TIM O'HARE ASSOCIATES
SOIL & LANDSCAPE CONSULTANCY

Mr Jason Lock
Boughton Loam Ltd
Telford Way Industrial Estate
Telford Way
Kettering
Northamptonshire NN16 8UN

15th January 2025
Our Ref: TOHA/25/1658/1/SS
Your Ref: PO 9765

Dear Sirs

Topsoil Analysis Report: Intensive Roof Garden Substrate

We have completed the analysis of the soil sample recently submitted, referenced *IN1 Green Roof Substrate,* and have pleasure reporting our findings.

The purpose of the analysis was to determine the suitability of the material for use as an intensive lightweight substrate in a rooftop or podium garden environment.

This report presents the results of analysis for the sample submitted to our office, and it should be considered 'indicative' of the topsoil source. The report and results should therefore not be used by third parties as a means of verification or validation testing or waste designation purposes, especially after the topsoil has left the Boughton Loam Ltd site.

SAMPLE EXAMINATION

The sample was described as a dark brown (Munsell Colour 10YR 3/3), dry, friable to non-plastic, slightly calcareous SAND with a single grain structure. The sample was free of stone-sized material, with the exception of frequent lightweight expanded clay aggregates (leca) particles. The sample contained a moderate proportion of organic fines and occasional woody fragments. No unusual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.

Plate 1: IN1 Green Roof Substrate Sample

ANALYTICAL SCHEDULE

The sample was submitted to a UKAS and MCERTS accredited laboratory for a range of physical and chemical tests to confirm the composition and fertility of the soil, and the concentration of selected potential contaminants. The following parameters were determined:

- detailed particle size analysis (5 sands, silt, clay);
- stone content (2-20mm, 20-50mm, >50mm);
- saturated hydraulic conductivity;
- bulk density (as received, saturated @ field capacity);
- pH and electrical conductivity values;
- exchangeable sodium percentage;
- major plant nutrients (N, P, K, Mg);
- organic matter content;
- C:N ratio;
- heavy metals (As, B, Cd, Cr, Cu, Pb, Hg, Ni, Se, Zn);
- total cyanide and total (mono) phenols;
- speciated PAHs (US EPA16 suite);
- aromatic and aliphatic TPH (C5-C35 banding);
- benzene, toluene, ethylbenzene, xylene (BTEX).

The results are presented on the attached Certificate of Analysis and an interpretation of the results is given below.

RESULTS OF ANALYSIS

Particle Size Analysis and Stone Content

The less than 2mm fraction fell into the *sand* texture class, with a predominance of medium sand (0.25-0.50mm). This indicates a narrow overall particle size distribution, which is beneficial for roof garden environments as good porosity levels are usually maintained in a consolidated state and the risk of particle interpacking is minimised.

The 'stone' sized fraction (>2mm) of the sample was very low (by mass), and comprised entirely of lightweight expanded clay aggregate (leca) up to 20mm in diameter. The proportion of stone sized particles recorded would be considered acceptable for an intensive roof garden substrate.

Saturated Hydraulic Conductivity and Bulk Density

The saturated hydraulic conductivity of the sample was high (143 mm/hour) and the soil would be described as 'free-draining'. This indicates that the substrate is sufficiently permeable and should demonstrate adequate drainage performance for use in rooftop or podium garden environments. Soils used in these environments need to have satisfactory drainage performance to avoid stagnation (and therefore excess weight) and to enable efficient conveyance of water into the drainage system. The soil is free-draining and may therefore benefit from additional irrigation input in dry periods, depending on the nature of the recipient scheme.

The sample displayed a bulk density at Field Capacity of 1.55 Mg/m^3, which is reasonably low compared to that of standard topsoil. The suitability of the bulk density result should be confirmed by the project engineer for the recipient site.

pH and Electrical Conductivity Values

The sample was strongly alkaline in reaction (pH 8.3). This pH value would be considered suitable for general landscape purposes providing species with a wide pH tolerance or those known to prefer alkaline soils are selected for planting, turfing and seeding.

The electrical conductivity (salinity) value (water extract) was moderately high; however, the exchangeable sodium percentage was low, indicating low sodium risk. The source of the elevated soluble salts in this instance is likely to be from soluble potassium (see comments below).

The electrical conductivity value by $CaSO_4$ extract (3833 µS/cm) exceeded our maximum recommended value (3300 µS/cm).

Organic Matter and Fertility Status

The sample was adequate to well supplied with organic matter and major plant nutrients. The sample contained a high level of extractable potassium (2158 mg/l) that exceed our recommended value (1500 mg/l).

High potassium levels such as that found in this sample can also have an antagonistic effect on other soil nutrients, particularly magnesium. This can reduce nutrient uptake, leading to plant stress, particularly for establishing specimens.

Potential Contaminants

With reference to *BS3882:2015 - Table 1*: Notes 3 and 4, there is a requirement to confirm levels of potential contaminants in relation to the topsoil's proposed end use. This includes human health, environmental protection and metals considered toxic to plants. In the absence of site-specific assessment criteria, the concentrations that affect human health have been compared with the *residential with homegrown produce* land use in the Suitable For Use Levels (S4ULs) presented in *The LQM/CIEH S4ULs for Human Health Risk Assessment* (2015) and the DEFRA SP1010: *Development of Category 4 Screening Levels* (C4SLs) *for Assessment of Land Affected by Contamination – Policy Companion Document* (2014).

Of the potential contaminants determined, none was found at levels that exceeded their guideline values.

Phytotoxic Contaminants

Of the phytotoxic (toxic to plants) contaminants determined (copper, nickel, zinc), none was found at levels that exceeded the maximum permissible levels specified in *BS3882:2015 – Table 1*.

CONCLUSION

The purpose of the analysis was to determine the suitability of the material for use as an intensive lightweight substrate in a roof garden or podium landscape environment.

From the soil examination and subsequent laboratory analysis, the sample was described as a strongly alkaline, saline, slightly calcareous sand with a weakly developed structure and frequent 'leca' particles. The sample was found to be free draining. The sample was adequately to well supplied with organic matter and major plant nutrients, with a high level of extractable potassium. Of the potential contaminants determined, none exceeded their respective guideline values.

Based on our findings, the substrate represented by this sample appears to be a little rich on account of its high potassium content and slightly elevated electrical conductivity. The source of the elevated potassium content could be associated with the proportion and/or the type of compost in the blend. Potassium is highly soluble, and the level is likely to fall when the material is wetted by rain or irrigation water. However, in this instance we recommend reviewing the quality and quantity of compost that has been used.

We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if we can be of further assistance.

Yours faithfully

H.MacRae

A.Cross

Harriet MacRae
BSc MSc
Soil Scientist

Aaron Cross
BSc MSc MISoilSci
Senior Soil Scientist

For & on behalf of Tim O'Hare Associates LLP

TIM O'HARE ASSOCIATES
SOIL & LANDSCAPE CONSULTANCY

Client:	**Boughton Loam Ltd**
Project:	**Intensive Roof Garden Substrate**
Job:	**Topsoil Analysis**
Date:	**15/01/2025**
Job Ref No:	**TOHA/25/1658/1/SS**

Sample Reference			**IN1 Green Roof Substrate**
		Accreditation	
Clay (<0.002mm)	%	UKAS	4
Silt (0.002-0.063mm)	%	UKAS	7
Very Fine Sand (0.05-0.15mm)	%	UKAS	7
Fine Sand (0.15-0.25mm)	%	UKAS	20
Medium Sand (0.25-0.50mm)	%	UKAS	45
Coarse Sand (0.50-1.0mm)	%	UKAS	15
Very Coarse Sand (1.0-2.0mm)	%	UKAS	2
Total Sand (0.05-2.0mm)	%	UKAS	89
Texture Class (UK Classification)	--	UKAS	S
Stones (2-20mm)	% DW	GLP	0
Stones (20-50mm)	% DW	GLP	0
Stones (>50mm)	% DW	GLP	0
Saturated Hydraulic Conductivity (m)	mm/hr	A2LA	143
Bulk Density (as Received)	Mg/m^3	UKAS	1.29
Bulk Density (Saturated @ Field Capacity)	Mg/m^3	UKAS	1.55
pH Value (1:2.5 water extract)	units	UKAS	8.3
Electrical Conductivity (1:2.5 water extract)	uS/cm	UKAS	1576
Electrical Conductivity (1:2 $CaSO_4$ extract)	uS/cm	UKAS	3833
Exchangeable Sodium Percentage	%	UKAS	3.2
Organic Matter (LOI)	%	UKAS	5.4
Total Nitrogen (Dumas)	%	UKAS	0.20
C : N Ratio	ratio	UKAS	16
Extractable Phosphorus	mg/l	UKAS	93
Extractable Potassium	mg/l	UKAS	2158
Extractable Magnesium	mg/l	UKAS	143
Total Arsenic (As)	mg/kg	MCERTS	22
Total Cadmium (Cd)	mg/kg	MCERTS	< 0.2
Total Chromium (Cr)	mg/kg	MCERTS	33
Hexavalent Chromium (Cr VI)	mg/kg	MCERTS	< 1.8
Total Copper (Cu)	mg/kg	MCERTS	5
Total Lead (Pb)	mg/kg	MCERTS	7
Total Mercury (Hg)	mg/kg	MCERTS	< 0.3
Total Nickel (Ni)	mg/kg	MCERTS	12
Total Selenium (Se)	mg/kg	MCERTS	< 1.0
Total Zinc (Zn)	mg/kg	MCERTS	38
Water Soluble Boron (B)	mg/kg	MCERTS	3.3
Total Cyanide (CN)	mg/kg	MCERTS	< 1.0
Total (mono) Phenols	mg/kg	MCERTS	< 1.0
Naphthalene	mg/kg	MCERTS	< 0.05
Acenaphthylene	mg/kg	MCERTS	< 0.05
Acenaphthene	mg/kg	MCERTS	< 0.05
Fluorene	mg/kg	MCERTS	< 0.05
Phenanthrene	mg/kg	MCERTS	< 0.05
Anthracene	mg/kg	MCERTS	< 0.05
Fluoranthene	mg/kg	MCERTS	0.06
Pyrene	mg/kg	MCERTS	0.05
Benz(a)anthracene	mg/kg	MCERTS	< 0.05
Chrysene	mg/kg	MCERTS	< 0.05
Benzo(b)fluoranthene	mg/kg	MCERTS	< 0.05
Benzo(k)fluoranthene	mg/kg	MCERTS	< 0.05
Benzo(a)pyrene	mg/kg	MCERTS	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	MCERTS	< 0.05
Dibenzo(a,h)anthracene	mg/kg	MCERTS	< 0.05
Benzo(g,h,i)perylene	mg/kg	MCERTS	< 0.05
Total PAHs (sum USEPA16)	mg/kg	MCERTS	< 0.80
Aliphatic TPH >C5 - C6	mg/kg	MCERTS	< 0.010
Aliphatic TPH >C6 - C8	mg/kg	MCERTS	< 0.010
Aliphatic TPH >C8 - C10	mg/kg	MCERTS	< 0.010
Aliphatic TPH >C10 - C12	mg/kg	MCERTS	< 1.0
Aliphatic TPH >C12 - C16	mg/kg	MCERTS	< 2.0
Aliphatic TPH >C16 - C21	mg/kg	MCERTS	< 8.0
Aliphatic TPH >C21 - C35	mg/kg	MCERTS	< 8.0
Aliphatic TPH (C5 - C35)	mg/kg	MCERTS	< 10
Aromatic TPH >C5 - C7	mg/kg	MCERTS	< 0.010
Aromatic TPH >C7 - C8	mg/kg	MCERTS	< 0.010
Aromatic TPH >C8 - C10	mg/kg	MCERTS	< 0.020
Aromatic TPH >C10 - C12	mg/kg	MCERTS	< 1.0
Aromatic TPH >C12 - C16	mg/kg	MCERTS	5
Aromatic TPH >C16 - C21	mg/kg	MCERTS	11
Aromatic TPH >C21 - C35	mg/kg	MCERTS	< 10
Aromatic TPH (C5 - C35)	mg/kg	MCERTS	16
Benzene	mg/kg	MCERTS	< 0.005
Toluene	mg/kg	MCERTS	< 0.005
Ethylbenzene	mg/kg	MCERTS	< 0.005
p & m-xylene	mg/kg	MCERTS	< 0.008
o-xylene	mg/kg	MCERTS	< 0.005
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	MCERTS	< 0.005

