

Analytical Report Number : 23-55077

Project / Site name: Chapman Way, Tunbridge Wells

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 |
|--|---|--|---------------|--------------------|----------------------|
| 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 |
| D.O. for Gravimetric Quant if Screen/ID positive | Dependent option for Gravimetric Quant if Screen/ID positive scheduled. | In house asbestos methods A001 & A006. | A006-PL | D | NONE |
| Sulphate, water soluble, in soil | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method. | L038-PL | D | MCERTS |

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

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

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

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 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 - understore to separate acronyms (exception for +) |
| + | Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total |



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Analytical Report Number : 23-55532

| | | | |
|-----------------------------|----------------|--|------------|
| Project / Site name: | Chapman Way | Samples received on: | 08/09/2023 |
| Your job number: | 561063 | Samples instructed on/ Analysis started on: | 08/09/2023 |
| Your order number: | 561063 | Analysis completed by: | 18/09/2023 |
| Report Issue Number: | 1 | Report issued on: | 18/09/2023 |
| Samples Analysed: | 5 soil samples | | |

Adam Fenwick
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 |

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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: 23-55532
 Project / Site name: Chapman Way
 Your Order No: 561063

| Lab Sample Number | | | | 2805876 | 2805877 | 2805878 | 2805879 | 2805880 |
|---|-------|--------------------|----------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference | | | | RO103 | RO103 | RO103 | RO103 | RO103 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 0.75 | 6.50 | 13.00 | WAC | 18.00 |
| Date Sampled | | | | 07/09/2023 | 07/09/2023 | 07/09/2023 | 07/09/2023 | 07/09/2023 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units | Limit of detection | Accreditation Status | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 6.2 | 17 | 18 | 18 | 2.4 |
| Total mass of sample received | kg | 0.001 | NONE | 0.9 | 0.9 | 1 | 1.2 | 0.2 |

| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | Not-detected | Not-detected | Not-detected | - |
|---------------------|------|-----|-----------|--------------|--------------|--------------|--------------|-----|
| Asbestos Analyst ID | N/A | N/A | N/A | MLO | MLO | MLO | MLO | N/A |

General Inorganics

| pH - Automated | pH Units | N/A | MCERTS | 9.1 | 8.6 | 8.0 | 8.0 | 8.0 |
|---|----------|---------|--------|-----|-----|-----|-------|-----|
| Total Cyanide | mg/kg | 1 | MCERTS | - | - | - | 13 | - |
| Water Soluble Sulphate as SO4 16hr extraction (2:1) | mg/kg | 2.5 | MCERTS | - | - | - | 530 | - |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | g/l | 0.00125 | MCERTS | - | - | - | 0.266 | - |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | mg/l | 1.25 | MCERTS | - | - | - | 266 | - |
| Organic Matter (automated) | % | 0.1 | MCERTS | - | - | - | 2.3 | - |
| Total Organic Carbon (TOC) - Automated | % | 0.1 | MCERTS | - | - | - | 1.3 | - |

Speciated PAHs

| | | | | | | | | |
|------------------------|-------|------|-----------|--------|------|------|------|--------|
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.13 | 0.53 | 0.2 | < 0.05 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | 0.36 | 0.22 | 0.13 | 0.1 | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | 0.13 | 0.2 | 2 | 0.52 | < 0.05 |
| Fluorene | mg/kg | 0.05 | MCERTS | 0.15 | 0.22 | 1.1 | 0.28 | < 0.05 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 1.4 | 1.2 | 4 | 2 | < 0.05 |
| Anthracene | mg/kg | 0.05 | MCERTS | 0.63 | 0.33 | 0.78 | 0.57 | < 0.05 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 4.9 | 3 | 3.5 | 4.2 | < 0.05 |
| Pyrene | mg/kg | 0.05 | MCERTS | 4.6 | 2.6 | 3 | 3.6 | < 0.05 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 2.6 | 1.6 | 1.4 | 1.8 | < 0.05 |
| Chrysene | mg/kg | 0.05 | MCERTS | 2.5 | 1.5 | 1.3 | 1.8 | < 0.05 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | ISO 17025 | 3.6 | 2.4 | 1.6 | 2.1 | < 0.05 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | ISO 17025 | 1.6 | 0.98 | 0.93 | 0.85 | < 0.05 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 2.9 | 1.8 | 1.4 | 1.8 | < 0.05 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 1.9 | 1.5 | 0.88 | 1 | < 0.05 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | 0.54 | 0.34 | 0.2 | 0.23 | < 0.05 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | 2.3 | 1.6 | 0.96 | 1.1 | < 0.05 |

Total PAH

| | | | | | | | | |
|-----------------------------|-------|-----|-----------|------|------|------|------|--------|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | 30.1 | 19.5 | 23.7 | 22.2 | < 0.80 |
|-----------------------------|-------|-----|-----------|------|------|------|------|--------|

Heavy Metals / Metalloids

| | | | | | | | | |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 9.9 | 12 | 15 | 21 | 72 |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 0.5 | 1.3 | 1.9 | 1 | 1.1 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | 0.8 | 13 | 3 | 2.5 | < 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 | 26 | 35 | 32 | 42 | 23 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 26 | 35 | 32 | 42 | 23 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 11 | 76 | 84 | 110 | 34 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 43 | 150 | 210 | 260 | 50 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | 1.8 | 1 | 0.9 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 16 | 31 | 40 | 54 | 55 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 73 | 260 | 260 | 290 | 74 |

Analytical Report Number: 23-55532
 Project / Site name: Chapman Way
 Your Order No: 561063

| Lab Sample Number | 2805876 | 2805877 | 2805878 | 2805879 | 2805880 |
|---|---------------|--------------------|----------------------|---------------|---------------|
| Sample Reference | RO103 | RO103 | RO103 | RO103 | RO103 |
| Sample Number | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | 0.75 | 6.50 | 13.00 | WAC | 18.00 |
| Date Sampled | 07/09/2023 | 07/09/2023 | 07/09/2023 | 07/09/2023 | 07/09/2023 |
| Time Taken | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units | Limit of detection | Accreditation Status | | |

Monoaromatics & Oxygenates

| Parameter | Units | Limit of detection | Accreditation Status | 2805876 | 2805877 | 2805878 | 2805879 | 2805880 |
|------------------------------------|-------|--------------------|----------------------|---------|---------|---------|---------|---------|
| 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 | 5 | MCERTS | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| o-xylene | µg/kg | 5 | MCERTS | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 5 | NONE | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |

Petroleum Hydrocarbons

| Parameter | Units | Limit of detection | Accreditation Status | 2805876 | 2805877 | 2805878 | 2805879 | 2805880 |
|---|-------|--------------------|----------------------|---------|---------|---------|---------|---------|
| Petroleum Range Organics (C6 - C10) HS_1D_TOTAL | mg/kg | 0.1 | NONE | - | - | - | < 0.1 | - |

| Parameter | Units | Limit of detection | Accreditation Status | 2805876 | 2805877 | 2805878 | 2805879 | 2805880 |
|---|-------|--------------------|----------------------|---------|---------|---------|---------|---------|
| TPH-CWG - Aliphatic >EC5 - EC6 HS_1D_AL | mg/kg | 0.1 | NONE | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| TPH-CWG - Aliphatic >EC6 - EC8 HS_1D_AL | mg/kg | 0.1 | NONE | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| TPH-CWG - Aliphatic >EC8 - EC10 HS_1D_AL | mg/kg | 0.1 | NONE | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| TPH-CWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL | mg/kg | 1 | MCERTS | 1.9 | 2 | 2.1 | 3 | < 1.0 |
| TPH-CWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL | mg/kg | 2 | MCERTS | 6.1 | 10 | 8.6 | 8 | < 2.0 |
| TPH-CWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL | mg/kg | 8 | MCERTS | 16 | 39 | 20 | 14 | < 8.0 |
| TPH-CWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL | mg/kg | 8 | MCERTS | 63 | 170 | 110 | 56 | < 8.0 |
| TPH-CWG - Aliphatic (EC5 - EC35) EH_CU+HS_1D_AL | mg/kg | 10 | NONE | 86 | 220 | 140 | 81 | < 10 |

| Parameter | Units | Limit of detection | Accreditation Status | 2805876 | 2805877 | 2805878 | 2805879 | 2805880 |
|--|-------|--------------------|----------------------|---------|---------|---------|---------|---------|
| TPH-CWG - Aromatic >EC5 - EC7 HS_1D_AR | mg/kg | 0.1 | NONE | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| TPH-CWG - Aromatic >EC7 - EC8 HS_1D_AR | mg/kg | 0.1 | NONE | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| TPH-CWG - Aromatic >EC8 - EC10 HS_1D_AR | mg/kg | 0.1 | NONE | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| TPH-CWG - Aromatic >EC10 - EC12 EH_CU_1D_AR | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | 1.5 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >EC12 - EC16 EH_CU_1D_AR | mg/kg | 2 | MCERTS | 6.5 | 6.1 | 6.4 | < 2.0 | < 2.0 |
| TPH-CWG - Aromatic >EC16 - EC21 EH_CU_1D_AR | mg/kg | 10 | MCERTS | 27 | 17 | 16 | < 10 | < 10 |
| TPH-CWG - Aromatic >EC21 - EC35 EH_CU_1D_AR | mg/kg | 10 | MCERTS | 120 | 49 | 41 | 12 | < 10 |
| TPH-CWG - Aromatic (EC5 - EC35) EH_CU+HS_1D_AR | mg/kg | 10 | NONE | 160 | 73 | 65 | 18 | < 10 |

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



Analytical Report Number : 23-55532
 Project / Site name: Chapman Way

* 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 * |
|-------------------|------------------|---------------|-----------|--|
| 2805876 | RO103 | None Supplied | 0.75 | Brown sandy loam with gravel and vegetation. |
| 2805877 | RO103 | None Supplied | 6.5 | Brown clay with gravel. |
| 2805878 | RO103 | None Supplied | 13 | Brown clay with gravel. |
| 2805879 | RO103 | None Supplied | WAC | Brown clay with gravel. |
| 2805880 | RO103 | None Supplied | 18 | Grey clay and sand. |

Analytical Report Number : 23-55532
Project / Site name: Chapman Way

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 |
|--|---|---|---------------|--------------------|----------------------|
| Metals in soil by ICP-OES | Determination of metals in soil by aqua-regia digestion followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L038-PL | D | MCERTS |
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method. | L038-PL | D | MCERTS |
| 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 | A001-PL | D | ISO 17025 |
| Boron, water soluble, in soil | Determination of water soluble boron in soil by hot water extract followed by ICP-OES. | In-house method based on Second Site Properties version 3 | L038-PL | D | MCERTS |
| Moisture Content | Moisture content, determined gravimetrically. (30 oC) | In house method. | L019-UK/PL | W | NONE |
| Speciated EPA-16 PAHs in soil | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. Refer to CoA for analyte specific accreditation. | In-house method based on USEPA 8270 | L064-PL | D | MCERTS |
| pH in soil (automated) | Determination of pH in soil by addition of water followed by automated electrometric measurement. | In house method. | L099-PL | D | MCERTS |
| PRO (Soil) | Determination of hydrocarbons C6-C10 by headspace GC-MS. | In-house method based on USEPA8260 | L088-PL | 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. | L019-UK/PL | D | NONE |
| 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 (Skalar) | L080-PL | W | MCERTS |
| Total organic carbon (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate. | In house method. | L009-PL | D | MCERTS |
| BTEX and MTBE in soil (Monoaromatics) | Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited | In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation | L073B-PL | W | MCERTS |
| Cr (III) in soil | In-house method by calculation from total Cr and Cr VI. | In-house method by calculation | L080-PL | W | NONE |
| TPHCWG (Soil) | Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID. Refer to CoA for band specific accreditation. | In-house method with silica gel split/clean up. | L088/76-PL | D | MCERTS |
| Organic matter (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate. | In house method. | L009-PL | D | MCERTS |
| 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 |

Analytical Report Number : 23-55532
 Project / Site name: Chapman Way

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 |
|--|---|--|---------------|--------------------|----------------------|
| D.O. for Gravimetric Quant if Screen/ID positive | Dependent option for Gravimetric Quant if Screen/ID positive scheduled. | In house asbestos methods A001 & A006. | A006-PL | D | NONE |
| Sulphate, water soluble, in soil | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method. | L038-PL | D | MCERTS |

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

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

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

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 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 - understore to separate acronyms (exception for +) |
| + | Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total |



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Analytical Report Number : 23-55534

| | | | |
|-----------------------------|-----------------|--|------------|
| Project / Site name: | Chapman Way | Samples received on: | 08/09/2023 |
| Your job number: | 561063 | Samples instructed on/ Analysis started on: | 08/09/2023 |
| Your order number: | 561063 | Analysis completed by: | 15/09/2023 |
| Report Issue Number: | 1 | Report issued on: | 15/09/2023 |
| Samples Analysed: | 10:1 WAC sample | | |

Joanna Szwagrak
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.



