

Chris Staniewski  
Manning Elliot Partnership  
Langlands  
Pallet Hill  
Penrith, Cumbria  
CA11 0BY

**Date:** 23.05.2024

**Project No:** GEO2024-6332

**Project Name:** Cleator Mills, Cumbria

**Project Title:** Supplementary Ground Investigation and Remediation Strategy

Dear Chris,

## Introduction

Geo Environmental Engineering Ltd (GEO) were commissioned by the Consultant, Manning Elliot Partnership, on behalf of the Client, Genr8 North Ltd to carry out a Supplementary Ground Investigation and Remediation Strategy for land at Cleator Mills in Cleator Moor, Cumbria.

It is understood that the Client is developing the site for commercial end use which will include a Speedy Hire Plant Depot.

## Previous Reporting Details and Summary

GEO have previously completed the following reports for the site which should be read in conjunction:

- Phase 1: Desk Top Study (Preliminary Environmental Risk Assessment), ref: 2023-5775, dated: 26.05.2023.
- Phase 2: Ground Investigation Report, ref: 2023-5775, dated 22.06.2023.

The ground investigation encountered made ground on site to depths of between c.0.45m and c.0.80m bgl. The made ground was typically granular and comprised occasional fused slag, silty sandy gravel of aggregate with occasional brick, glass, metal, plastic, clinker, timber, asphalt and ash with pockets of reworked gravelly clay. Evidence of minor hydrocarbon contamination (slight odour) was limited to the made ground in the north western part of the site. No evidence of organic contamination was noted elsewhere.

Laboratory screening of made ground samples indicated low concentrations of organic and inorganic contaminants and no significant risks were identified with respect to human health. The report recommended removal of any soils impacted by hydrocarbon (petroleum) contamination as good practice to protect the workforce and the wider environment.

A piece of board containing Amosite and Chrysotile was detected within the shallow granular made ground in the western part of the site. It is likely that the source of the asbestos board was the former roof materials. Loose asbestos fibres were not detected. The report included the following comment regarding asbestos contamination on the site:

*“care should be taken to ensure that ACMs are not exposed at the surface or disturbed where they could become airborne and inhaled. Where the ACM materials (board) are buried at*

***“Without Site Investigation Ground is a Hazard”***

*Site Investigation Steering Group (SISG), 1993*

*depth, the risk is considered negligible to the end user. Basic protection measures may be required ensure that the future end users (human health) are not put at risk, and the Principal Contractor should ensure that their health and Safety Management plan takes into account the presence of possible asbestos board in the made ground to maintain the safety of site operatives.”*

### **Supplementary Intrusive Ground Investigation Works**

GEO attended the site on the 3<sup>rd</sup> and 24<sup>th</sup> May 2024 to further investigate land to the west of the former building where minor hydrocarbon contamination had previously been encountered in trial pit TP04 and asbestos contamination was previously recorded in borehole BH02. During the site works, this area comprised crushed demolition rubble.

The supplementary intrusive site works comprised:

- 5 No. trial pits (TP04A to TP04F) to depths of between c.0.30m and c.1.10m bgl.
- Surface sampling of the demolition rubble at 7 No. Locations (Sample 1 to Sample 7).

An exploratory hole location plan is attached. The trial pits were located within the vicinity of trial pit TP04 which had previously encountered minor hydrocarbon contamination (slight odour) in order to identify a possible source of the contamination and to allow the materials to be excavated and disposed of if present.

### **Ground Conditions**

The trial pits encountered made ground to depths of between c.0.24m and c.0.62m bgl. This comprised granular deposits including gravel of aggregate, brick and concrete with occasional pockets of reworked clay. Concrete (former floor slab) was encountered in trial pit TP04E. The made ground was underlain by natural appearing soils comprising red brown sandy gravel and cobbles.

No evidence of hydrocarbon contamination was encountered in any of the trial pits. Samples of the made ground and natural deposits were recovered for chemical laboratory screening to confirm the organic contamination concentrations.

A visual inspection of the ground to the west of the former building was also undertaken. 4 No. fragments of suspected chrysotile board (former roofing material) was identified within the rubble. These were removed for disposal. Samples of the rubble soils were recovered to determine if they are impacted by asbestos materials.

