

APPENDIX 4

Chemical Laboratory Test Certificates



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Analytical Report Number : 24-059993

Project / Site name: Main Street, Nailstone

Samples received on: 17/12/2024

Your job number: 746

**Samples instructed on/
Analysis started on:** 17/12/2024

Your order number: 1766

Analysis completed by: 02/01/2025

Report Issue Number: 1

Report issued on: 02/01/2025

Samples Analysed: 7 soil samples

Signed:

Joanna Wawrzeczko
Senior Reporting Specialist
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
air - once the analysis is complete

Excel copies of reports are only valid when accompanied by this PDF certificate.

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: 24-059993
Project / Site name: Main Street, Nailstone
Your Order No: 1766

Lab Sample Number	410860	410861	410862	410863	410864
Sample Reference	HDP1	HDP2	HDP3	WS1	WS1
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.00-0.30	0.00-0.45	0.08-0.45	0.90-1.50	2.15-2.30
Date Sampled	12/12/2024	12/12/2024	13/12/2024	16/12/2024	16/12/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	22.3	< 0.1
Moisture Content	%	0.01	NONE	13	14	10	14	16
Total mass of sample received	kg	0.1	NONE	0.3	0.3	0.3	0.5	0.5

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	-
Asbestos Analyst ID	N/A	N/A	N/A	JSW	JSW	MJN	-	-

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	6.7	7	8	7.8	7.5
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	530	590	810	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	19	25	76	29	35
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.00956	0.0126	0.0377	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	9.56	12.6	37.7	14.6	17.5
Sulphide	mg/kg	1	MCERTS	< 1.0	1.4	4.5	-	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1.3	1.5	3.6	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.06	2.1	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.59	-	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	21	-	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	18	-	-
Phenanthrene	mg/kg	0.05	MCERTS	0.1	< 0.05	140	-	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	42	-	-
Fluoranthene	mg/kg	0.05	MCERTS	0.21	0.24	180	-	-
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	150	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.14	66	-	-
Chrysene	mg/kg	0.05	MCERTS	0.12	0.15	66	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	76	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	28	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	67	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	30	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	6	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	33	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	< 0.80	925	-	-
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Analytical Report Number: 24-059993
Project / Site name: Main Street, Nailstone
Your Order No: 1766

Lab Sample Number				410860	410861	410862	410863	410864
Sample Reference				HDP1	HDP2	HDP3	WS1	WS1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.00-0.30	0.00-0.45	0.08-0.45	0.90-1.50	2.15-2.30
Date Sampled				12/12/2024	12/12/2024	13/12/2024	16/12/2024	16/12/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.8	12	21	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	0.7	0.8	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	0.5	0.6	-	-
Chromium (hexavalent) Low Level	mg/kg	1.2	NONE	< 1.2	< 1.2	< 1.2	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	16	21	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	29	29	52	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	60	62	210	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	14	28	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	86	92	120	-	-

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-	-
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-	-
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-	-
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	-	-
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	-	-
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0	< 8.0	28	-	-
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	< 10	< 10	28	-	-

TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-	-
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-	-
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	-	-
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	< 1.0	< 1.0	1.6	-	-
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	< 2.0	< 2.0	43	-	-
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10	< 10	270	-	-
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10	< 10	440	-	-
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	< 10	< 10	760	-	-

TPH (EC10 - EC40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	< 10	< 10	870	-	-
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VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	-	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



Analytical Report Number: 24-059993
Project / Site name: Main Street, Nailstone
Your Order No: 1766

Lab Sample Number	410865			410866	
Sample Reference	WS2			WS3	
Sample Number	None Supplied			None Supplied	
Water Matrix	N/A			N/A	
Depth (m)	1.50-2.30			0.60-1.40	
Date Sampled	16/12/2024			16/12/2024	
Time Taken	None Supplied			None Supplied	
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	53.6	43
Moisture Content	%	0.01	NONE	13	11
Total mass of sample received	kg	0.1	NONE	0.5	0.5

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	-
Asbestos Analyst ID	N/A	N/A	N/A	-	-

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	7.8	8
Total Cyanide	mg/kg	1	MCERTS	-	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	30	75
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	15	37.4
Sulphide	mg/kg	1	MCERTS	-	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-
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Analytical Report Number: 24-059993
Project / Site name: Main Street, Nailstone
Your Order No: 1766

Lab Sample Number				410865	410866
Sample Reference				WS2	WS3
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				1.50-2.30	0.60-1.40
Date Sampled				16/12/2024	16/12/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-
Chromium (hexavalent) Low Level	mg/kg	1.2	NONE	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	-	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	-	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	-	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	-

TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-
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VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	-	-
Benzene	µg/kg	5	MCERTS	-	-
Toluene	µg/kg	5	MCERTS	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-
p & m-Xylene	µg/kg	8	MCERTS	-	-
o-Xylene	µg/kg	5	MCERTS	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



Analytical Report Number : 24-059993
Project / Site name: Main Street, Nailstone

* 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 *
410860	HDP1	None Supplied	0.00-0.30	Brown loam and clay with gravel and vegetation
410861	HDP2	None Supplied	0.00-0.45	Brown loam and sand with gravel and vegetation
410862	HDP3	None Supplied	0.08-0.45	Brown loam and clay with gravel and vegetation
410863	WS1	None Supplied	0.90-1.50	Brown sand with gravel and stones
410864	WS1	None Supplied	2.15-2.30	Brown clay and sand with gravel
410865	WS2	None Supplied	1.50-2.30	Brown sand with gravel and stones
410866	WS3	None Supplied	0.60-1.40	Brown clay and sand with gravel and stones

Analytical Report Number : 24-059993

Project / Site name: Main Street, Nailstone

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode	In-house method	L010-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
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.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088-PL	D/W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088-PL	D/W	MCERTS
Hexavalent chromium in soil (low level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS



Analytical Report Number : 24-059993
Project / Site name: Main Street, Nailstone

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' 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.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

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Analytical Report Number : 24-060938

Project / Site name: Main Street, Nailstone

Samples received on: 23/12/2024

Your job number: 746

**Samples instructed on/
Analysis started on:** 23/12/2024

Your order number:

Analysis completed by: 09/01/2025

Report Issue Number: 1

Report issued on: 09/01/2025

Samples Analysed: 3 soil samples

Signed:



Joanna Wawrzeczko
Senior Reporting Specialist
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
air - once the analysis is complete

Excel copies of reports are only valid when accompanied by this PDF certificate.

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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: 24-060938
Project / Site name: Main Street, Nailstone

Lab Sample Number				416750	416751	416752
Sample Reference				WS5A	WS6	WS6
Sample Number				ES4	ES5	ES6
Water Matrix				N/A	N/A	N/A
Depth (m)				0.30	0.50	0.75-0.85
Date Sampled				20/12/2024	20/12/2024	20/12/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status			

Stone Content	%	0.1	NONE	35.9	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	14	16	18
Total mass of sample received	kg	0.1	NONE	0.4	0.4	0.4

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	MBI	MBI	-

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	7.5	8	-
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	540	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	140	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0682	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	68.2	-	-
Sulphide	mg/kg	1	MCERTS	< 1.0	-	-
Organic Matter (automated)	%	0.1	MCERTS	-	4.2	3.4
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1.6	2.5	2

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.06	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	0.08	0.33	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.07	-
Fluoranthene	mg/kg	0.05	MCERTS	0.19	1.3	-
Pyrene	mg/kg	0.05	MCERTS	0.17	1.1	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.09	0.85	-
Chrysene	mg/kg	0.05	MCERTS	0.09	0.9	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.13	1.4	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.06	0.43	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.06	0.89	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.18	0.82	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.22	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.16	0.78	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	1.2	9.18	-
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Analytical Report Number: 24-060938
Project / Site name: Main Street, Nailstone

Lab Sample Number				416750	416751	416752
Sample Reference				WS5A	WS6	WS6
Sample Number				ES4	ES5	ES6
Water Matrix				N/A	N/A	N/A
Depth (m)				0.30	0.50	0.75-0.85
Date Sampled				20/12/2024	20/12/2024	20/12/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status			

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	22	-
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	4	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.5	< 0.2	-
Chromium (hexavalent) Low Level	mg/kg	1.2	NONE	< 1.2	< 1.2	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	25	20	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	27	39	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	63	91	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	14	28	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	87	150	-

