

REF: 2192/ECM/TSV/SDI

Doug Bailey
Gower Homes
8 Temple Row
Wrexham
LL13 8LY

13th August 2020

Dear Doug,

RE: EVERSLEY COURT, MINERA: TOPSOIL VALIDATION

The validation of the imported topsoil is presented below, which will need to be submitted to the NHBC to discharge the outstanding condition.

Introduction

A site investigation was carried out and a Phase I & II Geoenvironmental Report (ref. 2192/Rev A) was produced for the site by GroundSolve Ltd (GSL) in August 2019, for Gower Homes Ltd (GH). The site was found to contain topsoil contaminated with lead, overlying uncontaminated glacial till.

The report included a remediation strategy, requiring that the lead-contaminated topsoil be fully removed from site, and replaced where required in garden areas with clean, imported topsoil.

A source of clean topsoil was subsequently identified at Boozey Fields, a greenfield site currently undergoing development by Gower Homes in Wrexham. GSL have also carried out a site investigation on that site, which determined that the topsoil was uncontaminated, and suitable for reuse within a residential development.

GSL have subsequently been instructed to validate the removal and import of topsoil at the Minera site, for all plots.

Validation

GSL attended the site on the 12th June 2020, to inspect the site and take samples for validation testing.

At the time of the site visit, the existing topsoil had been removed from site, with glacial till exposed at the ground surface at several locations, see photographs below:



Gardens at rear of Plots 8 & 9, showing exposed glacial till (area to be paved)



Exposed till fill behind retaining wall at Plots 5/6



Exposed glacial till at gardens of Plots 2-4



Exposed till to front of Plot 4, showing access road

GSL were provided with transfer notices for the removal of the lead contaminated topsoil, copies of which are presented in Appendix A.

The Boozey Fields development had been identified as a source of clean topsoil to import. GSL have previously carried out a Phase I & II Geoenvironmental Report for that site (ref. 1669, dated October 2016), which showed the topsoil to be uncontaminated. A summary of the chemical test results for the Boozey Fields topsoil is presented in the tables below, with the laboratory results presented in full in Appendix B.

Metals & Non-Metals	Range (Mean) – mg/kg	Adopted Guideline (mg/kg)	Source	Exceedances
Arsenic	9.35 – 18.8(12.8)	32	C4SL	0
Boron, Water Soluble	70.8 –84.4 (77)	3750	S4UL	0
Cadmium	0.341-0.447(0.36)	10	C4SL	0
Chromium III	14.4 -18.7 (17)	3000	S4UL	0
Chromium, Hexavalent	<0.60-<1.2	4.3	C4SL	0
Copper	18.6 – 23.8 (21.7)	2330	S4UL	0
Lead	67.1 – 88 (76)	200	C4SL	0
Mercury	<0.14-0.141	1	S4UL	0
Nickel	11.9 – 16.7 (14.2)	130	S4UL	0
Phenol - Monohydric	<0.01*	420	S4UL	0
Selenium	<1-1.21	350	S4UL	0
Zinc	70.8 –84.4 (77)	3750	S4UL	0

Petroleum Hydrocarbons	Range (Mean) – mg/kg	Adopted Guideline (mg/kg)	Source	Exceedances
Aliphatic C5-C6	<0.01	55	S4UL	0
Aliphatic C6-C8	<0.01	160	S4UL	0
Aliphatic C8-C10	<0.01	46	S4UL	0
Aliphatic C10-C12	<0.01	230	S4UL	0
Aliphatic C12-C16	<0.10	1700	S4UL	0
Aliphatic C16-C35	<0.10-5.77	64000	S4UL	0
Aromatic C5-C7	<0.01	130	S4UL	0
Aromatic C7-C8	<0.01	270	S4UL	0
Aromatic C8-C10	<0.01	65	S4UL	0
Aromatic C10-C12	<0.01	160	S4UL	0
Aromatic C12-C16	<0.10	310	S4UL	0
Aromatic C16-C21	0.863-2.30	480	S4UL	0
Aromatic C21-C35	8.74- 11.7	1100	S4UL	0

Polyaromatic Hydrocarbons (PAH)	Range (Mean) – mg/kg	Adopted Guideline (mg/kg)	Source	Exceedances
Acenaphthene	<0.016	4900	S4UL	0
Acenaphthylene	<0.012	400	S4UL	0
Anthracene	<0.008	480	S4UL	0
Benzo(a)anthracene	0.052-0.095	4.7	S4UL	0
Benzo(a)pyrene	0.05-0.106	5.0 (C4SL)	C4SL	0
Benzo(b)fluoranthene	0.077-0.177	6.5	S4UL	0
Benzo(g,h,i)perylene	0.053-0.101	46	S4UL	0
Benzo(k)fluoranthene	0.027-0.053	9.6	S4UL	0
Chrysene	0.052-0.10	8.0	S4UL	0
Dibenzo(a,h)anthracene	<0.023	0.86	S4UL	0
Fluoranthene	0.069 – 0.146	460	S4UL	0
Fluorene	<0.01	380	S4UL	0
Indeno(1,2,3-c,d)pyrene	0.038-0.078	3.9	S4UL	0
Naphthalene	0.0159– 0.0169	3.7	S4UL	0
Phenanthrene	0.048 – 0.065	200	S4UL	0
Pyrene	0.063 – 0.13	1000	S4UL	0

