

# VERIFICATION REPORT FOR PLOT 3 BULLS BRIDGE FARM, BUMPSTEAD ROAD, HEMPSTEAD, SAFFRON WALDEN, ESSEX, CB10 2PP

**Report No: 232869V** 

February 2024

**Compass Geotechnical Limited** 

13 Willow Park, Upton Lane, Stoke Golding, Warwickshire, CV13 6EU

February 2024

**Report Title:** VERIFICATION REPORT FOR PLOT 3 BULLS BRIDGE FARM,

BUMPSTEAD ROAD, HEMPSTEAD, SAFFRON WALDEN, ESSEX,

**CB10 2PP** 

Report No: 232869V

Report Status: Final

**Report Date:** February 2024

**Report Prepared For:** M & H Build Ltd

Oak House, London Road,

Harston, Cambridge, CB22 7QQ

**Report Prepared By:** Compass Geotechnical Limited

13 Willow Park Upton Lane Stoke Golding CV13 6EU

## **Document Production Record**

Document	Name	Signature	Date	Position						
Prepared by	Rachel Foord		28.02.24	Director						
Reviewed by	E J Murray		04.03.24	Consultant						
Approved by	Rachel Foord		05.03.24	Director						

## **Document Revision Record**

Issue Number	Date	Details of Revision		
1	28.02.24	Draft		
2	05.03.24	Final		

## **Document Issue Record**

Report StatusDate of IssueFinal05.03.24		Issued to	Type of Report
		Client	Electronic
	05.03.24		Original

February 2024

# Verification Report for Plot 3 Bulls Bridge Farm, Bumpstead Road, Hempstead, Saffron Walden, Essex, CB10 2PP

## Contents

- 1. Introduction and Objectives
- 2. Remedial Requirements
- 3. Remedial Work and Validation
- 4. Concluding Comments

**Appendices** 

Appendix (i) Figures

Appendix (ii) Waste Transfer Notes

Appendix (iii) Photographs

Appendix (iv) Laboratory Test Results – Check Testing WS13

Appendix (v) Topsoil Import Information

Appendix (vi) Topsoil Supplier Laboratory Test Certificate

Appendix (vii) Laboratory Test Results – Check Testing Topsoil

March 2024

VERIFICATION REPORT FOR PLOT 3 BULLS BRIDGE FARM, BUMPSTEAD ROAD, HEMPSTEAD, SAFFRON WALDEN, ESSEX, CB10 2PP

## 1. INTRODUCTION

- 1.1 This report has been prepared on instructions given by the Client, M & H Build Ltd (Oak House, London Road, Harston, Cambridge, CB22 7QQ).
- 1.2 The site comprises the former Bulls Bridge Farm which is being redeveloped. The redevelopment is to include demolition of most of the existing buildings and retention of the barn in the south eastern corner for conversion into a dwelling. The purpose of this report is to provide details of the measures undertaken in remediating contamination in the area of Plot 3. The need for remediation in specific areas of the site is detailed in the following documents and a plan of the site is included as Figure 1, Appendix (i):

Compass Geotechnical Limited Report on a Phase 1 Desk Study and Risk Assessment For a Residential Development at Bulls Bridge Farm, Bumpstead Road, Hempstead, Saffron Walden, Essex, CB10 2PP. Report No: 20-2869r dated July 2020

Compass Geotechnical Limited Report on a Phase 2 Contamination Assessment For a Residential Development at Bulls Bridge Farm, Bumpstead Road, Hempstead, Saffron Walden, Essex, CB10 2PP. Report No: 212869C dated January 2022.

Compass Geotechnical Limited Remediation Method Statement for a Proposed Residential Development at Bulls Bridge Farm, Bumpstead Road, Hempstead, Saffron Walden, Essex, CB10 2PP. Report No 222869RMS dated July 2022.

1.3 This report relates to Plot 3 of the development, verification reports will be issued as necessary for the remaining two plots.

## 2. REMEDIAL REQUIREMENTS

2.1 The requirements of the remedial works, as set out in the Remediation Method Statement, were:

Prior to any development work the fragments of asbestos cement sheeting present at surface should be identified, removed and disposed of in an appropriate manner by an experienced contractor taking appropriate safety precautions.

Checks for any asbestos present in the remaining buildings should also be undertaken by an experienced contractor prior to demolition.

Once the remaining buildings have been demolished and removed from site and the concrete hard standing and other surface materials removed, a further

March 2024

inspection should be undertaken by an experienced geo-environmental engineer to identify any other potential sources of contamination so they may be dealt with in an appropriate manner.