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	-	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	-	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	-	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	12	-	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	12	-	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	-	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	-	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	< 0.020	-	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	-	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	-	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	-	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	-	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	-	-

TPH (>EC6 - EC8) _{HS_1D_TOTAL}	mg/kg	0.01	MCERTS	-	< 0.01	-
TPH (>EC8 - EC10) _{HS_1D_TOTAL}	mg/kg	0.02	MCERTS	-	< 0.02	-
TPH (>EC10 - EC12) _{EH_CU_1D_TOTAL}	mg/kg	2	MCERTS	-	< 2.0	-
TPH (>EC12 - EC16) _{EH_CU_1D_TOTAL}	mg/kg	4	MCERTS	-	< 4.0	-
TPH (>EC16 - EC21) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	< 10	-
TPH (>EC21 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	30	-

TPH Total >EC6 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	-	36	-
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Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	-	< 1.0	-
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	16	36	-

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	-	-
Benzene	µg/kg	5	MCERTS	< 5.0	-	-
Toluene	µg/kg	5	MCERTS	< 5.0	-	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-	-
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	-	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	-	-



Analytical Report Number: 24-060938
Project / Site name: Main Street, Nailstone

Lab Sample Number				416750	416751	416752
Sample Reference				WS5A	WS6	WS6
Sample Number				ES4	ES5	ES6
Water Matrix				N/A	N/A	N/A
Depth (m)				0.30	0.50	0.75-0.85
Date Sampled				20/12/2024	20/12/2024	20/12/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status			

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



Analytical Report Number : 24-060938
Project / Site name: Main Street, Nailstone

* 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 *
416750	WS5A	ES4	0.3	Brown loam and clay with vegetation and stones
416751	WS6	ES5	0.5	Brown loam and clay with gravel and vegetation
416752	WS6	ES6	0.75-0.85	Brown loam and clay with gravel and vegetation

Analytical Report Number : 24-060938

Project / Site name: Main Street, Nailstone

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode	In-house method	L010-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
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.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088-PL	D/W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088-PL	D/W	MCERTS
Hexavalent chromium in soil (low level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS



Analytical Report Number : 24-060938
Project / Site name: Main Street, Nailstone

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' 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.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

APPENDIX 5

Geotechnical Laboratory Test Certificates



TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS EN ISO 17892-12:2018+A2:2022,
cl 5.3 and 5.5, Fall Cone Method, 4 Pt Test, BS 1377-2:2022,
cl 5.2 and 6

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



Environmental Science

4041

Client: GeolInvestigations Ltd
Client Address: c/o 138 Mill Lane Bentley Heath Solihull West Midlands

Client Reference: 746
Job Number: 24-060417-1
Date Sampled: 16/12/2024
Date Received: 17/12/2024
Date Tested: 02/01/2025
Sampled By: Client - PJP

Contact: Paul Palgrave
Site Address: Main Street, Nailstone

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

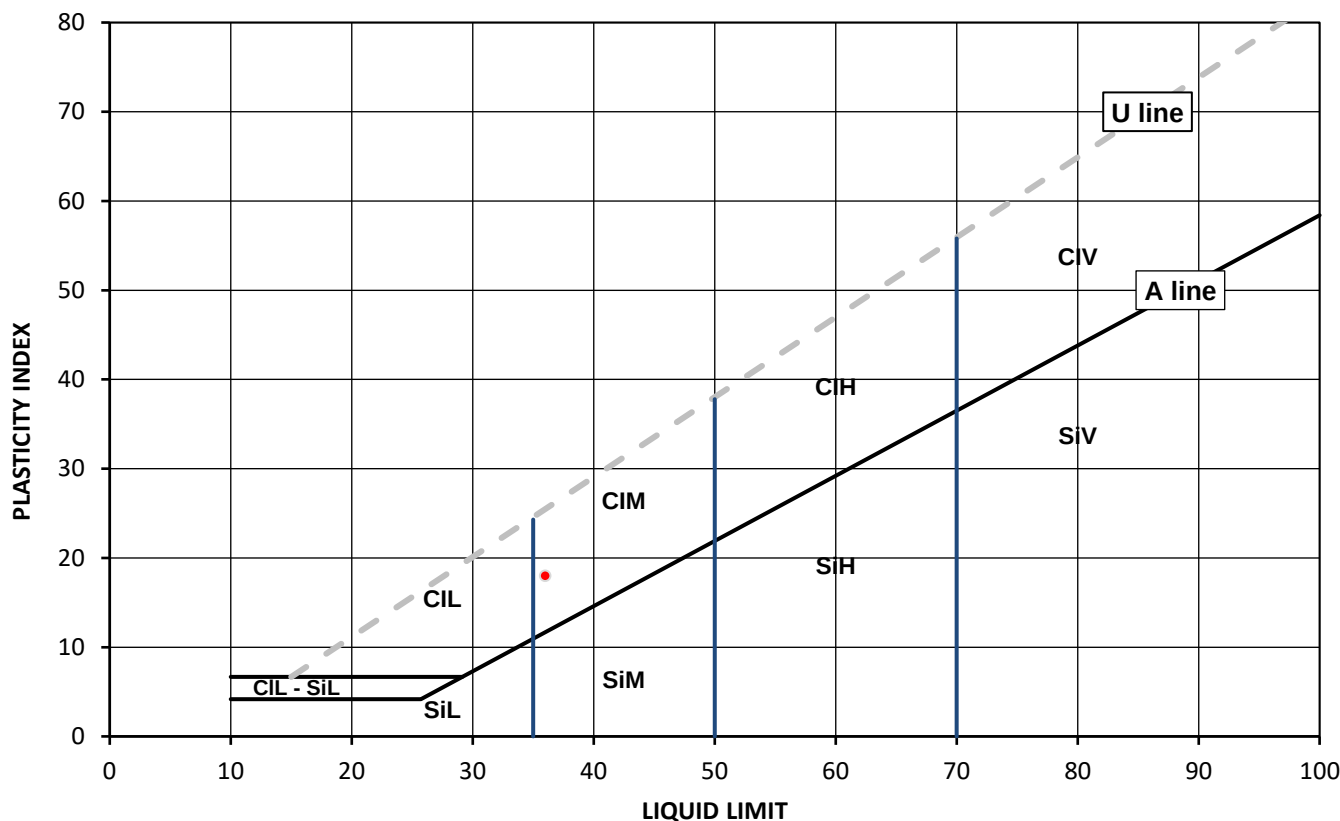
Test Results:

Laboratory Reference: 413457
Hole No.: WS1
Sample Reference: B2
Sample Description: Yellowish brown slightly gravelly sandy silty CLAY

Depth Top [m]: 1.50
Depth Base [m]: 1.80
Sample Type: B

Sample Preparation: Tested after washing to remove >0.425mm; The water content in the sample was increased
Cone Type: 80g/30deg

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity Index [IL] % #	Consistency Index [IC] % #	% Passing 425µm BS Test Sieve
15.8	36	18	18	-0.11	1.11	54



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

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

Note: Water Content by BS EN ISO 17892-1:2014+A1:2022, BS 1377-2:2022; # Non accredited

Remarks:

Signed:

Karolina Pobocho

Karolina Pobocho
PL Reporting Specialist
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 EN ISO 17892-12:2018+A2:2022,
cl 5.3 and 5.5, Fall Cone Method, 4 Pt Test, BS 1377-2:2022,
cl 5.2 and 6

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Date Received: 17/12/2024
Date Tested: 02/01/2025
Sampled By: Client - PJP

