete, and brick fragments. MADE GROUND	2
		1.00	2.20			28.19	Firm to stiff becoming very stiff reddish brown sandy slightly gravelly to gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subrounded to rounded of sandstone and mudstone. GLACIAL TILL			
		2.00	2.50			2.81				
		2.30 - 2.40	D	S	50 (11,12/50 for 255mm)			End of Borehole at 2.81m	3	
2.50										4
									5	

Remarks

1) Advanced using a Premier 110 drilling rig. 2) No groundwater encountered.

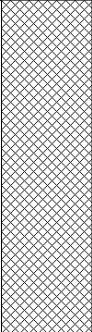
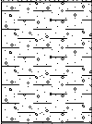
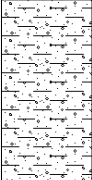


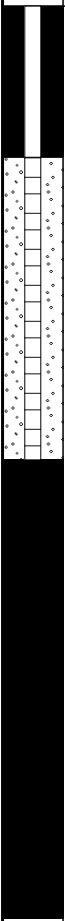
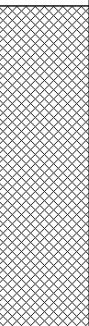
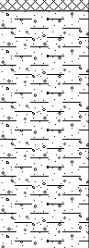
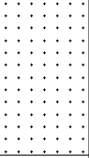
 G&J GeoEnvironmental 35-37 High Street, Barrow upon Soar, Loughborough, LE12 8PY		Borehole Log			Borehole No. WS104 Sheet 1 of 1	
Project Name: Contract Chemicals, Knowsley		Project No. GJ224		Co-ords: 342896E - 396768N		Hole Type WLS
Location: Penrhyn Road, Knowsley, Merseyside				Level: 29.35 m AOD		Scale 1:25
Client: Knowsley Redevelopments Ltd				Dates: 16/11/2021		Logged By AW

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20 - 0.30	D	N=0 (0,0/0,0,0,0)	0.10	29.35 29.25		Loose to medium dense light grey clayey gravelly SAND. Sand is fine to medium. Gravel is fine to medium subangular to subrounded of sandstone, brick and concrete. MADE GROUND	1
		0.20 - 0.30	ES						
		0.40 - 0.50	D		0.90	28.45		Firm to stiff reddish brown grey sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subangular of concrete, brick and sandstone. Slight solvent odor. MADE GROUND	
		1.00	S						
		1.20 - 1.30	D						
		2.00	S	N=50 (10,10/50 for 285mm)	1.60	27.75		Stiff to very stiff reddish brown sandy to very sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subrounded to rounded of quartzite, sandstone and mudstone. GLACIAL TILL	2
					2.44			End of Borehole at 2.44m	3
									4
									5

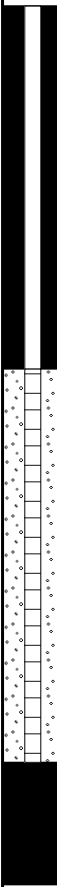
Remarks
 1) Advanced using a Premier 110 drilling rig. 2) No groundwater encountered.

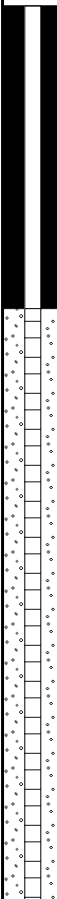


		G&J Geoenvironmental 35-37 High Street, Barrow upon Soar, Loughborough, LE12 8PY		Borehole Log			Borehole No. WS105 Sheet 1 of 1			
Project Name: Contract Chemicals, Knowsley		Project No. GJ224		Co-ords: 342885E - 396709N		Hole Type WLS				
Location: Penrhyn Road, Knowsley, Merseyside				Level: 28.53 m AOD		Scale 1:25				
Client: Knowsley Redevelopments Ltd				Dates: 16/11/2021		Logged By AW				
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.20 - 0.30	D	N=11 (2,2/3,3,3,3)	1.10	28.53		Firm to stiff dark grey sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subangular of sandstone, concrete, brick and mudstone. MADE GROUND	1	
		0.20 - 0.30	ES							
		1.00	S							
		1.30 - 1.40	D	N=14 (2,2/3,3,4,4)	2.10	27.43		Firm dark brown mottled black, sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subrounded of sandstone, containing frequent carbonaceous fragments. GLACIAL TILL	2	
		2.00	S							
	2.20 - 2.30	D	N=50 (8,10/50 for 280mm)	3.13	27.03		Firm to stiff reddish brown very sandy slightly gravelly CLAY. Sand is fine. Gravel is fine to medium subangular to subrounded of sandstone. GLACIAL TILL	3		
	2.70	S								
								End of Borehole at 3.13m	4	
									5	
Remarks 1) Advanced using a Premier 110 drilling rig. 2) No groundwater encountered.										

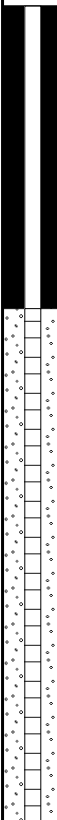
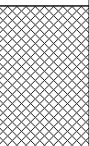
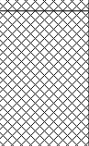
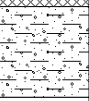
		G&J Geoenviromental 35-37 High Street, Barrow upon Soar, Loughborough, LE12 8PY		Borehole Log			Borehole No. WS106 Sheet 1 of 1		
Project Name: Contract Chemicals, Knowsley		Project No. GJ224		Co-ords: 342895E - 396638N		Hole Type WLS			
Location: Penrhyn Road, Knowsley, Merseyside				Level: 28.01 m AOD		Scale 1:25			
Client: Knowsley Redevelopments Ltd				Dates: 16/11/2021		Logged By AW			
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40 - 0.50 0.40 - 0.50	D ES			28.01		Firm dark brownish black very sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subangular to subrounded of sandstone and quartzite. MADE GROUND	1
		1.00	S	N=0 (0,0/0,0,0,0)	1.10	26.91			
		1.70 - 1.80	D		1.50	26.51		Firm reddish brown very sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subangular of sandstone and mudstone. GLACIAL TILL	2
		2.00	S	N=11 (2,2/2,3,3,3)	2.30	25.71			
		2.60	S	N=50 (6,10/50 for 265mm)	2.50	25.51		Weak reddish brown thinly bedded fine gained SANDSTONE. CHESTER FORMATION	3
					3.02				
Remarks 1) Advanced using a Premier 110 drilling rig. 2) Groundwater encountered at 1.0m begl.									

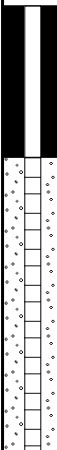
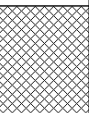
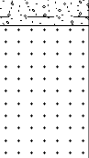


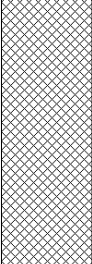
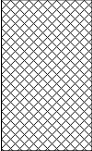
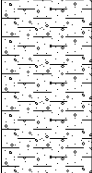
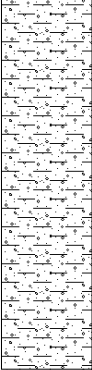
		G&J Geoenvironmental 35-37 High Street, Barrow upon Soar, Loughborough, LE12 8PY		Borehole Log			Borehole No. WS107 Sheet 1 of 1			
Project Name: Contract Chemicals, Knowsley		Project No. GJ224		Co-ords: 342960E - 396642N		Hole Type WLS				
Location: Penrhyn Road, Knowsley, Merseyside				Level: 28.76 m AOD		Scale 1:25				
Client: Knowsley Redevelopments Ltd				Dates: 17/11/2021		Logged By AW				
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
					0.20	28.76		Loose light grey sandy GRAVEL. Sand is fine to medium. Gravel is fine to medium subangular to subrounded of limestone.	1	
	0.30 - 0.40	D			28.56	MADE GROUND		Loose to medium dense dark brownish black slightly clayey SAND. Sand is fine to medium. Gravel is fine to medium angular to subangular of brick and sandstone.		
	0.30 - 0.40	ES						MADE GROUND		
	0.50 - 0.60	D								
	1.00	S	N=12 (4,5/3,3,3,3)							
						1.20	27.56		Firm reddish brown slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subrounded of mudstone and sandstone.	2
	1.40 - 1.50	D					GLACIAL TILL			
	2.00	S	N=12 (2,3/3,2,3,4)							
						2.20	26.56		Firm dark reddish brown sandy gravelly CLAY. Sand is fine. Gravel is fine to medium angular mudstone lithorelicts.	3
	2.30 - 2.35	D					WEATHERED CHESTER FORMATION			
2.50	S	N=50 (7,10/50 for 255mm)			2.40	26.36	Extremely weak thinly laminated MUDSTONE.			
					2.91			CHESTER FORMATION	4	
								End of Borehole at 2.91m		
									5	
Remarks 1) Advanced using a Premier 110 drilling rig. 2) No groundwater encountered.										

		G&J Geoenviroental 35-37 High Street, Barrow upon Soar, Loughborough, LE12 8PY		Borehole Log			Borehole No. WS108 Sheet 1 of 1			
Project Name: Contract Chemicals, Knowsley		Project No. GJ224		Co-ords: 342989E - 396692N		Hole Type WLS				
Location: Penrhyn Road, Knowsley, Merseyside				Level: 29.46 m AOD		Scale 1:25				
Client: Knowsley Redevelopments Ltd				Dates: 17/11/2021		Logged By AW				
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
						29.46		Grass over dark brown very sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subrounded of sandstone and brick fragments.		
					0.30	29.16		MADE GROUND		Stiff reddish brown very sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subangular of sandstone and occasional brick fragments.
		0.50 - 0.60	D					MADE GROUND		
		0.50 - 0.60	D							
		1.00 - 1.10	D			0.90	28.56			Firm to stiff dark greyish black sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subangular of brick and sandstone.
		1.00	S	N=10 (4,4/3,2,2,3)			MADE GROUND			
						1.30	28.16			Firm to stiff reddish brown sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subrounded of sandstone and mudstone. Geotextile membrane at base of unit.
						1.60	27.86			MADE GROUND
		2.00	S	N=13 (2,3/3,4,3,3)						Medium dense dark brown slightly gravelly SAND. Sand is fine to medium. Gravel is fine to medium subrounded sandstone.
						2.30	27.16			WEATHERED CHESTER FORMATION
2.40 - 2.50	D						Firm dark reddish brown very sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subangular sandstone.			
				2.80	26.66		WEATHERED CHESTER FORMATION			
3.00	S	N=48 (7,8/11,12,12,13)					Extremely weak to weak reddish brown fine grained slightly clayey SANDSTONE.			
				3.35			CHESTER FORMATION			
End of Borehole at 3.35m										
Remarks 1) Advanced using a Premier 110 drilling rig. 2) No groundwater encountered.										



		G&J Geoenviromental 35-37 High Street, Barrow upon Soar, Loughborough, LE12 8PY		Borehole Log			Borehole No. WS109 Sheet 1 of 1			
Project Name: Contract Chemicals, Knowsley		Project No. GJ224		Co-ords: 343039E - 396718N		Hole Type WLS				
Location: Penrhyn Road, Knowsley, Merseyside				Level: 30.10 m AOD		Scale 1:25				
Client: Knowsley Redevelopments Ltd				Dates: 17/11/2021		Logged By AW				
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.20 - 0.30	D	N=7 (1,2/1,2,2,2)	0.50	30.10		Firm to stiff reddish brown sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subangular of sandstone, brick and concrete. MADE GROUND <i>... Grey sand pocket encountered between 0.1m and 0.15m begl</i>	1	
	0.20 - 0.30	ES								
	0.70 - 0.80	D								
	1.00	S								
	1.60 - 1.70	D								
			2.00	S	N=10 (2,2/2,2,3,3)	1.50	28.60		Loose reddish brown slightly gravelly clayey SAND. Sand is fine to medium. Gravel is fine to medium subrounded to rounded of sandstone and quartzite. MADE GROUND	2
	2.70	S								
	2.60	S								
			2.90		N=50 (10,10/50 for 255mm)	2.90	27.20		Firm to stiff reddish brown gravelly to very sandy CLAY. Sand is fine to medium. Gravel is fine to medium angular to subrounded of sandstone and quartzite. GLACIAL TILL	3
	3.11									
								Extremely weak reddish brown fine grained thinly bedded SANDSTONE. CHESTER FORMATION End of Borehole at 3.11m		
4 5										
Remarks 1) Advanced using a Premier 110 drilling rig. 2) No groundwater encountered.										

		G&J Geoenvironmental 35-37 High Street, Barrow upon Soar, Loughborough, LE12 8PY		Borehole Log			Borehole No. WS110 Sheet 1 of 1		
Project Name: Contract Chemicals, Knowsley		Project No. GJ224		Co-ords: 343050E - 396789N		Hole Type WLS			
Location: Penrhyn Road, Knowsley, Merseyside				Level: 30.71 m AOD		Scale 1:25			
Client: Knowsley Redevelopments Ltd				Dates: 17/11/2021		Logged By AW			
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20 - 0.30	D ES D		0.40	30.71		Firm to stiff reddish brown sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium angular to subangular of brick sandstone, concrete and limestone. MADE GROUND	
	0.20 - 0.30					30.31			
	0.30 - 0.40					29.31		Extremely weak reddish brown slightly clayey, fine grained, thinly bedded SAANDSTONE. CHESTER FORMATION	
	1.00	S	N=22 (2,4/4,6,6,6)	1.40					
		1.50	S	N=60 (10,12/60 for 245mm)	1.90			End of Borehole at 1.90m	
Remarks 1) Advanced using a Premier 110 drilling rig. 2) No groundwater encountered.									

		G&J Geoenvironmental 35-37 High Street, Barrow upon Soar, Loughborough, LE12 8PY		Borehole Log			Borehole No. WS111 Sheet 1 of 1			
Project Name: Contract Chemicals, Knowsley		Project No. GJ224		Co-ords: 343057E - 396660N		Hole Type WLS				
Location: Penrhyn Road, Knowsley, Merseyside				Level: 30.25 m AOD		Scale 1:25				
Client: Knowsley Redevelopments Ltd				Dates: 17/11/2021		Logged By AW				
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
						30.25	 Tarmac. MADE GROUND		1	
					0.20	30.05				 Dense light grey sandy GRAVEL. Sand is fine to medium. Gravel is fine to medium angular to subangular of limestone. MADE GROUND
		1.00	S	N=22 (5,10/6,6,5,5)	1.10	29.15	 Medium dense dark brown slightly clayey, gravelly SAND. Sand is fine to medium. Gravel is fine to medium angular to subangular of brick and sandstone. MADE GROUND			
		1.40 - 1.50 1.40 - 1.50	D ES		1.60	28.65				 Firm dark reddish brown sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subrounded to rounded of quartzite and sandstone. GLACIAL TILL
		2.00	S	N=13 (2,3/3,3,3,4)	2.20	28.05	 Firm to stiff dark reddish brown very sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to medium subrounded to rounded of quartzite and sandstone. GLACIAL TILL		3	
		2.30 - 2.40	D							
		3.00	S	N=50 (6,10/50 for 285mm)						
					3.44		End of Borehole at 3.44m			
		Remarks 1) Advanced using a Premier 110 drilling rig. 2) No groundwater encountered.								
										



Appendix C – Investigation Photos



TP101



TP101 Spoil



TP102



TP102 Spoil

DO NOT SCALE
NOTES:



G&J Geoenvironmental Consultants Ltd
35-37 High Street, Barrow Upon Soar,
Loughborough, Leicestershire
Tel: 01509 410372

CLIENT:

Knowsley Redevelopments Ltd

PROJECT:

Contract Chemicals Knowsley

TITLE:

Exploratory Hole Photographs

SCALE@SIZE :

NTS

ISSUE:

FINAL

DESIGN/DRAWN by :

AW

DATE:

January 2022

PROJECT No:

GJ224

DRAWING No:

01

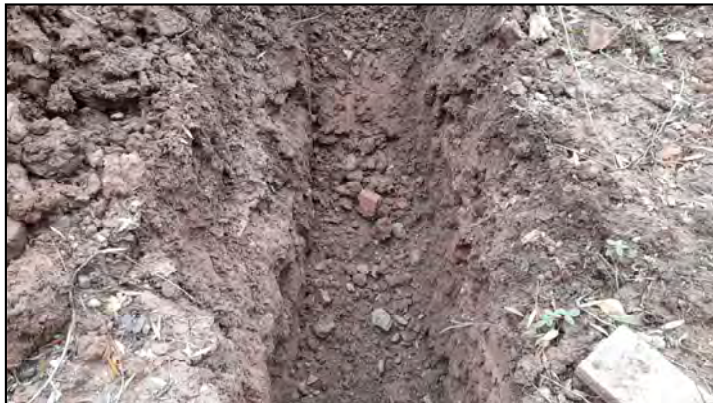
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TP103



TP103 Spoil



TP104



TP104 Spoil

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TITLE:

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TP105



TP105 Spoil



TP106



TP106 Spoil

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PROJECT:

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TITLE:

Exploratory Hole Photographs

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TP107



TP107 Spoil



TP108



TP108 Spoil

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TP019



TP109 Spoil



TP110



TP110 Spoil

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TP111



TP111 Spoil



TP112



TP112 Spoil

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TP113



TP113 Spoil



TP114



TP114 Spoil

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WS101



WS102



WS103

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WS104



WS105



WS106

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WS107



WS108



WS109

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WS110



WS111

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Appendix D – Gas and Groundwater Monitoring Results

G&J Geoenvironmental Consultants Ltd

35-37 High Street, Barrow upon Soar, Loughborough,
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Email: info@gjgeoenvironmental.com



GROUNDWATER / GAS MONITORING RECORD SHEET

Client:	Knowsley Redevelopments Ltd		Job No:	GJ224	Instruments:	GA5000				
Project Name:	Contract Chemicals, Knowsley		Date:	06/12/2021	Monitored By:	RCW (Enital)				
Weather:	Overcast, rain				GA Serial No:	G500669				
Exploratory Hole No.	Peak ¹		Steady ²			Flow Rate	Atmospheric Pressure	Water Depth	Base Depth	Remarks
	CH ₄	CO ₂	CH ₄	CO ₂	O ₂					
	(% vol)	(% vol)	(% vol)	(% vol)	(% vol)					
BH101	0.1	0.6	0.1	0.6	18.3	0.00	1003	2.32	8.38	0,0
BH103	0.0	1.0	0.0	0.8	20.8	0.00	1002	1.85	6.30	0,0
BH104	0.3	0.1	0.3	0.1	20.9	0.00	1003	0.66	3.02	0,0
BH105	0.3	0.2	0.3	0.1	17.4	0.50	1002	0.95	3.10	0,10
WS101	0.1	1.6	0.1	1.6	20.1	-0.40	1003	0.99	3.46	0,0
WS102	0.0	1.1	0.0	1.1	20.0	0.00	1002	1.01	2.56	0,0
WS106	0.0	0.5	0.0	0.5	6.9	0.00	1003	1.33	2.04	0,0
WS107	2.3	5.5	2.3	5.5	14.2	1.20	1003	2.00	3.55	0,0
WS108	12.3	3.1	12.3	3.1	9.7	0.10	1002	2.79	3.10	0,0
WS109	0.2	1.2	0.0	1.2	18.2	0.70	1002	2.18	3.21	0,0
WS110	0.0	0.2	0.0	0.2	20.3	0.00	1002	1.39	2.08	0,0
GRM-BH04	0.0	3.2	0.0	1.9	18.3	0.00	1003	2.40	2.99	0,0

Background Gas Levels:

	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Atmos (mbar)
Before Monitoring	0.0	0.1	20.9	1003
After Monitoring	0.0	0.1	20.9	1002

1 The peak reading is the maximum recorded level during a monitoring event.

2 The steady reading is the level which remained constant after approximately 1 minute.

G&J Geoenvironmental Consultants Ltd

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Leicestershire, LE12 8PY Tel: 01509 410372 / 07453 663323
Email: info@gjgeoenvironmental.com



GROUNDWATER / GAS MONITORING RECORD SHEET

Client:	Knowsley Redevelopments Ltd		Job No:	GJ224	Instruments:	GA5000				
Project Name:	Contract Chemicals, Knowsley		Date:	16/12/2021	Monitored By:	RCW (Enitial)				
Weather:	Overcast, dry, 14°C				GA Serial No:	G507573				
Exploratory Hole No.	Peak ¹		Steady ²			Flow Rate	Atmospheric Pressure	Water Depth	Base Depth	Remarks
	CH ₄	CO ₂	CH ₄	CO ₂	O ₂					
	(% vol)	(% vol)	(% vol)	(% vol)	(% vol)					
WS101	0	1.5	0	1.4	19.9	0	1035	0.36	2.71	
WS102	0	0.8	0	0.8	19.9	-0.1	1035	1.43	2.02	
WS106	0	0.1	0	0.1	18.3	0	1035	0.79	1.46	
WS107	2.5	6.9	2.5	6.9	14.3	0.3	1035	1.32	2.92	Peak flow 4.8l/hr
WS108										Unable to locate - suspect chamber may be destroyed
WS109	0	1.2	0	1.2	18.3	-0.1	1035	1.33	2.36	Peak flow -0.5l/hr
WS110	0	0.2	0	0.2	19.1	-0.1	1035	0.99	1.57	
BH101										Unable to locate - suspect chamber may be destroyed
BH103	13.7	6.5	13.7	6.5	3.4	-0.1	1035	1.33	5.78	Peak flow -0.6l/hr
BH104	0.9	0.1	0.9	0	20	-0.2	1035	0.29	2.61	Peak flow -2.9l/hr
BH105	0.3	0.2	0.3	0.2	16.4	0.2	1035	0.67	2.78	Peak flow 1.7l/hr
GRM-BH04	0	0.1	0	0.1	21	0	1036	1.35	2.52	

Background Gas Levels:

	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Atmos (mbar)
Before Monitoring	0.0	0.1	20.9	1035
After Monitoring	0.0	0.1	21.0	1035

1 The peak reading is the maximum recorded level during a monitoring event.

2 The steady reading is the level which remained constant after approximately 1 minute.

G&J Geoenvironmental Consultants Ltd

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Leicestershire, LE12 8PY Tel: 01509 410372 / 07453 663323
Email: info@gjgeoenvironmental.com



GROUNDWATER / GAS MONITORING RECORD SHEET

Client:	Knowsley Redevelopments Ltd		Job No:	GJ224	Instruments:	GA5000				
Project Name:	Contract Chemicals, Knowsley		Date:	23/12/2021	Monitored By:	RCW (Enitial)				
Weather:	Overcast, dry, 12°C				GA Serial No:	G507573				
Exploratory Hole No.	Peak ¹		Steady ²			Flow Rate	Atmospheric Pressure	Water Depth	Base Depth	Remarks
	CH ₄	CO ₂	CH ₄	CO ₂	O ₂					
	(% vol)	(% vol)	(% vol)	(% vol)	(% vol)					
WS101	0	1.3	0	1.2	20.3	0	1001	0.31	2.69	
WS102	0	1.7	0	1.7	19.5	0	1000	1.88	2.02	
WS106	0	0.1	0	0.1	18.5	0	1000	0.89	1.48	
WS107	3.9	8.6	3.9	8.6	9.7	0.2	1000	1.56	2.90	Peak flow 3.2l/hr
WS108										Borehole buried
WS109	0	1.7	0	1.7	16.9	0.2	1000	1.39	2.34	Peak flow 2.2l/hr
WS110	0	0.3	0	0.3	20.1	0	1001	1.15	1.56	
BH101										Borehole buried
BH103	14.1	8.1	14.1	8.1	2.8	0.1	1001	1.29	5.80	Peak flow 2.3l/hr
BH104	0.7	0.2	0.7	0.1	19	0.3	1000	0.39	2.62	Peak flow 8.8l/hr. Peak VOC 174ppm
BH105	0.1	0.2	0.1	0.1	18	0.1	1000	0.44	2.78	
GRM-BH04	0	6.6	0	5.4	12.3	0	1001	1.42	2.52	

Background Gas Levels:

	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Atmos (mbar)
Before Monitoring	0.0	0.1	21.0	1001
After Monitoring	0.0	0.1	21.0	1000

1 The peak reading is the maximum recorded level during a monitoring event.

2 The steady reading is the level which remained constant after approximately 1 minute.

G&J Geoenvironmental Consultants Ltd

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Email: info@gjgeoenvironmental.com



GROUNDWATER / GAS MONITORING RECORD SHEET

Client:	Knowsley Redevelopments Ltd		Job No:	GJ224	Instruments:	GA5000				
Project Name:	Contract Chemicals, Knowsley		Date:	29/12/2021	Monitored By:	RCW (Enital)				
Weather:	Overcast, dry, 11°C				GA Serial No:	G507573				
Exploratory Hole No.	Peak ¹		Steady ²			Flow Rate	Atmospheric Pressure	Water Depth	Base Depth	Remarks
	CH ₄	CO ₂	CH ₄	CO ₂	O ₂					
	(% vol)	(% vol)	(% vol)	(% vol)	(% vol)					
WS101	0	1.6	0	1.6	20.1	0.1	991	0.28	2.70	Peak flow 1.0l/hr
WS102	0	1	0	1	19.8	0.1	991	0.44	2.02	
WS106	0	0.1	0	0.1	18.6	0	991	0.64	1.50	
WS107	3.5	8.7	3.5	8.7	10.3	0.3	992	0.33	2.91	Peak flow 11.9l/hr
WS108										Borehole buried
WS109	0.2	1.5	0.2	1.5	15.2	0.2	990	1.34	2.34	Peak flow 2.6l/hr
WS110	0	0.2	0	0.2	19.9	0	991	0.77	1.58	
BH101										Borehole buried
BH103	3.7	2.6	3.6	2.6	16.6	0.1	991	1.34	5.80	Peak flow 2.4l/hr
BH104	0.9	0.2	0.9	0.1	19	0.2	991	0.34	2.62	Peak flow 2.8l/hr. Peak VOC 308ppm
BH105	0.1	0.2	0.1	0.1	18.2	0.1	990	0.44	2.79	Peak flow 0.9l/hr
GRM-BH04	0	4	0	1.7	18.6	0	992	1.22	2.52	

Background Gas Levels:

	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Atmos (mbar)
Before Monitoring	0.0	0.1	20.9	991
After Monitoring	0.0	0.1	21.1	992

1 The peak reading is the maximum recorded level during a monitoring event.

2 The steady reading is the level which remained constant after approximately 1 minute.

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GROUNDWATER / GAS MONITORING RECORD SHEET

Client:	Knowsley Redevelopments Ltd		Job No:	GJ224	Instruments:	GA5000				
Project Name:	Contract Chemicals, Knowsley		Date:	06/01/2022	Monitored By:	RCW (Enitial)				
Weather:	Overcast, snow				GA Serial No:	G502053				
Exploratory Hole No.	Peak ¹		Steady ²			Flow Rate	Atmospheric Pressure	Water Depth	Base Depth	Remarks
	CH ₄	CO ₂	CH ₄	CO ₂	O ₂					
	(% vol)	(% vol)	(% vol)	(% vol)	(% vol)					
BH101										Borehole lost/destroyed
BH103	4.8	3.1	4.8	3.1	17	0	1007	1.82	6.30	0,0
BH104	0.7	0.1	0.7	0.1	20.1	0	1007	0.70	3.03	0,24
BH105	0.1	0.1	0.1	0.1	19.5	-0.1	1006	0.74	3.10	0,6
WS101	0	0.8	0	0.7	21.1	0	1006	1.07	3.43	0,0
WS102	0	0.4	0	0.4	21.3	0	1006	1.66	2.55	0,0
WS106	0	0.2	0	0.1	17.4	0	1007	1.35	2.03	0,0
WS107	3.6	9.5	3.4	9.4	11.5	0.3	1007	1.89	3.56	0,1
WS108										Borehole lost/destroyed
WS109	0	1.5	0	1.5	12.8	0	1005	2.17	3.17	0,0
WS110	0	0.2	0	0.2	20.2	0	1006	1.58	2.08	0,0
GRM-BH04	0	2	0	1.2	19.2	0	1007	2.03	3.07	0,0

Background Gas Levels:

	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Atmos (mbar)
Before Monitoring	0.0	0.1	20.9	1007
After Monitoring	0.0	0.1	21.6	1006

- 1 The peak reading is the maximum recorded level during a monitoring event.
2 The steady reading is the level which remained constant after approximately 1 minute.

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GROUNDWATER / GAS MONITORING RECORD SHEET

Client:	Knowsley Redevelopments Ltd				Job No:	GJ224	Instruments:	GA5000		
Project Name:	Contract Chemicals, Knowsley				Date:	14/01/2022	Monitored By:	Ian Sidgwick		
Weather:	Overcast, dry, 5°C						GA Serial No:	G507573		
Exploratory Hole No.	Peak ¹		Steady ²			Flow Rate	Atmospheric Pressure	Base Depth	Remarks	CO
	CH ₄	CO ₂	CH ₄	CO ₂	O ₂					
	(% vol)	(% vol)	(% vol)	(% vol)	(% vol)					
BH101	NR	NR	NR	NR	NR	NR	NR	NR	NR	Borehole buried
BH103	ND	0.1	ND	0.1	20.8	0.00	1010	1.39	5.81	Peak flow -0.6l/hr. CO: ND; H2S: ND; VOC: 0.1ppm
BH104	0.7	0.2	0.7	0.1	20.2	-0.10	1011	0.36	2.60	Peak flow -1.0l/hr. Peak VOC 98ppm. CO: 12ppm; H2S: ND; VOC: 54ppm
BH105	0.1	0.1	0.1	0.1	19.1	-0.20	1011	0.45	2.78	Peak flow -3.0l/hr. CO: 4ppm; H2S: ND; VOC: 0.1ppm
WS101	ND	1.3	ND	1.2	20.4	0.00	1011	0.32	2.69	CO: ND; H2S: ND; VOC: ND
WS102	ND	0.5	ND	0.5	20.5	0.00	1011	0.45	2.02	CO: 1ppm; H2S: ND; VOC: 0.2ppm
WS106	ND	0.1	ND	0.1	13.4	0.00	1011	0.62	1.50	Peak flow -0.4l/hr. CO: ND; H2S: ND; VOC: 15.3ppm
WS107	3.3	8.2	3.3	8.2	12.5	0.20	1011	1.21	2.87	Peak flow 2.6l/hr. CO: 1ppm; H2S: ND; VOC: 1.2ppm
WS108	NR	NR	NR	NR	NR	NR	NR	NR	NR	Borehole buried
WS109	ND	1.6	ND	1.6	11.9	0.00	1011	1.30	2.34	CO: ND; H2S: ND; VOC: 0.1ppm
WS110	ND	0.3	ND	0.3	19.6	0.00	1011	0.78	1.57	CO: ND; H2S: ND; VOC: 0.7ppm
GRM-BH04	ND	0.1	ND	0.1	20.7	0.00	1011	1.26	2.52	CO: ND; H2S: ND; VOC: 0.3ppm

Background Gas Levels:

	CH ₄	CO ₂	O ₂	Atmos
	(%)	(%)	(%)	(mbar)
Before Monitoring	0.0	0.1	20.7	1010
After Monitoring	0.0	0.1	20.9	1011

1 The peak reading is the maximum recorded level during a monitoring event.

2 The steady reading is the level which remained constant after approximately 1 minute.



Appendix E – Soil and Groundwater Chemical Analysis Certificates



Tim Rogers
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Derwentside Environmental Testing Services Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 21-13971

Site Reference: Penrhyn Road, Knowsley

Project / Job Ref: GJ224

Order No: GJ224

Sample Receipt Date: 23/11/2021

Sample Scheduled Date: 23/11/2021

Report Issue Number: 1

Reporting Date: 29/11/2021

Authorised by:

Ela Mysiara
Quality Manager

Dates of laboratory activities for each tested analyte are available upon request.

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.



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Soil Analysis Certificate						
DETS Report No: 21-13971	Date Sampled	15/11/21	15/11/21	15/11/21	15/11/21	15/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP101	TP101	TP103	TP105	TP106
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.50 - 0.60	1.30 - 1.40	0.50 - 0.60	0.90 - 1.00	0.30 - 0.40
Reporting Date: 29/11/2021	DETS Sample No	576213	576214	576216	576219	576220

Determinand	Unit	RL	Accreditation	(n)				
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Sample Matrix ^(S)	Material Type	N/a	NONE					
Asbestos Type ^(S)	PLM Result	N/a	ISO17025					
pH	pH Units	N/a	MCERTS	8.9	7.9	10.5	8.1	8.2
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Thiocyanate as SCN	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	< 3
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	255	33	155	28	62
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.25	0.03	0.16	0.03	0.06
Total Sulphur	%	< 0.02	NONE	0.07	< 0.02	0.07	0.02	< 0.02
Sulphide	mg/kg	< 5	NONE	< 5	< 5	< 5	< 5	< 5
Organic Matter (SOM)	%	< 0.1	MCERTS	1.2	0.7	1.5	3.3	0.9
TOC (Total Organic Carbon)	%	< 0.1	MCERTS	0.7	0.4	0.9	1.9	0.5
Arsenic (As)	mg/kg	< 2	MCERTS	5	7	6	5	7
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	12	40	26	19	32
Copper (Cu)	mg/kg	< 4	MCERTS	12	12	15	38	14
Lead (Pb)	mg/kg	< 3	MCERTS	18	6	16	78	7
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	9	36	20	16	33
Selenium (Se)	mg/kg	< 2	MCERTS	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	163	38	136	119	36
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
EPH (C10 - C40)	mg/kg	< 6	MCERTS	33	< 6	60	69	7

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion

Subcontracted analysis (S)

(n) 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



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Soil Analysis Certificate						
DETS Report No: 21-13971	Date Sampled	15/11/21	15/11/21	16/11/21	16/11/21	16/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP107	TP108	WS101	WS102	WS103
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.50 - 0.60	0.50 - 0.60	0.30 - 0.40	0.30 - 0.40	0.40 - 0.50
Reporting Date: 29/11/2021	DETS Sample No	576221	576222	576223	576224	576225

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	Detected
Sample Matrix ^(S)	Material Type	N/a	NONE					Amosite present as fibre bundle
Asbestos Type ^(S)	PLM Result	N/a	ISO17025					Amosite
pH	pH Units	N/a	MCERTS	8.7	9.4	7.6	7.9	8.6
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Thiocyanate as SCN	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	< 3
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	50	25	< 10	17	389
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.05	0.02	< 0.01	0.02	0.39
Total Sulphur	%	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	0.14
Sulphide	mg/kg	< 5	NONE	< 5	< 5	< 5	< 5	< 5
Organic Matter (SOM)	%	< 0.1	MCERTS	0.4	0.6	1.1	1.1	1.2
TOC (Total Organic Carbon)	%	< 0.1	MCERTS	0.2	0.3	0.7	0.6	0.7
Arsenic (As)	mg/kg	< 2	MCERTS	5	6	5	5	4
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	11	14	22	20	16
Copper (Cu)	mg/kg	< 4	MCERTS	8	8	16	12	15
Lead (Pb)	mg/kg	< 3	MCERTS	3	13	24	12	21
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	10	12	13	16	11
Selenium (Se)	mg/kg	< 2	MCERTS	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	26	30	48	49	57
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
EPH (C10 - C40)	mg/kg	< 6	MCERTS	< 6	331	39	< 6	18

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion

Subcontracted analysis (S)



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Soil Analysis Certificate						
DETS Report No: 21-13971	Date Sampled	16/11/21	16/11/21	16/11/21	17/11/21	17/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS104	WS105	WS106	WS107	WS108
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.20 - 0.30	0.20 - 0.30	0.40 - 0.50	0.30 - 0.40	1.00 - 1.10
Reporting Date: 29/11/2021	DETS Sample No	576226	576227	576228	576229	576230

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Sample Matrix ^(S)	Material Type	N/a	NONE					
Asbestos Type ^(S)	PLM Result	N/a	ISO17025					
pH	pH Units	N/a	MCERTS	8.6	8.3	7.7	7.5	7.3
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Thiocyanate as SCN	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	< 3
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	82	411	58	43	56
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.08	0.41	0.06	0.04	0.06
Total Sulphur	%	< 0.02	NONE	0.04	0.24	< 0.02	0.07	0.02
Sulphide	mg/kg	< 5	NONE	< 5	< 5	< 5	< 5	< 5
Organic Matter (SOM)	%	< 0.1	MCERTS	1.3	2.2	1.7	2.5	2.5
TOC (Total Organic Carbon)	%	< 0.1	MCERTS	0.8	1.3	1	1.5	1.5
Arsenic (As)	mg/kg	< 2	MCERTS	6	8	2	9	4
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.8	2.3	< 0.2	< 0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	27	15	11	8	13
Copper (Cu)	mg/kg	< 4	MCERTS	16	20	7	11	10
Lead (Pb)	mg/kg	< 3	MCERTS	8	56	13	26	14
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	28	86	7	5	8
Selenium (Se)	mg/kg	< 2	MCERTS	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	129	102	30	23	25
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
EPH (C10 - C40)	mg/kg	< 6	MCERTS	9	< 6	16	39	27

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion

Subcontracted analysis (S)



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Soil Analysis Certificate						
DETS Report No: 21-13971	Date Sampled	17/11/21	17/11/21	16/11/21	16/11/21	17/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS109	WS110	BH101	BH102	WS111
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.20 - 0.30	0.20 - 0.30	0.50	0.20	1.10 - 1.50
Reporting Date: 29/11/2021	DETS Sample No	576231	576232	576233	576234	576235