In the area of WS13 (within Plot 3) the made ground should be removed to a depth of 600mm below proposed finished levels and replaced with clean cover materials. The resulting excavation should be inspected by Compass Geotechnical and samples recovered from the sides and base of the excavation for check testing.

## 3. REMEDIAL WORK AND VALIDATION

- 3.1 Clearance of the site and removal of asbestos was begun in the summer of 2022.
- 3.2 Waste transfer notes have been provided by the Client which confirm that around 2.7 tonnes of asbestos were removed from site and disposed of at Augean, Thornhaugh Landfill Site, Leicester Road, Thornhaugh, Nr Peterborough, PE8 6NL on 17<sup>th</sup> August 2022. A copy of the waste transfer note (Permit Number EPR/RP3133PP/V006) is provided in Appendix (ii).
- 3.3 Two site visits and inspections were made by personnel from Compass Geotechnical Limited during the course of the development to check on progress as detailed in Table 3.1 below.

Table 3.1 Summary of Site Visits and Inspections in area of Plots 1-6

Date of Visit	Activity	Comments
24.07.23	Site visit/inspection of dig out around WS13 (Plot 3)	The made ground around WS13 in the north eastern corner of the site had been excavated out to a minimum depth of 0.60m. Five samples were recovered from the sides and base of the excavation for check testing. The extent of the excavation was limited by the site boundary, adjoining building and a deep drain run.
30.10.23	Inspection and sampling of imported topsoil (Plot 3)	Three samples of imported topsoil recovered for check testing and photographic record made.

March 2024

The inspections confirmed that the works had been carried out in accordance with the remediation method statement. No evidence of additional sources of contamination were noted in the area of Plot 3 during the site visits and selected photographs are presented in Appendix (iii).

- 3.4 An invoice for the removal of the soils around WS13 has been provided by the client and a copy is included in Appendix (ii).
- 3.5 The results of the check testing on the base and sides of the excavation around WS13 are included in Appendix (iv). Some very slightly elevated levels of PAH were reported in the base of the excavation however, these are of little concern as these materials are at least 0.6m below finished levels and covered by clean cover materials. Elevated concentrations of PAHs were also reported in the sample on the eastern side of the excavation in proximity to the site boundary. However, it was not practical to remove any additional materials from this side of the excavation due to the proximity to the boundary. Given the placement of clean cover materials it is considered that risks to end users are minimal.
- 3.6 Information supplied by the Client confirms that topsoil was delivered to site on 16<sup>th</sup> October 2023. A copy of the import information are included in Appendix (v) along with a test certificate from the supplier (Springbridge Direct Chemtest Report 23-27248-2 dated 24<sup>th</sup> August 2023). The test certificate from the supplier confirms the imported topsoil is suitable for use in a residential setting and a copy is included in Appendix (vi).

Placement of imported topsoil in the garden to Plot 3 was inspected on 30<sup>th</sup> October 2023 by personnel from Compass Geotechnical. The topsoil had been placed in the garden to Plot 3 including in the area of WS13. Three samples of the imported topsoil were taken for a range of general contamination tests as an independent check on suitability for use in a residential garden. The results of the check testing are presented in Appendix (vii) and confirm the imported topsoil is uncontaminated and suitable for use. Photographs taken during the site inspection of 30<sup>th</sup> October 2023 are presented in Appendix (iii).

3.7 It is understood from the client that the garden to Plot 3 was completed in January 2024 and a photograph of the finished garden is included in Appendix (iii).

March 2024

## 4. **CONCLUDING COMMENTS**

- 4.1 The removal of the contaminated soils in the area of WS13 to a depth of 600mm and placement of clean topsoil in the garden to Plot 3 has broken the source-pathway-receptor linkage and rendered the site suitable for residential purposes.
- 4.2 It is considered that Plot 3 has been remediated in accordance with the documents of Section 1.2.



