

**CONSTRAINTS NOTES**

- Area Of Site Possibly Requiring Provision Of CS2 / Amber 1 Ground Gas Precautions (TO BE CONFIRMED BY LONG TERM MONITORING)
- Area Where Retaining Walls Are Likely To Be Required Between Plots, In Gardens & At Highways
- Approximate Area Of Standing Water / Surface Water Flooding, Land Drainage Or Raised Levels May Be Required
- Indicates Deep Strip / Trench Fill Foundations & Precautions Due To Tree Roots
- Major Engineering Works Required To Facilitate Acceptable Gradient To Proposed Access Road
- Likely Areas Of Regraded Slopes To Facilitate Access Road Very Large Retaining Walls & Slope Stability Analysis Required At An Early Date
- Indicates Area Where Precautionary Slope Stability Assessment (May Require Piled Foundations)

**LEGEND:**

- Approximate Site Boundary
- TP01 Trial Pit Locations

**DRG REFERENCES:**

- Topographical Survey - Survey Eng Ltd / WH.TS.01
- Final Sketch Layout - Wainhomes W/DV/SK/01

**NOTE:**

- Localised Hotspot Remediation Required At TP06 & TP10
- Delineation Of High Plasticity Clay Required At TP05
- Widespread Remediation / Capping Does Not Appear To Be Required Over The Site Area
- Allow For CS2 (Amber 1) Ground Gas Precautions Until Monitoring is Complete

revision suffix	Revision Details	Date

**worksafe consultant** **SSIP** SAFETY SCHEMES IN PROCEDURE

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Drawing Stage		Drawing Status	
<input type="checkbox"/> Draft	<input type="checkbox"/> Comments	<input type="checkbox"/> Tender	<input type="checkbox"/> Construction
<input checked="" type="checkbox"/> Issued	<input type="checkbox"/> Information	<input type="checkbox"/> Approval	<input type="checkbox"/> As Built

This drawing is not authorised unless signed as checked & approved

**Client**  
**Wainhomes Ltd**

**Job title**  
**Dinting Vale Glossop**

**Drawing title**  
**Preliminary Development Constraints Plan**

**REFA** 45 Bridgeman Terrace  
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**CONSULTING ENGINEERS**  
CIVIL • STRUCTURAL  
GEOTECHNICAL • ENVIRONMENTAL

Chkd	Appvd	date	scale	drawn	rev
		15.02.22	1:500 @ A1		

**DRAWING No** **21168/04** PT

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Plan On Proposed Development / Existing Site Topography

Robert E Fry & Associates Ltd  
45 Bridgeman Terrace  
Wigan  
WN1 1TT



**Attention :** Stephen Boots  
**Date :** 21st January, 2022  
**Your reference :** 21168  
**Our reference :** Test Report 22/455 Batch 1  
**Location :** Dinting Vale, Glossop  
**Date samples received :** 15th January, 2022  
**Status :** Final Report  
**Issue :** 1

Ten samples were received for analysis on 15th January, 2022 of which ten were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

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

**Authorised By:**



**Phil Sommerton BSc**

Senior Project Manager

Please include all sections of this report if it is reproduced

# Element Materials Technology

**Client Name:** Robert E Fry & Associates Ltd  
**Reference:** 21168  
**Location:** Dinting Vale, Glossop  
**Contact:** Stephen Boots  
**EMT Job No:** 22/455

