



CCG-C-23-13668

**VALIDATION REPORT
FOR
WHITEHOUSE CLUB, MIDDLETON ROAD,
CRUMPSALL**

MAY 2023



Prepared by:

CC GEOTECHNICAL LIMITED

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DOCUMENT CONTROL FORM

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Project Title:	Validation Report For; Whitehouse Club, Crumpsall
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Signature	
For and behalf of CC GEOTECHNICAL LTD	
Date:	May 2023
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1.0 INTRODUCTION

CC GEOTECHNICAL LIMITED (CCG) is providing consultancy services to **BRANLEY HOMES LIMITED** in connection with the redevelopment of a parcel of land at the former Whitehouse Club, Middleton Road, Crumpsall, Manchester M8 4JZ.

The site has been developed for the construction of a replacement social club building at the eastern end of the site. A layout of the development is presented in Appendix A.

The site is located within the jurisdiction of **MANCHESTER CITY COUNCIL**.

This report was prepared as part of the hierarchy of documentation required to demonstrate that the development was constructed in accordance with the "Phase III Remediation Strategy Report for land at the former Whitehouse Club, Middleton Road, Crumpsall, Manchester M8 4JZ" reference CCG-C-20-11980.

This report pertains only to the planted amenity areas / communal garden to the east of the club building.

The remediation strategy recommended the following principal measures be incorporated in the development:

- **Garden and Landscaped Areas**

"However as indicated on the CCG Drawing '11980' Appendix A the area requiring action appears to be largely communal gardens, and hence exposure to contamination via plant uptake / ingestion is unlikely, and hence the required remediation on communal landscaped areas may be reduced to a cover of 450mm clean imported topsoil.

Where made ground remaining in place, imported sub-soil / topsoil is to be placed on a suitable hi-vis geotextile fabric such as 'Terram 1000', or similar. All imported soils for garden areas are to be non-recycled of greenfield source. The proposed frequency of sampling / analysis for imported materials is one sample per 50m³ of material, with a minimum of 4nr samples being analysed per source material."

2.0 VALIDATION RECORDS

The primary objective of a validation report is to compile records which demonstrate compliance with the recommendations provided in the relevant Remediation Strategy, in relation to discharge of the planning conditions.

2.1 Imported Garden Cover

CCG attended site to independently to sample soils - 3nr of imported topsoil and 3nr of imported subsoils. The samples were despatched by courier the same day to a UKAS / MCERTs chemical laboratory.

Evidence of the capping protective measures:

- Verification showing 600mm (or greater) cover at each plot (300mm of topsoil and 300mm of subsoil) – Appendix B.
- Independent validation analysis records for imported soils (contamination test certificates) sampled on site – Appendix C.
- Independent validation analysis records for imported soils (contamination assessment worksheets) – Appendix D.
- Delivery documentation for imported soils – Appendix E.
- Declaration from contractor that no unanticipated made ground deposits were encountered during the construction process – Appendix F.

3.0 CONCLUSIONS

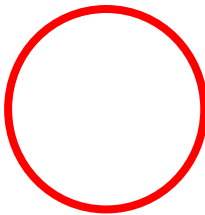
The evidence of the inspections/sampling/analyses is that the requisite planted amenity areas / communal garden cover construction is compliant in terms of the specified thickness and the chemical composition.