R. Foord BSc, MSc, MCSM, C Geol, FGS

February 2024

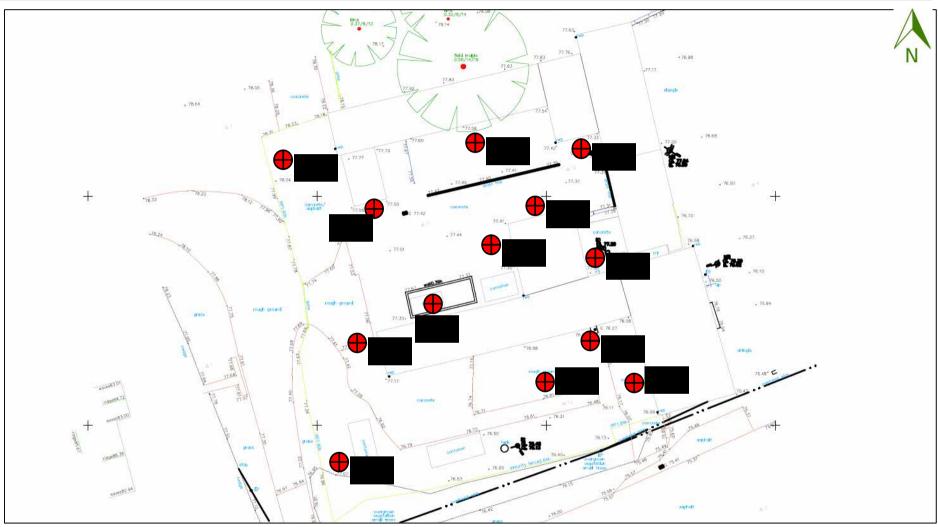
Appendix (i) Figures





Reproduced with the permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office, © Crown Copyright Licence No: AL100034022.

Figure 1	Site Location Plan
Date	February 2024
Not to Scale	



Extract from BRD Drawing No: BRD/19/068/001-Existing Site Survey Dated November 2019

Figure 2	Exploratory Hole Plan
Date	February 2024
Not to Scale	





Extract from Open Spaces Hard Landscaping Plan Drawing No: OS-2289-21.2 dated 16/08/2022

Figure 3	Proposed Development Plan
Date	February 2024
Not to Scale	

February 2024

Appendix (ii)
Waste Transfer Notes



Thornhaugh Landfill Site Leicester Road Thornhaugh, Nr. Peterborough Cambridgeshire PE8 6NL

Permit : EPR/RP3133PP/V006 ADVICE/WASTE TRANSFER NOTE TICKET NO 11483 HAULIER: C004076 CUSTOMER: C004076

Stowmarket Skips Ltd

Alpha 3

The Buntings Cedars Parr Stowmarket

ORDER NO: N/A SOURCE: 194 Ipswich WASTE TYPE:

Stowmarket Skips Ltd

Alpha 3

The Buntings

VEH. TYPE: Parr

VEH. TOPE: SKIP SKIP LOTTY
VEH. REG NO: AY66TGN
CARRIER NO: CBDU334257
TRANSFER NO: SOMMAGGG31

WASTE CATEGORY:

LFT Regn No. : 01774-1133-41000

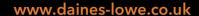
L170605 - Construction Mat. containing a GRID REF: Joi Job No. : L210319400029 CONTAINER: SEQ. NO ASB - DATE

WEIGHT KG'S GROSS 17/08/2022 17/08/2022 020779 13000 12:02 TARE 10260 020781

SIGNATURE ON BEHALF OF CUSTOMER: SIGNATURE FOR AUGEAN: 2740 MEASURE NET

PRINT NAME:

THWEIGHBRIDGE





# INVOICE

CUSTO	MER DE	TAILS:					INVOICE NO:	0719		
То:	N	1 & H Bui	ild Ltd,							
			e, London				<b>DATE:</b> 21/0	7/2023		
			Cambridge,							
						<b>TIME:</b> 16:00				
		C	DESCRIPTION	NC		QTY	UNIT PRICE	AMOUNT		
Muck-A	Away - Bu	ılls Bridg	le			1				
CA	RD		CASH		BACS	Х	SUB TOTAL:			
							VAT:			
T	erms: Pa	yment c	due							
							TOTAL:			

February 2024

Appendix (iii) Photographs

February 2024

## Photographs





Topsoil Placed in Garden to Plot 3 30<sup>th</sup> October 2023

February 2024





Topsoil Placed in Garden to Plot 3 30<sup>th</sup> October 2023



Garden to Plot 3 completed January 2024

February 2024

Appendix (iv) Laboratory Test Results - Check Testing WS13



Eurofins Chemtest Ltd Depot Road Newmarket CB8 0AL

# **Final Report**

**Report No.:** 23-24998-1

Initial Date of Issue: 31-Jul-2023

**Re-Issue Details:** 

Client Compass Geotechnical Limited

Client Address: 13 Willow Park, Upton Lane

Stoke Golding Warwickshire CV13 6EU

Contact(s):

