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Document ref: C-02035-CALA-M1-LR-005

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17 December 2019

Parcel M1, Princess Royal Barracks, Deepcut, Surrey - Validation of clean Cover System in garden areas

Dear Adam,

We are writing to provide a summary of the validation of the clean Cover System implemented in the garden areas of Parcel M1 at Princess Royal Barracks, Deepcut, Surrey. This report details the works undertaken to date.

1. INTRODUCTION

Hydrock Consultants Limited was commissioned by CALA Homes (Thames) Ltd to undertake validation of the clean Cover System implemented across private gardens in the residential development at Parcel M1 of the above-mentioned site.

A site plan showing the proposed development layout is provided by Ashby Design Limited (00263-ASH-XX-TA-SP-3000_T1) and presented in the appendix.

2. GARDEN VALIDATION

Validation works were carried out to confirm a minimum engineered capping thickness of 600mm was placed in the gardens (Cover System). As agreed with the Local Authority (Surrey Heath Borough Council) at least 150mm of soils within the Cover System should comprise topsoil over a minimum of 450mm subsoil. Where Made Ground is identified below the 600mm engineered capping material a geotextile membrane should be present to separate the materials. It is noted that the Local Authority have stipulated that no "man-made materials" should be present within the Cover System (e.g. brick, crushed concrete, glass etc). The minimum testing ratio at the site has been agreed as 40% of plots to be tested.

The Cover System was derived from site-won soils. The soils were tested prior to initial excavation, screened and tested again after placement in gardens.

The validation works were carried out in accordance with Hydrock's Remediation Method Statement (report ref: C14817-0019).

2.1 Site inspections

The site was visited to complete a plot inspection as detailed in Table 1.0 below. Hydrock will continue to visit the site when plots are ready for inspection as informed by CALA.

Table 1.0: Summary of site inspections for garden validation works

Date of inspection	Plots inspected
08/11/2019	29,30,31,32,62 & 68
21/11/2019	63, 64, 65 & 66
27/11/2019	61
06/12/2019	29

A series of hand excavated trial pits were undertaken to a minimum depth of 0.6m in the rear garden areas of the plots to assess installation of the Cover System and inspect topsoil and subsoil materials present. Photographic records are presented in the Appendix.

Representative soil samples were obtained and scheduled for laboratory testing which incorporated a comprehensive soils suite. Laboratory test results are presented in the Appendix.

2.2 Soils Assessment

Laboratory results were compared to soil screening values for the residential with plant uptake land use scenario. The soil screening values used are generic assessment criteria (GAC). The Category 4 Screening Levels (C4SL) have been used for Benzo(a) Pyrene (5mg/kg) as agreed with the Local Authority. Statistical testing is used where data sets are suitable.

The results of the assessment are summarised below and screening tables are presented in the Appendix.

2.2.1 Topsoil results

From the comparison of topsoil test results against the relevant GAC's, the following comments apply:

- The screening exercise confirmed that topsoil samples obtained from the tested plots were not in exceedance of the relevant GAC's and the material is deemed suitable for use.
- Chrysotile asbestos fibres was detected within Plot 31 at <0.001% which is below the limit of detection.
- No asbestos was identified within the remaining topsoil materials.
- A minimum of 150mm of topsoil was present, no significant "man-made materials" were encountered.

2.2.2 Subsoil results

From the comparison of subsoil test results against the relevant GAC's, the following comments apply:

- The screening exercise identified that the subsoil sample tested within plot 29 at 0.5m bgl contained PAHs (Benzo(a)anthracene and Benzo(a)pyrene) identified above the relevant GAC's;
- Remaining subsoil samples tested were not in exceedance of the relevant GAC's.
- No asbestos was identified within the subsoil materials.

- A minimum of 450mm subsoil was present, no significant “man-made materials” were encountered.
- A geotextile membrane was encountered at approximately 0.6m bgl within plots 63, 64, 65 and 66. A geotextile membrane was not noted within the remaining plots, where subsoil materials were noted to extend to depths greater than 0.6m bgl.

Following the initial test fail of subsoil in Plot 29 for PAHs, a return visit was undertaken on 6th December 2019. Four additional samples of subsoil were obtained and submitted for laboratory testing. The results of the additional testing were found to be below the relevant GAC's. On this basis it is considered that the initial result is anomalous.

3. Conclusions

Based on the remediation and verification works undertaken, the results of the plot inspections are outlined in Table 2.0 below. Those noted as "pass" are considered suitable for use and no further remedial works are required. Those noted as "fail" are subject to further remediation.

Table 2.0: Summary of site inspections for garden validation works

Plots Inspected	Recommendation	Notes
29	Pass	Initial exceedance of PAHs in subsoil, further testing showed no exceedances.
30	Pass	N/A
31	Pass	N/A
32	Pass	Asbestos fibres of chrysotile were detected below the LOD (<0.001%) which is not considered to pose a risk to human health.
61	Pass	N/A
62	Pass	N/A
63	Pass	N/A
64	Pass	N/A
65	Pass	N/A
66	Pass	N/A
68	Pass	N/A

It is recommended that this summary report be passed to the relevant regulators (Local Authority and NHBC) for review.

Should you have any queries, please do not hesitate to contact the undersigned.

Yours faithfully

[redacted]

[redacted]