Other Contaminants / Testing	Range (Mean) – mg/kg	Adopted Guideline (mg/kg)	Source	Exceedances
Organic matter	2.57 -5.24 (4)	-	-	-
pH	6.48 – 6.6 (6.53)	-	-	-
Sulphide	<15	-	-	-
Cyanide, Total	<1	-	-	-
Sulphur (free)	<10 – 160 (60)	-	-	-
Sulphate Aqueous Extract as SO4	<0.004 g/l	-	-	-

None of the results were above the adopted GAC for residential end use (2.5% SOM, as measured in the samples), and therefore the topsoil is considered suitable for reuse on a residential development, and subsequent import to the Minera site.

Additional Sampling & Testing

Two hand-dug trial pits were excavated by GSL in the gardens of Plots 7 and 8 on 12th June 2020, to confirm the placement of 200mm of topsoil from Boozey Fields above the underlying glacial till.

The trial pits locations are indicated on Figure 1. The pits confirmed the garden areas to be underlain by 200mm of topsoil. The trial pit logs and photographs are presented in Appendix C.

In order to confirm the suitability of the imported topsoil, two samples of the topsoil were also collected and scheduled for chemical testing.

Chemical testing was scheduled on a sample of the topsoil from both trial pits. The results were compared to the relevant guidelines for a residential end use (1% SOM), and are summarised in the tables below. The results are presented in full in Appendix D.

	Plot 7	Plot 8			
	0.20	0.10	Adopted Guideline (mg/kg)	Source	Exceedances
Metals & Non-Metals					
Arsenic	9.50	8.90	37	C4SL	0
Boron, Water Soluble	0.30	0.40	290	S4UL	0
Cadmium	0.30	0.30	22	C4SL	0
Chromium III	15.00	16.00	910	S4UL	0
Chromium, Hexavalent	< 1.0	< 1.0	21	C4SL	0
Copper	22.00	23.00	2400	S4UL	0
Lead	68.00	72.00	200	C4SL	0
Mercury	0.07	0.13	1.2	S4UL	0
Nickel	13.00	13.00	130	S4UL	0
Phenol - Monohydric	0.40	0.30	120	S4UL	0
Selenium	< 0.5	< 0.5	250	S4UL	0
Zinc	82.00	62.00	3700	S4UL	0

	Plot 7	Plot 8			
	0.20	0.10	Adopted Guideline (mg/kg)	Source	Exceedances
Petroleum Hydrocarbons					
Aliphatic C5-C6	< 0.01	< 0.01	42	S4UL	0
Aliphatic C6-C8	< 0.01	< 0.01	100	S4UL	0
Aliphatic C8-C10	< 0.01	< 0.01	27	S4UL	0
Aliphatic C10-C12	< 1.5	< 1.5	130	S4UL	0
Aliphatic C12-C16	< 1.2	< 1.2	1100	S4UL	0
Aliphatic C16-C21	< 1.5	< 1.5	65000	S4UL	0
Aliphatic C21-C35	< 3.4	< 3.4	65000	S4UL	0
Aliphatic C35-C40	< 3.4	< 3.4	70	S4UL	0
Aromatic C5-C7	< 0.01	< 0.01	130	S4UL	0
Aromatic C7-C8	< 0.01	< 0.01	34	S4UL	0
Aromatic C8-C10	< 0.01	< 0.01	74	S4UL	0
Aromatic C10-C12	< 0.9	< 0.9	140	S4UL	0
Aromatic C12-C16	< 0.5	< 0.5	260	S4UL	0
Aromatic C16-C21	< 0.6	< 0.6	1100	S4UL	0
Aromatic C21-C35	< 1.4	< 1.4	1100	S4UL	0

Polyaromatic Hydrocarbons (PAH)	Plot 7	Plot 8	Adopted Guideline (mg/kg)	Source	Exceedances
	0.20	0.10			
Acenaphthene	< 0.03	< 0.03	210	S4UL	0
Acenaphthylene	< 0.03	< 0.03	170	S4UL	0
Anthracene	< 0.03	< 0.03	2400	S4UL	0
Benzo(a)anthracene	< 0.03	< 0.03	7.2	S4UL	0
Benzo(a)pyrene	< 0.03	< 0.03	5	C4SL	0
Benzo(b)fluoranthene	0.04	< 0.03	2.6	S4UL	0
Benzo(g,h,i)perylene	< 0.03	< 0.03	320	S4UL	0
Benzo(k)fluoranthene	< 0.03	< 0.03	77	S4UL	0
Chrysene	< 0.03	< 0.03	15	S4UL	0
Dibenzo(a,h)anthracene	< 0.03	< 0.03	0.24	S4UL	0
Fluoranthene	0.04	< 0.03	280	S4UL	0
Fluorene	< 0.03	< 0.03	170	S4UL	0
Indeno(1,2,3-c,d)pyrene	< 0.03	< 0.03	27	S4UL	0
Naphthalene	< 0.03	< 0.03	2.3	S4UL	0
Phenanthrene	< 0.03	< 0.03	95	S4UL	0
Pyrene	< 0.03	< 0.03	620	S4UL	0