S = SAND

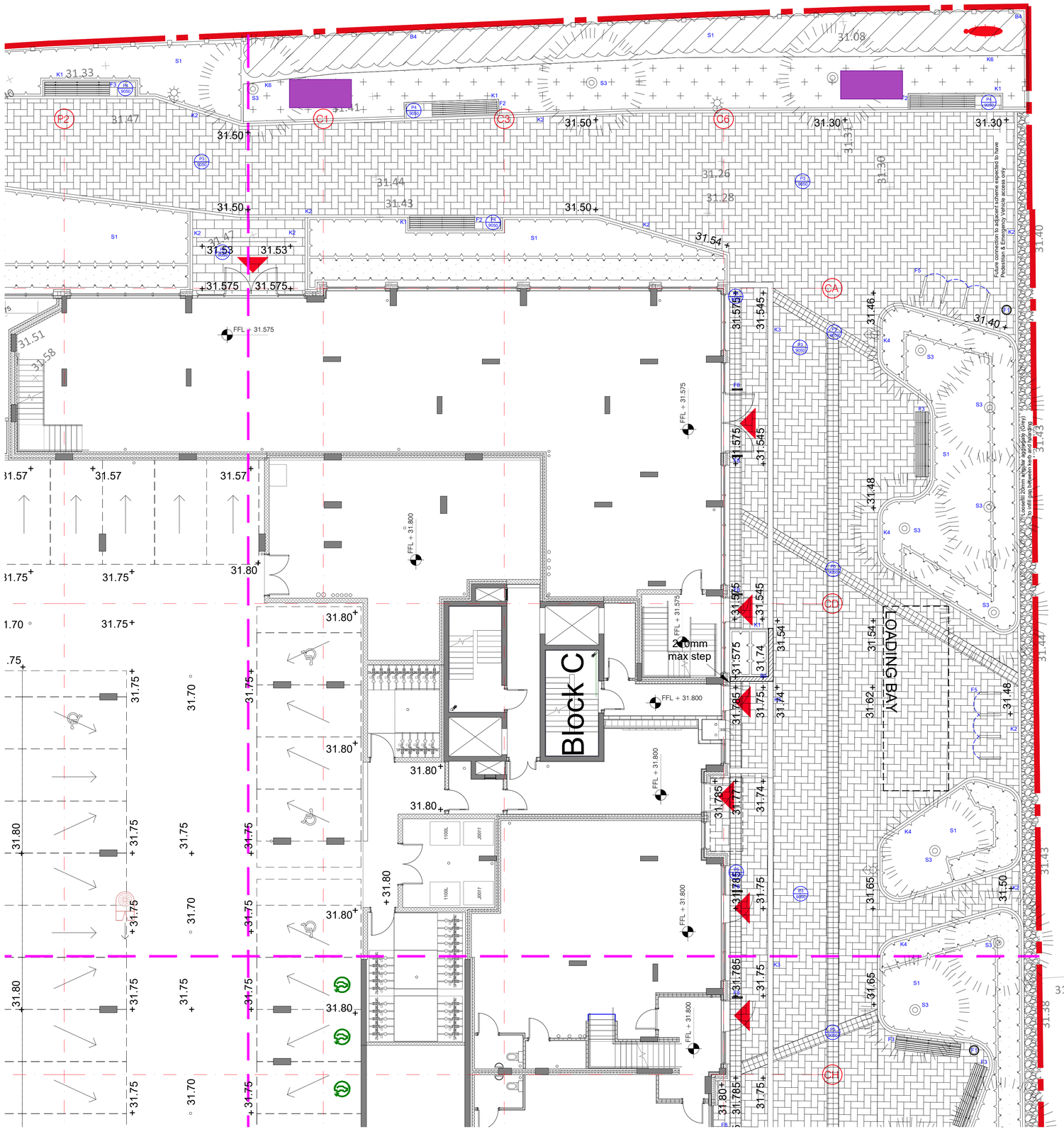
Visual Examination

The sample was described as a dark brown (Munsell Colour 10YR 3/3), dry, friable to non-plastic, slightly calcareous SAND with a single grain structure. The sample was free of stone-sized material, with the exception of frequent lightweight expanded clay aggregates (leca) particles. The sample contained a moderate proportion of organic fines and occasional woody fragments. No unusual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.

H.MacRae

Harriet MacRae
BSc MSc
Soil Scientist

Results of analysis should be read in conjunction with the report they were issued with



CDM Regulations 2015

ALL current drawings and specifications for the project must be read in conjunction with the Designer's Hazard and Environmental Assessment Record.

CDM 2015

notes

- The contractor is responsible for checking dimensions, tolerances and references.
- Any discrepancy to be verified with the Architect before proceeding with the works.
- Where an item is covered by drawings to different scales the larger scale drawing is to be worked to.
- Do not scale drawing. Figured dimensions to be worked to in all cases.

4 3 2 1 0 2 4 6m

KEY

Site Boundary

Adoptable Highway Boundary

Proposed tree (with paving - filled tree grille)
(Refer to Planting Plans for spec.)
Extent of below-ground geogrid root-crate system and vents indicated for hard landscaped areas

Proposed tree in soft landscape
(Refer to Planting Plans for spec.)

Proposed hedge planting with mulch layer

Proposed shrub planting with mulch layer

Proposed turf to Courtyard / Open Space

Proposed Wildflower Meadow

Hard Landscape *(For paving details below refer to CTC-LDA-XX-XX-DR-L-09050 / 09051)*

P1 - Vehicular carriageway.
Ref: Proposed Black DBM to Adoptable Standards.

P2 - Pedestrian carriageway.
Ref: Proposed Black DBM to Adoptable Standards.

P3 - PCC aggregate block for vehicle & pedestrian areas (permeable) -
Ref: Hydropave Fusion; Size: 200×100×80mm; 90° Herringbone
Colour: Silver (50%), Mid Grey (50%)

P4 - PCC aggregate block for vehicle thoroughfares & focal entrance areas (permeable) -
Ref: Hydropave Fusion; Size: 200×100×80mm; 90° Herringbone; Colour: Graphite

P5 - PCC Textured Sett to Decorative Banding with mortar bed & joints -
Ref: Hydropave Fusion; Size: 200×100×80mm; Staggered 50/50;
Colour: Silver (border), Mid Grey (middle)

P6 - PCC aggregate pavers to private frontages (non-permeable) -
Ref: Fusion Size: 600×300×60mm; Staggered stretcher 50/50
Colour: Silver (50%), Mid Grey (50%)

P7 - Resin bound gravel to railway 'aggregate' element
Ref: Addaset; Colour: 'Midnight Grey 6mm'

P8- Rubber mulch play surface to Central Play Courtyard
Ref: Rhino Mulch; Colour: 'Earth Tone'

P9 - Resin bound gravel to railway 'sleeper' element
Ref: Addaset; Colour: 'XXX 6mm'

Kerbs *(For all details below refer to CTC-LDA-XX-XX-DR-L-09052)*

K1 - PCC textured kerb - 75mm - (flush - transitions soft/hard, hard/hard)
K2 - PCC textured kerb - 125mm - (flush - transitions soft/hard, hard/hard)
K3 - PCC textured kerb - 255mm - (flush - transitions along vehicular routes)
K4 - PCC textured kerb - 125mm - (125mm upstand for planters)
K5 - PCC textured kerb - 255mm - (25mm upstand along car park access routes)
K6 - Timber edge to soft planting and grassed area
K7 - Bespoke Corten faux rail edge to railway feature.
PCC textured kerb colour to be silver, black specked

Boundary treatments *(For all details below refer to CTC-LDA-XX-XX-DR-L-09053)*

B1 - Metal railing to private frontages (1.2m high)
B2 - Secure railing & gate to semi-private space north of block A (2.1m high)
B3 - Metal gate to private frontages (1.2m high)
B4 - Timber post and 3 rail fence to canal edge (1.2m high)
B5 - Brick retaining wall (max. 450mm)

