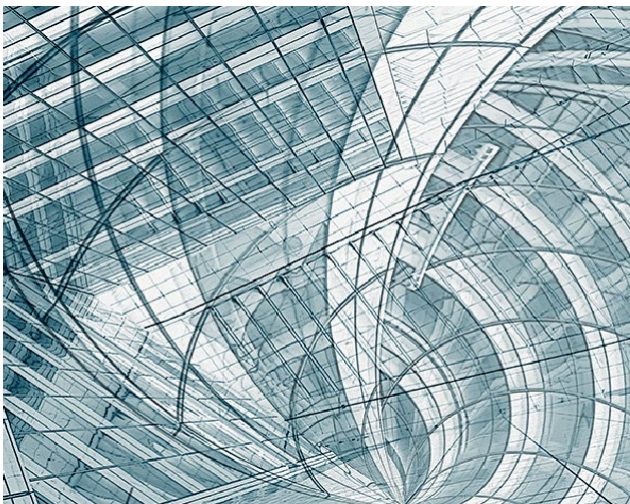




Hollybank Cottage, Holly Bank, Muswell Hill

Verification Report

JSW Consultants

GB727B-VR-NOV-2024-REV2

Verification Report

Holly Bank Cottage, Holly Bank, Muswell Hill

1. Introduction

GB Card & Partners (GBCP) has been commissioned by JSW Consultants (JSW) (on behalf of Hollybanks LLP (the Client) to provide a Verification Report to support the discharge of planning conditions for the development at Holly Bank Cottage, Holly Bank, Muswell Hill (the site).

2. Background

The development at Holly Bank Cottage is understood to have been completed in June 2020. Prior to the development, a ground investigation was completed and the subsequent report¹ identified localised concentrations of lead, beryllium and polycyclic aromatic hydrocarbons (PAH) above generic assessment criteria (GAC) for residential use with plant uptake. As such, the report recommended excavation of 600mm of existing soils and placement of a cover system to mitigate potential risks to future site users to comprise the following:

- A geotextile and/or mesh layer at the base of the excavation;
- 150mm thick layer of gap graded concrete (5-75mm) or the like;
- A second geotextile layer; and
- 450mm thick layer of clean certified topsoil.

GB Card + Partners

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Managing Director: Dr Geoffrey B Card
BSc PhD CEng FICE Eurlng CGeol FGS CSci
Registered in England and Wales No. 7453462.
Registered office at Dixcart House, Addlestone Road,
Bourne Business Park, Addlestone, KT15 2LE.

¹ Site Analytical Services Limited (2017). Report on a Ground Investigation, Hollybanks, Muswell Hill, London, N19 3TN. Ref: 17/27180. October 2017.



The Local Authority has reviewed information provided by the Client to facilitate discharge of condition 3 of the approved planning permission HGY/2023/0562. The Local Authority has requested the following information to support discharge of condition 3:

'Evidence of verification sampling of the imported topsoil including chemical analysis results and photographs to confirm cover system depth of the soft landscaped areas'

2.1 Previous Verification undertaken by GBCP

Verification of the capping material placed in the accessible gardens and soft landscaped areas of the site was undertaken by GBCP on 11 July 2023. A single exceedance of the adopted generic assessment criteria (GAC) was reported for lead from a sample of reworked material from V02 at 0.40m bgl. The Local Authority requested three additional verification locations in the private garden where V02 was sampled at 0.4m bgl to further assess lead concentrations in this area. The second verification visit was undertaken by GBCP on 13 October 2023.

During the site visit on 13 October 2023, three additional verification locations (V02A, V02B and V03C) were excavated to approximately 0.4mbgl in vicinity of V02 as requested by the Local Authority. The soils encountered were similar to V02 with turf overlying topsoil to approximately 0.1m bgl with reworked soils to 0.4m bgl. As requested by the Local Authority, an additional 3 No. samples were obtained from the vicinity of V02 from 0.40mbgl for chemical testing (V02A, V02B and V02C). The results for all analytes were below the GAC, with the exception of lead. The concentrations of lead were 546mg/kg, 403mg/kg and 395mg/kg, all exceeding the GAC of 200mg/kg.