4041



Environmental Science

i2 Analytical7 Woodshots Meadow
Croxley Green Business Park
Watford, WD18 8YS**Waste Acceptance Criteria Analytical Results**

| | | | | | | |
|---|-------------------|--|--|---|---|--------------------------|
| Report No: | 23-55534 | | | | | |
| | | | | Client: TRC COMP | | |
| Location | Chapman Way | | | | | |
| Lab Reference (Sample Number) | 2805881 / 2805882 | | | Landfill Waste Acceptance Criteria | | |
| Sampling Date | 07/09/2023 | | | Limits | | |
| Sample ID | RO103 | | | Inert Waste Landfill | Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill | Hazardous Waste Landfill |
| Depth (m) | | | | | | |
| Solid Waste Analysis | | | | | | |
| TOC (%)** | 1.3 | | | 3% | 5% | 6% |
| Loss on Ignition (%) ** | 4.6 | | | -- | -- | 10% |
| BTEX (µg/kg)** | < 5.0 | | | 6000 | -- | -- |
| Sum of PCBs (mg/kg)** | 0.027 | | | 1 | -- | -- |
| Mineral Oil (mg/kg) <small>EH, LD, CU, AL</small> | 53 | | | 500 | -- | -- |
| Total PAH (WAC-17) (mg/kg) | 22.4 | | | 100 | -- | -- |
| pH (units)** | 8.2 | | | -- | >6 | -- |
| Acid Neutralisation Capacity (mmol / kg) | 6.5 | | | -- | To be evaluated | To be evaluated |
| Eluate Analysis | | | | | | |
| | 10:1 | | | 10:1 | Limit values for compliance leaching test | |
| (BS EN 12457 - 2 preparation utilising end over end leaching procedure) | mg/l | | | mg/kg | using BS EN 12457-2 at L/S 10 l/kg (mg/kg) | |
| Arsenic * | 0.0018 | | | 0.0178 | 0.5 | 2 |
| Barium * | 0.0236 | | | 0.236 | 20 | 100 |
| Cadmium * | < 0.0001 | | | < 0.0008 | 0.04 | 1 |
| Chromium * | 0.0033 | | | 0.033 | 0.5 | 10 |
| Copper * | 0.015 | | | 0.15 | 2 | 50 |
| Mercury * | < 0.0005 | | | < 0.0050 | 0.01 | 0.2 |
| Molybdenum * | 0.0552 | | | 0.552 | 0.5 | 10 |
| Nickel * | 0.0030 | | | 0.030 | 0.4 | 10 |
| Lead * | < 0.0010 | | | < 0.010 | 0.5 | 10 |
| Antimony * | < 0.0017 | | | < 0.017 | 0.06 | 0.7 |
| Selenium * | < 0.0040 | | | < 0.040 | 0.1 | 0.5 |
| Zinc * | 0.0086 | | | 0.086 | 4 | 50 |
| Chloride * | 4.7 | | | 47 | 800 | 15000 |
| Fluoride* | 0.52 | | | 5.2 | 10 | 150 |
| Sulphate * | 39 | | | 390 | 1000 | 20000 |
| TDS* | 63 | | | 630 | 4000 | 60000 |
| Phenol Index (Monohydric Phenols) * | < 0.010 | | | < 0.10 | 1 | - |
| DOC | 4.87 | | | 48.7 | 500 | 800 |
| Leach Test Information | | | | | | |
| Stone Content (%) | < 0.1 | | | | | |
| Sample Mass (kg) | 1.2 | | | | | |
| Dry Matter (%) | 97 | | | | | |
| Moisture (%) | 2.6 | | | | | |
| Results are expressed on a dry weight basis, after correction for moisture content where applicable. *= UKAS accredited (liquid eluate analysis only) | | | | | | |
| Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation ** = MCERTS accredited | | | | | | |

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.

This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.



Analytical Report Number : 23-55534
 Project / Site name: Chapman Way

* 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 * |
|-------------------|------------------|---------------|---------------|-------------------------|
| 2805881 | RO103 | None Supplied | None Supplied | Brown clay with gravel. |

Analytical Report Number : 23-55534

Project / Site name: Chapman Way

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 |
|--|--|--|---------------|--------------------|----------------------|
| BS EN 12457-2 (10:1) Leachate Prep | 10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis. | In-house method based on BSEN12457-2. | L043-PL | W | NONE |
| Acid neutralisation capacity of soil | Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe. | In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance" | L046-PL | W | NONE |
| Loss on ignition of soil @ 450oC | Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace. | In house method. | L047-PL | D | MCERTS |
| Mineral Oil (Soil) C10 - C40 | Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID. | In-house method with silica gel spill/clean up. | L076-PL | D | NONE |
| Moisture Content | Moisture content, determined gravimetrically. (30 oC) | In house method. | L019-UK/PL | W | NONE |
| Speciated WAC-17 PAHs in soil | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. | In-house method based on USEPA 8270. | L064-PL | D | MCERTS |
| PCB's By GC-MS in soil | Determination of PCB by extraction with acetone and hexane followed by GC-MS. | In-house method based on USEPA 8082 | L027-PL | D | MCERTS |
| pH at 20oC in soil | Determination of pH in soil by addition of water followed by electrometric measurement. | In house method. | L005-PL | W | MCERTS |
| Stones content of soil | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight. | In-house method based on British Standard Methods and MCERTS requirements. | L019-UK/PL | D | NONE |
| Total organic carbon (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate. | In house method. | L009-PL | D | MCERTS |
| BTEX in soil (Monoaromatics) | Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited | In-house method based on USEPA8260 | L073B-PL | W | MCERTS |
| Total BTEX in soil (Poland) | Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited | In-house method based on USEPA8260 | L073-PL | W | MCERTS |
| Metals in leachate by ICP-OES | Determination of metals in leachate by acidification followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil" | L039-PL | W | ISO 17025 |
| Chloride 10:1 WAC | Determination of Chloride colorimetrically by discrete analyser. | In house based on MEWAM Method ISBN 0117516260. | L082-PL | W | ISO 17025 |
| Fluoride 10:1 WAC | Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode. | In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination" | L033B-PL | W | ISO 17025 |
| Sulphate 10:1 WAC | Determination of sulphate in leachate by ICP-OES | In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil" | L039-PL | W | ISO 17025 |

Analytical Report Number : 23-55534
Project / Site name: Chapman Way

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 dissolved solids 10:1 WAC | Determination of total dissolved solids in water by EC probe using a factor of 0.6. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L031-PL | W | ISO 17025 |
| Monohydric phenols 10:1 WAC | Determination of phenols in leachate by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L080-PL | W | ISO 17025 |
| Dissolved organic carbon 10:1 WAC | Determination of dissolved inorganic carbon in leachate by TOC/DOC NDIR Analyser. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L037-PL | 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.

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 - understore to separate acronyms (exception for +) |
| + | Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total |



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Analytical Report Number : 23-56280

| | | | |
|-----------------------------|-----------------------------|--|------------|
| Project / Site name: | Chapman Way Tunbridge Wells | Samples received on: | 13/09/2023 |
| Your job number: | 561063 | Samples instructed on/ Analysis started on: | 13/09/2023 |
| Your order number: | 561063 | Analysis completed by: | 20/09/2023 |
| Report Issue Number: | 1 | Report issued on: | 20/09/2023 |
| Samples Analysed: | 4 soil samples | | |

Izabela Wójcik
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: 23-56280
 Project / Site name: Chapman Way Tunbridge Wells
 Your Order No: 561063

| Lab Sample Number | | | | 2810063 | 2810064 | 2810065 | 2810066 |
|--------------------------------------|-------|--------------------|----------------------|---------------|---------------|---------------|---------------|
| Sample Reference | | | | RO101 | RO101 | RO101 | RO101 |
| Sample Number | | | | None Supplied | None Supplied | WAC | None Supplied |
| Depth (m) | | | | 1.50 | 9.50 | None Supplied | 3.50 |
| Date Sampled | | | | 11/09/2023 | 11/09/2023 | 11/09/2023 | 11/09/2023 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units | Limit of detection | Accreditation Status | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 12 | 18 | 18 | 7.3 |
| Total mass of sample received | kg | 0.001 | NONE | 0.8 | 0.7 | 1.2 | 0.8 |

| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | Not-detected | Not-detected | Not-detected |
|---------------------|------|-----|-----------|--------------|--------------|--------------|--------------|
| Asbestos Analyst ID | N/A | N/A | N/A | IZJ | IZJ | IZJ | IZJ |

General Inorganics

| pH - Automated | pH Units | N/A | MCERTS | 7.1 | 7.3 | 8.6 | 8.2 |
|---|----------|---------|--------|-----|-----|-------|-----|
| Total Cyanide | mg/kg | 1 | MCERTS | - | - | < 1.0 | - |
| Water Soluble Sulphate as SO4 16hr extraction (2:1) | mg/kg | 2.5 | MCERTS | - | - | 520 | - |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | g/l | 0.00125 | MCERTS | - | - | 0.26 | - |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | mg/l | 1.25 | MCERTS | - | - | 260 | - |
| Organic Matter (automated) | % | 0.1 | MCERTS | - | - | 1.8 | - |
| Total Organic Carbon (TOC) - Automated | % | 0.1 | MCERTS | - | - | 1.1 | - |

Speciated PAHs

| | | | | | | | |
|------------------------|-------|------|-----------|--------|------|------|--------|
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.16 | 0.49 | < 0.05 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.06 | 0.08 | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.16 | 1.9 | < 0.05 |
| Fluorene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.17 | 2.4 | < 0.05 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | < 0.05 | 1.4 | 14 | 0.06 |
| Anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.23 | 3.7 | < 0.05 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | < 0.05 | 2.5 | 17 | 0.1 |
| Pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | 2.2 | 14 | 0.1 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | 1.3 | 6 | < 0.05 |
| Chrysene | mg/kg | 0.05 | MCERTS | < 0.05 | 1.5 | 5.3 | < 0.05 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | ISO 17025 | < 0.05 | 2.1 | 5.6 | 0.06 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | ISO 17025 | < 0.05 | 0.95 | 3.4 | < 0.05 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | 1.8 | 5.9 | 0.05 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | 1.1 | 2.9 | < 0.05 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.25 | 0.57 | < 0.05 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | < 0.05 | 1.1 | 3 | < 0.05 |

Total PAH

| | | | | | | | |
|-----------------------------|-------|-----|-----------|--------|------|------|--------|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | < 0.80 | 16.8 | 85.7 | < 0.80 |
|-----------------------------|-------|-----|-----------|--------|------|------|--------|

Heavy Metals / Metalloids

| | | | | | | | |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 5.8 | 18 | 13 | 15 |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | < 0.2 | 1.7 | 1.5 | 0.2 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | 0.8 | < 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 | 14 | 21 | 25 | 10 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 14 | 22 | 26 | 11 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 11 | 120 | 36 | 11 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 9.2 | 430 | 69 | 8.7 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | 0.6 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 9.3 | 22 | 23 | 7.6 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 32 | 410 | 110 | 22 |

Analytical Report Number: 23-56280
 Project / Site name: Chapman Way Tunbridge Wells
 Your Order No: 561063

| | | | | | | | |
|---|-------|--------------------|----------------------|---------------|---------------|---------------|---------------|
| Lab Sample Number | | | | 2810063 | 2810064 | 2810065 | 2810066 |
| Sample Reference | | | | RO101 | RO101 | RO101 | RO101 |
| Sample Number | | | | None Supplied | None Supplied | WAC | None Supplied |
| Depth (m) | | | | 1.50 | 9.50 | None Supplied | 3.50 |
| Date Sampled | | | | 11/09/2023 | 11/09/2023 | 11/09/2023 | 11/09/2023 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units | Limit of detection | Accreditation Status | | | | |

Monoaromatics & Oxygenates

| | | | | | | | |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|
| 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 | 5 | MCERTS | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| o-xylene | µg/kg | 5 | MCERTS | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 5 | NONE | < 5.0 | < 5.0 | < 5.0 | < 5.0 |