Street Furniture *(For all details below refer to CTC-LDA-XX-XX-DR-L-09054)*

F1 - Litter Bin: Powercoated galvanised steel (8no) *(Ref. S45 TA Litter Bin by OMOS)*
F2 - Timber bench to communal seating area (10no), 3m wide *(Ref. QUAY by Factory Furniture)*
F3 - Timber seat to communal seating area (12no), 3m wide *(Ref. QUAY by Factory Furniture)*
F4 - Timber cube bollard (informal seat) *(Ref. Timber cube by Woodscape)*
F5 - Sheffield style cycle hoop (21no) *(Ref. Sheffield stand by Broxap, PCC RAL 9004)*
F6 - Removable bollard (12no) *(Ref. Autopa, Removable Bollard 101mm)*
F7 - Static bollard (15no) *(Ref. Autopa, Fixed Bollard 114mm)*
F8 - Door guard (16no) *(Ref. Root fixed, PCC RAL 9004)*

Indicative Lighting (To be designed by Specialist Lighting Consultant)

Lighting columns (4m post)

Play Items *(For all details below refer to CTC-LDA-XX-XX-DR-L-09057 / 09058)*

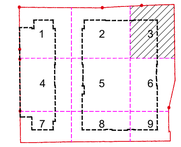
R1 - Obstacle Course Climbing Wall by HAGS
R2 - Equilibra Natural by HAGS
R3 - Somersault Volta by HAGS
R4 - Inclusive Roundabout Spinnee by HAGS
R5 - Swing Goro by HAGS
R6 - Clamber Stack 3 by HAGS

Ecological Enhancements at ground level
(Refer to Middlemarch Environmental Ltd Preliminary Ecological Appraisal - RT-MME-129768-01)

Partially buried, upstanding logs in a cluster for deadwood habitat for the benefit of invertebrates (3nos)

Note.
Site levels to Infrastructure Design Ltd design (Jan 2025)
Ref: CTC-ISS-XX-XX-DR-C-923051 C02

Levels shown alongside Clayton Road as per approved S278 drawing by LTP (July 2023)
Ref: LTP 3770 C2 01 01 REV E 11 07 23 Setting Out



FINAL	FINAL CONSTRUCTION ISSUE	16.05.25
C02	UPDATED ARCHITECT PLAN & HIGHWAYS PLAN RECEIVED	21.02.25
C01	ISSUED FOR CONSTRUCTION	14.02.25
P01	ISSUED FOR TEAM COORDINATION	15.12.23
REV	AMENDMENT	DATE

Client:

GREYSTAR™
The Global Leader in Rental Housing

Project:

CROWN TRADING CENTRE,
HAYES, LONDON

Title:

GENERAL ARRANGEMENT 03

Scale:
1 : 100 | A1

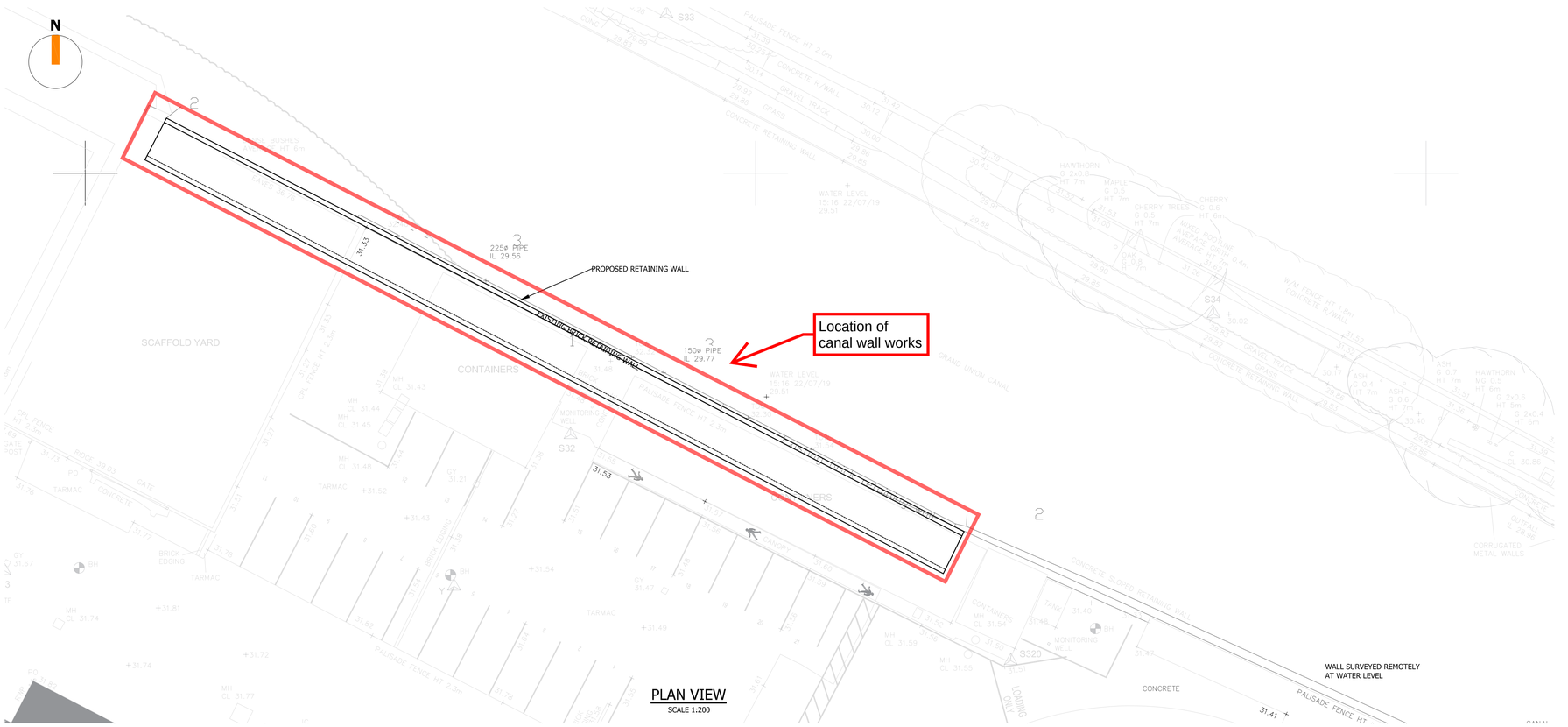
Date SEPT 2023
Drawn DT
Checked PW

L.D.A
LANDSCAPE DESIGN ARCHITECTURE
17a Cannon Hill Rd
Coventry
CV4 7AZ
Tel: 02476 696866 Mob: 07977 483787
info@landscapedesignarchitecture.co.uk

Drawing no.
CTC-LDA-XX-XX-DR-L-09013

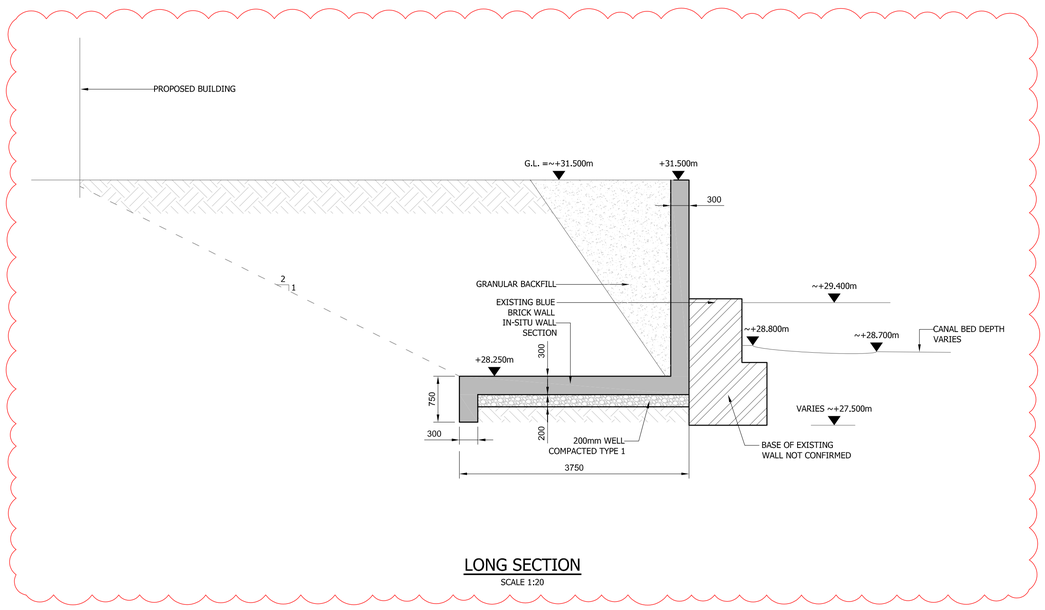
LDA Job no. L1115

Revision. FINAL



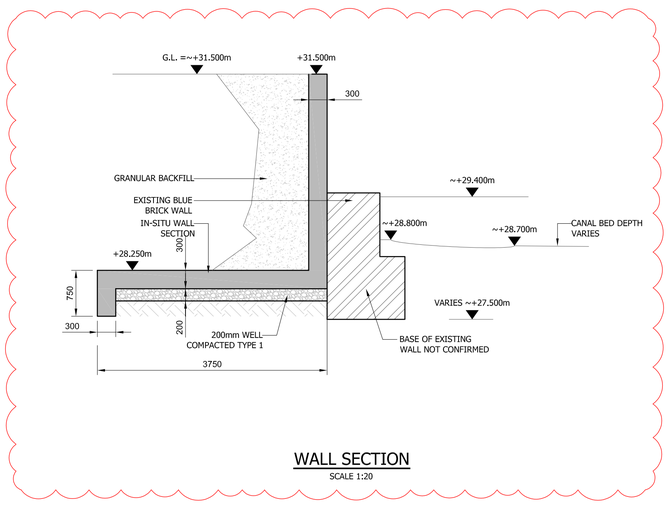
PLAN VIEW

SCALE 1:200



LONG SECTION

SCALE 1:20



WALL SECTION

SCALE 1:20

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS (mm). ALL LEVELS ARE IN METRES.
2. DO NOT SCALE THIS DRAWING. WORK TO FIGURED DIMENSIONS ONLY.
3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALISTS DRAWINGS, THE SPECIFICATION AND THE CONTRACT DOCUMENTS.
4. ALL WORK IS TO COMPLY WITH THE RELEVANT EUROCODES, CODES OF PRACTICE AND THE BUILDING REGULATIONS.
5. ALL DIMENSIONS ARE TO BE VERIFIED BY CONTRACTOR ON SITE. ALL DISCREPANCIES SHOULD BE REPORTED TO THE ENGINEER PRIOR TO COMMENCEMENT OF THE WORKS.
6. ALL CONCRETE TO BE GRADE C40/50 UNLESS NOTED OTHERWISE. ALL COLUMNS TO BE C50/60 U.N.O.
7. NO CHASING OF CONCRETE WILL BE PERMITTED.
8. CONTRACTOR TO ALLOW FOR CO-ORDINATION OF BUILDERSWORK REQUIREMENTS FOR SERVICES SO THAT HOLES, SLEEVES ETC. CAN BE CAST INTO ALL NEW CONCRETE WORK. NO POST DRILLING OF CONCRETE FOR SERVICE HOLES GREATER THAN 20mm WILL BE PERMITTED.
9. FOR GENERAL NOTES REFER TO DRAWING: JR006098-ISS-XX-ZZ-SP-S-7000

REV	DATE	DRAWN/CHK	REVISION INFO
T01	27.03.23	RMA/AW	PRELIMINARY ISSUE.
P01	24.08.22	RMA/AW	PRELIMINARY ISSUE.