Contact: Paul Palgrave
Site Address: Main Street, Nailstone

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

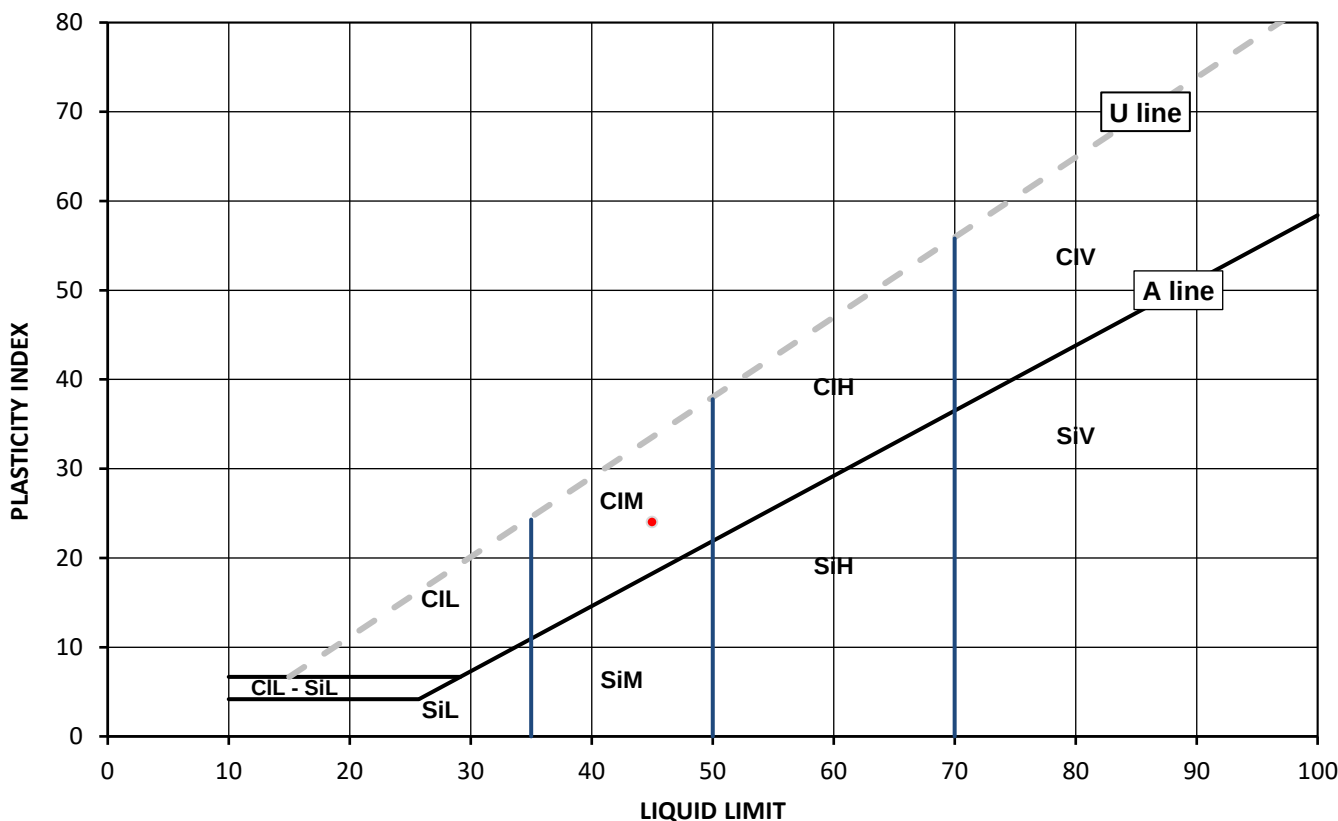
Test Results:

Laboratory Reference: 413458
Hole No.: WS2
Sample Reference: B3
Sample Description: Yellowish brown slightly gravelly sandy silty CLAY

Depth Top [m]: 0.65
Depth Base [m]: 1.50
Sample Type: B

Sample Preparation: Tested after washing to remove >0.425mm; The water content in the sample was increased
Cone Type: 80g/30deg

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity Index [IL] % #	Consistency Index [IC] % #	% Passing 425µm BS Test Sieve
16.1	45	21	24	-0.21	1.21	50



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

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

Note: Water Content by BS EN ISO 17892-1:2014+A1:2022, BS 1377-2:2022; # Non accredited

Remarks:

Signed:

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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS EN ISO 17892-12:2018+A2:2022,
cl 5.3 and 5.5, Fall Cone Method, 4 Pt Test, BS 1377-2:2022,
cl 5.2 and 6

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



Environmental Science

4041

Client: GeolInvestigations Ltd
Client Address: c/o 138 Mill Lane Bentley Heath Solihull West Midlands

Client Reference: 746
Job Number: 24-060417-1
Date Sampled: 16/12/2024
Date Received: 17/12/2024
Date Tested: 03/01/2025
Sampled By: Client - PJP

Contact: Paul Palgrave
Site Address: Main Street, Nailstone

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

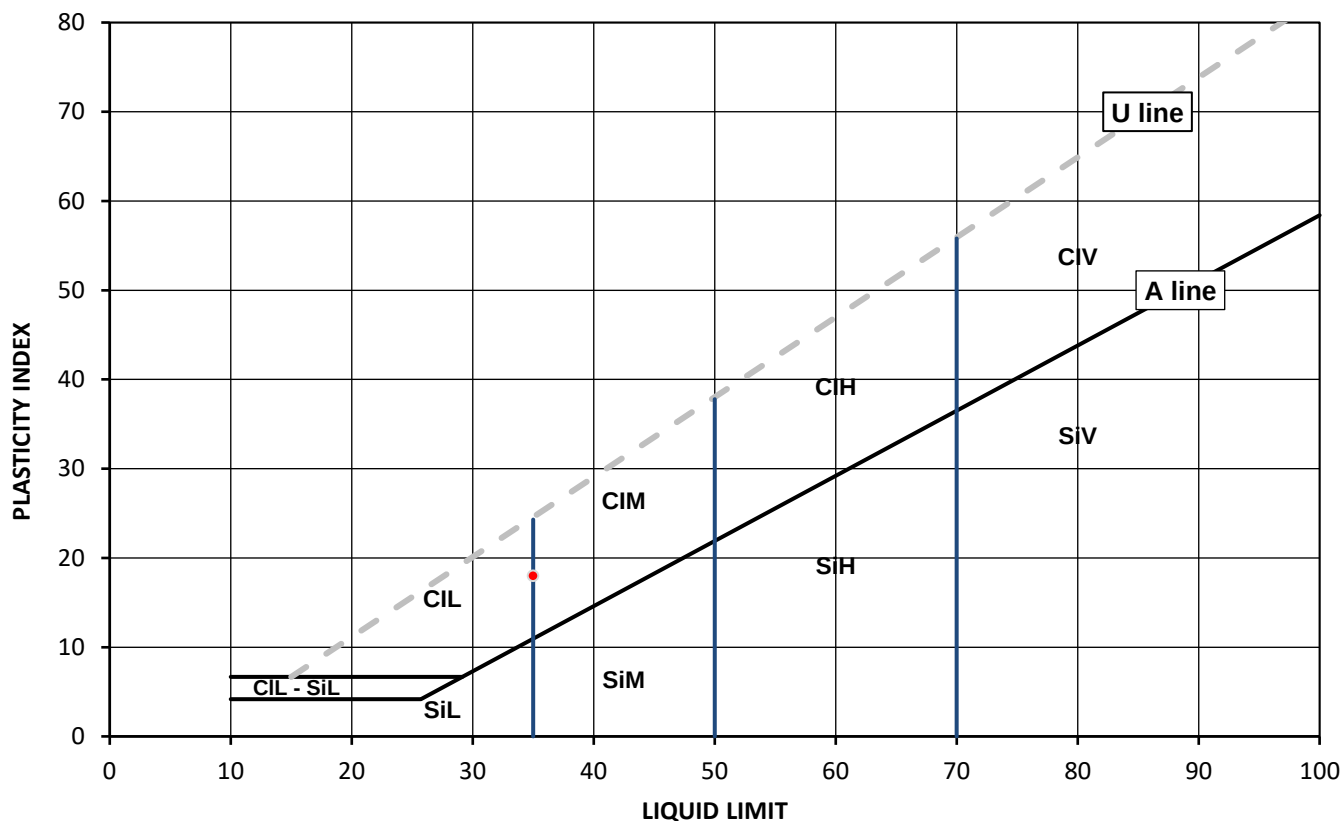
Test Results:

Laboratory Reference: 413461
Hole No.: WS3
Sample Reference: B6
Sample Description: Orangish brown slightly gravelly sandy CLAY

Depth Top [m]: 0.60
Depth Base [m]: 1.40
Sample Type: B

Sample Preparation: Tested after washing to remove >0.425mm; The water content in the sample was increased
Cone Type: 80g/30deg

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity Index [IL] % #	Consistency Index [IC] % #	% Passing 425µm BS Test Sieve
13.0	35	17	18	-0.22	1.22	58



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

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

Note: Water Content by BS EN ISO 17892-1:2014+A1:2022, BS 1377-2:2022; # Non accredited

Remarks:

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



Environmental Science

4041

Client: GeolInvestigations Ltd

Client Address: c/o 138 Mill Lane Bentley Heath Solihull
West Midlands

Contact: Paul Palgrave

Site Address: Main Street, Nailstone

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

BS EN ISO 17892-12:2018+A2:2022 cl 5.3 and 5.5, Fall Cone Method, 4 Pt
Test, BS 1377-2:2022, cl 5.2 and 6. W by BS EN ISO 17892-1:2014+A1:2022.