### **Chemical Laboratory Screening Results**

2 No. samples of the made ground and 2 No. samples of the natural drift deposits were scheduled to chemical screening for petroleum hydrocarbon compounds (speciated TPH) and associated derivatives (MTBE and BTEX). The results have been assessed against generic assessment criteria (GAC) for a commercial / industrial end use. The concentrations of TPH, MTBE and BTEX were typically below the level of detection. Where hydrocarbon compounds were detected, the concentrations were very low and well below the GAC values.

7 No samples of the surface rubble were scheduled to laboratory asbestos screening. The results indicate the presence of chrysotile asbestos within four of the seven samples screened. This included fibre bundles and occasional microscopic insulation.

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*Site Investigation Steering Group (SISG), 1993*

## Conclusions, Recommendations and Remediation Strategy

The supplementary investigation indicates that the minor hydrocarbon contamination (slight odour) that was previously identified in the north west part of the site is no longer present. No physical evidence of hydrocarbon contamination was encountered during the supplementary exploratory holes, therefore, it is likely that the previous investigation encountered a minor, localised spillage which has since evaporated or dissipated. As such, the risks to human health or the wider environment are considered negligible, and no further works are deemed necessary in this respect.

The presence of asbestos fibres within the granular made ground is a potential risk to human health through inhalation of dust. Construction workers, staff and members of the public are potentially at risk and safety precautions and remediation works are considered necessary in order to mitigate these risks.

Given the proposed end use, encapsulating the fibres within the ground and capping it beneath hard standing (concrete) may be the safest and most appropriate form of remediation. This will break the pathway and mitigate the risks to human health. As such, it is recommended that where granular made ground is present across the western part of the site, it is fully encapsulated beneath concrete. A membrane or imported sub-base should be employed to prevent the concrete mixing with the underlying granular made ground during pouring.

Some made ground may need to be excavated to accommodate the required levels. Excess soils should be disposed of appropriately to a suitable facility that is accredited to accept soil impacted by asbestos wastes. None of the made ground should be left exposed at the surface.

Dust suppression techniques should be employed during any earthworks and the materials should not be crushed as this could release asbestos fibres into the air. The principal Contractor should be made aware that the materials in this part of the site have tested positive for asbestos fibres so that they can accommodate this in their risk assessments and method statements to mitigate the risks to their staff and sub-contractors.

If buried utilities are to pass through this part of the site, clean inert materials should be used to line the trenches to mitigate the risks to future workers.

## Validation Of Remediation Works

Any remediation works would be subject to the approval of the Local Authority. It is recommended that the Remediation Strategy is agreed with the Planning Authority prior to implementation on site.

Once the remedial works have been implemented on site, the Planning Authority will require the completion of Validation to confirm the remedial works have been completed in accordance with the agreed strategy.

Therefore, following completion of the remediation works, it is recommended that GEO visit the site to confirm that the made ground has been successfully encapsulated beneath concrete and that no granular made ground remains exposed at the surface.

## General Comments

Consideration must be made for variations to occur in the ground conditions between the exploratory hole locations for which GEO holds no responsibility. It is therefore recommended that a “watching

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*Site Investigation Steering Group (SISG), 1993*

brief" be applied to ensure that if ground conditions vary from those identified during this investigation then advice should be sought from a suitably qualified and experienced Geo-Environmental Engineer.

The recommendations and opinions expressed in this report are based on the ground conditions observed. Consequently, GEO takes no responsibility for conditions that have not been revealed or which occur between them.

The conclusions and recommendations presented within this report are considered reasonable based on the available information. However, these cannot be guaranteed to gain regulatory approval. Therefore, the report should be passed to the appropriate regulatory authorities and/ or other key stakeholders, including warranty providers in order to seek their approval of the findings prior to undertaking any site works or development on site.

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If there are any queries, please do not hesitate to contact Geo-Environmental Engineering Ltd.