Appendices

Appendix A – Drawings

Appendix B – Site Visit Records

Appendix C – Laboratory Results/ Testing Certificates

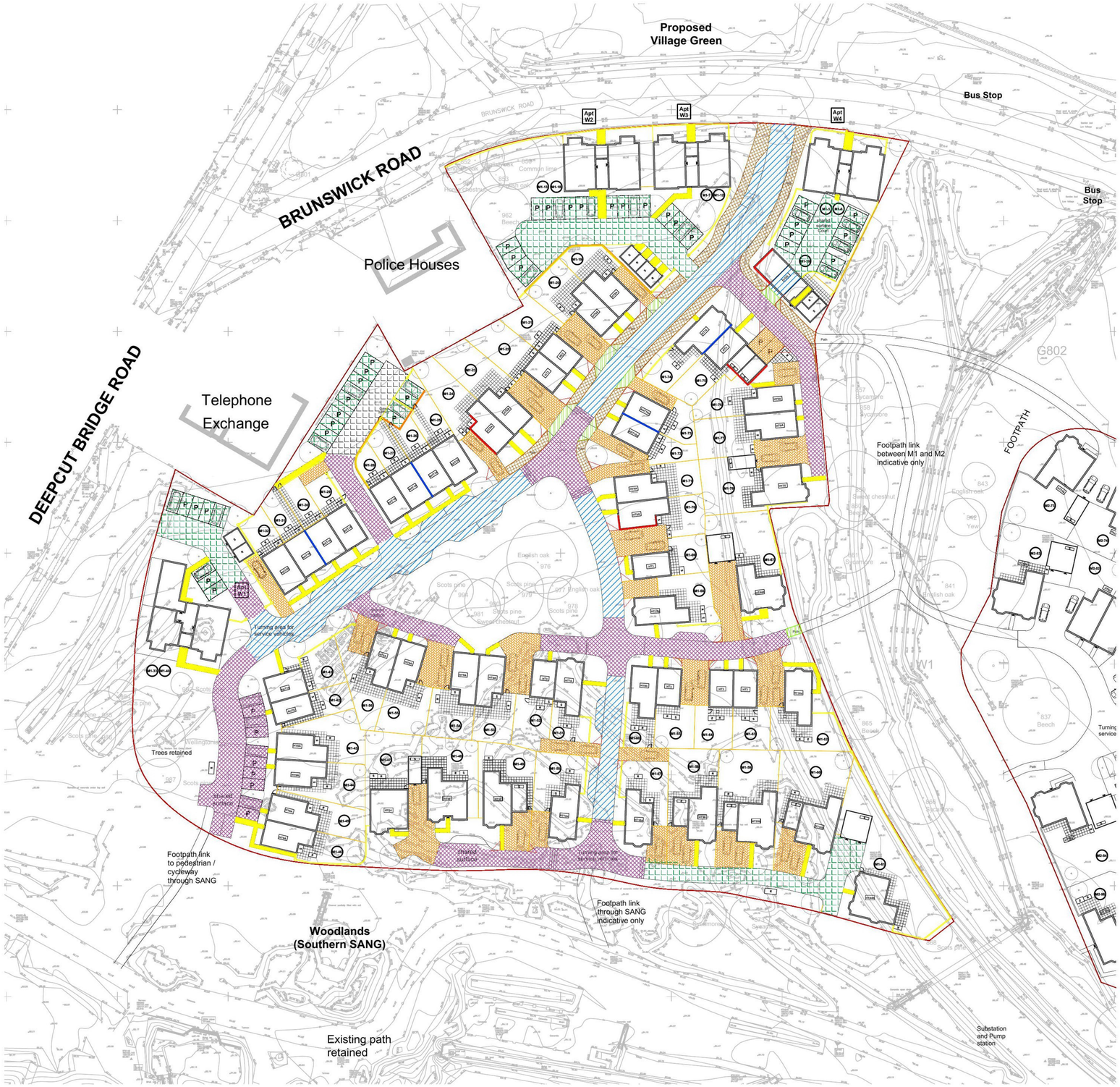
Appendix D – Screening Tables

Appendix A

Drawings

Mindenhurst, Deepcut

TENDER



GENERAL KEY

- CARRIAGEWAY –IMPERMEABLE BLOCKWORK (PAVEMENT TYPE B)
- PRIVATE DRIVE – BLOCK PAVING (PAVING TYPE A)
- PAVING –PERMEABLE BLOCKWORK (PAVEMENT TYPE E)
- PRIVATE FOOTPATH – INDIAN SANDSTONE (PAVEMENT TYPE C)
- ROAD– TARMAC (PAVEMENT TYPE D)
- PATIOS
- TARMAC FOOTPATH
- VEHICLE CROSSOVER
- SITE BOUNDARY
- BOUNDARY WALL – 1.8M HIGH WITH PIERS
- RETAINING WALL
- EXPOSED BRICK
- STEP BETWEEN FINISHED FLOOR LEVELS
- PARKING BAY
- VISIBILITY SPLAYS (2m x 2m)
- PROPOSED NEW TREE (TBC BY LANDSCAPE ARCHITECT)
- EXISTING TREE TO BE REMOVED (TBC BY LANDSCAPE ARCHITECT)
- DOOR ENTRANCE (LEVEL THRESHOLD)
- REFUSE
- CYCLE STORE

DRAWINGS TO BE READ IN CONJUNCTION WITH ENGINEERS & LANDSCAPE ARCHITECTS UP TO DATE DRAWINGS & SPECIFICATION

T1	External works, Ext. Steps, Exposed Bricks and Retailing walls shown in correspondence to the Engineer's latest drawings. Patios, Bin and Cycle Stores added as per Client's e-mail dated 19.02.18.	07/03/18 TY
A	Drawing status updated to Tender.	09/02/18 TY

Ashby Design Limited
13 ARM & SWORD LANE
OLD HATFIELD HERTS AL9 5EH
T 01707 270 077 W www.ashbydesign.co.uk

Project: Mindenhurst, Deepcut

Title: Site Plan M1

Scale: 1:50 @ A1 | Date: October 17 | Drawn: AP | Checked: TKh

Drawing No.: 00263-ASH-XX-TA-SP-3000 | Revision: T1

Site Plan - M1

KEY

- Sample Location
- Plot covered by validation

NOTES

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.

2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.

3. This drawing has been based on the following drawings and information:
Topographic survey provided by Skanska Construction UK Limited on Sept 2016. Drawing Ref. DC1-SMS-EU-101-00-DR-05-T001 22/12/15

4. Land use boundaries taken from JTP Drawing no: 00752_SK030 Rev M 03/08/17.

5. Layout based on unreferenced drawing supplied by the Client.

REV.		DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
P5	SAMPLE LOCATIONS ADDED	SD	17/12/19		17/12/19		
P4	SAMPLE LOCATIONS ADDED	SD	17/10/19	JB	17/10/19		
P3	SAMPLE LOCATIONS ADDED	SD	07/10/19	JB	07/10/19		
P2	SAMPLE LOCATIONS UPDATED	SD	20/08/19	JB	20/08/19		
P1	FIRST ISSUE	SD	18/07/19	AJ	18/07/19		

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CLIENT: CALA Homes (Thames)

PROJECT: PRINCESS ROYAL BARRACKS, DEEPCUT

TITLE: SAMPLE LOCATION PLAN (PARCEL M1)

HYDROCK PROJECT NO.	SCALE @ A3
C-02035-C	Not to scale

PURPOSE OF ISSUE	STATUS
SUITABLE FOR CO-ORDINATION	S1

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)	REVISION
02035-HYD-XX-ZZ-DR-GE-1001	P5

Appendix B

Site Visit Records

Hydrock Consultants Ltd, White Building, 1-4 Cumberland Place, Southampton, SO15 2NP
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SITE VISIT RECORD 008		SHEET NO: 1
Project: Princess Royal Barrack, Deepcut, Surrey		Date of Visit: 08.11.2019
Client: CALA Homes (Thames) Ltd	**Weather Conditions:** Overcast and cloudy	
Contract No.: C-02035-C		
Visit Carried Out By: Jane Baird		
Present: Hydrock Consultants		

Summary of Work Activities:

Validation sampling of garden plots 29,30,31,32,62 & 68

Comments/Discussions:

Geology descriptions of hand excavated pits comprised:

Plot 29

Ground level to 0.3m bgl comprised topsoil of dark greyish brown sandy slightly gravelly silt with roots and rootlets. Sand was fine to medium grained. Gravel was flint. Between 0.3m and 0.6m was greyish brown slightly clayey slightly gravelly fine to medium grained sand. Gravel was flint. Geotextile membrane was not encountered.

Plot 30

Ground level to 0.2m bgl comprised topsoil of dark greyish brown sandy slightly gravelly silt with roots and rootlets. Sand was fine to medium grained. Gravel was flint. Between 0.2m and 0.6m was greyish brown slightly clayey slightly gravelly fine to medium grained sand. Gravel was flint. Geotextile membrane was not encountered.

Plot 31

Ground level to 0.3m bgl comprised topsoil of dark greyish brown sandy slightly gravelly silt with roots and rootlets. Sand was fine to medium grained. Gravel was flint. Between 0.3m and 0.6m was greyish brown sandy slightly gravelly silt. Gravel was flint. Geotextile membrane was not encountered.

Plot 32

Ground level to 0.3m bgl comprised topsoil of dark greyish brown sandy slightly gravelly silt with roots and rootlets. Sand was fine to medium grained. Gravel was flint. Between 0.3m and 0.6m was greyish brown sandy slightly gravelly silt. Gravel was flint. Geotextile membrane was not encountered.

Plot 62

Ground level to 0.2m bgl comprised topsoil of dark greyish brown sandy slightly gravelly silt with roots and rootlets. Sand was fine to medium grained. Between 0.2m and 0.6m was greyish brown slightly clayey slightly gravelly fine to medium grained sand. Gravel was flint. Beneath this the beginning of orangish brown slightly clayey sand was present. Geotextile membrane was not encountered.

Plot 68

Ground level to 0.3m bgl comprised topsoil of dark greyish brown sandy slightly gravelly silt with roots and rootlets. Sand was fine to medium grained. Gravel was flint. Between 0.3m and 0.6m was dark greyish brown sandy slightly gravelly silt. Gravel was flint. Geotextile membrane was not encountered.

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SITE INSPECTION REPORT 008	SHEET NO: 2

Plot 29 hand excavated pit

Plot 30 hand excavated pit

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SITE INSPECTION REPORT 008	SHEET NO: 3

Plot 31 hand excavated pit

Plot 32 hand excavated pit

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SITE INSPECTION REPORT 008	SHEET NO: 4

Plot 62 hand excavated pit

Plot 68 hand excavated pit

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SITE VISIT RECORD 009		SHEET NO: 1
Project: Princess Royal Barrack, Deepcut, Surrey		Date of Visit: 21.11.2019
Client: CALA Homes (Thames) Ltd	**Weather Conditions:** Overcast and cloudy	
Contract No.: C-02035-C		
Visit Carried Out By: Jane Baird		
Present: Hydrock Consultants		

Summary of Work Activities:

Validation sampling of garden plots 63, 64, 65 & 66

Comments/Discussions:

Geology descriptions of hand excavated pits comprised:

Plot 63

Ground level to 0.3m bgl comprised topsoil of dark greyish brown sandy slightly gravelly silt with roots and rootlets. Sand was fine to medium grained. Between 0.3m and 0.6m was greyish brown slightly clayey slightly gravelly fine to medium grained sand. Gravel was flint. A geotextile membrane was encountered at 0.6m bgl.

Plot 64

Ground level to 0.2m bgl comprised topsoil of dark greyish brown sandy slightly gravelly silt with roots and rootlets. Sand was fine to medium grained. Gravel was flint. Between 0.2m and 0.6m was greyish brown slightly clayey slightly gravelly fine to medium grained sand. Gravel was flint. A geotextile membrane was encountered at 0.6m bgl.