Client Reference: 746

Job Number: 24-060417-1

Date Sampled: 16/12/2024

Date Received: 17/12/2024

Date Tested: 02/01 - 03/01/2025

Sampled By: Client - PJP

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	W	Liquid & Plastic Limit								Density		
		Reference	Depth Top	Depth Base	Type				% Passing 425um	WL*	Correlation Factor	Wp	Ip	Cone type	Sample Preparation	bulk	dry	PD	
			m	m															Mg/m3
413457	WS1	B2	1.50	1.80	B	Yellowish brown slightly gravelly sandy silty CLAY	Atterberg 4 Point	15.8	54	36	-	18	18	80g/30 deg	WR / I				
413458	WS2	B3	0.65	1.50	B	Yellowish brown slightly gravelly sandy silty CLAY	Atterberg 4 Point	16.1	50	45	-	21	24	80g/30 deg	WR / I				
413461	WS3	B6	0.60	1.40	B	Orangish brown slightly gravelly sandy CLAY	Atterberg 4 Point	13.0	58	35	-	17	18	80g/30 deg	WR / I				

Note: # Non accredited; NP - Non plastic; N - Tested in natural condition, R - Tested after >0,425mm removed by hand, WR - Tested after washing to remove >425mm; I - The water content in the sample was increased , D - The water content in the sample was decreased; * - One point liquid limit corrected as per the report Correlation Factor by Clayton C.R.I and Jukes A.W (1978)

Comments:

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for and on behalf of i2 Analytical Ltd



SUMMARY REPORT
DETERMINATION OF WATER CONTENT

Tested in Accordance with: BS EN ISO 17892-1:2014+A1:2022, BS 1377-2: 2022, clause 4.1

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



Environmental Science

4041
Client: GeolInvestigations Ltd
Client Address: c/o 138 Mill Lane Bentley Heath Solihull West Midlands
Contact: Paul Palgrave
Site Address: Main Street, Nailstone
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 746
Job Number: 24-060417-1
Date Sampled: 16/12/2024
Date Received: 17/12/2024
Date Tested: 02/01 - 03/01/2025
Sampled By: Client - PJP

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	WC											
		Reference	Depth Top m	Depth Base m	Type														
413457	WS1	B2	1.50	1.80	B	Yellowish brown slightly gravelly sandy silty CLAY		15.8											
413458	WS2	B3	0.65	1.50	B	Yellowish brown slightly gravelly sandy silty CLAY		16.1											
413461	WS3	B6	0.60	1.40	B	Orangish brown slightly gravelly sandy CLAY		13.0											

Comments:

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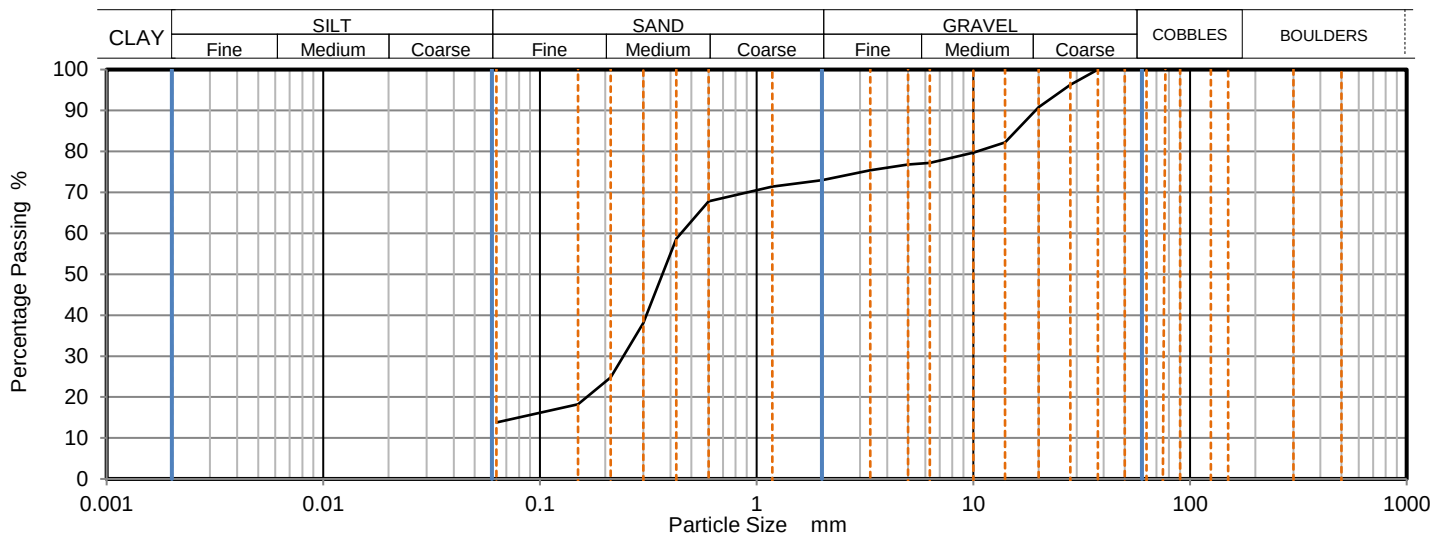
Signed: *Karolina Pobocho*
Karolina Pobocho
PL Reporting Specialist
for and on behalf of i2 Analytical Ltd



4041

**TEST CERTIFICATE****DETERMINATION OF PARTICLE
SIZE DISTRIBUTION**Tested in Accordance with: BS EN ISO 17892-4:2016,
BS 1377-2:2022 cl. 10i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EBClient: GeolInvestigations Ltd
Client Address: c/o 138 Mill Lane Bentley Heath Solihull West MidlandsClient Reference: 746
Job Number: 24-060417-1
Date Sampled: 16/12/2024
Date Received: 17/12/2024
Date Tested: 02/01/2025
Sampled By: Client - PJPContact: Paul Palgrave
Site Address: Main Street, Nailstone

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

Test Results:Laboratory Reference: 413456
Hole No.: WS1
Sample Reference: B1
Sample Description: Yellowish brown clayey gravelly SAND
Sample Preparation: Sample was whole tested, oven dried at 107.9 °C and broken down by hand.Depth Top [m]: 0.90
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	96		
20	91		
14	82		
10	80		
6.3	77		
5	77		
3.35	75		
2	73		
1.18	71		
0.6	68		
0.425	59		
0.3	38		
0.212	25		
0.15	18		
0.063	14		

Sample Proportions	% dry mass
Very coarse	0
Gravel	27
Sand	59
Fines <0.063 mm	14

Grading Analysis	
D100	mm 37.5
D60	mm 0.446
D30	mm 0.243
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

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

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks:

Signed:

*Karolina Pobocha*Karolina Pobocha
PL Reporting Specialist
for and on behalf of i2 Analytical Ltd