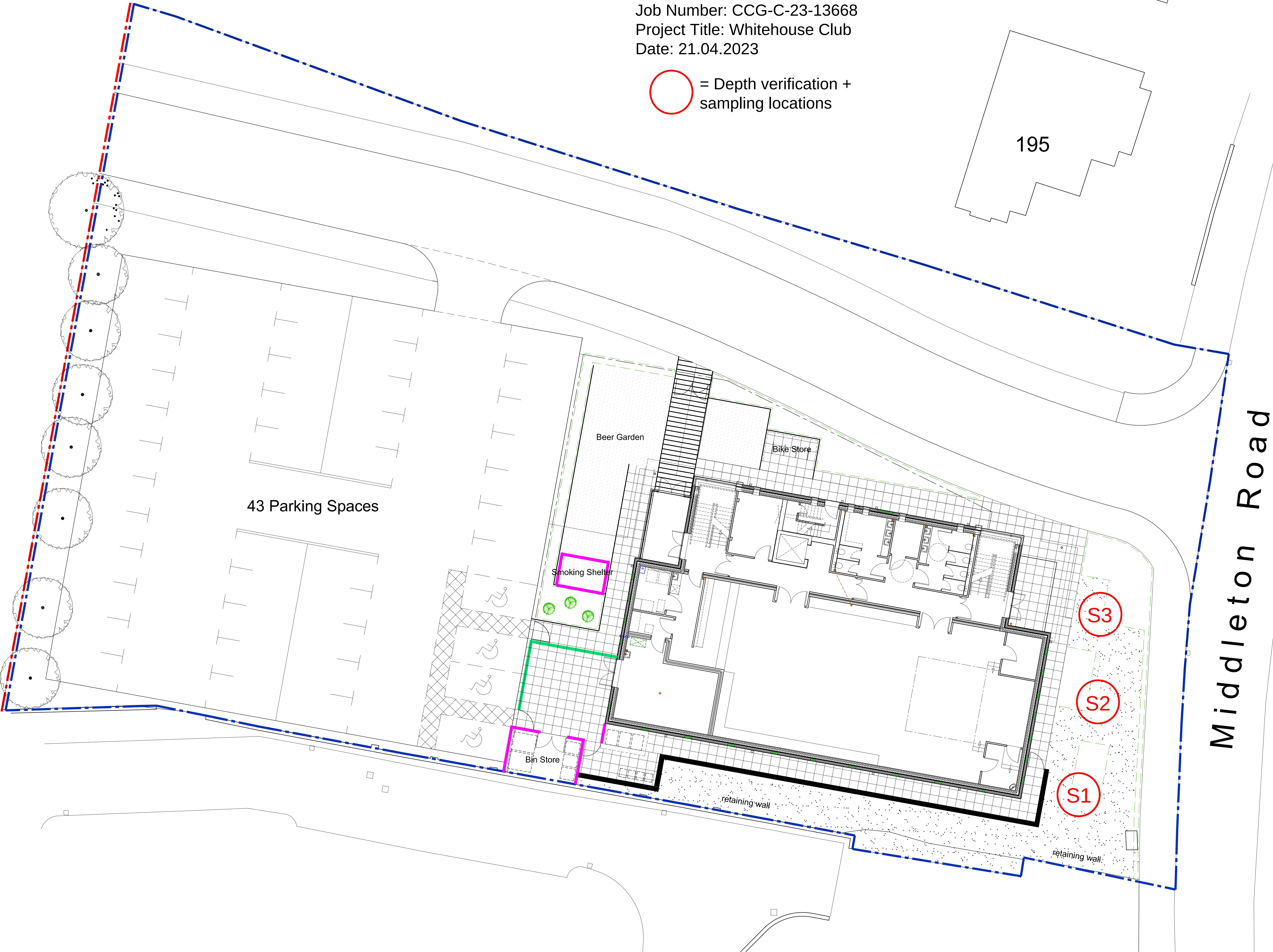
APPENDIX A

SITE DRAWINGS

Development Layout

Job Number: CCG-C-23-13668
Project Title: Whitehouse Club
Date: 21.04.2023

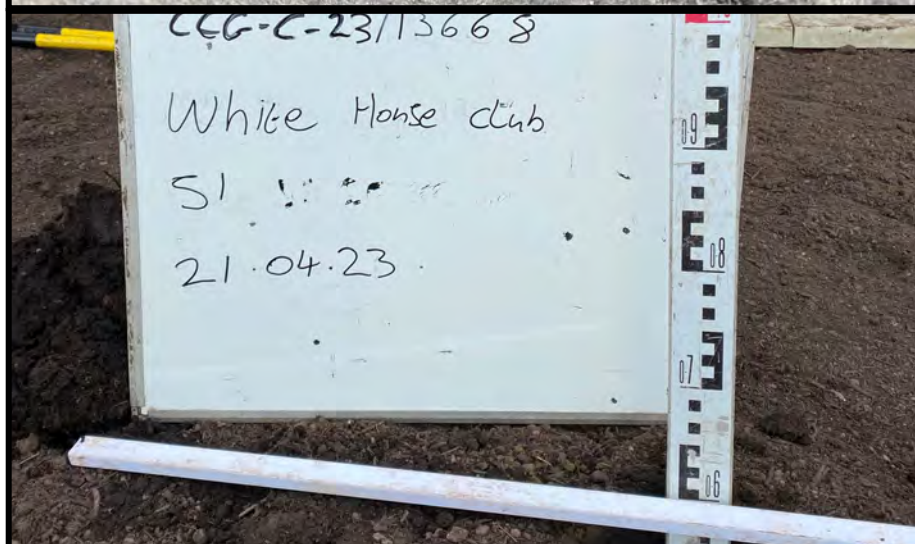
 = Depth verification + sampling locations