Plot 65

Ground level to 0.3m bgl comprised topsoil of greyish brown sandy slightly gravelly silt with roots and rootlets. Sand was fine to medium grained. Gravel was flint. Between 0.3m and 0.6m was greyish brown sandy slightly gravelly silt. Gravel was flint. A geotextile membrane was encountered at 0.6m bgl.

Plot 66

Ground level to 0.3m bgl comprised topsoil of dark greyish brown sandy slightly gravelly silt with roots and rootlets. Sand was fine to medium grained. Gravel was flint. Between 0.3m and 0.6m was light greyish brown and yellowish brown slightly clayey fine to medium grained sand. A geotextile membrane was encountered at 0.6m bgl.

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SITE INSPECTION REPORT 009 | SHEET NO: 2

Plot 63 hand excavated pit

Plot 64 hand excavated pit

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SITE INSPECTION REPORT 009 | SHEET NO: 3

Plot 65 hand excavated pit

Plot 66 hand excavated pit

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SITE VISIT RECORD 010		SHEET NO: 1
Project: Princess Royal Barrack, Deepcut, Surrey		Date of Visit: 27.11.2019
Client: CALA Homes (Thames) Ltd	**Weather Conditions:** Overcast and cloudy	
Contract No.: C-02035-C		
Visit Carried Out By: Jane Baird		
Present: Hydrock Consultants		

Summary of Work Activities:

Validation sampling of garden plot 61

Comments/Discussions:

Geology descriptions of hand excavated pits comprised:

Plot 61

Ground level to 0.3m bgl comprised topsoil of dark greyish brown sandy slightly gravelly silt with roots and rootlets. Sand was fine to medium grained. Gravel was flint. Between 0.3m and 0.6m was dark greyish brown sandy slightly gravelly silt. Gravel was flint. Geotextile membrane was not encountered.

Plot 61 hand excavated pit

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SITE VISIT RECORD 011		SHEET NO: 1
Project: Princess Royal Barrack, Deepcut, Surrey		Date of Visit: 06.12.2019
Client: CALA Homes (Thames) Ltd	**Weather Conditions:** Overcast and cloudy	
Contract No.: C-02035-C		
Visit Carried Out By: Jane Baird		
Present: Hydrock Consultants		

Summary of Work Activities:

Validation sampling of garden plot 29

Comments/Discussions:

Geology descriptions of hand excavated pits comprised:

Plot 29A

Ground level to 0.3m bgl comprised topsoil of dark greyish brown sandy slightly gravelly silt with roots and rootlets. Sand was fine to medium grained. Gravel was flint. Between 0.3m and 0.6m was greyish brown slightly clayey slightly gravelly fine to medium grained sand. Gravel was flint. Geotextile membrane was not encountered.

Plot 29B

Ground level to 0.3m bgl comprised topsoil of dark greyish brown sandy slightly gravelly silt with roots and rootlets. Sand was fine to medium grained. Gravel was flint. Between 0.3m and 0.6m was greyish brown slightly clayey slightly gravelly fine to medium grained sand. Gravel was flint. Geotextile membrane was not encountered.

Plot 29C

Ground level to 0.3m bgl comprised topsoil of dark greyish brown sandy slightly gravelly silt with roots and rootlets. Sand was fine to medium grained. Gravel was flint. Between 0.3m and 0.6m was greyish brown slightly clayey slightly gravelly fine to medium grained sand. Gravel was flint. Geotextile membrane was not encountered.

Plot 29D

Ground level to 0.3m bgl comprised topsoil of dark greyish brown sandy slightly gravelly silt with roots and rootlets. Sand was fine to medium grained. Gravel was flint. Between 0.3m and 0.6m was greyish brown slightly clayey slightly gravelly fine to medium grained sand. Gravel was flint. Geotextile membrane was not encountered.

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SITE INSPECTION REPORT 011

SHEET NO: 2

Plot 29A hand excavated pit

Plot 29B hand excavated pit

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SITE INSPECTION REPORT 011	SHEET NO: 3

Plot 29C hand excavated pit

Plot 29D hand excavated pit

Appendix C

Laboratory Results/ Testing Certificates

Jane Baird
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i2 Analytical Ltd.
7 Woodshots Meadow,
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t: 01923 225404
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e: reception@i2analytical.com

Analytical Report Number : 19-71583

Replaces Analytical Report Number : 19-71583, issue no. 1

Project / Site name:	Deepcut	**Samples received on:**	12/11/2019
Your job number:	C-02035	**Samples instructed on:**	12/11/2019
Your order number:		**Analysis completed by:**	25/11/2019
Report Issue Number:	2	**Report issued on:**	25/11/2019
Samples Analysed:	12 soil samples		

[redacted]
Agnieszka Czerwińska

Technical Reviewer (Reporting Team)
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: 19-71583

Project / Site name: Deepcut

Lab Sample Number				1360708	1360709	1360710	1360711	1360712
Sample Reference				Plot 62	Plot 62	Plot 68	Plot 68	Plot 29
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.50	0.10	0.50	0.10
Date Sampled				08/11/2019	08/11/2019	08/11/2019	08/11/2019	08/11/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	18	11	18	11	18
Total mass of sample received	kg	0.001	NONE	1.3	1.5	1.5	1.2	1.4
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	6.9	7.0	7.5	7.8	7.3
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.098	0.19	0.024	0.24	0.093
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.040	0.016	0.030	0.018	0.037
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	11
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	1.0	0.18	1.4	0.72	0.97
Anthracene	mg/kg	0.05	MCERTS	0.16	< 0.05	0.23	0.18	0.22
Fluoranthene	mg/kg	0.05	MCERTS	3.1	0.37	3.8	1.5	2.7
Pyrene	mg/kg	0.05	MCERTS	2.8	0.31	3.4	1.3	2.5
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.9	0.29	2.2	0.79	1.6
Chrysene	mg/kg	0.05	MCERTS	1.4	0.21	1.8	0.87	1.3
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	2.5	0.24	2.9	1.2	2.2
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.63	0.14	1.0	0.33	0.64
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.8	0.21	2.1	0.77	1.6
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.90	< 0.05	1.1	0.37	0.77
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.37	< 0.05	0.21
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.97	< 0.05	1.1	0.43	0.88
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	17.1	1.95	21.2	8.49	15.6
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.4	3.5	6.5	5.6	4.8
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.27	0.31	0.33	0.35	0.27
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	0.4	0.5	0.8	0.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	9.6	12	11	14	12
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	10	13	12	15	12
Copper (aqua regia extractable)	mg/kg	1	MCERTS	18	4.8	12	9.6	9.8
Lead (aqua regia extractable)	mg/kg	1	MCERTS	53	12	56	28	50
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	5.1	4.8	6.5	6.7	4.6
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	16	18	18	22	15
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	56	20	66	48	52

Analytical Report Number: 19-71583

Project / Site name: Deepcut

Lab Sample Number				1360713	1360714	1360715	1360716	1360717
Sample Reference				Plot 29	Plot 30	Plot 30	Plot 31	Plot 31
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.20	0.60	0.10	0.50
Date Sampled				08/11/2019	08/11/2019	08/11/2019	08/11/2019	08/11/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	13	17	13	17	11
Total mass of sample received	kg	0.001	NONE	1.3	1.3	1.4	1.4	1.2
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.8	7.1	7.5	5.9	7.7
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.22	0.051	0.31	0.045	0.24
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.016	0.040	0.018	0.038	0.019
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.46	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.73	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	1.0	< 0.05	< 0.05	< 0.05	0.27
Fluorene	mg/kg	0.05	MCERTS	1.6	< 0.05	< 0.05	< 0.05	0.31
Phenanthrene	mg/kg	0.05	MCERTS	17	1.3	0.92	0.94	2.5
Anthracene	mg/kg	0.05	MCERTS	2.7	0.25	0.18	0.20	0.46
Fluoranthene	mg/kg	0.05	MCERTS	18	3.1	1.9	2.7	3.2
Pyrene	mg/kg	0.05	MCERTS	14	2.8	1.7	2.4	2.7
Benzo(a)anthracene	mg/kg	0.05	MCERTS	7.3	1.7	1.1	1.6	1.4
Chrysene	mg/kg	0.05	MCERTS	7.6	2.4	1.4	1.7	2.2
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	7.1	2.1	1.1	1.9	1.5
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	3.4	1.2	0.68	0.84	0.91
Benzo(a)pyrene	mg/kg	0.05	MCERTS	5.7	1.7	0.83	1.5	1.4
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	2.4	1.0	0.56	0.70	0.79
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.43	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	3.3	1.3	0.72	0.97	0.93
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	92.4	19.0	11.0	15.4	18.6
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.2	4.8	4.8	4.6	4.9
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.35	0.26	0.30	0.20	0.31
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	0.8	0.6	0.6	0.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	13	10	13	11	13
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	13	10	13	12	14
Copper (aqua regia extractable)	mg/kg	1	MCERTS	12	11	19	9.4	9.4
Lead (aqua regia extractable)	mg/kg	1	MCERTS	27	56	31	48	31
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	6.7	4.6	7.0	7.8	5.8
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	19	14	16	13	19
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	50	55	62	45	56