Yours Faithfully

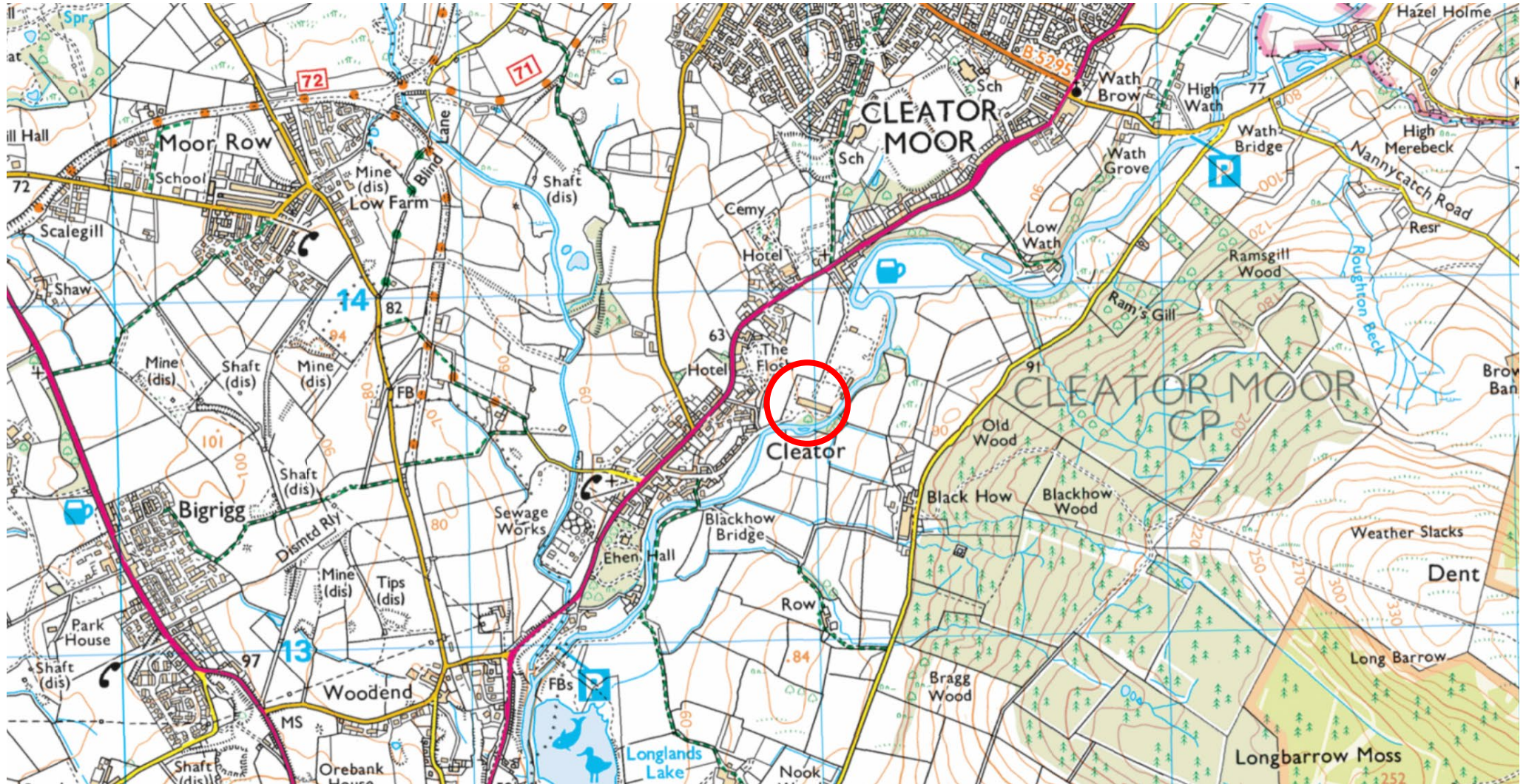
.....  
James Brock *BSc (Hons), MSc*  
Associate - Geo Environmental Engineering Ltd

***"Without Site Investigation Ground is a Hazard"***

*Site Investigation Steering Group (SISG), 1993*



**GEO2024-6332: Land at Cleator Mills, Cumbria – Site Location**



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Email: [info@geoenvironmentalengineering.com](mailto:info@geoenvironmentalengineering.com)





Telephone: 07883 440 186



**GEO2024-6332: Land at Cleator Mills, Cumbria – Exploratory Hole Location Plan**

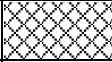
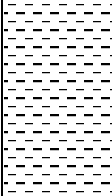