Middleton Road

APPENDIX B

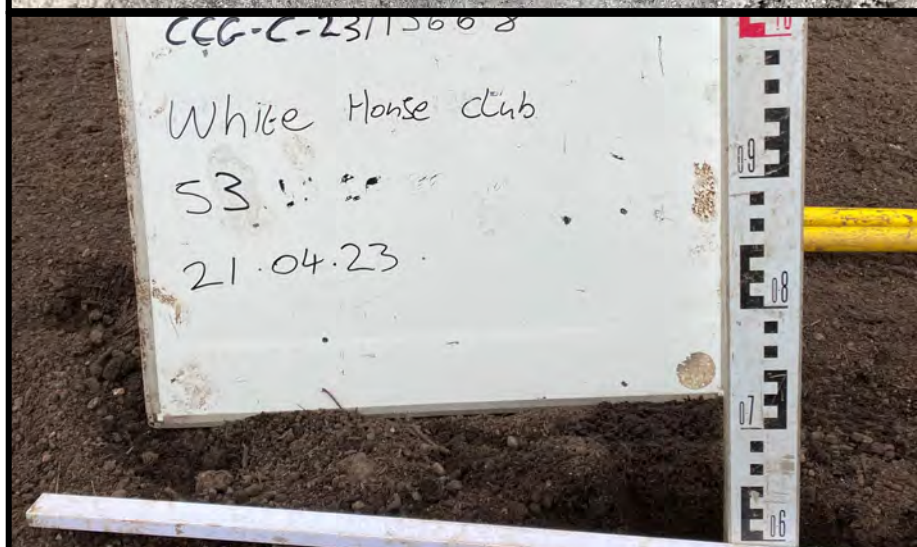
COMMUNAL GARDEN / LANDSCAPING CONSTRUCTION PHOTOGRAPHS



Site	Whitehouse Club, Crumpsall
Job No.	CCG-C-23-13668
Photograph location	PLOT S1



Site	Whitehouse Club, Crumpsall
Job No.	CCG-C-23-13668
Photograph location	PLOT S2



Site	Whitehouse Club, Crumpsall
Job No.	CCG-C-23-13668
Photograph location	PLOT S3



Site	Whitehouse Club, Crumpsall
Job No.	CCG-C-23-13668
Photograph location	Middleton Road Elevation



Site	Whitehouse Club, Crumpsall
Job No.	CCG-C-23-13668
Photograph location	Middleton Road Elevation



Site	Whitehouse Club, Crumpsall
Job No.	CCG-C-23-13668
Photograph location	Middleton Road Elevation



Site	Whitehouse Club, Crumpsall
Job No.	CCG-C-23-13668
Photograph location	Right Side of New Access Road



Site	Whitehouse Club, Crumpsall
Job No.	CCG-C-23-13668
Photograph location	Right Side of New Access Road

APPENDIX C

SUBSOIL & TOPSOIL CHEMICAL ANALYSES

CC Geotechnical Ltd
Units 1-2
Deltic Place
Deltic Way
Knowsley Industrial Estate
United Kingdom
L33 7BU



Attention :	Daniel Kerfoot
Date :	9th May, 2023
Your reference :	CCG-C-23-13668
Our reference :	Test Report 23/6436 Batch 1
Location :	Whitehouse Club Crumpsall
Date samples received :	22nd April, 2023
Status :	Final Report
Issue :	1

Six samples were received for analysis on 22nd April, 2023 of which six 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:



Paul Boden BSc
Senior Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: CC Geotechnical Ltd
Reference: CCG-C-23-13668
Location: Whitehouse Club Crumpsall
Contact: Daniel Kerfoot
EMT Job No: 23/6436