Analytical Report Number: 19-71583

Project / Site name: Deepcut

Lab Sample Number				1360718	1360719			
Sample Reference				Plot 32	Plot 32			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.20	0.60			
Date Sampled				08/11/2019	08/11/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1			
Moisture Content	%	N/A	NONE	19	13			
Total mass of sample received	kg	0.001	NONE	1.6	1.5			
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	-			
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected			
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	-			
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	-			
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.3	7.2			
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1			
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.054	0.22			
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.042	0.024			
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0			
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Phenanthrene	mg/kg	0.05	MCERTS	1.3	0.96			
Anthracene	mg/kg	0.05	MCERTS	0.18	0.14			
Fluoranthene	mg/kg	0.05	MCERTS	2.5	1.7			
Pyrene	mg/kg	0.05	MCERTS	2.1	1.5			
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.2	0.83			
Chrysene	mg/kg	0.05	MCERTS	1.9	1.4			
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.4	1.2			
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.87	0.48			
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.0	0.81			
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.58	0.42			
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.85	0.65			
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	13.8	10.0			
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.4	4.7			
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.22	0.34			
Boron (water soluble)	mg/kg	0.2	MCERTS	0.8	0.7			
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
Chromium (hexavalent)	mg/kg	1.2	MCERTS	1.3	< 1.2			
Chromium (III)	mg/kg	1	NONE	8.5	13			
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	9.7	14			
Copper (aqua regia extractable)	mg/kg	1	MCERTS	9.7	21			
Lead (aqua regia extractable)	mg/kg	1	MCERTS	63	37			
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3			
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	6.2	6.3			
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0			
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	16	19			
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	53	64			

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Analytical Report Number: 19-71583
Project / Site name: Deepcut
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
1360718	Plot 32	0.20	103	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

Analytical Report Number : 19-71583

Project / Site name: Deepcut

* 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 *
1360708	Plot 62	None Supplied	0.10	Brown loam and clay with gravel and vegetation.
1360709	Plot 62	None Supplied	0.50	Brown loam and clay with gravel and vegetation.
1360710	Plot 68	None Supplied	0.10	Brown loam and clay with gravel and vegetation.
1360711	Plot 68	None Supplied	0.50	Brown loam and clay with gravel and vegetation.
1360712	Plot 29	None Supplied	0.10	Brown loam and clay with gravel and vegetation.
1360713	Plot 29	None Supplied	0.50	Brown loam and clay with gravel and vegetation.
1360714	Plot 30	None Supplied	0.20	Brown loam and clay with gravel and vegetation.
1360715	Plot 30	None Supplied	0.60	Brown loam and clay with gravel and vegetation.
1360716	Plot 31	None Supplied	0.10	Brown loam and clay with gravel and vegetation.
1360717	Plot 31	None Supplied	0.50	Brown loam and clay with gravel and vegetation.
1360718	Plot 32	None Supplied	0.20	Brown loam and clay with gravel and vegetation.
1360719	Plot 32	None Supplied	0.60	Brown loam and clay with gravel and vegetation.

Analytical Report Number : 19-71583

Project / Site name: Deepcut

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

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 disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
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	L038-PL	D	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
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.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In-house method based on BS1377 Part 2, 1990, Classification tests	L019-UK/PL	W	NONE
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 (skalar)	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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
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.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' 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 30oC.

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Analytical Report Number : 19-73550

Project / Site name:	Deepcut - Parcel M1	**Samples received on:**	25/11/2019
Your job number:	C-02035-C	**Samples instructed on:**	25/11/2019
Your order number:	POP33822	**Analysis completed by:**	28/11/2019
Report Issue Number:	1	**Report issued on:**	28/11/2019
Samples Analysed:	8 soil samples		

[redacted]
Karolina Marek
Technical Reviewer (Reporting Team)

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

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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: 19-73550

Project / Site name: Deepcut - Parcel M1

Your Order No: POP33822

Lab Sample Number				1370811	1370812	1370813	1370814	1370815
Sample Reference				Plot 63	Plot 63	Plot 64	Plot 64	Plot 65
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.40	0.10	0.40	0.10
Date Sampled				21/11/2019	21/11/2019	21/11/2019	21/11/2019	21/11/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	11	12	13	12	12
Total mass of sample received	kg	0.001	NONE	1.3	1.2	1.2	1.1	1.2
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.4	7.9	9.4	8.0	7.8
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.45	0.19	0.53	0.37	0.38
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.025	0.014	0.013	0.012	0.0099
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.49	0.46	0.70	1.3	0.25
Anthracene	mg/kg	0.05	MCERTS	0.11	0.09	0.18	0.24	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	1.5	1.0	1.6	1.8	0.72
Pyrene	mg/kg	0.05	MCERTS	1.3	1.0	1.3	1.4	0.52
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.79	0.61	0.99	0.98	0.39
Chrysene	mg/kg	0.05	MCERTS	0.83	0.55	0.80	0.82	0.45
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.96	0.69	0.91	0.88	0.45
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.54	0.33	0.70	0.55	0.33
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.0	0.68	0.94	0.96	0.52
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.40	0.28	0.39	0.39	0.23
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.47	0.36	0.49	0.45	0.27
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	8.38	6.09	8.94	9.83	4.13
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.5	7.6	6.1	6.2	5.7
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.43	0.48	0.36	0.38	0.45
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	0.6	0.7	0.7	0.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	15	19	14	15	17
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	15	19	14	16	17
Copper (aqua regia extractable)	mg/kg	1	MCERTS	11	25	12	13	11
Lead (aqua regia extractable)	mg/kg	1	MCERTS	39	28	33	29	25
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	7.3	9.3	7.0	9.4	9.7
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	22	27	21	23	20
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	73	59	58	47	47

Analytical Report Number: 19-73550

Project / Site name: Deepcut - Parcel M1

Your Order No: POP33822

Lab Sample Number				1370816	1370817	1370818		
Sample Reference				Plot 65	Plot 66	Plot 66		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				0.50	0.10	0.50		
Date Sampled				21/11/2019	21/11/2019	21/11/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1		
Moisture Content	%	N/A	NONE	12	14	13		
Total mass of sample received	kg	0.001	NONE	1.1	1.2	1.2		
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected		
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.0	7.9	8.0		
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1		
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.19	0.45	0.47		
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.0095	0.0094	0.0063		
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Acenaphthene	mg/kg	0.05	MCERTS	0.46	< 0.05	< 0.05		
Fluorene	mg/kg	0.05	MCERTS	0.27	< 0.05	< 0.05		
Phenanthrene	mg/kg	0.05	MCERTS	3.5	< 0.05	0.20		
Anthracene	mg/kg	0.05	MCERTS	0.71	< 0.05	< 0.05		
Fluoranthene	mg/kg	0.05	MCERTS	3.7	0.37	0.34		
Pyrene	mg/kg	0.05	MCERTS	3.0	0.24	0.22		
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.5	0.24	0.23		
Chrysene	mg/kg	0.05	MCERTS	1.6	0.31	0.20		
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.2	0.25	0.24		
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	1.0	0.27	0.16		
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.4	0.28	0.25		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.60	< 0.05	< 0.05		
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.14	< 0.05	< 0.05		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.65	< 0.05	< 0.05		
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	19.6	1.96	1.84		
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	4.8	5.8	4.7		
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.28	0.35	0.28		
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	1.0	0.8		
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2		
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2		
Chromium (III)	mg/kg	1	NONE	14	16	15		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	14	16	15		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	12	18	10		
Lead (aqua regia extractable)	mg/kg	1	MCERTS	22	23	20		
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3		
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	8.0	9.5	9.1		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	18	23	17		
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	63	59	44		

Analytical Report Number : 19-73550

Project / Site name: Deepcut - Parcel M1

* 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 *
1370811	Plot 63	None Supplied	0.10	Brown loam and sand with gravel and vegetation.
1370812	Plot 63	None Supplied	0.40	Brown loam and sand with gravel and vegetation.
1370813	Plot 64	None Supplied	0.10	Brown clay and sand with vegetation and gravel
1370814	Plot 64	None Supplied	0.40	Brown clay and sand with gravel.
1370815	Plot 65	None Supplied	0.10	Brown clay and sand with gravel.
1370816	Plot 65	None Supplied	0.50	Brown clay and sand with gravel.
1370817	Plot 66	None Supplied	0.10	Brown clay and sand with gravel.
1370818	Plot 66	None Supplied	0.50	Brown clay and sand with gravel.