STATUS:

TENDER

CLIENT:

GRAYSTAR

PROJECT:

CROWN TRADING CENTER
UB3 1DU
HAYES

DRAWING TITLE:

NEW CANAL WALL.
GENERAL ARRANGEMENT
AND SECTIONS

JOB NUMBER:	SCALE AT A1:	REV. STATUS:
SE1560	AS SHOWN	S2

DRAWING NUMBER: JR006090-ISS-CW-ZZ-DR-S-1001

REVISION: T01

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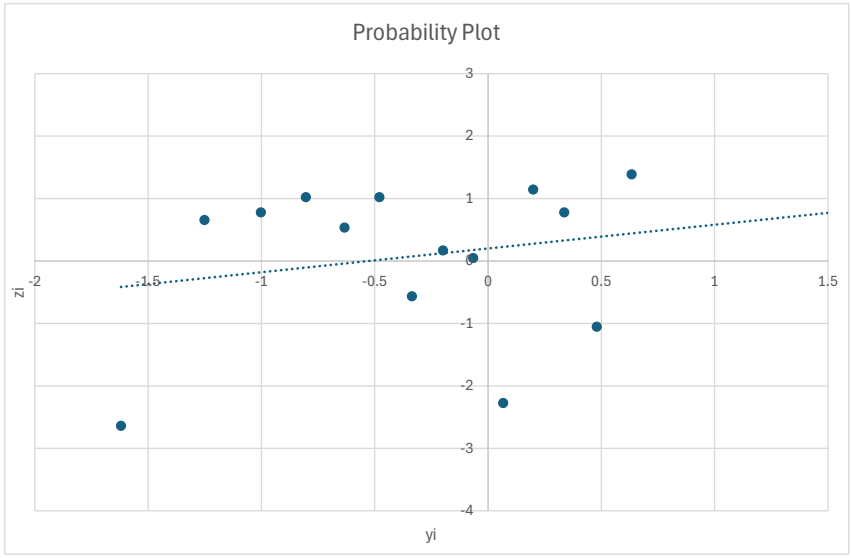
Appendix B – Topsoil Verification Screening and Statistical Analysis

CTC HAYES - BLKS C, E, F

BORON UCL 95

Average	2.261111
SD	0.818994
Sample size	18
Confidence Coff	1.96
Margin of error	0.378356
Upper Bound	2.639467
Lower Bound	1.882755
Max	3.4
Min	0.4
Range	3
Square root of N	4.242641

Xi	Yi = Xi - Mean/S	Qi	Zi
2	-2.638737728	0.052632	-1.61986
2.8	0.657988585	0.105263	-1.25212
2.9	0.78008956	0.157895	-1.00315
3.1	1.024291509	0.210526	-0.8046
2.7	0.535887611	0.263158	-0.63364
3.1	1.024291509	0.315789	-0.47951
1.8	-0.563021161	0.368421	-0.33604
2.4	0.169584687	0.421053	-0.1992
2.3	0.047483712	0.473684	-0.06601
0.4	-2.272434804	0.526316	0.066012
3.2	1.146392483	0.578947	0.199201
2.9	0.78008956	0.631579	0.336038
1.4	-1.051425059	0.684211	0.479506
3.4	1.390594433	0.736842	0.63364
1.3	-1.173526033	0.789474	0.804596
1.8	-0.563021161	0.842105	1.003148
1.6	-0.80722311	0.894737	1.25212
1.6	-0.80722311	0.947368	1.619856



$$UCL_{0.95} = \overline{x} + \left(t_{(n-1,\,0.95)} \times \frac{s}{\sqrt{n}} \right)$$

t-test

2.614951

$t_{(n-1,0.95)}$ = 1.833 from one-sample t-test theorem (CLAIRE)

Project / Site name: CTC Hayes

Lab Sample Number									484897	484898	484899	484900	484901	484902
Sample Reference									TS1-01	TS1-02	TS1-03	TS2-01	TS2-02	TS2-03
Sample Number									None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix									N/A	N/A	N/A	N/A	N/A	N/A
Depth (m)									None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled									18/03/2025	18/03/2025	18/03/2025	18/03/2025	18/03/2025	18/03/2025
Time Taken									1300	1300	1300	1315	1315	1315
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**	**UCL 95**	**Mean Concentration**	**S4UL - Public Open Space - residential mg/kg**	**S4UL - residential with produce mg/kg**	**Import Screening Criteria - extracted from Appendix C2 of Turnkey RMS**						
Stone Content	%	0.1	NONE	-	-		-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	-	-		-	-	15	15	14	11	11	12
Total mass of sample received	kg	0.1	NONE	-	-		-	-	0.7	0.7	0.7	0.7	0.7	0.7
Asbestos														
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	-	Non-detect	Non-detect	Non-detect	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	-	-				MJN	MJN	MJN	MJN	MJN	MJN
Analysis completed	N/A	N/A	N/A	-	-				21/03/2025	21/03/2025	21/03/2025	21/03/2025	21/03/2025	21/03/2025
General Inorganics														
Total Cyanide	mg/kg	1	MCERTS	-	-	N/A	N/A	<MDL	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	-	-	N/A	N/A	<MDL	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	-	-	N/A	N/A	<MDL	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Phenols														
Total Phenols (monohydric)	mg/kg	1	MCERTS	-	<1.0	760	750	<MDL	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs														
Naphthalene	mg/kg	0.05	MCERTS	-	0.17	4900	2.3	2.3	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	-	<0.05	15000	170	170	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	0.09	15000	210	210	0.05	0.16	0.07	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	-	0.15	9900	170	170	< 0.05	0.15	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	-	0.43	3100	95	15	0.32	1.2	0.38	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	-	0.15	74000	2400	4	0.07	0.29	0.09	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	-	0.50	3100	280	26	0.66	1.7	0.7	0.08	0.07	0.14
Pyrene	mg/kg	0.05	MCERTS	-	0.42	7400	620	21	0.59	1.4	0.61	0.07	0.07	0.13
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	0.33	29	7.2	9	0.28	0.62	0.26	< 0.05	< 0.05	0.08
Chrysene	mg/kg	0.05	MCERTS	-	0.27	57	15	15	0.3	0.62	0.27	0.06	< 0.05	0.09
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	0.41	7.1	2.6	7.1	0.42	0.82	0.38	0.11	< 0.05	0.17
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	0.17	190	77	77	0.15	0.28	0.13	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	0.41	5.70	2.2	5.7	0.34	0.62	0.28	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	0.18	82	27	27	0.18	0.3	0.15	< 0.05	< 0.05	0.07
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	<0.05	0.57	0.24	0.57	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.21	640	320	320	0.2	0.33	0.16	< 0.05	< 0.05	0.07
Total PAH														
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	4.64	-	-	114	3.58	8.52	3.49	< 0.80	< 0.80	< 0.80
Heavy Metals / Metalloids														
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	13	79	37	37	7.9	7.9	8.8	6.6	7.6	6.6
Boron (water soluble)	mg/kg	0.2	MCERTS	2.61	2.26	21000	290	3	2	2.8	2.9	3.1	2.7	3.1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	0.30	120	11	11	0.3	0.3	0.4	< 0.2	< 0.2	0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-	<1.8	7.70	6	6	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	-	18	1500	910	43	14	12	13	12	11	13
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	18.00	1500	910	43	14	13	14	13	11	14
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	18	1200	2400	153	25	25	27	28	19	22
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	26	630	200	630	60	41	38	19	14	16
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	<0.3	120	40	2.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	11.6	230	180	61	9.5	9.3	8.6	10	8.9	10
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	<1.0	1100	250	250	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	55.27	42.94	2000	410	82	22	20	20	18	17	19
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	56.28	81000	3700	328	75	76	72	68	47	51
Petroleum Hydrocarbons														
TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	-	<0.01	570000	42	42	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	-	<0.01	600000	100	100	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	-	<0.01	13000	27	27	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	-	<1.0	13000	130	130	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	-	3.6	13000	1100	36	3	4.6	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	-	<8.0	250000	65000	500	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	-	27	250000	65000	1000	38	29	28	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC35 - EC44 EH_CU_1D_AL	mg/kg	8.4	NONE	-	14.34	250000	65000	1000	11	8.7	< 8.4	< 8.4	< 8.4	< 8.4
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	-	27.90	-	-	1000	41	34	28	< 10	< 10	< 10
TPHCWG - Aliphatic >EC5 - EC44 EH_CU+HS_1D_AL	mg/kg	10	NONE	-	35.00	-	-	1000	51	42	28	< 10	< 10	< 10
TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	-	<0.01	56000	70	70	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	-	<0.01	56000	130	130	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	-	<0.02	5000	34	34	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	-	1.5	5000	74	74	< 1.0	1.5	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	-	6.2	5100	140	20	< 2.0	6.2	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	-	<10	3800	260	500	< 10	< 10	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	-	23.86	3800	1100	1000	34	36	28	< 10	< 10	< 10
TPHCWG - Aromatic >EC35 - EC44 EH_CU_1D_AR	mg/kg	8.4	NONE	-	42.33	3800	1100	1000	61	37	29	< 8.4	< 8.4	< 8.4
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	-	24.86	-	-	1000	34	43	28	< 10	< 10	< 10
TPHCWG - Aromatic >EC5 - EC44 EH_CU+HS_1D_AR	mg/kg	10	NONE	-	42.86	-	-	1000	94	80	57	< 10	< 10	< 10
TPH Total >EC6 - EC40 EH_CU+HS_1D_TOTAL	mg/kg	10	NONE	-	60.09	-	-	1000	120	110	84	< 10	< 10	< 10
Petroleum Range Organics (EC6 - EC10) HS_1D_TOTAL	mg/kg	1	ISO 17025	-	<1.0	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (EC10 - EC40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	-	60.09	-	-	-	120	110	84	< 10	< 10	< 10
VOCs														
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	-	<5.0	-	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	-	<5.0	72	87	6000	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	-	<5.0	56000	130000	6000	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	-	<5.0	24000	47000	6000	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	-	<8.0	41000	56000	6000	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	-	<5.0	4100	56000	6000	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