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Sample Matrix ^(S)	Material Type	N/a	NONE					
Asbestos Type ^(S)	PLM Result	N/a	ISO17025					
pH	pH Units	N/a	MCERTS	7.6	7.8	10.2	7.4	7.5
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Thiocyanate as SCN	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	< 3
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	14	13	178	1670	55
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.01	0.01	0.18	1.67	0.06
Total Sulphur	%	< 0.02	NONE	< 0.02	< 0.02	0.06	0.32	0.02
Sulphide	mg/kg	< 5	NONE	< 5	< 5	< 5	< 5	< 5
Organic Matter (SOM)	%	< 0.1	MCERTS	1.2	0.5	0.9	2	2.9
TOC (Total Organic Carbon)	%	< 0.1	MCERTS	0.7	0.3	0.5	1.2	1.7
Arsenic (As)	mg/kg	< 2	MCERTS	4	2	5	3	3
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	13	11	17	10	8
Copper (Cu)	mg/kg	< 4	MCERTS	9	< 4	11	7	11
Lead (Pb)	mg/kg	< 3	MCERTS	12	5	29	9	24
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	8	4	10	5	5
Selenium (Se)	mg/kg	< 2	MCERTS	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	23	16	39	14	31
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
EPH (C10 - C40)	mg/kg	< 6	MCERTS	< 6	< 6	< 6	< 6	64

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion

Subcontracted analysis (S)



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



Soil Analysis Certificate						
DETS Report No: 21-13971	Date Sampled	16/11/21	18/11/21	18/11/21	18/11/21	18/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	BH103	TP109	TP109	TP110	TP111
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.50	0.20 - 0.30	1.20 - 1.30	0.20 - 0.30	0.40 - 0.45
Reporting Date: 29/11/2021	DETS Sample No	576236	576237	576238	576239	576240

Determinand	Unit	RL	Accreditation	(n)				
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Sample Matrix ^(S)	Material Type	N/a	NONE					
Asbestos Type ^(S)	PLM Result	N/a	ISO17025					
pH	pH Units	N/a	MCERTS	7.7	8.1	8.6	8.4	8.9
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Thiocyanate as SCN	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	< 3
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	60	264	158	31	42
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.06	0.26	0.16	0.03	0.04
Total Sulphur	%	< 0.02	NONE	< 0.02	0.07	0.07	0.03	0.03
Sulphide	mg/kg	< 5	NONE	< 5	< 5	< 5	< 5	< 5
Organic Matter (SOM)	%	< 0.1	MCERTS	1.8	1.9	2.1	3.5	4.5
TOC (Total Organic Carbon)	%	< 0.1	MCERTS	1.1	1.1	1.2	1.6	2.6
Arsenic (As)	mg/kg	< 2	MCERTS	6	5	< 2	3	< 2
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	0.2	0.4	0.3
Chromium (Cr)	mg/kg	< 2	MCERTS	18	10	10	9	9
Copper (Cu)	mg/kg	< 4	MCERTS	23	12	14	33	7
Lead (Pb)	mg/kg	< 3	MCERTS	38	35	40	63	10
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	14	6	8	10	4
Selenium (Se)	mg/kg	< 2	MCERTS	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	55	63	62	98	37
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
EPH (C10 - C40)	mg/kg	< 6	MCERTS	75	68	29	309	< 6

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion

Subcontracted analysis (S)



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Soil Analysis Certificate						
DETS Report No: 21-13971	Date Sampled	18/11/21	18/11/21	17/11/21	18/11/21	
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP112	TP114	BH104	BH105	
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: GJ224	Depth (m)	0.20 - 0.30	0.30 - 0.40	0.20	0.20	
Reporting Date: 29/11/2021	DETS Sample No	576241	576242	576243	576244	

Determinand	Unit	RL	Accreditation	(n)			
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected
Sample Matrix ^(S)	Material Type	N/a	NONE				
Asbestos Type ^(S)	PLM Result	N/a	ISO17025				
pH	pH Units	N/a	MCERTS	8.8	8.1	10.9	9.6
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2
Thiocyanate as SCN	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	19	99	97	82
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.02	0.10	0.10	0.08
Total Sulphur	%	< 0.02	NONE	< 0.02	0.03	0.03	0.07
Sulphide	mg/kg	< 5	NONE	< 5	< 5	< 5	65
Organic Matter (SOM)	%	< 0.1	MCERTS	1.8	1.7	0.6	0.6
TOC (Total Organic Carbon)	%	< 0.1	MCERTS	1.1	1	0.3	0.4
Arsenic (As)	mg/kg	< 2	MCERTS	< 2	22	< 2	< 2
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.3	< 0.2	< 0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	7	53	26	16
Copper (Cu)	mg/kg	< 4	MCERTS	< 4	56	16	6
Lead (Pb)	mg/kg	< 3	MCERTS	6	49	8	8
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	5	14	33	10
Selenium (Se)	mg/kg	< 2	MCERTS	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	21	204	134	44
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2
EPH (C10 - C40)	mg/kg	< 6	MCERTS	< 6	19	216	368

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 21-13971	Date Sampled	15/11/21	15/11/21	15/11/21	15/11/21	15/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP101	TP101	TP103	TP105	TP106
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.50 - 0.60	1.30 - 1.40	0.50 - 0.60	0.90 - 1.00	0.30 - 0.40
Reporting Date: 29/11/2021	DETS Sample No	576213	576214	576216	576219	576220

Determinand	Unit	RL	Accreditation	(n)				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.66	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.15	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	1.68	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	1.77	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	1.06	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	1.17	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	2.58	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.70	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	2.09	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	1.76	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.20	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	1.59	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	15.4	< 1.6

(n) 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



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 21-13971	Date Sampled	15/11/21	15/11/21	16/11/21	16/11/21	16/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP107	TP108	WS101	WS102	WS103
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.50 - 0.60	0.50 - 0.60	0.30 - 0.40	0.30 - 0.40	0.40 - 0.50
Reporting Date: 29/11/2021	DETS Sample No	576221	576222	576223	576224	576225

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.12
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.16
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.15
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 21-13971	Date Sampled	16/11/21	16/11/21	16/11/21	17/11/21	17/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS104	WS105	WS106	WS107	WS108
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.20 - 0.30	0.20 - 0.30	0.40 - 0.50	0.30 - 0.40	1.00 - 1.10
Reporting Date: 29/11/2021	DETS Sample No	576226	576227	576228	576229	576230

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.11	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	1.10	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.32	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.14	0.13	1.77	0.30
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.14	0.12	1.44	0.30
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.57	0.13
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.59	0.19
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.69	0.22
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.25	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.59	0.18
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.44	0.14
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.41	0.14
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	8.3	1.6



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 21-13971	Date Sampled	17/11/21	17/11/21	16/11/21	16/11/21	17/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS109	WS110	BH101	BH102	WS111
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.20 - 0.30	0.20 - 0.30	0.50	0.20	1.10 - 1.50
Reporting Date: 29/11/2021	DETS Sample No	576231	576232	576233	576234	576235

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.12
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.74
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.21
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.13	1.92
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.13	1.69
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.71
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.88
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.98
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.35
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.81
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.56
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.54
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	9.5



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 21-13971	Date Sampled	16/11/21	18/11/21	18/11/21	18/11/21	18/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	BH103	TP109	TP109	TP110	TP111
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.50	0.20 - 0.30	1.20 - 1.30	0.20 - 0.30	0.40 - 0.45
Reporting Date: 29/11/2021	DETS Sample No	576236	576237	576238	576239	576240

Determinand	Unit	RL	Accreditation	(n)		(n)	
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	0.27	< 0.1	0.22
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.41
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.25
Phenanthrene	mg/kg	< 0.1	MCERTS	0.34	0.44	0.17	2.82
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.54
Fluoranthene	mg/kg	< 0.1	MCERTS	1.36	0.52	0.16	4.27
Pyrene	mg/kg	< 0.1	MCERTS	1.50	0.51	0.16	4.13
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.64	< 0.1	< 0.1	2.10
Chrysene	mg/kg	< 0.1	MCERTS	0.81	0.25	< 0.1	2.10
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	1.05	0.26	< 0.1	3.41
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.35	< 0.1	< 0.1	1.19
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.85	0.21	< 0.1	3.26
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.57	0.15	< 0.1	2.82
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.39
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.56	0.15	< 0.1	3.01
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	8	2.7	< 1.6	30.9



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 21-13971	Date Sampled	18/11/21	18/11/21	17/11/21	18/11/21	
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP112	TP114	BH104	BH105	
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: GJ224	Depth (m)	0.20 - 0.30	0.30 - 0.40	0.20	0.20	
Reporting Date: 29/11/2021	DETS Sample No	576241	576242	576243	576244	

Determinand	Unit	RL	Accreditation	(n)			
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.22	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.16	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.67	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.23	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.17	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6



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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 21-13971	Date Sampled	15/11/21	15/11/21	15/11/21	15/11/21	15/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP101	TP101	TP103	TP105	TP106
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.50 - 0.60	1.30 - 1.40	0.50 - 0.60	0.90 - 1.00	0.30 - 0.40
Reporting Date: 29/11/2021	DETS Sample No	576213	576214	576216	576219	576220

Determinand	Unit	RL	Accreditation	(n)				
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	4	< 2	< 2
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	14	< 3	10	< 3	< 3
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	24	< 3	< 3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	38	< 21	< 21
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	4	< 2	< 2
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	11	< 2	< 2	< 2	< 2
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	5	< 3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	< 10	18	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	< 21	24	< 21
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	42	< 42	< 42

(n) 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



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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 21-13971	Date Sampled	15/11/21	15/11/21	16/11/21	16/11/21	16/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP107	TP108	WS101	WS102	WS103
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.50 - 0.60	0.50 - 0.60	0.30 - 0.40	0.30 - 0.40	0.40 - 0.50
Reporting Date: 29/11/2021	DETS Sample No	576221	576222	576223	576224	576225

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	6	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	8	< 2	< 2	< 2
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	16	< 3	< 3	< 3
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	12	< 3	< 3	< 3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	14	< 10	< 10	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	55	< 21	< 21	< 21
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	17	< 2	< 2	< 2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	16	< 2	< 2	< 2
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	26	< 2	< 2	< 2
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	9	< 3	< 3	< 3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	26	< 10	< 10	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	93	< 21	< 21	< 21
Total >C5 - C35	mg/kg	< 42	NONE	< 42	149	< 42	< 42	< 42



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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 21-13971	Date Sampled	16/11/21	16/11/21	16/11/21	17/11/21	17/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS104	WS105	WS106	WS107	WS108
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.20 - 0.30	0.20 - 0.30	0.40 - 0.50	0.30 - 0.40	1.00 - 1.10
Reporting Date: 29/11/2021	DETS Sample No	576226	576227	576228	576229	576230

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	8	4
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	< 42



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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 21-13971	Date Sampled	17/11/21	17/11/21	16/11/21	16/11/21	17/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS109	WS110	BH101	BH102	WS111
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.20 - 0.30	0.20 - 0.30	0.50	0.20	1.10 - 1.50
Reporting Date: 29/11/2021	DETS Sample No	576231	576232	576233	576234	576235

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	9
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	17
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	26
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	< 42



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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 21-13971	Date Sampled	16/11/21	18/11/21	18/11/21	18/11/21	18/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	BH103	TP109	TP109	TP110	TP111
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.50	0.20 - 0.30	1.20 - 1.30	0.20 - 0.30	0.40 - 0.45
Reporting Date: 29/11/2021	DETS Sample No	576236	576237	576238	576239	576240

Determinand	Unit	RL	Accreditation	(n)		(n)	
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	5	< 2
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	0.02	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	0.06	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	6	5	< 2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	3	< 2
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	4	2	< 2
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	7	4	< 3	27
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	< 10	92
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	< 21	127
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	< 42	127



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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 21-13971	Date Sampled	18/11/21	18/11/21	17/11/21	18/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP112	TP114	BH104	BH105
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.20 - 0.30	0.30 - 0.40	0.20	0.20
Reporting Date: 29/11/2021	DETS Sample No	576241	576242	576243	576244

Determinand	Unit	RL	Accreditation	(n)			
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	0.17
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	17	62
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	25	38
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	13	< 3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	54	101
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	0.09	0.11
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	6	2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	14	21
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	66	12
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	41	3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	18	16
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	144	54
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	199	154



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 21-13971	Date Sampled	15/11/21	15/11/21	15/11/21	15/11/21	15/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP101	TP101	TP103	TP105	TP106
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.50 - 0.60	1.30 - 1.40	0.50 - 0.60	0.90 - 1.00	0.30 - 0.40
Reporting Date: 29/11/2021	DETS Sample No	576213	576214	576216	576219	576220

Determinand	Unit	RL	Accreditation	(n)				
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	7	< 5	< 5
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2	4	< 2	< 2
p & m-xylene	ug/kg	< 2	MCERTS	< 2	< 2	26	4	< 2
o-xylene	ug/kg	< 2	MCERTS	< 2	< 2	9	< 2	< 2
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 21-13971	Date Sampled	15/11/21	15/11/21	16/11/21	16/11/21	16/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP107	TP108	WS101	WS102	WS103
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.50 - 0.60	0.50 - 0.60	0.30 - 0.40	0.30 - 0.40	0.40 - 0.50
Reporting Date: 29/11/2021	DETS Sample No	576221	576222	576223	576224	576225

Determinand	Unit	RL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene	ug/kg	< 5	MCERTS	< 5	10	< 5	< 5	< 5
Ethylbenzene	ug/kg	< 2	MCERTS	59	25	< 2	< 2	< 2
p & m-xylene	ug/kg	< 2	MCERTS	494	86	11	< 2	< 2
o-xylene	ug/kg	< 2	MCERTS	296	28	8	< 2	< 2
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 21-13971	Date Sampled	16/11/21	16/11/21	16/11/21	17/11/21	17/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS104	WS105	WS106	WS107	WS108
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.20 - 0.30	0.20 - 0.30	0.40 - 0.50	0.30 - 0.40	1.00 - 1.10
Reporting Date: 29/11/2021	DETS Sample No	576226	576227	576228	576229	576230

Determinand	Unit	RL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene	ug/kg	< 2	MCERTS	16	< 2	< 2	< 2	< 2
o-xylene	ug/kg	< 2	MCERTS	5	< 2	< 2	< 2	< 2
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 21-13971	Date Sampled	17/11/21	17/11/21	16/11/21	16/11/21	17/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS109	WS110	BH101	BH102	WS111
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.20 - 0.30	0.20 - 0.30	0.50	0.20	1.10 - 1.50
Reporting Date: 29/11/2021	DETS Sample No	576231	576232	576233	576234	576235

Determinand	Unit	RL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene	ug/kg	< 2	MCERTS	< 2	< 2	3	< 2	< 2
o-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 21-13971	Date Sampled	16/11/21	18/11/21	18/11/21	18/11/21	18/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	BH103	TP109	TP109	TP110	TP111
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.50	0.20 - 0.30	1.20 - 1.30	0.20 - 0.30	0.40 - 0.45
Reporting Date: 29/11/2021	DETS Sample No	576236	576237	576238	576239	576240

Determinand	Unit	RL	Accreditation	(n)		(n)	
Benzene	ug/kg	< 2	MCERTS	< 2	7	17	< 2
Toluene	ug/kg	< 5	MCERTS	< 5	6	56	< 5
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	16	246	< 2
p & m-xylene	ug/kg	< 2	MCERTS	2	56	78	< 2
o-xylene	ug/kg	< 2	MCERTS	< 2	22	34	< 2
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 21-13971	Date Sampled	18/11/21	18/11/21	17/11/21	18/11/21	
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP112	TP114	BH104	BH105	
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: GJ224	Depth (m)	0.20 - 0.30	0.30 - 0.40	0.20	0.20	
Reporting Date: 29/11/2021	DETS Sample No	576241	576242	576243	576244	

Determinand	Unit	RL	Accreditation	(n)				
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	89	111	
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2	25	160	
p & m-xylene	ug/kg	< 2	MCERTS	< 2	< 2	112	305	
o-xylene	ug/kg	< 2	MCERTS	< 2	< 2	63	71	
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	



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Soil Analysis Certificate - Volatile Organic Compounds (VOC)						
DETS Report No: 21-13971	Date Sampled	15/11/21	15/11/21	15/11/21	15/11/21	15/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP101	TP101	TP103	TP105	TP106
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.50 - 0.60	1.30 - 1.40	0.50 - 0.60	0.90 - 1.00	0.30 - 0.40
Reporting Date: 29/11/2021	DETS Sample No	576213	576214	576216	576219	576220

Determinand	Unit	RL	Accreditation	(n)		
Dichlorodifluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Vinyl Chloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Chloromethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10
Chloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Bromomethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10
Trichlorofluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,1-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5
trans-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,1-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
cis-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
2,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Chloroform	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Bromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,1,1-Trichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,1-Dichloropropene	ug/kg	< 10	MCERTS	< 10	< 10	< 10
Carbon Tetrachloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,2-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2
1,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Trichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Bromodichloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Dibromomethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
TAME	ug/kg	< 5	MCERTS	< 5	< 5	< 5
cis-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
trans-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,1,2-Trichloroethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10
1,3-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Tetrachloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Dibromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,2-Dibromoethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Chlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,1,1,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Ethyl Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2
m,p-Xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2
o-Xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2
Styrene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Bromoform	ug/kg	< 10	MCERTS	< 10	< 10	< 10
Isopropylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,2,3-Trichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5
n-Propylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
Bromobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
2-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,3,5-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
4-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
tert-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,2,4-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
sec-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
p-Isopropyltoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,3-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,4-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
n-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5
1,2-Dichlorobenzene	ug/kg	< 5	MCERTS	22	12	4444
1,2-Dibromo-3-chloropropane	ug/kg	< 10	MCERTS	< 10	< 10	< 10
Hexachlorobutadiene	ug/kg	< 5	MCERTS	< 5	< 5	< 5

(n) 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



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Soil Analysis Certificate - Volatile Organic Compounds (VOC)						
DETS Report No: 21-13971	Date Sampled	15/11/21	16/11/21	16/11/21	17/11/21	17/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP108	WS102	WS104	WS107	WS108
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.50 - 0.60	0.30 - 0.40	0.20 - 0.30	0.30 - 0.40	1.00 - 1.10
Reporting Date: 29/11/2021	DETS Sample No	576222	576224	576226	576229	576230

Determinand	Unit	RL	Accreditation					
Dichlorodifluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Vinyl Chloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chloromethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Chloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromomethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Trichlorofluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
trans-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
cis-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
2,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chloroform	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,1-Trichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloropropene	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Carbon Tetrachloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
1,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Trichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromodichloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Dibromomethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
TAME	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
cis-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Toluene	ug/kg	< 5	MCERTS	10	< 5	< 5	< 5	< 5
trans-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
1,3-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Tetrachloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Dibromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dibromoethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chlorobenzene	ug/kg	< 5	MCERTS	44	< 5	10	< 5	< 5
1,1,1,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethyl Benzene	ug/kg	< 2	MCERTS	25	< 2	< 2	< 2	< 2
m,p-Xylene	ug/kg	< 2	MCERTS	86	< 2	16	< 2	< 2
o-Xylene	ug/kg	< 2	MCERTS	28	< 2	5	< 2	< 2
Styrene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromoform	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Isopropylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2,3-Trichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
n-Propylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromobenzene	ug/kg	< 5	MCERTS	6	< 5	< 5	< 5	< 5
2-Chlorotoluene	ug/kg	< 5	MCERTS	101	< 5	< 5	< 5	< 5
1,3,5-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
4-Chlorotoluene	ug/kg	< 5	MCERTS	104	< 5	< 5	< 5	< 5
tert-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2,4-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
sec-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
p-Isopropyltoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,3-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,4-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
n-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dichlorobenzene	ug/kg	< 5	MCERTS	932	26	2398	50	50
1,2-Dibromo-3-chloropropane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Hexachlorobutadiene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5



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Soil Analysis Certificate - Volatile Organic Compounds (VOC)						
DETS Report No: 21-13971	Date Sampled	17/11/21	17/11/21	17/11/21	18/11/21	18/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS109	WS110	WS111	TP109	TP111
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.20 - 0.30	0.20 - 0.30	1.10 - 1.50	1.20 - 1.30	0.40 - 0.45
Reporting Date: 29/11/2021	DETS Sample No	576231	576232	576235	576238	576240

Determinand	Unit	RL	Accreditation	(n)	(n)
Dichlorodifluoromethane	ug/kg	< 5	MCERTS	< 5	< 5
Vinyl Chloride	ug/kg	< 5	MCERTS	< 5	< 5
Chloromethane	ug/kg	< 10	MCERTS	< 10	< 10
Chloroethane	ug/kg	< 5	MCERTS	< 5	< 5
Bromomethane	ug/kg	< 10	MCERTS	< 10	< 10
Trichlorofluoromethane	ug/kg	< 5	MCERTS	< 5	< 5
1,1-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5
MTBE	ug/kg	< 5	MCERTS	< 5	< 5
trans-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5
1,1-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5
cis-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5
2,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5
Chloroform	ug/kg	< 5	MCERTS	< 5	< 5
Bromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5
1,1,1-Trichloroethane	ug/kg	< 5	MCERTS	< 5	< 5
1,1-Dichloropropene	ug/kg	< 10	MCERTS	< 10	< 10
Carbon Tetrachloride	ug/kg	< 5	MCERTS	< 5	< 5
1,2-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5
Benzene	ug/kg	< 2	MCERTS	< 2	17
1,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5
Trichloroethene	ug/kg	< 5	MCERTS	< 5	< 5
Bromodichloromethane	ug/kg	< 5	MCERTS	< 5	< 5
Dibromomethane	ug/kg	< 5	MCERTS	< 5	< 5
TAME	ug/kg	< 5	MCERTS	< 5	< 5
cis-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5
Toluene	ug/kg	< 5	MCERTS	< 5	56
trans-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5
1,1,2-Trichloroethane	ug/kg	< 10	MCERTS	< 10	< 10
1,3-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5
Tetrachloroethene	ug/kg	< 5	MCERTS	< 5	< 5
Dibromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5
1,2-Dibromoethane	ug/kg	< 5	MCERTS	< 5	< 5
Chlorobenzene	ug/kg	< 5	MCERTS	< 5	100
1,1,1,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5
Ethyl Benzene	ug/kg	< 2	MCERTS	< 2	246
m,p-Xylene	ug/kg	< 2	MCERTS	< 2	78
o-Xylene	ug/kg	< 2	MCERTS	< 2	34
Styrene	ug/kg	< 5	MCERTS	< 5	< 5
Bromoform	ug/kg	< 10	MCERTS	< 10	< 10
Isopropylbenzene	ug/kg	< 5	MCERTS	< 5	13
1,1,2,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5
1,2,3-Trichloropropane	ug/kg	< 5	MCERTS	< 5	< 5
n-Propylbenzene	ug/kg	< 5	MCERTS	< 5	11
Bromobenzene	ug/kg	< 5	MCERTS	< 5	< 5
2-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5
1,3,5-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	8
4-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5
tert-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5
1,2,4-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	9
sec-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5
p-Isopropyltoluene	ug/kg	< 5	MCERTS	< 5	< 5
1,3-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5
1,4-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5
n-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5
1,2-Dichlorobenzene	ug/kg	< 5	MCERTS	6	57
1,2-Dibromo-3-chloropropane	ug/kg	< 10	MCERTS	< 10	< 10
Hexachlorobutadiene	ug/kg	< 5	MCERTS	< 5	< 5



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Soil Analysis Certificate - Volatile Organic Compounds (VOC)						
DETS Report No: 21-13971	Date Sampled	18/11/21	17/11/21	18/11/21		
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP112	BH104	BH105		
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied		
Order No: GJ224	Depth (m)	0.20 - 0.30	0.20	0.20		
Reporting Date: 29/11/2021	DETS Sample No	576241	576243	576244		

Determinand	Unit	RL	Accreditation				
Dichlorodifluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
Vinyl Chloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
Chloromethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	
Chloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
Bromomethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	
Trichlorofluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
1,1-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
trans-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
1,1-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
cis-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
2,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
Chloroform	ug/kg	< 5	MCERTS	< 5	< 5	136	
Bromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
1,1,1-Trichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
1,1-Dichloropropene	ug/kg	< 10	MCERTS	< 10	< 10	< 10	
Carbon Tetrachloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
1,2-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	
1,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
Trichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
Bromodichloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
Dibromomethane	ug/kg	< 5	MCERTS	< 5	< 5	29	
TAME	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
cis-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
Toluene	ug/kg	< 5	MCERTS	< 5	89	111	
trans-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
1,1,2-Trichloroethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	
1,3-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
Tetrachloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
Dibromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
1,2-Dibromoethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
Chlorobenzene	ug/kg	< 5	MCERTS	< 5	68	78	
1,1,1,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
Ethyl Benzene	ug/kg	< 2	MCERTS	< 2	25	160	
m,p-Xylene	ug/kg	< 2	MCERTS	< 2	112	305	
o-Xylene	ug/kg	< 2	MCERTS	< 2	63	71	
Styrene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
Bromoform	ug/kg	< 10	MCERTS	< 10	< 10	168	
Isopropylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	14	
1,1,2,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
1,2,3-Trichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
n-Propylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	17	
Bromobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
2-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
1,3,5-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	10	6	
4-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	7	
tert-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
1,2,4-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	39	11	
sec-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
p-Isopropyltoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
1,3-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	8	< 5	
1,4-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	
n-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	634	
1,2-Dichlorobenzene	ug/kg	< 5	MCERTS	54	41460	512400	
1,2-Dibromo-3-chloropropane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	
Hexachlorobutadiene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)			
DETS Report No: 21-13971		Date Sampled	15/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	TP101
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.50 - 0.60
Reporting Date: 29/11/2021		DETS Sample No	576213

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	1-Bromo-2,3-dichlorobenzene	99	µg/kg	< 10	2070
2	N/a	N/a	µg/kg	< 10	< 10
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)		
DETS Report No: 21-13971	Date Sampled	15/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP101
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: GJ224	Depth (m)	1.30 - 1.40
Reporting Date: 29/11/2021	DETS Sample No	576214

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	1-Bromo-2,3-dichlorobenzene	99	µg/kg	< 10	54
2	N/a	N/a	µg/kg	< 10	< 10
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)			
DETS Report No: 21-13971		Date Sampled	15/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	TP103
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.50 - 0.60
Reporting Date: 29/11/2021		DETS Sample No	576216

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	Benzene, 1,2-diethyl-	98	µg/kg	< 10	104
2	1-Bromo-2,3-dichlorobenzene	98	µg/kg	< 10	88
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)		
DETS Report No: 21-13971	Date Sampled	15/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP105
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: GJ224	Depth (m)	0.90 - 1.00
Reporting Date: 29/11/2021	DETS Sample No	576219

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/kg	< 10	< 10
2	N/a	N/a	µg/kg	< 10	< 10
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)			
DETS Report No: 21-13971		Date Sampled	15/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	TP106
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.30 - 0.40
Reporting Date: 29/11/2021		DETS Sample No	576220

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/kg	< 10	< 10
2	N/a	N/a	µg/kg	< 10	< 10
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)			
DETS Report No: 21-13971		Date Sampled	15/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	TP108
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.50 - 0.60
Reporting Date: 29/11/2021		DETS Sample No	576222

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/kg	< 10	< 10
2	N/a	N/a	µg/kg	< 10	< 10
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)			
DETS Report No: 21-13971		Date Sampled	16/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	WS102
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.30 - 0.40
Reporting Date: 29/11/2021		DETS Sample No	576224

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/kg	< 10	< 10
2	N/a	N/a	µg/kg	< 10	< 10
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)			
DETS Report No: 21-13971		Date Sampled	16/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	WS104
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.20 - 0.30
Reporting Date: 29/11/2021		DETS Sample No	576226

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/kg	< 10	< 10
2	N/a	N/a	µg/kg	< 10	< 10
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)		
DETS Report No: 21-13971	Date Sampled	17/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS107
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: GJ224	Depth (m)	0.30 - 0.40
Reporting Date: 29/11/2021	DETS Sample No	576229

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/kg	< 10	< 10
2	N/a	N/a	µg/kg	< 10	< 10
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)		
DETS Report No: 21-13971	Date Sampled	17/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS108
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: GJ224	Depth (m)	1.00 - 1.10
Reporting Date: 29/11/2021	DETS Sample No	576230

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/kg	< 10	< 10
2	N/a	N/a	µg/kg	< 10	< 10
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)			
DETS Report No: 21-13971		Date Sampled	17/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	WS109
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.20 - 0.30
Reporting Date: 29/11/2021		DETS Sample No	576231

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/kg	< 10	< 10
2	N/a	N/a	µg/kg	< 10	< 10
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)		
DETS Report No: 21-13971	Date Sampled	17/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS110
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: GJ224	Depth (m)	0.20 - 0.30
Reporting Date: 29/11/2021	DETS Sample No	576232

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/kg	< 10	< 10
2	N/a	N/a	µg/kg	< 10	< 10
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)		
DETS Report No: 21-13971	Date Sampled	17/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS111
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: GJ224	Depth (m)	1.10 - 1.50
Reporting Date: 29/11/2021	DETS Sample No	576235

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/kg	< 10	< 10
2	N/a	N/a	µg/kg	< 10	< 10
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)			
DETS Report No: 21-13971		Date Sampled	18/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	TP109
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	1.20 - 1.30
Reporting Date: 29/11/2021		DETS Sample No	576238

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/kg	< 10	< 10
2	N/a	N/a	µg/kg	< 10	< 10
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)			
DETS Report No: 21-13971		Date Sampled	18/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	TP111
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.40 - 0.45
Reporting Date: 29/11/2021		DETS Sample No	576240

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/kg	< 10	< 10
2	N/a	N/a	µg/kg	< 10	< 10
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)			
DETS Report No: 21-13971		Date Sampled	18/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	TP112
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.20 - 0.30
Reporting Date: 29/11/2021		DETS Sample No	576241

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/kg	< 10	< 10
2	N/a	N/a	µg/kg	< 10	< 10
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)			
DETS Report No: 21-13971		Date Sampled	17/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	BH104
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.20
Reporting Date: 29/11/2021		DETS Sample No	576243

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	1-Bromo-2,4-dichlorobenzene	97	µg/kg	< 10	1750
2	Hexane, 1,6-dibromo-	97	µg/kg	< 10	75
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)			
DETS Report No: 21-13971		Date Sampled	18/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	BH105
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.20
Reporting Date: 29/11/2021		DETS Sample No	576244

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	1-Bromo-2,3-dichlorobenzene	99	µg/kg	< 10	1990
2	N/a	N/a	µg/kg	< 10	< 10
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds (SVOC)						
DETS Report No: 21-13971	Date Sampled	15/11/21	15/11/21	15/11/21	15/11/21	15/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP101	TP101	TP103	TP105	TP106
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.50 - 0.60	1.30 - 1.40	0.50 - 0.60	0.90 - 1.00	0.30 - 0.40
Reporting Date: 29/11/2021	DETS Sample No	576213	576214	576216	576219	576220

Determinand	Unit	RL	Accreditation	(n)					
Phenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Nitrobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
0-Cresol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-chloroethoxy)methane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-chloroethyl)ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene	mg/kg	< 0.1	ISO17025	0.3	< 0.1	3.6	0.4	< 0.1	< 0.1
2,4-Dimethylphenol	mg/kg	< 0.15	ISO17025	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
Isophorone	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachloroethane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
p-Cresol	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15	< 0.15	0.33	< 0.15	< 0.15
2,4,6-Trichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
2-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.4	< 0.1	0.3
Hexachlorocyclopentadiene	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethyl phthalate	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloroaniline	mg/kg	< 0.15	NONE	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
4-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibutyl phthalate	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-ethylhexyl)phthalate	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
Benzyl butyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

(n) 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



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Soil Analysis Certificate - Semi Volatile Organic Compounds (SVOC)						
DETS Report No: 21-13971	Date Sampled	15/11/21	16/11/21	16/11/21	17/11/21	17/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP108	WS102	WS104	WS107	WS108
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.50 - 0.60	0.30 - 0.40	0.20 - 0.30	0.30 - 0.40	1.00 - 1.10
Reporting Date: 29/11/2021	DETS Sample No	576222	576224	576226	576229	576230

Determinand	Unit	RL	Accreditation					
Phenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Nitrobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
0-Cresol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-chloroethoxy)methane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-chloroethyl)ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene	mg/kg	< 0.1	ISO17025	2.0	< 0.1	2.1	< 0.1	< 0.1
2,4-Dimethylphenol	mg/kg	< 0.15	ISO17025	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
Isophorone	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachloroethane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
p-Cresol	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
2,4,6-Trichlorophenol	mg/kg	< 0.1	MCERTS	0.7	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
2-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.3	< 0.1
Hexachlorocyclopentadiene	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethyl phthalate	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloroaniline	mg/kg	< 0.15	NONE	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
4-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibutyl phthalate	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-ethylhexyl)phthalate	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
Benzyl butyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1



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Soil Analysis Certificate - Semi Volatile Organic Compounds (SVOC)						
DETS Report No: 21-13971	Date Sampled	17/11/21	17/11/21	17/11/21	18/11/21	18/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS109	WS110	WS111	TP109	TP111
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.20 - 0.30	0.20 - 0.30	1.10 - 1.50	1.20 - 1.30	0.40 - 0.45
Reporting Date: 29/11/2021	DETS Sample No	576231	576232	576235	576238	576240

Determinand	Unit	RL	Accreditation	(n)		(n)	
Phenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Nitrobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
0-Cresol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-chloroethoxy)methane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-chloroethyl)ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	5.0	< 0.1
2,4-Dimethylphenol	mg/kg	< 0.15	ISO17025	< 0.15	< 0.15	< 0.15	< 0.15
Isophorone	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Hexachloroethane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
p-Cresol	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15	< 0.15	< 0.15
2,4,6-Trichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15	< 0.15	< 0.15
2-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	mg/kg	< 0.1	MCERTS	< 0.1	0.3	< 0.1	< 0.1
Hexachlorocyclopentadiene	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Dimethyl phthalate	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloroaniline	mg/kg	< 0.15	NONE	< 0.15	< 0.15	< 0.15	< 0.15
4-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Diethyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Dibutyl phthalate	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-ethylhexyl)phthalate	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15	< 0.15	< 0.15
Benzyl butyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1



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Soil Analysis Certificate - Semi Volatile Organic Compounds (SVOC)						
DETS Report No: 21-13971	Date Sampled	18/11/21	17/11/21	18/11/21		
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP112	BH104	BH105		
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied		
Order No: GJ224	Depth (m)	0.20 - 0.30	0.20	0.20		
Reporting Date: 29/11/2021	DETS Sample No	576241	576243	576244		

Determinand	Unit	RL	Accreditation				
Phenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	
1,2,4-Trichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	2.1	
2-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	
Nitrobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
0-Cresol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	
bis(2-chloroethoxy)methane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
bis(2-chloroethyl)ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
2,4-Dichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
2-Chlorophenol	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	
1,3-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	
1,4-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	
1,2-Dichlorobenzene	mg/kg	< 0.1	ISO17025	0.2	13.0	98.1	
2,4-Dimethylphenol	mg/kg	< 0.15	ISO17025	< 0.15	< 0.15	< 0.15	
Isophorone	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	
Hexachloroethane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
p-Cresol	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15	< 0.15	
2,4,6-Trichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
2,4,5-Trichlorophenol	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15	< 0.15	
2-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	
4-Chloro-3-methylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	
2-Methylnaphthalene	mg/kg	< 0.1	MCERTS	0.3	< 0.1	< 0.1	
Hexachlorocyclopentadiene	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	
Hexachlorobutadiene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	
2,6-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Dimethyl phthalate	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	
2-Chloronaphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
4-Chloroaniline	mg/kg	< 0.15	NONE	< 0.15	< 0.15	< 0.15	
4-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	
4-Chlorophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
3-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	
4-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	
4-Bromophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Hexachlorobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
2,4-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Diethyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Dibenzofuran	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Azobenzene	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	
Dibutyl phthalate	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	
Carbazole	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	
bis(2-ethylhexyl)phthalate	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15	< 0.15	
Benzyl butyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Di-n-octyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)			
DETS Report No: 21-13971		Date Sampled	15/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	TP101
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.50 - 0.60
Reporting Date: 29/11/2021		DETS Sample No	576213

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	mg/kg	< 0.1	< 0.1
2	N/a	N/a	mg/kg	< 0.1	< 0.1
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)			
DETS Report No: 21-13971		Date Sampled	15/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	TP101
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	1.30 - 1.40
Reporting Date: 29/11/2021		DETS Sample No	576214

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	mg/kg	< 0.1	< 0.1
2	N/a	N/a	mg/kg	< 0.1	< 0.1
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)			
DETS Report No: 21-13971		Date Sampled	15/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	TP103
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.50 - 0.60
Reporting Date: 29/11/2021		DETS Sample No	576216

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	mg/kg	< 0.1	< 0.1
2	N/a	N/a	mg/kg	< 0.1	< 0.1
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)			
DETS Report No: 21-13971		Date Sampled	15/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	TP105
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.90 - 1.00
Reporting Date: 29/11/2021		DETS Sample No	576219

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	mg/kg	< 0.1	< 0.1
2	N/a	N/a	mg/kg	< 0.1	< 0.1
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)			
DETS Report No: 21-13971		Date Sampled	15/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	TP106
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.30 - 0.40
Reporting Date: 29/11/2021		DETS Sample No	576220

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	mg/kg	< 0.1	< 0.1
2	N/a	N/a	mg/kg	< 0.1	< 0.1
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)			
DETS Report No: 21-13971		Date Sampled	15/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	TP108
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.50 - 0.60
Reporting Date: 29/11/2021		DETS Sample No	576222

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	Cyclic octaatomic sulfur	99	mg/kg	< 0.1	30.4
2	1,4-Benzenediamine, N-(1,3-dimethylbutyl)-N'-phenyl-	93	mg/kg	< 0.1	449
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)			
DETS Report No: 21-13971		Date Sampled	16/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	WS102
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.30 - 0.40
Reporting Date: 29/11/2021		DETS Sample No	576224

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	mg/kg	< 0.1	< 0.1
2	N/a	N/a	mg/kg	< 0.1	< 0.1
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)			
DETS Report No: 21-13971		Date Sampled	16/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	WS104
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.20 - 0.30
Reporting Date: 29/11/2021		DETS Sample No	576226