Report : Solid

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

EMT Sample No.	1-5	6-10	11-15	16-20	21-25	26-30					Please see attached notes for all abbreviations and acronyms		
Sample ID	S1	S1	S2	S2	S3	S3							
Depth	0.20	0.40	0.20	0.40	0.20	0.40							
COC No / misc													
Containers	V J T B	V J T B	V J T B	V J T B	V J T B	V J T B							
Sample Date	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1	1					LOD/LOR	Units	Method No.
Date of Receipt	22/04/2023	22/04/2023	22/04/2023	22/04/2023	22/04/2023	22/04/2023							
Arsenic #	2.9	5.6	3.0	5.6	2.8	4.7					<0.5	mg/kg	TM30/PM15
Cadmium #	<0.1	<0.1	<0.1	<0.1	<0.1	0.1					<0.1	mg/kg	TM30/PM15
Chromium #	50.5	85.4	48.6	35.9	55.5	49.0					<0.5	mg/kg	TM30/PM15
Copper #	11	27	13	29	14	26					<1	mg/kg	TM30/PM15
Lead #	17	38	17	42	21	37					<5	mg/kg	TM30/PM15
Mercury #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM30/PM15
Nickel #	29.9	33.0	25.7	11.2	22.2	10.3					<0.7	mg/kg	TM30/PM15
Selenium #	<1	<1	<1	<1	<1	<1					<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	166	723	171	692	174	1794					<50	mg/kg	TM50/PM29
Water Soluble Boron #	0.2	3.5	0.3	3.2	0.4	3.0					<0.1	mg/kg	TM74/PM32
Zinc #	78	78	77	90	68	78					<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04					<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	0.05	<0.03	<0.03	<0.03	<0.03					<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05					<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04					<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.05	0.43	0.07	0.36	0.06	0.09					<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	0.13	<0.04	0.10	<0.04	<0.04					<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.05	1.08	0.12	0.64	0.08	0.36					<0.03	mg/kg	TM4/PM8
Pyrene #	0.06	0.87	0.10	0.54	0.07	0.32					<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	<0.06	0.52	0.09	0.28	<0.06	0.20					<0.06	mg/kg	TM4/PM8
Chrysene #	0.03	0.59	0.07	0.29	0.05	0.23					<0.02	mg/kg	TM4/PM8
Benzo(b)fluoranthene #	<0.07	0.95	0.12	0.45	<0.07	0.40					<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04	0.52	0.07	0.23	<0.04	0.20					<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	<0.04	0.37	<0.04	0.16	<0.04	0.13					<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	0.07	<0.04	<0.04	<0.04	<0.04					<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	0.34	<0.04	0.18	<0.04	0.15					<0.04	mg/kg	TM4/PM8
PAH 16 Total	<0.6	5.9	0.6	3.2	<0.6	2.1					<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	<0.05	0.68	0.09	0.32	<0.05	0.29					<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	<0.02	0.27	0.03	0.13	<0.02	0.11					<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	90	89	87	92	87	90					<0	%	TM4/PM8
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL) #	<0.1	<0.1 ^{SV}	<0.1	<0.1 ^{SV}	<0.1	<0.1 ^{SV}					<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL) #	<0.1	<0.1 ^{SV}	<0.1	<0.1 ^{SV}	<0.1	<0.1 ^{SV}					<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	<0.1	<0.1 ^{SV}	<0.1	<0.1 ^{SV}	<0.1	<0.1 ^{SV}					<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL) #	<0.2	<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					<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL) #	<7	<7	<7	<7	<7	<7					<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL) #	<7	52	<7	79	<7	47					<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35 (EH+HS_CU_1D_AL)	<19	52	<19	79	<19	47					<19	mg/kg	TM5/PM8/PM16

Element Materials Technology

Client Name: CC Geotechnical Ltd
Reference: CCG-C-23-13668
Location: Whitehouse Club Crumpsall
Contact: Daniel Kerfoot
EMT Job No: 23/6436

Report : Solid

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

EMT Sample No.	1-5	6-10	11-15	16-20	21-25	26-30					Please see attached notes for all abbreviations and acronyms		
Sample ID	S1	S1	S2	S2	S3	S3							
Depth	0.20	0.40	0.20	0.40	0.20	0.40							
COC No / misc													
Containers	V J T B	V J T B	V J T B	V J T B	V J T B	V J T B							
Sample Date	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1	1							
Date of Receipt	22/04/2023	22/04/2023	22/04/2023	22/04/2023	22/04/2023	22/04/2023					LOD/LOR	Units	Method No.
TPH CWG													
Aromatics													
>C5-EC7 (HS_1D_AR) #	<0.1	<0.1 ^{SV}	<0.1	<0.1 ^{SV}	<0.1	<0.1 ^{SV}					<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR) #	<0.1	<0.1 ^{SV}	<0.1	<0.1 ^{SV}	<0.1	<0.1 ^{SV}					<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR) #	<0.1	<0.1 ^{SV}	<0.1	<0.1 ^{SV}	<0.1	<0.1 ^{SV}					<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR) #	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2					<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR) #	<4	<4	<4	<4	<4	<4					<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR) #	<7	23	<7	18	<7	27					<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR) #	<7	230	62	219	45	162					<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 (EH+HS_CU_1D_AR) #	<19	253	62	237	45	189					<19	mg/kg	TM5/PM8/PM16/PM12/PM10
Total aliphatics and aromatics(C5-35) (EH+HS_CU_1D_Total)	<38	305	62	316	45	236					<38	mg/kg	TM5/PM8/PM16/PM12/PM10
MTBE #	<5	<5 ^{SV}	<5	<5 ^{SV}	<5	<5 ^{SV}					<5	ug/kg	TM36/PM12
Benzene #	<5	<5 ^{SV}	<5	<5 ^{SV}	<5	<5 ^{SV}					<5	ug/kg	TM36/PM12
Toluene #	<5	<5 ^{SV}	<5	<5 ^{SV}	<5	<5 ^{SV}					<5	ug/kg	TM36/PM12
Ethylbenzene #	<5	<5 ^{SV}	<5	<5 ^{SV}	<5	<5 ^{SV}					<5	ug/kg	TM36/PM12
m/p-Xylene #	<5	<5 ^{SV}	<5	<5 ^{SV}	<5	<5 ^{SV}					<5	ug/kg	TM36/PM12
o-Xylene #	<5	<5 ^{SV}	<5	<5 ^{SV}	<5	<5 ^{SV}					<5	ug/kg	TM36/PM12
Natural Moisture Content	14.7	30.5	16.4	45.9	14.8	34.6					<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3					<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	0.0462	0.2068	0.0488	0.1569	0.0419	0.1838					<0.0015	g/l	TM38/PM20
Free Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	mg/kg	TM89/PM45
Organic Matter	1.0	9.9	1.2	10.1	1.5	10.9					<0.2	%	TM21/PM24
Sulphide	<10	<10	<10	<10	<10	<10					<10	mg/kg	TM107/PM45
pH #	7.39	8.05	8.10	8.06	8.12	8.05					<0.01	pH units	TM73/PM11