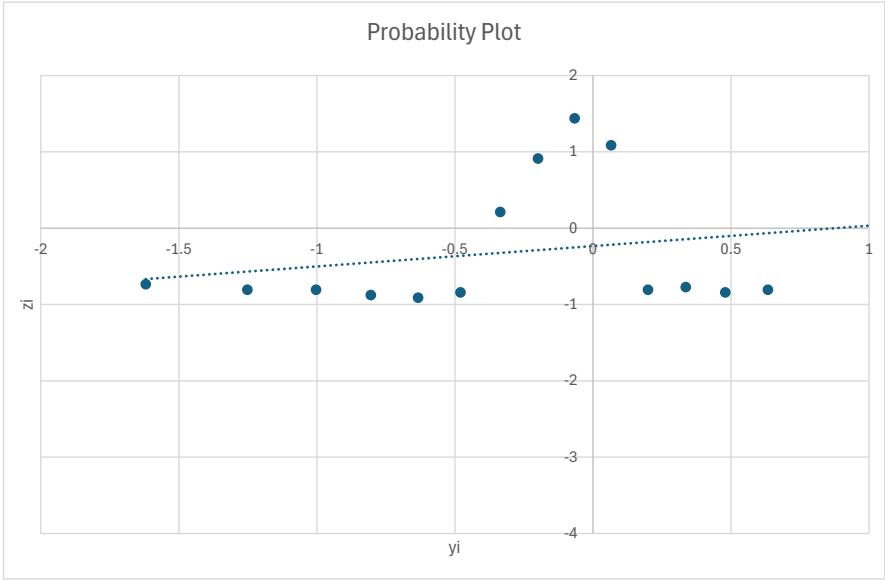
Lab Sample Number	514941	514942	514943	514944	526438	526439	526440	526441	610382	610383	610384	610385
Sample Reference	TS3-01	TS3-02	TS3-03	SS01-01	TS1-04	TS1-05	TS1-06	TS1-07	TS1-08	TS1-09	TS1-10	TS1-11
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.10-0.30	0.10-0.30	0.10-0.30	0.60-0.80	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	13/04/2025	13/04/2025	13/04/2025	13/04/2025	25/03/2025	25/03/2025	25/03/2025	25/03/2025	09/07/2025	09/07/2025	09/07/2025	09/07/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)												
Stone Content	< 0.1	< 0.1	< 0.1	< 0.1	15	15.8	<0.1	<0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	4.2	1.1	5.8	2.5	6.3	9.7	10	7.8	0.35	0.28	0.33	0.23
Total mass of sample received	0.6	0.6	0.5	0.7	1.5	1.5	1.4	1.3	0.9	0.8	0.9	1.1
Asbestos												
Asbestos in Soil Detected/Not Detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	SCA	SCA	SCA	SCA	DKI	DKI	DKI	DKI	KSZ	KSZ	KSZ	KSZ
Analysis completed	18/04/2025	18/04/2025	18/04/2025	18/04/2025	02/05/2025	02/05/2025	02/025/2025	02/05/2025	16/07/2025	16/07/2025	16/07/2025	16/07/2025
General Inorganics												
Total Cyanide	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
Complex Cyanide	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Phenols												
Total Phenols (monohydric)	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs												
Naphthalene	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	0.13	0.19	0.26	0.1
Acenaphthylene	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	< 0.05	< 0.05	< 0.05	< 0.05	0.1	<0.05	<0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	< 0.05	< 0.05	< 0.05	< 0.05	0.1	<0.05	<0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	< 0.05	< 0.05	< 0.05	< 0.05	0.66	0.46	0.21	0.49	< 0.05	0.06	0.07	< 0.05
Anthracene	< 0.05	< 0.05	< 0.05	< 0.05	0.18	0.11	0.07	0.13	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	< 0.05	< 0.05	0.1	< 0.05	0.83	0.91	0.73	0.87	0.05	0.07	0.09	< 0.05
Pyrene	< 0.05	< 0.05	0.08	< 0.05	0.66	0.75	0.65	0.74	< 0.05	0.05	0.07	< 0.05
Benzo(a)anthracene	< 0.05	< 0.05	< 0.05	< 0.05	0.3	0.37	0.36	0.35	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	< 0.05	< 0.05	< 0.05	< 0.05	0.33	0.35	0.37	0.36	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	< 0.05	< 0.05	< 0.05	< 0.05	0.37	0.43	0.48	0.47	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	< 0.05	< 0.05	< 0.05	< 0.05	0.14	0.17	0.18	0.17	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	< 0.05	< 0.05	< 0.05	< 0.05	0.27	0.33	0.37	0.36	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	< 0.05	< 0.05	< 0.05	< 0.05	0.16	0.19	0.19	0.2	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	< 0.05	< 0.05	< 0.05	< 0.05	0.19	0.23	0.21	0.25	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH												
Speciated Total EPA-16 PAHs	< 0.80	< 0.80	< 0.80	< 0.80	4.28	4.29	3.83	4.5	< 0.80	< 0.80	< 0.80	< 0.80
Heavy Metals / Metalloids												
Arsenic (aqua regia extractable)	13	20	28	18	7.5	8	6.7	8	23	21	23	17
Boron (water soluble)	1.8	2.4	2.3	0.4	3.2	2.9	1.4	3.4	1.3	1.8	1.6	1.6
Cadmium (aqua regia extractable)	< 0.2	< 0.2	< 0.2	< 0.2	0.3	0.3	0.3	0.3	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	< 1.8	< 1.8	< 1.8	< 1.8	<1.8	<1.8	<1.8	<1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	15	23	29	21	13	14	13	14	31	22	25	20
Chromium (aqua regia extractable)	16	24	30	21	14	15	13	14	31	22	25	20
Copper (aqua regia extractable)	13	10	12	7.2	22	22	22	23	8.7	11	9.3	9.1
Lead (aqua regia extractable)	8.3	11	14	5.1	32	38	33	36	12	11	12	9.7
Mercury (aqua regia extractable)	< 0.3	< 0.3	< 0.3	< 0.3	<0.3	<0.3	<0.3	<0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	10	13	19	15	8.9	9.1	8.6	9	16	15	16	12
Selenium (aqua regia extractable)	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	1	1.1	< 1.0	< 1.0
Vanadium (aqua regia extractable)	49	69	84	74	20	21	19	20	98	62	77	64
Zinc (aqua regia extractable)	30	40	61	28	64	71	70	73	47	52	50	38
Petroleum Hydrocarbons												
TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	< 0.010	< 0.010	< 0.010	< 0.010	<0.010	<0.010	<0.010	<0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	< 0.010	< 0.010	< 0.010	< 0.010	<0.010	<0.010	<0.010	<0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	< 0.010	< 0.010	< 0.010	< 0.010	<0.010	<0.010	<0.010	<0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	< 2.0	< 2.0	< 2.0	< 2.0	<2.0	<2.0	<2.0	3.2	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	< 8.0	< 8.0	< 8.0	< 8.0	<8.0	<8.0	<8.0	<8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	< 8.0	< 8.0	< 8.0	< 8.0	34	21	19	43	< 8.0	15	24	17
TPHCWG - Aliphatic >EC35 - EC44 EH_CU_1D_AL	< 8.4	< 8.4	< 8.4	< 8.4	<8.4	16	<8.4	26	< 8.4	< 8.4	10	< 8.4
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	< 10	< 10	< 10	< 10	34	21	19	46	< 10	15	24	17
TPHCWG - Aliphatic >EC5 - EC44 EH_CU+HS_1D_AL	< 10	< 10	< 10	< 10	34	38	19	72	< 10	15	34	17
TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	< 0.010	< 0.010	< 0.010	< 0.010	<0.010	<0.010	<0.010	<0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	< 0.010	< 0.010	< 0.010	< 0.010	<0.010	<0.010	<0.010	<0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	< 0.020	< 0.020	< 0.020	< 0.020	<0.020	<0.020	<0.020	<0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	< 2.0	< 2.0	< 2.0	< 2.0	<2.0	<2.0	<2.0	<2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	< 10	< 10	< 10	< 10	<10	<10	<10	<10	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	< 10	< 10	< 10	< 10	27	13	17	12	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC35 - EC44 EH_CU_1D_AR	< 8.4	< 8.4	< 8.4	< 8.4	<8.4	<8.4	<8.4	<8.4	< 8.4	< 8.4	< 8.4	< 8.4
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	< 10	< 10	< 10	< 10	27	13	17	12	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC5 - EC44 EH_CU+HS_1D_AR	< 10	< 10	< 10	< 10	27	13	17	12	< 10	< 10	< 10	< 10
TPH Total >EC6 - EC40 EH_CU+HS_1D_TOTAL	< 10	< 10	< 10	< 10	79	46	40	80	12	23	42	25
Petroleum Range Organics (EC6 - EC10) HS_1D_TOTAL	< 1.0	< 1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (EC10 - EC40) EH_CU_1D_TOTAL	< 10	< 10	< 10	< 10	79	46	40	80	12	23	42	25
VOCs												
MTBE (Methyl Tertiary Butyl Ether)	< 5.0	< 5.0	< 5.0	< 5.0	<5.0	<5.0	<5.0	<5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	< 5.0	< 5.0	< 5.0	< 5.0	<5.0	<5.0	<5.0	<5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	< 5.0	< 5.0	< 5.0	< 5.0	<5.0	<5.0	<5.0	<5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	< 5.0	< 5.0	< 5.0	< 5.0	<5.0	<5.0	<5.0	<5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	< 8.0	< 8.0	< 8.0	< 8.0	<8.0	<8.0	<8.0	<8.0	< 8.0	< 8.0	< 8.0	< 8.0
o-Xylene	< 5.0	< 5.0	< 5.0	< 5.0	<5.0	<5.0	<5.0	<5.0	< 5.0	< 5.0	< 5.0	< 5.0