Analytical Report Number : 19-73550

Project / Site name: Deepcut - Parcel M1

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

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 disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
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	L038-PL	D	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
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.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In-house method based on BS1377 Part 2, 1990, Classification tests	L019-UK/PL	W	NONE
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 (skalar)	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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
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.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' 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 30oC.

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Analytical Report Number : 19-74553

Project / Site name:	Deepcut - Parcel M1	**Samples received on:**	28/11/2019
Your job number:	C-02035-C	**Samples instructed on:**	28/11/2019
Your order number:	POP033926	**Analysis completed by:**	Not complete
Report Issue Number:	1	**Report issued on:**	03/12/2019
Samples Analysed:	2 soil samples		

Signed:

Karolina Marek
Technical Reviewer (Reporting Team)

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

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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: 19-74553

Project / Site name: Deepcut - Parcel M1

Your Order No: POP033926

Lab Sample Number				1375917	1375918			
Sample Reference				Plot 61	Plot 61			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.10	0.50			
Date Sampled				27/11/2019	27/11/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	5.9	5.9			
Moisture Content	%	N/A	NONE	23	20			
Total mass of sample received	kg	0.001	NONE	1.3	1.4			
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected			
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.1	8.1			
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1			
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.082	0.19			
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.031	0.030			
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0			
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Phenanthrene	mg/kg	0.05	MCERTS	1.3	1.3			
Anthracene	mg/kg	0.05	MCERTS	0.20	0.22			
Fluoranthene	mg/kg	0.05	MCERTS	3.0	3.2			
Pyrene	mg/kg	0.05	MCERTS	2.9	3.0			
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.7	1.8			
Chrysene	mg/kg	0.05	MCERTS	1.4	1.6			
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.5	1.7			
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	1.2	0.99			
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.5	1.6			
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.81	0.87			
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.75	0.88			
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	16.2	17.1			
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.4	7.1			
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.28	0.28			
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	1.1			
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
Chromium (hexavalent)	mg/kg	1.2	MCERTS	1.4	< 1.2			
Chromium (III)	mg/kg	1	NONE	11	12			
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	13	12			
Copper (aqua regia extractable)	mg/kg	1	MCERTS	13	11			
Lead (aqua regia extractable)	mg/kg	1	MCERTS	60	55			
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3			
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	7.2	7.2			
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0			
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	18	18			
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	68	65			

The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 19-74553

Project / Site name: Deepcut - Parcel M1

* 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 *
1375917	Plot 61	None Supplied	0.10	Brown loam and clay with stones and vegetation.
1375918	Plot 61	None Supplied	0.50	Brown loam and clay with stones and vegetation.

Analytical Report Number : 19-74553

Project / Site name: Deepcut - Parcel M1

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

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 disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
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	L038-PL	D	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
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.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In-house method based on BS1377 Part 2, 1990, Classification tests	L019-UK/PL	W	NONE
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 (skalar)	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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
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.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' 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 30oC.

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Analytical Report Number : 19-76189-A

Replaces Analytical Report Number : 19-76189, issue no. 1

Project / Site name:	Deepcut - Parcel M1	**Samples received on:**	06/12/2019
Your job number:	C-02035-C	**Samples instructed on:**	06/12/2019
Your order number:	POP034121	**Analysis completed by:**	16/12/2019
Report Issue Number:	2	**Report issued on:**	17/12/2019
Samples Analysed:	4 soil samples		

Signed:

Zina Abdul Razzak
Senior Quality Specialist

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

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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: 19-76189-A

Project / Site name: Deepcut - Parcel M1

Your Order No: POP034121

Lab Sample Number				1384935	1384936	1384937	1384938	
Sample Reference				Plot 29A	Plot 29B	Plot 29C	Plot 29D	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				0.50	0.40	0.50	0.50	
Date Sampled				06/12/2019	06/12/2019	06/12/2019	06/12/2019	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	11	8.6	< 0.1	
Moisture Content	%	N/A	NONE	13	12	14	13	
Total mass of sample received	kg	0.001	NONE	1.6	1.5	1.5	1.6	
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.6	8.4	7.7	7.8	
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.18	0.27	0.17	0.24	
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.013	0.016	0.020	0.014	
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Phenanthrene	mg/kg	0.05	MCERTS	0.60	1.3	2.1	2.7	
Anthracene	mg/kg	0.05	MCERTS	0.16	0.36	0.28	0.59	
Fluoranthene	mg/kg	0.05	MCERTS	1.5	2.5	3.6	3.6	
Pyrene	mg/kg	0.05	MCERTS	1.5	2.5	3.3	3.7	
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.82	1.4	1.4	1.6	
Chrysene	mg/kg	0.05	MCERTS	0.71	1.1	1.7	1.5	
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.2	1.6	2.1	2.1	
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.38	0.69	0.96	0.60	
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.90	1.4	1.6	1.6	
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.51	0.74	0.87	0.87	
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.20	0.29	0.24	
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.57	0.79	0.96	1.0	
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	8.91	14.4	19.1	20.1	
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.7	6.1	6.3	6.0	
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.32	0.34	0.32	0.36	
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	0.6	0.5	0.7	
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	
Chromium (III)	mg/kg	1	NONE	12	12	13	13	
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	12	13	13	13	
Copper (aqua regia extractable)	mg/kg	1	MCERTS	18	15	12	11	
Lead (aqua regia extractable)	mg/kg	1	MCERTS	29	26	43	32	
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	6.0	6.7	6.6	6.8	
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	18	21	18	20	
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	42	44	54	47	

Analytical Report Number : 19-76189-A

Project / Site name: Deepcut - Parcel M1

* 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 *
1384935	Plot 29A	None Supplied	0.50	Brown clay and sand with gravel and vegetation.
1384936	Plot 29B	None Supplied	0.40	Brown clay and sand with stones.
1384937	Plot 29C	None Supplied	0.50	Brown clay and loam with vegetation and stones.
1384938	Plot 29D	None Supplied	0.50	Brown clay and sand with gravel and vegetation.

Analytical Report Number : 19-76189-A

Project / Site name: Deepcut - Parcel M1

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

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 disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
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	L038-PL	D	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
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.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In-house method based on BS1377 Part 2, 1990, Classification tests	L019-UK/PL	W	NONE
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 (skalar)	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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
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.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' 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 30oC.