Project Bulls Bridge Farm

**Quotation No.:** Q19-18078 **Date Received:** 25-Jul-2023

**Order No.:** 232869-1 **Date Instructed:** 25-Jul-2023

No. of Samples: 5

Turnaround (Wkdays): 5 Results Due: 31-Jul-2023

Date Approved: 31-Jul-2023

**Approved By:** 

**Details:** Stuart Henderson, Technical

Manager

# **Results - Soil**

Project: Bulls Bridge Farm

Client: Compass Geotechnical Limited		Che	mtest Jo	ob No.:	23-24998	23-24998	23-24998	23-24998	23-24998
Quotation No.: Q19-18078		Chemtest San		ple ID.:	1678796	1678797	1678798	1678799	1678800
		Cli	ent Sam	ple ID.:	ESA	ESB	ESC	ESD	EDE
		Sa	ample Lo	ocation:	Area 1				
		Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	
		Top Depth (m):		0.5	0.5	0.4	0.4	0.6	
		Bot	tom Dep	oth (m):	0.6	0.6	0.5	0.5	0.65
			Date Sa	ampled:	24-Jul-2023	24-Jul-2023	24-Jul-2023	24-Jul-2023	24-Jul-2023
			Time Sa	ampled:	0:00	0:00	0:00	0:00	0:00
			Asbest	os Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD					
ACM Type	U	2192		N/A	-	-	-	-	-
Asbestos Identification	11	2102		NI/A	No Asbestos				
Aspestos identification	U 2192 N/A		IN/A	Detected	Detected	Detected	Detected	Detected	
Moisture	N	2030	%	0.020	18	15	15	16	18
рН	U	2010		4.0	8.2	8.3	8.4	8.3	8.3
Arsenic	U	2455	mg/kg	0.5	13	17	8.5	7.6	8.8
Cadmium	U	2455	mg/kg	0.10	0.14	0.13	< 0.10	< 0.10	< 0.10
Copper	U	2455	mg/kg	0.50	9.3	17	9.2	8.5	7.9
Mercury	U	2455	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Nickel	U	2455	mg/kg	0.50	19	22	14	13	14
Lead	U	2455	mg/kg	0.50	15	24	12	23	13
Selenium	U	2455	mg/kg	0.25	0.67	0.69	0.39	0.38	0.48
Zinc	U	2455	mg/kg	0.50	49	59	34	35	34
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.51	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	1.5	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.96	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	1.2	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	12	1.7
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	4.3	0.60
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	0.22	< 0.10	31	4.4
Pyrene	U	2700	mg/kg	0.10	< 0.10	0.21	< 0.10	27	3.8
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	17	2.1
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	18	2.5
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	19	2.7
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	7.1	0.26
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	14	1.4
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	9.5	1.2
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	3.1	0.43
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	8.6	0.82
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	170	22

# **Test Methods**

SOP	Title	Parameters included	Method summary		
2010	pH Value of Soils	рН	pH Meter		
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.		
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930		
2120	Vater Soluble Boron, Sulphate, Anguesium & Chromium Boron; Sulphate; Magnesium; Chromium		Aqueous extraction / ICP-OES		
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry		
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.		
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.		
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)		

## **Report Information**

#### Key **UKAS** accredited MCERTS and UKAS accredited M Unaccredited Ν This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for S this analysis This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited SN for this analysis Т This analysis has been subcontracted to an unaccredited laboratory I/S Insufficient Sample U/S Unsuitable Sample N/E not evaluated "less than" "greater than" > SOP Standard operating procedure LOD Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

## **Sample Deviation Codes**

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

### Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.com</u>

February 2024

Appendix (v)
Topsoil Import Information

## Travis Perkins

## **COPY INVOICE**

3663 AOG468

Travis Perkins Trading Company Limited VAT Registration Number: GB 408 5567 37 Cheques Payable to : Travis Perkins Trading Co. Ltd.

P 0 BOX 5227

NORTHAMPTON NN5 7ZE

INVOICE/TAX DATE DELIVERY NOTE DELIVERY DATE :16/10/23 ORDER NO ACCOUNT NO : MN8542 REGION 006 ORDER REF. :

INVOICE

DELIVERED TO:

BULLSBRIDGE FARM BUMPSTEAD ROA HEMPSTEAD, SAFFRON WALDEN CB10 2PP

M AND H BUILD LTD OAK HOUSE 41A LONDON ROAD

**HARSTON** CAMBRIDGE CB22 7QQ

GRS ROADSTONE

22023

PAGE NO: 1 QUANTITY PRICE ITEM VALUE VAT **DESCRIPTION OF GOODS** CODE PER PER % LOOSE LOAD TOP SOIL GENERIC CODE 411144 EACH EACH **GOODS AMOUNT** GRS ROADSTONE VAT TOTAL 22023 **BRANCH** INVOICE TOTAL