Petroleum Hydrocarbons

| | | | | | | | |
|--|-------|-----|------|---|---|-------|---|
| Petroleum Range Organics (C6 - C10) <small>HS_1D_TOTAL</small> | mg/kg | 0.1 | NONE | - | - | < 0.1 | - |
|--|-------|-----|------|---|---|-------|---|

| | | | | | | | |
|--|-------|-----|--------|--------|--------|--------|--------|
| TPH-CWG - Aliphatic >EC5 - EC6 <small>HS_1D_AL</small> | mg/kg | 0.1 | NONE | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| TPH-CWG - Aliphatic >EC6 - EC8 <small>HS_1D_AL</small> | mg/kg | 0.1 | NONE | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| TPH-CWG - Aliphatic >EC8 - EC10 <small>HS_1D_AL</small> | mg/kg | 0.1 | NONE | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| TPH-CWG - Aliphatic >EC10 - EC12 <small>EH_CU_1D_AL</small> | mg/kg | 1 | MCERTS | < 1.0 | 1.8 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >EC12 - EC16 <small>EH_CU_1D_AL</small> | mg/kg | 2 | MCERTS | < 2.0 | 3.4 | 3.5 | < 2.0 |
| TPH-CWG - Aliphatic >EC16 - EC21 <small>EH_CU_1D_AL</small> | mg/kg | 8 | MCERTS | < 8.0 | < 8.0 | 10 | < 8.0 |
| TPH-CWG - Aliphatic >EC21 - EC35 <small>EH_CU_1D_AL</small> | mg/kg | 8 | MCERTS | < 8.0 | 16 | 21 | 12 |
| TPH-CWG - Aliphatic (EC5 - EC35) <small>EH_CU+HS_1D_AL</small> | mg/kg | 10 | NONE | < 10 | 25 | 35 | 13 |

| | | | | | | | |
|---|-------|-----|--------|--------|--------|--------|--------|
| TPH-CWG - Aromatic >EC5 - EC7 <small>HS_1D_AR</small> | mg/kg | 0.1 | NONE | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| TPH-CWG - Aromatic >EC7 - EC8 <small>HS_1D_AR</small> | mg/kg | 0.1 | NONE | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| TPH-CWG - Aromatic >EC8 - EC10 <small>HS_1D_AR</small> | mg/kg | 0.1 | NONE | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| TPH-CWG - Aromatic >EC10 - EC12 <small>EH_CU_1D_AR</small> | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >EC12 - EC16 <small>EH_CU_1D_AR</small> | mg/kg | 2 | MCERTS | < 2.0 | < 2.0 | 9.3 | < 2.0 |
| TPH-CWG - Aromatic >EC16 - EC21 <small>EH_CU_1D_AR</small> | mg/kg | 10 | MCERTS | < 10 | < 10 | 55 | < 10 |
| TPH-CWG - Aromatic >EC21 - EC35 <small>EH_CU_1D_AR</small> | mg/kg | 10 | MCERTS | < 10 | 20 | 64 | < 10 |
| TPH-CWG - Aromatic (EC5 - EC35) <small>EH_CU+HS_1D_AR</small> | mg/kg | 10 | NONE | < 10 | 27 | 130 | < 10 |

VOCs

| | | | | | | | |
|---------------------------------------|-------|---|-----------|---|-------|---|---|
| Chloromethane | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| Chloroethane | µg/kg | 5 | NONE | - | < 5.0 | - | - |
| Bromomethane | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| Vinyl Chloride | µg/kg | 5 | NONE | - | < 5.0 | - | - |
| Trichlorofluoromethane | µg/kg | 5 | NONE | - | < 5.0 | - | - |
| 1,1-dichloroethene | µg/kg | 5 | NONE | - | < 5.0 | - | - |
| 1,1,2-Trichloro 1,2,2-Trifluoroethane | µg/kg | 5 | NONE | - | < 5.0 | - | - |
| Trans 1,2-dichloroethylene | µg/kg | 5 | NONE | - | < 5.0 | - | - |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 5 | NONE | - | < 5.0 | - | - |
| 1,1-dichloroethane | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| 2,2-Dichloropropane | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| Chloroform | µg/kg | 5 | NONE | - | < 5.0 | - | - |
| 1,1,1-Trichloroethane | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| 1,2-dichloroethane | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| 1,1-Dichloropropene | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| Cis-1,2-dichloroethene | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| Benzene | µg/kg | 5 | MCERTS | - | < 5.0 | - | - |
| Carbontetrachloride | µg/kg | 5 | NONE | - | < 5.0 | - | - |
| 1,2-dichloropropane | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| Trichloroethene | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| Dibromomethane | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |

Analytical Report Number: 23-56280
 Project / Site name: Chapman Way Tunbridge Wells
 Your Order No: 561063

| Lab Sample Number | | | | 2810063 | 2810064 | 2810065 | 2810066 |
|---|-------|--------------------|----------------------|---------------|---------------|---------------|---------------|
| Sample Reference | | | | RO101 | RO101 | RO101 | RO101 |
| Sample Number | | | | None Supplied | None Supplied | WAC | None Supplied |
| Depth (m) | | | | 1.50 | 9.50 | None Supplied | 3.50 |
| Date Sampled | | | | 11/09/2023 | 11/09/2023 | 11/09/2023 | 11/09/2023 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units | Limit of detection | Accreditation Status | | | | |
| Bromodichloromethane | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| Cis-1,3-dichloropropene | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| Trans-1,3-dichloropropene | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| Toluene | µg/kg | 5 | MCERTS | - | < 5.0 | - | - |
| 1,1,2-Trichloroethane | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| 1,3-Dichloropropane | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| Dibromochloromethane | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| Tetrachloroethene | µg/kg | 5 | NONE | - | < 5.0 | - | - |
| 1,2-Dibromoethane | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| Chlorobenzene | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| 1,1,1,2-Tetrachloroethane | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| Ethylbenzene | µg/kg | 5 | MCERTS | - | < 5.0 | - | - |
| p & m-xylene | µg/kg | 5 | MCERTS | - | < 5.0 | - | - |
| Styrene | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| Bromoform | µg/kg | 5 | NONE | - | < 5.0 | - | - |
| o-xylene | µg/kg | 5 | MCERTS | - | < 5.0 | - | - |
| Isopropylbenzene | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| 1,1,2,2-Tetrachloroethane | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| Bromobenzene | µg/kg | 5 | NONE | - | < 5.0 | - | - |
| N-Propylbenzene | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| 2-Chlorotoluene | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| 4-Chlorotoluene | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| 1,3,5-Trimethylbenzene | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| Tert-Butylbenzene | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| 1,2,4-Trimethylbenzene | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| Sec-Butylbenzene | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| 1,3-dichlorobenzene | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| P-Isopropyltoluene | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| 1,4-dichlorobenzene | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| 1,2-dichlorobenzene | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| Butylbenzene | µg/kg | 5 | NONE | - | < 5.0 | - | - |
| 1,2-Dibromo-3-chloropropane | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| 1,2,4-Trichlorobenzene | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |
| Hexachlorobutadiene | µg/kg | 5 | NONE | - | < 5.0 | - | - |
| 1,2,3-Trichlorobenzene | µg/kg | 5 | ISO 17025 | - | < 5.0 | - | - |

PCBs by GC-MS

| | | | | | | | |
|------------------|-------|-------|--------|---------|---|---|---|
| PCB Congener 28 | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - |
| PCB Congener 52 | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - |
| PCB Congener 101 | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - |
| PCB Congener 118 | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - |
| PCB Congener 138 | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - |
| PCB Congener 153 | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - |
| PCB Congener 180 | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - |

Total PCBs by GC-MS

| | | | | | | | |
|------------|-------|-------|--------|---------|---|---|---|
| Total PCBs | mg/kg | 0.007 | MCERTS | < 0.007 | - | - | - |
|------------|-------|-------|--------|---------|---|---|---|

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



Analytical Report Number : 23-56280

Project / Site name: Chapman Way Tunbridge Wells

* 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 * |
|-------------------|------------------|---------------|---------------|----------------------|
| 2810063 | RO101 | None Supplied | 1.5 | Brown clay. |
| 2810064 | RO101 | None Supplied | 9.5 | Brown clay. |
| 2810065 | RO101 | WAC | None Supplied | Brown clay. |
| 2810066 | RO101 | None Supplied | 3.5 | Brown clay. |

Analytical Report Number : 23-56280

Project / Site name: Chapman Way Tunbridge Wells

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 |
|--|---|---|---------------|--------------------|----------------------|
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method. | L038-PL | D | MCERTS |
| Metals in soil by ICP-OES | Determination of metals in soil by aqua-regia digestion followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L038-PL | D | MCERTS |
| 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 | A001-PL | D | ISO 17025 |
| Boron, water soluble, in soil | Determination of water soluble boron in soil by hot water extract followed by ICP-OES. | In-house method based on Second Site Properties version 3 | L038-PL | D | MCERTS |
| Moisture Content | Moisture content, determined gravimetrically. (30 oC) | In house method. | L019-UK/PL | W | NONE |
| Speciated EPA-16 PAHs in soil | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. Refer to CoA for analyte specific accreditation. | In-house method based on USEPA 8270 | L064-PL | D | MCERTS |
| PCB's By GC-MS in soil | Determination of PCB by extraction with acetone and hexane followed by GC-MS. | In-house method based on USEPA 8082 | L027-PL | D | MCERTS |
| pH in soil (automated) | Determination of pH in soil by addition of water followed by automated electrometric measurement. | In house method. | L099-PL | D | MCERTS |
| PRO (Soil) | Determination of hydrocarbons C6-C10 by headspace GC-MS. | In-house method based on USEPA8260 | L088-PL | 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. | L019-UK/PL | D | NONE |
| 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 (Skalar) | L080-PL | W | MCERTS |
| Total organic carbon (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate. | In house method. | L009-PL | D | MCERTS |
| Volatile organic compounds in soil | Determination of volatile organic compounds in soil by headspace GC-MS. | In-house method based on USEPA8260 | L073B-PL | W | MCERTS |
| BTEX and MTBE in soil (Monoaromatics) | Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited | In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation | L073B-PL | W | MCERTS |
| Cr (III) in soil | In-house method by calculation from total Cr and Cr VI. | In-house method by calculation | L080-PL | W | NONE |
| TPHCWG (Soil) | Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID. Refer to CoA for band specific accreditation. | In-house method with silica gel split/clean up. | L088/76-PL | D | MCERTS |

Analytical Report Number : 23-56280

Project / Site name: Chapman Way Tunbridge Wells

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 |
|--|---|--|---------------|--------------------|----------------------|
| Organic matter (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate. | In house method. | L009-PL | D | MCERTS |
| 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 |
| D.O. for Gravimetric Quant if Screen/ID positive | Dependent option for Gravimetric Quant if Screen/ID positive scheduled. | In house asbestos methods A001 & A006. | A006-PL | D | NONE |
| Sulphate, water soluble, in soil | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method. | L038-PL | D | MCERTS |

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

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

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

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 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 - understore to separate acronyms (exception for +) |
| + | Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total |



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Analytical Report Number : 23-56281

| | | | |
|-----------------------------|-----------------------------|--|------------|
| Project / Site name: | Chapman Way Tunbridge Wells | Samples received on: | 13/09/2023 |
| Your job number: | 561063 | Samples instructed on/ Analysis started on: | 13/09/2023 |
| Your order number: | 561063 | Analysis completed by: | 21/09/2023 |
| Report Issue Number: | 1 | Report issued on: | 21/09/2023 |
| Samples Analysed: | 10:1 WAC sample | | |

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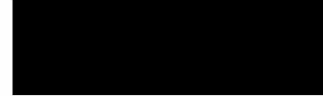
Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.



4041



Environmental Science

i2 Analytical7 Woodshots Meadow
Croxley Green Business Park
Watford, WD18 8YS**Waste Acceptance Criteria Analytical Results**

| | | | | | | |
|--|-----------------------------|--|----------|---|---|--------------------------|
| Report No: | 23-56281 | | | | | |
| | | | | Client: TRC COMP | | |
| Location | Chapman Way Tunbridge Wells | | | | | |
| Lab Reference (Sample Number) | 2810067 / 2810068 | | | Landfill Waste Acceptance Criteria | | |
| Sampling Date | 11/09/2023 | | | Limits | | |
| Sample ID | RO101 WAC | | | Inert Waste Landfill | Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill | Hazardous Waste Landfill |
| Depth (m) | | | | | | |
| Solid Waste Analysis | | | | | | |
| TOC (%)** | 1.1 | | | 3% | 5% | 6% |
| Loss on Ignition (%) ** | 3.9 | | | -- | -- | 10% |
| BTEX (µg/kg)** | < 5.0 | | | 6000 | -- | -- |
| Sum of PCBs (mg/kg)** | < 0.007 | | | 1 | -- | -- |
| Mineral Oil (mg/kg) <small>EH_ID_CJ_AL</small> | 40 | | | 500 | -- | -- |
| Total PAH (WAC-17) (mg/kg) | 86.7 | | | 100 | -- | -- |
| pH (units)** | 7.7 | | | -- | >6 | -- |
| Acid Neutralisation Capacity (mmol / kg) | 3.9 | | | -- | To be evaluated | To be evaluated |
| Eluate Analysis | 10:1 | | 10:1 | Limit values for compliance leaching test | | |
| (BS EN 12457 - 2 preparation utilising end over end leaching procedure) | mg/l | | mg/kg | using BS EN 12457-2 at L/S 10 l/kg (mg/kg) | | |
| Arsenic * | 0.0020 | | 0.0199 | 0.5 | 2 | 25 |
| Barium * | 0.0790 | | 0.790 | 20 | 100 | 300 |
| Cadmium * | < 0.0001 | | < 0.0008 | 0.04 | 1 | 5 |
| Chromium * | 0.0015 | | 0.016 | 0.5 | 10 | 70 |
| Copper * | 0.028 | | 0.28 | 2 | 50 | 100 |
| Mercury * | < 0.0005 | | < 0.0050 | 0.01 | 0.2 | 2 |
| Molybdenum * | 0.0150 | | 0.150 | 0.5 | 10 | 30 |
| Nickel * | 0.0036 | | 0.036 | 0.4 | 10 | 40 |
| Lead * | 0.0044 | | 0.044 | 0.5 | 10 | 50 |
| Antimony * | 0.0034 | | 0.034 | 0.06 | 0.7 | 5 |
| Selenium * | < 0.0040 | | < 0.040 | 0.1 | 0.5 | 7 |
| Zinc * | 0.020 | | 0.20 | 4 | 50 | 200 |
| Chloride * | 2.7 | | 27 | 800 | 15000 | 25000 |
| Fluoride* | 0.61 | | 6.1 | 10 | 150 | 500 |
| Sulphate * | 32 | | 320 | 1000 | 20000 | 50000 |
| TDS* | 160 | | 1600 | 4000 | 60000 | 100000 |
| Phenol Index (Monohydric Phenols) * | < 0.010 | | < 0.10 | 1 | - | - |
| DOC | 14.7 | | 147 | 500 | 800 | 1000 |
| Leach Test Information | | | | | | |
| Stone Content (%) | < 0.1 | | | | | |
| Sample Mass (kg) | 1.2 | | | | | |
| Dry Matter (%) | 82 | | | | | |
| Moisture (%) | 18 | | | | | |
| | | | | | | |
| | | | | | | |
| Results are expressed on a dry weight basis, after correction for moisture content where applicable. | | | | * = UKAS accredited (liquid eluate analysis only) | | |
| Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation | | | | ** = MCERTS accredited | | |
| Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3. This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous. | | | | | | |