Other Contaminants / Testing	Plot 7	Plot 8	Adopted Guideline (mg/kg)	Source	Exceedances
	0.20	0.10			
Organic matter	3.10	3.60	-	-	-
pH	7.10	8.10	-	-	-
Sulphide	92.00	32.00	-	-	-
Cyanide, Total	0.20	0.30	-	-	-
Sulphur (free)	< 0.75	< 0.75	-	-	-
Sulphate Aqueous Extract as SO4	62.00	120.00	-	-	-

None of the values are above the adopted GAC, proving that the imported topsoil remains suitable for use at the site.

The rest of the site had been wholly stripped of topsoil, as shown in the photographs above. The southern half of the site is not shown in the photographs, however this area has also been stripped of topsoil and stoned up for use as the contractor's car park and site compound area.

As the remainder of the topsoil to be placed shall continue to be brought from the Boozey Fields site, which had already been shown to be uncontaminated and confirmed by in-situ testing, the site is considered to be fully remediated in accordance with the remediation strategy produced for the site.

We trust this is satisfactory, should you have any queries please call Stefan Imiolczyk on 01244 661361.

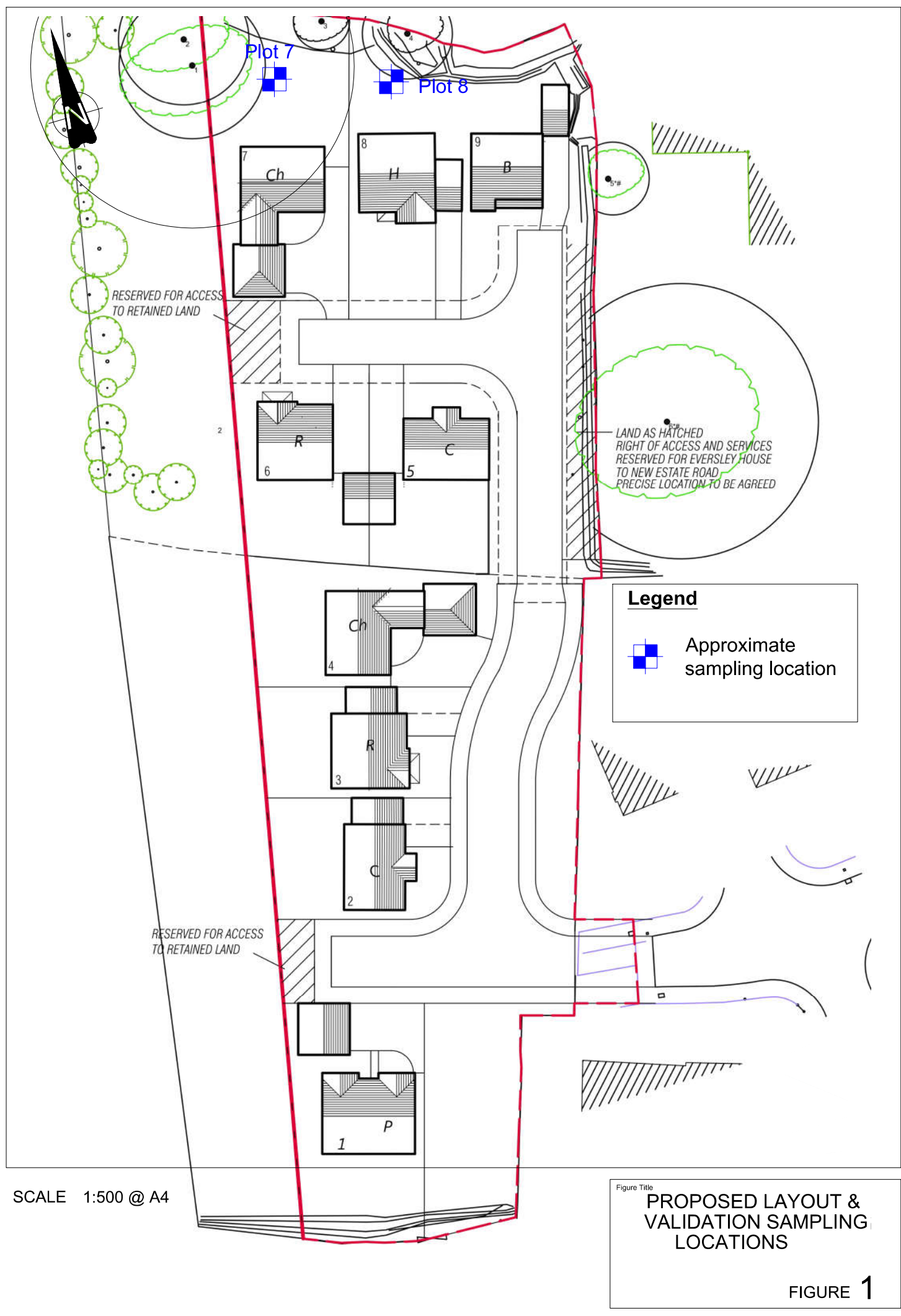
Yours sincerely,

A handwritten signature in black ink, appearing to read 'S. Imiolczyk', written in a cursive style.

Stefan D Imiolczyk

Enc.

FIGURES



APPENDIX A

Waste Transfer Tickets for Disposal of Topsoil



VAT Reg. No. 817 7436 09 Company Reg. No. 4829675
Carrier Licence No. CBDU3174

**Recycled Aggregates • Virgin Aggregates • Top Soil • Rock Salt • Muck Shift
Sweeper Hire • Skip Hire • Roll on Roll off Hire • Tipping Facilities**

www.alansskips.co.uk E-mail: enquiries@alansskips.co.uk

Freephone 0800 195 4707

Place of Loading:				Date:							
MINERA				20/3/20							
Delivery To:											
DEESIDE											
Customer:											
GOWER HOMES											
Driver's Name:				Vehicle Reg. No.:							
A Burrows				PJ17 VPP							
		tonnes				Kg					
GROSS											
TARE											
NET											
Description of Material/Comments:				SIC CODE							
				<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">4</td> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">0</td> </tr> </table>				4	1	2	0
				4	1	2	0				
				EWC CODE							
<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">7</td> <td style="width: 25%;">0</td> <td style="width: 25%;">5</td> </tr> </table>				1	7	0	5				
1	7	0	5								
TOP SOIL											
A.M.		P.M.		TRAVELLING TIME		HRS. WORKED EX. MEALTIME					
FROM	TO	FROM	TO								