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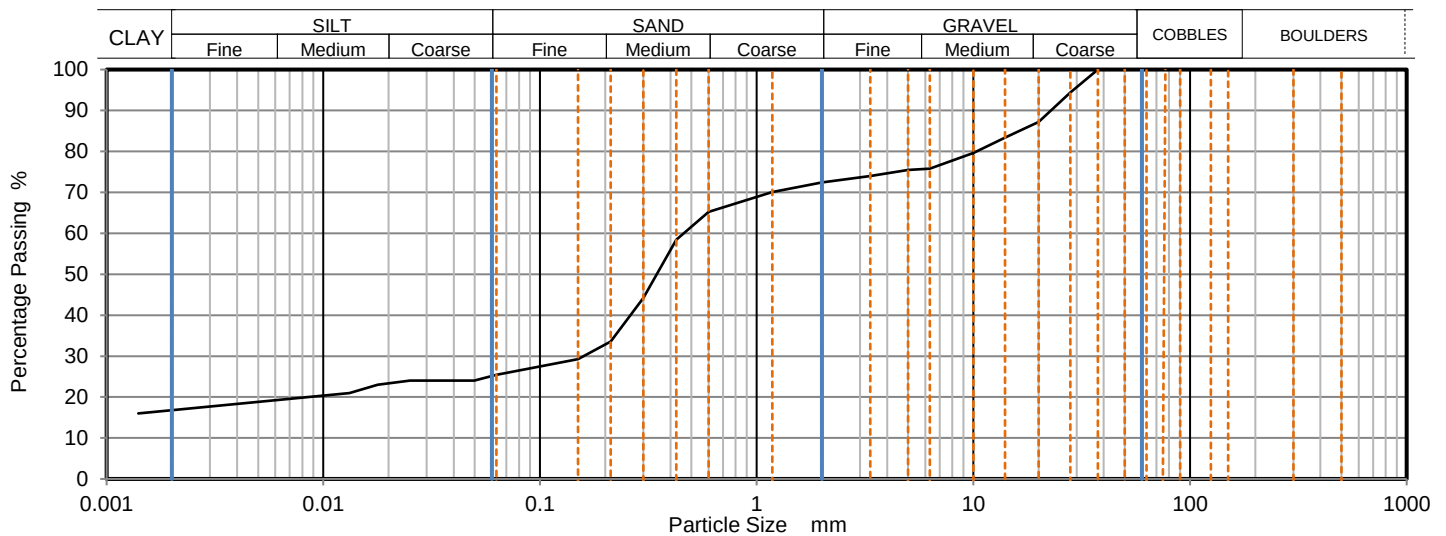
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**TEST CERTIFICATE****DETERMINATION OF PARTICLE
SIZE DISTRIBUTION**Tested in Accordance with: BS EN ISO 17892-4:2016,
BS 1377-2:2022 cl. 10i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Environmental Science

Client: GeolInvestigations Ltd
Client Address: c/o 138 Mill Lane Bentley Heath Solihull West MidlandsClient Reference: 746
Job Number: 24-060417-1
Date Sampled: 16/12/2024
Date Received: 17/12/2024
Date Tested: 02/01/2025
Sampled By: Client - PJPContact: Paul Palgrave
Site Address: Main Street, Nailstone

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

Test Results:Laboratory Reference: 413457
Hole No.: WS1
Sample Reference: B2
Sample Description: Yellowish brown slightly gravelly sandy silty CLAY
Sample Preparation: Sample was quartered, oven dried at 107.9 °C and broken down by hand.Depth Top [m]: 1.50
Depth Base [m]: 1.80
Sample Type: B

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0498	24
300	100	0.0355	24
150	100	0.0251	24
125	100	0.0178	23
90	100	0.0132	21
75	100	0.0014	16
63	100		
50	100		
37.5	100		
28	94		
20	87		
14	83		
10	80		
6.3	76		
5	76		
3.35	74		
2	72		
1.18	70		
0.6	65	Particle density (assumed) 2.65 Mg/m3	
0.425	58		
0.3	44		
0.212	34		
0.15	29		
0.063	25		

Sample Proportions	% dry mass
Very coarse	0
Gravel	28
Sand	47
Silt	8
Clay	17

Grading Analysis		
D100	mm	37.5
D60	mm	0.461
D30	mm	0.159
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

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

Note: Tested in Accordance with ISO 17892 -4, by sieving and hydrometer sedimentation

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS EN ISO 17892-4:2016 Table 1.

Signed:

*Karolina Pobocha*Karolina Pobocha
PL Reporting Specialist
for and on behalf of i2 Analytical Ltd

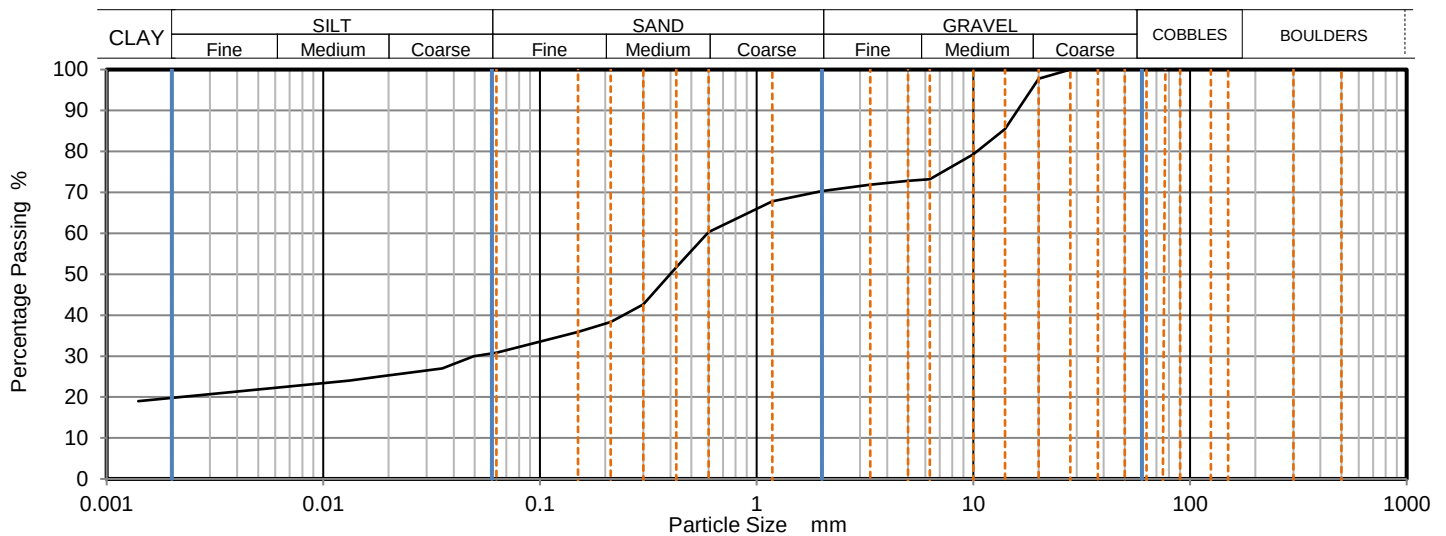
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SIZE DISTRIBUTION**Tested in Accordance with: BS EN ISO 17892-4:2016,
BS 1377-2:2022 cl. 10i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Environmental Science

Client: GeolInvestigations Ltd
Client Address: c/o 138 Mill Lane Bentley Heath Solihull West MidlandsClient Reference: 746
Job Number: 24-060417-1
Date Sampled: 16/12/2024
Date Received: 17/12/2024
Date Tested: 02/01/2025
Sampled By: Client - PJPContact: Paul Palgrave
Site Address: Main Street, Nailstone
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland**Test Results:**Laboratory Reference: 413458
Hole No.: WS2
Sample Reference: B3
Sample Description: Yellowish brown slightly gravelly sandy silty CLAY
Sample Preparation: Sample was quartered, oven dried at 107.9 °C and broken down by hand.Depth Top [m]: 0.65
Depth Base [m]: 1.50
Sample Type: B

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0494	30
300	100	0.0354	27
150	100	0.0252	26
125	100	0.0179	25
90	100	0.0132	24
75	100	0.0014	19
63	100		
50	100		
37.5	100		
28	100		
20	98		
14	86		
10	79		
6.3	73		
5	73		
3.35	72		
2	70		
1.18	68		
0.6	60	Particle density (assumed) 2.65 Mg/m3	
0.425	52		
0.3	43		
0.212	38		
0.15	36		
0.063	31		

Sample Proportions	% dry mass
Very coarse	0
Gravel	30
Sand	39
Silt	11
Clay	20

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

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

Note: Tested in Accordance with ISO 17892 -4, by sieving and hydrometer sedimentation

Remarks:

Signed:

Karolina Pobocha
PL Reporting Specialist
for and on behalf of i2 Analytical Ltd

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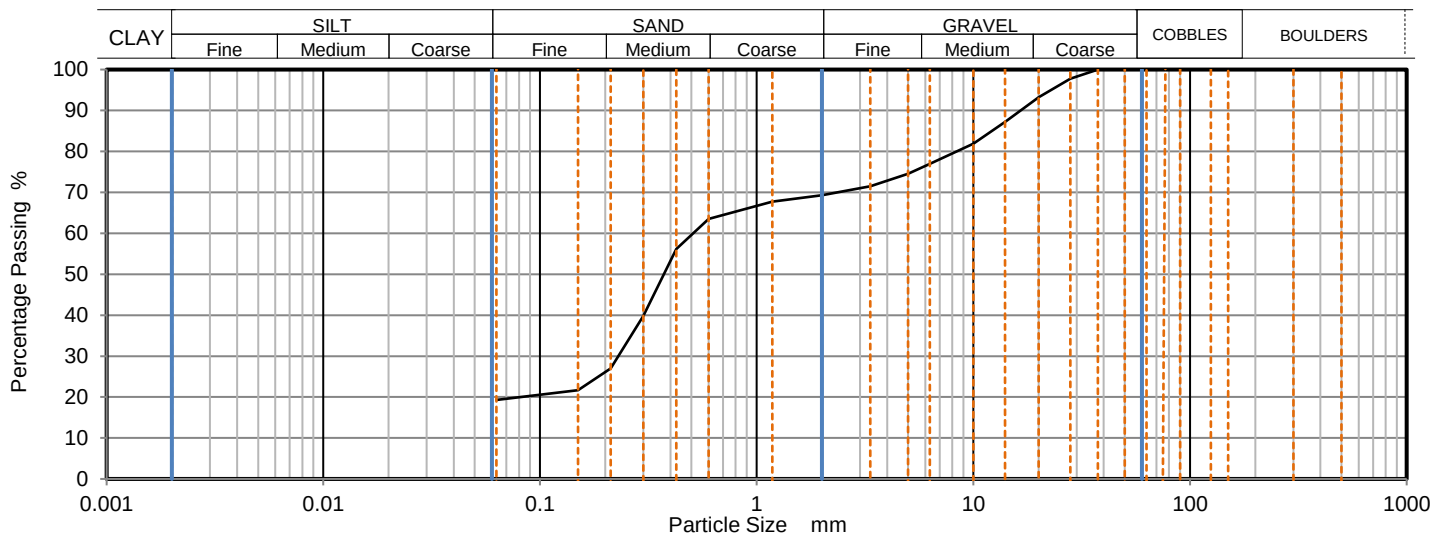
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SIZE DISTRIBUTION**Tested in Accordance with: BS EN ISO 17892-4:2016,
BS 1377-2:2022 cl. 10i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Environmental Science

Client: GeolInvestigations Ltd
Client Address: c/o 138 Mill Lane Bentley Heath Solihull West MidlandsClient Reference: 746
Job Number: 24-060417-1
Date Sampled: 16/12/2024
Date Received: 17/12/2024
Date Tested: 02/01/2025
Sampled By: Client - PJPContact: Paul Palgrave
Site Address: Main Street, Nailstone

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

Test Results:Laboratory Reference: 413459
Hole No.: WS2
Sample Reference: B4
Sample Description: Yellowish brown very gravelly clayey SAND
Sample Preparation: Sample was whole tested, oven dried at 107.9 °C and broken down by hand.Depth Top [m]: 1.50
Depth Base [m]: 2.30
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	98		
20	93		
14	87		
10	82		
6.3	77		
5	75		
3.35	72		
2	69		
1.18	68		
0.6	64		
0.425	56		
0.3	40		
0.212	27		
0.15	22		
0.063	19		

Sample Proportions	% dry mass
Very coarse	0
Gravel	31
Sand	50
Fines <0.063 mm	19

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

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

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks:

Signed:

*Karolina Pobocho*Karolina Pobocho
PL Reporting Specialist
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS EN ISO 17892-4:2016,
BS 1377-2:2022 cl. 10

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



Environmental Science

Client: GeolInvestigations Ltd
Client Address: c/o 138 Mill Lane Bentley Heath Solihull West Midlands

Client Reference: 746
Job Number: 24-060417-1
Date Sampled: 16/12/2024
Date Received: 17/12/2024
Date Tested: 03/01/2025
Sampled By: Client - PJP

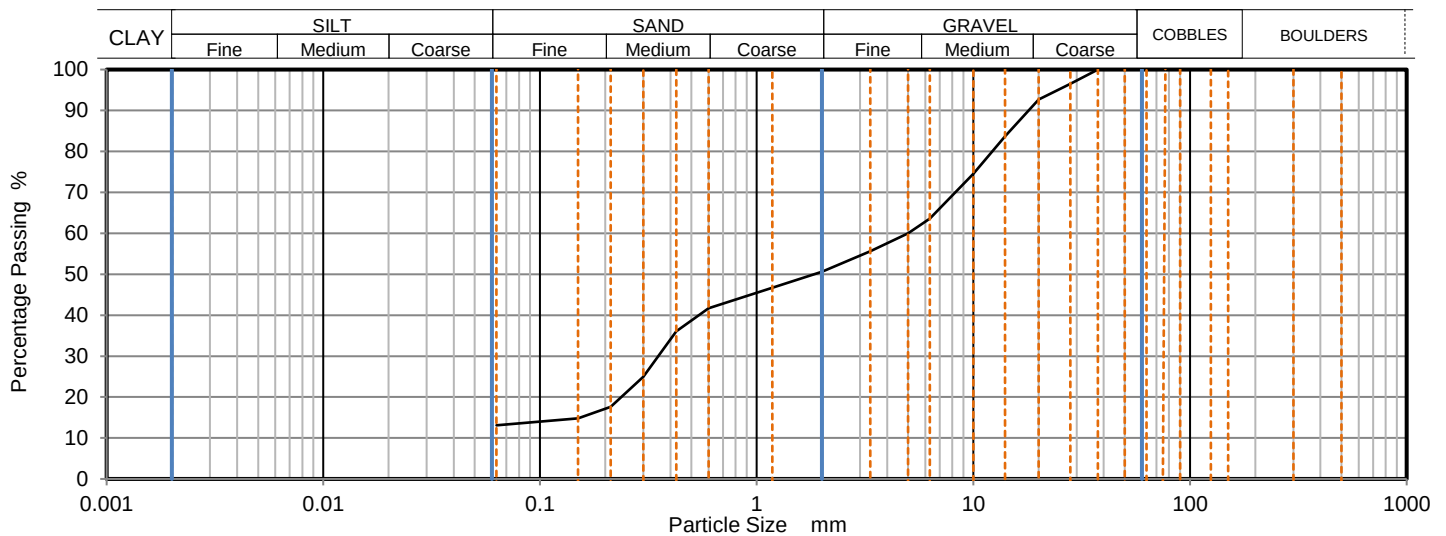
Contact: Paul Palgrave
Site Address: Main Street, Nailstone

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

Test Results:

Laboratory Reference: 413460
Hole No.: WS2
Sample Reference: B5
Sample Description: Brown clayey very sandy GRAVEL
Sample Preparation: Sample was whole tested, oven dried at 107.9 °C and broken down by hand.