Analytical Report Number : 23-56281

Project / Site name: Chapman Way Tunbridge Wells

* 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 * |
|-------------------|------------------|---------------|---------------|----------------------|
| 2810067 | RO101 | WAC | None Supplied | Brown clay. |

Analytical Report Number : 23-56281

Project / Site name: Chapman Way Tunbridge Wells

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 |
|--|--|--|---------------|--------------------|----------------------|
| BS EN 12457-2 (10:1) Leachate Prep | 10:1 (as received, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis. | In-house method based on BSEN12457-2. | L043-PL | W | NONE |
| Acid neutralisation capacity of soil | Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe. | In-house method based on Guidance on Sampling and Testing of Wastes to Meet Landfill Waste Acceptance" | L046-PL | W | NONE |
| Loss on ignition of soil @ 450oC | Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace. | In house method. | L047-PL | D | MCERTS |
| Mineral Oil (Soil) C10 - C40 | Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID. | In-house method with silica gel split/clean up. | L076-PL | D | NONE |
| Moisture Content | Moisture content, determined gravimetrically. (30 oC) | In house method. | L019-UK/PL | W | NONE |
| Speciated WAC-17 PAHs in soil | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. | In-house method based on USEPA 8270. | L064-PL | D | MCERTS |
| PCB's By GC-MS in soil | Determination of PCB by extraction with acetone and hexane followed by GC-MS. | In-house method based on USEPA 8082 | L027-PL | D | MCERTS |
| pH at 20oC in soil | Determination of pH in soil by addition of water followed by electrometric measurement. | In house method. | L005-PL | W | MCERTS |
| Stones content of soil | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight. | In-house method based on British Standard Methods and MCERTS requirements. | L019-UK/PL | D | NONE |
| Total organic carbon (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate. | In house method. | L009-PL | D | MCERTS |
| BTEX in soil (Monoaromatics) | Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited | In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation | L073B-PL | W | MCERTS |
| Total BTEX in soil (Poland) | Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited | In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation | L073-PL | W | MCERTS |
| Metals in leachate by ICP-OES | Determination of metals in leachate by acidification followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil" | L039-PL | W | ISO 17025 |
| Chloride 10:1 WAC | Determination of Chloride colorimetrically by discrete analyser. | In house based on MEWAM Method ISBN 0117516260. | L082-PL | W | ISO 17025 |
| Fluoride 10:1 WAC | Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode. | In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination" | L033B-PL | W | ISO 17025 |
| Sulphate 10:1 WAC | Determination of sulphate in leachate by ICP-OES | In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil" | L039-PL | W | ISO 17025 |

Analytical Report Number : 23-56281

Project / Site name: Chapman Way Tunbridge Wells

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 dissolved solids 10:1 WAC | Determination of total dissolved solids in water by EC probe using a factor of 0.6. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L031-PL | W | ISO 17025 |
| Monohydric phenols 10:1 WAC | Determination of phenols in leachate by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L080-PL | W | ISO 17025 |
| Dissolved organic carbon 10:1 WAC | Determination of dissolved inorganic carbon in leachate by TOC/DOC NDIR Analyser. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L037-PL | 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.

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 - understore to separate acronyms (exception for +) |
| + | Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total |



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Analytical Report Number : 23-56285

| | | | |
|-----------------------------|------------------------|--|------------|
| Project / Site name: | Chapman Way, Tunbridge | Samples received on: | 13/09/2023 |
| Your job number: | 561063 | Samples instructed on/ Analysis started on: | 13/09/2023 |
| Your order number: | 561063 | Analysis completed by: | 20/09/2023 |
| Report Issue Number: | 1 | Report issued on: | 20/09/2023 |
| Samples Analysed: | 4 soil samples | | |

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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: 23-56285
 Project / Site name: Chapman Way, Tunbridge
 Your Order No: 561063

| Lab Sample Number | | | | 2810070 | 2810071 | 2810072 | 2810073 |
|---|-------|--------------------|----------------------|---------------|---------------|---------------|---------------|
| Sample Reference | | | | R0104 | R0104 | R0104 | R0104 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 0.75 | 5.50 | WAC | 10.40 |
| Date Sampled | | | | 12/09/2023 | 12/09/2023 | 12/09/2023 | 12/09/2023 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units | Limit of detection | Accreditation Status | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 9.2 | 21 | 16 | 19 |
| Total mass of sample received | kg | 0.001 | NONE | 0.7 | 0.8 | 1.7 | 0.2 |

| Asbestos in Soil Screen / Identification Name | Type | N/A | ISO 17025 | Chrysotile | Amosite | - | - |
|---|------|-------|-----------|------------|----------|--------------|--------------|
| Asbestos in Soil | Type | N/A | ISO 17025 | Detected | Detected | Not-detected | Not-detected |
| Asbestos Quantification (Stage 2) | % | 0.001 | ISO 17025 | < 0.001 | < 0.001 | - | - |
| Asbestos Quantification Total | % | 0.001 | ISO 17025 | < 0.001 | < 0.001 | - | - |
| Asbestos Analyst ID | N/A | N/A | N/A | SPU | SPU | SPU | SPU |

General Inorganics

| pH - Automated | pH Units | N/A | MCERTS | 9.7 | 8.3 | 9.8 | 7.8 |
|---|----------|---------|--------|-----|-----|-------|-----|
| Total Cyanide | mg/kg | 1 | MCERTS | - | - | < 1.0 | - |
| Water Soluble Sulphate as SO4 16hr extraction (2:1) | mg/kg | 2.5 | MCERTS | - | - | 1300 | - |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | g/l | 0.00125 | MCERTS | - | - | 0.647 | - |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | mg/l | 1.25 | MCERTS | - | - | 647 | - |
| Organic Matter (automated) | % | 0.1 | MCERTS | - | - | 1.7 | - |
| Total Organic Carbon (TOC) - Automated | % | 0.1 | MCERTS | - | - | 1 | - |

Speciated PAHs

| | | | | | | | |
|------------------------|-------|------|-----------|------|--------|------|--------|
| Naphthalene | mg/kg | 0.05 | MCERTS | 1.1 | < 0.05 | 0.05 | 0.19 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | 0.24 | 0.17 | 0.16 | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | 3.4 | 0.09 | 0.13 | 0.28 |
| Fluorene | mg/kg | 0.05 | MCERTS | 3.6 | 0.14 | 0.22 | 0.28 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 25 | 0.87 | 1.1 | 2.4 |
| Anthracene | mg/kg | 0.05 | MCERTS | 7.4 | 0.25 | 0.26 | 0.6 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 33 | 1.8 | 1.9 | 2.7 |
| Pyrene | mg/kg | 0.05 | MCERTS | 30 | 1.5 | 1.7 | 2.6 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 15 | 0.8 | 0.76 | 1.5 |
| Chrysene | mg/kg | 0.05 | MCERTS | 12 | 0.88 | 0.87 | 1.9 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | ISO 17025 | 17 | 1.3 | 1.2 | 1.3 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | ISO 17025 | 7.3 | 0.43 | 0.43 | 0.65 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 15 | 1 | 0.98 | 1.4 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 7 | 0.67 | 0.7 | 0.58 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | 2 | 0.19 | 0.18 | 0.14 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | 8.4 | 0.85 | 0.8 | 0.6 |

Total PAH

| | | | | | | | |
|-----------------------------|-------|-----|-----------|-----|------|------|----|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | 188 | 10.9 | 11.4 | 17 |
|-----------------------------|-------|-----|-----------|-----|------|------|----|

Analytical Report Number: 23-56285
 Project / Site name: Chapman Way, Tunbridge
 Your Order No: 561063

| | | | | | | | |
|---|-------|--------------------|----------------------|---------------|---------------|---------------|---------------|
| Lab Sample Number | | | | 2810070 | 2810071 | 2810072 | 2810073 |
| Sample Reference | | | | R0104 | R0104 | R0104 | R0104 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 0.75 | 5.50 | WAC | 10.40 |
| Date Sampled | | | | 12/09/2023 | 12/09/2023 | 12/09/2023 | 12/09/2023 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units | Limit of detection | Accreditation Status | | | | |

Heavy Metals / Metalloids

| | | | | | | | |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 11 | 8.5 | 15 | 12 |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 0.9 | 1.2 | 0.9 | 0.4 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | 0.5 | 0.9 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 1.8 | MCERTS | < 1.8 | < 1.8 | < 1.8 | < 1.8 |
| Chromium (III) | mg/kg | 1 | NONE | 20 | 34 | 27 | 23 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 20 | 34 | 28 | 23 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 28 | 31 | 72 | 29 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 170 | 180 | 81 | 32 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 24 | 16 | 21 | 21 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 110 | 110 | 160 | 90 |

Monoaromatics & Oxygenates

| | | | | | | | |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|
| 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 | 5 | MCERTS | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| o-xylene | µg/kg | 5 | MCERTS | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 5 | NONE | < 5.0 | < 5.0 | < 5.0 | < 5.0 |

Petroleum Hydrocarbons

| | | | | | | | |
|---|-------|-----|------|---|---|-------|---|
| Petroleum Range Organics (C6 - C10) HS_ID_TOTAL | mg/kg | 0.1 | NONE | - | - | < 0.1 | - |
|---|-------|-----|------|---|---|-------|---|

| | | | | | | | |
|---|-------|-----|--------|--------|--------|--------|--------|
| TPH-CWG - Aliphatic >EC5 - EC6 HS_ID_AL | mg/kg | 0.1 | NONE | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| TPH-CWG - Aliphatic >EC6 - EC8 HS_ID_AL | mg/kg | 0.1 | NONE | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| TPH-CWG - Aliphatic >EC8 - EC10 HS_ID_AL | mg/kg | 0.1 | NONE | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| TPH-CWG - Aliphatic >EC10 - EC12 EH_CU_ID_AL | mg/kg | 1 | MCERTS | 5.8 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >EC12 - EC16 EH_CU_ID_AL | mg/kg | 2 | MCERTS | 13 | 4.4 | 5.2 | 3.6 |
| TPH-CWG - Aliphatic >EC16 - EC21 EH_CU_ID_AL | mg/kg | 8 | MCERTS | 32 | 10 | 12 | 14 |
| TPH-CWG - Aliphatic >EC21 - EC35 EH_CU_ID_AL | mg/kg | 8 | MCERTS | 180 | 32 | 30 | 24 |
| TPH-CWG - Aliphatic (EC5 - EC35) EH_CU+HS_ID_AL | mg/kg | 10 | NONE | 230 | 47 | 47 | 42 |

| | | | | | | | |
|--|-------|-----|--------|--------|--------|--------|--------|
| TPH-CWG - Aromatic >EC5 - EC7 HS_ID_AR | mg/kg | 0.1 | NONE | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| TPH-CWG - Aromatic >EC7 - EC8 HS_ID_AR | mg/kg | 0.1 | NONE | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| TPH-CWG - Aromatic >EC8 - EC10 HS_ID_AR | mg/kg | 0.1 | NONE | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| TPH-CWG - Aromatic >EC10 - EC12 EH_CU_ID_AR | mg/kg | 1 | MCERTS | 2.1 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >EC12 - EC16 EH_CU_ID_AR | mg/kg | 2 | MCERTS | 17 | < 2.0 | < 2.0 | 3 |
| TPH-CWG - Aromatic >EC16 - EC21 EH_CU_ID_AR | mg/kg | 10 | MCERTS | 140 | < 10 | < 10 | 30 |
| TPH-CWG - Aromatic >EC21 - EC35 EH_CU_ID_AR | mg/kg | 10 | MCERTS | 720 | < 10 | 14 | 46 |
| TPH-CWG - Aromatic (EC5 - EC35) EH_CU+HS_ID_AR | mg/kg | 10 | NONE | 880 | < 10 | 25 | 79 |

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



Analytical Report Number: 23-56285
Project / Site name: Chapman Way, Tunbridge
Your Order No: 561063