By signing this ticket I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011.											
DRIVER'S SIGNATURE:				HIRER'S SIGNATURE:							
A Burrows				Simpson							
DATE:				DATE:							
20/3/20				20/3/20							

I am aware of and accept the conditions as stated overleaf on behalf of the waste producer.

WHITE CUSTOMER PINK OFFICE YELLOW ACCOUNTS



CONVEYANCE NOTE

No: 177081

VAT Reg. No. 817 7436 09 Company Reg. No. 4829675
Carrier Licence No. CBDU3174Recycled Aggregates • Virgin Aggregates • Top Soil • Rock Salt • Muck Shift
Sweeper Hire • Skip Hire • Roll on Roll off Hire • Tipping FacilitiesBroughton Mill Road, Bretton, Flintshire CH4 0BY
Sales Tel: 01244 660422 Accounts Tel: 01244 663500

Fax: 01244 661652

www.alansskips.co.uk E-mail: enquiries@alansskips.co.uk

Freephone 0800 195 4707

Place of Loading: EVERSEY COURT, MIERA				Date: 20-03-2020	
Delivery To: DEESIDE					
Customer: Gower Homes					
Driver's Name: M. VANT				Vehicle Reg. No.: FW68 FCZ	
		tonnes	Kg		Goods: V.A.T. @ INVOICE TOTAL
GROSS					
TARE					
NET					
Description of Material/Comments: TOP SOIL				SIC CODE 4 1 2 0 2 EWC CODE 1 7 0 5 0 4	
A.M.		P.M.		TRAVELLING TIME	HRS. WORKED EX. MEALTIME
FROM	TO	FROM	TO		
By signing this ticket I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011.					
DRIVER'S SIGNATURE: 				HIRER'S SIGNATURE: 	
DATE: 20-03-2020				DATE: 20-03-2020	

I am aware of and accept the conditions as stated overleaf on behalf of the waste producer.
WHITE CUSTOMER PINK OFFICE YELLOW ACCOUNTS

WHITE CUSTOMER PINK OFFICE YELLOW ACCOUNTS



CONVEYANCE NOTE

No: 177080

VAT Reg. No. 817 7436 09 Company Reg. No. 4829675
Carrier Licence No. CBDU3174Recycled Aggregates • Virgin Aggregates • Top Soil • Rock Salt • Muck Shift
Sweeper Hire • Skip Hire • Roll on Roll off Hire • Tipping FacilitiesBroughton Mill Road, Bretton, Flintshire CH4 0BY
Sales Tel: 01244 660422 Accounts Tel: 01244 663500
Fax: 01244 661652

www.alansskips.co.uk E-mail: enquiries@alansskips.co.uk

Freephone 0800 195 4707

Place of Loading: EVERSLEY COURT MILNERA, L11 342		Date: 20-03-2020	
Delivery To: DEESIDE			
Customer: GOWER HOMES			
Driver's Name: M. VANT		Vehicle Reg. No.: FN68 FZ	
	tonnes	Kg	
GROSS			
TARE			
NET			
Description of Material/Comments: Top Soil		SIC CODE	
		4 1 2 0 2	
		EWC CODE	
		1 7 0 5 0 4	
A.M.		P.M.	
FROM	TO	FROM	TO
TRAVELLING TIME		HRS. WORKED EX. MEALTIME	

By signing this ticket I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011.