Depth Top [m]: 3.00
Depth Base [m]: 4.00
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	93		
14	84		
10	75		
6.3	64		
5	60		
3.35	56		
2	51		
1.18	47		
0.6	42		
0.425	36		
0.3	25		
0.212	18		
0.15	15		
0.063	13		

Sample Proportions	% dry mass
Very coarse	0
Gravel	49
Sand	38
Fines <0.063 mm	13

Grading Analysis	
D100	mm 37.5
D60	mm 5.01
D30	mm 0.351
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

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

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks:

Signed:

Karolina
Pobocha

Karolina Pobocha
PL Reporting Specialist
for and on behalf of i2 Analytical Ltd

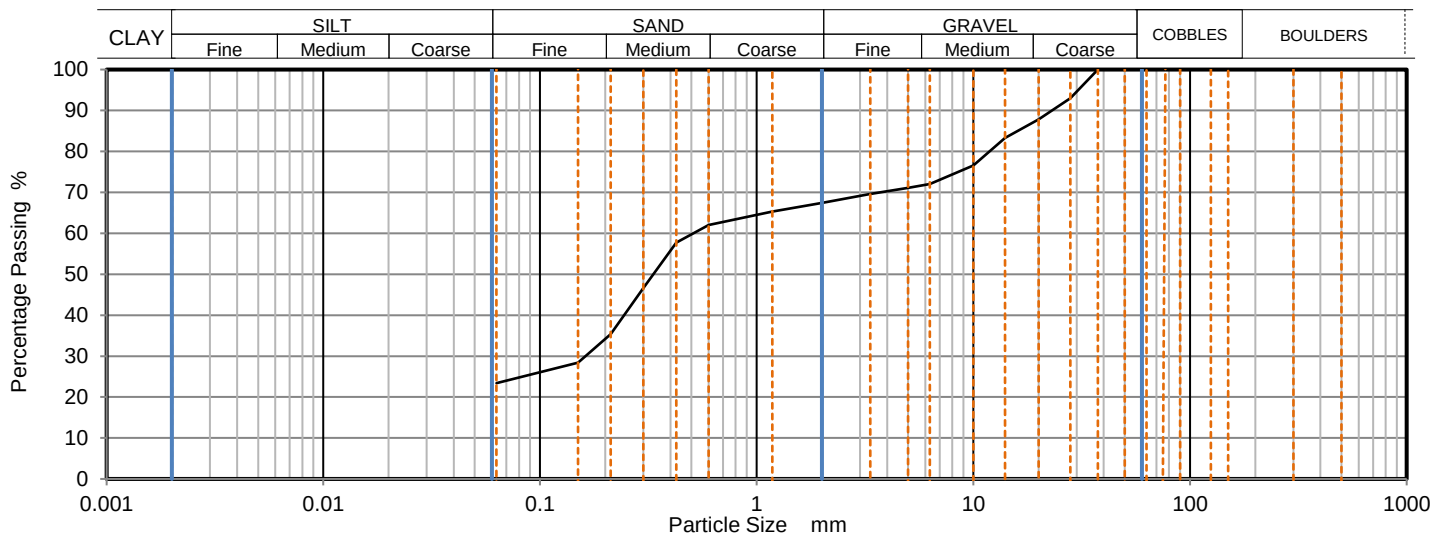
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SIZE DISTRIBUTION**Tested in Accordance with: BS EN ISO 17892-4:2016,
BS 1377-2:2022 cl. 10i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Environmental Science

Client: GeolInvestigations Ltd
Client Address: c/o 138 Mill Lane Bentley Heath Solihull West MidlandsClient Reference: 746
Job Number: 24-060417-1
Date Sampled: 16/12/2024
Date Received: 17/12/2024
Date Tested: 03/01/2025
Sampled By: Client - PJPContact: Paul Palgrave
Site Address: Main Street, Nailstone
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland**Test Results:**Laboratory Reference: 413461
Hole No.: WS3
Sample Reference: B6
Sample Description: Orangish brown slightly gravelly sandy CLAY
Sample Preparation: Sample was quartered, oven dried at 107.9 °C and broken down by hand.Depth Top [m]: 0.60
Depth Base [m]: 1.40
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	93		
20	88		
14	83		
10	77		
6.3	72		
5	71		
3.35	70		
2	67		
1.18	65		
0.6	62		
0.425	58		
0.3	47		
0.212	35		
0.15	28		
0.063	23		

Sample Proportions	% dry mass
Very coarse	0
Gravel	33
Sand	44
Fines <0.063 mm	23

Grading Analysis	
D100	mm 37.5
D60	mm 0.511
D30	mm 0.162
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

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

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks:**Signed:***Karolina Pobocho*Karolina Pobocho
PL Reporting Specialist
for and on behalf of i2 Analytical Ltd

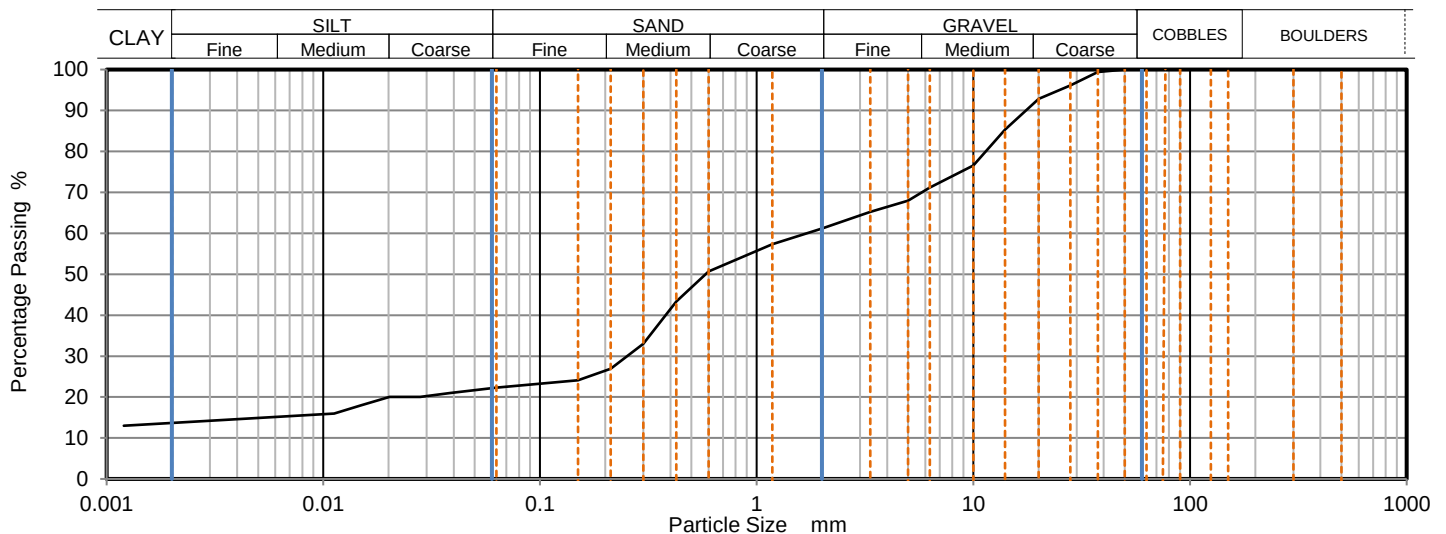
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Unit 8 Harrowden Road
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Northampton NN4 7EB

Environmental Science

Client: GeolInvestigations Ltd
Client Address: c/o 138 Mill Lane Bentley Heath Solihull West MidlandsClient Reference: 746
Job Number: 24-060417-1
Date Sampled: 16/12/2024
Date Received: 17/12/2024
Date Tested: 03/01/2025
Sampled By: Client - PJPContact: Paul Palgrave
Site Address: Main Street, Nailstone
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland**Test Results:**Laboratory Reference: 413462
Hole No.: WS3
Sample Reference: B7
Sample Description: Yellowish brown very gravelly very clayey SAND
Sample Preparation: Sample was quartered, oven dried at 107.9 °C and broken down by hand.Depth Top [m]: 1.40
Depth Base [m]: 2.90
Sample Type: B

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0383	21
300	100	0.0280	20
150	100	0.0202	20
125	100	0.0150	18
90	100	0.0112	16
75	100	0.0012	13
63	100		
50	100		
37.5	99		
28	96		
20	93		
14	85		
10	77		
6.3	71		
5	68		
3.35	65		
2	61		
1.18	57		
0.6	51	Particle density (assumed) 2.65 Mg/m3	
0.425	43		
0.3	33		
0.212	27		
0.15	24		
0.063	22		

Sample Proportions	% dry mass
Very coarse	0
Gravel	39
Sand	38
Silt	9
Clay	14

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

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

Note: Tested in Accordance with ISO 17892 -4, by sieving and hydrometer sedimentation

Remarks:

Signed:

*Karolina Pobocha*Karolina Pobocha
PL Reporting Specialist
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS EN ISO 17892-4:2016,
BS 1377-2:2022 cl. 10

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



Client: GeolInvestigations Ltd
Client Address: c/o 138 Mill Lane Bentley Heath Solihull West Midlands