Therefore, it was requested by the local authority to remove the material where V02 was located.

This report addresses the capping layer installed by the client specifically for House 2, where the exceedances of lead were previously recorded.

3. Verification

The following sections set out the verification activities undertaken by GBCP and the information provided by the client.



4. Cover system

Three verification visits were conducted by GBCP between 30 September 2024 and the 22 October 2024. During the first visit, the excavation depth in the soft landscaping area was inspected and found to be insufficient. Following this, the client adjusted the excavation in the rear garden, deepening it to the required 600mm and installing the high visibility membrane. Photographs can be seen in Appendix A.

The final visit involved an inspection of the imported topsoil to ensure compliance with the remediation strategy. The verification locations are shown on a plan in Appendix B and discussed in the following sections.

4.1 Capping layer construction

Three inspection pits were excavated in order to observe the thickness of the capping layer and obtain samples of the topsoil for laboratory testing. The capping layer thickness observed at each verification location are detailed in Table 1 with photographs from the site visit included in appendix A.

Location	Topsoil Thickness (mm)	Granular anti- dig layer thickness (mm)	Total capping layer thickness (mm)
V01	540	Unable to get to base of anti-dig layer	*600 plus – the base of the anti-dig layer was not confirmed
V02	480	150	680
V03	480	150	680

*Engineer unable to penetrate the anti-dig layer due to the material being too compacted at V01.



The capping layer thickness recorded at each location were in general accordance or in excess of the requirements set out in Site Analytical Limited (2017) report².

The soils encountered were generally described as; *'Dark brown silty gravelly fine to coarse SAND. Gravel was subangular to subrounded fine to medium flints. With occasional roots'*.

Furthermore, the presence of 'geotextile marker layer' was observed at the base of the topsoil layer in all inspection pits, as well as the 'high visibility geotextile marker' recorded at the base of the granular layer in V02 and V03. The installation of the 'high visibility geotextile marker' was confirmed during the site visit undertaken by a GBCP engineer on the 01 October 2024. Photographs taken during the inspection visits are presented in the photographic evidence included Appendix A.

4.2 Chemical testing

The chemical testing of verification samples was undertaken by i2 Analytical UK Ltd (i2) which is a United Kingdom Accreditation Service (UKAS) and the Environment Agency Monitoring Certification Scheme (MCERTS) accredited laboratory for the selected suite of analysis. Samples were tested for metals, total petroleum hydrocarbons (TPH), polycyclic aromatic hydrocarbons (PAH), phenols, cyanide and asbestos. The laboratory reports are included in Appendix C.

The chemical test results were screened against the GAC which are included in Appendix D. The GAC for residential plant uptake was used in the screening assessment with a soil organic matter (SOM) of 1% as a conservative measure as the SOM ranged between 4.2% and 4.7%.

Concentrations of all analytes were reported below the GAC. Based on the results of the assessment, the capping layer was assessed to pose a *low* risk to the sites final users.

² Site Analytical Services Limited (2017). Report on a Ground Investigation, Hollybanks, Muswell Hill, London, N19 3TN. Ref: 17/27180. October 2017.



5. Conclusion

The verification works undertaken by GBCP confirms that the outstanding items relating to condition 3 of the approved planning permission HGY/2023/0562 have been addressed. It is considered that following the installation of remedial measures associated with the rear garden of house 2 where lead was previously identified, poses no abnormal risk to future occupants and users of the development.