Note:

The LOQ of the Asbestos Quantification is 0.001% dry fibre of dry mass of sample.

Where the sample is not taken by a Element Materials Technology consultant, Element Materials Technology cannot be responsible for inaccurate or unrepresentative sampling.

Where trace asbestos is reported the amount of asbestos will be <0.1%.

QF-PM 3.1.15 v10

Client Name: CC Geotechnical Ltd
Reference: CCG-C-23-13668
Location: Whitehouse Club Crumpsall
Contact: Daniel Kerfoot

[illegible]

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

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 23/6436

SOILS and ASH

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

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

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

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

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

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

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

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

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

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

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

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

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

WATERS

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

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

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

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

STACK EMISSIONS

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

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

DEVIATING SAMPLES

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

SURROGATES

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

DILUTIONS

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

BLANKS

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

NOTE

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

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

REPORTS FROM THE SOUTH AFRICA LABORATORY

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

Measurement Uncertainty

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

Customer Provided Information

Sample ID and depth is information provided by the customer.

ABBREVIATIONS and ACRONYMS USED

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

HWOL ACRONYMS AND OPERATORS USED

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

EMT Job No: 23/6436

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	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
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details	Yes		AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.			AD	Yes
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
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

EMT Job No: 23/6436

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	A hot hydrochloric acid digest is performed on a dried and ground sample, and the resulting liquor is analysed.	Yes		AD	Yes
TM65	Asbestos Bulk Identification method based on HSG 248 Second edition (2021)	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
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes
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.			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

APPENDIX D

CHEMICAL ASSESSMENT TABLES



Threshold exceeded

 = Below Limit of detection

n/t = Not tested

n/t = Not tested

n/t = Not tested

n/t = Not tested

			Metals								
Contaminants			Cadmium	Chromium III	Chromium VI	Copper	Lead	Mercury (elemental)	Nickel	Zinc	
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
			Limit of Detection	0.5	5.0	0.8	5.0	5.0	0.5	5.0	5.0
			Human Health Risk Assessment (GAC)	11	910	6	240	200	1.2	180	3700
			Sample Location	Sample Depth (m)	Sample type						
S1	0.20	0	<0.1	50.5	<0.3	11	17	<0.1	29.9	78	
S1	0.40	0	<0.1	85.4	<0.3	27	38	<0.1	33	78	
S2	0.20	0	<0.1	48.6	<0.3	13	17	<0.1	25.7	77	
S2	0.40	0	<0.1	35.9	<0.3	29	42	<0.1	11.2	90	
S3	0.20	0	<0.1	55.5	<0.3	14	21	<0.1	22.2	68	
S3	0.40	0	0.1	49	<0.3	26	37	<0.1	10.3	78	
Human Health Risk Assessment (GAC)			11	910	6	240	200	1.2	180	3700	