**Report : Solid**

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

EMT Sample No.	1-2	3	4-5	6-7	8	9-10	11-13	14	15	16	Please see attached notes for all abbreviations and acronyms		
Sample ID	TP02	TP03	TP04	TP06	TP08	TP09	TP10	TP11	TP14	TP15			
Depth	0.0-0.3	0.0-0.3	0.0-0.3	0.0-0.2	0.1-0.4	0.0-0.3	0.1-0.45	0.0-0.3	0.0-0.3	0.0-0.3			
COC No / misc													
Containers	V J	J	V J	V J	J	V J	V J T	J	J	J			
Sample Date	11/01/2022	12/01/2022	12/01/2022	12/01/2022	11/01/2022	11/01/2022	12/01/2022	12/01/2022	12/01/2022	12/01/2022			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	15/01/2022	15/01/2022	15/01/2022	15/01/2022	15/01/2022	15/01/2022	15/01/2022	15/01/2022	15/01/2022	15/01/2022	LOD/LOR	Units	Method No.
Arsenic #	22.9	28.0	18.9	16.5	28.6	20.8	10.0	16.1	21.5	15.8	<0.5	mg/kg	TM30/PM15
Cadmium #	0.3	0.1	0.2	0.4	0.4	0.3	0.7	0.2	0.2	0.2	<0.1	mg/kg	TM30/PM15
Chromium #	70.7	73.0	78.9	59.8	100.0	86.0	33.9	67.0	67.0	69.4	<0.5	mg/kg	TM30/PM15
Copper #	35	34	29	51	61	33	22	31	38	31	<1	mg/kg	TM30/PM15
Lead #	81	86	64	284	107	76	64	62	81	61	<5	mg/kg	TM30/PM15
Mercury #	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Nickel #	18.1	18.1	18.0	20.1	38.6	21.0	27.6	17.2	19.9	20.3	<0.7	mg/kg	TM30/PM15
Selenium #	<1	<1	1	<1	<1	1	<1	<1	<1	1	<1	mg/kg	TM30/PM15
Zinc #	59	41	59	77	76	78	68	60	61	65	<5	mg/kg	TM30/PM15
<b>PAH MS</b>													
Naphthalene #	<0.04	<0.04	<0.04	<0.04	0.12	<0.04	0.21	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.03	0.06	<0.03	0.46	<0.03	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	<0.05	<0.05	0.29	<0.05	0.84	<0.05	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.04	<0.04	<0.04	0.18	<0.04	0.66	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.24	0.20	0.31	<0.03	2.01	0.45	7.93	0.12	0.19	0.14	<0.03	mg/kg	TM4/PM8
Anthracene #	0.06	0.07	0.07	<0.04	0.50	0.10	3.16	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.53	0.39	0.58	0.11	2.98	0.81	21.54	0.24	0.41	0.27	<0.03	mg/kg	TM4/PM8
Pyrene #	0.48	0.33	0.52	0.09	2.54	0.72	18.37	0.19	0.38	0.24	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.33	0.25	0.33	<0.06	1.39	0.45	12.20	0.16	0.25	0.17	<0.06	mg/kg	TM4/PM8
Chrysene #	0.33	0.25	0.34	0.07	1.57	0.46	10.95	0.15	0.26	0.15	<0.02	mg/kg	TM4/PM8
Benzo(k)fluoranthene #	0.57	0.41	0.55	<0.07	2.18	0.71	21.39	0.21	0.46	0.22	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.33	0.24	0.31	<0.04	1.29	0.42	13.69	0.12	0.25	0.11	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.24	0.17	0.24	<0.04	0.87	0.29	10.63	0.09	0.22	0.10	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	0.05	<0.04	<0.04	0.18	0.07	1.76	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.19	0.16	0.21	<0.04	0.72	0.24	8.02	0.09	0.18	0.08	<0.04	mg/kg	TM4/PM8
PAH 16 Total	3.3	2.5	3.5	<0.6	16.9	4.7	131.8	1.4	2.6	1.5	<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.41	0.30	0.40	<0.05	1.57	0.51	15.40	0.15	0.33	0.16	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.16	0.11	0.15	<0.02	0.61	0.20	5.99	0.06	0.13	0.06	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	89	89	90	93	91	96	91	91	92	92	<0	%	TM4/PM8
<b>TPH CWG</b>													
<b>Aliphatics</b>													
>C5-C6 (HS_1D_AL) #	<0.1 <sup>SV</sup>	-	<0.1	<0.1	-	<0.1	<0.1 <sup>SV</sup>	-	-	-	<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL) #	<0.1 <sup>SV</sup>	-	<0.1	<0.1	-	<0.1	<0.1 <sup>SV</sup>	-	-	-	<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	<0.1 <sup>SV</sup>	-	<0.1	<0.1	-	<0.1	<0.1 <sup>SV</sup>	-	-	-	<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL) #	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-	-	-	<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL) #	<4	-	<4	<4	-	<4	<4	-	-	-	<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL) #	<7	-	<7	<7	-	<7	24	-	-	-	<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL) #	<7	-	<7	<7	-	<7	274	-	-	-	<7	mg/kg	TM5/PM8/PM16
>C35-C44 (EH_1D_AL)	<7	-	<7	<7	-	<7	44	-	-	-	<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-44 (EH+HS_1D_AL)	<26	-	<26	<26	-	<26	342	-	-	-	<26	mg/kg	TM5/PM8/PM16