Client Reference: 746
Job Number: 24-060417-1
Date Sampled: 16/12/2024
Date Received: 17/12/2024
Date Tested: 03/01/2025
Sampled By: Client - PJP

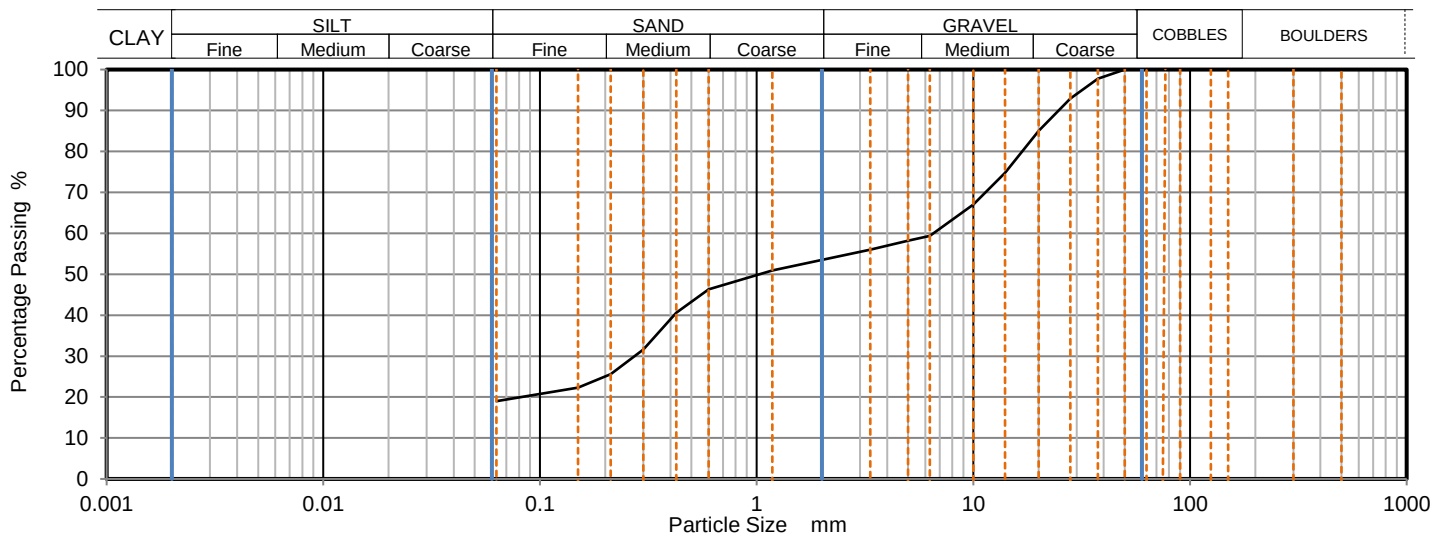
Contact: Paul Palgrave
Site Address: Main Street, Nailstone

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

Test Results:

Laboratory Reference: 413463
Hole No.: WS3
Sample Reference: B8
Sample Description: Brown clayey very sandy GRAVEL
Sample Preparation: Sample was whole tested, oven dried at 107.9 °C and broken down by hand.

Depth Top [m]: 3.00
Depth Base [m]: 4.00
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	98		
28	93		
20	85		
14	75		
10	67		
6.3	59		
5	58		
3.35	56		
2	54		
1.18	51		
0.6	46		
0.425	41		
0.3	32		
0.212	26		
0.15	22		
0.063	19		

Sample Proportions	% dry mass
Very coarse	0
Gravel	46
Sand	35
Fines <0.063 mm	19

Grading Analysis	
D100	mm 50
D60	mm 6.53
D30	mm 0.274
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

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

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks:

Signed:

Karolina
Pobocha

Karolina Pobocha
PL Reporting Specialist
for and on behalf of i2 Analytical Ltd

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APPENDIX 6

Hazard Ground Gas Monitoring Results

APPENDIX 6
Hazardous Ground Gas Monitoring Results

Date	Site Name	Borehole Ref.	CH4(%)	LEL(%)	CO2(%)	O2(%)	H2S(ppm)	CO(ppm)	Hex(%)	PIDCf()	Flw(lh)	PkFlw(lh)	DP(Pa)	AP(mbar)	DTw (m begl)	Base (m begl)
10/01/2025	Comments: Surface frozen, very cold and dry. Sunny spells.															
10/01/2025	Main St, Nailstone	WS1	0.0	0.0	0	20.6	0	0	0.000	1	0	0	0	1000	0.55	2.65
10/01/2025	Main St, Nailstone	WS3	0.0	0.0	0.3	19.3	0	0	0.000	1	0	0	0	1000	0.65	2.65
10/01/2025	Main St, Nailstone	WS4	0.0	0.0	0.8	18.7	0	0	0.000	1	-0.4	-0.4	-2	1000	1.27	2.96
10/01/2025	Main St, Nailstone	WS5A	0.0	0.0	0.2	19.8	0	0	0.000	1	0	0	0	1000	0.57	2.51
16/01/2025	Comments: Dry, cold, but ground not frozen.															
16/01/2025	Main St, Nailstone	WS1	0.0	0.0	1.1	15.7	0	0	0.000	1	0	0	0	1014	0.74	2.63
16/01/2025	Main St, Nailstone	WS3	0.0	0.0	0.7	19.1	0	0	0.000	1	0	0	0	1013	0.56	2.64
16/01/2025	Main St, Nailstone	WS4	0.0	0.0	2	13	0	0	0.000	1	1.8	1.8	0.23	1013	1.14	2.98
16/01/2025	Main St, Nailstone	WS5A	0.0	0.0	0.9	19.6	0	0	0.000	1	4.3	4.3	0.38	1012	0.5	2.45
10/02/2025	Comments: Cool, cloudy with showers.															
10/02/2025	Main St, Nailstone	WS1	0	0	2.1	16.7	0	0	0	1	0	0	0	1008	0.93	2.65
10/02/2025	Main St, Nailstone	WS3	0	0	1.8	15.8	0	0	0	1	0	0	0	1008	0.45	2.64
10/02/2025	Main St, Nailstone	WS4	0	0	3	0.2	0	0	0	1	0.0001	0.1	0	1008	1.2	3.01
10/02/2025	Main St, Nailstone	WS5A	0	0	0.3	20.1	0	0	0	1	0.0001	0.1	0	1006	0.4	2.42
14/03/2025	Comments: Cool, dry.															
14/03/2025	Main St, Nailstone	WS1	0	0	2.3	17.6	0	0	0	1	0	0	0	993	1.23	2.64
14/03/2025	Main St, Nailstone	WS3	0	0	1.8	15.8	0	0	0	1	0	4.7	0	993	1.15	2.66
14/03/2025	Main St, Nailstone	WS4	0	0	3.1	4.7	0	0	0	1	0	0	0	992	1.64	2.99
14/03/2025	Main St, Nailstone	WS5A	0	0	3	17.8	0	0	0	1	0	0	0	992	0.76	2.41
03/04/2025	Comments: Dry, cloudy.															
03/04/2025	Main St, Nailstone	WS1	0	0	1.9	18.9	0	0	0	1	0	0	0	1002	1.52	2.63
03/04/2025	Main St, Nailstone	WS3	0	0	2.4	16.5	0	0	0	1	0	0	0	1002	1.34	2.66
03/04/2025	Main St, Nailstone	WS4	0	0	2.5	7.1	0	0	0	1	0.0075	0	0.84	1002	1.8	3.01
03/04/2025	Main St, Nailstone	WS5A	0	0	3.1	18.4	0	0	0	1	0	0	0	1001	0.88	2.41
15/04/2025	Comments: Cloudy, fairly heavy rain.															
15/04/2025	Main St, Nailstone	WS1	0	0	1.7	19.3	0	0	0	1	0	0	0	978	1.58	2.63
15/04/2025	Main St, Nailstone	WS3	0	0	2.4	17.8	0	0	0	1	0	0	0.02	978	1.4	2.67
15/04/2025	Main St, Nailstone	WS4	0	0	2.7	9	0	0	0	1	0	0.1	0.01	978	1.92	3.01
15/04/2025	Main St, Nailstone	WS5A	0	0	2.7	18.4	0	0	0	1	0	0.1	0	977	1.01	2.41