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	mg/kg	< 0.1	< 0.1
2	N/a	N/a	mg/kg	< 0.1	< 0.1
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)			
DETS Report No: 21-13971		Date Sampled	17/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	WS107
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.30 - 0.40
Reporting Date: 29/11/2021		DETS Sample No	576229

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	mg/kg	< 0.1	< 0.1
2	N/a	N/a	mg/kg	< 0.1	< 0.1
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)		
DETS Report No: 21-13971	Date Sampled	17/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS108
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: GJ224	Depth (m)	1.00 - 1.10
Reporting Date: 29/11/2021	DETS Sample No	576230

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	mg/kg	< 0.1	< 0.1
2	N/a	N/a	mg/kg	< 0.1	< 0.1
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)			
DETS Report No: 21-13971		Date Sampled	17/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	WS109
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.20 - 0.30
Reporting Date: 29/11/2021		DETS Sample No	576231

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	mg/kg	< 0.1	< 0.1
2	N/a	N/a	mg/kg	< 0.1	< 0.1
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)			
DETS Report No: 21-13971		Date Sampled	17/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	WS110
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.20 - 0.30
Reporting Date: 29/11/2021		DETS Sample No	576232

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	mg/kg	< 0.1	< 0.1
2	N/a	N/a	mg/kg	< 0.1	< 0.1
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)		
DETS Report No: 21-13971	Date Sampled	17/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS111
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: GJ224	Depth (m)	1.10 - 1.50
Reporting Date: 29/11/2021	DETS Sample No	576235

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	mg/kg	< 0.1	< 0.1
2	N/a	N/a	mg/kg	< 0.1	< 0.1
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)			
DETS Report No: 21-13971		Date Sampled	18/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	TP109
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	1.20 - 1.30
Reporting Date: 29/11/2021		DETS Sample No	576238

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	mg/kg	< 0.1	< 0.1
2	N/a	N/a	mg/kg	< 0.1	< 0.1
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)			
DETS Report No: 21-13971		Date Sampled	18/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	TP111
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.40 - 0.45
Reporting Date: 29/11/2021		DETS Sample No	576240

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	mg/kg	< 0.1	< 0.1
2	N/a	N/a	mg/kg	< 0.1	< 0.1
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)			
DETS Report No: 21-13971		Date Sampled	18/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	TP112
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.20 - 0.30
Reporting Date: 29/11/2021		DETS Sample No	576241

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	mg/kg	< 0.1	< 0.1
2	N/a	N/a	mg/kg	< 0.1	< 0.1
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)		
DETS Report No: 21-13971	Date Sampled	17/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	BH104
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: GJ224	Depth (m)	0.20
Reporting Date: 29/11/2021	DETS Sample No	576243

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	mg/kg	< 0.1	< 0.1
2	N/a	N/a	mg/kg	< 0.1	< 0.1
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)			
DETS Report No: 21-13971		Date Sampled	18/11/21
G & J Geoenvironmental Consultants Ltd		Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley		TP / BH No	BH105
Project / Job Ref: GJ224		Additional Refs	None Supplied
Order No: GJ224		Depth (m)	0.20
Reporting Date: 29/11/2021		DETS Sample No	576244

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	Cyclic octaatomic sulfur	98	mg/kg	< 0.1	2.9
2	N/a	N/a	mg/kg	< 0.1	< 0.1
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - PCB (7 Congeners)						
DETS Report No: 21-13971	Date Sampled	17/11/21	18/11/21	18/11/21		
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS110	TP111	TP112		
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied		
Order No: GJ224	Depth (m)	0.20 - 0.30	0.40 - 0.45	0.20 - 0.30		
Reporting Date: 29/11/2021	DETS Sample No	576232	576240	576241		

Determinand	Unit	RL	Accreditation	(n)			
PCB Congener 28	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	
PCB Congener 52	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	
PCB Congener 101	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	
PCB Congener 118	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	
PCB Congener 138	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	
PCB Congener 153	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	
PCB Congener 180	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	
Total PCB (7 Congeners)	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	

(n) 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



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Soil Analysis Certificate - Sample Descriptions

DETS Report No: 21-13971
G & J Geoenvironmental Consultants Ltd
Site Reference: Penrhyn Road, Knowsley
Project / Job Ref: GJ224
Order No: GJ224
Reporting Date: 29/11/2021

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
576213	TP101	None Supplied	0.50 - 0.60	8	Brown sandy gravel with stones and concrete
576214	TP101	None Supplied	1.30 - 1.40	10.5	Light brown sandy clay with stones
576216	TP103	None Supplied	0.50 - 0.60	11.8	Light brown sandy clay with stones
576219	TP105	None Supplied	0.90 - 1.00	14.7	Brown sandy clay with vegetation
576220	TP106	None Supplied	0.30 - 0.40	12.6	Light brown sandy clay
576221	TP107	None Supplied	0.50 - 0.60	12.8	Light brown sandy clay with stones
576222	TP108	None Supplied	0.50 - 0.60	11.6	Light brown sandy clay
576223	WS101	None Supplied	0.30 - 0.40	11.1	Brown sandy clay with stones
576224	WS102	None Supplied	0.30 - 0.40	11.8	Light brown sandy clay with stones
576225	WS103	None Supplied	0.40 - 0.50	7.7	Brown sandy clay with stones and concrete
576226	WS104	None Supplied	0.20 - 0.30	10.4	Light brown sandy clay with stones
576227	WS105	None Supplied	0.20 - 0.30	11.5	Brown sandy clay with stones and concrete
576228	WS106	None Supplied	0.40 - 0.50	10.2	Brown sandy clay with stones and brick
576229	WS107	None Supplied	0.30 - 0.40	8.9	Brown sandy clay with stones and brick
576230	WS108	None Supplied	1.00 - 1.10	9.6	Black sandy clay
576231	WS109	None Supplied	0.20 - 0.30	6.7	Brown sandy clay with stones and concrete
576232	WS110	None Supplied	0.20 - 0.30	7.6	Red sandy clay with stones and concrete
576233	BH101	None Supplied	0.50	12.6	Brown sandy clay with stones
576234	BH102	None Supplied	0.20	11	Brown sandy clay with stones
576235	WS111	None Supplied	1.10 - 1.50	7.9	Black sandy clay with stones
576236	BH103	None Supplied	0.50	11.3	Brown sandy clay with stones and brick
576237	TP109	None Supplied	0.20 - 0.30	11	Brown sandy clay with stones and brick
576238	TP109	None Supplied	1.20 - 1.30	9.8	Brown sandy gravel with stones and concrete
576239	TP110	None Supplied	0.20 - 0.30	7.3	Brown gravelly sand with stones and concrete
576240	TP111	None Supplied	0.40 - 0.45	4.1	Brown sandy gravel with stones
576241	TP112	None Supplied	0.20 - 0.30	5	Brown gravelly sand with stones and concrete
576242	TP114	None Supplied	0.30 - 0.40	7.2	Brown sandy gravel with stones and concrete
576243	BH104	None Supplied	0.20	11.7	Light brown sandy clay with stones
576244	BH105	None Supplied	0.20	10	Red sandy clay with stones

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample ^{I/S}

Unsuitable Sample ^{U/S}



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Soil Analysis Certificate - Methodology & Miscellaneous Information	
DETS Report No: 21-13971	
G & J Geoenvironmental Consultants Ltd	
Site Reference: Penrhyn Road, Knowsley	
Project / Job Ref: GJ224	
Order No: GJ224	
Reporting Date: 29/11/2021	

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received



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Derwentside Environmental Testing Services Ltd
Unit 1
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Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 21-14033

Site Reference: Penrhyn Road, Knowsley

Project / Job Ref: GJ224

Order No: GJ224

Sample Receipt Date: 23/11/2021

Sample Scheduled Date: 24/11/2021

Report Issue Number: 1

Reporting Date: 30/11/2021

Authorised by:

Dave Ashworth
Technical Manager

Dates of laboratory activities for each tested analyte are available upon request.

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.



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Soil Analysis Certificate						
DETS Report No: 21-14033	Date Sampled	15/11/21	15/11/21	15/11/21	17/11/21	
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP102	TP104	TP105	WS101	
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: GJ224	Depth (m)	0.20 - 0.30	0.50	0.70 - 0.80	0.80 - 0.90	
Reporting Date: 30/11/2021	DETS Sample No	576474	576475	576476	576477	

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	
pH	pH Units	N/a	MCERTS	7.6	10.1	7.9	7.2	
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	
Thiocyanate as SCN	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	87	174	40	12	
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.09	0.17	0.04	0.01	
Total Sulphur	%	< 0.02	NONE	0.03	0.08	< 0.02	< 0.02	
Sulphide	mg/kg	< 5	NONE	< 5	< 5	< 5	< 5	
Organic Matter (SOM)	%	< 0.1	MCERTS	1.1	1.2	0.8	0.7	
TOC (Total Organic Carbon)	%	< 0.1	MCERTS	0.7	0.7	0.4	0.4	
Arsenic (As)	mg/kg	< 2	MCERTS	4	6	7	6	
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.2	0.3	0.2	< 0.2	
Chromium (Cr)	mg/kg	< 2	MCERTS	19	26	32	36	
Copper (Cu)	mg/kg	< 4	MCERTS	14	24	17	15	
Lead (Pb)	mg/kg	< 3	MCERTS	14	23	12	7	
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	
Nickel (Ni)	mg/kg	< 3	MCERTS	15	32	34	37	
Selenium (Se)	mg/kg	< 2	MCERTS	< 3	< 3	< 3	< 3	
Zinc (Zn)	mg/kg	< 3	MCERTS	38	125	39	33	
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	
EPH (C10 - C40)	mg/kg	< 6	MCERTS	30	69	14	< 6	

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 21-14033	Date Sampled	15/11/21	15/11/21	15/11/21	17/11/21	
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP102	TP104	TP105	WS101	
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: GJ224	Depth (m)	0.20 - 0.30	0.50	0.70 - 0.80	0.80 - 0.90	
Reporting Date: 30/11/2021	DETS Sample No	576474	576475	576476	576477	

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	



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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 21-14033	Date Sampled	15/11/21	15/11/21	15/11/21	17/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP102	TP104	TP105	WS101
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.20 - 0.30	0.50	0.70 - 0.80	0.80 - 0.90
Reporting Date: 30/11/2021	DETS Sample No	576474	576475	576476	576477

Determinand	Unit	RL	Accreditation				
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	0.07	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	7	< 3	< 3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 21-14033	Date Sampled	15/11/21	15/11/21	15/11/21	17/11/21	
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP102	TP104	TP105	WS101	
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: GJ224	Depth (m)	0.20 - 0.30	0.50	0.70 - 0.80	0.80 - 0.90	
Reporting Date: 30/11/2021	DETS Sample No	576474	576475	576476	576477	

Determinand	Unit	RL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
p & m-xylene	ug/kg	< 2	MCERTS	< 2	7	6	< 2	
o-xylene	ug/kg	< 2	MCERTS	< 2	4	< 2	< 2	
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	



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Soil Analysis Certificate - Volatile Organic Compounds (VOC)						
DETS Report No: 21-14033	Date Sampled	15/11/21	15/11/21	15/11/21	17/11/21	
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP102	TP104	TP105	WS101	
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: GJ224	Depth (m)	0.20 - 0.30	0.50	0.70 - 0.80	0.80 - 0.90	
Reporting Date: 30/11/2021	DETS Sample No	576474	576475	576476	576477	

Determinand	Unit	RL	Accreditation				
Dichlorodifluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Vinyl Chloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Chloromethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10
Chloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Bromomethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10
Trichlorofluoromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,1-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
trans-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,1-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
cis-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
2,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Chloroform	ug/kg	< 5	MCERTS	70	14	< 5	< 5
Bromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,1,1-Trichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,1-Dichloropropene	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10
Carbon Tetrachloride	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,2-Dichloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
1,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Trichloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Bromodichloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Dibromomethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
TAME	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
cis-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
trans-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10
1,3-Dichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Tetrachloroethene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Dibromochloromethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,2-Dibromoethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Chlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	33
1,1,1,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Ethyl Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
m,p-Xylene	ug/kg	< 2	MCERTS	< 2	7	6	< 2
o-Xylene	ug/kg	< 2	MCERTS	< 2	4	< 2	< 2
Styrene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Bromoform	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10
Isopropylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,2,3-Trichloropropane	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
n-Propylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Bromobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
2-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,3,5-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
4-Chlorotoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
tert-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,2,4-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
sec-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
p-Isopropyltoluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,3-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,4-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
n-Butylbenzene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
1,2-Dichlorobenzene	ug/kg	< 5	MCERTS	35	119	775	75
1,2-Dibromo-3-chloropropane	ug/kg	< 10	MCERTS	< 10	< 10	< 10	< 10
Hexachlorobutadiene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)		
DETS Report No: 21-14033	Date Sampled	15/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP102
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: GJ224	Depth (m)	0.20 - 0.30
Reporting Date: 30/11/2021	DETS Sample No	576474

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/kg	< 10	< 10
2	N/a	N/a	µg/kg	< 10	< 10
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)		
DETS Report No: 21-14033	Date Sampled	15/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP104
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: GJ224	Depth (m)	0.50
Reporting Date: 30/11/2021	DETS Sample No	576475

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	1-Bromo-2,4-dichlorobenzene	97	µg/kg	< 10	55
2	N/a	N/a	µg/kg	< 10	< 10
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)		
DETS Report No: 21-14033	Date Sampled	15/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP105
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: GJ224	Depth (m)	0.70 - 0.80
Reporting Date: 30/11/2021	DETS Sample No	576476

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/kg	< 10	< 10
2	N/a	N/a	µg/kg	< 10	< 10
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC)		
DETS Report No: 21-14033	Date Sampled	17/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS101
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: GJ224	Depth (m)	0.80 - 0.90
Reporting Date: 30/11/2021	DETS Sample No	576477

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/kg	< 10	< 10
2	N/a	N/a	µg/kg	< 10	< 10
3	N/a	N/a	µg/kg	< 10	< 10
4	N/a	N/a	µg/kg	< 10	< 10
5	N/a	N/a	µg/kg	< 10	< 10

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds (SVOC)					
DETS Report No: 21-14033	Date Sampled	15/11/21	15/11/21	15/11/21	17/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP102	TP104	TP105	WS101
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied
Order No: GJ224	Depth (m)	0.20 - 0.30	0.50	0.70 - 0.80	0.80 - 0.90
Reporting Date: 30/11/2021	DETS Sample No	576474	576475	576476	576477

Determinand	Unit	RL	Accreditation					
Phenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	
1,2,4-Trichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	
2-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	
Nitrobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
0-Cresol	mg/kg	< 0.1	NONE	< 0.1	0.1	< 0.1	< 0.1	
bis(2-chloroethoxy)methane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
bis(2-chloroethyl)ether	mg/kg	< 0.1	MCERTS	< 0.1	0.2	< 0.1	< 0.1	
2,4-Dichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
2-Chlorophenol	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	
1,3-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	
1,4-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	
1,2-Dichlorobenzene	mg/kg	< 0.1	ISO17025	0.3	0.4	1.5	0.3	
2,4-Dimethylphenol	mg/kg	< 0.15	ISO17025	< 0.15	< 0.15	< 0.15	< 0.15	
Isophorone	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	
Hexachloroethane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
p-Cresol	mg/kg	< 0.15	MCERTS	< 0.15	0.29	< 0.15	< 0.15	
2,4,6-Trichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
2,4,5-Trichlorophenol	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15	< 0.15	< 0.15	
2-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	
4-Chloro-3-methylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	
2-Methylnaphthalene	mg/kg	< 0.1	MCERTS	0.4	0.3	0.3	< 0.1	
Hexachlorocyclopentadiene	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	
Hexachlorobutadiene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	
2,6-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Dimethyl phthalate	mg/kg	< 0.1	NONE	< 0.1	0.2	< 0.1	< 0.1	
2-Chloronaphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
4-Chloroaniline	mg/kg	< 0.15	NONE	< 0.15	< 0.15	< 0.15	< 0.15	
4-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	
4-Chlorophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
3-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	0.2	< 0.1	< 0.1	
4-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	
4-Bromophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Hexachlorobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
2,4-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Diethyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Dibenzofuran	mg/kg	< 0.1	MCERTS	< 0.1	0.4	< 0.1	< 0.1	
Azobenzene	mg/kg	< 0.1	NONE	< 0.1	0.5	< 0.1	< 0.1	
Dibutyl phthalate	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	
Carbazole	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1	< 0.1	
bis(2-ethylhexyl)phthalate	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15	< 0.15	< 0.15	
Benzyl butyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Di-n-octyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)		
DETS Report No: 21-14033	Date Sampled	15/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP102
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: GJ224	Depth (m)	0.20 - 0.30
Reporting Date: 30/11/2021	DETS Sample No	576474

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	mg/kg	< 0.1	< 0.1
2	N/a	N/a	mg/kg	< 0.1	< 0.1
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)		
DETS Report No: 21-14033	Date Sampled	15/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP104
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: GJ224	Depth (m)	0.50
Reporting Date: 30/11/2021	DETS Sample No	576475

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	mg/kg	< 0.1	< 0.1
2	N/a	N/a	mg/kg	< 0.1	< 0.1
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)		
DETS Report No: 21-14033	Date Sampled	15/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	TP105
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: GJ224	Depth (m)	0.70 - 0.80
Reporting Date: 30/11/2021	DETS Sample No	576476

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	mg/kg	< 0.1	< 0.1
2	N/a	N/a	mg/kg	< 0.1	< 0.1
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)		
DETS Report No: 21-14033	Date Sampled	17/11/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS101
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: GJ224	Depth (m)	0.80 - 0.90
Reporting Date: 30/11/2021	DETS Sample No	576477

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	mg/kg	< 0.1	< 0.1
2	N/a	N/a	mg/kg	< 0.1	< 0.1
3	N/a	N/a	mg/kg	< 0.1	< 0.1
4	N/a	N/a	mg/kg	< 0.1	< 0.1
5	N/a	N/a	mg/kg	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Soil Analysis Certificate - Sample Descriptions

DETS Report No: 21-14033	
G & J Geoenvironmental Consultants Ltd	
Site Reference: Penrhyn Road, Knowsley	
Project / Job Ref: GJ224	
Order No: GJ224	
Reporting Date: 30/11/2021	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
576474	TP102	None Supplied	0.20 - 0.30	9.9	Brown sandy clay with stones
576475	TP104	None Supplied	0.50	10	Brown sandy clay with stones and concrete
576476	TP105	None Supplied	0.70 - 0.80	11.4	Brown sandy clay with stones
576477	WS101	None Supplied	0.80 - 0.90	12.3	Light brown sandy clay

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample ^{I/S}

Unsuitable Sample ^{U/S}



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Soil Analysis Certificate - Methodology & Miscellaneous Information	
DETS Report No: 21-14033	
G & J Geoenvironmental Consultants Ltd	
Site Reference: Penrhyn Road, Knowsley	
Project / Job Ref: GJ224	
Order No: GJ224	
Reporting Date: 30/11/2021	

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received



Chris Hepworth
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Derwentside Environmental Testing Services Ltd
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t: 01622 850410

DETS Report No: 21-14871

Site Reference: Penrhyn Road, Knowsley

Project / Job Ref: GJ224

Order No: None Supplied

Sample Receipt Date: 20/12/2021

Sample Scheduled Date: 20/12/2021

Report Issue Number: 1

Reporting Date: 23/12/2021

Authorised by:

Dave Ashworth
Technical Manager

Dates of laboratory activities for each tested analyte are available upon request.

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Water Analysis Certificate						
DETS Report No: 21-14871	Date Sampled	16/12/21	16/12/21	16/12/21	16/12/21	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	GRM-BH4	BH103	BH104	BH105	WS101
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	1.30 - 1.40	0.20 - 0.30	0.50 - 0.60	0.50	0.70 - 0.80
Reporting Date: 23/12/2021	DETS Sample No	580066	580067	580068	580069	580070

Determinand	Unit	RL	Accreditation					
pH	pH Units	N/a	ISO17025	6.9	7.3	7.3	12.3	8.9
Total Cyanide	ug/l	< 5	NONE	< 5	< 5	169	215	< 5
Sulphate as SO ₄	mg/l	< 1	ISO17025	107	273	18	151	13
Sulphide	mg/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ammoniacal Nitrogen as NH ₄	ug/l	< 50	ISO17025	95	559	20000	18400	1350
Total Organic Carbon (TOC)	mg/l	< 0.1	NONE	15.2	21.2	370	141	147
Arsenic (dissolved)	ug/l	< 5	ISO17025	< 5	< 5	63	17	7
Boron (dissolved)	ug/l	< 5	ISO17025	96	387	62	56	96
Cadmium (dissolved)	ug/l	< 0.4	ISO17025	< 0.4	0.4	< 0.4	< 0.4	< 0.4
Chromium (dissolved)	ug/l	< 5	ISO17025	10	< 5	40	< 5	< 5
Copper (dissolved)	ug/l	< 5	ISO17025	5	10	70	< 5	< 5
Lead (dissolved)	ug/l	< 5	ISO17025	< 5	5	22	10	6
Mercury (dissolved)	ug/l	< 0.05	ISO17025	< 0.05	< 0.05	1.14	0.31	0.25
Nickel (dissolved)	ug/l	< 5	ISO17025	9	10	97	18	8
Selenium (dissolved)	ug/l	< 5	ISO17025	< 5	< 5	12	21	< 5
Zinc (dissolved)	ug/l	< 2	ISO17025	124	84	314	110	67
Total Phenols (monohydric)	ug/l	< 10	NONE	< 10	40	694	294	146
EPH (C10 - C40)	ug/l	< 10	NONE	11	1590	3428	2967	5277

Subcontracted analysis ^(S)

Insufficient sample ^{I/S}

Unsuitable Sample ^{U/S}

(hs) Please note deviating sample due to head space in container



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Water Analysis Certificate						
DETS Report No: 21-14871	Date Sampled	16/12/21	16/12/21	16/12/21	16/12/21	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS102	WS106	WS107	WS109	WS110
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.90 - 1.00	0.30 - 0.40	0.50 - 0.60	0.30 - 0.40	0.30 - 0.40
Reporting Date: 23/12/2021	DETS Sample No	580071	580072	580073	580075	580076

Determinand	Unit	RL	Accreditation	(hs)	(hs)	(hs)	(hs)	(hs)
pH	pH Units	N/a	ISO17025	7.3	7.6	6.9	7.3	7.9
Total Cyanide	ug/l	< 5	NONE	< 5	5	< 5	< 5	215
Sulphate as SO ₄	mg/l	< 1	ISO17025	82	114	20	164	68
Sulphide	mg/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ammoniacal Nitrogen as NH ₄	ug/l	< 50	ISO17025	183	186	9740	1060	100
Total Organic Carbon (TOC)	mg/l	< 0.1	NONE	12.9	44.3	43.9	22.2	13.6
Arsenic (dissolved)	ug/l	< 5	ISO17025	< 5	27	< 5	< 5	< 5
Boron (dissolved)	ug/l	< 5	ISO17025	125	100	98	72	82
Cadmium (dissolved)	ug/l	< 0.4	ISO17025	< 0.4	1.8	< 0.4	< 0.4	< 0.4
Chromium (dissolved)	ug/l	< 5	ISO17025	20	15	< 5	< 5	< 5
Copper (dissolved)	ug/l	< 5	ISO17025	5	160	8	7	16
Lead (dissolved)	ug/l	< 5	ISO17025	< 5	197	8	< 5	< 5
Mercury (dissolved)	ug/l	< 0.05	ISO17025	< 0.05	0.63	0.79	0.29	0.23
Nickel (dissolved)	ug/l	< 5	ISO17025	< 5	137	58	< 5	< 5
Selenium (dissolved)	ug/l	< 5	ISO17025	< 5	13	< 5	< 5	< 5
Zinc (dissolved)	ug/l	< 2	ISO17025	47	1500	26	12	16
Total Phenols (monohydric)	ug/l	< 10	NONE	19	10	< 10	< 10	265
EPH (C10 - C40)	ug/l	< 10	NONE	27	24	21	< 10	29

Subcontracted analysis ^(S)
Insufficient sample ^{I/S}
Unsuitable Sample ^{U/S}



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Water Analysis Certificate - Speciated PAH						
DETS Report No: 21-14871	Date Sampled	16/12/21	16/12/21	16/12/21	16/12/21	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	GRM-BH4	BH103	BH104	BH105	WS101
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	1.30 - 1.40	0.20 - 0.30	0.50 - 0.60	0.50	0.70 - 0.80
Reporting Date: 23/12/2021	DETS Sample No	580066	580067	580068	580069	580070

Determinand	Unit	RL	Accreditation					
Naphthalene	ug/l	< 0.01	NONE	0.04	0.04	1.80	0.15	0.14
Acenaphthylene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	ug/l	< 0.01	NONE	< 0.01	< 0.01	0.13	0.03	< 0.01
Fluorene	ug/l	< 0.01	NONE	< 0.01	< 0.01	0.15	0.02	< 0.01
Phenanthrene	ug/l	< 0.01	NONE	< 0.01	0.02	< 0.01	0.05	< 0.01
Anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	ug/l	< 0.01	NONE	< 0.01	0.01	0.03	0.02	< 0.01
Pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	0.01	< 0.01
Benzo(a)anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	ug/l	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
Total EPA-16 PAHs	ug/l	< 0.16	NONE	< 0.16	< 0.16	2.11	0.28	< 0.16



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Water Analysis Certificate - Speciated PAH						
DETS Report No: 21-14871	Date Sampled	16/12/21	16/12/21	16/12/21	16/12/21	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS102	WS106	WS107	WS109	WS110
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.90 - 1.00	0.30 - 0.40	0.50 - 0.60	0.30 - 0.40	0.30 - 0.40
Reporting Date: 23/12/2021	DETS Sample No	580071	580072	580073	580075	580076

Determinand	Unit	RL	Accreditation	(hs)	(hs)	(hs)	(hs)	(hs)
Naphthalene	ug/l	< 0.01	NONE	0.03	0.02	0.06	0.01	0.01
Acenaphthylene	ug/l	< 0.01	NONE	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	ug/l	< 0.01	NONE	0.01	< 0.01	0.05	< 0.01	< 0.01
Fluorene	ug/l	< 0.01	NONE	0.04	< 0.01	0.02	< 0.01	< 0.01
Phenanthrene	ug/l	< 0.01	NONE	0.04	0.03	0.03	< 0.01	< 0.01
Anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	ug/l	< 0.01	NONE	0.21	0.13	0.03	< 0.01	< 0.01
Pyrene	ug/l	< 0.01	NONE	0.14	0.14	0.02	< 0.01	< 0.01
Benzo(a)anthracene	ug/l	< 0.01	NONE	< 0.01	0.07	< 0.01	< 0.01	< 0.01
Chrysene	ug/l	< 0.01	NONE	< 0.01	0.07	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	ug/l	< 0.01	NONE	< 0.01	0.14	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	ug/l	< 0.01	NONE	< 0.01	0.06	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	ug/l	< 0.01	NONE	< 0.01	0.09	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	ug/l	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
Total EPA-16 PAHs	ug/l	< 0.16	NONE	0.48	0.75	0.21	< 0.16	< 0.16



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Water Analysis Certificate - TPH CWG Banded

DETS Report No: 21-14871	Date Sampled	16/12/21	16/12/21	16/12/21	16/12/21	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	GRM-BH4	BH103	BH104	BH105	WS101
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	1.30 - 1.40	0.20 - 0.30	0.50 - 0.60	0.50	0.70 - 0.80
Reporting Date: 23/12/2021	DETS Sample No	580066	580067	580068	580069	580070

Determinand	Unit	RL	Accreditation						
Aliphatic >C5 - C6	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic >C6 - C8	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	161	< 10
Aliphatic >C8 - C10	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	12	37
Aliphatic >C10 - C12	ug/l	< 10	NONE	< 10	515	389	701	1183	
Aliphatic >C12 - C16	ug/l	< 10	NONE	< 10	< 10	< 10	58	20	< 10
Aliphatic >C16 - C21	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic >C21 - C34	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	ug/l	< 70	NONE	< 70	515	446	895	1219	
Aromatic >C5 - C7	ug/l	< 10	NONE	< 10	< 10	< 10	33	< 10	< 10
Aromatic >C7 - C8	ug/l	< 10	NONE	< 10	< 10	< 10	582	31	61
Aromatic >C8 - C10	ug/l	< 10	NONE	< 10	< 10	< 10	1088	338	166
Aromatic >C10 - C12	ug/l	< 10	NONE	< 10	301	1315	166	1046	
Aromatic >C12 - C16	ug/l	< 10	NONE	< 10	< 10	< 10	306	15	18
Aromatic >C16 - C21	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic >C21 - C35	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C35)	ug/l	< 70	NONE	< 70	301	3324	549	1290	
Total >C5 - C35	ug/l	< 140	NONE	< 140	816	3770	1444	2510	

(hs) Please note deviating sample due to head space in container



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Water Analysis Certificate - TPH CWG Banded

DETS Report No: 21-14871	Date Sampled	16/12/21	16/12/21	16/12/21	16/12/21	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS102	WS106	WS107	WS109	WS110
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.90 - 1.00	0.30 - 0.40	0.50 - 0.60	0.30 - 0.40	0.30 - 0.40
Reporting Date: 23/12/2021	DETS Sample No	580071	580072	580073	580075	580076

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



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Water Analysis Certificate - BTEX / MTBE						
DETS Report No: 21-14871	Date Sampled	16/12/21	16/12/21	16/12/21	16/12/21	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	GRM-BH4	BH103	BH104	BH105	WS101
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	1.30 - 1.40	0.20 - 0.30	0.50 - 0.60	0.50	0.70 - 0.80
Reporting Date: 23/12/2021	DETS Sample No	580066	580067	580068	580069	580070

Determinand	Unit	RL	Accreditation					
Benzene	ug/l	< 1	ISO17025	< 1	< 1	33	< 1	< 1
Toluene	ug/l	< 5	ISO17025	< 5	< 5	582	31	61
Ethylbenzene	ug/l	< 5	ISO17025	< 5	< 5	38	7	15
p & m-xylene	ug/l	< 10	ISO17025	< 10	< 10	127	16	86
o-xylene	ug/l	< 5	ISO17025	< 5	< 5	70	6	53
MTBE	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10

(hs) Please note deviating sample due to head space in container



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Water Analysis Certificate - BTEX / MTBE						
DETS Report No: 21-14871	Date Sampled	16/12/21	16/12/21	16/12/21	16/12/21	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS102	WS106	WS107	WS109	WS110
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.90 - 1.00	0.30 - 0.40	0.50 - 0.60	0.30 - 0.40	0.30 - 0.40
Reporting Date: 23/12/2021	DETS Sample No	580071	580072	580073	580075	580076

Determinand	Unit	RL	Accreditation	(hs)	(hs)	(hs)	(hs)	(hs)
Benzene	ug/l	< 1	ISO17025	< 1	< 1	< 1	< 1	< 1
Toluene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
p & m-xylene	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
o-xylene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
MTBE	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10



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Water Analysis Certificate - Volatile Organic Compounds (VOC)						
DETS Report No: 21-14871	Date Sampled	16/12/21	16/12/21	16/12/21	16/12/21	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	GRM-BH4	BH103	BH104	BH105	WS101
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	1.30 - 1.40	0.20 - 0.30	0.50 - 0.60	0.50	0.70 - 0.80
Reporting Date: 23/12/2021	DETS Sample No	580066	580067	580068	580069	580070

Determinand	Unit	RL	Accreditation					
Dichlorodifluoromethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Vinyl Chloride	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Chloromethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Chloroethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Bromomethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Trichlorofluoromethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
MTBE	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
trans-1,2-Dichloroethene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
cis-1,2-Dichloroethene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
2,2-Dichloropropane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Chloroform	ug/l	< 5	ISO17025	< 5	< 5	< 5	161	< 5
Bromochloromethane	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
1,1,1-Trichloroethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,1-Dichloropropene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Carbon Tetrachloride	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,2-Dichloroethane	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
Benzene	ug/l	< 1	ISO17025	< 1	< 1	33	< 1	< 1
1,2-Dichloropropane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Trichloroethene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Bromodichloromethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Dibromomethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
TAME	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
cis-1,3-Dichloropropene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Toluene	ug/l	< 5	ISO17025	< 5	< 5	582	31	61
trans-1,3-Dichloropropene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
1,3-Dichloropropane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Tetrachloroethene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Dibromochloromethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,2-Dibromoethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Chlorobenzene	ug/l	< 5	ISO17025	< 5	< 5	229	60	493
1,1,1,2-Tetrachloroethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Ethyl Benzene	ug/l	< 5	ISO17025	< 5	< 5	38	7	15
m,p-Xylene	ug/l	< 10	ISO17025	< 10	< 10	127	16	86
o-Xylene	ug/l	< 5	ISO17025	< 5	< 5	70	6	53
Styrene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Bromoform	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
Isopropylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
1,2,3-Trichloropropane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
n-Propylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Bromobenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
2-Chlorotoluene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,3,5-Trimethylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	167
4-Chlorotoluene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
tert-Butylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,2,4-Trimethylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
sec-Butylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
p-Isopropyltoluene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,3-Dichlorobenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,4-Dichlorobenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
n-Butylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,2-Dichlorobenzene	ug/l	< 5	ISO17025	< 5	2380	8151	3619	8357
1,2-Dibromo-3-chloropropane	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
Hexachlorobutadiene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5

(hs) Please note deviating sample due to head space in container



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Water Analysis Certificate - Volatile Organic Compounds (VOC)						
DETS Report No: 21-14871	Date Sampled	16/12/21	16/12/21	16/12/21	16/12/21	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS102	WS106	WS107	WS109	WS110
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.90 - 1.00	0.30 - 0.40	0.50 - 0.60	0.30 - 0.40	0.30 - 0.40
Reporting Date: 23/12/2021	DETS Sample No	580071	580072	580073	580075	580076

Determinand	Unit	RL	Accreditation	(hs)	(hs)	(hs)	(hs)	(hs)
Dichlorodifluoromethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Vinyl Chloride	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Chloromethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Chloroethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Bromomethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Trichlorofluoromethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
MTBE	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
trans-1,2-Dichloroethene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
cis-1,2-Dichloroethene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
2,2-Dichloropropane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Chloroform	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Bromochloromethane	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
1,1,1-Trichloroethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,1-Dichloropropene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Carbon Tetrachloride	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,2-Dichloroethane	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
Benzene	ug/l	< 1	ISO17025	< 1	< 1	< 1	< 1	< 1
1,2-Dichloropropane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Trichloroethene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Bromodichloromethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Dibromomethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
TAME	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
cis-1,3-Dichloropropene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Toluene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
trans-1,3-Dichloropropene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
1,3-Dichloropropane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Tetrachloroethene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Dibromochloromethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,2-Dibromoethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Chlorobenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,1,1,2-Tetrachloroethane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Ethyl Benzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
m,p-Xylene	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
o-Xylene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Styrene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Bromoform	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
Isopropylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
1,2,3-Trichloropropane	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
n-Propylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Bromobenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
2-Chlorotoluene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,3,5-Trimethylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
4-Chlorotoluene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
tert-Butylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,2,4-Trimethylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
sec-Butylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
p-Isopropyltoluene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,3-Dichlorobenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,4-Dichlorobenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
n-Butylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
1,2-Dichlorobenzene	ug/l	< 5	ISO17025	25	11	6	< 5	< 5
1,2-Dibromo-3-chloropropane	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
Hexachlorobutadiene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5



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Water Analysis Certificate - Volatile Organic Compounds TIC (VOC)		
DETS Report No: 21-14871	Date Sampled	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	GRM-BH4
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: None Supplied	Depth (m)	1.30 - 1.40
Reporting Date: 23/12/2021	DETS Sample No	580066

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/l	< 5	< 5
2	N/a	N/a	µg/l	< 5	< 5
3	N/a	N/a	µg/l	< 5	< 5
4	N/a	N/a	µg/l	< 5	< 5
5	N/a	N/a	µg/l	< 5	< 5

There were no / other compounds identified with a match of >90%



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Water Analysis Certificate - Volatile Organic Compounds TIC (VOC)		
DETS Report No: 21-14871	Date Sampled	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	BH103
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: None Supplied	Depth (m)	0.20 - 0.30
Reporting Date: 23/12/2021	DETS Sample No	580067

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/l	< 5	< 5
2	N/a	N/a	µg/l	< 5	< 5
3	N/a	N/a	µg/l	< 5	< 5
4	N/a	N/a	µg/l	< 5	< 5
5	N/a	N/a	µg/l	< 5	< 5

There were no / other compounds identified with a match of >90%



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Water Analysis Certificate - Volatile Organic Compounds TIC (VOC)		
DETS Report No: 21-14871	Date Sampled	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	BH104
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: None Supplied	Depth (m)	0.50 - 0.60
Reporting Date: 23/12/2021	DETS Sample No	580068

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	Propyl sulfide	94	µg/l	< 5	787
2	N/a	N/a	µg/l	< 5	< 5
3	N/a	N/a	µg/l	< 5	< 5
4	N/a	N/a	µg/l	< 5	< 5
5	N/a	N/a	µg/l	< 5	< 5

There were no / other compounds identified with a match of >90%



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Water Analysis Certificate - Volatile Organic Compounds TIC (VOC)		
DETS Report No: 21-14871	Date Sampled	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	BH105
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: None Supplied	Depth (m)	0.50
Reporting Date: 23/12/2021	DETS Sample No	580069

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	Propyl Sulfide	94	µg/l	< 5	184
2	N/a	N/a	µg/l	< 5	< 5
3	N/a	N/a	µg/l	< 5	< 5
4	N/a	N/a	µg/l	< 5	< 5
5	N/a	N/a	µg/l	< 5	< 5

There were no / other compounds identified with a match of >90%



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Water Analysis Certificate - Volatile Organic Compounds TIC (VOC)		
DETS Report No: 21-14871	Date Sampled	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS101
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: None Supplied	Depth (m)	0.70 - 0.80
Reporting Date: 23/12/2021	DETS Sample No	580070