# Element Materials Technology

**Client Name:** Robert E Fry & Associates Ltd  
**Reference:** 21168  
**Location:** Dinting Vale, Glossop  
**Contact:** Stephen Boots  
**EMT Job No:** 22/455

**Report : Solid**

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

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Sample ID	TP02	TP03	TP04	TP06	TP08	TP09	TP10	TP11	TP14	TP15			
Depth	0.0-0.3	0.0-0.3	0.0-0.3	0.0-0.2	0.1-0.4	0.0-0.3	0.1-0.45	0.0-0.3	0.0-0.3	0.0-0.3			
COC No / misc													
Containers	V J	J	V J	V J	J	V J	V J T	J	J	J			
Sample Date	11/01/2022	12/01/2022	12/01/2022	12/01/2022	11/01/2022	11/01/2022	12/01/2022	12/01/2022	12/01/2022	12/01/2022			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	15/01/2022	15/01/2022	15/01/2022	15/01/2022	15/01/2022	15/01/2022	15/01/2022	15/01/2022	15/01/2022	15/01/2022	LOD/LOR	Units	Method No.
TPH CWG													
<b>Aromatics</b>													
>C5-EC7 (HS_1D_AR) #	<0.1 <sup>SV</sup>	-	<0.1	<0.1	-	<0.1	<0.1 <sup>SV</sup>	-	-	-	<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR) #	<0.1 <sup>SV</sup>	-	<0.1	<0.1	-	<0.1	<0.1 <sup>SV</sup>	-	-	-	<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR) #	<0.1 <sup>SV</sup>	-	<0.1	<0.1	-	<0.1	<0.1 <sup>SV</sup>	-	-	-	<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR) #	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-	-	-	<0.2	mg/kg	TMS/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR) #	<4	-	<4	<4	-	<4	18	-	-	-	<4	mg/kg	TMS/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR) #	<7	-	20	<7	-	40	378	-	-	-	<7	mg/kg	TMS/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR) #	86	-	52	<7	-	249	1487	-	-	-	<7	mg/kg	TMS/PM8/PM16
>EC35-EC44 (EH_1D_AR)	29	-	<7	<7	-	42	214	-	-	-	<7	mg/kg	TMS/PM8/PM16
Total aromatics C5-44 (EH+HS_1D_AR)	115	-	72	<26	-	331	2097	-	-	-	<26	mg/kg	TMS/PM8/PM16/PM12/PM15
Total aliphatics and aromatics(C5-44) (EH+HS_CU_1D_Total)	115	-	72	<52	-	331	2439	-	-	-	<52	mg/kg	TMS/PM8/PM16/PM12/PM15
MTBE #	<5 <sup>SV</sup>	-	<5	<5	-	<5	<5 <sup>SV</sup>	-	-	-	<5	ug/kg	TM36/PM12
Benzene #	<5 <sup>SV</sup>	-	<5	<5	-	<5	<5 <sup>SV</sup>	-	-	-	<5	ug/kg	TM36/PM12
Toluene #	<5 <sup>SV</sup>	-	<5	<5	-	<5	<5 <sup>SV</sup>	-	-	-	<5	ug/kg	TM36/PM12
Ethylbenzene #	<5 <sup>SV</sup>	-	<5	<5	-	<5	<5 <sup>SV</sup>	-	-	-	<5	ug/kg	TM36/PM12
m/p-Xylene #	<5 <sup>SV</sup>	-	<5	<5	-	<5	<5 <sup>SV</sup>	-	-	-	<5	ug/kg	TM36/PM12
o-Xylene #	<5 <sup>SV</sup>	-	<5	<5	-	<5	<5 <sup>SV</sup>	-	-	-	<5	ug/kg	TM36/PM12
Total Phenols HPLC	<0.15	0.19	<0.15	0.45	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	mg/kg	TM26/PM21B
Natural Moisture Content	38.3	33.5	30.8	123.6	52.2	44.0	15.3	48.9	36.5	39.9	<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	27.7	25.1	23.5	55.3	34.3	30.6	13.3	32.8	26.7	28.5	<0.1	%	PM4/PM0
Sulphate as SO4 (2:1 Ext) #	0.0067	0.0108	0.0111	0.2576	0.0225	0.0105	0.0266	0.0177	0.0091	0.0040	<0.0015	g/l	TM38/PM20
Total Cyanide #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	4.51	3.43	2.57	7.71	4.83	4.09	1.40	3.87	4.08	2.93	<0.02	%	TM21/PM24
Sulphide	<10	<10	<10	<10	<10	<10	13	<10	<10	<10	<10	mg/kg	TM107/PM45
pH #	5.47	4.89	5.22	6.86	5.58	5.41	7.90	5.72	5.42	6.41	<0.01	pH units	TM73/PM11





# NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 22/455

## SOILS and ASH

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

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

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

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. Asbestos samples are retained for 6 months.