Appendix D

Screening Tables

Assessment of Chemicals of Potential Concern to Human Health

Hydrock

All values in mg/kg unless otherwise stated								Soil Type											
								Location & Depth	Plot 29	Plot 30	Plot 31	Plot 32	Plot 61	Plot 62	Plot 63	Plot 64	Plot 65	Plot 66	Plot 68
Chemical of Potential Concern	**Lab. RL**	**No. Samples**	**Min. Value**	**Max. Value**	**No. Samples > or = GAC**	**GAC**	**US_{95}**	**Result of Significance Test**	**0.50**	**0.60**	**0.50**	**0.60**	**0.5**	**0.5**	**0.40**	**0.40**	**0.50**	**0.50**	**0.5**
Arsenic	1	11	3.5	7.6	0	37	6.9282715	POTENTIALLY SUITABLE FOR USE	5.2	4.8	4.9	4.7	7.1	3.5	7.6	6.2	4.8	4.7	5.6
Beryllium	0.06	11	0.28	0.48	0	73	0.4105196	POTENTIALLY SUITABLE FOR USE	0.35	0.3	0.31	0.34	0.28	0.31	0.48	0.38	0.28	0.28	0.35
Boron	0.2	11	0.4	1.1	0	300	0.9907875	POTENTIALLY SUITABLE FOR USE	0.5	0.6	0.9	0.7	1.1	0.4	0.6	0.7	0.9	0.8	0.8
Cadmium	0.2	11	0.2	0.2	0	14	0.2	POTENTIALLY SUITABLE FOR USE	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Chromium (III)	1	11	12	19	0	890	16.50217	POTENTIALLY SUITABLE FOR USE	13	13	13	13	12	12	19	15	14	15	14
Chromium (VI)	1.2	11	1.2	1.2	0	6.1	1.2	POTENTIALLY SUITABLE FOR USE	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Copper	1	11	4.8	25	0	2500	21.116527	POTENTIALLY SUITABLE FOR USE	12	19	9.4	21	11	4.8	25	13	12	10	9.6
Lead	2	11	12	55	0	200	43.328035	POTENTIALLY SUITABLE FOR USE	27	31	31	37	55	12	28	29	22	20	28
Mercury, inorganic	0.3	11	0.3	0.3	0	170	0.3	POTENTIALLY SUITABLE FOR USE	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Nickel	2	11	4.8	9.4	0	130	9.2701306	POTENTIALLY SUITABLE FOR USE	6.7	7	5.8	6.3	7.2	4.8	9.3	9.4	8	9.1	6.7
Selenium	1	11	1	1	0	360	1		1	1	1	1	1	1	1	1	1	1	1
Vanadium	1	11	16	27	0	410	23.804783	POTENTIALLY SUITABLE FOR USE	19	16	19	19	18	18	27	23	18	17	22
Zinc	2	11	20	65	0	3900	69.829818	POTENTIALLY SUITABLE FOR USE	50	62	56	64	65	20	59	47	63	44	48
Cyanide (free)	1	11	1	1	0	790	1		1	1	1	1	1	1	1	1	1	1	1
Phenol (total)	2	11	1	1	0	290	1		1	1	1	1	1	1	1	1	1	1	1
Acenaphthene	0.05	11	0.05	1	0	220	0.5862685	POTENTIALLY SUITABLE FOR USE	1	0.05	0.27	0.05	0.05	0.05	0.05	0.05	0.46	0.05	0.05
Acenaphthylene	0.05	11	0.05	0.73	0	180	0.3813455	POTENTIALLY SUITABLE FOR USE	0.73	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Anthracene	0.05	11	0.05	2.7	0	2400	1.4676798	POTENTIALLY SUITABLE FOR USE	2.7	0.18	0.46	0.14	0.22	0.05	0.09	0.24	0.71	0.05	0.18
Benz(a)anthracene	0.05	11	0.23	7.3	1	4.2	4.125527	POTENTIALLY SUITABLE FOR USE	7.3	1.1	1.4	0.83	1.8	0.29	0.61	0.98	1.5	0.23	0.79
Benzo(a)pyrene	0.05	11	0.21	5.7	2	1.5	3.3215851	FURTHER ASSESSMENT REQUIRED	5.7	0.83	1.4	0.81	1.6	0.21	0.68	0.96	1.4	0.25	0.77
Benzo(b)fluoranthene	0.05	11	0.24	7.1	0	7.6	4.0448885	POTENTIALLY SUITABLE FOR USE	7.1	1.1	1.5	1.2	1.7	0.24	0.69	0.88	1.2	0.24	1.2
Benzo(ghi)perylene	0.05	11	0.05	3.3	0	64	1.9379001	POTENTIALLY SUITABLE FOR USE	3.3	0.72	0.93	0.65	0.88	0.05	0.36	0.45	0.65	0.05	0.43
Benzo(k)fluoranthene	0.05	11	0.14	3.4	0	12	2.0139588	POTENTIALLY SUITABLE FOR USE	3.4	0.68	0.91	0.48	0.99	0.14	0.33	0.55	1	0.16	0.33
Chrysene	0.05	11	0.2	7.6	0	7.7	4.3876941	POTENTIALLY SUITABLE FOR USE	7.6	1.4	2.2	1.4	1.6	0.21	0.55	0.82	1.6	0.2	0.87
Dibenz(a,h)anthracene	0.05	11	0.05	0.43	0	1.1	0.2440012	POTENTIALLY SUITABLE FOR USE	0.43	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.14	0.05	0.05
Fluoranthene	0.05	11	0.34	18	0	290	9.8957597	POTENTIALLY SUITABLE FOR USE	18	1.9	3.2	1.7	3.2	0.37	1	1.8	3.7	0.34	1.5
Fluorene	0.05	11	0.05	1.6	0	170	0.8432263	POTENTIALLY SUITABLE FOR USE	1.6	0.05	0.31	0.05	0.05	0.05	0.05	0.05	0.27	0.05	0.05
Indeno(1,2,3,cd)pyrene	0.05	11	0.05	2.4	0	4.3	1.4667369	POTENTIALLY SUITABLE FOR USE	2.4	0.56	0.79	0.42	0.87	0.05	0.28	0.39	0.6	0.05	0.37
Naphthalene	0.05	11	0.05	0.46	0	2.2	0.2497818	POTENTIALLY SUITABLE FOR USE	0.46	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Phenanthrene	0.05	11	0.18	17	0	97	9.0368631	POTENTIALLY SUITABLE FOR USE	17	0.92	2.5	0.96	1.3	0.18	0.46	1.3	3.5	0.2	0.72
Pyrene	0.05	11	0.22	14	0	620	7.8082899	POTENTIALLY SUITABLE FOR USE	14	1.7	2.7	1.5	3	0.31	1	1.4	3	0.22	1.3
Asbestos identified	Y/N								N	N	N	N	N	N	N	N	N	N	N
FOC (dimensionless)	0.016618	**(mean)**							0.016	0.018	0.019	0.024	0.03	0.016	0.014	0.012	0.0095	0.0063	0.018
SOM (calculated)	2.86%	**(mean)**							2.76%	3.10%	3.28%	4.14%	5.17%	2.76%	2.41%	2.07%	1.64%	1.09%	3.10%
pH (su)	7.7	**(mean)**							7.8	7.5	7.7	7.2	8.1	7	7.9	8	8	8	7.8

Risk parameter: Human health - residential with plant uptake (1%SOM)
Data set: Subsoil
Client: CALA Homes Ltd
Site: Deepcut - Parcel M1
Job no.: C-02035
Lab. report no(s).: 19-71583-2, 19-73550-1 & 19-754553-1

Legend: Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
Values in red are equal to, or greater than, the generic assessment criterion (GAC).
MG denotes Made Ground
NAT denotes natural ground

Assessment of Chemicals of Potential Concern to Plant Life

Hydrock

All values in mg/kg unless otherwise stated								Soil Type												
								Location & Depth	Plot 29	Plot 30	Plot 31	Plot 32	Plot 61	Plot 62	Plot 63	Plot 64	Plot 65	Plot 66	Plot 68	
Chemical of Potential Concern	**Lab. RL**	**No. Samples**	**Min. Value**	**Max. Value**	**No. Samples > or = GAC**	**GAC**	**US_{95}**	**Result of Significance Test**	**0.50**	**0.60**	**0.50**	**0.60**	**0.5**	**0.5**	**0.40**	**0.40**	**0.50**	**0.50**	**0.5**	
Arsenic	1	11	3.5	7.6	0	250	6.928272	POTENTIALLY SUITABLE FOR USE	5.2	4.8	4.9	4.7	7.1	3.5	7.6	6.2	4.8	4.7	5.6	
Boron	0.2	11	0.4	1.1	0	3	0.990787	POTENTIALLY SUITABLE FOR USE	0.5	0.6	0.9	0.7	1.1	0.4	0.6	0.7	0.9	0.8	0.8	
Chromium (III)	1	11	12	19	0	400	16.50217	POTENTIALLY SUITABLE FOR USE	13	13	13	13	12	12	19	15	14	15	14	
Chromium (VI)	1.2	11	1.2	1.2	0	25	1.2	POTENTIALLY SUITABLE FOR USE	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	
Copper	1	11	4.8	25	0	135	21.11653	POTENTIALLY SUITABLE FOR USE	12	19	9.4	21	11	4.8	25	13	12	10	9.6	
Nickel	2	11	4.8	9.4	0	75	9.270131	POTENTIALLY SUITABLE FOR USE	6.7	7	5.8	6.3	7.2	4.8	9.3	9.4	8	9.1	6.7	
Zinc	2	11	20	65	0	300	69.82982	POTENTIALLY SUITABLE FOR USE	50	62	56	64	65	20	59	47	63	44	48	
	Mean																			
pH (su)	7.7								7.8	7.5	7.7	7.2	8.1	7	7.9	8	8	8	7.8	

Risk parameter: Plant life pH 7
Data set: Subsoil
Client: CALA Homes Ltd
Site: Deepcut - Parcel M1
Job no.: C-02035
Lab. report no(s).: 19-71583-2, 19-73550-1 & 19-754553-1

Legend: Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
Values in red are equal to, or greater than, the generic assessment criterion (GAC).
MG denotes Made Ground
NAT denotes natural ground