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

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

Quantitative Analysis

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

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

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

Both Qualitative and Quantitative Analyses are UKAS accredited.

| Sample Number | Sample ID | Sample Depth (m) | Sample Weight (g) | Asbestos Containing Material Types Detected (ACM) | PLM Results | Asbestos by hand picking/weighing (%) | Total % Asbestos in Sample |
|---------------|-----------|------------------|-------------------|---|-------------|---------------------------------------|----------------------------|
| 2810070 | R0104 | 0.75 | 132 | Loose Fibres | Chrysotile | < 0.001 | < 0.001 |
| 2810071 | R0104 | 5.50 | 146 | Loose Fibres | Amosite | < 0.001 | < 0.001 |

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



Analytical Report Number : 23-56285

Project / Site name: Chapman Way, Tunbridge

* 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 * |
|-------------------|------------------|---------------|-----------|-----------------------------------|
| 2810070 | R0104 | None Supplied | 0.75 | Brown sand with gravel and brick. |
| 2810071 | R0104 | None Supplied | 5.5 | Brown clay. |
| 2810072 | R0104 | None Supplied | WAC | Brown clay. |
| 2810073 | R0104 | None Supplied | 10.4 | Brown clay. |

Analytical Report Number : 23-56285

Project / Site name: Chapman Way, Tunbridge

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 |
|--|---|---|---------------|--------------------|----------------------|
| Metals in soil by ICP-OES | Determination of metals in soil by aqua-regia digestion followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L038-PL | D | MCERTS |
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method. | L038-PL | D | MCERTS |
| 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 | A001-PL | D | ISO 17025 |
| Boron, water soluble, in soil | Determination of water soluble boron in soil by hot water extract followed by ICP-OES. | In-house method based on Second Site Properties version 3 | L038-PL | D | MCERTS |
| Moisture Content | Moisture content, determined gravimetrically. (30 oC) | In house method. | L019-UK/PL | W | NONE |
| Speciated EPA-16 PAHs in soil | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. Refer to CoA for analyte specific accreditation. | In-house method based on USEPA 8270 | L064-PL | D | MCERTS |
| pH in soil (automated) | Determination of pH in soil by addition of water followed by automated electrometric measurement. | In house method. | L099-PL | D | MCERTS |
| PRO (Soil) | Determination of hydrocarbons C6-C10 by headspace GC-MS. | In-house method based on USEPA8260 | L088-PL | 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. | L019-UK/PL | D | NONE |
| 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 (Skalar) | L080-PL | W | MCERTS |
| Total organic carbon (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate. | In house method. | L009-PL | D | MCERTS |
| BTEX and MTBE in soil (Monoaromatics) | Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited | In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation | L073B-PL | W | MCERTS |
| Cr (III) in soil | In-house method by calculation from total Cr and Cr VI. | In-house method by calculation | L080-PL | W | NONE |
| TPHCWG (Soil) | Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID. Refer to CoA for band specific accreditation. | In-house method with silica gel split/clean up. | L088/76-PL | D | MCERTS |
| Asbestos Quantification - Gravimetric | Asbestos quantification by gravimetric method - in house method based on references. | HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft). | A006-PL | D | ISO 17025 |
| Organic matter (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate. | In house method. | L009-PL | D | MCERTS |

Analytical Report Number : 23-56285
 Project / Site name: Chapman Way, Tunbridge

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 |
|--|---|--|---------------|--------------------|----------------------|
| 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 |
| D.O. for Gravimetric Quant if Screen/ID positive | Dependent option for Gravimetric Quant if Screen/ID positive scheduled. | In house asbestos methods A001 & A006. | A006-PL | D | NONE |
| Sulphate, water soluble, in soil | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method. | L038-PL | D | MCERTS |

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

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

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

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 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 - understore to separate acronyms (exception for +) |
| + | Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total |

Sample Deviation Report



Analytical Report Number : 23-56285

Project / Site name: Chapman Way, Tunbridge

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 |
|-----------|---------------|-------------|-------------------|------------------|---------------|---------------|----------------|
| R0104 | None Supplied | S | 2810072 | a | None Supplied | None Supplied | None Supplied |



Radhika Patel
 TRC Companies Ltd
 20 Red Lion Street, London
 WC1R 4PQ

i2 Analytical Ltd.
 7 Woodshots Meadow,
 Croxley Green
 Business Park,
 Watford,
 Herts,
 WD18 9YC

Analytical Report Number : 23-56287

| | | | |
|-----------------------------|------------------------|--|------------|
| Project / Site name: | Chapman Way, Tunbridge | Samples received on: | 13/09/2023 |
| Your job number: | 561063 | Samples instructed on/ Analysis started on: | 13/09/2023 |
| Your order number: | 51063 | Analysis completed by: | 22/09/2023 |
| Report Issue Number: | 1 | Report issued on: | 22/09/2023 |
| Samples Analysed: | 10:1 WAC sample | | |

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 |

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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.



i2 Analytical

7 Woodshots Meadow
Croxley Green Business Park
Watford, WD18 8YS



| Waste Acceptance Criteria Analytical Results | | | | | | | |
|---|------------------------|---|--------------------------|----------|--|-----------------|-----------------|
| Report No: | 23-56287 | | | | | | |
| | Client: TRC COMP | | | | | | |
| Location | Chapman Way, Tunbridge | | | | | | |
| Lab Reference (Sample Number) | 2810079 / 2810080 | | | | | | |
| Sampling Date | | | | | | | |
| Sample ID | R0104 | | | | | | |
| Depth (m) | | | | | | | |
| Landfill Waste Acceptance Criteria Limits | | | | | | | |
| | Inert Waste Landfill | Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill | Hazardous Waste Landfill | | | | |
| Solid Waste Analysis | | | | | | | |
| TOC (%)** | 1.0 | | | | 3% | 5% | 6% |
| Loss on Ignition (%) ** | 3.3 | | | | -- | -- | 10% |
| BTEX (µg/kg)** ~ | < 5.0 | | | | 6000 | -- | -- |
| Sum of PCBs (mg/kg)** | < 0.007 | | | | 1 | -- | -- |
| Mineral Oil (mg/kg) <small>EH, ID, CU, AL</small> | 52 | | | | 500 | -- | -- |
| Total PAH (WAC-17) (mg/kg) | 11.5 | | | | 100 | -- | -- |
| pH (units)** | 7.8 | | | | -- | >6 | -- |
| Acid Neutralisation Capacity (mmol / kg) | 10 | | | | -- | To be evaluated | To be evaluated |
| Eluate Analysis | | | | | | | |
| | 10:1 | | | 10:1 | Limit values for compliance leaching test | | |
| (BS EN 12457 - 2 preparation utilising end over end leaching procedure) | mg/l | | | mg/kg | using BS EN 12457-2 at L/S 10 l/kg (mg/kg) | | |
| Arsenic * | 0.0037 | | | 0.0373 | 0.5 | 2 | 25 |
| Barium * | 0.0270 | | | 0.270 | 20 | 100 | 300 |
| Cadmium * | < 0.0001 | | | < 0.0008 | 0.04 | 1 | 5 |
| Chromium * | 0.0012 | | | 0.012 | 0.5 | 10 | 70 |
| Copper * | 0.031 | | | 0.31 | 2 | 50 | 100 |
| Mercury * | < 0.0005 | | | < 0.0050 | 0.01 | 0.2 | 2 |
| Molybdenum * | 0.0143 | | | 0.143 | 0.5 | 10 | 30 |
| Nickel * | 0.0066 | | | 0.066 | 0.4 | 10 | 40 |
| Lead * | 0.0055 | | | 0.055 | 0.5 | 10 | 50 |
| Antimony * | 0.0066 | | | 0.066 | 0.06 | 0.7 | 5 |
| Selenium * | < 0.0040 | | | < 0.040 | 0.1 | 0.5 | 7 |
| Zinc * | 0.011 | | | 0.11 | 4 | 50 | 200 |
| Chloride * | 3.2 | | | 32 | 800 | 15000 | 25000 |
| Fluoride* | 0.34 | | | 3.4 | 10 | 150 | 500 |
| Sulphate * | 30 | | | 300 | 1000 | 20000 | 50000 |
| TDS* | 120 | | | 1200 | 4000 | 60000 | 100000 |
| Phenol Index (Monohydric Phenols) * | < 0.010 | | | < 0.10 | 1 | - | - |
| DOC | 14.7 | | | 147 | 500 | 800 | 1000 |
| Leach Test Information | | | | | | | |
| Stone Content (%) | < 0.1 | | | | | | |
| Sample Mass (kg) | 1.7 | | | | | | |
| Dry Matter (%) | 84 | | | | | | |
| Moisture (%) | 16 | | | | | | |
| Results are expressed on a dry weight basis, after correction for moisture content where applicable. *= UKAS accredited (liquid eluate analysis only) | | | | | | | |
| Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation ** = MCERTS accredited | | | | | | | |

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.



Analytical Report Number : 23-56287

Project / Site name: Chapman Way, Tunbridge

* 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 * |
|-------------------|------------------|---------------|---------------|----------------------|
| 2810079 | R0104 | None Supplied | None Supplied | Brown clay. |

Analytical Report Number : 23-56287

Project / Site name: Chapman Way, Tunbridge

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 |
|--|--|--|---------------|--------------------|----------------------|
| BS EN 12457-2 (10:1) Leachate Prep | 10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis. | In-house method based on BSEN12457-2. | L043-PL | W | NONE |
| Acid neutralisation capacity of soil | Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe. | In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance" | L046-PL | W | NONE |
| Loss on ignition of soil @ 450oC | Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace. | In house method. | L047-PL | D | MCERTS |
| Mineral Oil (Soil) C10 - C40 | Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID. | In-house method with silica gel split/clean up. | L076-PL | D | NONE |
| Moisture Content | Moisture content, determined gravimetrically. (30 oC) | In house method. | L019-UK/PL | W | NONE |
| Speciated WAC-17 PAHs in soil | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. | In-house method based on USEPA 8270. | L064-PL | D | MCERTS |
| PCB's By GC-MS in soil | Determination of PCB by extraction with acetone and hexane followed by GC-MS. | In-house method based on USEPA 8082 | L027-PL | D | MCERTS |
| pH at 20oC in soil | Determination of pH in soil by addition of water followed by electrometric measurement. | In house method. | L005-PL | W | MCERTS |
| Stones content of soil | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight. | In-house method based on British Standard Methods and MCERTS requirements. | L019-UK/PL | D | NONE |
| Total organic carbon (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate. | In house method. | L009-PL | D | MCERTS |
| BTEX in soil (Monoaromatics) | Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited | In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation | L073B-PL | W | MCERTS |
| Total BTEX in soil (Poland) | Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited | In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation | L073-PL | W | MCERTS |
| Metals in leachate by ICP-OES | Determination of metals in leachate by acidification followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil" | L039-PL | W | ISO 17025 |
| Chloride 10:1 WAC | Determination of Chloride colorimetrically by discrete analyser. | In house based on MEWAM Method ISBN 0117516260. | L082-PL | W | ISO 17025 |
| Fluoride 10:1 WAC | Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode. | In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination" | L033B-PL | W | ISO 17025 |
| Sulphate 10:1 WAC | Determination of sulphate in leachate by ICP-OES | In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil" | L039-PL | W | ISO 17025 |

Analytical Report Number : 23-56287
 Project / Site name: Chapman Way, Tunbridge

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 dissolved solids 10:1 WAC | Determination of total dissolved solids in water by EC probe using a factor of 0.6. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L031-PL | W | ISO 17025 |
| Monohydric phenols 10:1 WAC | Determination of phenols in leachate by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L080-PL | W | ISO 17025 |
| Dissolved organic carbon 10:1 WAC | Determination of dissolved inorganic carbon in leachate by TOC/DOC NDIR Analyser. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L037-PL | 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.

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 - understore to separate acronyms (exception for +) |
| + | Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total |

- - Quality control surrogate recovery outside of limits, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.