Author		Checked	
	Anna Smaje Engineer <i>BSc FGS</i>		Laura Bacon Director <i>BSc CGeol EurGeol FGS RoGEP</i>

Appendices

Appendix A – Site photographs

Appendix B – Trial hole location plan

Appendix C – Laboratory results

Appendix D – Soil screening assessment

Appendix A

Site photographs





Photo 1: V01 Inspection Pit



Photo 2: V01 inspection Pit



Photo 3: V02 Inspection Pit



Photo 4: V02 Inspection Pit

Fig. No.: **Figure 1**

Figure: **Photosheet**

Project ref.: **GB/727B**

Project: **Hollybank Verification**

Dwg No.: **GB727B/001** Rev: **1**
Drn: AS Chk: LB Date: 01/11/23



Photo 5: V03 Inspection Pit



Photo 6: V03 inspection Pit



Photo 7: Excvation measurments



Photo 8: Excvation measurments

Fig. No.: **Figure 1**

Figure: **Photosheet**

Project ref.: **GB/727B**

Project: **Hollybank Verification**

Dwg No.: **GB727B/001** Rev: **1**
Drn: AS Chk: LB Date: 01/11/23



Photo 9: memebrane verification



Photo 10: Membrane verification

Fig. No.: **Figure 1**

Figure: **Photosheet**

Project ref.: **GB/727B**

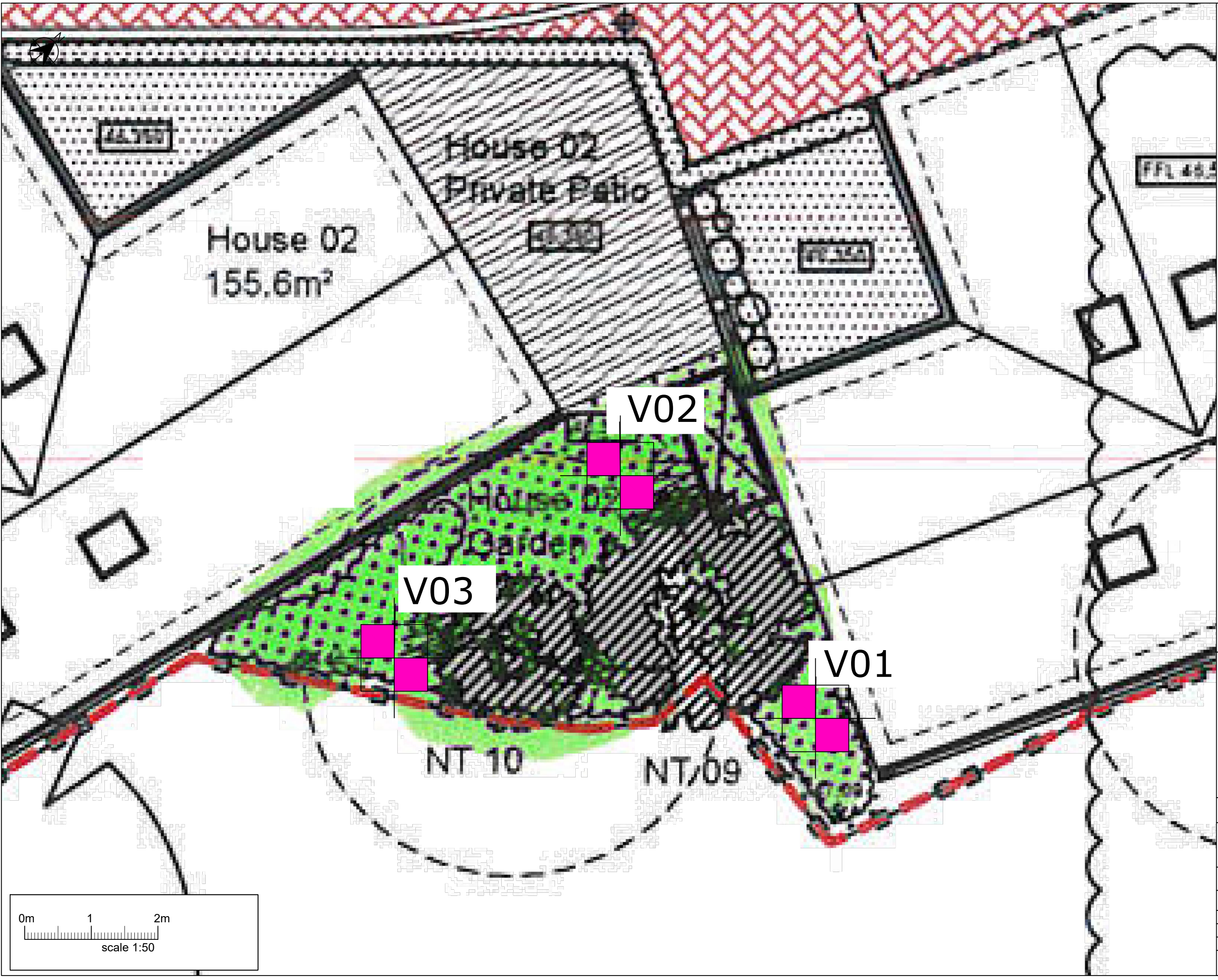
Project: **Hollybank Verification**

Dwg No.: **GB727B/001** Rev: **1**
 Drn: AS Chk: LB Date: 01/11/23

Appendix B

Trial hole location plan





KEY
 VO
Verification trial pit location

NOTES
Base drawing provided to GB Card and Partners by the Client.

DO NOT SCALE

**GB Card Partners**
CONSULTING ENGINEERS

GB Card & Partners Limited
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Addlestone KT15 2LE
0203 795 9990
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PROJECT			
GB727B - Holly Bank Cottage Verification			
DRAWING TITLE			
Garden verification trial pit locations			
CLIENT			
JSW Consultants			
STATUS			
FINAL			
DRAWN	AS	DATE	01/11/2024
CHECKED	LB	SCALE	1:50@ A3
APPROVED	LB		
DRAWING NUMBER			REVISION
GB727B-DWG-002			1

Appendix C

Laboratory results



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Addlestone
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i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-049830