CTC HAYES - BLKS C, E, F

VANADIUM UCL 95

Average	42.94444
SD	28.52341
Sample size	18
Confidence Coff	1.96
Margin of error	13.17714
Upper Bound	56.12159
Lower Bound	29.7673
Max	98
Min	17
Range	81
Square root of N	4.242641

Xi	Yi = Xi - Mean/S	Qi	Zi
22	-0.734289617	0.052632	-1.61986
20	-0.804407459	0.105263	-1.25212
20	-0.804407459	0.157895	-1.00315
18	-0.8745253	0.210526	-0.8046
17	-0.909584221	0.263158	-0.63364
19	-0.839466379	0.315789	-0.47951
49	0.212301242	0.368421	-0.33604
69	0.913479656	0.421053	-0.1992
84	1.439363467	0.473684	-0.06601
74	1.08877426	0.526316	0.066012
20	-0.804407459	0.578947	0.199201
21	-0.769348538	0.631579	0.336038
19	-0.839466379	0.684211	0.479506
20	-0.804407459	0.736842	0.63364
98	1.930188357	0.789474	0.804596
62	0.668067211	0.842105	1.003148
77	1.193951022	0.894737	1.25212
64	0.738185053	0.947368	1.619856



$$UCL_{0.95} = \bar{x} + \left(t_{(n-1,\,0.95)} \times \frac{s}{\sqrt{n}} \right)$$

t-test

55.26776

$t_{(n-1,0.95)}$ = 1.833 from one-sample t-test theorem (CLAIRE)

Appendix C – Laboratory Certificates

Turnkey Regeneration Ltd
2 Caffyn Place
Broadbridge Heath
Horsham
West Sussex
RH123XH

e: dave.rutherford@turnkeyregeneration.com

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 : 25-013442

Project / Site name:	CTC	**Samples received on:**	18/03/2025
Your job number:	0112	**Samples instructed on/ Analysis started on:**	18/03/2025
Your order number:	0112	**Analysis completed by:**	24/03/2025
Report Issue Number:	1	**Report issued on:**	24/03/2025
Samples Analysed:	6 soil samples		

Signed:

Joanna Wawrzeczko
Senior Reporting 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
air	- once the analysis is complete

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

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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: 25-013442
Project / Site name: CTC
Your Order No: 0112

Lab Sample Number				484897	484898	484899	484900	484901
Sample Reference				TS1-01	TS1-02	TS1-03	TS2-01	TS2-02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				18/03/2025	18/03/2025	18/03/2025	18/03/2025	18/03/2025
Time Taken				1300	1300	1300	1315	1315
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	15	15	14	11	11
Total mass of sample received	kg	0.1	NONE	0.7	0.7	0.7	0.7	0.7
Asbestos								
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MJN	MJN	MJN	MJN	MJN
Analysis completed	N/A	N/A	N/A	21/03/2025	21/03/2025	21/03/2025	21/03/2025	21/03/2025
General Inorganics								
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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	0.16	0.07	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.15	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.32	1.2	0.38	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.07	0.29	0.09	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.66	1.7	0.7	0.08	0.07
Pyrene	mg/kg	0.05	MCERTS	0.59	1.4	0.61	0.07	0.07
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.28	0.62	0.26	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.3	0.62	0.27	0.06	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.42	0.82	0.38	0.11	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.15	0.28	0.13	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.34	0.62	0.28	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.18	0.3	0.15	< 0.05	< 0.05
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	0.2	0.33	0.16	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	3.58	8.52	3.49	< 0.80	< 0.80

Analytical Report Number: 25-013442
Project / Site name: CTC
Your Order No: 0112

Lab Sample Number				484897	484898	484899	484900	484901
Sample Reference				TS1-01	TS1-02	TS1-03	TS2-01	TS2-02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				18/03/2025	18/03/2025	18/03/2025	18/03/2025	18/03/2025
Time Taken				1300	1300	1300	1315	1315
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.9	7.9	8.8	6.6	7.6
Boron (water soluble)	mg/kg	0.2	MCERTS	2	2.8	2.9	3.1	2.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.3	0.3	0.4	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	14	12	13	12	11
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	14	13	14	13	11
Copper (aqua regia extractable)	mg/kg	1	MCERTS	25	25	27	28	19
Lead (aqua regia extractable)	mg/kg	1	MCERTS	60	41	38	19	14
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	9.5	9.3	8.6	10	8.9
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	20	20	18	17
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	75	76	72	68	47
Petroleum Hydrocarbons								
TPHCWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	3	4.6	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	38	29	28	< 8.0	< 8.0
TPHCWG - Aliphatic >EC35 - EC44 $_{EH\_CU\_1D\_AL}$	mg/kg	8.4	NONE	11	8.7	< 8.4	< 8.4	< 8.4
TPHCWG - Aliphatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	41	34	28	< 10	< 10
TPHCWG - Aliphatic >EC5 - EC44 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	51	42	28	< 10	< 10
TPHCWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	1.5	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	6.2	< 2.0	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	34	36	28	< 10	< 10
TPHCWG - Aromatic >EC35 - EC44 $_{EH\_CU\_1D\_AR}$	mg/kg	8.4	NONE	61	37	29	< 8.4	< 8.4
TPHCWG - Aromatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	34	43	28	< 10	< 10
TPHCWG - Aromatic >EC5 - EC44 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	94	80	57	< 10	< 10
TPH Total >EC6 - EC40 $_{EH\_CU+HS\_1D\_TOTAL}$	mg/kg	10	NONE	120	110	84	< 10	< 10
Petroleum Range Organics (EC6 - EC10) $_{HS\_1D\_TOTAL}$	mg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (EC10 - EC40) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	MCERTS	120	110	84	< 10	< 10

Analytical Report Number: 25-013442
Project / Site name: CTC
Your Order No: 0112

Lab Sample Number				484897	484898	484899	484900	484901
Sample Reference				TS1-01	TS1-02	TS1-03	TS2-01	TS2-02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				18/03/2025	18/03/2025	18/03/2025	18/03/2025	18/03/2025
Time Taken				1300	1300	1300	1315	1315
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
VOCs								
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

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

Analytical Report Number: 25-013442
Project / Site name: CTC
Your Order No: 0112

Lab Sample Number				484902
Sample Reference				TS2-03
Sample Number				None Supplied
Water Matrix				N/A
Depth (m)				None Supplied
Date Sampled				18/03/2025
Time Taken				1315
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	12
Total mass of sample received	kg	0.1	NONE	0.7
Asbestos				
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MJN
Analysis completed	N/A	N/A	N/A	21/03/2025
General Inorganics				
Total Cyanide	mg/kg	1	MCERTS	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0
Total Phenols				
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0
Speciated PAHs				
Naphthalene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.14
Pyrene	mg/kg	0.05	MCERTS	0.13
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.08
Chrysene	mg/kg	0.05	MCERTS	0.09
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.17
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.07
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.07
Total PAH				
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80

Analytical Report Number: 25-013442
Project / Site name: CTC
Your Order No: 0112

Lab Sample Number				484902
Sample Reference				TS2-03
Sample Number				None Supplied
Water Matrix				N/A
Depth (m)				None Supplied
Date Sampled				18/03/2025
Time Taken				1315
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**	
Heavy Metals / Metalloids				
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.6
Boron (water soluble)	mg/kg	0.2	MCERTS	3.1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8
Chromium (III)	mg/kg	1	NONE	13
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	14
Copper (aqua regia extractable)	mg/kg	1	MCERTS	22
Lead (aqua regia extractable)	mg/kg	1	MCERTS	16
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	10
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	19
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	51
Petroleum Hydrocarbons				
TPHCWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0
TPHCWG - Aliphatic >EC35 - EC44 $_{EH\_CU\_1D\_AL}$	mg/kg	8.4	NONE	< 8.4
TPHCWG - Aliphatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10
TPHCWG - Aliphatic >EC5 - EC44 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10
TPHCWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010
TPHCWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010
TPHCWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.02	MCERTS	< 0.020
TPHCWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0
TPHCWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0
TPHCWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10
TPHCWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10
TPHCWG - Aromatic >EC35 - EC44 $_{EH\_CU\_1D\_AR}$	mg/kg	8.4	NONE	< 8.4
TPHCWG - Aromatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10
TPHCWG - Aromatic >EC5 - EC44 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10
TPH Total >EC6 - EC40 $_{EH\_CU+HS\_1D\_TOTAL}$	mg/kg	10	NONE	< 10
Petroleum Range Organics (EC6 - EC10) $_{HS\_1D\_TOTAL}$	mg/kg	1	ISO 17025	< 1.0
TPH (EC10 - EC40) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	MCERTS	< 10

Analytical Report Number: 25-013442
Project / Site name: CTC
Your Order No: 0112

Lab Sample Number				484902
Sample Reference				TS2-03
Sample Number				None Supplied
Water Matrix				N/A
Depth (m)				None Supplied
Date Sampled				18/03/2025
Time Taken				1315
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**	
VOCs				
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0

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

Analytical Report Number : 25-013442
Project / Site name: CTC

* 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 *
484897	TS1-01	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation
484898	TS1-02	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation
484899	TS1-03	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation
484900	TS2-01	None Supplied	None Supplied	Brown sand with gravel
484901	TS2-02	None Supplied	None Supplied	Brown sand with gravel
484902	TS2-03	None Supplied	None Supplied	Brown sand with gravel

Analytical Report Number : 25-013442
Project / Site name: CTC

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI 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
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
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/L088-PL	D/W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088-PL	D/W	MCERTS
Complex Cyanide in soil	Determination of complex cyanide by calculation	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	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
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	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

Analytical Report Number : 25-013442
Project / Site name: CTC

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total petroleum hydrocarbons by HS-GC-MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC-MS	In-house method	L129-PL	W	ISO 17025

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 30oC.
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.