Sample Deviation Report



Analytical Report Number : 23-56287

Project / Site name: Chapman Way, Tunbridge

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 |
|-----------|---------------|-------------|-------------------|------------------|---------------|---------------|----------------|
| R0104 | None Supplied | L | 2810080 | a | None Supplied | None Supplied | None Supplied |
| R0104 | None Supplied | S | 2810079 | a | None Supplied | None Supplied | None Supplied |



Radhika Patel
TRC Companies Ltd
20 Red Lion Street, London
WC1R 4PQ

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

Analytical Report Number : 23-56828

| | | | |
|-----------------------------|------------------------|--|------------|
| Project / Site name: | Chapman Way, Turbridge | Samples received on: | 15/09/2023 |
| Your job number: | 561063 | Samples instructed on/ Analysis started on: | 15/09/2023 |
| Your order number: | 561063 | Analysis completed by: | 22/09/2023 |
| Report Issue Number: | 1 | Report issued on: | 22/09/2023 |
| Samples Analysed: | 1 soil sample | | |

Adam Fenwick
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 |

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

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

Analytical Report Number: 23-56828
 Project / Site name: Chapman Way, Turbridge
 Your Order No: 561063

| Lab Sample Number | 2813211 | | | |
|---|---------------|--------------------|-------------------------|-------|
| Sample Reference | R0104 | | | |
| Sample Number | None Supplied | | | |
| Depth (m) | 19.00 | | | |
| Date Sampled | 13/09/2023 | | | |
| Time Taken | None Supplied | | | |
| Analytical Parameter (Soil Analysis) | Units | Limit of detection | Accreditation Status | |
| Stone Content | % | 0.1 | NONE | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 19 |
| Total mass of sample received | kg | 0.001 | NONE | 0.8 |

General Inorganics

| | | | | |
|----------------|----------|-----|--------|-----|
| pH - Automated | pH Units | N/A | MCERTS | 8.8 |
|----------------|----------|-----|--------|-----|

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 | 0.23 |
| Anthracene | mg/kg | 0.05 | MCERTS | < 0.05 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 0.17 |
| Pyrene | mg/kg | 0.05 | MCERTS | 0.17 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 0.06 |
| Chrysene | mg/kg | 0.05 | MCERTS | 0.06 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | ISO 17025 | 0.07 |
| 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 | < 0.05 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | < 0.05 |

Total PAH

| | | | | |
|-----------------------------|-------|-----|-----------|------|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | 0.81 |
|-----------------------------|-------|-----|-----------|------|

Heavy Metals / Metalloids

| | | | | |
|-----------------------------------|-------|-----|--------|-------|
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 11 |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 2.4 |
| 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 | 23 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 23 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 25 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 18 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 29 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 55 |

Analytical Report Number: 23-56828
 Project / Site name: Chapman Way, Turbridge
 Your Order No: 561063

| | | | | |
|---|---------------|--------------------|----------------------|--|
| Lab Sample Number | 2813211 | | | |
| Sample Reference | R0104 | | | |
| Sample Number | None Supplied | | | |
| Depth (m) | 19.00 | | | |
| Date Sampled | 13/09/2023 | | | |
| Time Taken | None Supplied | | | |
| Analytical Parameter (Soil Analysis) | Units | Limit of detection | Accreditation Status | |

Monoaromatics & Oxygenates

| Compound | Units | Limit of detection | Accreditation Status | Result |
|------------------------------------|-------|--------------------|----------------------|--------|
| 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 | 5 | MCERTS | < 5.0 |
| o-xylene | µg/kg | 5 | MCERTS | < 5.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 5 | NONE | < 5.0 |

Petroleum Hydrocarbons

| TPH-CWG - Aliphatic > EC5 - EC6 _{HS_1D_AL} | mg/kg | Limit of detection | Accreditation Status | Result |
|--|-------|--------------------|----------------------|--------|
| TPH-CWG - Aliphatic > EC6 - EC8 _{HS_1D_AL} | mg/kg | 0.1 | NONE | < 0.10 |
| TPH-CWG - Aliphatic > EC8 - EC10 _{HS_1D_AL} | mg/kg | 0.1 | NONE | < 0.10 |
| TPH-CWG - Aliphatic > EC10 - EC12 _{EH_CU_1D_AL} | mg/kg | 1 | MCERTS | < 1.0 |
| TPH-CWG - Aliphatic > EC12 - EC16 _{EH_CU_1D_AL} | mg/kg | 2 | MCERTS | < 2.0 |
| TPH-CWG - Aliphatic > EC16 - EC21 _{EH_CU_1D_AL} | mg/kg | 8 | MCERTS | < 8.0 |
| TPH-CWG - Aliphatic > EC21 - EC35 _{EH_CU_1D_AL} | mg/kg | 8 | MCERTS | < 8.0 |
| TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL} | mg/kg | 10 | NONE | < 10 |

| TPH-CWG - Aromatic > EC5 - EC7 _{HS_1D_AR} | mg/kg | Limit of detection | Accreditation Status | Result |
|---|-------|--------------------|----------------------|--------|
| TPH-CWG - Aromatic > EC7 - EC8 _{HS_1D_AR} | mg/kg | 0.1 | NONE | < 0.10 |
| TPH-CWG - Aromatic > EC8 - EC10 _{HS_1D_AR} | mg/kg | 0.1 | NONE | < 0.10 |
| TPH-CWG - Aromatic > EC10 - EC12 _{EH_CU_1D_AR} | mg/kg | 1 | MCERTS | < 1.0 |
| TPH-CWG - Aromatic > EC12 - EC16 _{EH_CU_1D_AR} | mg/kg | 2 | MCERTS | < 2.0 |
| TPH-CWG - Aromatic > EC16 - EC21 _{EH_CU_1D_AR} | mg/kg | 10 | MCERTS | < 10 |
| TPH-CWG - Aromatic > EC21 - EC35 _{EH_CU_1D_AR} | mg/kg | 10 | MCERTS | < 10 |
| TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR} | mg/kg | 10 | NONE | < 10 |

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



Analytical Report Number : 23-56828

Project / Site name: Chapman Way, Turbridge

* 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 * |
|-------------------|------------------|---------------|-----------|-------------------------------|
| 2813211 | R0104 | None Supplied | 19 | Brown sandy clay with gravel. |

Analytical Report Number : 23-56828

Project / Site name: Chapman Way, Turbridge

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 |
|---------------------------------------|---|--|---------------|--------------------|----------------------|
| Metals in soil by ICP-OES | Determination of metals in soil by aqua-regia digestion followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L038-PL | D | MCERTS |
| Boron, water soluble, in soil | Determination of water soluble boron in soil by hot water extract followed by ICP-OES. | In-house method based on Second Site Properties version 3 | L038-PL | D | MCERTS |
| Moisture Content | Moisture content, determined gravimetrically. (30 oC) | In house method. | L019-UK/PL | W | NONE |
| Speciated EPA-16 PAHs in soil | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. Refer to CoA for analyte specific accreditation. | In-house method based on USEPA 8270 | L064-PL | D | MCERTS |
| pH in soil (automated) | Determination of pH in soil by addition of water followed by automated electrometric measurement. | In house method. | L099-PL | D | MCERTS |
| Stones content of soil | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight. | In-house method based on British Standard Methods and MCERTS requirements. | L019-UK/PL | D | NONE |
| BTEX and MTBE in soil (Monoaromatics) | Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited | In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation | L073B-PL | W | MCERTS |
| Cr (III) in soil | In-house method by calculation from total Cr and Cr VI. | In-house method by calculation | L080-PL | W | NONE |
| TPHCWG (Soil) | Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID. Refer to CoA for band specific accreditation. | In-house method with silica gel split/clean up. | L088/76-PL | D | MCERTS |
| 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 |

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 |



Analytical Report Number : 23-56828
 Project / Site name: Chapman Way, Turbridge

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 |
|----------------------|--|-----------------------------|---------------|--------------------|----------------------|
| #1 | EH_2D_Total but with humics mathematically subtracted | | | | |
| #2 | EH_2D_Total but with fatty acids mathematically subtracted | | | | |
| - | Operator - understore to separate acronyms (exception for +) | | | | |
| + | Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total | | | | |

Annex G: Screened Data

Human Health Generic Assessment Criteria

| Contaminant of Concern | Units | Generic Assessment Criteria (mg/kg) | | | | Source |
|---|-------|-------------------------------------|--------------------|-------------------|------------|-----------------|
| | | Residential (wHP) | Residential (woHP) | POS (Residential) | Commercial | |
| Heavy Metals | | | | | | |
| Arsenic | mg/kg | 37 | 40 | 79 | 640 | S4UL |
| Boron | mg/kg | 290 | 11000 | 21000 | 240000 | S4UL |
| Cadmium | mg/kg | 11 | 85 | 120 | 190 | S4UL |
| Chromium (hexavalent) | mg/kg | 6 | 6 | 7.7 | 33 | S4UL |
| Chromium (III) | mg/kg | 910 | 910 | 1500 | 8600 | S4UL |
| Chromium | mg/kg | 910 | 910 | 1500 | 8600 | S4UL |
| Copper | mg/kg | 2400 | 7100 | 12000 | 68000 | S4UL |
| Lead | mg/kg | 200 | 310 | 630 | 2330 | C4SL |
| Mercury | mg/kg | 40 | 56 | 120 | 1100 | S4UL |
| Nickel | mg/kg | 180 | 180 | 230 | 980 | S4UL |
| Selenium | mg/kg | 250 | 430 | 1100 | 12000 | S4UL |
| Zinc | mg/kg | 3700 | 40000 | 81000 | 730000 | S4UL |
| Polycyclic Aromatic Hydrocarbons | | | | | | |
| Naphthalene | mg/kg | 2.3 | 2.3 | 4900 | 190 | S4UL |
| Acenaphthylene | mg/kg | 170 | 2900 | 15000 | 83000 | S4UL |
| Acenaphthene | mg/kg | 210 | 3000 | 15000 | 84000 | S4UL |
| Fluorene | mg/kg | 170 | 2800 | 9900 | 63000 | S4UL |
| Phenanthrene | mg/kg | 95 | 1300 | 3100 | 22000 | S4UL |
| Anthracene | mg/kg | 2400 | 31000 | 74000 | 520000 | S4UL |
| Fluoranthene | mg/kg | 280 | 1500 | 3100 | 23000 | S4UL |
| Pyrene | mg/kg | 620 | 3700 | 7400 | 54000 | S4UL |
| Benzo(a)anthracene | mg/kg | 7.2 | 11 | 29 | 170 | S4UL |
| Chrysene | mg/kg | 15 | 30 | 57 | 350 | S4UL |
| Benzo(b)fluoranthene | mg/kg | 2.6 | 3.9 | 7.1 | 44 | S4UL |
| Benzo(k)fluoranthene | mg/kg | 77 | 110 | 190 | 1200 | S4UL |
| Benzo(a)pyrene | mg/kg | 2.2 | 3.2 | 5.7 | 35 | S4UL |
| Indeno(1,2,3-cd) pyrene | mg/kg | 27 | 45 | 82 | 500 | S4UL |
| Dibenz(a,h)anthracene | mg/kg | 0.24 | 0.31 | 0.57 | 3.5 | S4UL |
| Benzo(ghi)perylene | mg/kg | 320 | 360 | 640 | 3900 | S4UL |
| Monoaromatics | | | | | | |
| Benzene | µg/kg | 87 | 380 | 72000 | 27000 | S4UL |
| Toluene | µg/kg | 130000 | 880000 | 56000000 | 56000000 | S4UL |
| Ethylbenzene | µg/kg | 47000 | 83000 | 24000000 | 5700000 | S4UL |
| p & m-xylene | µg/kg | 56000 | 79000 | 41000000 | 5900000 | S4UL |
| o-xylene | µg/kg | 60000 | 88000 | 41000000 | 6600000 | S4UL |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 49000 | 73000 | - | 7900000 | EIC/AGS/CL:AIRE |
| Petroleum Hydrocarbons (Aliphatic) | | | | | | |
| TPH-CWG – Aliphatic >EC5 – EC6 | mg/kg | 42 | 42 | 570000 | 3200 | S4UL |
| TPH-CWG – Aliphatic >EC6 – EC 8 | mg/kg | 100 | 100 | 600000 | 7800 | S4UL |
| TPH-CWG – Aliphatic >EC8 – EC10 | mg/kg | 27 | 27 | 13000 | 2000 | S4UL |
| TPH-CWG – Aliphatic >EC10 – EC12 | mg/kg | 130 | 130 | 13000 | 9700 | S4UL |
| TPH-CWG – Aliphatic >EC12 – EC16 | mg/kg | 1100 | 1100 | 13000 | 59000 | S4UL |
| TPH-CWG – Aliphatic >EC16 – EC21 | mg/kg | 65000 | 65000 | 250000 | 1600000 | S4UL |