Replaces Analytical Report Number: 24-049830, issue no. 1
Client references/information amended.
Sample Depth Added By Lab

Project / Site name:	Holly Bank Cottage	Samples received on:	24/10/2024
Your job number:	GB727B	Samples instructed on/ Analysis started on:	24/10/2024
Your order number:	GB727B AS	Analysis completed by:	30/10/2024
Report Issue Number:	2	Report issued on:	01/11/2024
Samples Analysed:	3 soil samples		



Signed:

Arslaan Saleem
Customer Service Advisor
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 24-049830
Project / Site name: Holly Bank Cottage
Your Order No: GB727B AS

Lab Sample Number	358841	358842	358843
Sample Reference	V01	V02	V03
Sample Number	None Supplied	None Supplied	None Supplied
Depth (m)	0.20	0.40	0.30
Date Sampled	22/10/2024	22/10/2024	22/10/2024
Time Taken	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	18	17
Total mass of sample received	kg	0.1	NONE	0.8	1.1	0.8

Asbestos

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

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	6.2	7.3	6.8
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	870	650	1000
Organic Matter (automated)	%	0.1	MCERTS	4.3	4.2	4.7

Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	0.11	0.12	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.09	0.07	0.06
Fluorene	mg/kg	0.05	MCERTS	0.1	0.08	0.07
Phenanthrene	mg/kg	0.05	MCERTS	0.99	0.71	0.69
Anthracene	mg/kg	0.05	MCERTS	0.22	0.16	0.16
Fluoranthene	mg/kg	0.05	MCERTS	1.1	0.94	0.82
Pyrene	mg/kg	0.05	MCERTS	0.94	0.72	0.72
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.59	0.45	0.51
Chrysene	mg/kg	0.05	MCERTS	0.59	0.49	0.53
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.71	0.49	0.62
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.33	0.21	0.27
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.67	0.44	0.56
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.34	0.23	0.27
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.07	0.05	0.06
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.36	0.27	0.27
Coronene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05