Assessment of Chemicals of Potential Concern to Human Health

Hydrock

All values in mg/kg unless otherwise stated								Soil Type	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS
								Location & Depth	Plot 29	Plot 30	Plot 31	Plot 32	Plot 61	Plot 62	Plot 63	Plot 64	Plot 65	Plot 66	Plot 68
Chemical of Potential Concern	**Lab. RL**	**No. Samples**	**Min. Value**	**Max. Value**	**No. Samples > or = GAC**	**GAC**	**US_{95}**	**Result of Significance Test**	**0.1**	**0.2**	**0.1**	**0.2**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**		**0.1**
Arsenic	1	11	4.6	6.5	0	37	6.5381236	POTENTIALLY SUITABLE FOR USE	4.8	4.8	4.6	6.4	6.4	5.4	5.5	6.1	5.7	5.8	6.5
Beryllium	0.06	11	0.2	0.45	0	73	0.4171316	POTENTIALLY SUITABLE FOR USE	0.27	0.26	0.2	0.22	0.28	0.27	0.43	0.36	0.45	0.35	0.33
Boron	0.2	11	0.5	1	0	300	0.9520655	POTENTIALLY SUITABLE FOR USE	0.7	0.8	0.6	0.8	0.9	0.7	0.9	0.7	0.8	1	0.5
Cadmium	0.2	11	0.2	0.2	0	14	0.2	POTENTIALLY SUITABLE FOR USE	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Chromium (III)	1	11	8.5	17	0	890	15.956475	POTENTIALLY SUITABLE FOR USE	12	10	11	8.5	11	9.6	15	14	17	16	11
Chromium (VI)	1.2	11	1.2	1.4	0	6.1	1.3122833	POTENTIALLY SUITABLE FOR USE	1.2	1.2	1.2	1.3	1.4	1.2	1.2	1.2	1.2	1.2	1.2
Copper	1	11	9.4	18	0	2500	16.253701	POTENTIALLY SUITABLE FOR USE	9.8	11	9.4	9.7	13	18	11	12	11	18	12
Lead	2	11	23	63	0	200	64.319548	POTENTIALLY SUITABLE FOR USE	50	56	48	63	60	53	39	33	25	23	56
Mercury, inorganic	0.3	11	0.3	0.3	0	170	0.3	POTENTIALLY SUITABLE FOR USE	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Nickel	2	11	4.6	9.7	0	130	9.145328	POTENTIALLY SUITABLE FOR USE	4.6	4.6	7.8	6.2	7.2	5.1	7.3	7	9.7	9.5	6.5
Selenium	1	11	1	1	0	360	1		1	1	1	1	1	1	1	1	1	1	1
Vanadium	1	11	13	23	0	410	22.210492	POTENTIALLY SUITABLE FOR USE	15	14	13	16	18	16	22	21	20	23	18
Zinc	2	11	45	73	0	3900	68.844743	POTENTIALLY SUITABLE FOR USE	52	55	45	53	68	56	73	58	47	59	66
Cyanide (free)	1	11	1	1	0	790	1		1	1	1	1	1	1	1	1	1	1	1
Phenol (total)	2	11	1	11	0	290	5.8727273	POTENTIALLY SUITABLE FOR USE	11	1	1	1	1	1	1	1	1	1	1
Acenaphthene	0.05	11	0.05	0.05	0	220	0.05	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Acenaphthylene	0.05	11	0.05	0.05	0	180	0.05	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Anthracene	0.05	11	0.05	0.25	0	2400	0.2563478	POTENTIALLY SUITABLE FOR USE	0.22	0.25	0.2	0.18	0.2	0.16	0.11	0.18	0.05	0.05	0.23
Benz(a)anthracene	0.05	11	0.24	2.2	0	4.2	2.131069	POTENTIALLY SUITABLE FOR USE	1.6	1.7	1.6	1.2	1.7	1.9	0.79	0.99	0.39	0.24	2.2
Benzo(a)pyrene	0.05	11	0.28	2.1	6	1.5	2.0070279	FURTHER ASSESSMENT REQUIRED	1.6	1.7	1.5	1	1.5	1.8	1	0.94	0.52	0.28	2.1
Benzo(b)fluoranthene	0.05	11	0.25	2.9	0	7.6	2.6715493	POTENTIALLY SUITABLE FOR USE	2.2	2.1	1.9	1.4	1.5	2.5	0.96	0.91	0.45	0.25	2.9
Benzo(ghi)perylene	0.05	11	0.05	1.3	0	64	1.2305259	POTENTIALLY SUITABLE FOR USE	0.88	1.3	0.97	0.85	0.75	0.97	0.47	0.49	0.27	0.05	1.1
Benzo(k)fluoranthene	0.05	11	0.27	1.2	0	12	1.1566609	POTENTIALLY SUITABLE FOR USE	0.64	1.2	0.84	0.87	1.2	0.63	0.54	0.7	0.33	0.27	1
Chrysene	0.05	11	0.31	2.4	0	7.7	2.1483494	POTENTIALLY SUITABLE FOR USE	1.3	2.4	1.7	1.9	1.4	1.4	0.83	0.8	0.45	0.31	1.8
Dibenz(a,h)anthracene	0.05	11	0.05	0.37	0	1.1	0.2296532	POTENTIALLY SUITABLE FOR USE	0.21	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.37
Fluoranthene	0.05	11	0.37	3.8	0	290	3.7045124	POTENTIALLY SUITABLE FOR USE	2.7	3.1	2.7	2.5	3	3.1	1.5	1.6	0.72	0.37	3.8
Fluorene	0.05	11	0.05	0.05	0	170	0.05	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Indeno(1,2,3,cd)pyrene	0.05	11	0.05	1.1	0	4.3	1.065405	POTENTIALLY SUITABLE FOR USE	0.77	1	0.7	0.58	0.81	0.9	0.4	0.39	0.23	0.05	1.1
Naphthalene	0.05	11	0.05	0.05	0	2.2	0.05	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Phenanthrene	0.05	11	0.05	1.4	0	97	1.4836595	POTENTIALLY SUITABLE FOR USE	0.97	1.3	0.94	1.3	1.3	1	0.49	0.7	0.25	0.05	1.4
Pyrene	0.05	11	0.24	3.4	0	620	3.3854809	POTENTIALLY SUITABLE FOR USE	2.5	2.8	2.4	2.1	2.9	2.8	1.3	1.3	0.52	0.24	3.4
Asbestos identified	Y/N								N	N	N	Y	N	N	N	N	N	N	N
FOC (dimensionless)	0.026755	**(mean)**							0.016	0.04	0.038	0.042	0.031	0.04	0.025	0.013	0.0099	0.0094	0.03
SOM (calculated)	4.61%	**(mean)**							2.76%	6.90%	6.55%	7.24%	5.34%	6.90%	4.31%	2.24%	1.71%	1.62%	5.17%
pH (su)	7.5	**(mean)**							7.8	7.1	5.9	7.3	7.1	6.9	7.4	9.4	7.8	7.9	7.5

Risk parameter: Human health - residential with plant uptake (1%SOM)
Data set: Topsoil
Client: CALA Homes Ltd
Site: Deepcut - Parcel M1
Job no.: C-02035
Lab. report no(s).: 19-71583-2, 19-73550-1 & 19-74553-1

Legend: Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
Values in red are equal to, or greater than, the generic assessment criterion (GAC).
MG denotes Made Ground
NAT denotes natural ground
TS denotes Topsoil

Assessment of Chemicals of Potential Concern to Plant Life

Hydrock

All values in mg/kg unless otherwise stated								Soil Type	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	
								Location & Depth	Plot 29	Plot 30	Plot 31	Plot 32	Plot 61	Plot 62	Plot 63	Plot 64	Plot 65	Plot 66	Plot 68	
Chemical of Potential Concern	**Lab. RL**	**No. Samples**	**Min. Value**	**Max. Value**	**No. Samples > or = GAC**	**GAC**	**US_{95}**	**Result of Significance Test**	**0.1**	**0.2**	**0.1**	**0.2**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**		**0.1**	
Arsenic	1	11	4.6	6.5	0	250	6.538124	POTENTIALLY SUITABLE FOR USE	4.8	4.8	4.6	6.4	6.4	5.4	5.5	6.1	5.7	5.8	6.5	
Boron	0.2	11	0.5	1	0	3	0.952065	POTENTIALLY SUITABLE FOR USE	0.7	0.8	0.6	0.8	0.9	0.7	0.9	0.7	0.8	1	0.5	
Chromium (III)	1	11	8.5	17	0	400	15.95647	POTENTIALLY SUITABLE FOR USE	12	10	11	8.5	11	9.6	15	14	17	16	11	
Chromium (VI)	1.2	11	1.2	1.4	0	25	1.312283	POTENTIALLY SUITABLE FOR USE	1.2	1.2	1.2	1.3	1.4	1.2	1.2	1.2	1.2	1.2	1.2	
Copper	1	11	9.4	18	0	135	16.2537	POTENTIALLY SUITABLE FOR USE	9.8	11	9.4	9.7	13	18	11	12	11	18	12	
Nickel	2	11	4.6	9.7	0	75	9.145328	POTENTIALLY SUITABLE FOR USE	4.6	4.6	7.8	6.2	7.2	5.1	7.3	7	9.7	9.5	6.5	
Zinc	2	11	45	73	0	300	68.84474	POTENTIALLY SUITABLE FOR USE	52	55	45	53	68	56	73	58	47	59	66	
	Mean																			
pH (su)	7.5								7.8	7.1	5.9	7.3	7.1	6.9	7.4	9.4	7.8	7.9	7.5	