Human Health Generic Assessment Criteria

| | | | | | | |
|---------------------------------------|-------|--------|--------|-----------|----------|-----------------|
| TPH-CWG – Aliphatic >EC21 – EC35 | mg/kg | 65000 | 65000 | 250000 | 1600000 | S4UL |
| Petroleum Hydrocarbons (Aromatic) | | | | | | |
| TPH-CWG – Aromatic >EC5 – EC7 | mg/kg | 70 | 370 | 56000 | 26000 | S4UL |
| TPH-CWG – Aromatic >EC7 – EC8 | mg/kg | 130 | 860 | 56000 | 56000 | S4UL |
| TPH-CWG – Aromatic >EC8 – EC10 | mg/kg | 34 | 47 | 5000 | 3500 | S4UL |
| TPH-CWG – Aromatic >EC10 – EC12 | mg/kg | 74 | 250 | 5000 | 16000 | S4UL |
| TPH-CWG – Aromatic >EC12 – EC16 | mg/kg | 140 | 1800 | 5100 | 36000 | S4UL |
| TPH-CWG – Aromatic >EC16 – EC21 | mg/kg | 260 | 1900 | 3800 | 28000 | S4UL |
| TPH-CWG – Aromatic >EC21 – EC35 | mg/kg | 1100 | 1900 | 3800 | 28000 | S4UL |
| Volatile Organic Compounds | | | | | | |
| Chloromethane | µg/kg | 8.3 | 8.5 | - | 1000 | EIC/AGS/CL:AIRE |
| Chloroethane | µg/kg | 8300 | 8400 | - | 960000 | EIC/AGS/CL:AIRE |
| Bromomethane | µg/kg | - | - | - | - | - |
| Vinyl Chloride | µg/kg | 0.64 | 0.77 | 3500 | 59 | S4UL |
| Trichlorofluoromethane | µg/kg | - | - | - | - | - |
| 1,1-Dichloroethene | µg/kg | 230 | 230 | - | 26000 | EIC/AGS/CL:AIRE |
| 1,1,2-Trichloro 1,2,2-Trifluoroethane | µg/kg | - | - | - | - | - |
| Cis-1,2-dichloroethene | µg/kg | 110 | 120 | - | 14000 | EIC/AGS/CL:AIRE |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 49000 | 73000 | - | 7900000 | EIC/AGS/CL:AIRE |
| 1,1-Dichloroethane | µg/kg | 2400 | 2500 | - | 280000 | EIC/AGS/CL:AIRE |
| 2,2-Dichloropropane | µg/kg | - | - | - | - | - |
| Trichloromethane | µg/kg | 910 | 1200 | 2500000 | 99000 | S4UL |
| 1,1,1-Trichloroethane | µg/kg | 8800 | 9000 | 140000000 | 660000 | S4UL |
| 1,2-Dichloroethane | µg/kg | 7.1 | 9.2 | 29000 | 670 | S4UL |
| 1,1-Dichloropropene | µg/kg | - | - | - | - | - |
| Trans-1,2-dichloroethene | µg/kg | 190 | 190 | - | 22000 | EIC/AGS/CL:AIRE |
| Benzene | µg/kg | 87 | 380 | 72000 | 27000 | S4UL |
| Tetrachloromethane | µg/kg | 26 | 26 | 890000 | 2900 | S4UL |
| 1,2-Dichloropropane | µg/kg | 24 | 24 | - | 3300 | EIC/AGS/CL:AIRE |
| Trichloroethene | µg/kg | 16 | 17 | 120000 | 1200 | S4UL |
| Dibromomethane | µg/kg | - | - | - | - | - |
| Bromodichloromethane | µg/kg | 16 | 19 | - | 2100 | EIC/AGS/CL:AIRE |
| Cis-1,3-dichloropropene | µg/kg | - | - | - | - | - |
| Trans-1,3-dichloropropene | µg/kg | - | - | - | - | - |
| Toluene | µg/kg | 130000 | 880000 | 56000000 | 56000000 | S4UL |
| 1,1,2-Trichloroethane | µg/kg | 600 | 880 | - | 94000 | EIC/AGS/CL:AIRE |
| 1,3-Dichloropropane | µg/kg | - | - | - | - | - |
| Dibromochloromethane | µg/kg | - | - | - | - | - |
| Tetrachloroethene | µg/kg | 180 | 180 | 1400000 | 19000 | S4UL |
| 1,2-Dibromoethane | µg/kg | - | - | - | - | - |
| Chlorobenzene | µg/kg | 460 | 460 | 11000000 | 56000 | S4UL |
| 1,1,1,2-Tetrachloroethane | µg/kg | 1200 | 1500 | 1400000 | 110000 | S4UL |
| Ethylbenzene | µg/kg | 47000 | 83000 | 24000000 | 5700000 | S4UL |
| p & m-Xylene | µg/kg | 56000 | 79000 | 41000000 | 5900000 | S4UL |
| Styrene | µg/kg | 8100 | 35000 | - | 3300000 | EIC/AGS/CL:AIRE |
| Tribromomethane | µg/kg | - | - | - | - | - |
| o-Xylene | µg/kg | 60000 | 88000 | 41000000 | 6600000 | S4UL |

Human Health Generic Assessment Criteria

| | | | | | | |
|-----------------------------|-------|-------|-------|----------|---------|-----------------|
| 1,1,2,2-Tetrachloroethane | µg/kg | 1600 | 3900 | 1400000 | 270000 | S4UL |
| Isopropylbenzene | µg/kg | 11000 | 12000 | - | 1400000 | EIC/AGS/CL:AIRE |
| Bromobenzene | µg/kg | 870 | 910 | - | 97000 | EIC/AGS/CL:AIRE |
| n-Propylbenzene | µg/kg | 34000 | 40000 | - | 4100000 | EIC/AGS/CL:AIRE |
| 2-Chlorotoluene | µg/kg | - | - | - | - | - |
| 4-Chlorotoluene | µg/kg | - | - | - | - | - |
| 1,3,5-Trimethylbenzene | µg/kg | - | - | - | - | - |
| tert-Butylbenzene | µg/kg | - | - | - | - | - |
| 1,2,4-Trimethylbenzene | µg/kg | 350 | 410 | - | 42000 | EIC/AGS/CL:AIRE |
| sec-Butylbenzene | µg/kg | - | - | - | - | - |
| 1,3-Dichlorobenzene | µg/kg | 400 | 440 | 300000 | 30000 | S4UL |
| p-Isopropyltoluene | µg/kg | - | - | - | - | - |
| 1,2-Dichlorobenzene | µg/kg | 23000 | 24000 | 90000000 | 2000000 | S4UL |
| 1,4-Dichlorobenzene | µg/kg | 61000 | 61000 | 17000000 | 4400000 | S4UL |
| Butylbenzene | µg/kg | - | - | - | - | - |
| 1,2-Dibromo-3-chloropropane | µg/kg | - | - | - | - | - |
| 1,2,4-Trichlorobenzene | µg/kg | 2600 | 2600 | 15000000 | 220000 | S4UL |
| Hexachlorobutadiene | µg/kg | 290 | 320 | 25000 | 31000 | S4UL |
| 1,2,3-Trichlorobenzene | µg/kg | 1500 | 1500 | 1800000 | 102000 | S4UL |

| Key | |
|------------------|--|
| Source Reference | Document |
| S4UL | Nathanail, CP et al (2015) The LQM/CIEH S4ULs for human health risk assessment. |
| C4SL | Department for Environment, Food and Rural Affairs (2014) SP1010: Development of category 4 screening levels for assessment of land affected by contamination – policy companion document. |
| EIC/AGS/CL:AIRE | Environmental Industries Commission, The Association of Geotechnical and Geoenvironmental Specialists and Contaminated Land: Applications in Real Environments (2009) The EIC/AGS/CL:AIRE soil generic assessment criteria for human health risk assessment. |

Notes:

The above GAC are for guidance only when assessing risk to human health receptors for specific development scenarios.

The absence of GAC for a substance does not necessarily imply there is no risk.

Some substances may be known by alternative names.

GAC given for organic compounds are based on the assumption of 1% soil organic matter.

Abbreviations:

| | |
|------|-----------------------------|
| GAC | Generic Assessment Criteria |
| wHP | With homegrown produce |
| woHP | Without homegrown produce |
| POS | Public open space |

Generic Assessment Criteria for Assessing Vapour Risk to Human Health from Volatile Contaminants in Groundwater

| Contaminant of Concern | Units | SoBRA Generic Assessment Criteria (µg/l) | |
|---|-------|--|------------|
| | | Residential | Commercial |
| Polycyclic Aromatic Hydrocarbons | | | |
| Naphthalene | µg/l | 220 | 23000 |
| Acenaphthylene | µg/l | 170000 | 15000000 |
| Acenaphthene | µg/l | 220000 | 20000000 |
| Fluorene | µg/l | - | - |
| Phenanthrene | µg/l | - | - |
| Anthracene | µg/l | - | - |
| Fluoranthene | µg/l | 210000 | 18000000 |
| Pyrene | µg/l | - | - |
| Benzo(a)anthracene | µg/l | - | - |
| Chrysene | µg/l | - | - |
| Benzo(b)fluoranthene | µg/l | 0.00017 | - |
| Benzo(k)fluoranthene | µg/l | 0.00017 | - |
| Benzo(a)pyrene | µg/l | 0.00017 | - |
| Indeno(1,2,3-cd) pyrene | µg/l | - | - |
| Dibenz(a,h)anthracene | µg/l | 0.00017 | - |
| Benzo(ghi)perylene | µg/l | 0.00017 | - |
| Monoaromatics | | | |
| Benzene | µg/l | 210 | 20000 |
| Toluene | µg/l | 230000 | 230000 |
| Ethylbenzene | µg/l | 10000 | 960000 |
| p & m-xylene | µg/l | 9500 | 94000 |
| o-xylene | µg/l | 12000 | 1100000 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/l | 83000 | 7800000 |
| Petroleum Hydrocarbons (Aliphatic) | | | |
| TPH-CWG – Aliphatic >EC5 – EC6 | µg/l | 1900 | 190000 |
| TPH-CWG – Aliphatic >EC6 – EC 8 | µg/l | 1500 | 150000 |
| TPH-CWG – Aliphatic >EC8 – EC10 | µg/l | 57 | 5700 |
| TPH-CWG – Aliphatic >EC10 – EC12 | µg/l | 37 | 3600 |
| TPH-CWG – Aliphatic >EC12 – EC16 | µg/l | - | - |
| TPH-CWG – Aliphatic >EC16 – EC21 | µg/l | - | - |
| TPH-CWG – Aliphatic >EC21 – EC35 | µg/l | - | - |
| Petroleum Hydrocarbons (Aromatic) | | | |
| TPH-CWG – Aromatic >EC5 – EC7 | µg/l | 210000 | 20000000 |
| TPH-CWG – Aromatic >EC7 – EC8 | µg/l | 220000 | 21000000 |
| TPH-CWG – Aromatic >EC8 – EC10 | µg/l | 1900 | 190000 |
| TPH-CWG – Aromatic >EC10 – EC12 | µg/l | 6800 | 660000 |
| TPH-CWG – Aromatic >EC12 – EC16 | µg/l | 39000 | 3700000 |
| TPH-CWG – Aromatic >EC16 – EC21 | µg/l | - | - |
| TPH-CWG – Aromatic >EC21 – EC35 | µg/l | - | - |
| Volatile Organic Compounds | | | |
| 1,1-Dichloroethene | µg/l | 160 | 16000 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/l | 83000 | 7800000 |
| 1,1-Dichloroethane | µg/l | 2700 | 260000 |

Generic Assessment Criteria for Assessing Vapour Risk to Human Health from Volatile Contaminants in Groundwater

| | | | |
|---------------------------|------|--------|----------|
| 1,1,1-Trichloroethane | µg/l | 3000 | 290000 |
| 1,2-Dichloroethane | µg/l | 8.9 | 850 |
| Benzene | µg/l | 210 | 20000 |
| 1,2-Dichloropropane | µg/l | 22 | 2600 |
| Toluene | µg/l | 230000 | 21000000 |
| 1,1,2-Trichloroethane | µg/l | 520 | 49000 |
| 1,1,1,2-Tetrachloroethane | µg/l | 240 | 22000 |
| Ethylbenzene | µg/l | 10000 | 960000 |
| p & m-Xylene | µg/l | 9500 | 94000 |
| Styrene | µg/l | 8800 | 810000 |
| o-Xylene | µg/l | 12000 | 1100000 |
| 1,1,2,2-Tetrachloroethane | µg/l | 1600 | 150000 |
| Isopropylbenzene | µg/l | 850 | 86000 |
| n-Propylbenzene | µg/l | 2700 | 240000 |
| 1,2,4-Trimethylbenzene | µg/l | 24 | 2200 |
| 1,2-Dichlorobenzene | µg/l | 2000 | 220000 |
| 1,2,4-Trichlorobenzene | µg/l | 68 | 7200 |
| 1,2,3-Trichlorobenzene | µg/l | 35 | 3100 |

| Key | |
|------------------|---|
| Source Reference | Document |
| SoBRA | Society of Brownfield Risk Assessment, Development of Generic Assessment Criteria for Assessing Vapour Risk to Human Health from Volatile Contaminants in Groundwater, 2017 |

Notes:

The above GAC are for guidance only when assessing risk to human health from volatile contaminants in groundwater.

The absence of GAC for a substance does not necessarily imply there is no risk.

Some substances may be known by alternative names.