Total PAH

Total WAC-17 PAHs	mg/kg	0.85	NONE	7.19	5.42	5.61
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	16	16
Barium (aqua regia extractable)	mg/kg	1	MCERTS	230	230	240
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.51	0.52	0.55
Boron (water soluble)	mg/kg	0.2	MCERTS	1.1	0.9	1.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	15	15	16
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	16	17
Copper (aqua regia extractable)	mg/kg	1	MCERTS	20	20	21
Lead (aqua regia extractable)	mg/kg	1	MCERTS	42	41	44
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3

Analytical Report Number: 24-049830
Project / Site name: Holly Bank Cottage
Your Order No: GB727B AS

Lab Sample Number				358841	358842	358843
Sample Reference				V01	V02	V03
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.40	0.30
Date Sampled				22/10/2024	22/10/2024	22/10/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status			
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	9.2	9.3	10
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	20	20	21
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	57	51	59

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS,1D,AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS,1D,AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS,1D,AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH,CU,1D,AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH,CU,1D,AL}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 _{EH,CU,1D,AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 _{EH,CU,1D,AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC5 - EC35 _{EH,CU+HS,1D,AL}	mg/kg	10	NONE	< 10	< 10	< 10

TPHCWG - Aromatic >EC5 - EC7 _{HS,1D,AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS,1D,AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS,1D,AR}	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH,CU,1D,AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 _{EH,CU,1D,AR}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 _{EH,CU,1D,AR}	mg/kg	10	MCERTS	< 10	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 _{EH,CU,1D,AR}	mg/kg	10	MCERTS	< 10	< 10	< 10
TPHCWG - Aromatic >EC5 - EC35 _{EH,CU+HS,1D,AR}	mg/kg	10	NONE	< 10	< 10	< 10

VOCs

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

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

Analytical Report Number : 24-049830
Project / Site name: Holly Bank Cottage

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
358841	V01	None Supplied	0.2	Brown loam and sand with gravel and vegetation
358842	V02	None Supplied	0.4	Brown loam and clay with gravel and vegetation
358843	V03	None Supplied	0.3	Brown loam and clay with gravel and vegetation

Analytical Report Number : 24-049830
Project / Site name: Holly Bank Cottage

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L08B-PL	D/W	MCERTS
Chromium III in soil	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080-PL/L130B	W	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS

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

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Analytical Report Number : 24-049830
Project / Site name: Holly Bank Cottage

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Analytical Report Number : 24-049830
Project / Site name: Holly Bank Cottage

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_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