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

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

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C. Ash samples are dried at 37°C ±5°C.

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

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

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

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

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

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

## WATERS

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

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

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

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

## STACK EMISSIONS

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

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

## DEVIATING SAMPLES

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

## SURROGATES

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

## DILUTIONS

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

## BLANKS

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

Please include all sections of this report if it is reproduced

All solid results are expressed on a dry weight basis unless stated otherwise.

## NOTE

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

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

**REPORTS FROM THE SOUTH AFRICA LABORATORY**

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

**Measurement Uncertainty**

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

**ABBREVIATIONS and ACRONYMS USED**

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

## HWOL ACRONYMS AND OPERATORS USED

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

EMT Job No: 22/455

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21B	As Received samples are extracted in Methanol: Water (60:40) by reciprocal shaker.			AR	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry); WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009; SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

EMT Job No: 22/455

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM65	Asbestos Bulk Identification method based on HSG 248 First edition (2006)	PM42	Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM89	Modified USEPA method OIA-1667 (1999). Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide, Sulphide and Thiocyanate analysis.	Yes		AR	Yes
TM107	Determination of Sulphide/Thiocyanate by Skalar Continuous Flow Analyser	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide, Sulphide and Thiocyanate analysis.			AR	Yes



# LABORATORY REPORT



4043

**Contract Number: PSL22/0974**

Report Date: 15 February 2022  
Client's Reference: 21168  
Client Name: REFA  
45 Bridgeman Terrace  
Wigan  
WN1 1TT

**For the attention of: Stephen Boot**

Contract Title: Dinting Vale, Glossop  
Date Received: 8/2/2022  
Date Commenced: 8/2/2022  
Date Completed: 15/2/2022

**Notes: Opinions and Interpretations are outside the UKAS Accreditation**

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. 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 other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

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(Director)

R Berriman  
(Quality Manager)

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# SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
TP01			1.50		Brown slightly gravelly very sandy CLAY.
TP02			2.00		Brown mottled grey slightly gravelly slightly sandy CLAY.
TP03			1.00		Brown mottled grey slightly gravelly very sandy CLAY.
TP04			2.00		Brown slightly gravelly very sandy CLAY.
TP05			2.00		Brown slightly gravelly very sandy CLAY.
TP06			2.10		Brown mottled grey slightly gravelly sandy CLAY.
TP07			1.00		Brown mottled grey slightly gravelly sandy CLAY.
TP08			1.40		Brown mottled grey slightly gravelly sandy CLAY.
TP09			0.90		Brown CLAY.
TP10			2.00		Brown slightly gravelly very sandy CLAY.
TP11			2.00		Brown mottled grey sandy CLAY.
TP12			1.00		Brown mottled grey slightly sandy CLAY.
TP13			2.00		Brown mottled grey slightly gravelly very sandy CLAY.
TP14			1.00		Brown slightly gravelly sandy CLAY.
TP15			2.00		Brown mottled grey sandy CLAY.



4043

PSL

Professional Soils Laboratory

Dinting Vale, Glossop

**Contract No:**

**PSL22/0974**

**Client Ref:**

**21168**

# SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m <sup>3</sup> Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
TP01			1.50		17			32	16	16	96	Low Plasticity CL
TP02			2.00		26			65	27	38	97	High Plasticity CH
TP03			1.00		16			32	16	16	96	Low Plasticity CL
TP04			2.00		17			33	16	17	95	Low Plasticity CL
TP05			2.00		16			34	17	17	97	Low Plasticity CL
TP06			2.10		22			48	22	26	97	Intermediate Plasticity CI
TP07			1.00		21			44	21	23	97	Intermediate Plasticity CI
TP08			1.40		21			47	22	25	98	Intermediate Plasticity CI
TP09			0.90		41			72	30	42	100	Very High Plasticity CV
TP10			2.00		18			30	15	15	96	Low Plasticity CL
TP11			2.00		17			38	19	19	100	Intermediate Plasticity CI
TP12			1.00		27			62	26	36	100	High Plasticity CH
TP13			2.00		18			34	17	17	97	Low Plasticity CL
TP14			1.00		24			49	23	26	96	Intermediate Plasticity CI
TP15			2.00		18			36	18	18	100	Intermediate Plasticity CI

SYMBOLS : NP : Non Plastic

\* : Liquid Limit and Plastic Limit Wet Sieved.