Threshold exceeded

= Below Limit of detection

n/t = Not tested

n/t = Not tested

n/t = Not tested

n/t = Not tested

			Semi/non-metals			Inorganics			Other				
Contaminants			Arsenic	Boron	Selenium	Cyanide (free)	Sulphate (water soluble)	Sulphate (water soluble)	pH (units)	Soil Organic Matter %			
			Units	mg/kg	mg/kg	mg/kg	mg/kg	g/l	mg/l	units	units		
			Limit of Detection	1.0	0.5	1.0	1.0	0.02	20.0	0.1	0.1		
			Human Health Risk Assessment (GAC)	37	290	250	22	NA	NA	NA	NA		
			Sample Location	Sample Depth (m)	Sample type								
			S1	0.20	0	2.9	0.2	<1	<0.5	n/t	n/t	7.39	1
			S1	0.40	0	5.6	3.5	<1	<0.5	n/t	n/t	8.05	9.9
S2	0.20	0	3	0.3	<1	<0.5	n/t	n/t	8.1	1.2			
S2	0.40	0	5.6	3.2	<1	<0.5	n/t	n/t	8.06	10.1			
S3	0.20	0	2.8	0.4	<1	<0.5	n/t	n/t	8.12	1.5			
S3	0.40	0	4.7	3	<1	<0.5	n/t	n/t	8.05	10.9			
Human Health Risk Assessment (GAC)			37	290	250	22	NA	NA	NA	NA			



n/t = Not tested

			PAH's																
Contaminants			Acenaphthene	Acenaphthylene	Anthracene	Benz[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[ghi]perylene	Benzo[k]fluoranthene	Chrysene	Dibenzo[ah]anthracene	Fluoranthene	Fluorene	Indeno[123-cd]pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH's
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Limit of Detection			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.4
Human Health Risk Assessment (GAC)			210	170	2400	7.2	2.2	2.6	320	77	15	0.24	280	170	27	2.3	95	620	NA
Sample Location	Sample Depth (m)	Sample type																	
S1	0.20	0	<0.05	<0.03	<0.04	<0.06	<0.04	<0.05	<0.04	<0.02	0.03	<0.04	0.05	<0.04	<0.04	<0.04	0.05	0.06	90
S1	0.40	0	<0.05	0.05	0.13	0.52	0.52	0.68	0.34	0.27	0.59	0.07	1.08	<0.04	0.37	<0.04	0.43	0.87	89
S2	0.20	0	<0.05	<0.03	<0.04	0.09	0.07	0.09	<0.04	0.03	0.07	<0.04	0.12	<0.04	<0.04	<0.04	0.07	0.1	87
S2	0.40	0	<0.05	<0.03	0.1	0.28	0.23	0.32	0.18	0.13	0.29	<0.04	0.64	<0.04	0.16	<0.04	0.36	0.54	92
S3	0.20	0	<0.05	<0.03	<0.04	<0.06	<0.04	<0.05	<0.04	<0.02	0.05	<0.04	0.08	<0.04	<0.04	<0.04	0.06	0.07	87
S3	0.40	0	<0.05	<0.03	<0.04	0.2	0.2	0.29	0.15	0.11	0.23	<0.04	0.36	<0.04	0.13	<0.04	0.09	0.32	90
Human Health Risk Assessment (GAC)			210	170	2400	7.2	2.2	2.6	320	77	15	0.24	280	170	27	2.3	95	620	NA



Threshold exceeded

 = Below Limit of detection

n/t = Not tested

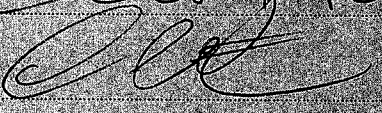
$$n/t$$

= Not tested

$$n/t$$
[illegible]

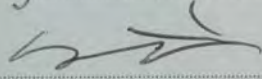
APPENDIX E

DELIVERY DOCUMENTATION

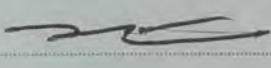
Customer: Branley Homes Site Address: 193 Middleton Road Crumpsall M84JZ		 MARCHINGTONSTONE Buxton Road, High Lane, Stockport SK6 8DX Tel: 01663 765000 Fax: 01663 763777	
		Delivery Date: 8-3-2023	
		Order No:	
Material Description Subsoil <small>(WRAP Recycled Aggs Protocol Compliant)</small>		In accordance with our Terms & Conditions a charge for excessive waiting time may be made. Waiting Time Agreed By: Print Signed	
Tonnes Gross 1 X load	Tonnes Tare 8 WHL	Tonnes Nett	Time On Site Time Off Site Waiting Time Agreed
This vehicle may leave the road on your instruction and at the drivers discretion, providing you accept responsibility for damage to your own or third party property. Customer Agreed ☐ Signed.....		Haulier BJ Crowther	Place of Loading SHQ
Load Accepted on Behalf of Customer: Print: C. CURTIN Signed: 		Registration No. MK 67NJP	Weighbridge Ticket No.
		Driver Colin	Marchington Ticket No. 600181 Office Copy
Subject to the Conditions of Sale of Marchington Stone Limited applicable to goods of this kind. Available on request.		CE Mark & Declaration of Performance available by contacting sales@marchington.net	