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/l	< 5	< 5
2	N/a	N/a	µg/l	< 5	< 5
3	N/a	N/a	µg/l	< 5	< 5
4	N/a	N/a	µg/l	< 5	< 5
5	N/a	N/a	µg/l	< 5	< 5

There were no / other compounds identified with a match of >90%



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Water Analysis Certificate - Volatile Organic Compounds TIC (VOC)		
DETS Report No: 21-14871	Date Sampled	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS102
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: None Supplied	Depth (m)	0.90 - 1.00
Reporting Date: 23/12/2021	DETS Sample No	580071

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/l	< 5	< 5
2	N/a	N/a	µg/l	< 5	< 5
3	N/a	N/a	µg/l	< 5	< 5
4	N/a	N/a	µg/l	< 5	< 5
5	N/a	N/a	µg/l	< 5	< 5

There were no / other compounds identified with a match of >90%



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Water Analysis Certificate - Volatile Organic Compounds TIC (VOC)		
DETS Report No: 21-14871	Date Sampled	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS106
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: None Supplied	Depth (m)	0.30 - 0.40
Reporting Date: 23/12/2021	DETS Sample No	580072

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/l	< 5	< 5
2	N/a	N/a	µg/l	< 5	< 5
3	N/a	N/a	µg/l	< 5	< 5
4	N/a	N/a	µg/l	< 5	< 5
5	N/a	N/a	µg/l	< 5	< 5

There were no / other compounds identified with a match of >90%



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Water Analysis Certificate - Volatile Organic Compounds TIC (VOC)		
DETS Report No: 21-14871	Date Sampled	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS107
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: None Supplied	Depth (m)	0.50 - 0.60
Reporting Date: 23/12/2021	DETS Sample No	580073

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/l	< 5	< 5
2	N/a	N/a	µg/l	< 5	< 5
3	N/a	N/a	µg/l	< 5	< 5
4	N/a	N/a	µg/l	< 5	< 5
5	N/a	N/a	µg/l	< 5	< 5

There were no / other compounds identified with a match of >90%



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Water Analysis Certificate - Volatile Organic Compounds TIC (VOC)		
DETS Report No: 21-14871	Date Sampled	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS109
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: None Supplied	Depth (m)	0.30 - 0.40
Reporting Date: 23/12/2021	DETS Sample No	580075

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/l	< 5	< 5
2	N/a	N/a	µg/l	< 5	< 5
3	N/a	N/a	µg/l	< 5	< 5
4	N/a	N/a	µg/l	< 5	< 5
5	N/a	N/a	µg/l	< 5	< 5

There were no / other compounds identified with a match of >90%



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Water Analysis Certificate - Volatile Organic Compounds TIC (VOC)		
DETS Report No: 21-14871	Date Sampled	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS110
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: None Supplied	Depth (m)	0.30 - 0.40
Reporting Date: 23/12/2021	DETS Sample No	580076

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/l	< 5	< 5
2	N/a	N/a	µg/l	< 5	< 5
3	N/a	N/a	µg/l	< 5	< 5
4	N/a	N/a	µg/l	< 5	< 5
5	N/a	N/a	µg/l	< 5	< 5

There were no / other compounds identified with a match of >90%



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Water Analysis Certificate - Semi Volatile Organic Compounds (SVOC)						
DETS Report No: 21-14871	Date Sampled	16/12/21	16/12/21	16/12/21	16/12/21	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	GRM-BH4	BH103	BH104	BH105	WS101
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	1.30 - 1.40	0.20 - 0.30	0.50 - 0.60	0.50	0.70 - 0.80
Reporting Date: 23/12/2021	DETS Sample No	580066	580067	580068	580069	580070

Determinand	Unit	RL	Accreditation					
Phenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	0.5	0.6
2-Nitrophenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Nitrobenzene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
0-Cresol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-chloroethoxy)methane	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-chloroethyl)ether	ug/l	< 0.1	NONE	< 0.1	< 0.1	8.1	15.5	< 0.1
2,4-Dichlorophenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	0.5	< 0.1
2-Chlorophenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene	ug/l	< 0.1	NONE	< 0.1	< 0.1	0.3	< 0.1	0.2
1,4-Dichlorobenzene	ug/l	< 0.1	NONE	< 0.1	1.1	0.5	0.2	1
1,2-Dichlorobenzene	ug/l	< 0.1	NONE	0.8	950	1160	843	1050
2,4-Dimethylphenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Isophorone	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachloroethane	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
p-Cresol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	0.2	< 0.1
2,4,5-Trichlorophenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethyl phthalate	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloroaniline	ug/l	< 0.1	NONE	< 0.1	< 0.1	0.7	1.6	< 0.1
4-Nitrophenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenyl phenyl ether	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenyl phenyl ether	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethyl phthalate	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibutyl phthalate	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-ethylhexyl)phthalate	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl butyl phthalate	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octyl phthalate	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

(hs) Please note deviating sample due to head space in container



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Water Analysis Certificate - Semi Volatile Organic Compounds (SVOC)						
DETS Report No: 21-14871	Date Sampled	16/12/21	16/12/21	16/12/21	16/12/21	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS102	WS106	WS107	WS109	WS110
Project / Job Ref: GJ224	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.90 - 1.00	0.30 - 0.40	0.50 - 0.60	0.30 - 0.40	0.30 - 0.40
Reporting Date: 23/12/2021	DETS Sample No	580071	580072	580073	580075	580076

Determinand	Unit	RL	Accreditation	(hs)	(hs)	(hs)	(hs)	(hs)
Phenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitrophenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Nitrobenzene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
0-Cresol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-chloroethoxy)methane	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-chloroethyl)ether	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene	ug/l	< 0.1	NONE	2.8	1	1.2	1.1	0.6
2,4-Dimethylphenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Isophorone	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachloroethane	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
p-Cresol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethyl phthalate	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloroaniline	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenyl phenyl ether	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenyl phenyl ether	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethyl phthalate	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibutyl phthalate	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
bis(2-ethylhexyl)phthalate	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl butyl phthalate	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octyl phthalate	ug/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1



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Water Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)		
DETS Report No: 21-14871	Date Sampled	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	GRM-BH4
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: None Supplied	Depth (m)	1.30 - 1.40
Reporting Date: 23/12/2021	DETS Sample No	580066

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/l	< 0.1	< 0.1
2	N/a	N/a	µg/l	< 0.1	< 0.1
3	N/a	N/a	µg/l	< 0.1	< 0.1
4	N/a	N/a	µg/l	< 0.1	< 0.1
5	N/a	N/a	µg/l	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Water Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)		
DETS Report No: 21-14871	Date Sampled	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	BH103
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: None Supplied	Depth (m)	0.20 - 0.30
Reporting Date: 23/12/2021	DETS Sample No	580067

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/l	< 0.1	< 0.1
2	N/a	N/a	µg/l	< 0.1	< 0.1
3	N/a	N/a	µg/l	< 0.1	< 0.1
4	N/a	N/a	µg/l	< 0.1	< 0.1
5	N/a	N/a	µg/l	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Water Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)		
DETS Report No: 21-14871	Date Sampled	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	BH104
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: None Supplied	Depth (m)	0.50 - 0.60
Reporting Date: 23/12/2021	DETS Sample No	580068

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	Propyl sulfide	93	µg/l	< 0.1	476
2	Flutriafol	97	µg/l	< 0.1	104
3	N/a	N/a	µg/l	< 0.1	< 0.1
4	N/a	N/a	µg/l	< 0.1	< 0.1
5	N/a	N/a	µg/l	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Water Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)		
DETS Report No: 21-14871	Date Sampled	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	BH105
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: None Supplied	Depth (m)	0.50
Reporting Date: 23/12/2021	DETS Sample No	580069

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	Propyl sulfide	95	µg/l	< 0.1	222
2	1,4-Benzenediamine, N-(1-methylethyl)-N'-phenyl-	91	µg/l	< 0.1	777
3	1,4-Benzenediamine, N-(1,3-dimethylbutyl)-N'-phenyl-	98	µg/l	< 0.1	189
4	N/a	N/a	µg/l	< 0.1	< 0.1
5	N/a	N/a	µg/l	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Water Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)		
DETS Report No: 21-14871	Date Sampled	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS101
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: None Supplied	Depth (m)	0.70 - 0.80
Reporting Date: 23/12/2021	DETS Sample No	580070

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	Chlorobenzene	98	µg/l	< 0.1	223
2	N/a	N/a	µg/l	< 0.1	< 0.1
3	N/a	N/a	µg/l	< 0.1	< 0.1
4	N/a	N/a	µg/l	< 0.1	< 0.1
5	N/a	N/a	µg/l	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Water Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)		
DETS Report No: 21-14871	Date Sampled	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS102
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: None Supplied	Depth (m)	0.90 - 1.00
Reporting Date: 23/12/2021	DETS Sample No	580071

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/l	< 0.1	< 0.1
2	N/a	N/a	µg/l	< 0.1	< 0.1
3	N/a	N/a	µg/l	< 0.1	< 0.1
4	N/a	N/a	µg/l	< 0.1	< 0.1
5	N/a	N/a	µg/l	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Water Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)		
DETS Report No: 21-14871	Date Sampled	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS106
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: None Supplied	Depth (m)	0.30 - 0.40
Reporting Date: 23/12/2021	DETS Sample No	580072

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/l	< 0.1	< 0.1
2	N/a	N/a	µg/l	< 0.1	< 0.1
3	N/a	N/a	µg/l	< 0.1	< 0.1
4	N/a	N/a	µg/l	< 0.1	< 0.1
5	N/a	N/a	µg/l	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Water Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)		
DETS Report No: 21-14871	Date Sampled	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS107
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: None Supplied	Depth (m)	0.50 - 0.60
Reporting Date: 23/12/2021	DETS Sample No	580073

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/l	< 0.1	< 0.1
2	N/a	N/a	µg/l	< 0.1	< 0.1
3	N/a	N/a	µg/l	< 0.1	< 0.1
4	N/a	N/a	µg/l	< 0.1	< 0.1
5	N/a	N/a	µg/l	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Water Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)		
DETS Report No: 21-14871	Date Sampled	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS109
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: None Supplied	Depth (m)	0.30 - 0.40
Reporting Date: 23/12/2021	DETS Sample No	580075

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	Trietazine	91	µg/l	< 0.1	1.5
2	Flutriafol	93	µg/l	< 0.1	0.8
3	Tributyl acetylcitrate	93	µg/l	< 0.1	1.5
4	N/a	N/a	µg/l	< 0.1	< 0.1
5	N/a	N/a	µg/l	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Water Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)		
DETS Report No: 21-14871	Date Sampled	16/12/21
G & J Geoenvironmental Consultants Ltd	Time Sampled	None Supplied
Site Reference: Penrhyn Road, Knowsley	TP / BH No	WS110
Project / Job Ref: GJ224	Additional Refs	None Supplied
Order No: None Supplied	Depth (m)	0.30 - 0.40
Reporting Date: 23/12/2021	DETS Sample No	580076

Compound No	Compound Name	% Match	Units	RL	Estimated Concentration
1	N/a	N/a	µg/l	< 0.1	< 0.1
2	N/a	N/a	µg/l	< 0.1	< 0.1
3	N/a	N/a	µg/l	< 0.1	< 0.1
4	N/a	N/a	µg/l	< 0.1	< 0.1
5	N/a	N/a	µg/l	< 0.1	< 0.1

There were no / other compounds identified with a match of >90%



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Water Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 21-14871

G & J Geoenvironmental Consultants Ltd

Site Reference: Penrhyn Road, Knowsley

Project / Job Ref: GJ224

Order No: None Supplied

Reporting Date: 23/12/2021

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Water	UF	Alkalinity	Determination of alkalinity by titration against hydrochloric acid using bromocresol green as the end point	E103
Water	F	Ammoniacal Nitrogen	Determination of ammoniacal nitrogen by discrete analyser.	E126
Water	UF	BTEX	Determination of BTEX by headspace GC-MS	E101
Water	F	Cations	Determination of cations by filtration followed by ICP-MS	E102
Water	UF	Chemical Oxygen Demand (COD)	Determination using a COD reactor followed by colorimetry	E112
Water	F	Chloride	Determination of chloride by filtration & analysed by ion chromatography	E109
Water	F	Chromium - Hexavalent	Determination of hexavalent chromium by acidification, addition of 1,5 diphenylcarbazide followed by	E116
Water	UF	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E115
Water	UF	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through liquid:liquid extraction with cyclohexane	E111
Water	F	Diesel Range Organics (C10 - C24)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Dissolved Organic Content (DOC)	Determination of DOC by filtration followed by low heat with persulphate addition followed by IR detection	E110
Water	UF	Electrical Conductivity	Determination of electrical conductivity by electrometric measurement	E123
Water	F	EPH (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E104
Water	F	Fluoride	Determination of Fluoride by filtration & analysed by ion chromatography	E109
Water	F	Hardness	Determination of Ca and Mg by ICP-MS followed by calculation	E102
Leachate	F	Leachate Preparation - NRA	Based on National Rivers Authority leaching test 1994	E301
Leachate	F	Leachate Preparation - WAC	Based on BS EN 12457 Pt1, 2, 3	E302
Water	F	Metals	Determination of metals by filtration followed by ICP-MS	E102
Water	F	Mineral Oil (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Nitrate	Determination of nitrate by filtration & analysed by ion chromatography	E109
Water	UF	Monohydric Phenol	Determination of phenols by distillation followed by colorimetry	E121
Water	F	PAH - Speciated (EPA 16)	Determination of PAH compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E105
Water	F	PCB - 7 Congeners	Determination of PCB compounds by concentration through SPE cartridge, collection in dichloromethane	E108
Water	UF	Petroleum Ether Extract (PEE)	Gravimetrically determined through liquid:liquid extraction with petroleum ether	E111
Water	UF	pH	Determination of pH by electrometric measurement	E107
Water	F	Phosphate	Determination of phosphate by filtration & analysed by ion chromatography	E109
Water	UF	Redox Potential	Determination of redox potential by electrometric measurement	E113
Water	F	Sulphate (as SO4)	Determination of sulphate by filtration & analysed by ion chromatography	E109
Water	UF	Sulphide	Determination of sulphide by distillation followed by colorimetry	E118
Water	F	SVOC	Determination of semi-volatile organic compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E106
Water	UF	Toluene Extractable Matter (TEM)	Gravimetrically determined through liquid:liquid extraction with toluene	E111
Water	UF	Total Organic Carbon (TOC)	Low heat with persulphate addition followed by IR detection	E110
Water	F	TPH CWG (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C35. C5 to C8 by headspace GC-MS	E104
Water	F	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C44. C5 to C8 by headspace GC-MS	E104
Water	UF	VOCs	Determination of volatile organic compounds by headspace GC-MS	E101
Water	UF	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E101

Key

F Filtered
UF Unfiltered



Appendix F – Geotechnical Laboratory Test Results

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: G & J Geoenvironmental Consultants Ltd
Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers
Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224
Job Number: 21-26080
Date Sampled: 15/11/2021
Date Received: 24/11/2021
Date Tested: 09/12/2021
Sampled By: i2- AW

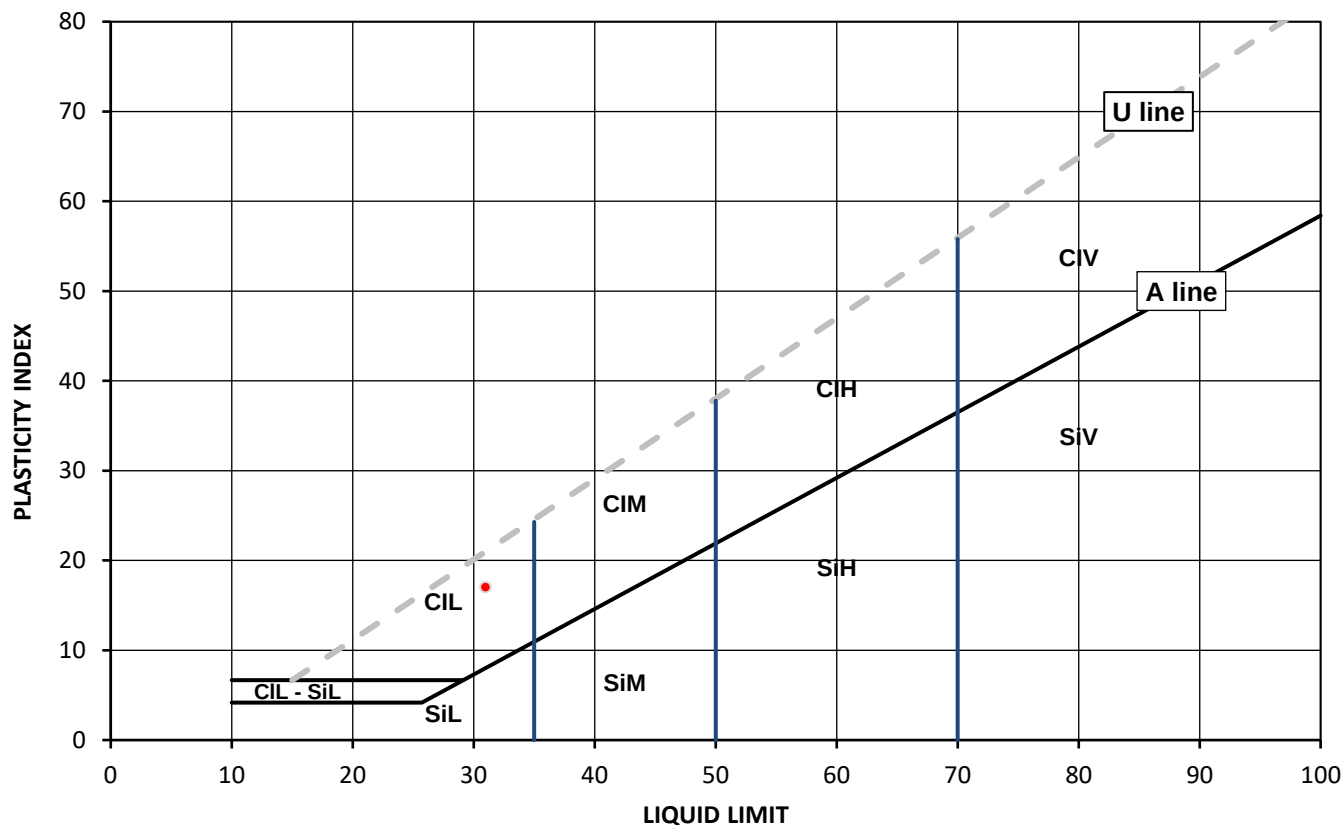
Test Results:

Laboratory Reference: 2100138
Hole No.: TP105
Sample Reference: Not Given
Sample Description: Brown slightly gravelly very sandy CLAY

Depth Top [m]: 1.50
Depth Base [m]: 1.60
Sample Type: B

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
16	31	14	17	84



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

Cl	Clay	Plasticity	L	Low	Liquid Limit	below 35
Si	Silt		M	Medium		35 to 50
			H	High		50 to 70
			V	Very high		exceeding 70
			O	Organic		append to classification for organic material (eg CIHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: G & J Geoenvironmental Consultants Ltd
Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers
Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224
Job Number: 21-26080
Date Sampled: 15/11/2021
Date Received: 24/11/2021
Date Tested: 09/12/2021
Sampled By: i2- AW

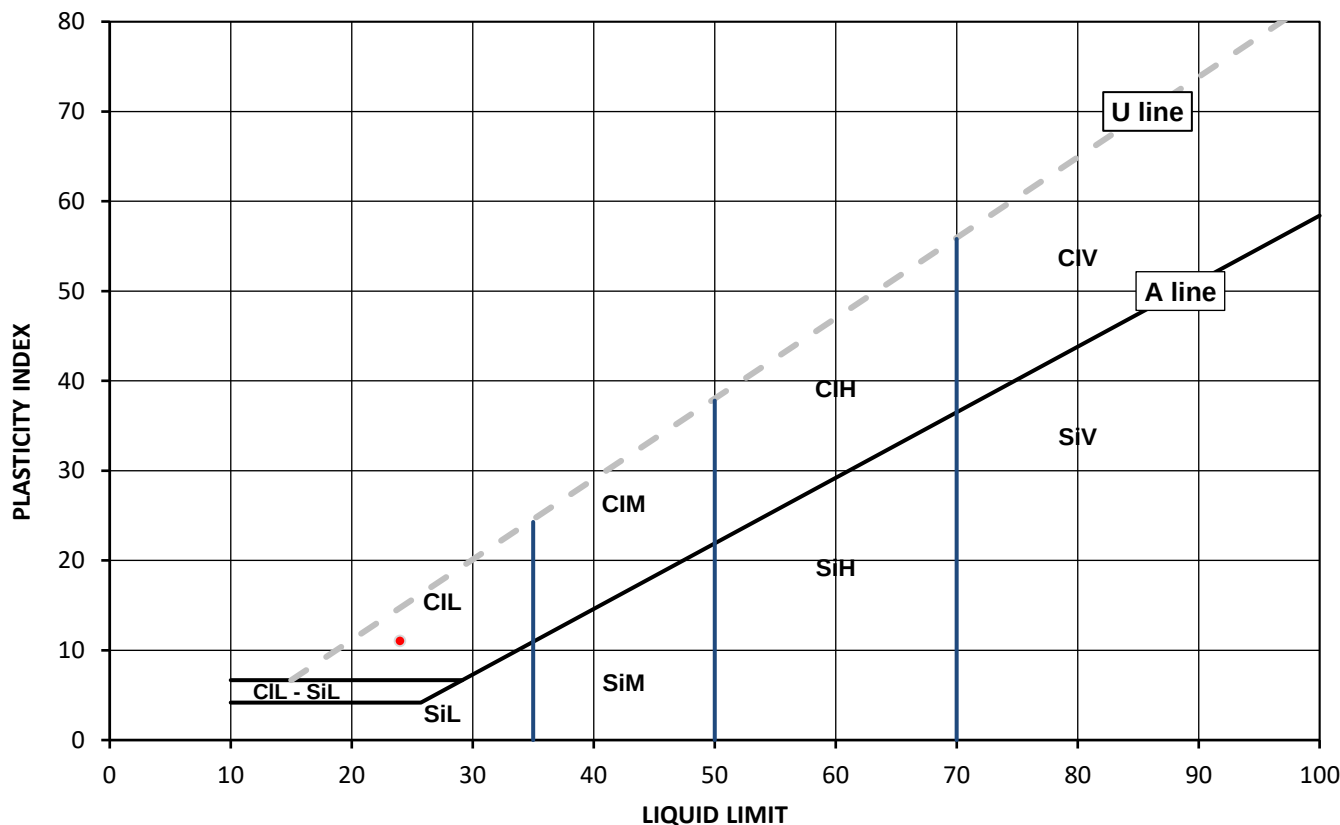
Test Results:

Laboratory Reference: 2100142
Hole No.: TP108
Sample Reference: Not Given
Sample Description: Brown gravelly CLAY and SAND

Depth Top [m]: 0.20
Depth Base [m]: 0.30
Sample Type: B

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
14	24	13	11	90



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

Cl	Clay	Plasticity	L	Low	Liquid Limit	below 35
Si	Silt		M	Medium		35 to 50
			H	High		50 to 70
			V	Very high		exceeding 70
			O	Organic		append to classification for organic material (eg CIHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
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Northampton NN4 7EB

Client: G & J Geoenvironmental Consultants Ltd
Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers
Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224
Job Number: 21-26080
Date Sampled: 18/11/2021
Date Received: 24/11/2021
Date Tested: 13/12/2021
Sampled By: i2- AW

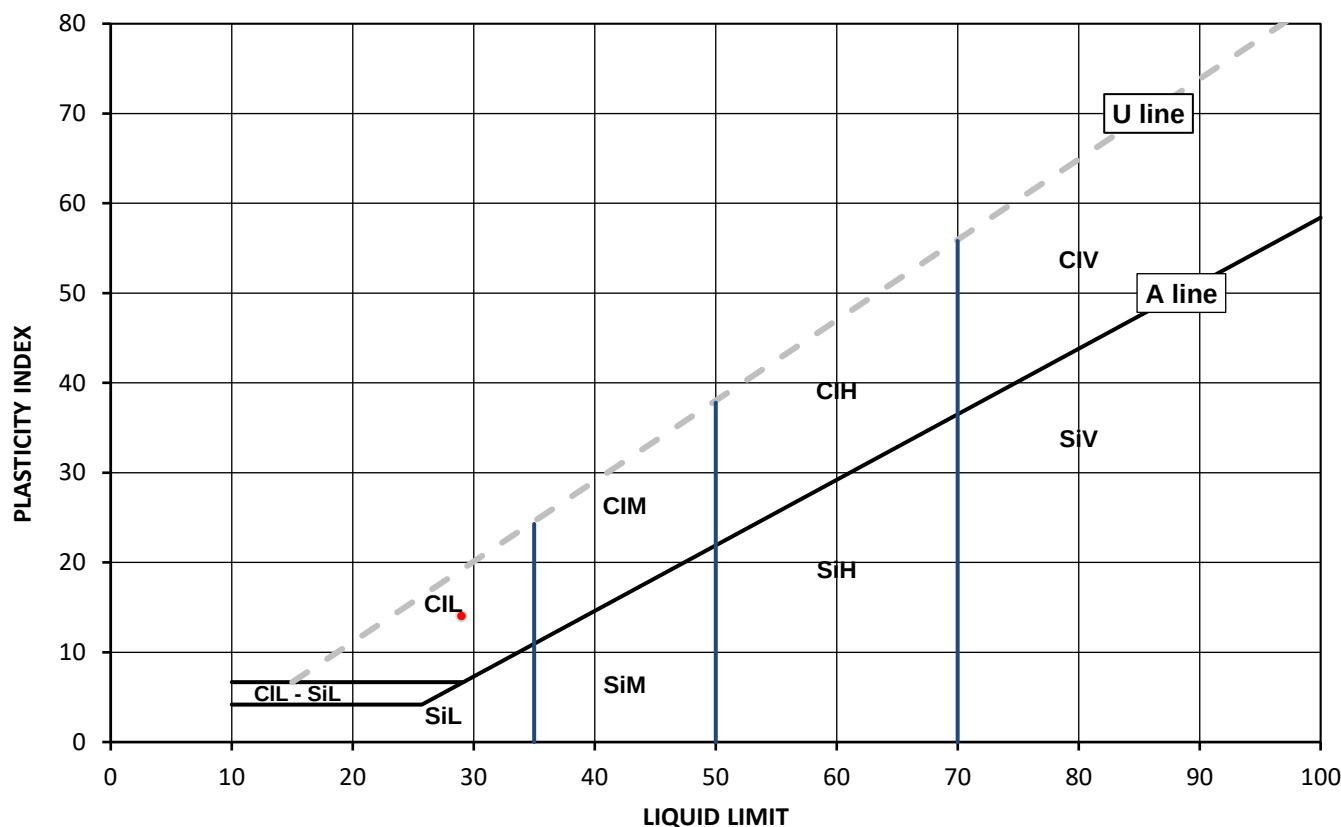
Test Results:

Laboratory Reference: 2100145
Hole No.: TP110
Sample Reference: Not Given
Sample Description: Brown slightly gravelly very sandy CLAY

Depth Top [m]: 0.50
Depth Base [m]: 0.60
Sample Type: B

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
14	29	15	14	88



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

Cl	Clay	Plasticity	L	Low	Liquid Limit	below 35
Si	Silt		M	Medium		35 to 50
			H	High		50 to 70
			V	Very high		exceeding 70
			O	Organic		append to classification for organic material (eg CIHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: Preliminary report

Signed:

Katarzyna Koziel
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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
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Client: G & J Geoenvironmental Consultants Ltd
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Client Reference: GJ224
Job Number: 21-26080
Date Sampled: 18/11/2021
Date Received: 24/11/2021
Date Tested: 13/12/2021
Sampled By: i2- AW

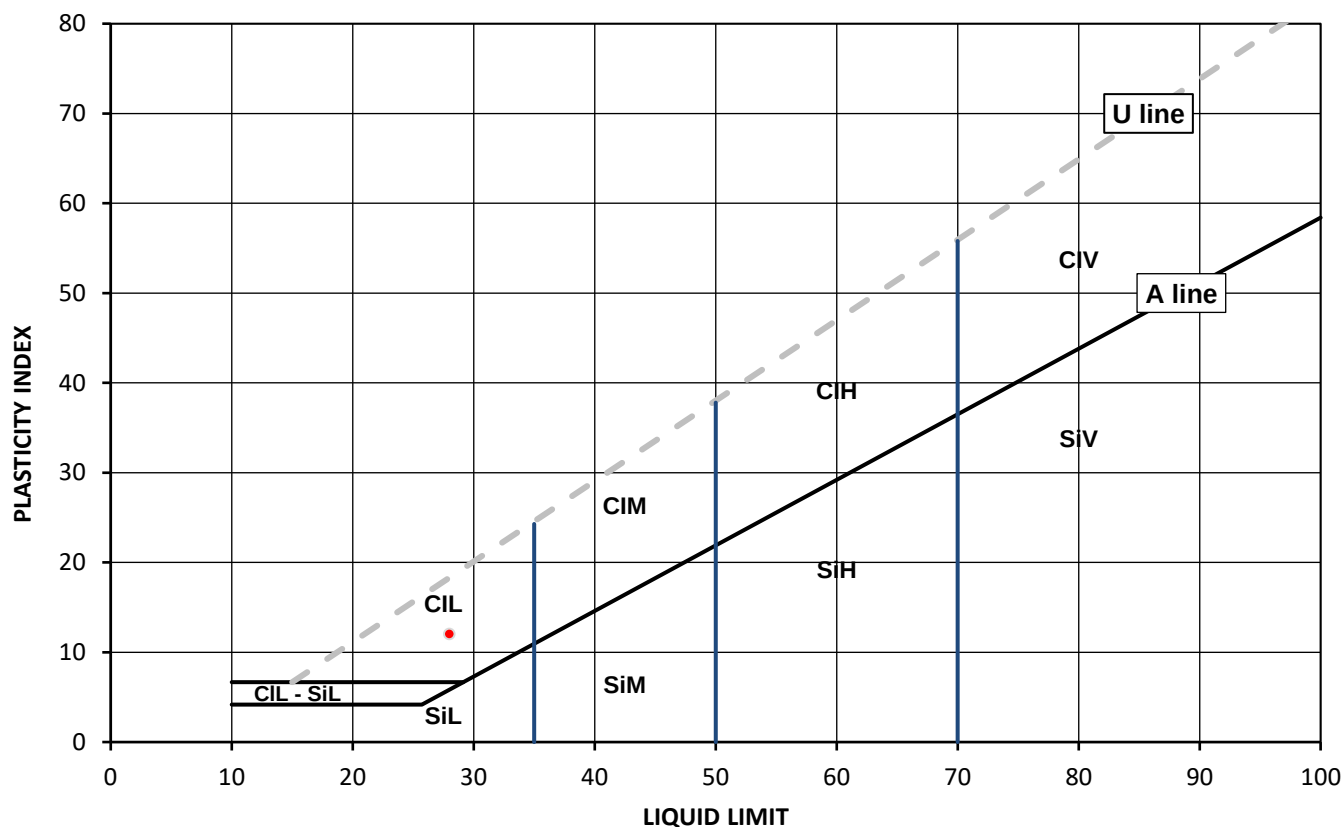
Test Results:

Laboratory Reference: 2100148
Hole No.: TP112
Sample Reference: Not Given
Sample Description: Brown slightly gravelly very sandy CLAY

Depth Top [m]: 0.50
Depth Base [m]: 0.60
Sample Type: B

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
13	28	16	12	94



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl Clay	L Low	below 35
Si Silt	M Medium	35 to 50
	H High	50 to 70
	V Very high	exceeding 70
	O Organic	append to classification for organic material (eg CIHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: G & J Geoenvironmental Consultants Ltd

Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers

Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224

Job Number: 21-26080

Date Sampled: 16/11/2021

Date Received: 24/11/2021

Date Tested: 08/12/2021

Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100149

Hole No.: WS101

Sample Reference: Not Given

Sample Description: Reddish brown slightly gravelly sandy CLAY

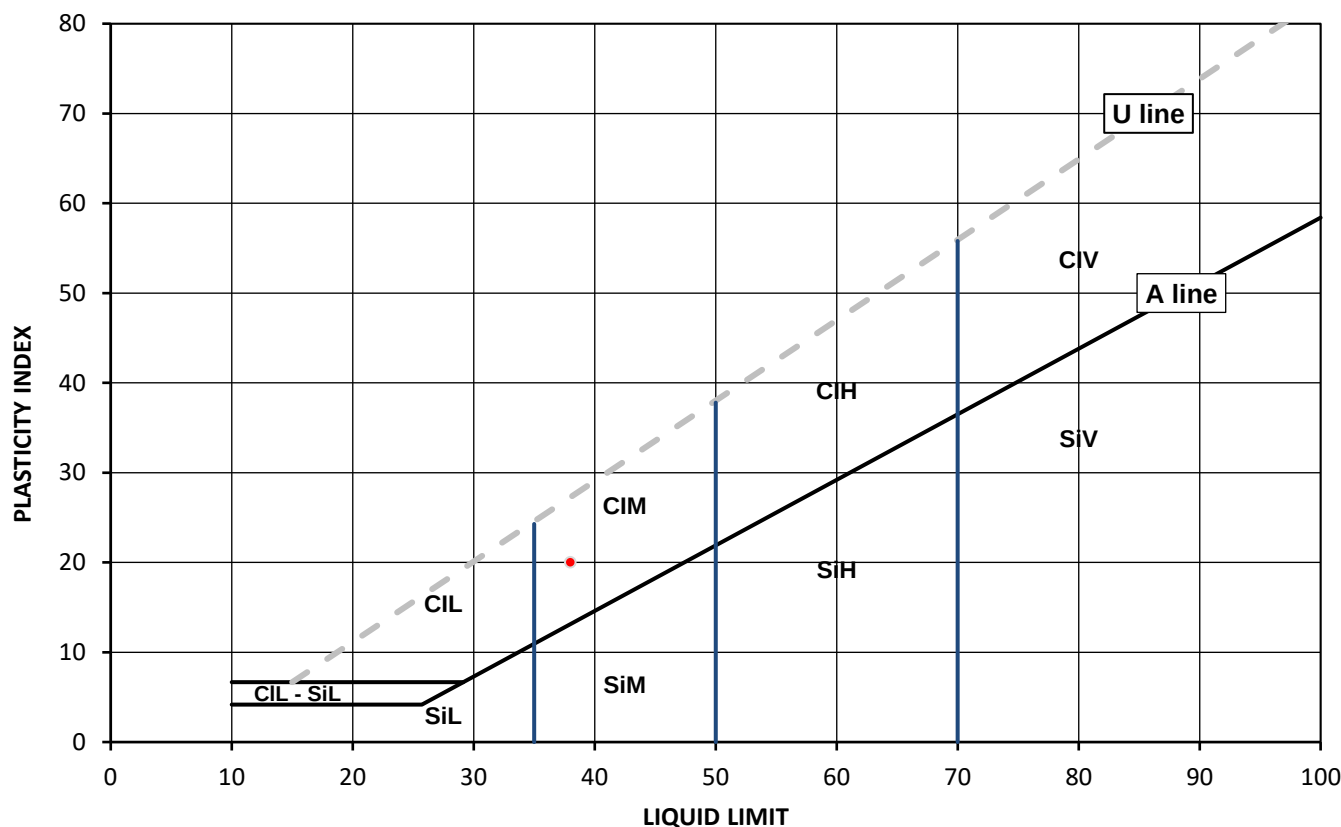
Depth Top [m]: 0.80

Depth Base [m]: 0.90

Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
17	38	18	20	88



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	L Low below 35
Si	Silt	M Medium 35 to 50
		H High 50 to 70
		V Very high exceeding 70
	O Organic	append to classification for organic material (eg CIHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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4041

Client: G & J Geoenvironmental Consultants Ltd

Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers

Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224

Job Number: 21-26080

Date Sampled: 16/11/2021

Date Received: 24/11/2021

Date Tested: 08/12/2021

Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100150

Hole No.: WS103

Sample Reference: Not Given

Sample Description: Reddish brown slightly gravelly clayey SAND

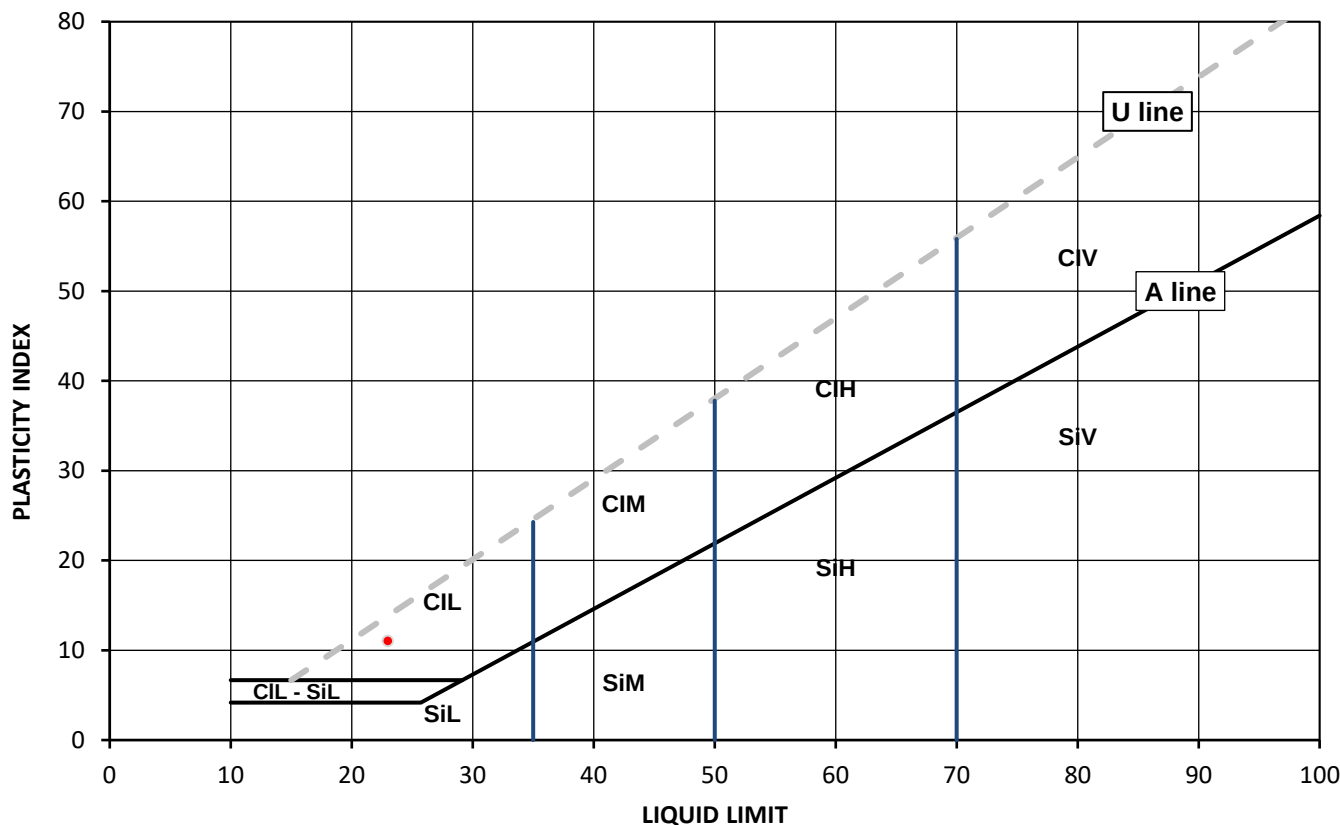
Depth Top [m]: 2.30

Depth Base [m]: 2.40

Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
7.9	23	12	11	83



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

Cl	Clay	Plasticity	L	Low	Liquid Limit	below 35
Si	Silt	M	Medium	35 to 50		
		H	High	50 to 70		
		V	Very high	exceeding 70		
		O	Organic	append to classification for organic material (eg CIHO)		