**PSL**  
Professional Soils Laboratory

Dinting Vale, Glossop

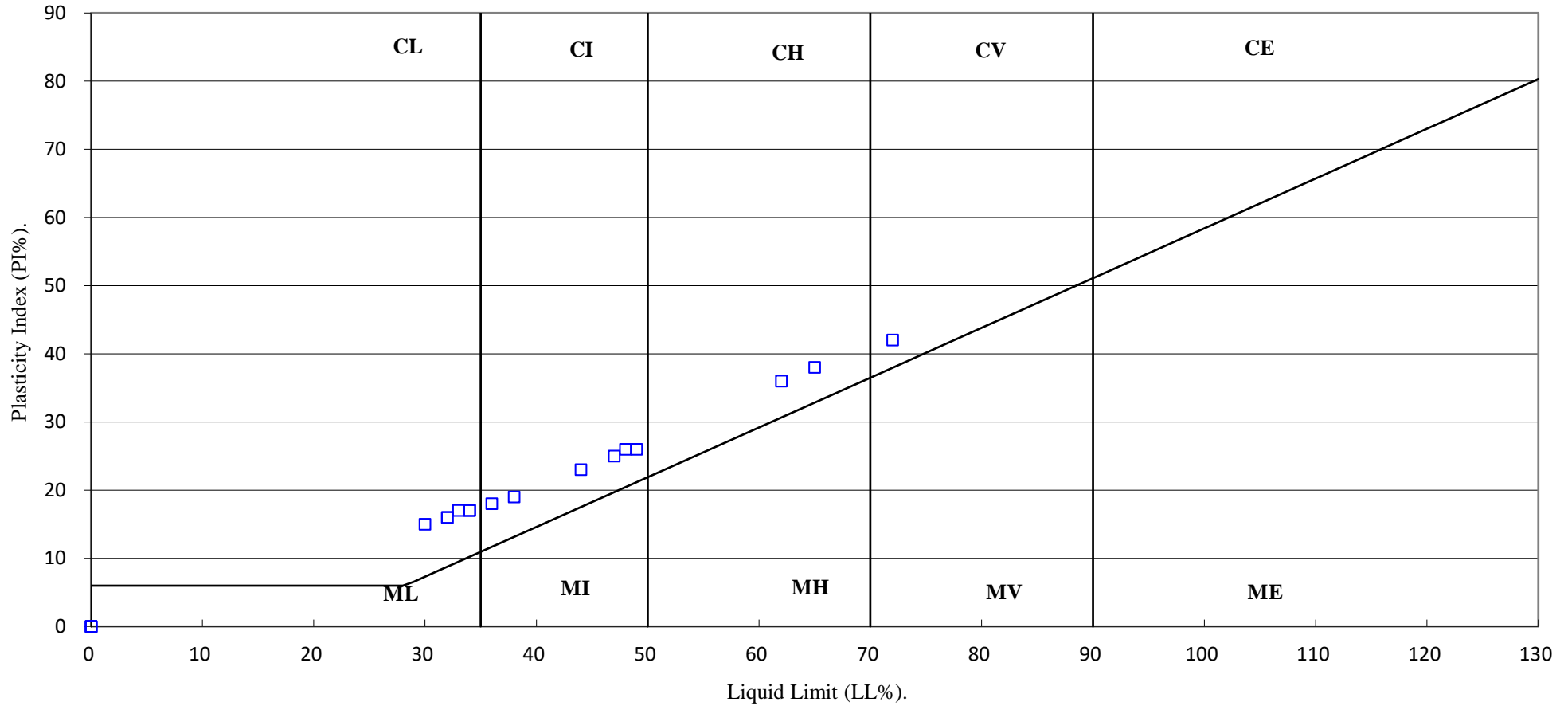
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# PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



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