TRAVIS PERKINS TRADING CO. LTD 35 HOLLANDS ROAD

HAVERHILL

CB9 8PU

01440 707788

TERMS NET MONTHLY

2 014656 05996

Health & Safety :- Information on all products sold/hired by Travis Perkins is freely available by contacting the Health & Safety Department on Northampton (01604) 752424

February 2024

Appendix (vi)
Topsoil Supplier Laboratory Test Certificate





Eurofins Chemtest Ltd Depot Road Newmarket CB8 0AL

# **Amended Report**

**Report No.:** 23-27248-2

Initial Date of Issue: 24-Aug-2023 Date of Re-Issue: 24-Aug-2023

Client Springbridge Direct Ltd

Client Address: Oxford Road

Denham Middlesex UB9 4DF

Contact(s): Ellissa Dunn

Tom Hawkins

**Project** Springbridge Yard

Quotation No.: Q23-32160 Date Received: 14-Aug-2023

**Order No.:** 136510 **Date Instructed:** 14-Aug-2023

No. of Samples: 2

Turnaround (Wkdays): 5 Results Due: 18-Aug-2023

**Date Approved:** 24-Aug-2023 **Subcon Results Due:** 05-Sep-2023

Approved By:

**Details:** Stuart Henderson, Technical Manager

# Results - Soil

Project: Springbridge Yard

Client: Springbridge Direct Ltd		23-27248							
Quotation No.: Q23-32160		Chemtest Sample ID.							
Order No.: 136510		Clie	nt Samp		Topsoil Top				
		Sample Type							
			ampled:	10-Aug-2023					
			ampled:	10:30					
		SOP	Asbest Units	os Lab:	COVENTRY				
Determinand	Accred.								
ACM Type	U	2192		N/A	-				
Asbestos Identification	U	2192		N/A	No Asbestos Detected				
Moisture	N	2030	%	0.020	17				
Soil Colour	N	2040		N/A	Brown				
Other Material	N	2040		N/A	Stones				
Soil Texture	N	2040		N/A	Sand				
Boron (Hot Water Soluble)	М	2120		0.40	1.3				
Cyanide (Total)	М	2300	0 0	0.50	< 0.50				
Arsenic	М	2455		0.5	6.9				
Cadmium	M	2455		0.10	< 0.10				
Chromium	M	2455		0.5	8.9				
Copper	M	2455		0.50	8.3				
Mercury	M	2455	0 0	0.05	0.05				
Nickel	M	2455	mg/kg	0.50	11				
Lead	M M	2455 2455	mg/kg	0.50	9.6 < 0.25				
Selenium Zinc	M	2455	mg/kg mg/kg	0.23	31				
Chromium (Hexavalent)	N	2490		0.50	< 0.50				
Aliphatic VPH >C5-C6	U	2780	U U	0.05	< 0.05				
Aliphatic VPH >C6-C7	Ü	2780		0.05	< 0.05				
Aliphatic VPH >C7-C8	Ü	2780	mg/kg	0.05	< 0.05				
Aliphatic VPH >C6-C8 (Sum)	N	2780		0.10	< 0.10				
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05				
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25				
Aliphatic EPH >C10-C12	М	2690		2.00	2.3				
Aliphatic EPH >C12-C16	М	2690	mg/kg	1.00	1.5				
Aliphatic EPH >C16-C21	М	2690		2.00	7.3				
Aliphatic EPH >C21-C35	М	2690	mg/kg	3.00	5.4				
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10				
Total Aliphatic EPH >C10-C35	М	2690	mg/kg	5.00	16				
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	16				
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05				
Aromatic VPH >C7-C8	U	2780		0.05	< 0.05				
Aromatic VPH >C8-C10	U	2780		0.05	< 0.05				
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25				
Aromatic EPH >C10-C12	U	2690	0 0	1.00	1.0				
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0				
Aromatic EPH >C16-C21	U	2690	mg/kg	2.00	3.3				