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

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Analytical Report Number : 25-019276

Project / Site name:	CTC	**Samples received on:**	15/04/2025
Your job number:	0112	**Samples instructed on/ Analysis started on:**	15/04/2025
Your order number:	0112	**Analysis completed by:**	23/04/2025
Report Issue Number:	1	**Report issued on:**	23/04/2025
Samples Analysed:	4 soil samples		

Signed:

Rafał Szczepańczyk
Technical Reviewer
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
air	- once the analysis is complete

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Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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: 25-019276
Project / Site name: CTC
Your Order No: 0112

Lab Sample Number				514941	514942	514943	514944
Sample Reference				TS3-01	TS3-02	TS3-03	SS01-01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.10-0.30	0.10-0.30	0.10-0.30	0.60-0.80
Date Sampled				13/04/2025	13/04/2025	13/04/2025	13/04/2025
Time Taken				None Supplied	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	< 0.1
Moisture Content	%	0.01	NONE	4.2	1.1	5.8	2.5
Total mass of sample received	kg	0.1	NONE	0.6	0.6	0.5	0.7
Asbestos							
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	SCA	SCA	SCA	SCA
Analysis completed	N/A	N/A	N/A	18/04/2025	18/04/2025	18/04/2025	18/04/2025
General Inorganics							
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
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	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.1	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.08	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	< 0.80	< 0.80	< 0.80

Analytical Report Number: 25-019276
Project / Site name: CTC
Your Order No: 0112

Lab Sample Number				514941	514942	514943	514944
Sample Reference				TS3-01	TS3-02	TS3-03	SS01-01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.10-0.30	0.10-0.30	0.10-0.30	0.60-0.80
Date Sampled				13/04/2025	13/04/2025	13/04/2025	13/04/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**				
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	20	28	18
Boron (water soluble)	mg/kg	0.2	MCERTS	1.8	2.4	2.3	0.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	15	23	29	21
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	24	30	21
Copper (aqua regia extractable)	mg/kg	1	MCERTS	13	10	12	7.2
Lead (aqua regia extractable)	mg/kg	1	MCERTS	8.3	11	14	5.1
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	10	13	19	15
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	49	69	84	74
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	30	40	61	28
Petroleum Hydrocarbons							
TPHCWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC35 - EC44 $_{EH\_CU\_1D\_AL}$	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4
TPHCWG - Aliphatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10
TPHCWG - Aliphatic >EC5 - EC44 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC35 - EC44 $_{EH\_CU\_1D\_AR}$	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4
TPHCWG - Aromatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC5 - EC44 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10
TPH Total >EC6 - EC40 $_{EH\_CU+HS\_1D\_TOTAL}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10
Petroleum Range Organics (EC6 - EC10) $_{HS\_1D\_TOTAL}$	mg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
TPH (EC10 - EC40) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10
VOCs							
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0

Analytical Report Number: 25-019276
Project / Site name: CTC
Your Order No: 0112

Lab Sample Number				514941	514942	514943	514944
Sample Reference				TS3-01	TS3-02	TS3-03	SS01-01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.10-0.30	0.10-0.30	0.10-0.30	0.60-0.80
Date Sampled				13/04/2025	13/04/2025	13/04/2025	13/04/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**				

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

Analytical Report Number : 25-019276
Project / Site name: CTC

* 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 *
514941	TS3-01	None Supplied	0.10-0.30	Brown loam and sand with gravel and vegetation
514942	TS3-02	None Supplied	0.10-0.30	Brown loam and sand with gravel and vegetation
514943	TS3-03	None Supplied	0.10-0.30	Brown loam and sand with gravel and vegetation
514944	SS01-01	None Supplied	0.60-0.80	Brown sand with gravel

Analytical Report Number : 25-019276
Project / Site name: CTC

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI 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
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
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/L088-PL	D/W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088-PL	D/W	MCERTS
Complex Cyanide in soil	Determination of complex cyanide by calculation	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	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
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	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

Analytical Report Number : 25-019276
Project / Site name: CTC

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total petroleum hydrocarbons by HS-GC-MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC-MS	In-house method	L129-PL	W	ISO 17025
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

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 30oC.
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.

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

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Analytical Report Number : 25-021322

Project / Site name:	CTC	**Samples received on:**	28/04/2025
Your job number:	0112	**Samples instructed on/ Analysis started on:**	28/04/2025
Your order number:	0112	**Analysis completed by:**	02/05/2025
Report Issue Number:	1	**Report issued on:**	02/05/2025
Samples Analysed:	4 soil samples		

Signed:

Anna Goc
PL Head of 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
air	- once the analysis is complete

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

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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: 25-021322
Project / Site name: CTC
Your Order No: 0112

Lab Sample Number				526438	526439	526440	526441
Sample Reference				TS1-04	TS1-05	TS1-06	TS1-07
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				25/03/2025	25/03/2025	25/03/2025	25/03/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**				
Stone Content	%	0.1	NONE	15	15.8	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	6.3	9.7	10	7.8
Total mass of sample received	kg	0.1	NONE	1.5	1.5	1.4	1.3
Asbestos							
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	DKI	DKI	DKI	DKI
Analysis completed	N/A	N/A	N/A	02/05/2025	02/05/2025	02/05/2025	02/05/2025
General Inorganics							
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
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	0.1	< 0.05	< 0.05	0.06
Fluorene	mg/kg	0.05	MCERTS	0.1	< 0.05	< 0.05	0.06
Phenanthrene	mg/kg	0.05	MCERTS	0.66	0.46	0.21	0.49
Anthracene	mg/kg	0.05	MCERTS	0.18	0.11	0.07	0.13
Fluoranthene	mg/kg	0.05	MCERTS	0.83	0.91	0.73	0.87
Pyrene	mg/kg	0.05	MCERTS	0.66	0.75	0.65	0.74
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.3	0.37	0.36	0.35
Chrysene	mg/kg	0.05	MCERTS	0.33	0.35	0.37	0.36
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.37	0.43	0.48	0.47
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.14	0.17	0.18	0.17
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.27	0.33	0.37	0.36
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.16	0.19	0.19	0.2
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.19	0.23	0.21	0.25
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	4.28	4.29	3.83	4.5

Analytical Report Number: 25-021322
Project / Site name: CTC
Your Order No: 0112

Lab Sample Number				526438	526439	526440	526441
Sample Reference				TS1-04	TS1-05	TS1-06	TS1-07
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				25/03/2025	25/03/2025	25/03/2025	25/03/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**				
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.5	8	6.7	8
Boron (water soluble)	mg/kg	0.2	MCERTS	3.2	2.9	1.4	3.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.3	0.3	0.3	0.3
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	13	14	13	14
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	14	15	13	14
Copper (aqua regia extractable)	mg/kg	1	MCERTS	22	22	22	23
Lead (aqua regia extractable)	mg/kg	1	MCERTS	32	38	33	36
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	8.9	9.1	8.6	9
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	20	21	19	20
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	64	71	70	73
Petroleum Hydrocarbons							
TPHCWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	3.2
TPHCWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	34	21	19	43
TPHCWG - Aliphatic >EC35 - EC44 $_{EH\_CU\_1D\_AL}$	mg/kg	8.4	NONE	< 8.4	16	< 8.4	26
TPHCWG - Aliphatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	34	21	19	46
TPHCWG - Aliphatic >EC5 - EC44 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	34	38	19	72
TPHCWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	27	13	17	12
TPHCWG - Aromatic >EC35 - EC44 $_{EH\_CU\_1D\_AR}$	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4
TPHCWG - Aromatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	27	13	17	12
TPHCWG - Aromatic >EC5 - EC44 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	27	13	17	12
TPH Total >EC6 - EC40 $_{EH\_CU+HS\_1D\_TOTAL}$	mg/kg	10	NONE	79	46	40	80
Petroleum Range Organics (EC6 - EC10) $_{HS\_1D\_TOTAL}$	mg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
TPH (EC10 - EC40) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	MCERTS	79	46	40	80
VOCs							
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0

Analytical Report Number: 25-021322
Project / Site name: CTC
Your Order No: 0112

Lab Sample Number				526438	526439	526440	526441
Sample Reference				TS1-04	TS1-05	TS1-06	TS1-07
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				25/03/2025	25/03/2025	25/03/2025	25/03/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status				

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

Analytical Report Number : 25-021322
Project / Site name: CTC

* 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 *
526438	TS1-04	None Supplied	None Supplied	Brown loam and sand with vegetation and stones
526439	TS1-05	None Supplied	None Supplied	Brown loam and sand with vegetation and stones
526440	TS1-06	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation
526441	TS1-07	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation

Analytical Report Number : 25-021322
Project / Site name: CTC

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI 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
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
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/L088-PL	D/W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088-PL	D/W	MCERTS
Complex Cyanide in soil	Determination of complex cyanide by calculation	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	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
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	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

Analytical Report Number : 25-021322
Project / Site name: CTC

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total petroleum hydrocarbons by HS-GC-MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC-MS	In-house method	L129-PL	W	ISO 17025
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

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 30oC.
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.