**KEY:**

-  Previous Borehole Location
-  Previous Trial Pit Location
-  Supplementary Trial Pit Locations
-  Made Ground Sample Locations



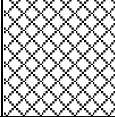
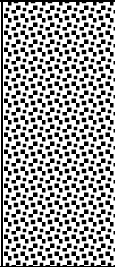
**GEO2024-6332: Land at Cleator Mills, Cumbria – TP04A**

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / Samples
0.00	0.24	MADE GROUND: Dark grey brown silty sandy angular GRAVEL of aggregate, brick and concrete.		0.20 - J
0.24	0.80	Firm to stiff red brown silty sandy CLAY.		
		Trial hole remained open and dry on completion. Trial hole backfilled with arisings on completion.		
<b>Engineer:</b> J.Brock <b>Site Works Date:</b> 08/05/2024 <b>Plant:</b> Tracked 360 Excavator			<b>Log Notes:</b> HSV = Hand Shear Vane (kN/m <sup>2</sup> ) LP = Limited Penetration (HSV/CBR) B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub	





**GEO2024-6332: Land at Cleator Mills, Cumbria – TP04B**

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / Samples
0.00	0.44	MADE GROUND: Dark grey brown silty sandy angular GRAVEL of aggregate, brick and concrete.		
0.44	1.10	Red brown sandy sub-rounded GRAVEL and COBBLES of mixed lithology.		0.50 - J
		Trial hole remained open and dry on completion. Trial hole backfilled with arisings on completion.		

**Engineer:** J.Brock

**Site Works Date:** 08/05/2024

**Plant:** Tracked 360 Excavator

**Log Notes:**

HSV = Hand Shear Vane (kN/m<sup>2</sup>)

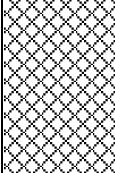
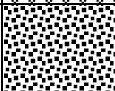
LP = Limited Penetration (HSV/CBR)

B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub





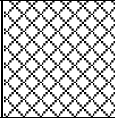
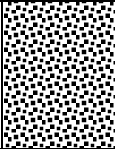
**GEO2024-6332: Land at Cleator Mills, Cumbria – TP04C**

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / Samples
0.00	0.62	MADE GROUND: Dark grey brown silty sandy angular GRAVEL of aggregate, brick and concrete. Many bricks.		0.40 - J
0.62	0.90	Red brown sandy sub-rounded GRAVEL and COBBLES of mixed lithology.		
		Trial hole remained open and dry on completion. Trial hole backfilled with arisings on completion.		
<b>Engineer:</b> J.Brock <b>Site Works Date:</b> 08/05/2024 <b>Plant:</b> Tracked 360 Excavator			<b>Log Notes:</b> HSV = Hand Shear Vane (kN/m <sup>2</sup> ) LP = Limited Penetration (HSV/CBR) B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub	





**GEO2024-6332: Land at Cleator Mills, Cumbria – TP04D**

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / Samples
0.00	0.44	MADE GROUND: Dark grey brown silty sandy angular GRAVEL of aggregate, brick and concrete. Occasional pockets of reworked gravelly clay.		
0.44	0.90	Red brown sandy sub-rounded GRAVEL and COBBLES of mixed lithology.		0.50 - J
		Trial hole remained open and dry on completion. Trial hole backfilled with arisings on completion.		

**Engineer:** J.Brock

**Site Works Date:** 08/05/2024

**Plant:** Tracked 360 Excavator

**Log Notes:**

HSV = Hand Shear Vane (kN/m<sup>2</sup>)

LP = Limited Penetration (HSV/CBR)

B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub





**GEO2024-6332: Land at Cleator Mills, Cumbria – TP04E**

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / Samples
0.00	0.30	MADE GROUND: Dark grey brown silty sandy angular GRAVEL of aggregate, brick and concrete.		
0.30		Concrete. Unable to penetrate. Trial pit terminated.		
		Trial hole remained open and dry on completion. Trial hole backfilled with arisings on completion.		