DRIVER'S SIGNATURE:	HIRER'S SIGNATURE:
DATE: 20-03-2020	DATE: 20-03-2020

I am aware of and accept the conditions as stated overleaf on behalf of the waste producer.

WHITE CUSTOMER PINK OFFICE YELLOW ACCOUNTS



CONVEYANCE NOTE

No: 175542

VAT Reg. No. 817 7436 09 Company Reg. No. 4829675
Carrier Licence No. CBDU3174Recycled Aggregates • Virgin Aggregates • Top Soil • Rock Salt • Muck Shift
Sweeper Hire • Skip Hire • Roll on Roll off Hire • Tipping FacilitiesBroughton Mill Road, Bretton, Flintshire CH4 0BY
Sales Tel: 01244 660422 Accounts Tel: 01244 663500
Fax: 01244 661652

www.alansskips.co.uk E-mail: enquiries@alansskips.co.uk

Freephone 0800 195 4707

Place of Loading:				Date:			
MINERA				20/3/20			
Delivery To:				DEESIDE			
Customer:				GOWER HOMES			
Driver's Name:				Vehicle Reg. No.:			
A Bullows				PJ17 VPP			
		tonnes		Kg			
GROSS						Goods:	
TARE						V.A.T. @	
NET						INVOICE TOTAL	
Description of Material/Comments:						SIC CODE	
Top Soil						7 1 2 0 2	
						EWC CODE	
						1 7 0 5 0 4	
A.M.		P.M.		TRAVELLING TIME		HRS. WORKED	
FROM	TO	FROM	TO			EX. MEALTIME	
By signing this ticket I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011.							
DRIVER'S SIGNATURE:				HIRER'S SIGNATURE:			
A Bullows				Saurbhe			
DATE:				DATE:			
20/3/20				20/3/20			

I am aware of and accept the conditions as stated overleaf on behalf of the waste producer.

WHITE CUSTOMER PINK OFFICE YELLOW ACCOUNTS



CONVEYANCE NOTE

No: 177079

VAT Reg. No. 817 7436 09 Company Reg. No. 4829675
Carrier Licence No. CBDU3174Recycled Aggregates • Virgin Aggregates • Top Soil • Rock Salt • Muck Shift
Sweeper Hire • Skip Hire • Roll on Roll off Hire • Tipping FacilitiesBroughton Mill Road, Bretton, Flintshire CH4 0BY
Sales Tel: 01244 660422 Accounts Tel: 01244 663500
Fax: 01244 661652

www.alansskips.co.uk E-mail: enquiries@alansskips.co.uk

Freephone 0800 195 4707

Place of Loading:		EVERSLEY COURT		Date:	20-03-2020	
MINERA		LL13 4Z				
Delivery To:						
DEESIDE						
Customer:						
GOWER HOMES						
Driver's Name:				Vehicle Reg. No.:		
M. VAWT				FNE8 FCZ		
		tonnes	Kg			
GROSS				Goods:		
TARE				V.A.T. @		
NET				INVOICE TOTAL		
Description of Material/Comments:				SIC CODE		
TOP SOIL				4 1 2 0 2		
				EWC CODE		
				1 7 0 5 0 4		
A.M.		P.M.		TRAVELLING TIME		
FROM	TO	FROM	TO	HRS. WORKED		
				EX. MEALTIME		
By signing this ticket I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011.						
DRIVER'S SIGNATURE:				HIRER'S SIGNATURE:		
DATE: 20-03-2020				D TE:		

I am aware of and accept the conditions as stated overleaf on behalf of the waste producer.
WHITE CUSTOMER PINK OFFICE YELLOW ACCOUNTS

APPENDIX B

Laboratory Chemical Test Results – Boozey Fields Topsoil



Ground Solve
Unit 7
Well House Barns
Chester Road
Bretton
Cheshire
CH4 0DH

Attention: Mike Scott

CERTIFICATE OF ANALYSIS

Date: 20 February 2015
Customer: H_GRSOLVE_BRE
Sample Delivery Group (SDG): 150211-9
Your Reference: 1669/001/mjs
Location: Boozey Fields, Stansty, Wrexham
Report No: 302762

We received 3 samples on Tuesday February 10, 2015 and 3 of these samples were scheduled for analysis which was completed on Friday February 20, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan

Operations Manager



SDG: 150211-9
Job: H_GRSOLVE_BRE-137
Client Reference: 1669/001/mjs

Location: Boozey Fields, Stansty, Wrexham
Customer: Ground Solve
Attention: Mike Scott

Order Number: 1669/001/mjs
Report Number: 302762
Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
10810538	TP2		0.00 - 0.15	09/02/2015
10810539	TP6		0.00 - 0.20	09/02/2015
10810540	TP9		0.00 - 0.20	09/02/2015

Only received samples which have had analysis scheduled will be shown on the following pages.