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: G & J Geoenvironmental Consultants Ltd

Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers

Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224

Job Number: 21-26080

Date Sampled: 16/11/2021

Date Received: 24/11/2021

Date Tested: 08/12/2021

Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100151

Hole No.: WS105

Sample Reference: Not Given

Sample Description: Dark brown slightly gravelly very sandy CLAY

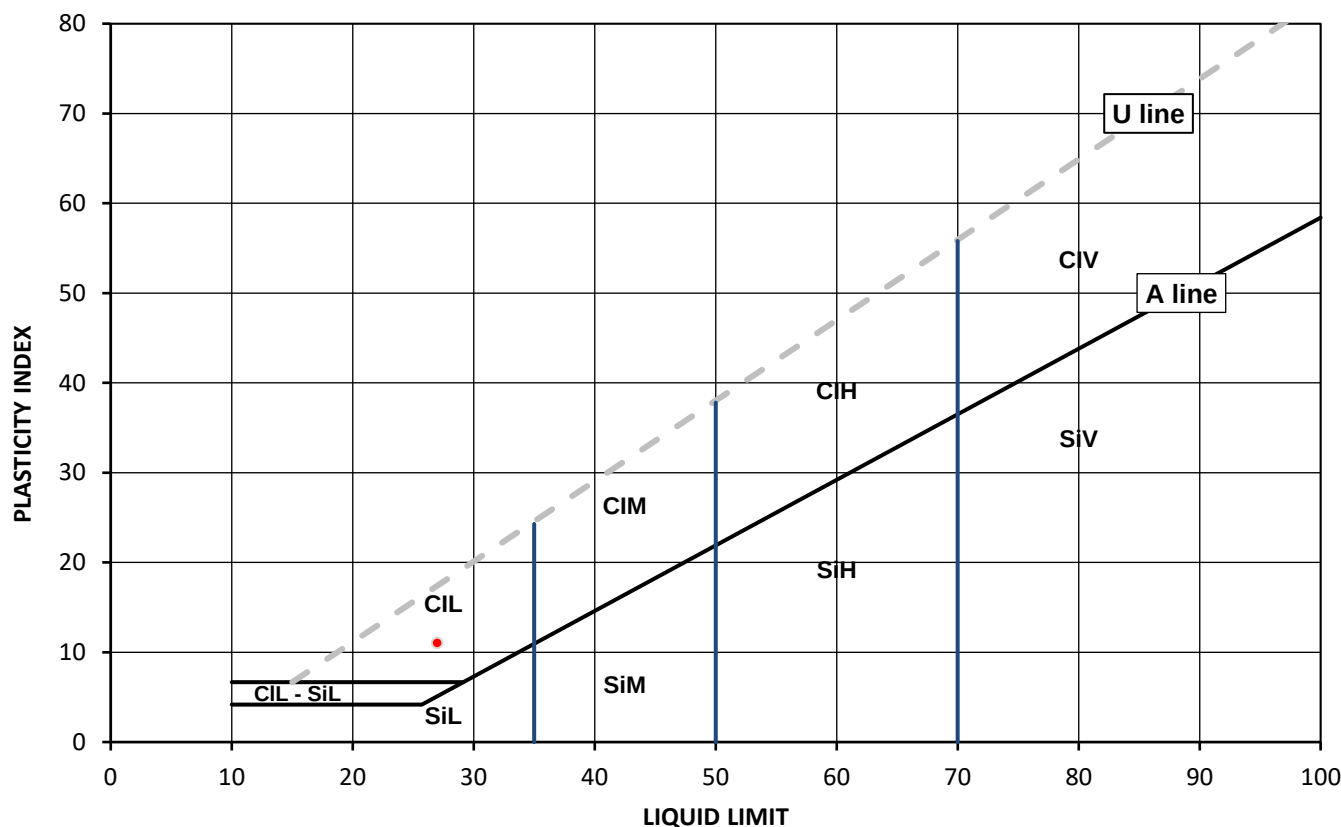
Depth Top [m]: 1.30

Depth Base [m]: 1.40

Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
18	27	16	11	88



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

Cl	Clay	Plasticity	L	Low	Liquid Limit	below 35
Si	Silt		M	Medium		35 to 50
			H	High		50 to 70
			V	Very high		exceeding 70
			O	Organic		append to classification for organic material (eg CIHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: G & J Geoenvironmental Consultants Ltd

Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers

Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224

Job Number: 21-26080

Date Sampled: 16/11/2021

Date Received: 24/11/2021

Date Tested: 08/12/2021

Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100152

Hole No.: WS106

Sample Reference: Not Given

Sample Description: Reddish brown slightly gravelly clayey SAND

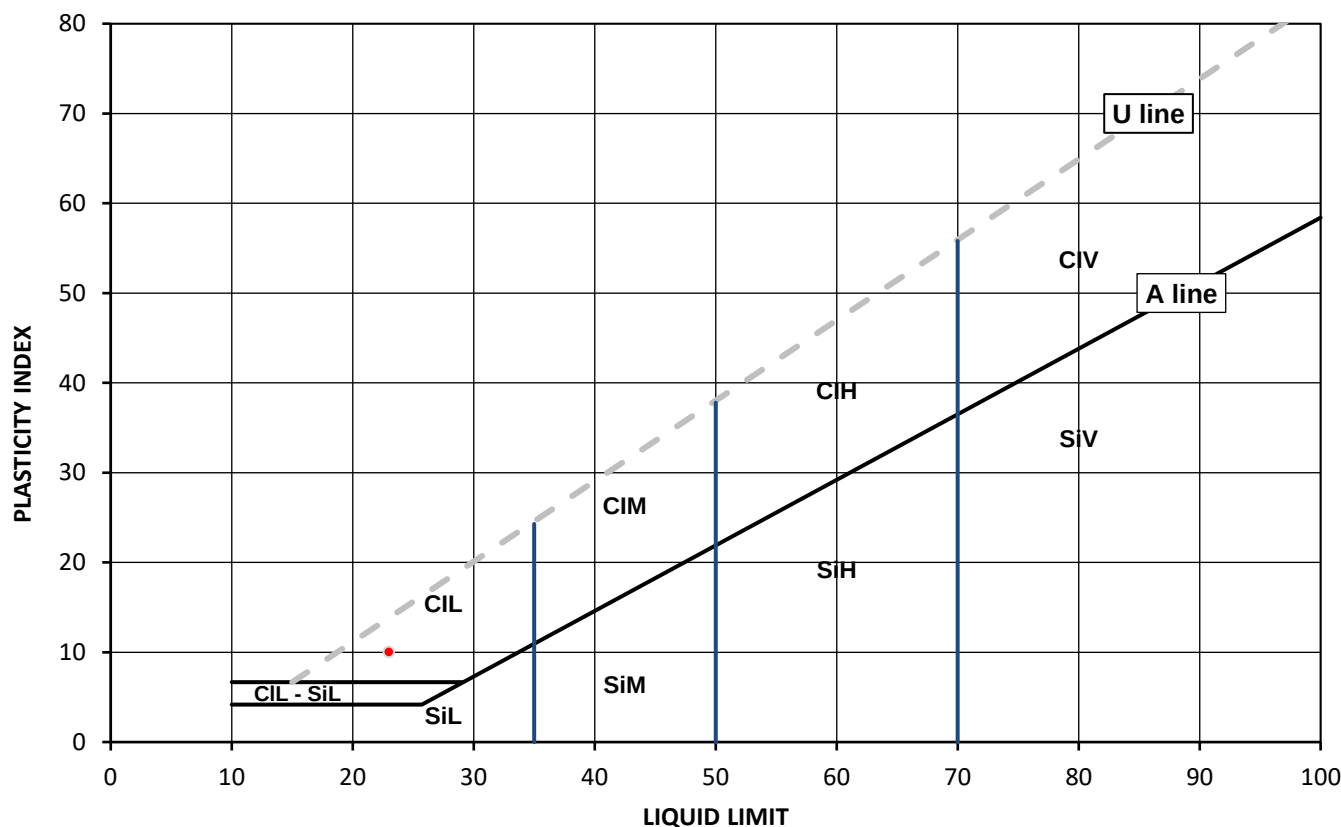
Depth Top [m]: 1.70

Depth Base [m]: 1.80

Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
15	23	13	10	86



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

Cl	Clay	Plasticity	L	Low	Liquid Limit	below 35
Si	Silt		M	Medium		35 to 50
			H	High		50 to 70
			V	Very high		exceeding 70
			O	Organic		append to classification for organic material (eg CIHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: G & J Geoenvironmental Consultants Ltd

Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers

Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224

Job Number: 21-26080

Date Sampled: 17/11/2021

Date Received: 24/11/2021

Date Tested: 08/12/2021

Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100153

Hole No.: WS107

Sample Reference: Not Given

Sample Description: Orangish brown sandy CLAY

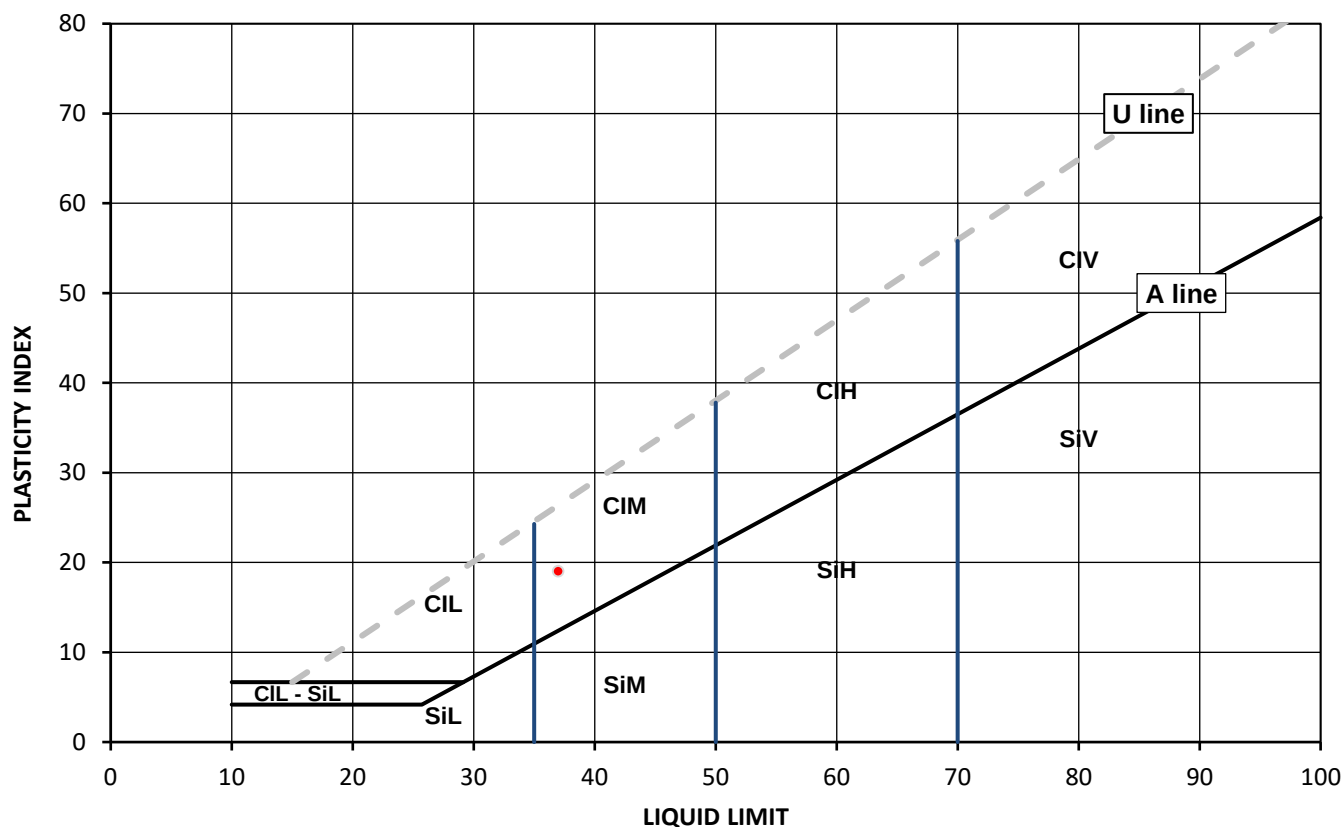
Depth Top [m]: 1.40

Depth Base [m]: 1.50

Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
18	37	18	19	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl Clay	L Low	below 35
Si Silt	M Medium	35 to 50
	H High	50 to 70
	V Very high	exceeding 70
	O Organic	append to classification for organic material (eg CIHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: Preliminary report

Signed:

Katarzyna Koziel
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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: G & J Geoenvironmental Consultants Ltd

Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers

Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224

Job Number: 21-26080

Date Sampled: 17/11/2021

Date Received: 24/11/2021

Date Tested: 08/12/2021

Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100154

Hole No.: WS108

Sample Reference: Not Given

Sample Description: Reddish brown slightly gravelly very sandy CLAY

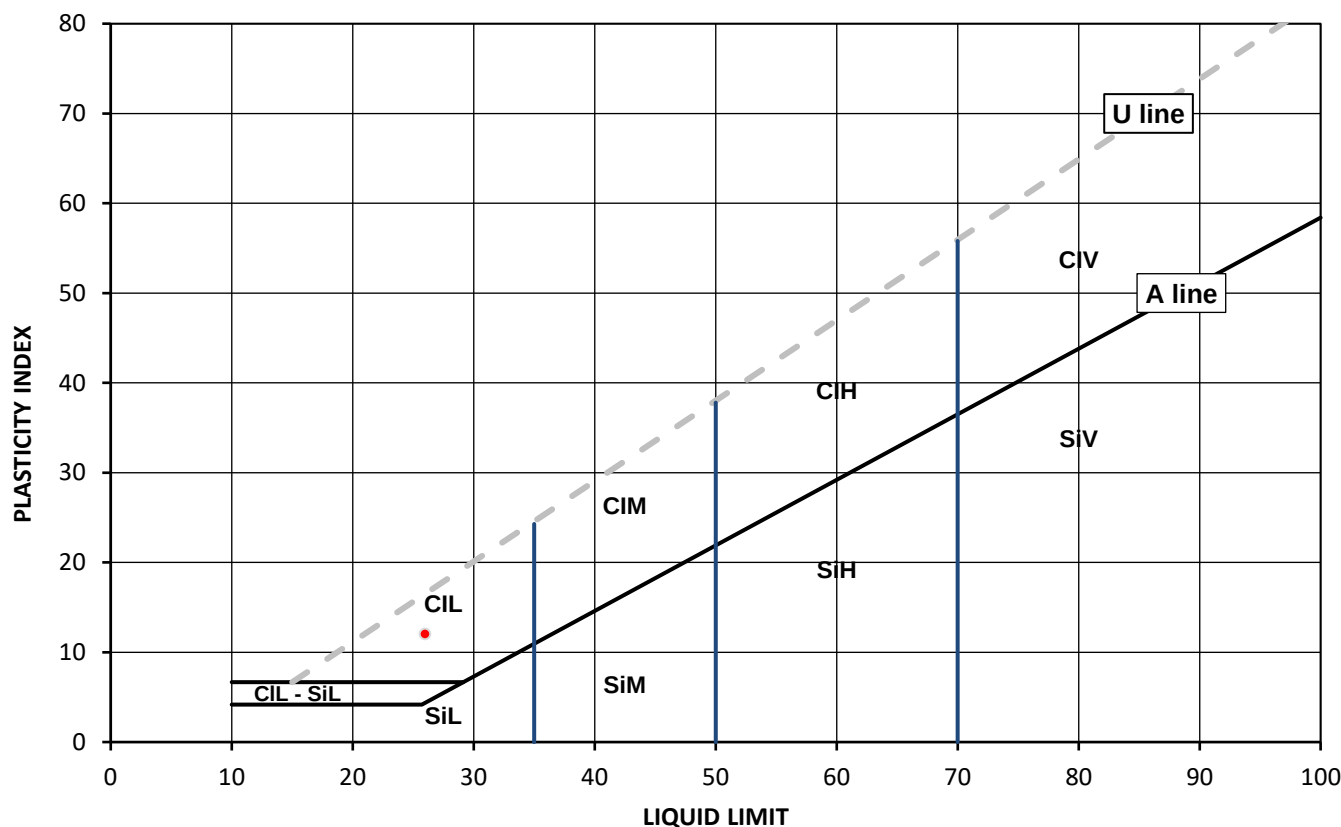
Depth Top [m]: 1.00

Depth Base [m]: 1.10

Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
13	26	14	12	80



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl Clay	L Low	below 35
Si Silt	M Medium	35 to 50
	H High	50 to 70
	V Very high	exceeding 70
	O Organic	append to classification for organic material (eg CIHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: Preliminary report

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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: G & J Geoenvironmental Consultants Ltd
Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers
Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224
Job Number: 21-26080
Date Sampled: 17/11/2021
Date Received: 24/11/2021
Date Tested: 08/12/2021
Sampled By: i2- AW

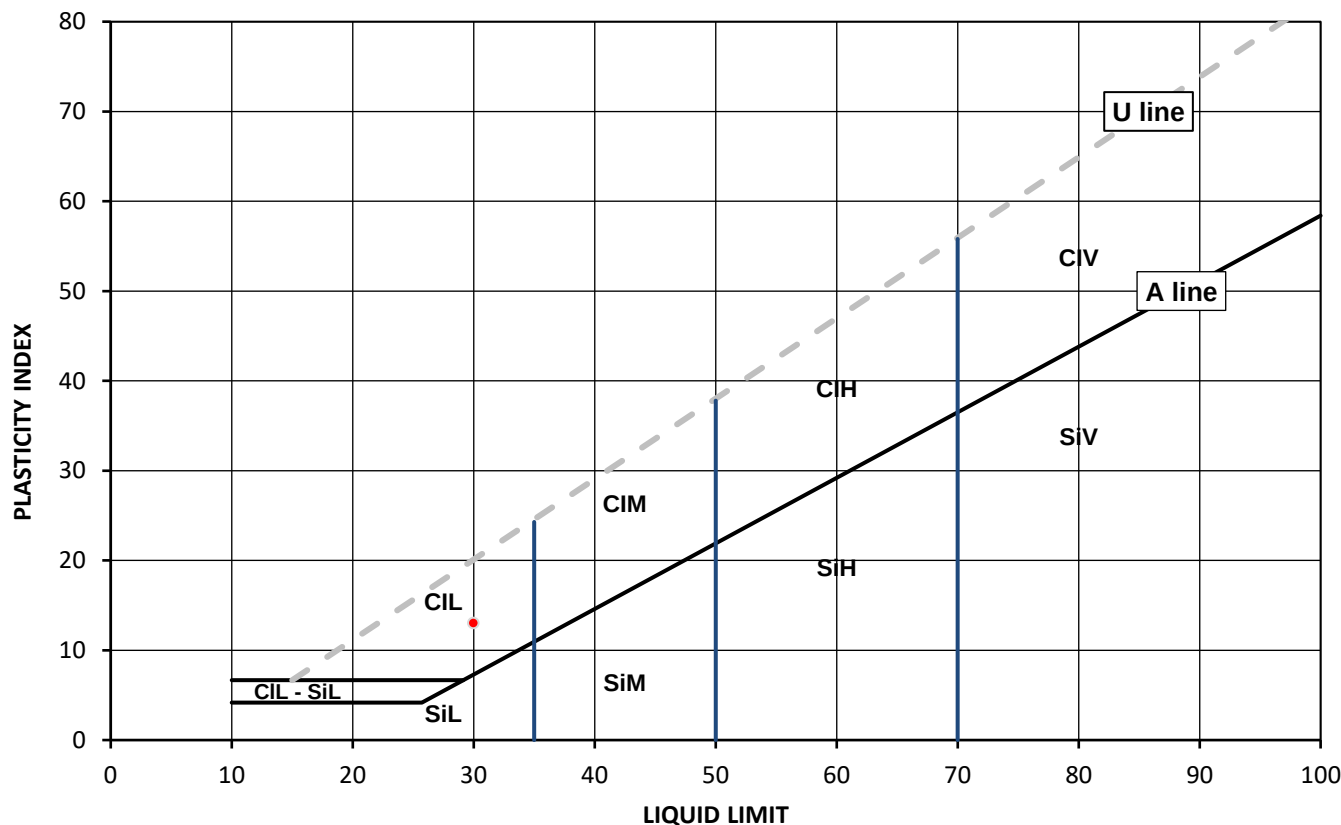
Test Results:

Laboratory Reference: 2100155
Hole No.: WS109
Sample Reference: Not Given
Sample Description: Brown slightly gravelly very sandy CLAY

Depth Top [m]: 1.60
Depth Base [m]: 1.70
Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
18	30	17	13	94



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

Cl	Clay	Plasticity	L	Low	Liquid Limit	below 35
Si	Silt	M	Medium	35 to 50		
		H	High	50 to 70		
		V	Very high	exceeding 70		
		O	Organic	append to classification for organic material (eg CIHO)		

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: Preliminary report

Signed:

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Technical Reviewer
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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: G & J Geoenvironmental Consultants Ltd

Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers

Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224

Job Number: 21-26080

Date Sampled: 17/11/2021

Date Received: 24/11/2021

Date Tested: 08/12/2021

Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100156

Hole No.: WS111

Sample Reference: Not Given

Sample Description: Brown slightly gravelly clayey SAND

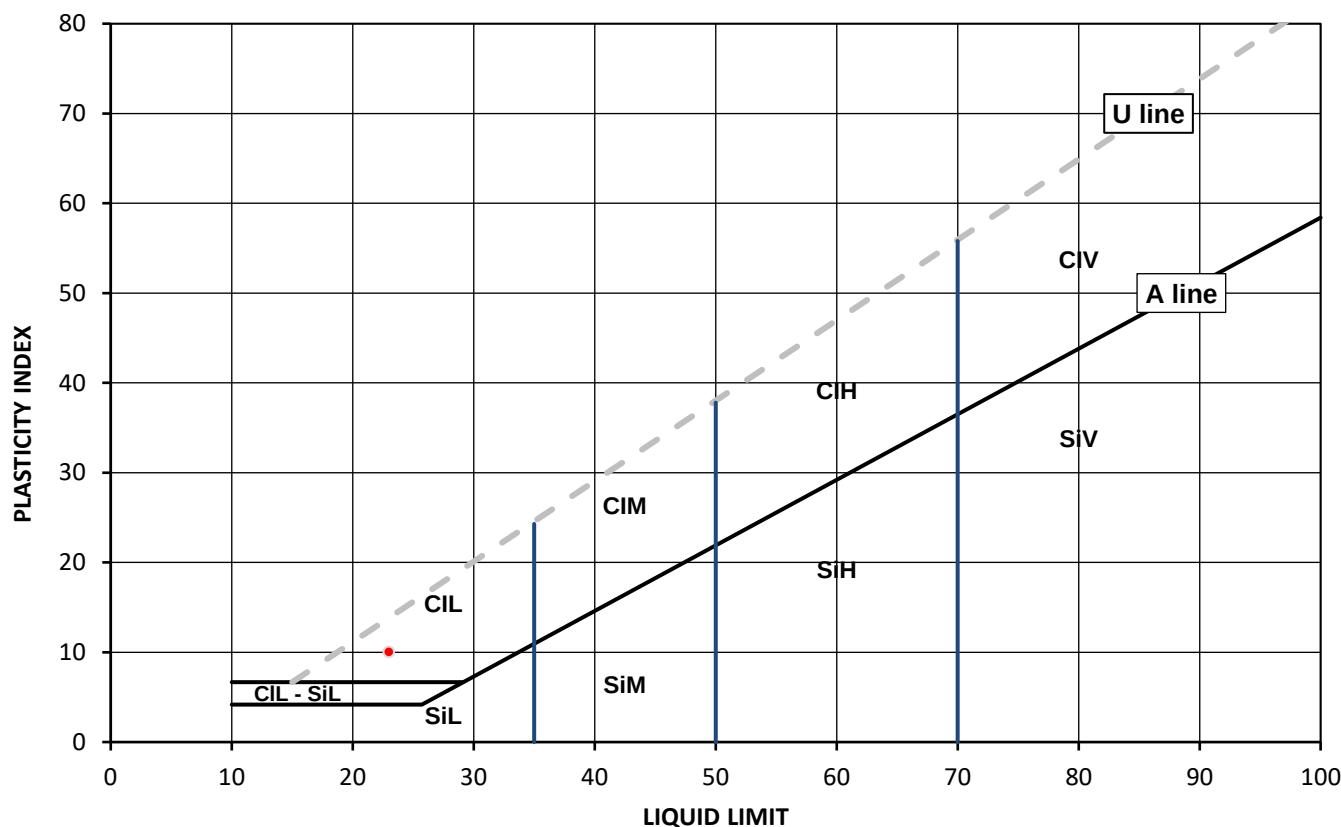
Depth Top [m]: 2.30

Depth Base [m]: 2.40

Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
12	23	13	10	81



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

Cl	Clay	Plasticity	L	Low	Liquid Limit	below 35
Si	Silt		M	Medium		35 to 50
			H	High		50 to 70
			V	Very high		exceeding 70
			O	Organic		append to classification for organic material (eg CIHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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4041

Client: G & J Geoenvironmental Consultants Ltd

Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers

Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224

Job Number: 21-26080

Date Sampled: 16/11/2021

Date Received: 24/11/2021

Date Tested: 08/12/2021

Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100159

Hole No.: BH101

Sample Reference: Not Given

Sample Description: Reddish brown slightly gravelly very sandy CLAY

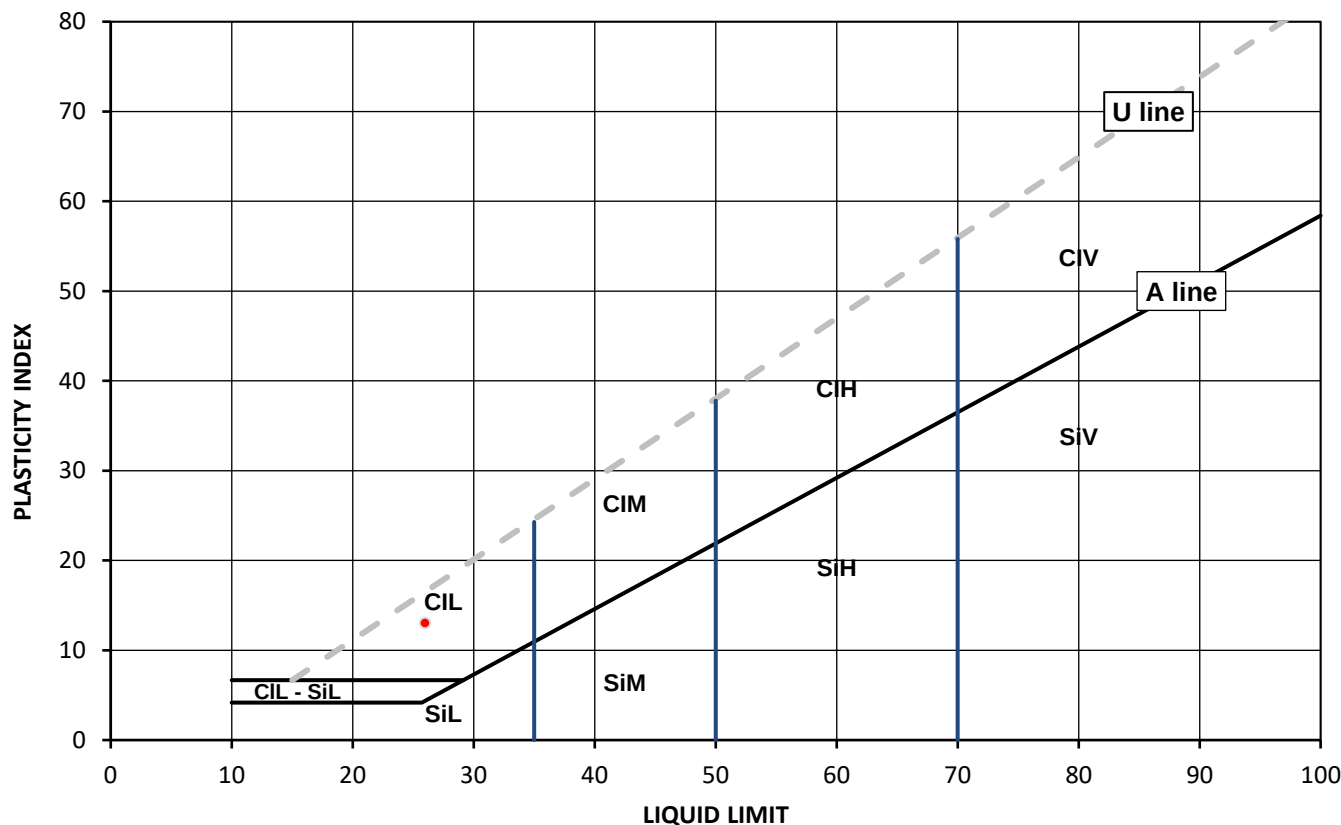
Depth Top [m]: 4.50

Depth Base [m]: Not Given

Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
9.3	26	13	13	87



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

Cl	Clay	Plasticity	L	Low	Liquid Limit	below 35
Si	Silt	M	Medium	35 to 50		
		H	High	50 to 70		
		V	Very high	exceeding 70		
		O	Organic	append to classification for organic material (eg CIHO)		

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: Preliminary report

Signed:

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SUMMARY REPORT

SUMMARY OF CLASSIFICATION TEST RESULTS

Tested in Accordance with:

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



4041

Client: G & J Geoenvironmental Consultants Ltd

Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers

Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Moisture Content by BS 1377-2: 1990: Clause 3.2; Water Content by BS EN 17892-1: 2014; Atterberg by BS 1377-2: 1990: Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5; PD by BS 1377-2: 1990: Clause 8.2

Client Reference: GJ224

Job Number: 21-26080

Date Sampled: 15/11 - 18/11/2021

Date Received: 24/11/2021

Date Tested: 08/12 - 13/12/2021

Sampled By: i2- AW

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Moisture Content [W]	Water Content [W]	Atterberg				Density			Total Porosity#		
		Reference	Depth Top	Depth Base	Type					% Passing 425um	WL	Wp	Ip	bulk	dry	PD			
			m	m															
2100159	BH101	Not Given	4.50	Not Given	D	Reddish brown slightly gravelly very sandy CLAY	Atterberg 1 Point	9.3		87	26	13	13						
2100138	TP105	Not Given	1.50	1.60	B	Brown slightly gravelly very sandy CLAY	Atterberg 1 Point	16		84	31	14	17						
2100142	TP108	Not Given	0.20	0.30	B	Brown gravelly CLAY and SAND	Atterberg 1 Point	14		90	24	13	11						
2100145	TP110	Not Given	0.50	0.60	B	Brown slightly gravelly very sandy CLAY	Atterberg 1 Point	14		88	29	15	14						
2100148	TP112	Not Given	0.50	0.60	B	Brown slightly gravelly very sandy CLAY	Atterberg 1 Point	13		94	28	16	12						
2100149	WS101	Not Given	0.80	0.90	D	Reddish brown slightly gravelly sandy CLAY	Atterberg 1 Point	17		88	38	18	20						
2100150	WS103	Not Given	2.30	2.40	D	Reddish brown slightly gravelly clayey SAND	Atterberg 1 Point	7.9		83	23	12	11						
2100151	WS105	Not Given	1.30	1.40	D	Dark brown slightly gravelly very sandy CLAY	Atterberg 1 Point	18		88	27	16	11						
2100152	WS106	Not Given	1.70	1.80	D	Reddish brown slightly gravelly clayey SAND	Atterberg 1 Point	15		86	23	13	10						
2100153	WS107	Not Given	1.40	1.50	D	Orangish brown sandy CLAY	Atterberg 1 Point	18		100	37	18	19						

Note: # Non accredited; NP - Non plastic

Comments: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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SUMMARY REPORT

SUMMARY OF CLASSIFICATION TEST RESULTS

Tested in Accordance with:

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



4041

Client: G & J Geoenvironmental Consultants Ltd

Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers

Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Moisture Content by BS 1377-2: 1990: Clause 3.2; Water Content by BS EN 17892-1: 2014; Atterberg by BS 1377-2: 1990: Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5; PD by BS 1377-2: 1990: Clause 8.2

Client Reference: GJ224

Job Number: 21-26080

Date Sampled: 17/11/2021

Date Received: 24/11/2021

Date Tested: 08/12/2021

Sampled By: i2- AW

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Moisture Content [W]	Water Content [W]	Atterberg				Density			Total Porosity#		
		Reference	Depth Top	Depth Base	Type					% Passing 425um	WL	Wp	Ip	bulk	dry	PD			
			m	m				%	%	%	%	%	%	Mg/m3	Mg/m3	Mg/m3	%		
2100154	WS108	Not Given	1.00	1.10	D	Reddish brown slightly gravelly very sandy CLAY	Atterberg 1 Point	13		80	26	14	12						
2100155	WS109	Not Given	1.60	1.70	D	Brown slightly gravelly very sandy CLAY	Atterberg 1 Point	18		94	30	17	13						
2100156	WS111	Not Given	2.30	2.40	D	Brown slightly gravelly clayey SAND	Atterberg 1 Point	12		81	23	13	10						

Note: # Non accredited; NP - Non plastic

Comments: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: G & J Geoenvironmental Consultants Ltd

Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers

Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224

Job Number: 21-26080

Date Sampled: 15/11/2021

Date Received: 24/11/2021

Date Tested: 13/12/2021

Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100135

Hole No.: TP101

Sample Reference: Not Given

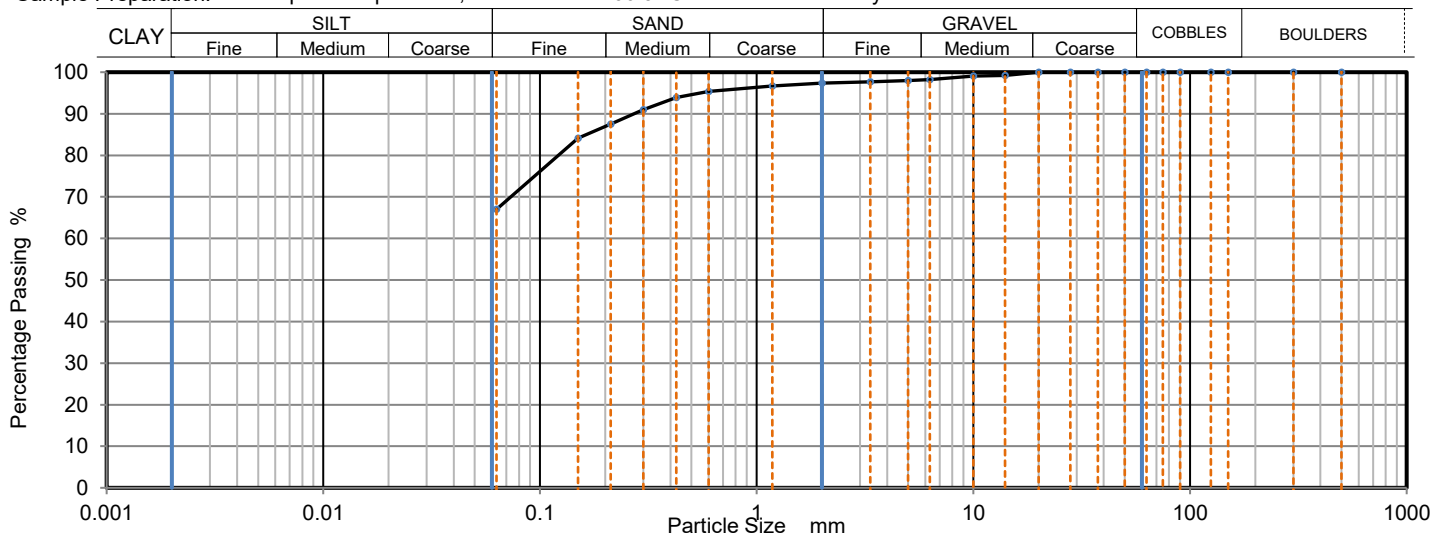
Sample Description: Brown slightly gravelly sandy CLAY

Sample Preparation: Sample was quartered, oven dried at 106.3 °C and broken down by hand.