# Results - Soil

Project: Springbridge Yard

Client: Springbridge Direct Ltd		23-27248						
Quotation No.: Q23-32160		Chemtest Sample ID.:						
Order No.: 136510		Clie	nt Samp	le Ref.:	Topsoil Top			
			е Туре:	SOIL				
			mpled:	10-Aug-2023				
			Time Sa	mpled:	10:30			
			Asbest	os Lab:	COVENTRY			
Determinand	Accred.	SOP	Units	LOD				
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	79			
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	4.1			
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	83			
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	87			
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50			
Total EPH >C10-C35	U	2690	mg/kg	10.00	100			
Total EPH >C10-C40	N	2690	mg/kg	10.00	100			
Naphthalene	N	2700	mg/kg	0.010	< 0.010			
Acenaphthylene	N	2700	mg/kg	0.010	< 0.010			
Acenaphthene	N	2700	mg/kg	0.010	< 0.010			
Fluorene	N	2700	mg/kg	0.010	< 0.010			
Phenanthrene	N	2700	mg/kg	0.010	< 0.010			
Anthracene	N	2700	mg/kg	0.010	< 0.010			
Fluoranthene	N	2700	mg/kg	0.010	< 0.010			
Pyrene	N	2700	mg/kg	0.010	< 0.010			
Benzo[a]anthracene	N	2700	mg/kg	0.010	< 0.010			
Chrysene	N	2700	mg/kg	0.010	< 0.010			
Benzo[b]fluoranthene	N	2700	mg/kg	0.010	< 0.010			
Benzo[k]fluoranthene	N	2700	mg/kg	0.010	< 0.010			
Benzo[a]pyrene	N	2700	mg/kg	0.010	< 0.010			
Indeno(1,2,3-c,d)Pyrene	N	2700	mg/kg	0.010	< 0.010			
Dibenz(a,h)Anthracene	N	2700	mg/kg	0.010	< 0.010			
Benzo[g,h,i]perylene	N	2700	mg/kg	0.010	< 0.010			
Total Of 16 PAH's	N	2700	mg/kg	0.20	< 0.20			
Benzene	М	2760	μg/kg	1.0	< 1.0			
Toluene	М	2760	μg/kg	1.0	< 1.0			
Ethylbenzene	М	2760	μg/kg	1.0	< 1.0			
m & p-Xylene	М	2760	μg/kg	1.0	< 1.0			
o-Xylene	М	2760	μg/kg	1.0	< 1.0			
Total Phenols	М	2920	mg/kg	0.10	< 0.10			

# **Results - Topsoil Report**

BS3882:2015

Chemtest Job No.: 23-27248
Chemtest Sample ID.: 1688174
Client Sample Ref.: Topsoil Top

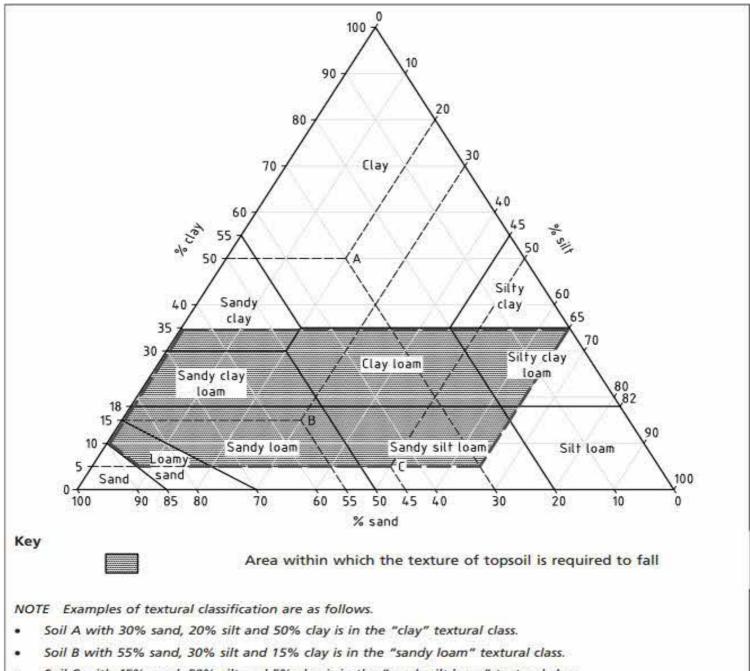
Sample Location:
Client Sample ID.:
Top Depth (m):
Bottom Depth (m):

Date Sampled: 10-Aug-2023

Time Sampled:

Parameter	Units	Multipurpose Range		Result	Compliant with Multipurpose Range? (Y/N)	Spe Ra	Compliant with Specific Purpose Range? (Y/N)		
Texture						Acid	Low F	Calc.	
Clay content (Sub Contracted)	%				10	YES			
Silt content (Sub Contracted)	%				11	YES			
Sand content (Sub Contracted)	%				79	YES			
Soil texture class		See A	Attached	Chart		Sandy Loam			
Mass Loss on Ignition									
Clay 5-20%			3.0-20		7.1	YES	YES	YES	YES
Clay 20-35%			5.0-20		7.1	TES	IES	IES	IES
Stone Content	% m/m								
>2mm (Sub Contracted)			0-30		13	YES			
>20mm (Sub Contracted)			0-10		< 0.10	YES			
>50mm (Sub Contracted)		0		< 0.10	YES				
Soil pH value		5.5-8.5		8.3	YES	NO	YES	YES	
Carbonate (Calcareous only)	%			< 0.10				NO	
Electrical Conductivity	μS/cm	If >3300 do ESP		2100	YES				
Available Nutrient Content									
Nitrogen %		>0.15		0.16	YES	YES		YES	
Extractable phosphorus	mg/l	16-140		65	YES	YES	NO	YES	
Extractable potassium	mg/l	121-1500		1450	YES	YES		YES	
Extractable magnesium	mg/l	51-600		310	YES	YES		YES	
Carbon : Nitrogen Ratio		<20:1		19/1	YES	N/A	N/A	N/A	
Exchangeable sodium	%	<15		5.9					
Available Calcium	mg/l			540					
Available Sodium	mg/l			310					
Phytotoxic Contaminants (by soil pH)		< 6.0   6.0-7.0   > 7.0							
Zinc (Nitric Acid extract)	mg/kg	<200	<200	<300	25	YES			
Copper (Nitric Acid extract)	mg/kg	<100	<135	<200	8.1	YES			
Nickel (Nitric Acid extract)	mg/kg	<60 <75 <110		10	YES				
Visible Contaminants	% mm								
>2mm		<0.5		0.000	YES				
of which plastics		<0.25		0.000	YES				
man-made sharps		zero in 1kg		0.000	YES				

# <u>Topsoil:</u> Texture Classification Chart



Soil C with 45% sand, 50% silt and 5% clay is in the "sandy silt loam" textural class.

Permission to reproduce extracts from BS 3882:2015 is granted by BSI.

British Standards can be obtained in PDF or hard copy formats from the BSI online shop: www.bsigroup.com/Shop or by contacting BSI Customer Services for hardcopies only: Tel: +44 (0)20 8996 9001, Email: cservices@bsigroup.com.

# **Test Methods**

SOP	Title	Parameters included	Method summary			
2010	pH Value of Soils	рН	pH Meter			
2020	Electrical Conductivity	Electrical conductivity (EC) of aqueous extract or calcium sulphate solution for topsoil	Measurement of the electrical resistance of a 2:1 water/soil extract.			
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.			
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930			
2115	Total Nitrogen in Soils	Nitrogen	Determination by elemental analyser			
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES			
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry			
2260	Carbonate	Carbonate	Titration			
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.			
2400	Cations	Cations	ICP-MS			
2420	Phosphate	Phosphate	Spectrophotometry - Discrete analyser			
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.			
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.			
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.			
2620	LOI 440	LOI 440 Trommel Fines	Determination of the proportion by mass that is lost from a soil by ignition at 440°C.			
2690	EPH A/A Split	Aliphatics: >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C40 Aromatics: >C10-C12, >C12-C16, >C16- C21, >C21- C35, >C35- C40				
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)			
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.			
2780	VPH A/A Split	Aliphatics: >C5-C6, >C6-C7,>C7-C8,>C8-C10 Aromatics: >C5-C7,>C7-C8,>C8-C10	Water extraction / Headspace GCxGC FID detection			
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.			

## **Report Information**

#### Key **UKAS** accredited MCERTS and UKAS accredited Μ Unaccredited N This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for S this analysis This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited SN for this analysis Т This analysis has been subcontracted to an unaccredited laboratory I/S Insufficient Sample U/S Unsuitable Sample N/E not evaluated < "less than" "greater than" > SOP Standard operating procedure LOD Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

## **Sample Deviation Codes**

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

## Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

February 2024

Appendix (vii) Laboratory Test Results – Check Testing Topsoil





Eurofins Chemtest Ltd Depot Road Newmarket

CB8 0AL

# **Final Report**

Report No.: 23-35177-1
Initial Date of Issue: 30-Oct-2023

**Re-Issue Details:** 

Client Compass Geotechnical Limited

Client Address: 13 Willow Park, Upton Lane

Stoke Golding Warwickshire CV13 6EU

Contact(s):

Project Bulls Bridge Farm

Quotation No.: Q23-32314 Date Received: 20-Oct-2023

**Order No.:** 232869-2 **Date Instructed:** 20-Oct-2023

No. of Samples: 3

Turnaround (Wkdays): 5 Results Due: 26-Oct-2023

Date Approved: 30-Oct-2023

Approved By:

**Details:** Stuart Henderson, Technical

Manager

# Results - Soil

Project: Bulls Bridge Farm

Client: Compass Geotechnical Limited		Che	mtest Jo	ob No.:	23-35177	23-35177	23-35177
Quotation No.: Q23-32314	Chemtest Sample ID.:		1719643	1719644	1719645		
	Client Sample ID.:		ES	ES	ES		
		Sa	ample Lo	cation:	Topsoil 1	Topsoil 2	Topsoil 3
			Sample	е Туре:	SOIL	SOIL	SOIL
			Date Sa	ampled:	19-Oct-2023	19-Oct-2023	19-Oct-2023
			Time Sa	ampled:	0:00	0:00	0:00
			Asbest	os Lab:	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD			
АСМ Туре	U	2192		N/A	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	27	29	29
Soil Colour	N	2040		N/A	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones and Roots	Stones and Roots	Stones and Roots
Soil Texture	N	2040		N/A	Clay	Clay	Clay
pH at 20C	M	2010		4.0	8.9	8.6	8.5
Arsenic	M	2455	mg/kg	0.5	7.3	8.5	6.9
Cadmium	M	2455	mg/kg	0.10	0.20	0.19	0.13
Copper	M	2455	mg/kg	0.50	24	37	22
Mercury	M	2455	mg/kg	0.05	0.08	0.06	0.07
Nickel	M	2455	mg/kg	0.50	14	16	12
Lead	M	2455	mg/kg	0.50	47	88	44
Selenium	M	2455	mg/kg	0.25	0.56	0.60	0.47
Zinc	M	2455	mg/kg	0.50	80	110	120
Chromium (Hexavalent)	N N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
TPH >C8-C10	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0
TPH >C10-C12	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0
TPH >C12-C16	N	2670	mg/kg	1.0	< 1.0	< 1.0	8.1
TPH >C16-C21	N	2670	mg/kg	1.0	< 1.0	7.6	15
TPH >C21-C35	N	2670	mg/kg	1.0	< 1.0	60	100
TPH >C35-C40	N	2670	mg/kg	1.0	< 1.0	4.6	64
Total TPH >C8-C40	N	2670	mg/kg	10	< 10	72	190
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.10	1.1	1.2	1.0
Anthracene	M	2700	mg/kg	0.10	0.21	0.74	0.22
Fluoranthene	M	2700	mg/kg	0.10	1.3	1.1	1.1
Pyrene	М	2700	mg/kg	0.10	1.4	1.1	0.91
Benzo[a]anthracene	M	2700	mg/kg	0.10	0.67	0.53	0.57
Chrysene	M	2700	mg/kg	0.10	1.1	0.96	1.0
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	0.86	1.0	0.67
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	0.64	0.84	0.61

# Results - Soil

Project: Bulls Bridge Farm

Client: Compass Geotechnical Limited	Chemtest Job No.:			23-35177	23-35177	23-35177	
Quotation No.: Q23-32314	Chemtest Sample ID.:			1719643	1719644	1719645	
		Cli	ent Sam	ple ID.:	ES	ES	ES
	Sample Location:				Topsoil 1	Topsoil 2	Topsoil 3
	Sample Type:		SOIL	SOIL	SOIL		
	Date Sampled:			19-Oct-2023	19-Oct-2023	19-Oct-2023	
	Time Sampled:			0:00	0:00	0:00	
	Asbestos Lab:		DURHAM	DURHAM	DURHAM		
Determinand	Accred.	SOP	Units	LOD			
Benzo[a]pyrene	М	2700	mg/kg	0.10	1.1	0.63	0.58
Indeno(1,2,3-c,d)Pyrene	М	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	M 2700 mg/kg 0.10		< 0.10	< 0.10	< 0.10		
Benzo[g,h,i]perylene	M 2700 mg/kg 0.10		< 0.10	< 0.10	< 0.10		
Total Of 16 PAH's	M 2700 mg/kg 2.0		8.4	8.1	6.7		

# **Test Methods**

SOP	Title	Parameters included	Method summary			
2010	pH Value of Soils	pH at 20°C	pH Meter			
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.			
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930			
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES			
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry			
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.			
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.			
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID			
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)			

## **Report Information**

#### Key **UKAS** accredited MCERTS and UKAS accredited M Unaccredited N This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for S this analysis This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited SN for this analysis Т This analysis has been subcontracted to an unaccredited laboratory I/S Insufficient Sample U/S Unsuitable Sample N/E not evaluated < "less than" "greater than" > SOP Standard operating procedure LOD Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

## **Sample Deviation Codes**

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

## Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