SDG: 150211-9
Job: H_GRSOLVE_BRE-137
Client Reference: 1669/001/mjs

Location: Boozey Fields, Stansty, Wrexham
Customer: Ground Solve
Attention: Mike Scott

Order Number: 1669/001/mjs
Report Number: 302762
Superseded Report:

SOLID**Results Legend**

Test



No Determination Possible

Lab Sample No(s)**Customer Sample Reference****AGS Reference****Depth (m)****Container**

Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container
10810538	TP2		0.00 - 0.15	250g Amber Jar (AL)
10810539	TP6		0.00 - 0.20	250g VOC (ALE215)
10810540	TP9		0.00 - 0.20	60g VOC (ALE215)

Anions by Kone (soil)	All	NDPs: 0 Tests: 3	X	X	X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 3	X	X	X
Chromium III	All	NDPs: 0 Tests: 3	X	X	X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 3	X	X	X
Easily Liberated Sulphide	All	NDPs: 0 Tests: 3	X	X	X
Elemental Sulphur	All	NDPs: 0 Tests: 3	X	X	X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 3	X	X	X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 3	X	X	X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3		X	X
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 3	X	X	X
Metals in solid samples by OES	All	NDPs: 0 Tests: 3	X	X	X
PAH by GCMS	All	NDPs: 0 Tests: 3	X	X	X
pH	All	NDPs: 0 Tests: 3	X	X	X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3	X	X	X
Sample description	All	NDPs: 0 Tests: 3	X	X	X



SDG:	150211-9	Location:	Boozey Fields, Stansty, Wrexham	Order Number:	1669/001/mjs
Job:	H_GRSOLVE_BRE-137	Customer:	Ground Solve	Report Number:	302762
Client Reference:	1669/001/mjs	Attention:	Mike Scott	Superseded Report:	

SOLID
Results Legend

- X

Test
- N

No Determination Possible

Lab Sample No(s)	10810538	10810539	10810540
Customer Sample Reference	TP2	TP6	TP9
AGS Reference			
Depth (m)	0.00 - 0.15	0.00 - 0.20	0.00 - 0.20
Container	250g Amber Jar (AL 60g VOC (ALE215))	250g Amber Jar (AL 60g VOC (ALE215))	250g Amber Jar (AL 60g VOC (ALE215))
Total Organic Carbon	All	NDPs: 0 Tests: 3	X X X
TPH CWG GC (S)	All	NDPs: 0 Tests: 3	X X X

SDG:	150211-9	Location:	Boozey Fields, Stansty, Wrexham	Order Number:	1669/001/mjs
Job:	H_GRSOLVE_BRE-137	Customer:	Ground Solve	Report Number:	302762
Client Reference:	1669/001/mjs	Attention:	Mike Scott	Superseded Report:	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
------------------	----------	-------------	-----------------	---------------	-------------	---------------	------------	--------------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
10810538	TP2	0.00 - 0.15	Dark Brown	Loamy Sand	0.1 - 2 mm	Stones	Vegetation
10810539	TP6	0.00 - 0.20	Dark Brown	Loamy Sand	0.1 - 2 mm	Stones	Vegetation
10810540	TP9	0.00 - 0.20	Dark Brown	Loamy Sand	0.1 - 2 mm	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG: 150211-9
Job: H_GRSOLVE_BRE-137
Client Reference: 1669/001/mjs

Location:	Boozey Fields, Stansty, Wrexham
Customer:	Ground Solve
Attention:	Mike Scott

Order Number: 1669/001/mjs
Report Number: 302762
Superseded Report:

[illegible]

CERTIFICATE OF ANALYSIS

SDG: 150211-9
Job: H_GRSOLVE_BRE-137
Client Reference: 1669/001/mjs

Location:	Boozey Fields, Stansty, Wrexham
Customer:	Ground Solve
Attention:	Mike Scott

Order Number: 1669/001/mjs
Report Number: 302762
Superseded Report:

PAH by GCMS

[illegible]



CERTIFICATE OF ANALYSIS

SDG: 150211-9
Job: H_GRSOLVE_BRE-137
Client Reference: 1669/001/mjs

Location: Boozey Fields, Stansty, Wrexham
Customer: Ground Solve
Attention: Mike Scott