Depth Top [m]: 1.20

Depth Base [m]: 1.30

Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	99		
10	99		
6.3	98		
5	98		
3.35	98		
2	97		
1.18	97		
0.6	95		
0.425	94		
0.3	91		
0.212	88		
0.15	84		
0.063	67		

Sample Proportions	% dry mass
Very coarse	0
Gravel	3
Sand	30
Fines <0.063mm	67

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	N/A
Curvature Coefficient	

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: G & J Geoenvironmental Consultants Ltd

Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers

Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224

Job Number: 21-26080

Date Sampled: 15/11/2021

Date Received: 24/11/2021

Date Tested: 09/12/2021

Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100136

Hole No.: TP102

Sample Reference: Not Given

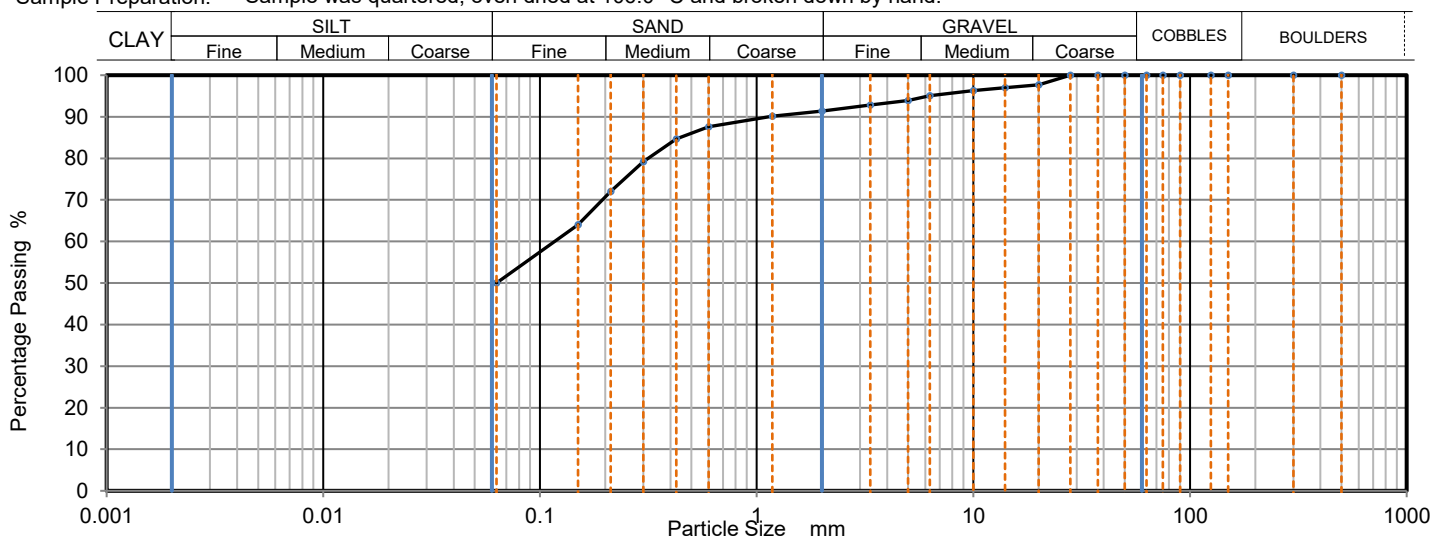
Sample Description: Brown gravelly very sandy CLAY

Sample Preparation: Sample was quartered, oven dried at 106.0 °C and broken down by hand.

Depth Top [m]: 1.40

Depth Base [m]: 1.50

Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	98		
14	97		
10	96		
6.3	95		
5	94		
3.35	93		
2	91		
1.18	90		
0.6	88		
0.425	85		
0.3	79		
0.212	72		
0.15	64		
0.063	50		

Sample Proportions	% dry mass
Very coarse	0
Gravel	9
Sand	41
Fines <0.063mm	50

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 1.9
Curvature Coefficient	

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

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Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: G & J Geoenvironmental Consultants Ltd

Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers

Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224

Job Number: 21-26080

Date Sampled: 15/11/2021

Date Received: 24/11/2021

Date Tested: 09/12/2021

Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100138

Hole No.: TP105

Sample Reference: Not Given

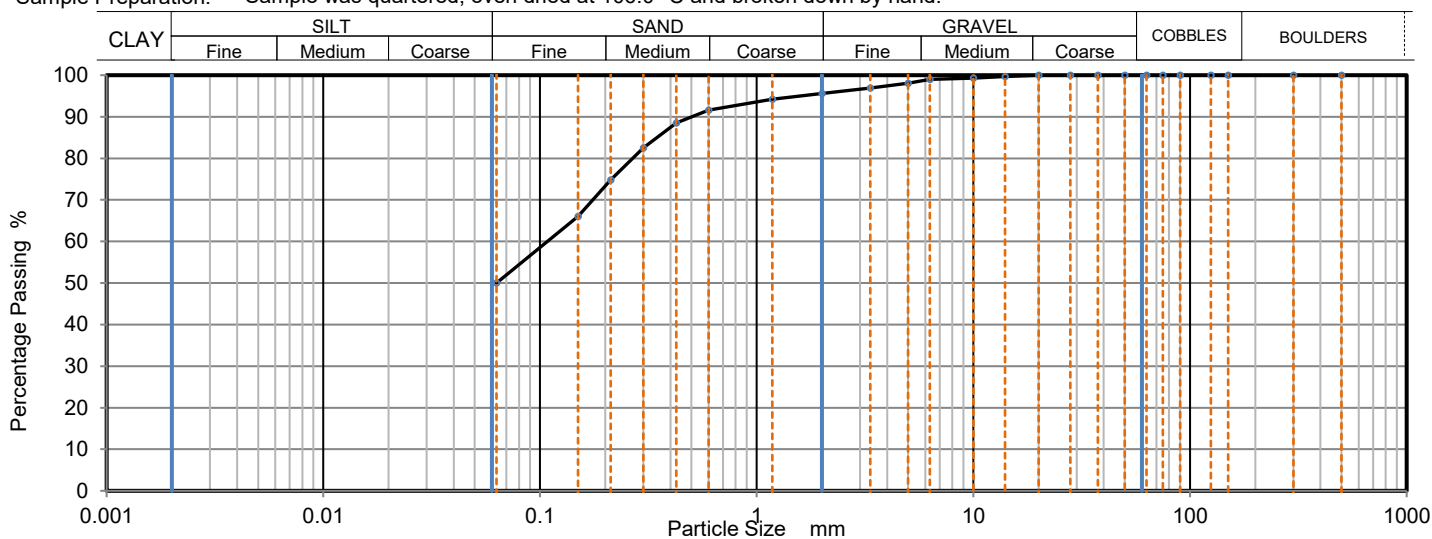
Sample Description: Brown slightly gravelly very sandy CLAY

Sample Preparation: Sample was quartered, oven dried at 106.0 °C and broken down by hand.

Depth Top [m]: 1.50

Depth Base [m]: 1.60

Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99		
6.3	99		
5	98		
3.35	97		
2	96		
1.18	94		
0.6	92		
0.425	89		
0.3	83		
0.212	75		
0.15	66		
0.063	50		

Sample Proportions	% dry mass
Very coarse	0
Gravel	4
Sand	45
Fines <0.063mm	50

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 1.7
Curvature Coefficient	

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Preliminary report

Signed:

Katarzyna Koziel
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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: G & J Geoenvironmental Consultants Ltd

Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers

Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224

Job Number: 21-26080

Date Sampled: 15/11/2021

Date Received: 24/11/2021

Date Tested: 09/12/2021

Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100139

Hole No.: TP106

Sample Reference: Not Given

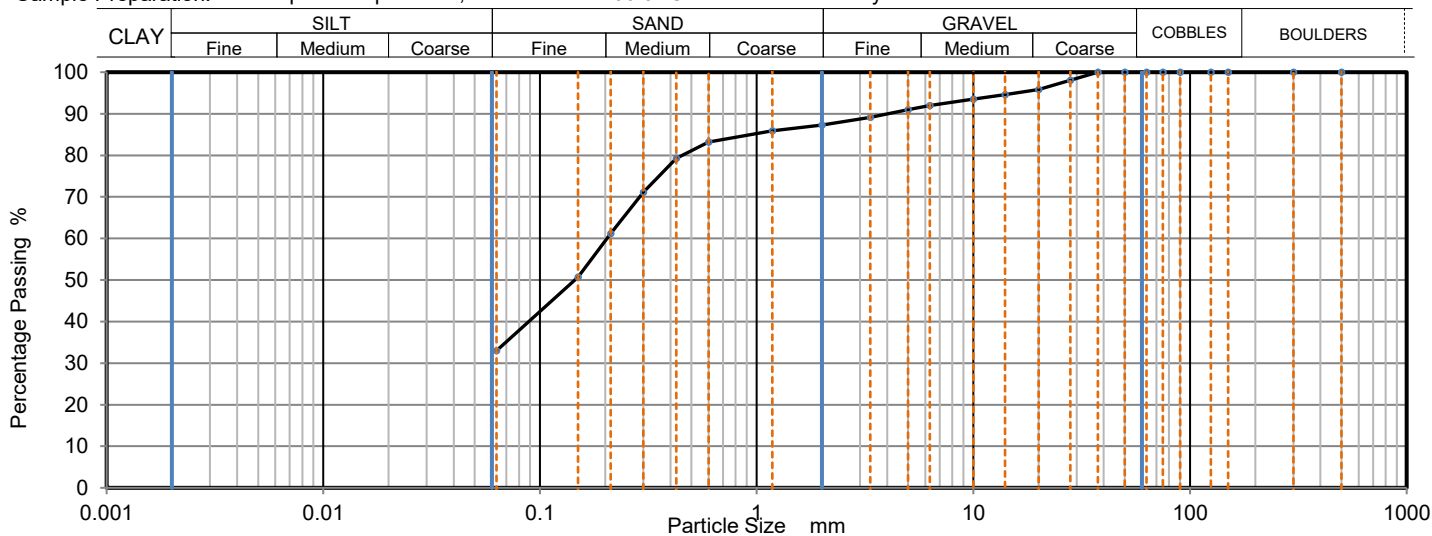
Sample Description: Brown gravelly very clayey SAND

Sample Preparation: Sample was quartered, oven dried at 106.0 °C and broken down by hand.

Depth Top [m]: 1.80

Depth Base [m]: 1.90

Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	98		
20	96		
14	95		
10	94		
6.3	92		
5	91		
3.35	89		
2	87		
1.18	86		
0.6	83		
0.425	79		
0.3	71		
0.212	61		
0.15	51		
0.063	34		

Sample Proportions	% dry mass
Very coarse	0
Gravel	13
Sand	54
Fines <0.063mm	34

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 3.2
Curvature Coefficient	

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: G & J Geoenvironmental Consultants Ltd

Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers

Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224

Job Number: 21-26080

Date Sampled: 15/11/2021

Date Received: 24/11/2021

Date Tested: 09/12/2021

Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100142

Hole No.: TP108

Sample Reference: Not Given

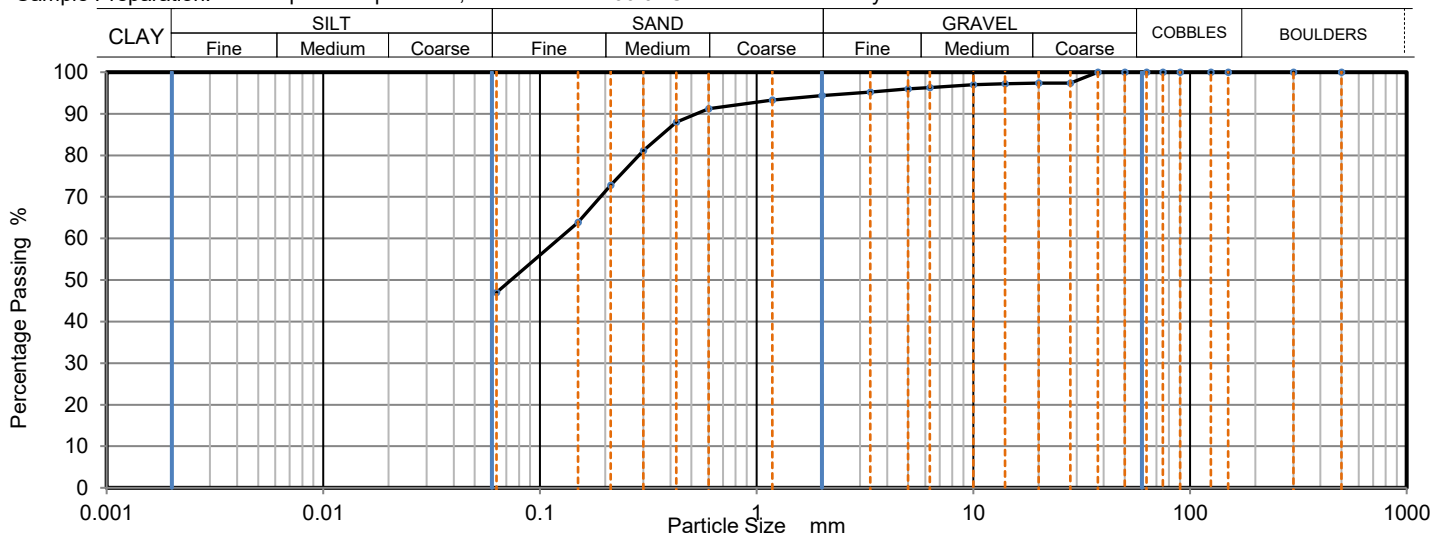
Sample Description: Brown gravelly CLAY and SAND

Sample Preparation: Sample was quartered, oven dried at 106.0 °C and broken down by hand.

Depth Top [m]: 0.20

Depth Base [m]: 0.30

Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	97		
20	97		
14	97		
10	97		
6.3	96		
5	96		
3.35	95		
2	94		
1.18	93		
0.6	91		
0.425	88		
0.3	81		
0.212	73		
0.15	64		
0.063	47		

Sample Proportions	% dry mass
Very coarse	0
Gravel	6
Sand	47
Fines <0.063mm	47

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 2
Curvature Coefficient	

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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Client: G & J Geoenvironmental Consultants Ltd
Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers
Site Address: Penrhyn Road Knowsley

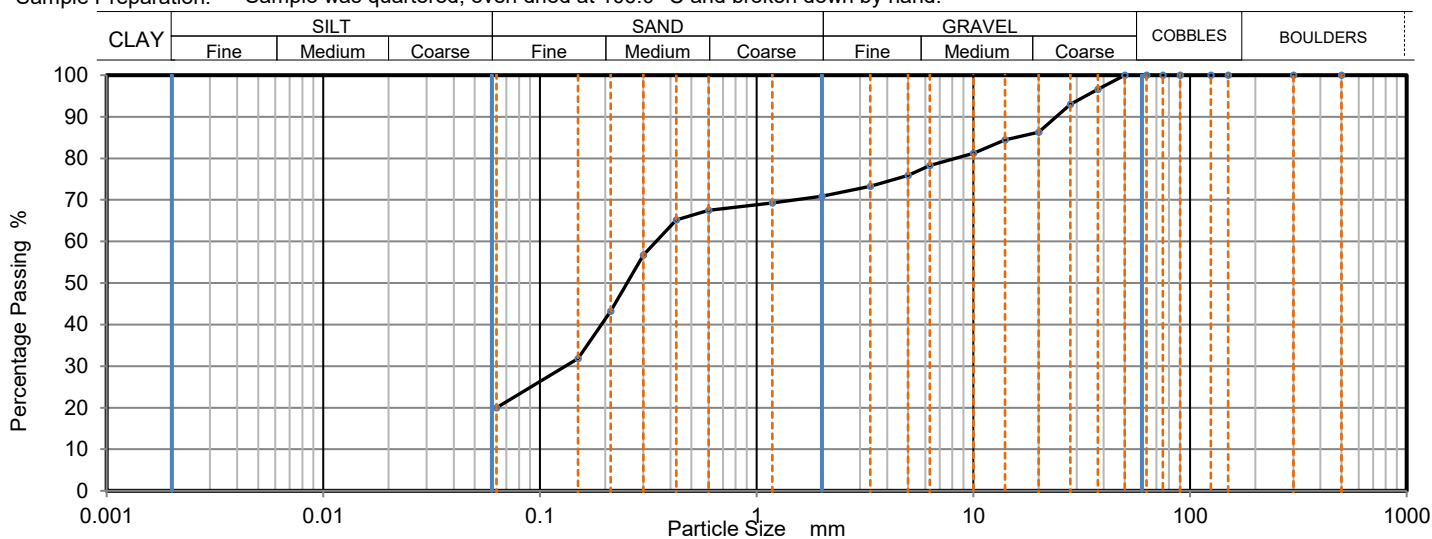
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224
Job Number: 21-26080
Date Sampled: 18/11/2021
Date Received: 24/11/2021
Date Tested: 09/12/2021
Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100144
Hole No.: TP109
Sample Reference: Not Given
Sample Description: Dark brown clayey very gravelly SAND
Sample Preparation: Sample was quartered, oven dried at 106.0 °C and broken down by hand.

Depth Top [m]: 1.20
Depth Base [m]: 1.30
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	97		
28	93		
20	86		
14	84		
10	81		
6.3	78		
5	76		
3.35	73		
2	71		
1.18	69		
0.6	68		
0.425	65		
0.3	57		
0.212	43		
0.15	32		
0.063	20		

Sample Proportions	% dry mass
Very coarse	0
Gravel	29
Sand	51
Fines <0.063mm	20

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 5.4
Curvature Coefficient	

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
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Client: G & J Geoenvironmental Consultants Ltd
Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers
Site Address: Penrhyn Road Knowsley

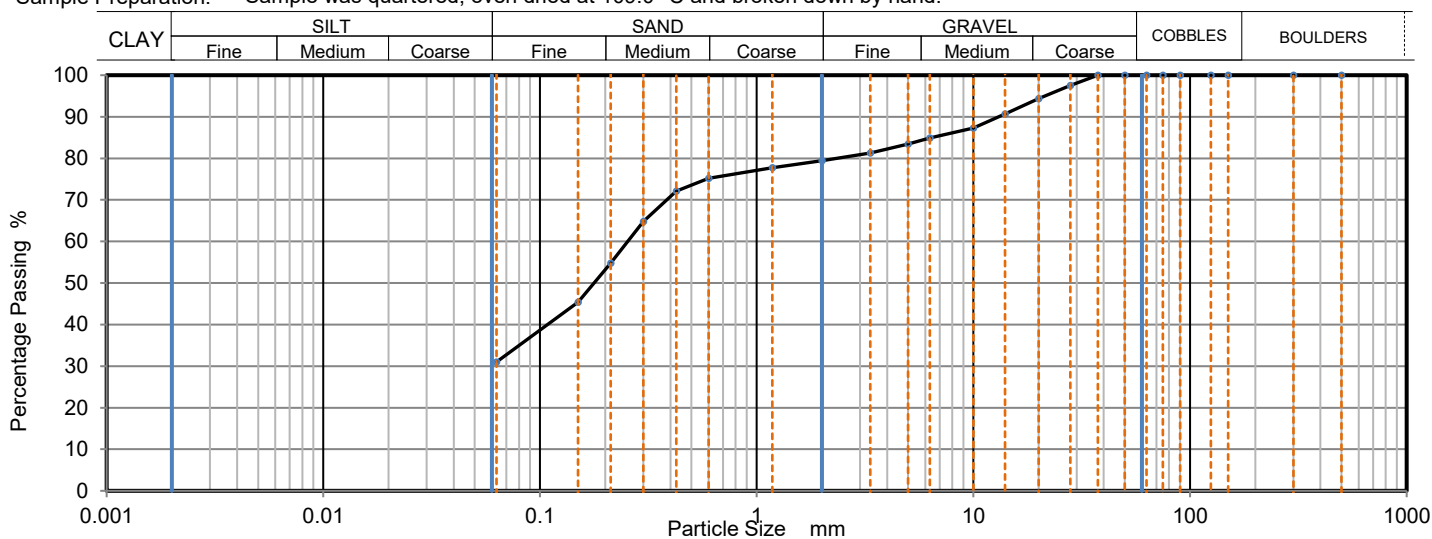
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224
Job Number: 21-26080
Date Sampled: 16/11/2021
Date Received: 24/11/2021
Date Tested: 09/12/2021
Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100157
Hole No.: BH101
Sample Reference: Not Given
Sample Description: Brown gravelly very clayey SAND
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 0.00
Depth Base [m]: 0.50
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	98		
20	94		
14	91		
10	87		
6.3	85		
5	83		
3.35	81		
2	79		
1.18	78		
0.6	75		
0.425	72		
0.3	65		
0.212	55		
0.15	45		
0.063	31		

Sample Proportions	% dry mass
Very coarse	0
Gravel	21
Sand	48
Fines <0.063mm	31

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 4
Curvature Coefficient	

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: G & J Geoenvironmental Consultants Ltd
Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

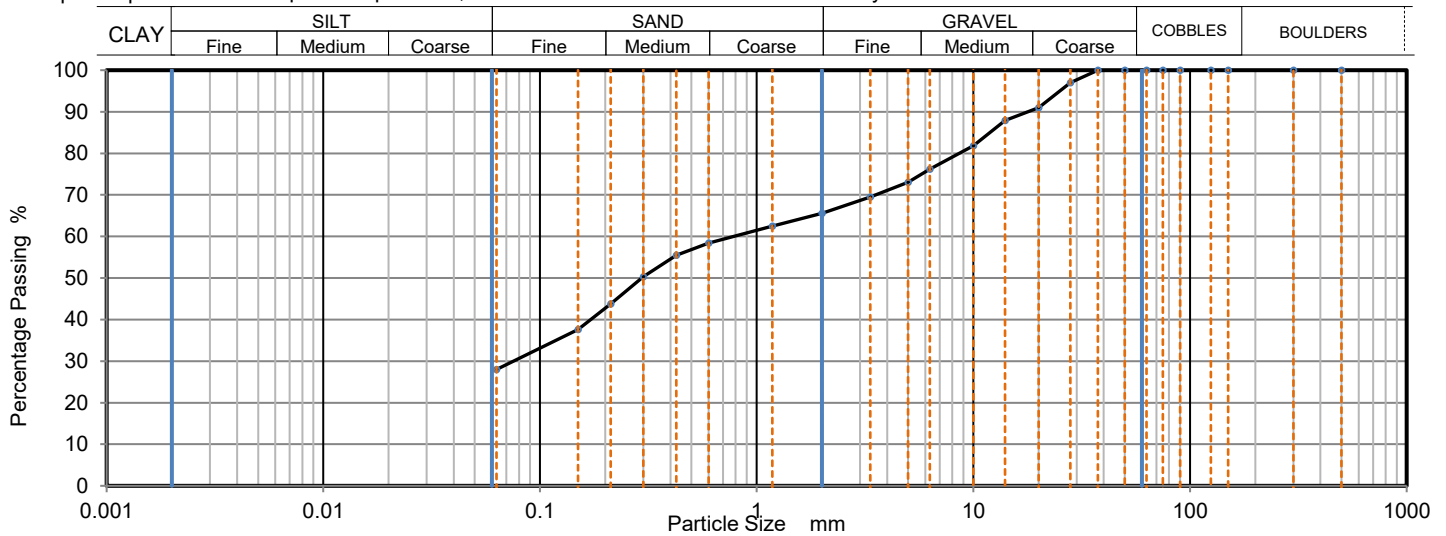
Contact: Tim Rogers
Site Address: Penrhyn Road Knowsley

Client Reference: GJ224
Job Number: 21-26080
Date Sampled: 17/11/2021
Date Received: 24/11/2021
Date Tested: 09/12/2021
Sampled By: i2- AW

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2100161
Hole No.: BH104
Sample Reference: Not Given
Sample Description: Brown very clayey very gravelly SAND
Sample Preparation: Sample was quartered, oven dried at 106.0 °C and broken down by hand.

Depth Top [m]: 0.50
Depth Base [m]: 1.00
Sample Type: B


Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	97		
20	91		
14	88		
10	82		
6.3	76		
5	73		
3.35	70		
2	66		
1.18	63		
0.6	58		
0.425	56		
0.3	50		
0.212	44		
0.15	38		
0.063	28		

Sample Proportions	% dry mass
Very coarse	0
Gravel	34
Sand	37
Fines <0.063mm	28

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 12
Curvature Coefficient	

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

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i2 Analytical Ltd
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Brackmills Industrial Estate
Northampton NN4 7EB

Client: G & J Geoenvironmental Consultants Ltd

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Loughborough, LE12 8PY

Contact: Tim Rogers

Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224

Job Number: 21-26080

Date Sampled: 18/11/2021

Date Received: 24/11/2021

Date Tested: 13/12/2021

Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100162

Hole No.: BH105

Sample Reference: Not Given

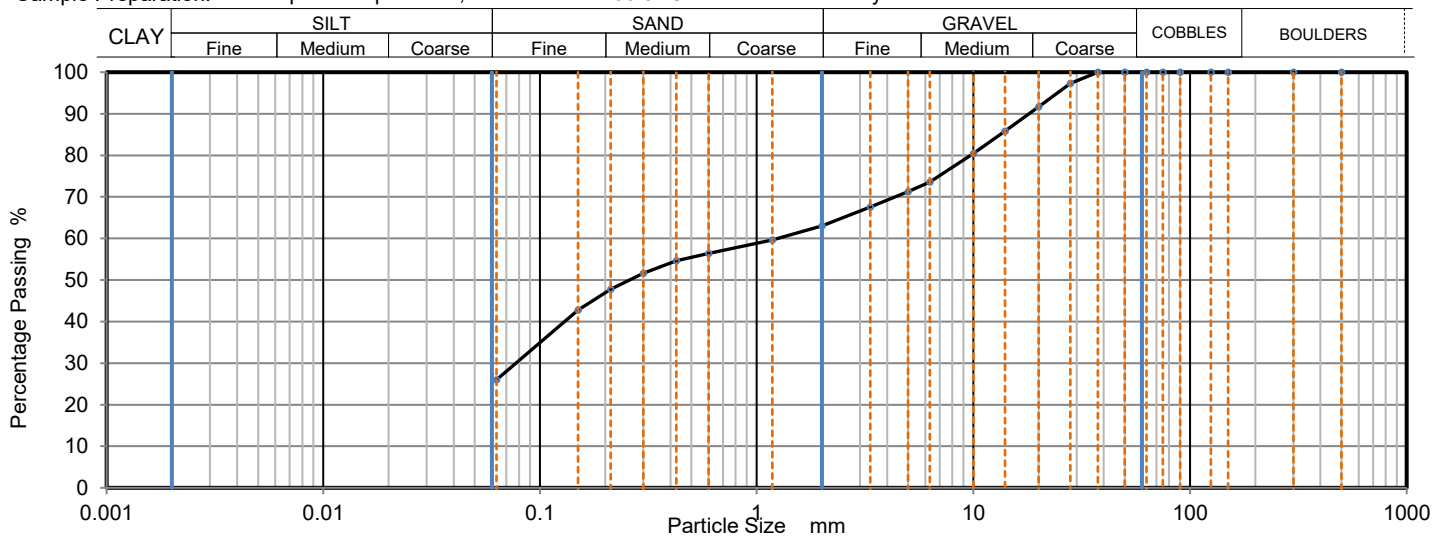
Sample Description: Brown very clayey SAND and GRAVEL

Sample Preparation: Sample was quartered, oven dried at 106.0 °C and broken down by hand.

Depth Top [m]: 0.50

Depth Base [m]: 1.00

Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	97		
20	92		
14	86		
10	80		
6.3	74		
5	71		
3.35	68		
2	63		
1.18	60		
0.6	56		
0.425	55		
0.3	52		
0.212	48		
0.15	43		
0.063	26		

Sample Proportions	% dry mass
Very coarse	0
Gravel	37
Sand	37
Fines <0.063mm	26

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 20
Curvature Coefficient	

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Preliminary report

Signed:

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Technical Reviewer
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TEST CERTIFICATE

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Loughborough, LE12 8PY

Contact: Tim Rogers

Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224

Job Number: 21-26080

Date Sampled: 16/11/2021

Date Received: 24/11/2021

Date Tested: 13/12/2021

Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100163

Hole No.: BH102

Sample Reference: Not Given

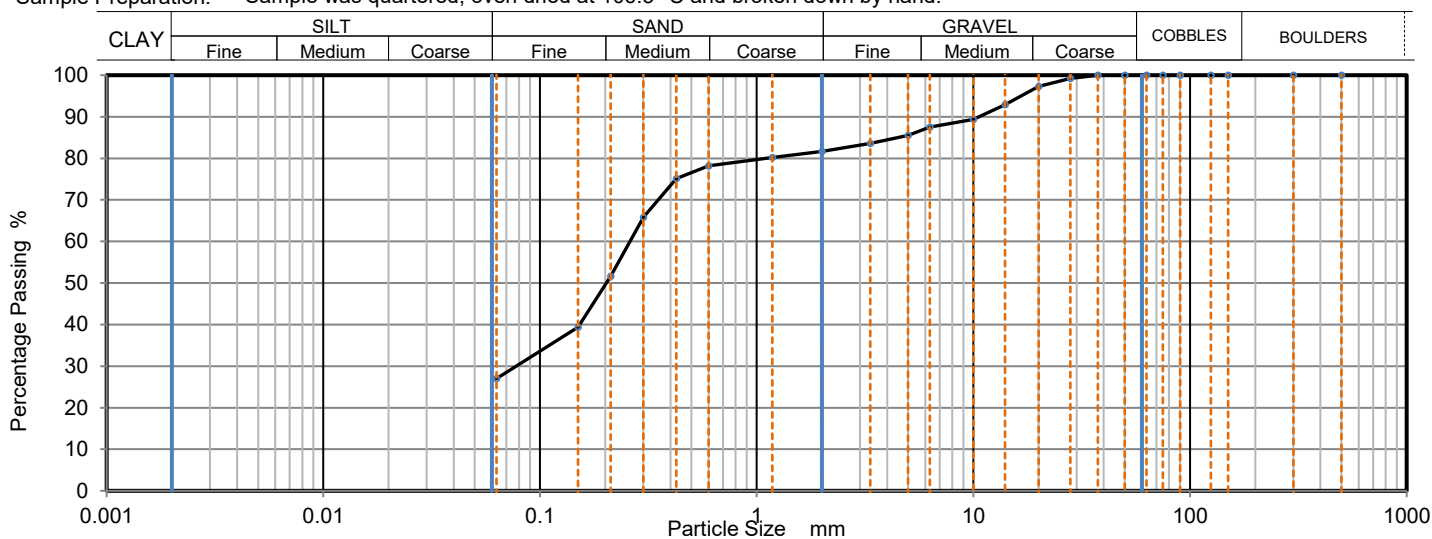
Sample Description: Greyish brown gravelly very clayey SAND

Sample Preparation: Sample was quartered, oven dried at 106.3 °C and broken down by hand.

Depth Top [m]: 0.50

Depth Base [m]: 1.00

Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	99		
20	97		
14	93		
10	89		
6.3	88		
5	86		
3.35	84		
2	82		
1.18	80		
0.6	78		
0.425	75		
0.3	66		
0.212	52		
0.15	39		
0.063	27		

Sample Proportions	% dry mass
Very coarse	0
Gravel	18
Sand	55
Fines <0.063mm	27

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 4.1
Curvature Coefficient	

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Preliminary report

Signed:

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TEST CERTIFICATE
Dry Density / Moisture Content
Relationship Light Compaction

Tested in Accordance with:
BS 1377-4: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Client: G & J Geoenvironmental Consultants Ltd
Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers
Site Address: Penrhyn Road Knowsley

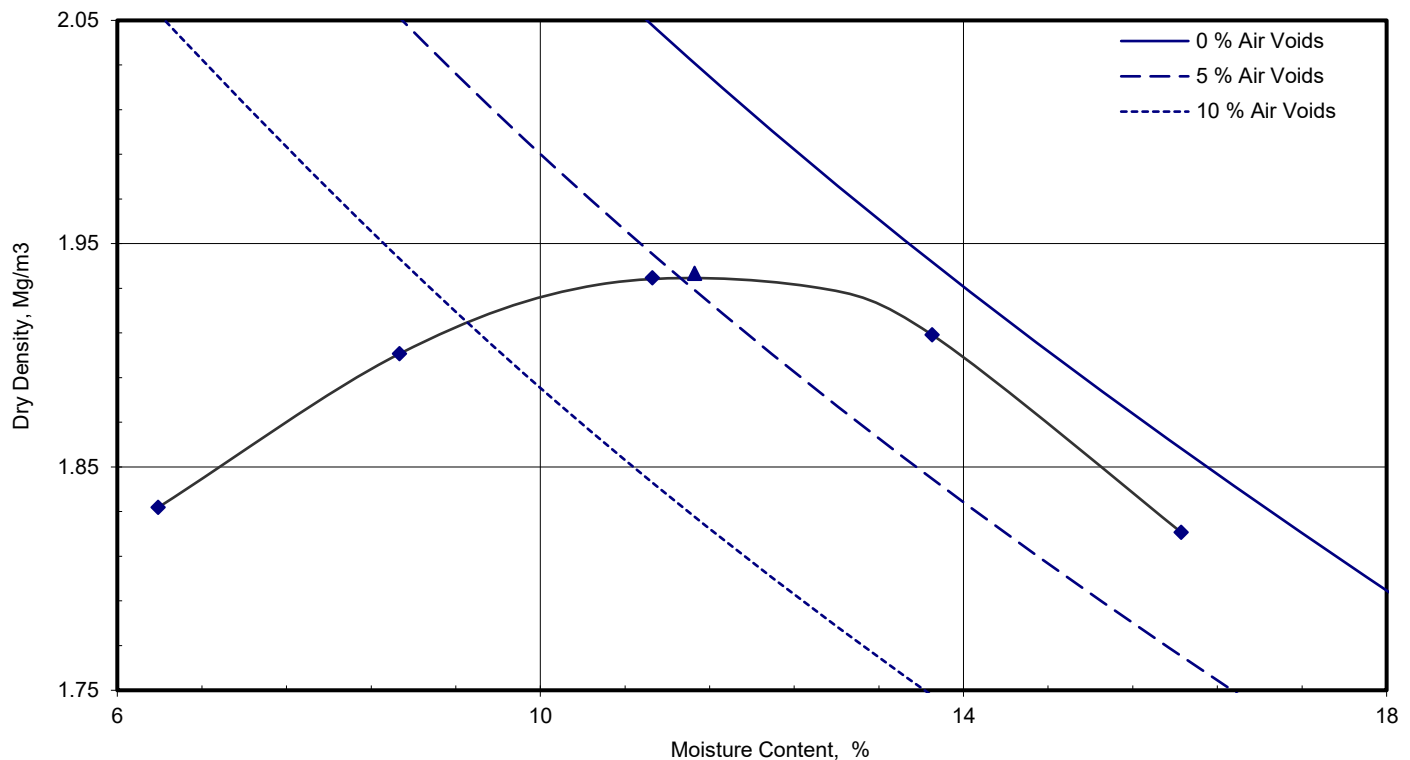
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224
Job Number: 21-26080
Date Sampled: 15/11/2021
Date Received: 24/11/2021
Date Tested: 13/12/2021
Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100137
Hole No.: TP105
Sample Reference: Not Given
Sample Description: Dark brown slightly gravelly slightly sandy CLAY
Sample Preparation: Sample was quartered and broken down by hand. Material used was natural.

Depth Top [m]: 0.70
Depth Base [m]: 0.80
Sample Type: B



Compaction Point No.	1	2	3	4	5	
Moisture Content	%	6.4	8.7	11	14	16
Dry Density	Mg/m³	1.83	1.90	1.93	1.91	1.82

Mould Type		1 Litre
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	0
Material Retained on 20.0 mm Sieve	%	2
Particle Density - Assumed	Mg/m³	2.65
As received Moisture Content	%	14
Maximum Dry Density	Mg/m³	1.94

Optimum Moisture Content	%	11
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Note: Tested in Accordance with BS 1377-4: 1990: Clause 3.3 using 2.5kg [light] Rammer

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE
Dry Density / Moisture Content
Relationship Light Compaction

Tested in Accordance with:
BS 1377-4: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Client: G & J Geoenvironmental Consultants Ltd
Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers
Site Address: Penrhyn Road Knowsley

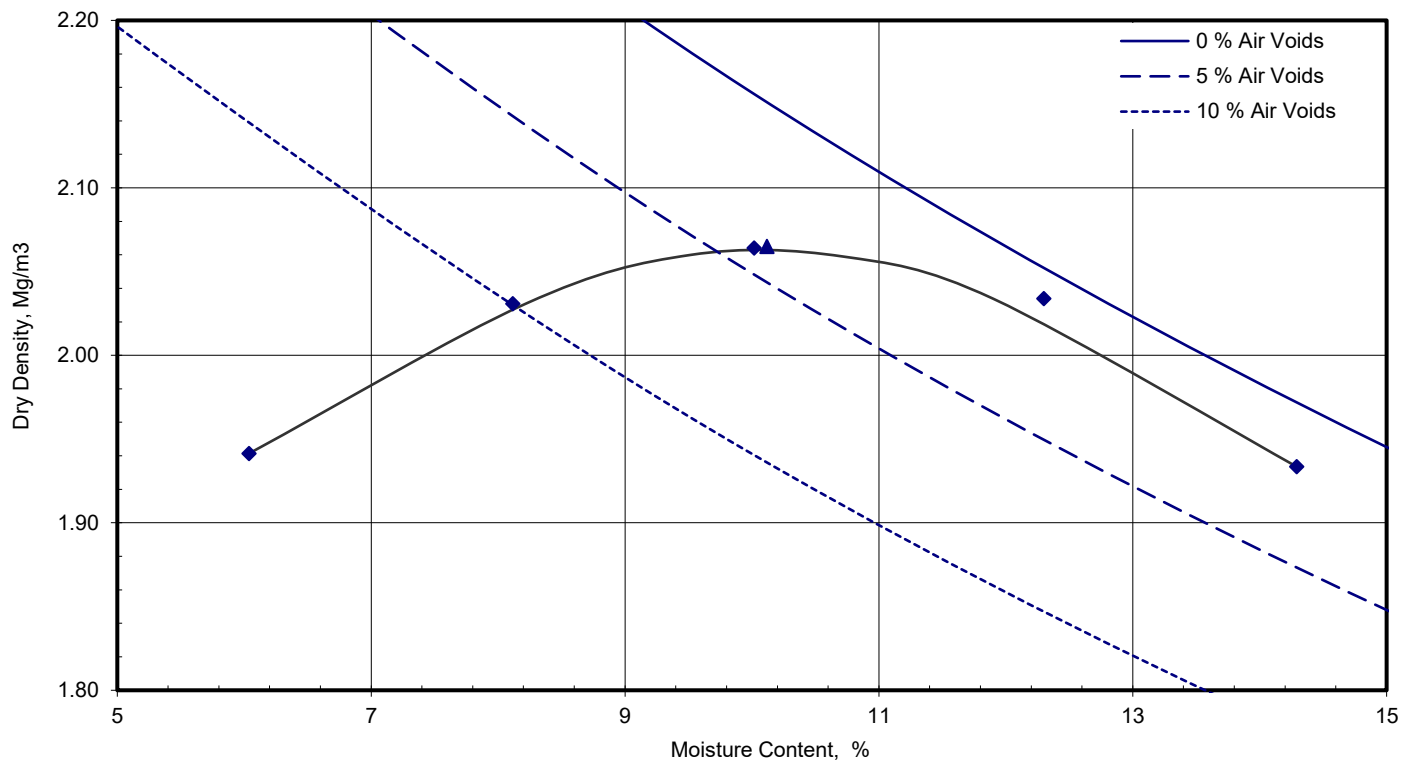
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224
Job Number: 21-26080
Date Sampled: 15/11/2021
Date Received: 24/11/2021
Date Tested: 13/12/2021
Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100141
Hole No.: TP107
Sample Reference: Not Given
Sample Description: Brown slightly gravelly slightly sandy CLAY
Sample Preparation: Sample was quartered and broken down by hand. Material used was natural.