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

Appendix D

Soil screening assessment



Job Title:	Hollybank cottage				Exploratory Hole ID:	v01	v02	v03
Job Number:	GB727B				Sample ID:	ES1	ES1	ES1
Client:	Jigsaw				Lab ID:	358841	358842	358843
Author:	AS				Date:	22/10/2024	22/10/2024	22/10/2024
Checker:	LB				Stratum:	Topsoil	Topsoil	Topsoil
Date:	31/10/2024				Depth:	0.2	0.2	0.3
Generic Assessment Criteria – Soil					Results			RED = GAC Exceedance
Parameter	Residential with homegrown produce: SOM 1%	Min. Conc	Max. Conc	No. Exceedances				
pH		6.2	7.3	-	6.2	7.3	6.8	
Cyanide		0	0	-	< 1.0	< 1.0	< 1.0	
SOM %		4.2	4.7	-	4.3	4.2	4.7	
Antimony	-	0	0	0				
Arsenic (inorganic)	37	16	16	0	16	16	16	
Barium	-	230	240	0	230	230	240	
Beryllium	1.7	0.51	0.55	0	0.51	0.52	0.55	
Boron	290	0.9	1.2	0	1.1	0.9	1.2	
Cadmium	22	0	0	0	< 0.2	< 0.2	< 0.2	
Chromium III	910	15	16	0	15	15	16	
Chromium VI	21	0	0	0	< 1.8	< 1.8	< 1.8	
Copper	2400	20	21	0	20	20	21	
Lead	200	41	44	0	42	41	44	
Mercury (inorganic)	40	0	0	0	< 0.3	< 0.3	< 0.3	
Nickel	130	9.2	10	0	9.2	9.3	10	
Selenium	250	0	0	0	< 1.0	< 1.0	< 1.0	
Vanadium	410	20	21	0	20	20	21	
Zinc	3700	51	59	0	57	51	59	
Benzene	0.0087	0	0	0	< 5.0	< 5.0	< 5.0	
Toluene	130	0	0	0	< 5.0	< 5.0	< 5.0	
Ethylbenzene	47	0	0	0	< 5.0	< 5.0	< 5.0	
o-xylene	60	0	0	0	< 5.0	< 5.0	< 5.0	
m-xylene	59	0	0	0				
p-xylene	56	0	0	0				
Methyl tert-butyl ether (MTBE)	49	0	0	0	< 5.0	< 5.0	< 5.0	
Aliphatic EC5-6	42	0	0	0	< 0.010	< 0.010	< 0.010	
Aliphatic EC6-8	100	0	0	0	< 0.010	< 0.010	< 0.010	
Aliphatic EC8-10	27	0	0	0	< 0.010	< 0.010	< 0.010	
Aliphatic EC10-12	130	0	0	0				
Aliphatic EC12-16	1100	0	0	0				
Aliphatic EC16-35	65000	0	0	0				
Aliphatic EC35-44	65000	0	0	0				
Aromatic EC5-7	70	0	0	0	< 0.010	< 0.010	< 0.010	
Aromatic EC7-8	130	0	0	0	< 0.010	< 0.010	< 0.010	
Aromatic EC8-10	34	0	0	0	< 0.020	< 0.020	< 0.020	
Aromatic EC10-12	74	0	0	0	< 1.0	< 1.0	< 1.0	
Aromatic EC12-16	140	0	0	0	< 2.0	< 2.0	< 2.0	
Aromatic EC16-21	260	0	0	0	< 10	< 10	< 10	
Aromatic EC21-35	1100	0	0	0	< 10	< 10	< 10	
Aromatic EC35-44	1100	0	0	0				
Aliphatic & Aromatic EC44-70	1600	0	0	0				
Acenaphthene	210	0.06	0.09	0	0.09	0.07	0.06	
Acenaphthylene	170	0	0	0	< 0.05	< 0.05	< 0.05	
Anthracene	2400	0.16	0.22	0	0.22	0.16	0.16	
Benzo(a)anthracene	7.2	0.45	0.59	0	0.59	0.45	0.51	
Benzo(a)pyrene ONLY	2.2	0.44	0.67	0	0.67	0.44	0.56	
Benzo(b)fluoranthene	2.6	0.49	0.71	0	0.71	0.49	0.62	
Benzo(ghi)perylene	320	0.27	0.36	0	0.36	0.27	0.27	
Benzo(k)fluoranthene	77	0.21	0.33	0	0.33	0.21	0.27	
Chrysene	15	0.49	0.59	0	0.59	0.49	0.53	
Dibenzo(ah)anthracene	0.24	0.05	0.07	0	0.07	0.05	0.06	
Fluoranthene	280	0.82	1.1	0	1.1	0.94	0.82	
Fluorene	170	0.07	0.1	0	0.1	0.08	0.07	
Indeno(123-cd)pyrene	27	0.23	0.34	0	0.34	0.23	0.27	
Naphthalene	2.3	0.11	0.12	0	0.11	0.12	< 0.05	
Phenanthrene	95	0.69	0.99	0	0.99	0.71	0.69	
Pyrene	620	0.72	0.94	0	0.94	0.72	0.72	



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