Order Number: 1669/001/mjs
Report Number: 302762
Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample R	TP2	TP6	TP9			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
1-5&*\$@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	79	119	115			
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44 M	<44 M	<44 M			
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5 M	<5 M	<5 M			
Benzene	<10 µg/kg	TM089	<10 M	<10 M	<10 M			
Toluene	<2 µg/kg	TM089	<2 M	<2 M	<2 M			
Ethylbenzene	<3 µg/kg	TM089	<3 M	<3 M	<3 M			
m,p-Xylene	<6 µg/kg	TM089	<6 M	<6 M	<6 M			
o-Xylene	<3 µg/kg	TM089	<3 M	<3 M	<3 M			
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9			
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24			
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	<10			
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	<10	<10			
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	<10	<10			
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	<10	<10			
Aliphatics >C12-C16	<100 µg/kg	TM173	<100	<100	<100			
Aliphatics >C16-C21	<100 µg/kg	TM173	<100	<100	<100			
Aliphatics >C21-C35	<100 µg/kg	TM173	4990	5670	<100			
Aliphatics >C35-C44	<100 µg/kg	TM173	<100	<100	<100			
Total Aliphatics >C12-C44	<100 µg/kg	TM173	4990	5670	<100			
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10			
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10			
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	<10	<10			
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10	<10			
Aromatics >EC12-EC16	<100 µg/kg	TM173	<100	<100	<100			
Aromatics >EC16-EC21	<100 µg/kg	TM173	1230	863	2300			
Aromatics >EC21-EC35	<100 µg/kg	TM173	9360	8740	11700			
Aromatics >EC35-EC44	<100 µg/kg	TM173	1720	1940	3100			
Aromatics >EC40-EC44	<100 µg/kg	TM173	<100	892	<100			
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	12300	11500	17100			
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	17300	17200	17200			



SDG: 150211-9
Job: H_GRSOLVE_BRE-137
Client Reference: 1669/001/mjs

Location: Boozey Fields, Stansty, Wrexham
Customer: Ground Solve
Attention: Mike Scott

Order Number: 1669/001/mjs
Report Number: 302762
Superseded Report:

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP2 0.00 - 0.15 SOLID 09/02/2015 00:00:00 16/02/2015 09:27:13 150211-9 10810538 TM048	20/02/15	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP6 0.00 - 0.20 SOLID 09/02/2015 00:00:00 16/02/2015 09:13:29 150211-9 10810539 TM048	20/02/15	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP9 0.00 - 0.20 SOLID 09/02/2015 00:00:00 16/02/2015 09:38:18 150211-9 10810540 TM048	20/02/15	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



SDG: 150211-9
Job: H_GRSOLVE_BRE-137
Client Reference: 1669/001/mjs

Location: Boozey Fields, Stansty, Wrexham
Customer: Ground Solve
Attention: Mike Scott

Order Number: 1669/001/mjs
Report Number: 302762
Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)'	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM243		Mixed Anions In Soils By Kone		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.



SDG: 150211-9
Job: H_GRSOLVE_BRE-137
Client Reference: 1669/001/mjs

Location: Boozey Fields, Stansty, Wrexham
Customer: Ground Solve
Attention: Mike Scott

Order Number: 1669/001/mjs
Report Number: 302762
Superseded Report:

Test Completion Dates

Lab Sample No(s)	10810538	10810539	10810540
Customer Sample Ref.	TP2	TP6	TP9
AGS Ref.			
Depth	0.00 - 0.15	0.00 - 0.20	0.00 - 0.20
Type	SOLID	SOLID	SOLID

Anions by Kone (soil)	19-Feb-2015	19-Feb-2015	19-Feb-2015
Asbestos ID in Solid Samples	20-Feb-2015	20-Feb-2015	20-Feb-2015
Chromium III	19-Feb-2015	19-Feb-2015	19-Feb-2015
Cyanide Comp/Free/Total/Thiocyanate	19-Feb-2015	19-Feb-2015	19-Feb-2015
Easily Liberated Sulphide	17-Feb-2015	17-Feb-2015	17-Feb-2015
Elemental Sulphur	19-Feb-2015	19-Feb-2015	19-Feb-2015
EPH CWG (Aliphatic) GC (S)	17-Feb-2015	17-Feb-2015	17-Feb-2015
EPH CWG (Aromatic) GC (S)	17-Feb-2015	17-Feb-2015	17-Feb-2015
GRO by GC-FID (S)	19-Feb-2015	19-Feb-2015	19-Feb-2015
Hexavalent Chromium (s)	19-Feb-2015	19-Feb-2015	19-Feb-2015
Metals in solid samples by OES	19-Feb-2015	19-Feb-2015	19-Feb-2015
PAH by GCMS	18-Feb-2015	18-Feb-2015	18-Feb-2015
pH	17-Feb-2015	17-Feb-2015	17-Feb-2015
Phenols by HPLC (S)	20-Feb-2015	20-Feb-2015	20-Feb-2015
Sample description	16-Feb-2015	16-Feb-2015	16-Feb-2015
Total Organic Carbon	19-Feb-2015	19-Feb-2015	19-Feb-2015
TPH CWG GC (S)	19-Feb-2015	19-Feb-2015	19-Feb-2015