Customer: Branley Homes, Site Address: 193 Middleton Road Crumpsall M84JZ			 MARCHINGTONSTONE Buxton Road, High Lane, Stockport SK6 8DX Tel: 01663 765000 Fax: 01663 763777		
			Delivery Date: 8-3-2023		
			Order No:		
Material Description Subsoil <small>(WRAP Recycled Aggs Protocol Compliant)</small>			In accordance with our Terms & Conditions a charge for excessive waiting time may be made. Waiting Time Agreed By: Print Signed		
Tonnes Gross 1 X 8	Tonnes Tare WHL	Tonnes Nett 10AD	Time On Site	Time Off Site	Waiting Time Agreed
This vehicle may leave the road on your instruction and at the drivers discretion, providing you accept responsibility for damage to your own or third party property. Customer Agreed ☐ Signed.....			Haulier BJ Crowther		Place of Loading Shirehill Quarry
Load Accepted on Behalf of Customer:  Print Signed			Registration No. Mk67 NJP		Weighbridge Ticket No.
			Driver Colin		Marchington Ticket No. 600182 Office Copy
			CE Mark & Declaration of Performance available by contacting sales@marchington.net		
Subject to the Conditions of Sale of Marchington Stone Limited applicable to goods of this kind. Available on request.					

2/CJLS

Customer: Branley Mannes Limited Site Address: Crumpsall The Whitehouse Club 193 Middleton Road M8 4JZ			 MARCHINGTONSTONE Buxton Road, High Lane, Stockport SK6 8DX Tel: 01663 765000 Fax: 01663 763777		
			Delivery Date: 16/3/23		
			Order No: WHITEHOUSE		
Material Description Grade 1 tested Sand Soil compost <small>(WRAP Recycled Aggs Protocol Compliant)</small>			In accordance with our Terms & Conditions a charge for excessive waiting time may be made. Waiting Time Agreed By:		
			Print Signed		
Tonnes Gross 31720	Tonnes Tare 11940	Tonnes Nett 19780	Time On Site	Time Off Site	Waiting Time Agreed
This vehicle may leave the road on your instruction and at the drivers discretion, providing you accept responsibility for damage to your own or third party property. Customer Agreed ☐ Signed.....			Haulier E+S LOGISTICS		Place of Loading SDX
Load Accepted on Behalf of Customer: Print S. Curran Signed 			Registration No. MU71 XFS		Weighbridge Ticket No. BH097660
			Driver LEWIS		Marchington Ticket No. 559137 Office Copy
Subject to the Conditions of Sale of Marchington Stone Limited applicable to goods of this kind. Available on request.			CE Mark & Declaration of Performance available by contacting sales@marchington.net		

Z/RCS

Customer: Branley Homes Ltd Site Address: White House Club 193 Middleton Road Crumphall			 MARCHINGTONSTONE Buxton Road, High Lane, Stockport SK6 8DX Tel: 01663 765000 Fax: 01663 763777		
			Delivery Date: 16/03/23		
			Order No:		
Material Description Grade 1 Soil (WRAP Recycled Aggs Protocol Compliant)			In accordance with our Terms & Conditions a charge for excessive waiting time may be made. Waiting Time Agreed By:		
			Print Signed		
Tonnes Gross 32.02	Tonnes Tare 11.60	Tonnes Nett 20.42	Time On Site	Time Off Site	Waiting Time Agreed
This vehicle may leave the road on your instruction and at the drivers discretion, providing you accept responsibility for damage to your own or third party property. Customer Agreed ☐ Signed.....			Haulier RECHACENER		Place of Loading Sooty
Load Accepted on Behalf of Customer: Print S. Curran * Signed  *			Registration No. PN16FWP		Weighbridge Ticket No. BA 097630
			Driver Rick		Marchington Ticket No. 591150
			Office Copy		
Subject to the Conditions of Sale of Marchington Stone Limited applicable to goods of this kind. Available on request.			CE Mark & Declaration of Performance available by contacting sales@marchington.net		