Abbreviations:

GAC

Generic Assessment Criteria

Water Quality Standards

| Contaminant of Concern | Units | EQS | Source | DWS | Source |
|---|-------|---------|---------|-------|------------|
| General Inorganics | | | | | |
| Total Cyanide | µg/l | 1 | GUK 22 | 50 | WSR 18 |
| Sulphate | mg/l | 400 | GUK 22 | 250 | WSR 18 |
| Chloride | mg/l | 250 | GUK 22 | 250 | WSR 18 |
| Ammonium as NH4 | µg/l | - | - | 500 | WSR 18 |
| Heavy Metals | | | | | |
| Arsenic | µg/l | 50 | GUK 22 | 10 | WSR 18 |
| Boron | µg/l | 2,000 | GUK 22 | 1,000 | WSR 18 |
| Cadmium | µg/l | 0.08 | GUK 22 | 5 | WSR 18 |
| Chromium (hexavalent) | µg/l | 3.4 | GUK 22 | 5.4 | US EPA RfD |
| Chromium | µg/l | 4.7 | GUK 22 | 50 | WSR 18 |
| Copper | µg/l | 1 | GUK 22 | 2,000 | WSR 18 |
| Lead | µg/l | 1.2 | GUK 22 | 10 | WSR 18 |
| Mercury | µg/l | 0.07 | GUK 22 | 1 | WSR 18 |
| Nickel | µg/l | 4 | GUK 22 | 20 | WSR 18 |
| Selenium | µg/l | - | - | 10 | WSR 18 |
| Zinc | µg/l | 10.9 | GUK 22 | 5000 | US EPA |
| Polycyclic Aromatic Hydrocarbons | | | | | |
| Naphthalene | µg/l | 2 | GUK 22 | 0.1 | DWI 17 |
| Acenaphthylene | µg/l | - | - | 0.1 | DWI 17 |
| Acenaphthene | µg/l | - | - | 0.1 | DWI 17 |
| Fluorene | µg/l | - | - | 0.1 | DWI 17 |
| Phenanthrene | µg/l | - | - | 0.1 | DWI 17 |
| Anthracene | µg/l | 0.1 | GUK 22 | 0.1 | DWI 17 |
| Fluoranthene | µg/l | 0.0063 | GUK 22 | 0.1 | DWI 17 |
| Pyrene | µg/l | - | - | 0.01 | DWI 17 |
| Benzo(a)anthracene | µg/l | - | - | 0.1 | DWI 17 |
| Chrysene | µg/l | - | - | 0.1 | DWI 17 |
| Benzo(b)fluoranthene | µg/l | 0.00017 | GUK 22 | 0.1 | DWI 17 |
| Benzo(k)fluoranthene | µg/l | 0.00017 | GUK 22 | 0.1 | DWI 17 |
| Benzo(a)pyrene | µg/l | 0.00017 | GUK 22 | 0.1 | DWI 17 |
| Indeno(1,2,3-cd) pyrene | µg/l | 0.00017 | GUK 22 | 0.1 | DWI 17 |
| Dibenz(a,h)anthracene | µg/l | - | - | 0.1 | DWI 17 |
| Benzo(ghi)perylene | µg/l | 0.00017 | GUK 22 | 0.1 | DWI 17 |
| Total EPA-16 PAHs | µg/l | - | - | 0.1 | DWI 17 |
| Monoaromatics | | | | | |
| Benzene | µg/l | 10 | GUK 22 | 10 | PHG 17 |
| Toluene | µg/l | 74 | GUK 22 | 700 | PHG 17 |
| Ethylbenzene | µg/l | 20 | EQS R&D | 300 | PHG 17 |
| p & m-xylene | µg/l | 30 | GUK 22 | 500 | PHG 17 |
| o-xylene | µg/l | 30 | GUK 22 | 500 | PHG 17 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/l | - | - | - | - |
| Petroleum Hydrocarbons (Aliphatic) | | | | | |
| TPH-CWG – Aliphatic >EC5 – EC6 | µg/l | - | - | 15000 | PHG 17 |
| TPH-CWG – Aliphatic >EC6 – EC 8 | µg/l | - | - | 15000 | PHG 17 |

Water Quality Standards

| | | | | | |
|---------------------------------------|------|-------|--------|-----------|-----------------|
| TPH-CWG – Aliphatic >EC8 – EC10 | µg/l | - | - | 300 | PHG 17 |
| TPH-CWG – Aliphatic >EC10 – EC12 | µg/l | - | - | 300 | PHG 17 |
| TPH-CWG – Aliphatic >EC12 – EC16 | µg/l | - | - | 300 | PHG 17 |
| TPH-CWG – Aliphatic >EC16 – EC21 | µg/l | - | - | 300 | PHG 17 |
| TPH-CWG – Aliphatic >EC21 – EC35 | µg/l | - | - | 300 | PHG 17 |
| Petroleum Hydrocarbons (Aromatic) | | | | | |
| TPH-CWG – Aromatic >EC5 – EC7 | µg/l | - | - | 10 | PHG 17 |
| TPH-CWG – Aromatic >EC7 – EC8 | µg/l | - | - | 700 | PHG 17 |
| TPH-CWG – Aromatic >EC8 – EC10 | µg/l | - | - | 300 | PHG 17 |
| TPH-CWG – Aromatic >EC10 – EC12 | µg/l | - | - | 90 | PHG 17 |
| TPH-CWG – Aromatic >EC12 – EC16 | µg/l | - | - | 90 | PHG 17 |
| TPH-CWG – Aromatic >EC16 – EC21 | µg/l | - | - | 90 | PHG 17 |
| TPH-CWG – Aromatic >EC21 – EC35 | µg/l | - | - | 90 | PHG 17 |
| Volatile Organic Compounds | | | | | |
| Chloromethane | µg/l | - | - | - | - |
| Chloroethane | µg/l | - | - | - | - |
| Bromomethane | µg/l | - | - | - | - |
| Vinyl Chloride | µg/l | 0.375 | WFD 15 | 0.5 (0.3) | WSR 18 (WHO 22) |
| Trichlorofluoromethane | µg/l | - | - | - | - |
| 1,1-Dichloroethene | µg/l | - | - | - | - |
| 1,1,2-Trichloro 1,2,2-Trifluoroethane | µg/l | - | - | - | - |
| Cis-1,2-dichloroethene | µg/l | - | - | 50 | WHO 22 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/l | - | - | - | - |
| 1,1-Dichloroethane | µg/l | - | - | - | - |
| 2,2-Dichloropropane | µg/l | - | - | - | - |
| Trichloromethane | µg/l | 2.5 | GUK 22 | 100 (300) | WSR 18 (WHO 22) |
| 1,1,1-Trichloroethane | µg/l | 100 | GUK 22 | - | - |
| 1,2-Dichloroethane | µg/l | 10 | GUK 22 | 3 (30) | WSR 18 (WHO 22) |
| 1,1-Dichloropropene | µg/l | - | - | - | - |
| Trans-1,2-dichloroethene | µg/l | - | - | 50 | WHO 22 |
| Tetrachloromethane | µg/l | 12 | GUK 22 | - | - |
| 1,2-Dichloropropane | µg/l | - | - | - | - |
| Trichloroethene | µg/l | 10 | GUK 22 | 10 (8) | WSR 18 (WHO 22) |
| Dibromomethane | µg/l | - | - | - | - |
| Bromodichloromethane | µg/l | - | - | 100 | WSR 18 |
| Cis-1,3-dichloropropene | µg/l | - | - | - | - |
| Trans-1,3-dichloropropene | µg/l | - | - | - | - |
| 1,1,2-Trichloroethane | µg/l | 400 | GUK 22 | - | - |
| 1,3-Dichloropropane | µg/l | - | - | - | - |
| Dibromochloromethane | µg/l | - | - | 100 | WSR 18 |
| Tetrachloroethene | µg/l | 10 | GUK 22 | 100 | WHO 22 |
| 1,2-Dibromoethane | µg/l | - | - | 0.4 | WHO 22 |
| Chlorobenzene | µg/l | - | - | - | - |
| 1,1,1,2-Tetrachloroethane | µg/l | - | - | - | - |
| Styrene | µg/l | 50 | GUK 22 | 20 | WHO 22 |
| Tribromomethane | µg/l | - | - | 100 | WSR 18 |
| 1,1,2,2-Tetrachloroethane | µg/l | - | - | - | - |

Water Quality Standards

| | | | | | |
|---------------------------------|------|-----|--------|------|--------|
| Isopropylbenzene | µg/l | - | - | - | - |
| Bromobenzene | µg/l | - | - | - | - |
| n-Propylbenzene | µg/l | - | - | - | - |
| 2-Chlorotoluene | µg/l | - | - | - | - |
| 4-Chlorotoluene | µg/l | - | - | - | - |
| 1,3,5-Trimethylbenzene | µg/l | - | - | - | - |
| tert-Butylbenzene | µg/l | - | - | - | - |
| 1,2,4-Trimethylbenzene | µg/l | - | - | - | - |
| sec-Butylbenzene | µg/l | - | - | - | - |
| 1,3-Dichlorobenzene | µg/l | - | - | - | - |
| p-Isopropyltoluene | µg/l | - | - | - | - |
| 1,2-Dichlorobenzene | µg/l | 20 | GUK 22 | 1000 | WHO 22 |
| 1,4-Dichlorobenzene | µg/l | 20 | GUK 22 | 300 | WHO 22 |
| Butylbenzene | µg/l | - | - | - | - |
| 1,2-Dibromo-3-chloropropane | µg/l | - | - | 1 | WHO 22 |
| 1,2,4-Trichlorobenzene | µg/l | 0.4 | GUK 22 | - | - |
| Hexachlorobutadiene | µg/l | - | - | 0.6 | WHO 22 |
| 1,2,3-Trichlorobenzene | µg/l | 0.4 | GUK 22 | - | - |
| Semi-volatile Organic Compounds | | | | | |
| Aniline | µg/l | - | - | - | - |
| Phenol | µg/l | 7.7 | GUK 22 | - | - |
| 2-Chlorophenol | µg/l | 50 | GUK 22 | - | - |
| Bis(2-chloroethyl)ether | µg/l | - | - | - | - |
| 1,3-Dichlorobenzene | µg/l | - | - | - | - |
| Bis(2-chloroisopropyl)ether | µg/l | - | - | - | - |
| 2-Methylphenol | µg/l | - | - | - | - |
| Hexachloroethane | µg/l | - | - | - | - |
| Nitrobenzene | µg/l | - | - | - | - |
| 4-Methylphenol | µg/l | - | - | - | - |
| Isophorone | µg/l | - | - | - | - |
| 2-Nitrophenol | µg/l | - | - | - | - |
| 2,4-Dimethylphenol | µg/l | - | - | - | - |
| Bis(2-chloroethoxy)methane | µg/l | - | - | - | - |
| 2,4-Dichlorophenol | µg/l | 4.2 | GUK 22 | - | - |
| 4-Chloroaniline | µg/l | - | - | - | - |
| Hexachlorobutadiene | µg/l | - | - | 0.6 | WHO 22 |
| 4-Chloro-3-methylphenol | µg/l | - | - | - | - |
| 2,4,6-Trichlorophenol | µg/l | - | - | 200 | WHO 22 |
| 2,4,5-Trichlorophenol | µg/l | - | - | - | - |
| 2-Methylnaphthalene | µg/l | - | - | - | - |
| 2-Chloronaphthalene | µg/l | - | - | - | - |
| Dimethylphthalate | µg/l | 800 | GUK 22 | - | - |
| 2,6-Dinitrotoluene | µg/l | - | - | - | - |
| 2,4-Dinitrotoluene | µg/l | - | - | - | - |
| Dibenzofuran | µg/l | - | - | - | - |
| 4-Chlorophenyl phenyl ether | µg/l | - | - | - | - |
| Diethyl phthalate | µg/l | 200 | GUK 22 | - | - |

Water Quality Standards

| | | | | | |
|--------------------------|------|---|--------|---|---|
| 4-Nitroaniline | µg/l | - | - | - | - |
| Azobenzene | µg/l | - | - | - | - |
| Bromophenyl phenyl ether | µg/l | - | - | - | - |
| Hexachlorobenzene | µg/l | - | - | - | - |
| Carbazole | µg/l | - | - | - | - |
| Dibutyl phthalate | µg/l | 8 | GUK 22 | - | - |
| Anthraquinone | µg/l | - | - | - | - |
| Butyl benzyl phthalate | µg/l | - | - | - | - |

| Key | |
|------------------|--|
| Source Reference | Document |
| PHG 17 | Petroleum Hydrocarbons in Groundwater (CL:AIRE, 2017, ISBN 978-1-905046-31-7). |
| DWI 17 | DEFRA, Drinking Water Inspectorate, 2017. |
| WFD 15 | The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015. |
| WSR 18 | The Water Supply (Water Quality) Regulations 2018 (Statutory Instrument 2018 No. 647). |
| EQS R&D | Proposed Environmental Quality Standards for Ethylbenzene in Water R&D Technical Report P2-115/TR4 (Annual Average) 2002. |
| GUK 22 | Gov.UK February 2022. Surface water pollution risk assessment for your environmental permit. (www.gov.uk/guidance/surface-water-pollution-risk-assessment-for-your-environmental-permit). |
| WHO 22 | World Health Organisation Guidelines for drinking water quality: fourth edition incorporating the first and second addenda 2022. |
| US EPA RfD | US EPA Reference Dose, presented in the Drinking Water Inspectorate 2015. |
| US EPA | US EPA Secondary Drinking Water Standards. |

Notes:

The above GAC are for guidance only when assessing risk to groundwater and surface water receptors.

The absence of GAC for a substance does not necessarily imply there is no risk.

Some substances may be known by alternative names.

EQS referenced are annual average concentrations for inland (freshwater) surface waters.

Alternative EQS are available for assessing risk to estuarine or marine water environments.

The EQS for cadmium is based on hardness band 40mg to less than 50mg CaCO₃/l.

Abbreviations:

| | |
|-----|---------------------------------|
| EQS | Environmental Quality Standards |
| DWS | UK Drinking Water Standards |
| GAC | Generic Assessment Criteria |