SDG: 150211-9
Job: H_GRSOLVE_BRE-137
Client Reference: 1669/001/mjs

Location: Boozey Fields, Stansty, Wrexham
Customer: Ground Solve
Attention: Mike Scott

Order Number: 1669/001/mjs
Report Number: 302762
Superseded Report:

Appendix General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before preservation was performed
\$	Sampled on date not provided
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than :
- Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

APPENDIX C

Trial Pit Logs

Hand Dug Trial Pit – Plot 7

Depth (m)	Strata
0.0-0.30	Soft dark brown slightly sandy very slightly gravelly SILT. Gravel is fine to coarse subangular and subrounded sandstone and mudstone. (TOPSOIL)
0.30-0.35	Stiff yellow brown and grey slightly gravelly CLAY with low cobble content of sandstone. Gravel is fine to coarse subangular and subrounded sandstone. (GLACIAL TILL)

Notes

1. Trial pit terminated at 0.35m in natural glacial till.
2. Pit sides stable.
3. No groundwater encountered.
4. Jar samples taken at 0.2m depth.



HDTP - Plot 7



HDTP - Plot 7 Location

Hand Dug Trial Pit – Plot 8

Depth (m)	Strata
0.0-0.20	Soft dark brown slightly sandy very slightly gravelly SILT. Gravel is fine to coarse subangular and subrounded sandstone and mudstone. (TOPSOIL)
0.20-0.30	Stiff yellow brown and grey slightly gravelly CLAY with low cobble content of sandstone. Gravel is fine to coarse subangular and subrounded sandstone. (GLACIAL TILL)

Notes

1. Trial pit terminated at 0.3m in natural glacial till.
2. Pit sides stable.
3. No groundwater encountered.
4. Jar samples taken at 0.1m depth.



HDTP - Plot 8



H DTP - Plot 8 Location

APPENDIX D

Laboratory Chemical Test Results – Imported Topsoil



Certificate of Analysis

Certificate Number 20-11099

03-Jul-20

Client GroundSolve Limited
Unit 1
Well House Barns
Bretton
Flintshire
FAO Adam Fenwick
CH4 0DH

Our Reference 20-11099

Client Reference 2192

Order No 2192/SDI

Contract Title Eversley Court, Minera - Validation Sampling: Plot 7 & 8

Description 2 Soil samples.

Date Received 23-Jun-20

Date Started 23-Jun-20

Date Completed 03-Jul-20

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

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Adam Fenwick
Contracts Manager



2139

Summary of Chemical Analysis

Soil Samples

Our Ref 20-11099

Client Ref 2192

Contract Title Eversley Court, Minera - Validation Sampling: Plot 7 & 8

Lab No	1688225	1688226
Sample ID	PLOT 7	PLOT 8
Depth	0.20	0.10
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	12/06/2020	12/06/2020
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Metals					
Arsenic	DETSC 2301#	0.2	mg/kg	9.5	8.9
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.3	0.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.3
Chromium	DETSC 2301#	0.15	mg/kg	15	16
Chromium III	DETSC 2301*	0.15	mg/kg	15	16
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	22	23
Lead	DETSC 2301#	0.3	mg/kg	68	72
Mercury	DETSC 2325#	0.05	mg/kg	0.07	0.13
Nickel	DETSC 2301#	1	mg/kg	13	13
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	82	62
Inorganics					
pH	DETSC 2008#		pH	7.1	8.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	0.3
Organic matter	DETSC 2002#	0.1	%	3.1	3.6
Sulphate Aqueous Extract as SO ₄	DETSC 2076#	10	mg/l	62	120
Sulphide	DETSC 2024*	10	mg/kg	92	32
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4
Aliphatic C35-C40	DETSC 3072*	3.4	mg/kg	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C35-C40	DETSC 3072*	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10

Summary of Chemical Analysis

Soil Samples

Our Ref 20-11099

Client Ref 2192

Contract Title Eversley Court, Minera - Validation Sampling: Plot 7 & 8

Lab No	1688225	1688226
Sample ID	PLOT 7	PLOT 8
Depth	0.20	0.10
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	12/06/2020	12/06/2020
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.4	0.3

Summary of Asbestos Analysis

Soil Samples

Our Ref 20-11099

Client Ref 2192

Contract Title Eversley Court, Minera - Validation Sampling: Plot 7 & 8

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1688225	PLOT 7 0.20	SOIL	NAD	none	Jordan Eadington
1688226	PLOT 8 0.10	SOIL	NAD	none	Jordan Eadington

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 20-11099
 Client Ref 2192
 Contract Eversley Court, Minera - Validation Sampling: Plot 7 & 8

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1688225	PLOT 7 0.20 SOIL	12/06/20	GJ 250ml, GJ 60ml x2	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1688226	PLOT 8 0.10 SOIL	12/06/20	GJ 250ml, GJ 60ml x2	Sulphur (free) (7 days), pH + Conductivity (7 days)	

Key: G-Glass J-Jar

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

Soil Analysis Notes

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

Disposal

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