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

Analytical Report Number : 25-021322
Project / Site name: CTC

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TS1-04	N/A	S	526438	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TS1-04	N/A	S	526438	c	Chromium III in soil	L080-PL/L130B	c
TS1-04	N/A	S	526438	c	Complex Cyanide in soil	L080-PL	c
TS1-04	N/A	S	526438	c	Free cyanide in soil	L080-PL	c
TS1-04	N/A	S	526438	c	Hexavalent chromium in soil	L080-PL	c
TS1-04	N/A	S	526438	c	Metals in soil by ICP-OES	L038B	c
TS1-04	N/A	S	526438	c	Monohydric phenols in soil	L080-PL	c
TS1-04	N/A	S	526438	c	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TS1-04	N/A	S	526438	c	Total cyanide in soil	L080-PL	c
TS1-04	N/A	S	526438	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088-PL	c
TS1-04	N/A	S	526438	c	Total petroleum hydrocarbons by HS-GC-MS in soil	L129-PL	c
TS1-04	N/A	S	526438	c	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088-PL	c
TS1-05	N/A	S	526439	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TS1-05	N/A	S	526439	c	Chromium III in soil	L080-PL/L130B	c
TS1-05	N/A	S	526439	c	Complex Cyanide in soil	L080-PL	c
TS1-05	N/A	S	526439	c	Free cyanide in soil	L080-PL	c
TS1-05	N/A	S	526439	c	Hexavalent chromium in soil	L080-PL	c
TS1-05	N/A	S	526439	c	Metals in soil by ICP-OES	L038B	c
TS1-05	N/A	S	526439	c	Monohydric phenols in soil	L080-PL	c
TS1-05	N/A	S	526439	c	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TS1-05	N/A	S	526439	c	Total cyanide in soil	L080-PL	c
TS1-05	N/A	S	526439	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088-PL	c
TS1-05	N/A	S	526439	c	Total petroleum hydrocarbons by HS-GC-MS in soil	L129-PL	c
TS1-05	N/A	S	526439	c	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088-PL	c
TS1-06	N/A	S	526440	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TS1-06	N/A	S	526440	c	Chromium III in soil	L080-PL/L130B	c
TS1-06	N/A	S	526440	c	Complex Cyanide in soil	L080-PL	c
TS1-06	N/A	S	526440	c	Free cyanide in soil	L080-PL	c
TS1-06	N/A	S	526440	c	Hexavalent chromium in soil	L080-PL	c
TS1-06	N/A	S	526440	c	Metals in soil by ICP-OES	L038B	c
TS1-06	N/A	S	526440	c	Monohydric phenols in soil	L080-PL	c
TS1-06	N/A	S	526440	c	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TS1-06	N/A	S	526440	c	Total cyanide in soil	L080-PL	c
TS1-06	N/A	S	526440	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088-PL	c
TS1-06	N/A	S	526440	c	Total petroleum hydrocarbons by HS-GC-MS in soil	L129-PL	c
TS1-06	N/A	S	526440	c	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088-PL	c
TS1-07	N/A	S	526441	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TS1-07	N/A	S	526441	c	Chromium III in soil	L080-PL/L130B	c
TS1-07	N/A	S	526441	c	Complex Cyanide in soil	L080-PL	c
TS1-07	N/A	S	526441	c	Free cyanide in soil	L080-PL	c
TS1-07	N/A	S	526441	c	Hexavalent chromium in soil	L080-PL	c
TS1-07	N/A	S	526441	c	Metals in soil by ICP-OES	L038B	c
TS1-07	N/A	S	526441	c	Monohydric phenols in soil	L080-PL	c
TS1-07	N/A	S	526441	c	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TS1-07	N/A	S	526441	c	Total cyanide in soil	L080-PL	c
TS1-07	N/A	S	526441	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088-PL	c
TS1-07	N/A	S	526441	c	Total petroleum hydrocarbons by HS-GC-MS in soil	L129-PL	c
TS1-07	N/A	S	526441	c	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088-PL	c

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Analytical Report Number : 25-036586

Project / Site name:	CTC	**Samples received on:**	10/07/2025
Your job number:	112	**Samples instructed on/ Analysis started on:**	10/07/2025
Your order number:	PO 0112	**Analysis completed by:**	17/07/2025
Report Issue Number:	1	**Report issued on:**	17/07/2025
Samples Analysed:	4 soil samples		

Signed:

Adam Fenwick
Customer Relationship Manager
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
air	- once the analysis is complete

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

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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: 25-036586
Project / Site name: CTC
Your Order No: PO 0112

Lab Sample Number				610382	610383	610384	610385
Sample Reference				TS1-08	TS1-09	TS1-10	TS1-11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				09/07/2025	09/07/2025	09/07/2025	09/07/2025
Time Taken				None Supplied	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	< 0.1
Moisture Content	%	0.01	NONE	0.35	0.28	0.33	0.23
Total mass of sample received	kg	0.1	NONE	0.9	0.8	0.9	1.1
Asbestos							
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	KSZ	KSZ	KSZ	KSZ
Analysis completed	N/A	N/A	N/A	16/07/2025	16/07/2025	16/07/2025	16/07/2025
General Inorganics							
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
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	0.13	0.19	0.26	0.1
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	< 0.05	0.06	0.07	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.05	0.07	0.09	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	0.05	0.07	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	< 0.80	< 0.80	< 0.80

Analytical Report Number: 25-036586
Project / Site name: CTC
Your Order No: PO 0112

Lab Sample Number				610382	610383	610384	610385
Sample Reference				TS1-08	TS1-09	TS1-10	TS1-11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				09/07/2025	09/07/2025	09/07/2025	09/07/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**				
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	23	21	23	17
Boron (water soluble)	mg/kg	0.2	MCERTS	1.3	1.8	1.6	1.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	31	22	25	20
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	31	22	25	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	8.7	11	9.3	9.1
Lead (aqua regia extractable)	mg/kg	1	MCERTS	12	11	12	9.7
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	16	15	16	12
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1	1.1	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	98	62	77	64
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	47	52	50	38
Petroleum Hydrocarbons							
TPHCWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0 ##	< 1.0 ##	< 1.0 ##	< 1.0 ##
TPHCWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0 ##	< 2.0 ##	< 2.0 ##	< 2.0 ##
TPHCWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0 ##	< 8.0 ##	< 8.0 ##	< 8.0 ##
TPHCWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	15	24	17
TPHCWG - Aliphatic >EC35 - EC44 $_{EH\_CU\_1D\_AL}$	mg/kg	8.4	NONE	< 8.4	< 8.4	10	< 8.4
TPHCWG - Aliphatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	15	24	17
TPHCWG - Aliphatic >EC5 - EC44 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	15	34	17
TPHCWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC35 - EC44 $_{EH\_CU\_1D\_AR}$	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4
TPHCWG - Aromatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC5 - EC44 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10
TPH Total >EC6 - EC40 $_{EH\_CU+HS\_1D\_TOTAL}$	mg/kg	10	NONE	12	23	42	25
Petroleum Range Organics (EC6 - EC10) $_{HS\_1D\_TOTAL}$	mg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
TPH (EC10 - EC40) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	MCERTS	12 ##	23 ##	42 ##	25 ##

Analytical Report Number: 25-036586
Project / Site name: CTC
Your Order No: PO 0112

Lab Sample Number				610382	610383	610384	610385
Sample Reference				TS1-08	TS1-09	TS1-10	TS1-11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				09/07/2025	09/07/2025	09/07/2025	09/07/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**				
VOCs							
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0

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

Analytical Report Number : 25-036586
Project / Site name: CTC

* 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 *
610382	TS1-08	None Supplied	None Supplied	Brown sand with gravel and vegetation
610383	TS1-09	None Supplied	None Supplied	Brown sand with gravel and vegetation
610384	TS1-10	None Supplied	None Supplied	Brown sand with gravel and vegetation
610385	TS1-11	None Supplied	None Supplied	Brown sand with gravel and vegetation

Analytical Report Number : 25-036586
Project / Site name: CTC

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI 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
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
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/L088-PL	D/W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088-PL	D/W	MCERTS
Complex Cyanide in soil	Determination of complex cyanide by calculation	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	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
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	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
Total petroleum hydrocarbons by HS-GC-MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC-MS	In-house method	L129-PL	W	ISO 17025

Analytical Report Number : 25-036586
Project / Site name: CTC

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

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 30oC.
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.

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

##- Quality control parameter has a high recovery (outside of limit); however the associated result is below the reporting limit, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.

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Analytical Report Number : 24-047642

Project / Site name:	CTC, HAYES	**Samples received on:**	09/10/2024
Your job number:		**Samples instructed on/ Analysis started on:**	14/10/2024
Your order number:		**Analysis completed by:**	22/10/2024
Report Issue Number:	1	**Report issued on:**	22/10/2024
Samples Analysed:	2 soil samples		

Signed:

Dominika Liana
Junior Reporting 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: 24-047642
Project / Site name: CTC, HAYES

Lab Sample Number				347834	347835
Sample Reference				Sprinkler ES1	Sprinkler ES2
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				08/10/2024	08/10/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**		
Stone Content	%	0.1	NONE	30	41.2
Moisture Content	%	0.01	NONE	10	12
Total mass of sample received	kg	0.1	NONE	0.8	0.8

Asbestos

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

General Inorganics

Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.07	< 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	0.62	0.66
Anthracene	mg/kg	0.05	MCERTS	0.22	0.25
Fluoranthene	mg/kg	0.05	MCERTS	1.4	1.8
Pyrene	mg/kg	0.05	MCERTS	1.3	1.7
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.56	0.89
Chrysene	mg/kg	0.05	MCERTS	0.6	0.84
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.68	1
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.26	0.38
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.66	0.93
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.32	0.43
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.1
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.35	0.43

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	7.04	9.37

Analytical Report Number: 24-047642
Project / Site name: CTC, HAYES

Lab Sample Number				347834	347835
Sample Reference				Sprinkler ES1	Sprinkler ES2
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				08/10/2024	08/10/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**		
Heavy Metals / Metalloids					
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	14
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	1.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.3	0.4
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	52	37
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	52	37
Copper (aqua regia extractable)	mg/kg	1	MCERTS	37	31
Lead (aqua regia extractable)	mg/kg	1	MCERTS	82	80
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	1	0.5
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	23	23
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	35	38
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	95	69
Petroleum Hydrocarbons					
TPHCWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	3.2	2.6
TPHCWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	84	11
TPHCWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	340	62
TPHCWG - Aliphatic >EC35 - EC44 $_{EH\_CU\_1D\_AL}$	mg/kg	8.4	NONE	240	40
TPHCWG - Aliphatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	430	75
TPHCWG - Aliphatic >EC5 - EC44 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	660	110
TPHCWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.02	MCERTS	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	5.1	< 2.0
TPHCWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	25	< 10
TPHCWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	100	15
TPHCWG - Aromatic >EC35 - EC44 $_{EH\_CU\_1D\_AR}$	mg/kg	8.4	NONE	110	15
TPHCWG - Aromatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	130	15
TPHCWG - Aromatic >EC5 - EC44 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	240	30
TPH Total >EC6 - EC40 $_{EH\_CU+HS\_1D\_TOTAL}$	mg/kg	10	NONE	760	120
Petroleum Range Organics (EC6 - EC10) $_{HS\_1D\_TOTAL}$	mg/kg	1	ISO 17025	< 1.0	< 1.0
TPH (EC10 - EC40) $_{EH\_CU\_1D\_TOTAL}$	mg/kg	10	MCERTS	760	120
VOCs					
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0

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

Analytical Report Number : 24-047642
Project / Site name: CTC, HAYES

* 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 *
347834	Sprinkler ES1	None Supplied	None Supplied	Brown clay and loam with gravel and stones
347835	Sprinkler ES2	None Supplied	None Supplied	Brown clay and loam with gravel and stones

Analytical Report Number : 24-047642
Project / Site name: CTC, HAYES

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
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
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/L088-PL	D/W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088-PL	D/W	MCERTS
Complex Cyanide in soil	Determination of complex cyanide by calculation	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	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
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	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

Analytical Report Number : 24-047642
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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
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

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 30oC.
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.

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