Risk parameter: Plant life pH 7
Data set: Topsoil
Client: CALA Homes Ltd
Site: Deepcut - Parcel M1
Job no.: C-02035
Lab. report no(s).: 19-71583-2, 19-73550-1 & 19-74553-1

Legend: Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
Values in red are equal to, or greater than, the generic assessment criterion (GAC).
MG denotes Made Ground
NAT denotes natural ground
TS denotes Topsoil

Assessment of Chemicals of Potential Concern to Human Health

Hydrock

All values in mg/kg unless otherwise stated							Soil Type										
							Location & Depth	Plot 29A	Plot 29B	Plot 29C	Plot 29D						
Chemical of Potential Concern	**Lab. RL**	**No. Samples**	**Min. Value**	**Max. Value**	**No. Samples > or = GAC**	**GAC**	**Result of Significance Test**	**0.5**	**0.4**	**0.5**	**0.5**						
Arsenic	1	4	5.7	6.3	0	37	POTENTIALLY SUITABLE FOR USE	5.7	6.1	6.3	6						
Beryllium	0.06	4	0.32	0.36	0	73	POTENTIALLY SUITABLE FOR USE	0.32	0.34	0.32	0.36						
Boron	0.2	4	0.5	0.7	0	300	POTENTIALLY SUITABLE FOR USE	0.5	0.6	0.5	0.7						
Cadmium	0.2	4	0.2	0.2	0	14		0.2	0.2	0.2	0.2						
Chromium (III)	1	4	12	13	0	890	POTENTIALLY SUITABLE FOR USE	12	12	13	13						
Chromium (VI)	1.2	4	1.2	1.2	0	6.1		1.2	1.2	1.2	1.2						
Copper	1	4	11	18	0	2500	POTENTIALLY SUITABLE FOR USE	18	15	12	11						
Lead	2	4	26	43	0	200	POTENTIALLY SUITABLE FOR USE	29	26	43	32						
Mercury, inorganic	0.3	4	0.3	0.3	0	170		0.3	0.3	0.3	0.3						
Nickel	2	4	6	6.8	0	130	POTENTIALLY SUITABLE FOR USE	6	6.7	6.6	6.8						
Selenium	1	4	1	1	0	360		1	1	1	1						
Vanadium	1	4	18	21	0	410	POTENTIALLY SUITABLE FOR USE	18	21	18	20						
Zinc	2	4	42	54	0	3900	POTENTIALLY SUITABLE FOR USE	42	44	54	47						
Cyanide (free)	1	4	1	1	0	790		1	1	1	1						
Phenol (total)	2	4	1	1	0	290		1	1	1	1						
Acenaphthene	0.05	4	0.05	0.05	0	220		0.05	0.05	0.05	0.05						
Acenaphthylene	0.05	4	0.05	0.05	0	180		0.05	0.05	0.05	0.05						
Anthracene	0.05	4	0.16	0.59	0	2400	POTENTIALLY SUITABLE FOR USE	0.16	0.36	0.28	0.59						
Benz(a)anthracene	0.05	4	0.82	1.6	0	4.2	POTENTIALLY SUITABLE FOR USE	0.82	1.4	1.4	1.6						
Benzo(a)pyrene	0.05	4	0.9	1.6	2	1.5	FURTHER ASSESSMENT REQUIRED	0.9	1.4	1.6	1.6						
Benzo(b)fluoranthene	0.05	4	1.2	2.1	0	7.6	POTENTIALLY SUITABLE FOR USE	1.2	1.6	2.1	2.1						
Benzo(ghi)perylene	0.05	4	0.57	1	0	64	POTENTIALLY SUITABLE FOR USE	0.57	0.79	0.96	1						
Benzo(k)fluoranthene	0.05	4	0.38	0.96	0	12	POTENTIALLY SUITABLE FOR USE	0.38	0.69	0.96	0.6						
Chrysene	0.05	4	0.71	1.7	0	7.7	POTENTIALLY SUITABLE FOR USE	0.71	1.1	1.7	1.5						
Dibenz(a,h)anthracene	0.05	4	0.05	0.29	0	1.1	POTENTIALLY SUITABLE FOR USE	0.05	0.2	0.29	0.24						
Fluoranthene	0.05	4	1.5	3.6	0	290	POTENTIALLY SUITABLE FOR USE	1.5	2.5	3.6	3.6						
Fluorene	0.05	4	0.05	0.05	0	170		0.05	0.05	0.05	0.05						
Indeno(1,2,3,cd)pyrene	0.05	4	0.51	0.87	0	4.3	POTENTIALLY SUITABLE FOR USE	0.51	0.74	0.87	0.87						
Naphthalene	0.05	4	0.05	0.05	0	2.2		0.05	0.05	0.05	0.05						
Phenanthrene	0.05	4	0.6	2.7	0	97	POTENTIALLY SUITABLE FOR USE	0.6	1.3	2.1	2.7						
Pyrene	0.05	4	1.5	3.7	0	620	POTENTIALLY SUITABLE FOR USE	1.5	2.5	3.3	3.7						
Asbestos identified	Y/N							N	N	N	N						
FOC (dimensionless)	0.01575	**(mean)**						0.013	0.016	0.02	0.014						
SOM (calculated)	2.72%	**(mean)**						2.24%	2.76%	3.45%	2.41%						
pH (su)	7.9	**(mean)**						7.6	8.4	7.7	7.8						

Risk parameter: **Human health - residential with plant uptake (1%SOM)**
Data set: Subsoil
Client: CALA Homes Ltd
Site: Deepcut - Parcel M1
Job no.: C-02035-C
Lab. report no(s).: 19-76189-2A

Legend: Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
Values in red are equal to, or greater than, the generic assessment criterion (GAC).
MG denotes Made Ground
NAT denotes natural ground

Assessment of Chemicals of Potential Concern to Plant Life

Hydrock

							Soil Type						
	All values in mg/kg unless otherwise stated						Location & Depth	Plot 29A	Plot 29B	Plot 29C	Plot 29D		
Chemical of Potential Concern	**Lab. RL**	**No. Samples**	**Min. Value**	**Max. Value**	**No. Samples > or = GAC**	**GAC**	**Result of Significance Test**	**0.5**	**0.4**	**0.5**	**0.5**		
Arsenic	1	4	5.7	6.3	0	250	POTENTIALLY SUITABLE FOR USE	5.7	6.1	6.3	6		
Boron	0.2	4	0.5	0.7	0	3	POTENTIALLY SUITABLE FOR USE	0.5	0.6	0.5	0.7		
Chromium (III)	1	4	12	13	0	400	POTENTIALLY SUITABLE FOR USE	12	12	13	13		
Chromium (VI)	1.2	4	1.2	1.2	0	25		1.2	1.2	1.2	1.2		
Copper	1	4	11	18	0	135	POTENTIALLY SUITABLE FOR USE	18	15	12	11		
Nickel	2	4	6	6.8	0	75	POTENTIALLY SUITABLE FOR USE	6	6.7	6.6	6.8		
Zinc	2	4	42	54	0	300	POTENTIALLY SUITABLE FOR USE	42	44	54	47		
	Mean												
pH (su)	7.9							7.6	8.4	7.7	7.8		

Risk parameter: Plant life pH 7
Data set: Subsoil
Client: CALA Homes Ltd
Site: Deepcut - Parcel M1
Job no.: C-02035-C
Lab. report no(s).: 19-76189-2A

Legend: Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
Values in red are equal to, or greater than, the generic assessment criterion (GAC).
MG denotes Made Ground
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