Depth Top [m]: 1.20
Depth Base [m]: 1.30
Sample Type: B



Compaction Point No.		1	2	3	4	5
Moisture Content	%	6.0	8.1	10	12	14
Dry Density	Mg/m ³	1.94	2.03	2.06	2.03	1.93

Mould Type		1 Litre
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	0
Material Retained on 20.0 mm Sieve	%	3
Particle Density - Assumed	Mg/m ³	2.75
As received Moisture Content	%	12
Maximum Dry Density	Mg/m ³	2.06

Optimum Moisture Content	%	10
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Note: Tested in Accordance with BS 1377-4: 1990: Clause 3.3 using 2.5kg [light] Rammer

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Dry Density / Moisture Content

Relationship Light Compaction

Tested in Accordance with:
BS 1377-4: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Client: G & J Geoenvironmental Consultants Ltd

Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers

Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224

Job Number: 21-26080

Date Sampled: 18/11/2021

Date Received: 24/11/2021

Date Tested: 13/12/2021

Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100143

Hole No.: TP109

Sample Reference: Not Given

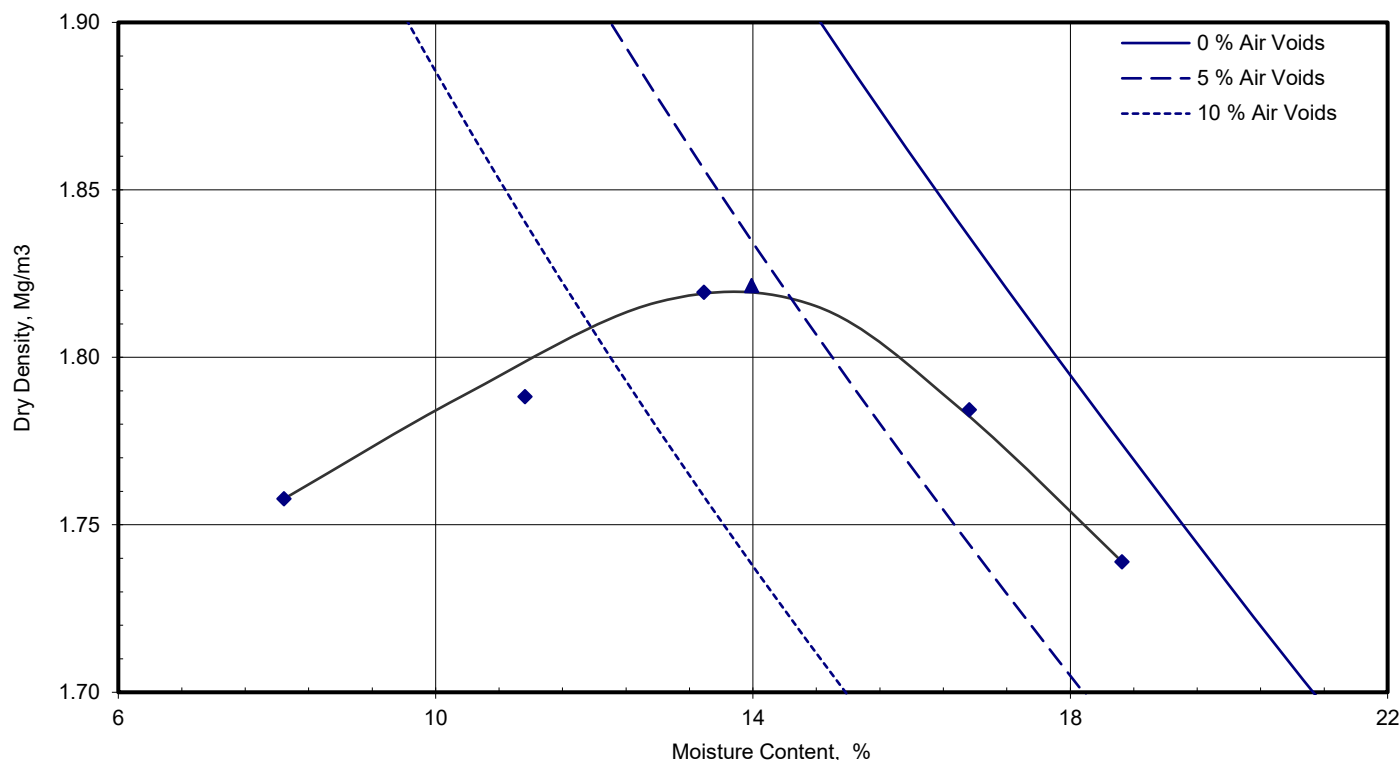
Sample Description: Brown gravelly CLAY

Sample Preparation: Sample was quartered and broken down by hand. Material used was natural.

Depth Top [m]: 0.40

Depth Base [m]: 0.50

Sample Type: B



Compaction Point No.		1	2	3	4	5
Moisture Content	%	8.1	11	13	17	19
Dry Density	Mg/m³	1.76	1.79	1.82	1.78	1.74

Mould Type	CBR
Samples Used	Separate specimens tested
Material Retained on 37.5 mm Sieve	11
Material Retained on 20.0 mm Sieve	16
Particle Density - Assumed	2.65
As received Moisture Content	19
Maximum Dry Density	1.82

Optimum Moisture Content	%	14
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Note: Tested in Accordance with BS 1377-4: 1990: Clause 3.4 using 2.5kg [light] Rammer

Remarks: Zone X - test carried out as per client request
Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Dry Density / Moisture Content

Relationship Light Compaction

Tested in Accordance with:
BS 1377-4: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Client: G & J Geoenvironmental Consultants Ltd

Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers

Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224

Job Number: 21-26080

Date Sampled: 18/11/2021

Date Received: 24/11/2021

Date Tested: 13/12/2021

Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100145

Hole No.: TP110

Sample Reference: Not Given

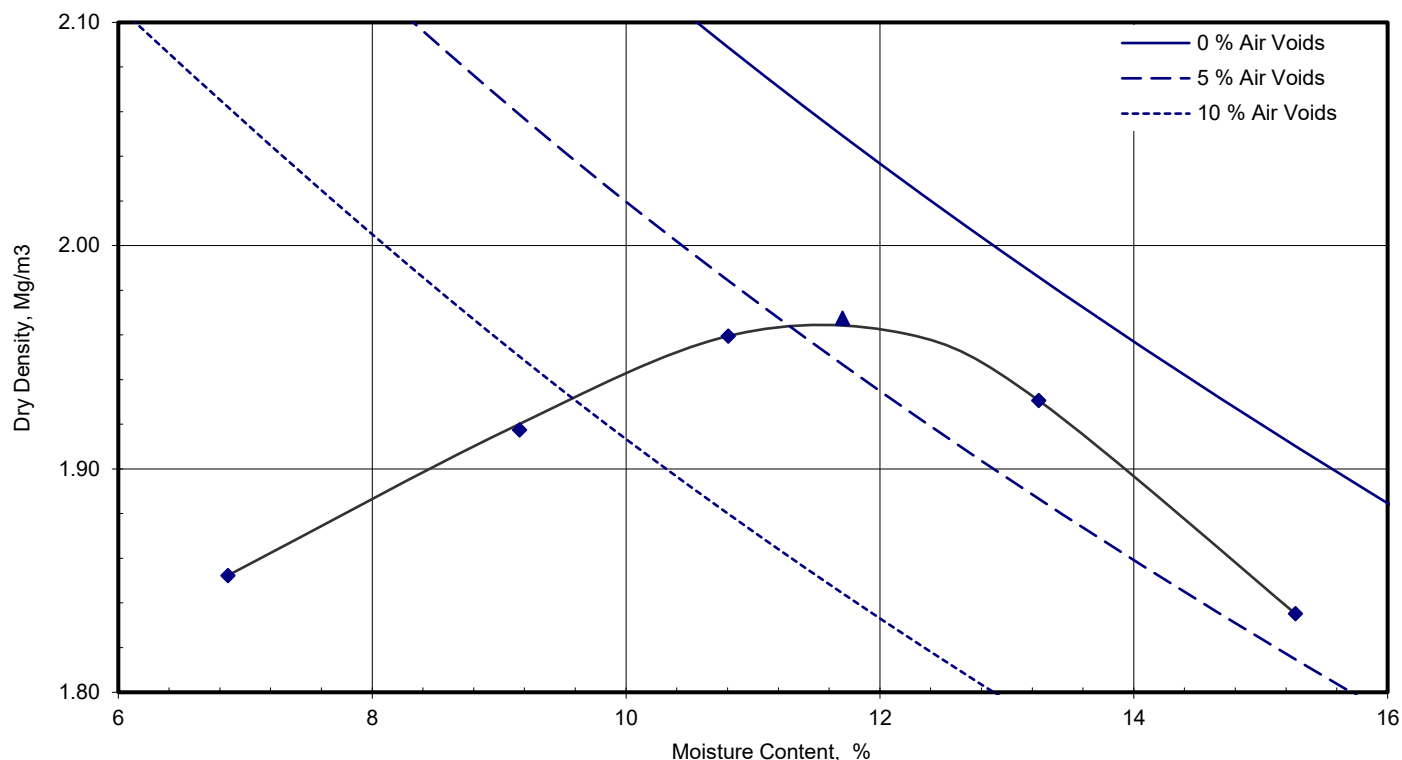
Sample Description: Brown slightly gravelly very sandy CLAY

Sample Preparation: Sample was quartered and broken down by hand. Material used was natural.

Depth Top [m]: 0.50

Depth Base [m]: 0.60

Sample Type: B



Compaction Point No.	1	2	3	4	5	
Moisture Content	%	6.9	9.2	11	13	15
Dry Density	Mg/m³	1.85	1.92	1.96	1.93	1.84

Mould Type		1 Litre
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	0
Material Retained on 20.0 mm Sieve	%	2
Particle Density - Assumed	Mg/m³	2.70
As received Moisture Content	%	13
Maximum Dry Density	Mg/m³	1.97

Optimum Moisture Content	%	12
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Note: Tested in Accordance with BS 1377-4: 1990: Clause 3.3 using 2.5kg [light] Rammer

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE
Dry Density / Moisture Content
Relationship Light Compaction

Tested in Accordance with:
BS 1377-4: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Client: G & J Geoenvironmental Consultants Ltd
Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers
Site Address: Penrhyn Road Knowsley

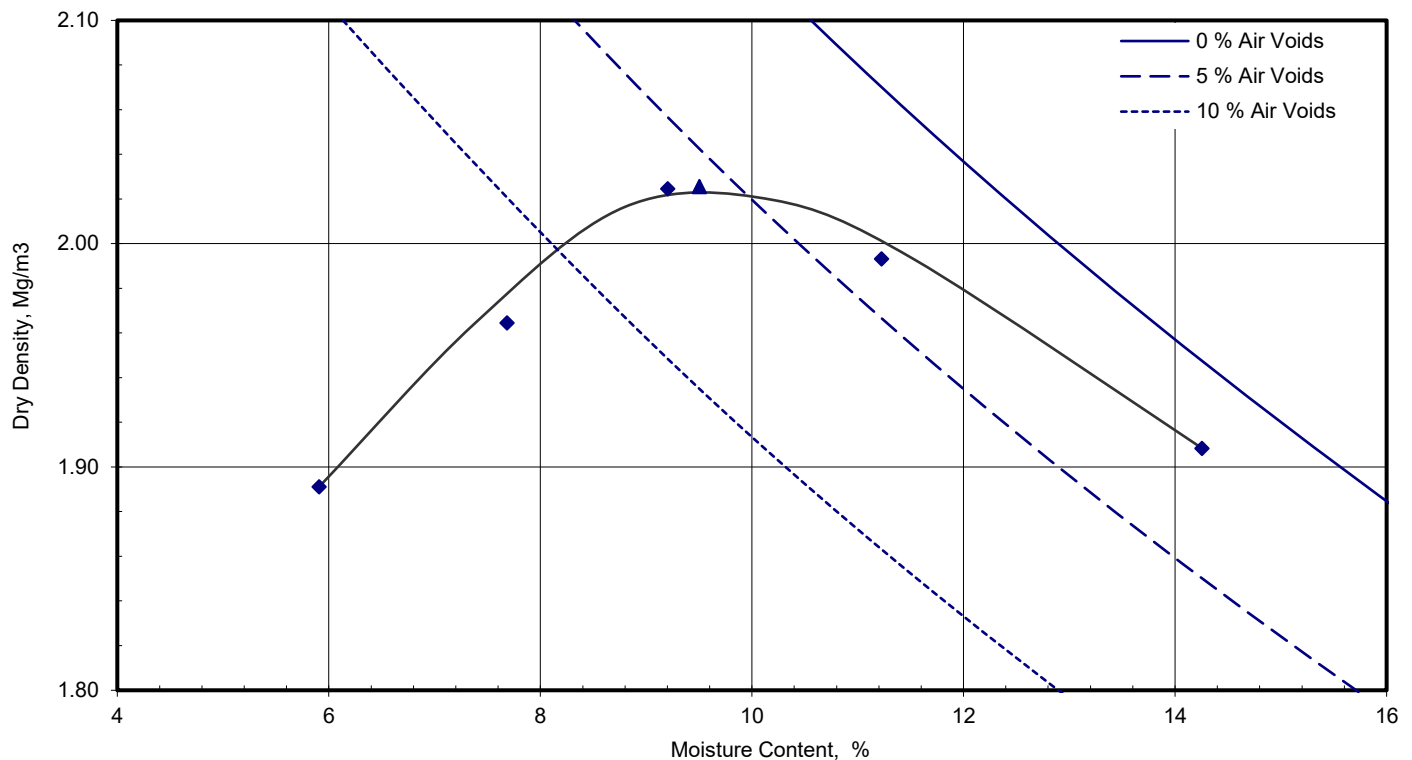
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224
Job Number: 21-26080
Date Sampled: 16/11/2021
Date Received: 24/11/2021
Date Tested: 13/12/2021
Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100163
Hole No.: BH102
Sample Reference: Not Given
Sample Description: Greyish brown gravelly very clayey SAND
Sample Preparation: Sample was quartered and broken down by hand. Material used was natural.

Depth Top [m]: 0.50
Depth Base [m]: 1.00
Sample Type: B



Compaction Point No.	1	2	3	4	5	
Moisture Content	%	5.9	7.7	9.2	11	14
Dry Density	Mg/m³	1.89	1.96	2.02	1.99	1.91

Mould Type		1 Litre
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	0
Material Retained on 20.0 mm Sieve	%	3
Particle Density - Assumed	Mg/m³	2.70
As received Moisture Content	%	15
Maximum Dry Density	Mg/m³	2.03

Optimum Moisture Content	%	9.5
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Note: Tested in Accordance with BS 1377-4: 1990: Clause 3.3 using 2.5kg [light] Rammer

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Determination of California Bearing Ratio

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Tested in Accordance with: BS 1377-4: 1990: Clause 7

Client: G & J Geoenvironmental Consultants Ltd
Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers
Site Address: Penrhyn Road Knowsley

Client Reference: GJ224
Job Number: 21-26080
Date Sampled: 15/11/2021
Date Received: 24/11/2021
Date Tested: 13/12/2021
Sampled By: i2- AW

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

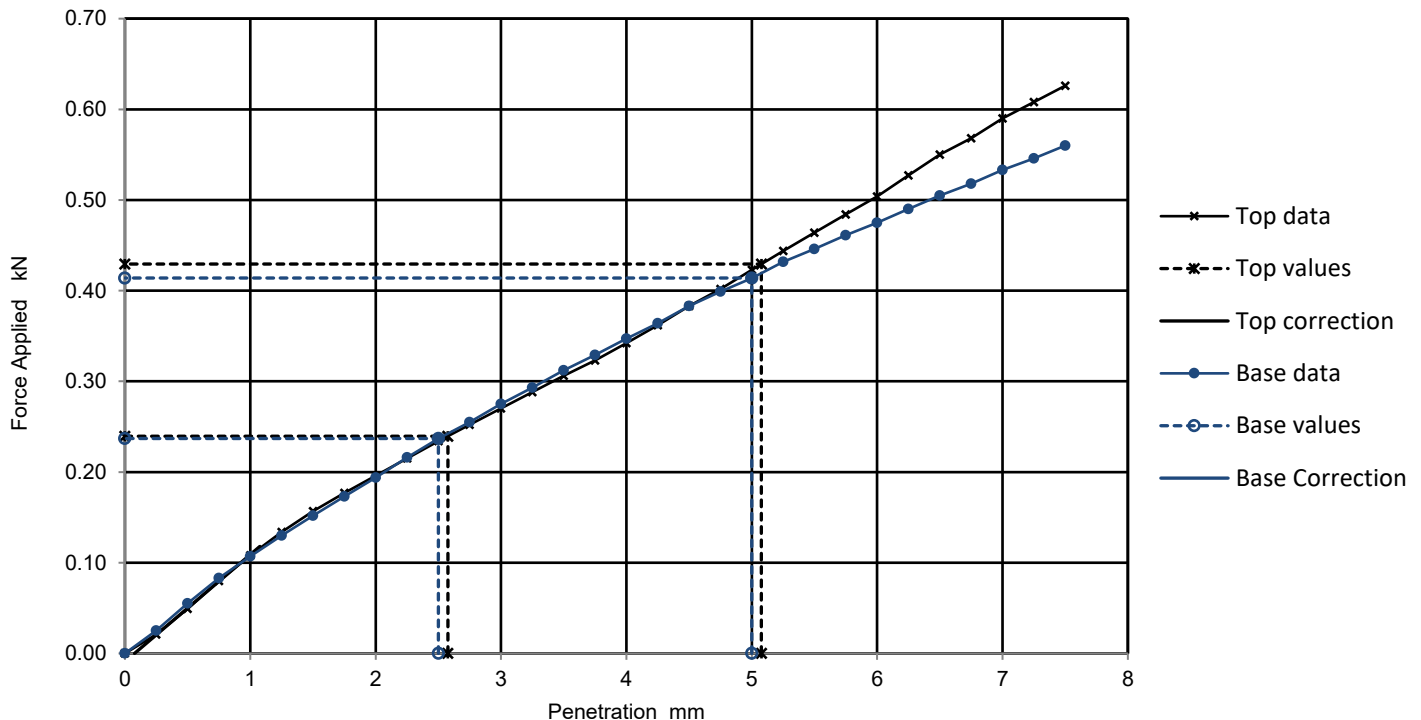
Laboratory Reference: 2100135
Hole No.: TP101
Sample Reference: Not Given
Sample Description: Brown slightly gravelly sandy CLAY

Depth Top [m]: 1.20
Depth Base [m]: 1.30
Sample Type: B

Specimen Preparation:

Condition	Remoulded			Soaking details		Not soaked	
Details	Recompacted with specified standard effort using 2.5kg rammer			Period of soaking		days	
				Time to surface		days	
				Amount of swell recorded		mm	
Material retained on 20mm sieve removed	0	%		Dry density after soaking		Mg/m3	
Initial Specimen details	Bulk density	2.09	Mg/m3	Surcharge applied		8	kg
	Dry density	1.77	Mg/m3			4.8	kPa
	Moisture content	18	%				

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
Yes	1.8	2.1	2.1	2.1
No	1.8	2.1	2.1	

Moisture Content %
18
18

Remarks: Preliminary report

Test/ Specimen specific remarks:

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Determination of California Bearing Ratio

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Tested in Accordance with: BS 1377-4: 1990: Clause 7

Client: G & J Geoenvironmental Consultants Ltd

Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers

Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224

Job Number: 21-26080

Date Sampled: 15/11/2021

Date Received: 24/11/2021

Date Tested: 13/12/2021

Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100137

Hole No.: TP105

Sample Reference: Not Given

Sample Description: Dark brown slightly gravelly slightly sandy CLAY

Depth Top [m]: 0.70

Depth Base [m]: 0.80

Sample Type: B

Specimen Preparation:

Condition Remoulded

Details Recompacted with specified standard effort using 2.5kg rammer

Soaking details

Period of soaking

Time to surface

Amount of swell recorded

Dry density after soaking

Not soaked

days

days

mm

Mg/m3

Material retained on 20mm sieve removed 2 %

Initial Specimen details Bulk density 2.18 Mg/m3

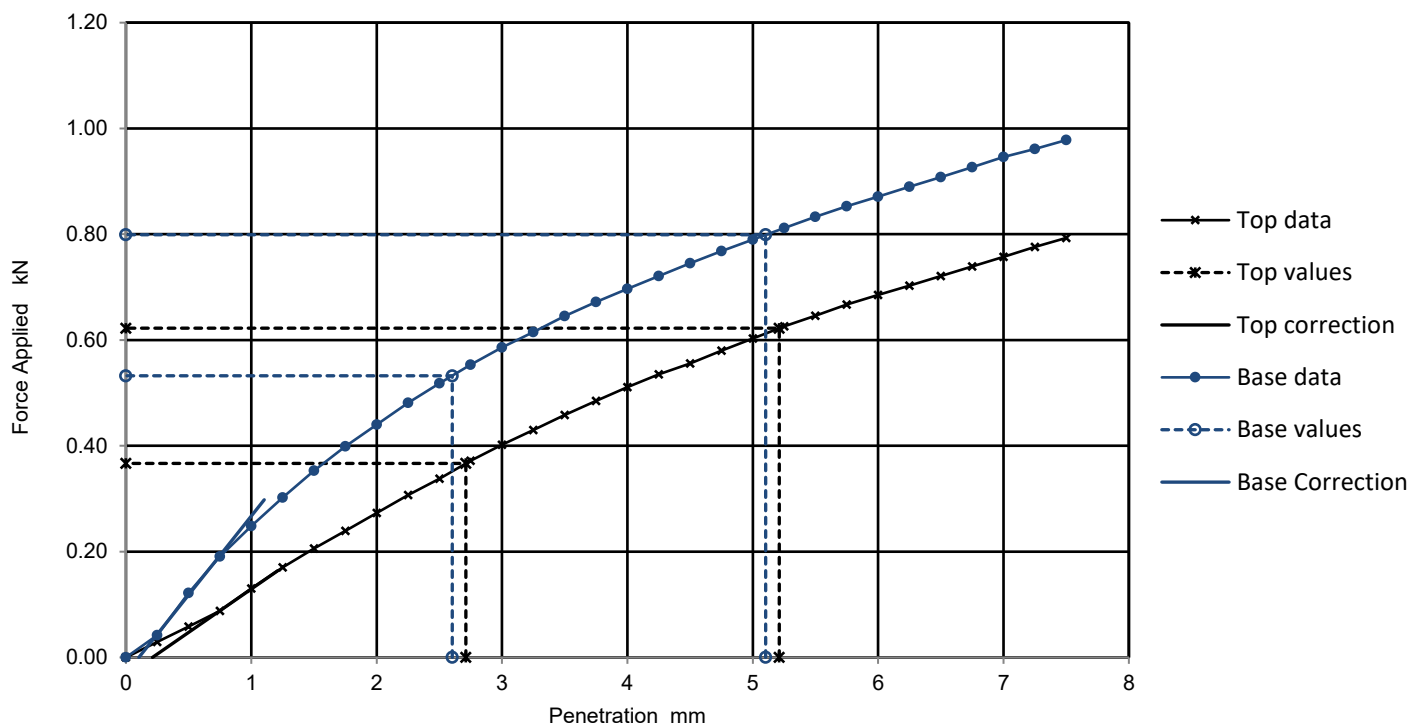
Dry density 1.92 Mg/m3

Moisture content 14 %

Surcharge applied 8 kg

4.8 kPa

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
Yes	2.8	3.1	3.1	
Yes	4.0	4.0	4.0	

Moisture Content %
14
14

Remarks: Preliminary report

Test/ Specimen specific remarks:

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Determination of California Bearing Ratio

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Tested in Accordance with: BS 1377-4: 1990: Clause 7

Client: G & J Geoenvironmental Consultants Ltd

Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers

Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224

Job Number: 21-26080

Date Sampled: 15/11/2021

Date Received: 24/11/2021

Date Tested: 13/12/2021

Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100140

Hole No.: TP107

Sample Reference: Not Given

Sample Description: Orangish brown slightly gravelly slightly sandy CLAY

Depth Top [m]: 0.40

Depth Base [m]: 0.50

Sample Type: B

Specimen Preparation:

Condition Remoulded

Details Recompacted with specified standard effort using 2.5kg rammer

Soaking details

Period of soaking

Time to surface

Amount of swell recorded

Dry density after soaking

Not soaked

days

days

mm

Mg/m³

Material retained on 20mm sieve removed 12 %

Initial Specimen details Bulk density 2.16 Mg/m³

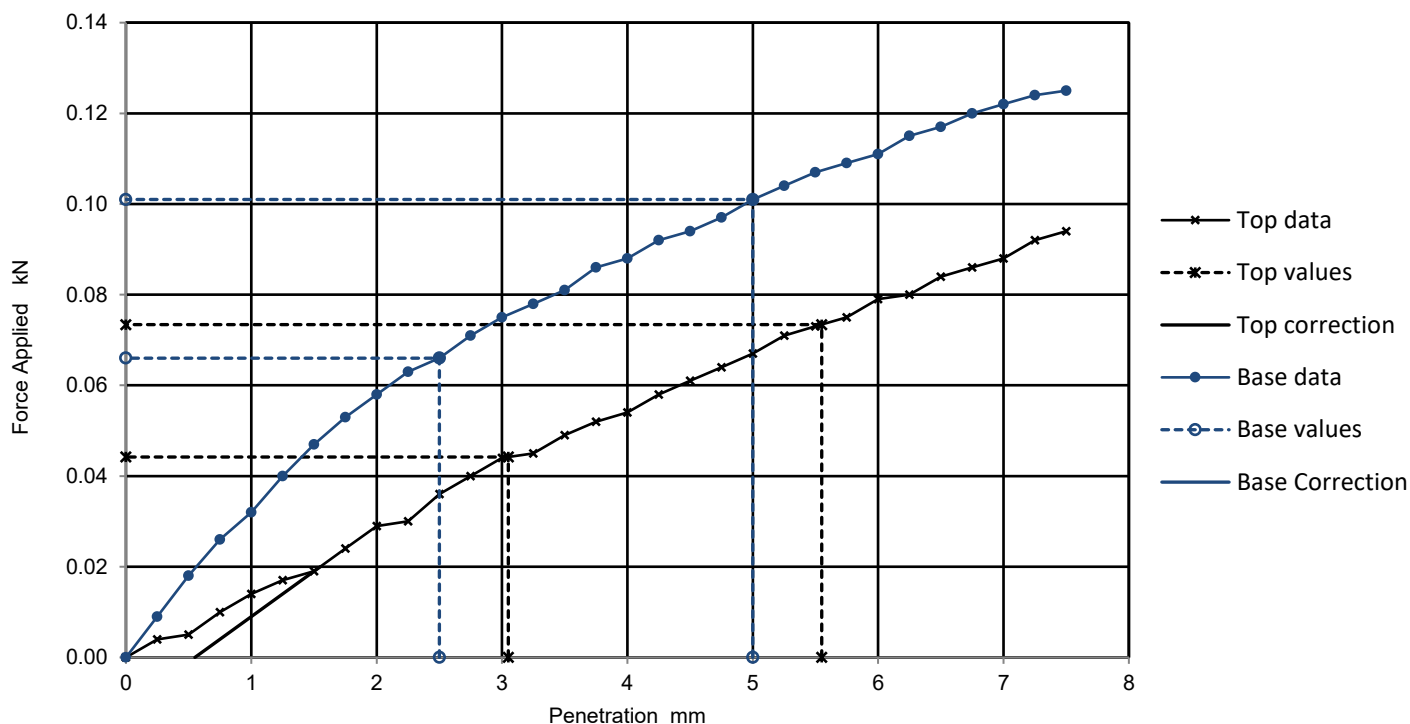
Dry density 1.87 Mg/m³

Moisture content 15 %

Surcharge applied 8 kg

4.8 kPa

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
Yes	0.3	0.4	0.4	
No	0.5	0.5	0.5	

Moisture Content %
15
15

Remarks: Preliminary report

Test/ Specimen specific remarks:

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Determination of California Bearing Ratio

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Tested in Accordance with: BS 1377-4: 1990: Clause 7

Client: G & J Geoenvironmental Consultants Ltd
Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers
Site Address: Penrhyn Road Knowsley

Client Reference: GJ224
Job Number: 21-26080
Date Sampled: 18/11/2021
Date Received: 24/11/2021
Date Tested: 13/12/2021
Sampled By: i2- AW

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2100143
Hole No.: TP109
Sample Reference: Not Given
Sample Description: Brown gravelly CLAY

Depth Top [m]: 0.40
Depth Base [m]: 0.50
Sample Type: B

Specimen Preparation:

Condition Remoulded
Details Recompacted with specified standard effort using 2.5kg rammer

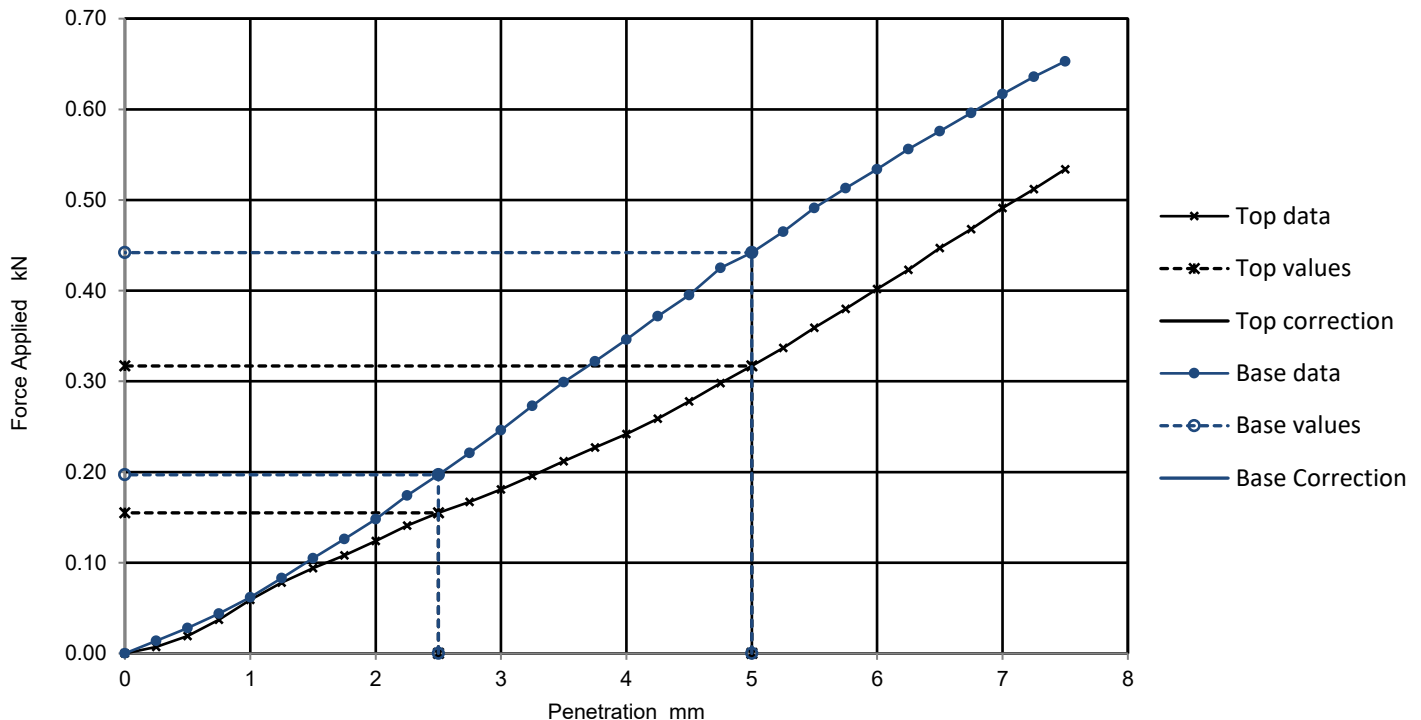
Soaking details Not soaked
Period of soaking days
Time to surface days
Amount of swell recorded mm
Dry density after soaking Mg/m³

Material retained on 20mm sieve removed 5 %

Initial Specimen details Bulk density 2.06 Mg/m³
Dry density 1.74 Mg/m³
Moisture content 19 %

Surcharge applied 8 kg
4.8 kPa

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
No	1.2	1.6	1.6	
No	1.5	2.2	2.2	

Moisture Content %
18
19

Remarks: Preliminary report

Test/ Specimen specific remarks:

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Determination of California Bearing Ratio

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Tested in Accordance with: BS 1377-4: 1990: Clause 7

Client: G & J Geoenvironmental Consultants Ltd
Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers
Site Address: Penrhyn Road Knowsley

Client Reference: GJ224
Job Number: 21-26080
Date Sampled: 18/11/2021
Date Received: 24/11/2021
Date Tested: 13/12/2021
Sampled By: i2- AW

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

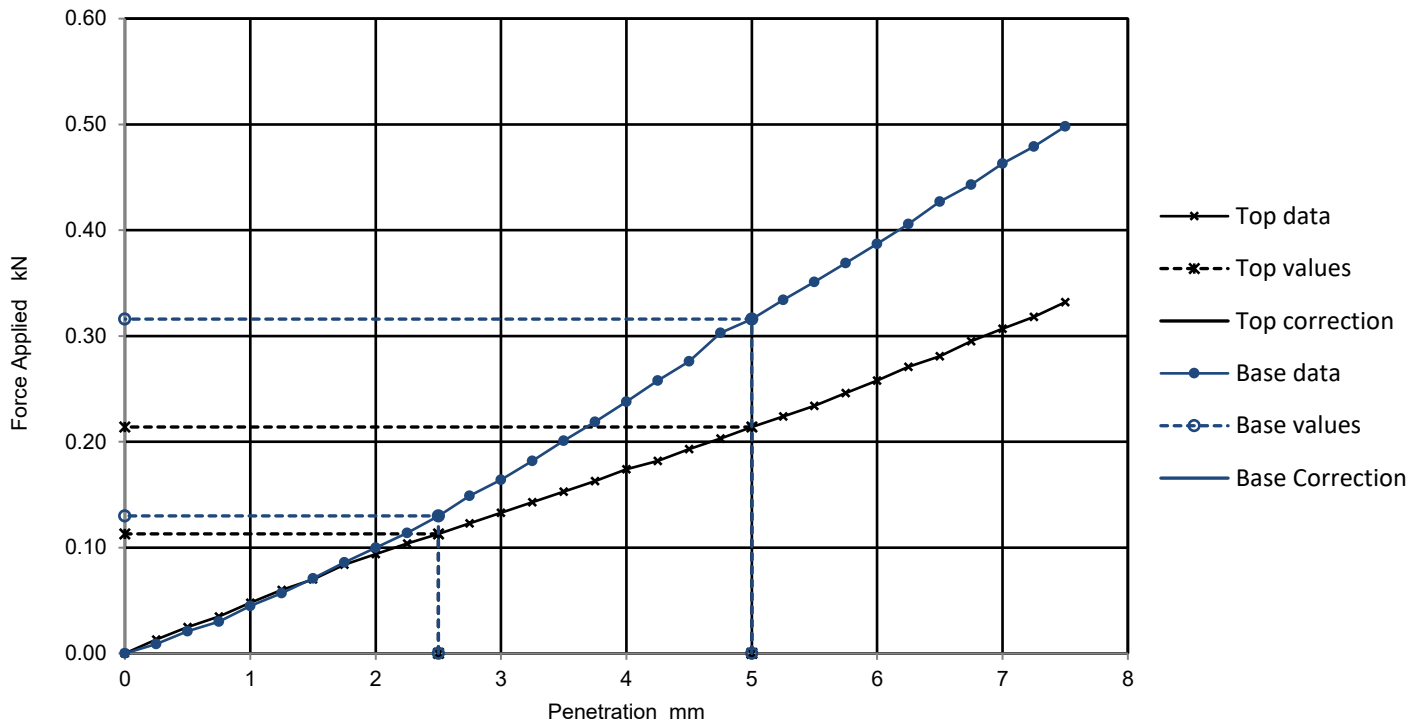
Laboratory Reference: 2100162
Hole No.: BH105
Sample Reference: Not Given
Sample Description: Brown very clayey SAND and GRAVEL