2/sms

Customer: BEANLEY Homes Site Address: THE WHITE HOUSE CLUB 193 MIDDLETON RD CUMPSALL			 MARCHINGTONSTONE Buxton Road, High Lane, Stockport SK6 8DX Tel: 01663 765000 Fax: 01663 763777		
			Delivery Date: 14-3-23		
			Order No:		
Material Description Sub Soil (WRAP Recycled Aggs Protocol Compliant)			In accordance with our Terms & Conditions a charge for excessive waiting time may be made. Waiting Time Agreed By:		
			Print		
			Signed		
Tonnes Gross	Tonnes Tare	Tonnes Nett	Time On Site	Time Off Site	Waiting Time Agreed
31.700	12.000	19.700			
This vehicle may leave the road on your instruction and at the drivers discretion, providing you accept responsibility for damage to your own or third party property. Customer Agreed ☐ Signed.....			Haulier SANDERSON		Place of Loading Town Quarry
Load Accepted on Behalf of Customer MARTIN Print			Registration No. R19 HDA		Weighbridge Ticket No. 59925
			Driver Pil		Marchington Ticket No. 574500 Office Copy
Subject to the Conditions of Sale of Marchington Stone Limited applicable to goods of this kind. Available on request.			CE Mark & Declaration of Performance available by contacting sales@marchington.net		

Customer: Site Address: Bronley hony 193 Middleton rd White hase club Crumpsall			 MARCHINGTONSTONE Buxton Road, High Lane, Stockport SK6 8DX Tel: 01663 765000 Fax: 01663 763777		
			Delivery Date: 14.3.23		
			Order No:		
Material Description Sub Soil (WRAP Recycled Aggs Protocol Compliant)			In accordance with our Terms & Conditions a charge for excessive waiting time may be made. Waiting Time Agreed By:		
			Print Signed		
Tonnes Gross 32300	Tonnes Tare 13200	Tonnes Nett 19.100	Time On Site	Time Off Site	Waiting Time Agreed
This vehicle may leave the road on your instruction and at the drivers discretion, providing you accept responsibility for damage to your own or third party property. Customer Agreed ☐ Signed.....			Haulier Sanders		Place of Loading Bacup
Load Accepted on Behalf of Customer Print: M C Signed: M C			Registration No. PW2044N		Weighbridge Ticket No. 59933
			Driver Sam		Marchington Ticket No. 579142 Office Copy
Subject to the Conditions of Sale of Marchington Stone Limited applicable to goods of this kind. Available on request.			CE Mark & Declaration of Performance available by contacting sales@marchington.net		

DATA SHEET: GEOTEC 90

Geotec 90 is a woven geotextile with high tensile strength properties, and is recommended for use in separation applications. The woven range includes general purpose and heavier grades to suit a wide variety of performance requirements

SIG Geotechnical Centre also offers a range of non woven and protection geotextiles which for use in landfill and other membrane protection applications.



PROPERTIES

TESTED PROPERTY	TEST METHOD	UNIT	GEOTEC 90
Tensile Strength (md)	EN ISO 10319	kN/m	16
Tensile Strength (cmd)	EN ISO 10319	kN/m	13
Tensile Elongation (md)	EN ISO 10319	%	17
Tensile Elongation (cmd)	EN ISO 10319	%	14
CBR Puncture Resistance	EN ISO 12236	N	1800
Waterflow normal to the plane	EN ISO 11058	l/m ² /s	15
Weight	EN ISO 9864	g/m ²	80
Material			Polypropylene
Colour			Black
Manufacturing Process			Woven
Roll Size		m	4.5 x 100

DISCLAIMER

The information contained herein is to the best of our knowledge accurate in all material respects, however since the circumstances and conditions in which this information and the products mentioned herein can be used may vary and are beyond our control, no representation or warranty, express or implied of any nature is or will be made and no responsibility or liability will be accepted by us, or our affiliates or our or their respective directors, officers, employees, or agents in relation to the accuracy or completeness or use of the information contained herein or any such products and any such liability is expressly disclaimed.



T 08444 430050 F 08444 430051 E geotecinfo@sigplc.co.uk

APPENDIX F

CLIENT DECLARATION

Branley Homes Limited
York House
1 Bridgenorth Avenue
Urmston
Manchester
M41 9PA

0161 749 9849
www.branleyhomes.com
enquiry@branleyhomes.com

4th May 2023

By Email: Laboratory@ccgeotechnical.com

Dear Daniel,

RE: PHASE 1 - GMT WHITEHOUSE CLUB, 193 MIDDLETON ROAD, CRUMPSALL, M8 4JZ

I refer to our above referenced site.

Please accept this correspondence as confirmation that no unanticipated made ground deposits were encountered during the construction (landscaping) process.

Yours faithfully,

Branley Homes Limited