**Engineer:** J.Brock

**Site Works Date:** 08/05/2024

**Plant:** Tracked 360 Excavator

**Log Notes:**

HSV = Hand Shear Vane (kN/m<sup>2</sup>)

LP = Limited Penetration (HSV/CBR)

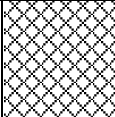
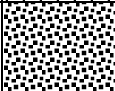
B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub



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**GEO2024-6332: Land at Cleator Mills, Cumbria – TP04F**

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / Samples
0.00	0.39	MADE GROUND: Dark grey brown silty sandy angular GRAVEL of aggregate, brick and concrete.		
0.39	0.70	Red brown sandy sub-rounded GRAVEL and COBBLES of mixed lithology.		
		Trial hole remained open and dry on completion. Trial hole backfilled with arisings on completion.		
<b>Engineer:</b> J.Brock <b>Site Works Date:</b> 08/05/2024 <b>Plant:</b> Tracked 360 Excavator			<b>Log Notes:</b> HSV = Hand Shear Vane (kN/m <sup>2</sup> ) LP = Limited Penetration (HSV/CBR) B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub	







## Certificate of Analysis

**Certificate Number** 24-09576

**Issued:** 17-May-24

**Client** GEO Environmental Engineering  
NW Office  
31 Casshow Way  
Cockermouth  
Cumbria  
CA13 9FY

**Our Reference** 24-09576

**Client Reference ~** GEO2023-6332

**Order No ~** (not supplied)

**Contract Title ~** Cleator Mills, Cumbria

**Description** 11 Soil samples.

**Date Received** 10-May-24

**Date Started** 10-May-24

**Date Completed** 17-May-24

**Test Procedures** Identified by prefix DETSn (details on request).

**Notes** 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.

**Approved By**

Kirk Bridgewood  
General Manager



2139

Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report    Tel: 01207 582333 • email: [info@dets.co.uk](mailto:info@dets.co.uk) • [www.dets.co.uk](http://www.dets.co.uk)

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# Summary of Chemical Analysis

## Soil Samples

Our Ref 24-09576  
 Client Ref ~ GEO2023-6332  
 Contract Title ~ Cleator Mills, Cumbria

Lab No	2335322	2335323	2335324	2335325
Sample ID ~	TP04A	TP04B	TP04C	TP04D
Depth ~	0.20	0.50	0.40	0.50
Other ID ~				
Sample Type ~	SOIL	SOIL	SOIL	SOIL
Sampling Date ~	08/05/2024	08/05/2024	08/05/2024	08/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
<b>Petroleum Hydrocarbons</b>							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	7.6
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	87
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	84
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C10-C44	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	180
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	1.6
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	3.2
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	38
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	59
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C10-C44	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	100
Ali/Aro C10-C44	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	280
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01



## Summary of Asbestos Analysis Soil Samples

Our Ref 24-09576

Client Ref ~ GEO2023-6332

Contract Title ~ Cleator Mills, Cumbria

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2335326	SAMPLE 1 Surface	SOIL	NAD	none	Ben Rose
2335327	SAMPLE 2 Surface	SOIL	Chrysotile	Chrysotile present as fibre bundles and in microscopic insulation	Ben Rose
2335328	SAMPLE 3 Surface	SOIL	NAD	none	Ben Rose
2335329	SAMPLE 4 Surface	SOIL	Chrysotile	Chrysotile present as fibre bundles	Ben Rose
2335330	SAMPLE 5 Surface	SOIL	Chrysotile	Chrysotile present as fibre bundles	Ben Rose
2335331	SAMPLE 6 Surface	SOIL	NAD	none	Ben Rose
2335332	SAMPLE 7 Surface	SOIL	Chrysotile	Chrysotile present as fibe bundles	Ben Rose
<p>Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.</p>					

## Information in Support of the Analytical Results

Our Ref ~ 24-09576  
 Client Ref ~ GEO2023-6332  
 Contract ~ Cleator Mills, Cumbria

### Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
2335322	TP04A 0.20 SOIL	08/05/24	GJ 250ml		
2335323	TP04B 0.50 SOIL	08/05/24	GJ 250ml		
2335324	TP04C 0.40 SOIL	08/05/24	GJ 250ml		
2335325	TP04D 0.50 SOIL	08/05/24	GJ 250ml		
2335326	SAMPLE 1 SOIL	08/05/24	PT 1L		
2335327	SAMPLE 2 SOIL	08/05/24	PT 1L		
2335328	SAMPLE 3 SOIL	08/05/24	PT 1L		
2335329	SAMPLE 4 SOIL	08/05/24	PT 1L		
2335330	SAMPLE 5 SOIL	08/05/24	PT 1L		
2335331	SAMPLE 6 SOIL	08/05/24	PT 1L		
2335332	SAMPLE 7 SOIL	08/05/24	PT 1L		

Key: G-Glass J-Jar P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.  
 Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.  
 The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-  
 Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

#### Key:

~ Sample details are provided by the client and can affect the validity of the results  
 \* -not accredited.  
 # -MCERTS (accreditation only applies if report carries the MCERTS logo).  
 \$ -subcontracted.  
 n/s -not supplied.  
 I/S -insufficient sample.  
 U/S -unsuitable sample.  
 t/f -to follow.  
 nd -not detected.

#### End of Report

# Geo Environmental Engineering Ltd

## Chemical Assessment Sheet - Soils

Lab Ref 24-09576  
 GEO Ref ~ GEO2023-6332  
 Contract Title ~ Cleator Mills, Cumbria



				Sample ID ~	TP04A	TP04B	TP04C	TP04D	GAC Value	GAC Value Exceeded?	GAC Ref:
				Depth ~	0.20	0.50	0.40	0.50			
				Sample Type	MG	GRAVEL	MG	GRAVEL			
Petroleum Hydrocarbons	Method	LOD	Units								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01	< 0.01	< 0.01	12000	No	LQM S4UL
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01	< 0.01	< 0.01	40000	No	LQM S4UL
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01	< 0.01	< 0.01	11000	No	LQM S4UL
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg		< 1.5	< 1.5	< 1.5	< 1.5	47000	No	LQM S4UL
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg		< 1.2	< 1.2	< 1.2	7.6	90000	No	LQM S4UL
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg		< 1.5	< 1.5	< 1.5	87	1800000	No	LQM S4UL
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg		< 3.4	< 3.4	< 3.4	84	1800000	No	LQM S4UL
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg		< 3.4	< 3.4	< 3.4	< 3.4	1800000	No	LQM S4UL
Aliphatic C10-C44	DETSC 3072*	10	mg/kg		< 10	< 10	< 10	180	N/A		
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01	< 0.01	< 0.01	86000	No	LQM S4UL
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01	< 0.01	< 0.01	180000	No	LQM S4UL
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01	< 0.01	< 0.01	17000	No	LQM S4UL
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg		< 0.9	< 0.9	< 0.9	1.6	34000	No	LQM S4UL
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg		< 0.5	< 0.5	< 0.5	3.2	38000	No	LQM S4UL
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg		< 0.6	< 0.6	< 0.6	38	28000	No	LQM S4UL
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg		< 1.4	< 1.4	< 1.4	59	28000	No	LQM S4UL
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg		< 1.4	< 1.4	< 1.4	< 1.4	28000	No	LQM S4UL
Aromatic C10-C44	DETSC 3072*	10	mg/kg		< 10	< 10	< 10	100	28000	No	LQM S4UL
Ali/Aro C10-C44	DETSC 3072*	10	mg/kg		< 10	< 10	< 10	280	N/A		
Benzene	DETSC 3321#	0.01	mg/kg		< 0.01	< 0.01	< 0.01	< 0.01	90.00	No	LQM S4UL
Ethylbenzene	DETSC 3321#	0.01	mg/kg		< 0.01	< 0.01	< 0.01	< 0.01	180000	No	LQM S4UL
Toluene	DETSC 3321#	0.01	mg/kg		< 0.01	< 0.01	< 0.01	< 0.01	27000	No	LQM S4UL
Xylene	DETSC 3321#	0.01	mg/kg		< 0.01	< 0.01	< 0.01	< 0.01	2600	No	LQM S4UL
MTBE	DETSC 3321	0.01	mg/kg		< 0.01	< 0.01	< 0.01	< 0.01	24000	No	CL:AIRE GAC (2010)





GEO Environmental Engineering Ltd

Geotechnical and Environmental  
Consultants  
&  
Drilling Experts

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