Depth Top [m]: 0.50
Depth Base [m]: 1.00
Sample Type: B

Specimen Preparation:

Condition	Remoulded	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
		Dry density after soaking	Mg/m3
Material retained on 20mm sieve removed	9 %		
Initial Specimen details	Bulk density 2.02 Mg/m3	Surcharge applied	8 kg
	Dry density 1.77 Mg/m3		4.8 kPa
	Moisture content 14 %		

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
No	0.9	1.1	1.1	
No	1.0	1.6	1.6	

Moisture Content %
15
14

Remarks: Preliminary report

Test/ Specimen specific remarks:

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE Unconsolidated Undrained

Triaxial Compression

Tested in Accordance with:
BS 1377-7: 1990: Clause 8

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Client: G & J Geoenvironmental Consultants Ltd
Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers
Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224
Job Number: 21-26080
Date Sampled: 16/11/2021
Date Received: 24/11/2021
Date Tested: 09/12/2021
Sampled By: i2- AW

Test Results:

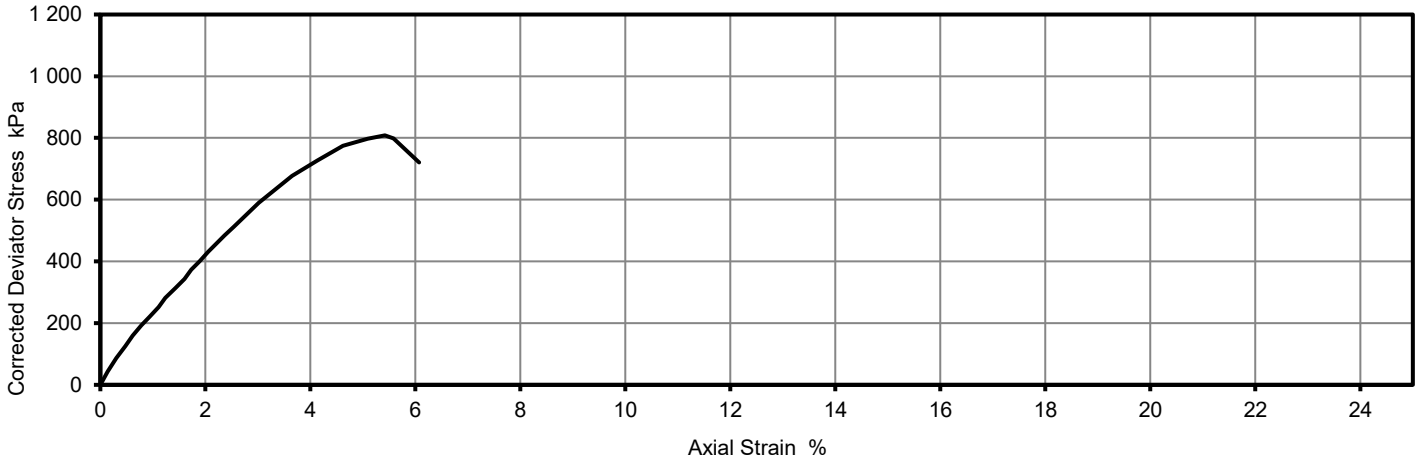
Laboratory Reference: 2100158
Hole No.: BH101
Sample Reference: Not Given
Sample Description: Reddish brown slightly gravelly sandy CLAY

Depth Top [m]: 4.00
Depth Base [m]: 4.45
Sample Type: U

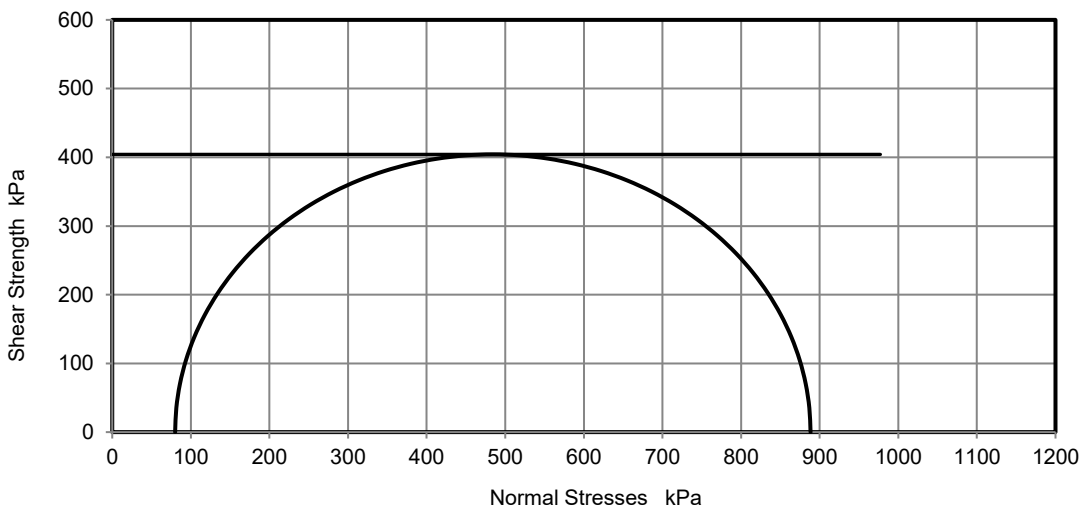
Test Number	1
Length	101.12 mm
Diameter	49.84 mm
Bulk Density	2.26 Mg/m ³
Moisture Content	9.8 %
Dry Density	2.06 Mg/m ³
Membrane Correction	0.69 kPa

Rate of Strain	2.00 %/min
Cell Pressure	80 kPa
Axial Strain at failure	5.4 %
Deviator Stress, ($\sigma_1 - \sigma_3$) _f	808 kPa
Undrained Shear Strength, c_u	404 kPa $\frac{1}{2}(\sigma_1 - \sigma_3)_f$
Mode of Failure	Brittle
Membrane thickness	0.23 mm

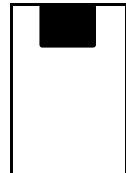
Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377.
This is provided for information only.

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Unconsolidated Undrained

Triaxial Compression

Tested in Accordance with:
BS 1377-7: 1990: Clause 8

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Client: G & J Geoenvironmental Consultants Ltd
Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers
Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224
Job Number: 21-26080
Date Sampled: 17/11/2021
Date Received: 24/11/2021
Date Tested: 09/12/2021
Sampled By: i2- AW

Test Results:

Laboratory Reference: 2100160
Hole No.: BH103
Sample Reference: Not Given
Sample Description: Reddish brown slightly gravelly sandy CLAY

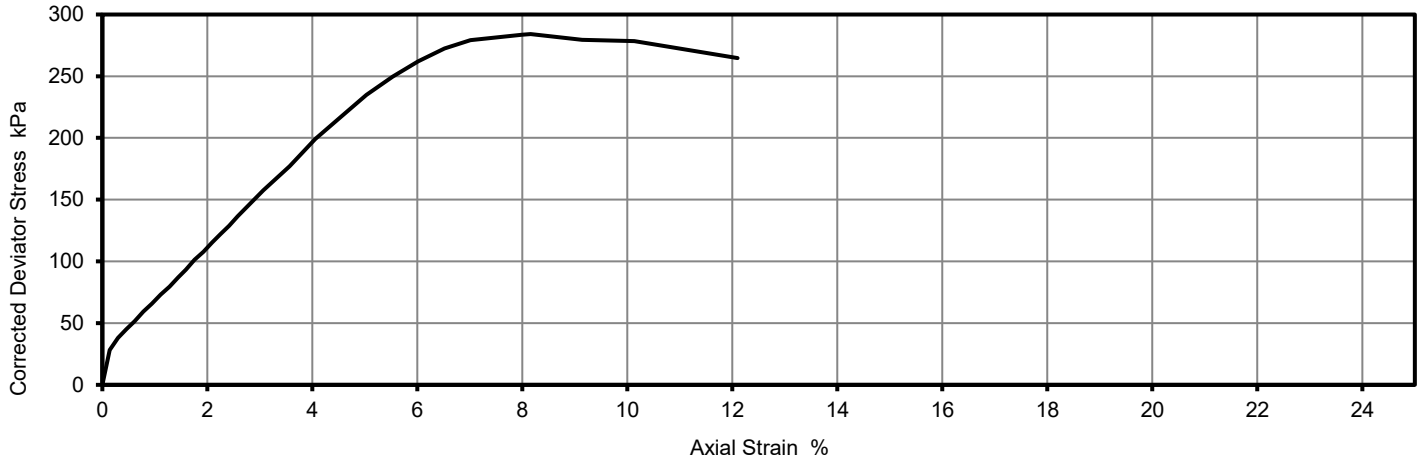
Depth Top [m]: 2.00
Depth Base [m]: 2.45
Sample Type: U

Test Number	1
Length	140.75 mm
Diameter	69.34 mm
Bulk Density	2.28 Mg/m ³
Moisture Content	10 %
Dry Density	2.07 Mg/m ³
Membrane Correction	0.67 kPa

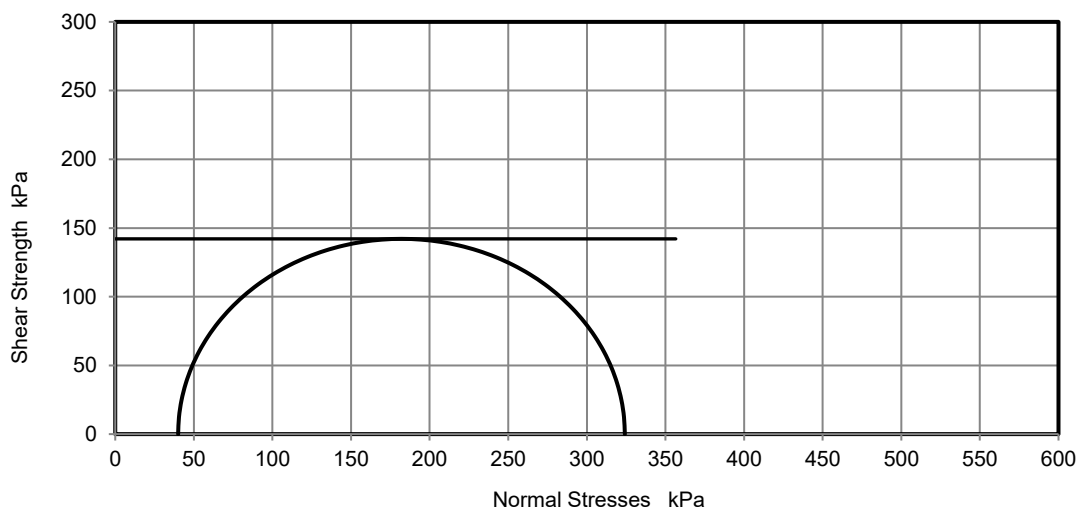
Rate of Strain
Cell Pressure
Axial Strain at failure
Deviator Stress, ($\sigma_1 - \sigma_3$)_f
Undrained Shear Strength, c_u
Mode of Failure
Membrane thickness

2.00	%/min
40	kPa
8.2	%
284	kPa
142	kPa $\frac{1}{2}(\sigma_1 - \sigma_3)_f$
Compound	
0.24	mm

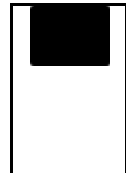
Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377.
This is provided for information only.

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Unconsolidated Undrained

Triaxial Compression

Tested in Accordance with:
BS 1377-7: 1990: Clause 8

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Client: G & J Geoenvironmental Consultants Ltd
Client Address: 35-37 High Street, Barrow upon Soar,
Loughborough, LE12 8PY

Contact: Tim Rogers
Site Address: Penrhyn Road Knowsley

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: GJ224
Job Number: 21-26080
Date Sampled: 16/11/2021
Date Received: 24/11/2021
Date Tested: 09/12/2021
Sampled By: i2- AW

Test Results:

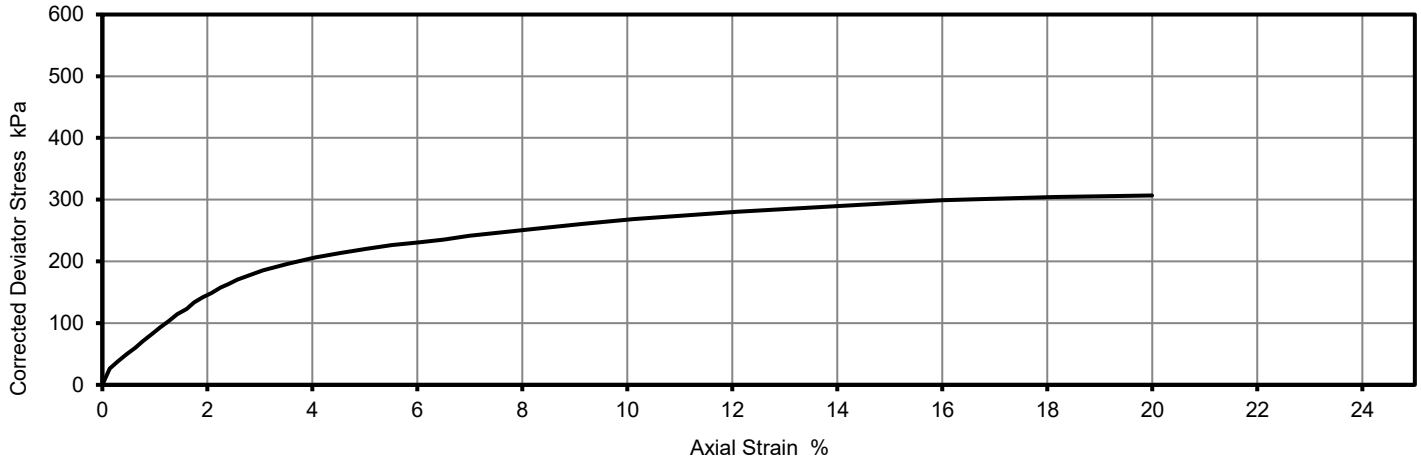
Laboratory Reference: 2100164
Hole No.: BH102
Sample Reference: Not Given
Sample Description: Reddish brown sandy CLAY

Depth Top [m]: 2.00
Depth Base [m]: 2.45
Sample Type: U

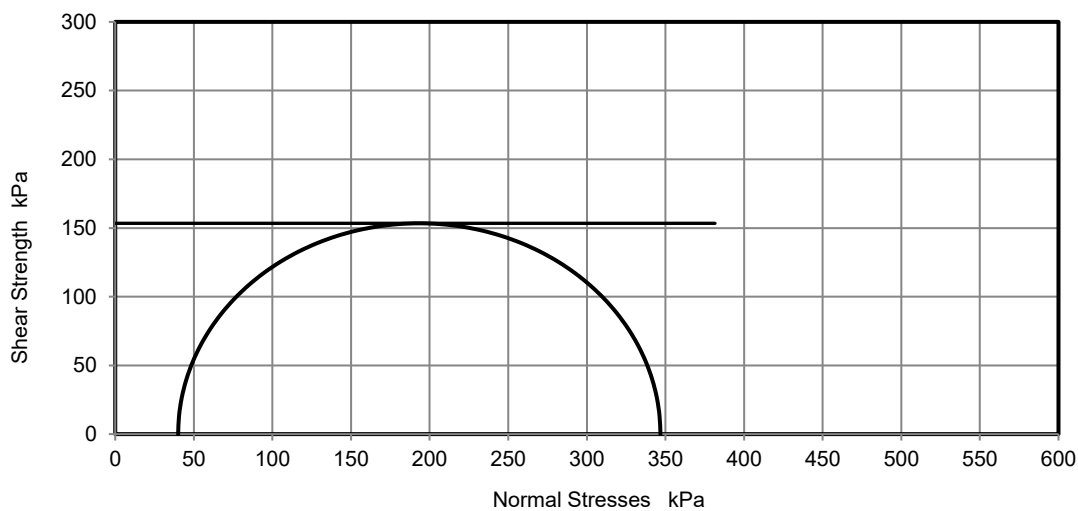
Test Number	1
Length	140.40 mm
Diameter	69.06 mm
Bulk Density	2.19 Mg/m ³
Moisture Content	14 %
Dry Density	1.92 Mg/m ³
Membrane Correction	1.45 kPa

Rate of Strain	2.00 %/min
Cell Pressure	40 kPa
Axial Strain at failure	20.0 %
Deviator Stress, ($\sigma_1 - \sigma_3$) _f	307 kPa
Undrained Shear Strength, c_u	153 kPa $\frac{1}{2}(\sigma_1 - \sigma_3)_f$
Mode of Failure	Compound
Membrane thickness	0.26 mm

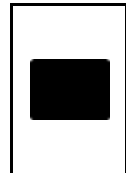
Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377.
This is provided for information only.

Remarks: Preliminary report

Signed:

Katarzyna Koziel
Technical Reviewer
for and on behalf of i2 Analytical Ltd

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**Tim Rogers**

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Analytical Report Number : 21-26086

Project / Site name:	Penrhyn Road Knowsley	Samples received on:	24/11/2021
Your job number:	GJ224	Samples instructed on/ Analysis started on:	24/11/2021
Your order number:	GJ228	Analysis completed by:	08/12/2021
Report Issue Number:	1	Report issued on:	08/12/2021
Samples Analysed:	6 soil samples		

Signed: *A. Czerwińska*

Agnieszka Czerwińska
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-26086
 Project / Site name: Penrhyn Road Knowsley
 Your Order No: GJ228

Lab Sample Number				2100188	2100189	2100190	2100191	2100192
Sample Reference				TP107	TP109	WS101	WS107	BH104
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.20-1.30	1.90-2.00	0.80-0.90	1.40-1.50	2.50-3.00
Date Sampled				15/11/2021	18/11/2021	16/11/2021	17/11/2021	18/11/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	10	18	14	14	31
Total mass of sample received	kg	0.001	NONE	0.50	0.50	0.50	0.50	0.50

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.0	7.4	7.3	5.6	10.3
Water Soluble SO ₄ 16ml extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.039	0.025	0.17	0.014	0.10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-26086
Project / Site name: Penrhyn Road Knowsley
Your Order No: GJ228

Lab Sample Number				2100193
Sample Reference				BH105
Sample Number				None Supplied
Depth (m)				3.00-3.45
Date Sampled				18/11/2021
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	8.5
Total mass of sample received	kg	0.001	NONE	0.50

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.0
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.062

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 21-26086

Project / Site name: Penrhyn Road Knowsley

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2100188	TP107	None Supplied	1.20-1.30	Brown clay and sand.
2100189	TP109	None Supplied	1.90-2.00	Brown clay and sand.
2100190	WS101	None Supplied	0.80-0.90	Brown clay and sand with gravel.
2100191	WS107	None Supplied	1.40-1.50	Brown clay and sand with gravel.
2100192	BH104	None Supplied	2.50-3.00	Brown silt.**
2100193	BH105	None Supplied	3.00-3.45	Brown clay and loam.

** Non MCERTS Matrix

Analytical Report Number : 21-26086

Project / Site name: Penrhyn Road Knowsley

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Knowsley
Redevelopments Ltd
Former Contract
Chemicals, Knowsley

Detailed Quantitative Risk
Assessment

March 2025



Document Control

Project: Former Contract Chemicals, Knowsley – Detailed Quantitative Risk Assessment

Site Address: Penrhyn Road, Knowsley, L34 9HY

Client: Knowsley Redevelopments Ltd

Author: G&J Geoenvironmental Consultants Ltd

Report Reference: GJ224-03-R002-DQRA-V1

Brief Description of Contents Review of site information in order to evaluate risks to human health and controlled waters and generate site-specific remedial target criteria for the site. Includes details of supplementary site investigation works to obtain information to inform the risk assessments.

Document Checking:

Date	Issue	Comments	Prepared by:	Checked by:	Issued by:
March 2025	V1	-	Chris Hepworth Managing Director	Andrew Bedford Senior Engineer	Chris Hepworth Managing Director

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G	CONSIM MODEL OUTPUT SHEETS
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1.0 INTRODUCTION

G&J Geoenvironmental Consultants Ltd (G&J) was commissioned by Knowsley Redevelopments Ltd to undertake a Detailed Quantitative Risk Assessment (DQRA) to support the remediation and redevelopment of the site of the former Contract Chemicals, on Penrhyn Road, Knowsley. The chemical works has been demolished and the site is currently rough open ground containing a series of concrete stockpiles. G&J previously produced a desk study for the site in February 2021 prior to demolition, and undertook ground investigation works in November 2021 after the demolition works had largely been completed.

The objectives of the DQRA are to determine whether the levels of contamination recorded in the soil and groundwater at the site present any significant risks to human health and / or controlled waters, and if so, determine appropriate remedial targets to ensure the protection of future users and the water environment.

1.1 Scope of Work

Supplementary ground investigation works have been undertaken as part of this assessment. Overall, the assessment comprises the following key elements;

- Supplementary ground investigation works to provide up-to-date information on the quality of the shallow (perched) groundwater and that of the deeper groundwater within the underlying sandstone aquifer;
- Definition of the contaminants of concern and their source areas, and the development of the Conceptual Site Model (CSM) in terms of risks to human health and controlled waters;
- Undertake a Detailed Quantitative Risk Assessment using the Contaminated Land Exposure Assessment (CLEA) model and ConSim v2.5 probabilistic model, as appropriate;
- Derive protective target concentrations for any contaminants of concern identified as presenting a potentially significant risk to human health or controlled waters

1.2 Terms and Conditions

This report has been prepared for Knowsley Developments Ltd in consideration of the current use of the site and the proposed future development. Much of the environmental information relates to the site in its present state and should not be used in a different context without reference to G&J.

1.3 Limitations

The findings and opinions conveyed in this report are based on the current information available to G&J. This report presents a DQRA based on the available information for the site and interpretative comment in terms of current contaminative status of the soil and groundwater at the site.

Although every effort has been made to ensure the accuracy of the information contained herein, no checks have been carried out to ensure the accuracy of information obtained from and collated by third parties and no liability can be accepted for any errors or misinterpretation of the third party information where it has been incorporated into this report.

Future changes in legislation and advances in current best practises or provision of more detailed design proposals or additional investigation data, may result in this report requiring review and possible further assessment after the date of issue.

1.4 Sources of information

The primary sources of information used in this assessment are the previous reports produced by G&J, as referenced below;

- '*Former Contract Chemicals Ltd, Knowsley – Interpretative Desk Study*', G&J Geoenvironmental Consultants Ltd, Report Ref: GJ224-DTS-V1, February 2021.
- '*Former Contract Chemicals Ltd, Knowsley – Site Investigation Interpretative Report*', G&J Geoenvironmental Consultants Ltd, Report Ref: GJ224-SI-INT-V1, January 2022.

The desk study included a review of a number of previous ground investigations that were undertaken at the site between 1993 and 2012. The findings are described in the following reports;

- '*Preliminary Contaminated Site Investigation Contract Chemicals Ltd, Knowsley*', Cremer & Warner Ltd, Report ref: C397/1, April 1993.
- '*Integrated Pollution Prevention and Control, Pre-Authorisation Desk Study of Contract Chemicals Ltd*', AIG Consultants Ltd, Report ref: UK99/A1421, July 1999.
- '*Contract Chemicals Ltd, Trade Effluent Overspill Sampling, Final Interpretive Report*', Entec UK Limited, Report ref: 11002il, January 2011.
- '*Bromododecane Spillage Investigation, Contract Chemicals Site, Knowsley*', AMEC Environment & Infrastructure UK Limite, Report ref: 32144, September 2012.

1.5 Policy Context – Land Contamination

The primary legal and policy mechanisms for managing contaminated land are Part IIA of the Environmental Protection Act 1990 and the National Planning Policy Framework.

Part IIA provides a statutory definition of Contaminated Land and supporting guidance which defines how to decide whether or not land meets this definition. For land to be determined as contaminated land, the onus is on demonstrating with sufficient certainty that land is in such condition, by reasons of substances in, on or under the ground that;

- a) Significant harm is being caused or there is a significant possibility of such harm being caused; or
- b) Significant pollution of controlled waters is being caused, or there is a significant possibility of such pollution being caused.

Significant harm and how to determine if a significant possibility of such harm exists is defined in the statutory guidance which accompanies Part IIA. The guidance also defines four categories of land with respect to the risks to human health and the water environment and how the degree of risk relates to the statutory definition of contaminated land, as summarised in the following figure:

Figure 1.1 Part IIA Categories

Land Category	Human Health	Water	
1	Unacceptably high probability that Significant Harm would occur if no action taken	Strong case that a Significant Possibility of Significant Pollution exists	Part IIA Contaminated Land
2	The risks are sufficient that a Significant Possibility of Significant Harm exists	Of sufficient concern to present a Significant Possibility of Significant Pollution	
3	Not low risk but does not pose a Significant Possibility of Significant Harm	The risks are not sufficient to constitute Significant Possibility of Significant Pollution	Not Part IIA Contaminated Land
4	Low risk to human health and no possibility of meeting the statutory definition	No/low risk to controlled waters and would not meet the statutory definition	

In terms of planning policy, a precautionary approach is adopted whereby it is necessary to demonstrate with sufficient confidence that the site cannot meet the statutory definition of contaminated land. Although the above categorisation is not explicitly applicable to planning decisions, a site classed as Category 4 should be considered suitable for development in accordance with planning policy. While a

Category 3 site could be considered suitable, the reduced level of confidence associated with such a site means this is less likely.

2.0 SITE SETTING

2.1 Site Location and Description

The site is located off Penrhyn Road, Knowsley, approximately 1km east of Junction 4 of the M57 motorway. The site is approximately centred on National Grid Reference 342970, 396725; the site location and current layout are shown in Figure 2.1.

Figure 2.1 Site Location and Layout



Contains Ordnance Survey data, © Crown copyright 2025

2.2 Site Description

The site covers an area of approximately 3.5ha and is approximately rectangular in shape. Prior to the demolition and clearance works the central and eastern portions of the site comprised disused chemical processing plants and tank farms, with warehousing and storage in the west and office space and car parking in the south. The details of the former layout and specific features are presented in G&J's previous desk study (and summarised in Section 2.3, below).

The site has now been cleared and comprises predominantly rough open ground, with stockpiles of crushed demolition rubble. Some of the site roads remain in place.

The site slopes very gently down to the south, with ground levels of approximately 32mAOD in the north and 30mAOD in the south, a gradient of approximately 1 in 90.

To the immediate north of site is the embanked A580 'East Lancashire Road' with the Brintonwood Trading Estate beyond. The southern boundary is formed by Penrhyn Road, with an area of rough ground beyond. To the west of the site is a distribution warehouse where a number of businesses operate. To the east is a chemical works operated by Algal Omega 3 Ltd, including an electricity sub-station.

2.3 Site History

The site was largely undeveloped agricultural land/rough ground until around 1980, when development of the current site commenced. Knowsley Brook was shown to run east to west across the site but was culverted when the site was developed. Since then the site has seen some development between 1988 and 2003, the most significant being the construction of a building (the Bonner building) in 1997.

Anecdotal evidence suggests that during the Second World War period the site was occupied by Nissan Hut accommodation for workers at the Royal Ordnance Factory Kirby, which was located to the north of the A580.

The history as a chemical works and the wide variety of chemicals and processes used during its operation resulted in several potential contamination sources. The most prominent of these were the main processing areas such as the Surfactant Hall, Bonner building, Diol Plant, Technical Development Centre (TDC) and adjacent tank farms. In addition, other sources such as fuel tanks, electricity substations, IBCs and smaller chemical containers were identified during the site walkover.

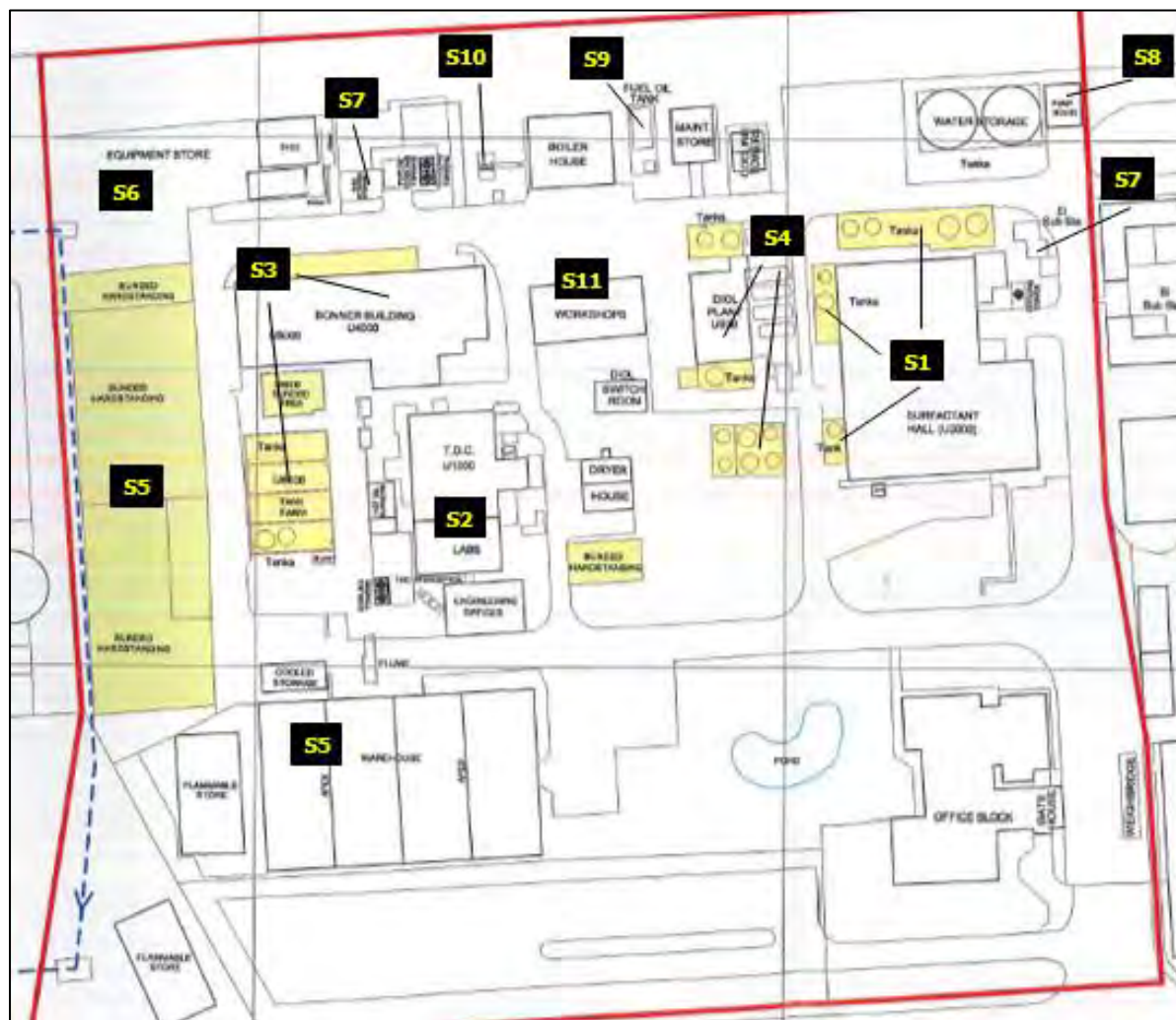
Table 2.1 presents a summary of the main potential sources and the primary contaminants of concern associated with each. Figure 2.2 is a plan of the former works and shows the locations of these sources.

Table 2.1 Summary of Main Potential Contaminant Sources

Source	Potential Contaminants
Surfactant Hall and Tank Farm (S1)	Sodium cyanate; Sodium thiocyanate; Hydrochloric Acid; Acetic Acid
Technical Development Centre (TDC) (S2)	Various organic and inorganic contaminants
Bonner Building and Tank Farm (S3)	Bromine; Butyric acid; Hydrochloric acid; Ethanol
Diol Plant and Tank Farm (S4)	Dimethyl amine (1, 2) propane diol; Hydrochloric Acid; Sodium Hydroxide

Source	Potential Contaminants
Warehouse & Bunded Hardstanding (west) (S5)	Hydrochloric acid wastes; Hydrobromine acid wastes; Sulphur Dioxide absorber waste; Alkaline wastes; Solvent wastes; Diol wastes; Ammonium Sulphate wastes
Equipment Store (S6)	Hydrocarbons; Inorganics
Substations (S7)	Hydrocarbons (including PCBs)
Pump House (S8)	Biocides; Bromgard 420 (zinc based water hardness treatment)
Fuel Tanks (S9)	Fuel Oils; Petroleum Hydrocarbons
Valve House (S10)	Gas Condensates
Workshops (S11)	Petroleum Hydrocarbons
General Contaminants associated with the buildings and Made Ground (S12)	Metals; PAHs; Asbestos

Figure 2.2 Main Potential Contaminant Source Locations



It is proposed to redevelop the site for commercial use, as shown in the potential layout in Figure 2.3.

[illegible]

3.0 GROUND CONDITIONS

3.1 Geology and Hydrogeology

The site is shown to be underlain by Devensian Till in the north and the Shirdley Hill Sand Formation in the south, and then a bedrock consisting of the sandstone of the Chester Formation. A surficial layer of Made Ground is anticipated due to the past uses and development of the site.

The Shirdley Hill Sand Formation is classed as Secondary (A) Aquifer by the Environment Agency (EA), and the Devensian Till deposits as a Secondary (undifferentiated) Aquifer. The underlying Chester Formation is classed as Principal Aquifer. The site is within Zone 3 (total catchment) of a Groundwater Source Protection Zone. The closest active groundwater abstraction is a potable abstraction approximately 980m to the east of site, where water is taken from a number of boreholes. Another potable abstraction is present approximately 2km to the west.

3.2 Hydrology

Knowsley Brook is understood to flow within a culvert beneath the site, having historically flowed east to west at the surface across the site. Available plans show the culvert to run beneath the western margin of the site, while anecdotal evidence suggests it flows beneath the northern and western edges of the site.

3.3 Previous Investigation Findings

The 2021 investigation by G&J comprised the following elements:

- Excavation of 14no trial pits to a maximum depth of 2.2mbgl;
- Drilling of 11no. window sample boreholes to a maximum depth of 3.45mbgl;
- Drilling of 5no. cable percussion boreholes to a maximum depth of 7.95m;
- Sampling of groundwater from standpipes installed in 11no. borehole locations;
- Chemical laboratory analysis of selected soil and groundwater samples.

The exploratory hole locations are shown in the plan included in Appendix A.

3.3.1 Geology

Made Ground was encountered throughout the site to depths of between 0.4m and 3.0mbgl, but typically between 1.0m and 2.0mbgl.

The observed Made Ground typically comprised reworked natural soils (Glacial Till and Chester Formation), with entrained man-made materials such as brick and concrete fragments. The Made Ground was predominantly cohesive (e.g. sandy, gravelly clay) but granular (e.g. slightly clayey, gravelly sand) horizons were also present. Cobble-sized brick and concrete fragments were present locally.

A 'solvent odour' was reported in the Made Ground in exploratory holes WS104, BH104, TP101, TP103 to TP106 inclusive, and TP108. A 'hydrocarbon odour' was reported in the Made Ground in exploratory holes TP106 and TP107. All of these exploratory holes were located in the northern half of the site (see plan in Appendix A).

Deposits considered to be Glacial Till were encountered at depths of between 0.4m (TP102) and 3.0mbgl (BH101), with thicknesses from 0.3m to >4.75m where encountered (Glacial Till was not recorded in several locations, predominantly in the north-east of the site). These deposits were predominantly cohesive, although thin granular horizons were present locally within them.

Beneath the Glacial Till, or directly beneath the Made Ground where the Till was absent, strata considered to represent the Chester Formation were encountered, at depths of between 0.4m and 6.5mbgl (BH101). Both sandstone and mudstone were encountered, with the weathered strata being both granular and cohesive.

Several of the boreholes were terminated at shallow depth as they were unable to penetrate the Chester Formation (or stiff / dense Glacial Till).

3.3.1.1 Groundwater

During drilling, groundwater strikes (seepages) were predominantly associated with the lower part of the Made Ground, although in some locations was encountered in the underlying natural deposits. It was typically encountered, where present, at depths shallower than 2mbgl.

The standpipes typically had response zones within the Made Ground or superficial natural deposits, and during monitoring groundwater levels were typically <2mbgl. It is considered likely that in most cases groundwater had collected in the installations following minor ingress from overlying Made Ground or thin natural granular horizons and was not necessarily representative of actual groundwater

levels. The groundwater within most (or all) of these standpipes is not likely to be representative of the deeper groundwater within the Chester Formation.

3.3.2 Soil Contamination

Contamination within the soil was predominantly in the form of organic compounds, most notably 1,2-dichlorobenzene, and to a lesser extent other BTEX compounds. The highest concentrations were recorded in Made Ground from BH105 (512mg/kg) and BH104 (41mg/kg) located in the eastern and western parts of the central process area (see exploratory hole plan in Appendix A). Lower concentrations of 1,2-dichlorobenzene and other organic compounds were common in locations across the northern half of the site.

However, none of the recorded contaminant concentrations were in excess of the generic assessment criteria (GAC) which are protective of human health for a commercial land use. Asbestos was recorded in only one sample out of 33 that were tested.

3.3.3 Groundwater Contamination

Contaminant concentrations in groundwater were referenced against Water Quality Standards (WQSs), these being freshwater Environmental Quality Standards (EQSs) and UK Drinking Water Standards (DWS). Although not directly applicable to groundwater, they represent useful initial conservative benchmarks for contamination.

Several inorganic and organic contaminants were recorded at concentrations in excess of the WQSs, but this is not considered unusual for shallow groundwater and the exceedances do not necessarily equate to a significant impact.

However, the most significant contamination recorded in the groundwater was organic, again most notably in the form of 1,2-dichlorobenzene. Significant concentrations (between 2400 – 8400ug/l) were recorded in BH103, BH104, BH105 and WS101, all of which were located within the area previously occupied by the main process areas and tank farms. Trace concentrations of organic contamination (dichlorobenzene and other compounds) were generally recorded in other locations.

Inorganic contamination was less significant, although notable cyanide concentrations (between 169-215ug/l) were recorded in BH104, BH105 and WS110.