Our Ref: 16-384.04L

FAO Jeremy Roberts
Strategic Team Group Ltd
Strategic Business Centre
Blue Ridge Park
Thunderhead Ridge
Glasshoughton
Castleford
WF10 4UA

Arc Environmental Ltd
Solum House
Unit 1 Elliott Court
St. Johns Road
Meadowfield
Durham
DH7 8PN

29th January 2018

Dear Jeremy,

**Re: Plots 1 to 9, Lairds Way, Penistone**

As requested by Strategic Team Group Ltd, and in accordance with The Remediation Strategy dated 20th October 2016, a representative from Arc Environmental Ltd visited site on 12th December 2017 and 4th January 2018 to recover representative samples of the imported materials used as a clean cover system. Samples were recovered to check the suitability for use within the private gardens of Plots 1 to 9. A total of 6 no. trial pits were excavated for a visual inspection across the 9 no. plots.

The depth of the clean cover was confirmed as being a minimum of 600mm, which comprised of a minimum 150mm topsoil and a minimum 450mm of sub-soil (see photographic evidence attached). As part of the validation works, a visual and olfactory inspection of the emplaced clean cover was undertaken during the site visit to ensure these materials were absent of obvious contamination i.e. staining, obvious fuel odours, fragments of asbestos containing materials and the like. The 6 no. representative samples were recovered for confirmatory screening and dispatched to Chemtech Environmental Limited for laboratory analysis. To ascertain the suitability of the materials, the soils were screened for the following range of analytes;

- Arsenic, Cadmium, Chromium (III & VI), Copper, Lead, Mercury, Nickel, Selenium, Zinc, Sulphur, Cyanide and Total Organic Carbon.
- Asbestos fibres (presence).
- Speciated Polycyclic Aromatic Hydrocarbons (PAH's), based on the current USEPA 16 PAH's + Benzo(j)fluoranthene.

We understand the source of the imported materials has purportedly been a 'greenfield site' in Otley, West Yorkshire, with chemical screening of the soils provided to Arc Environmental for approval prior to importation.

A summary of the results can be seen in Table 1 on the following page. The results can also be seen in the Chemtech Environmental Limited analytical test reports (Report Nos: 69079 & 69328) attached to this report. The results have been assessed against the most up to date and appropriate guidelines.

**Re: Plots 1 to 9, Lairds Way, Penistone (Cont'd)**

The Clean Cover Validation Record Sheet showing the positions from where representative samples of emplaced materials were recovered is attached.

**Table 1**

| Analyte | Critical Concentration ($C_C$) | Sub-soil Concentrations ($C_M$) recorded | Topsoil Concentrations ($C_M$) recorded |
|---|---|---|---|
| Arsenic 37 | [1] 7.2 | | 12 |
| Cadmium 11 | [1] 0.9 | | 1.2 |
| Chromium III | 910[1] 1 | 62 | 99 |
| Chromium VI | 6[1] <1 | | <1 |
| Copper 2 | 400[1] 25 | | 132 |
| Lead 200 | [2] 21 | | 69 |
| Mercury 40 | [1] <0. | 5 | <0.5 |
| Nickel 18 | 0[1] 42 | | 28 |
| Selenium 250 | [1] 1.4 | | 1.5 |
| Zinc 3 | 700[1] 79 | | 135 |
| Cyanide | 34[3] <1 | | <1 |
| Asbestos Pr | esence | None detected None | detected |
| Acenaphthene | 510[1] | <0.01 | <0.01 |
| Acenaphthylene | 420[1] | <0.01 | <0.01 |
| Anthracene | 5400[1] | 0.11 | <0.02 |
| Benzo(a)anthracene | 11[1] | 0.03 | 0.09 |
| Benzo(a)pyrene | 2.7[1] | <0.02 | 0.07 |
| Benzo(b)fluoranthene | 3.3[1] | <0.02 | 0.09 |
| Benzo(ghi)perylene | 340[1] | <0.02 | <0.02 |
| Benzo(k)fluoranthene | 93[1] | <0.02 | 0.04 |
| Chrysene | 22[1] | 0.06 | 0.07 |
| Dibenz(ah)anthracene | 0.28[1] | <0.02 | <0.02 |
| Fluoranthene | 560[1] | 0.19 | 0.14 |
| Fluorene | 400[1] | <0.01 | <0.01 |
| Indeno(123cd)pyrene | 36[1] | <0.02 | <0.02 |
| Naphthalene | 5.6[1] | <0.01 | <0.01 |
| Phenanthrene | 220[1] | 0.10 | 0.08 |
| Pyrene | 1200[1] | 0.17 | 0.13 |

[1] = The LQM / CIEH Suitable 4 Use Levels – Residential with home-grown produce (2.5% SOM), [2] = CL:AIRE Category 4 Screening Levels – Residential with home-grown produce, [3] = ATRISK$^{SOIL}$ Soil Screening Values (2015).

The ground contamination screening has identified that none of the maximum concentration ($C_M$) values for the contaminants displayed in Table 1 exceed the critical concentration ($C_C$) values associated with the current designated end-use of Residential with home-grown produce. It has therefore been determined that the soils which have been imported to the site and used within the areas of soft landscaping are appropriate for use.

From the validation works undertaken it is the opinion of Arc Environmental Limited that the clean cover provided meets the requirements of the remediation strategy and is suitable for use.

We trust the contents of this report are to your satisfaction, and if you require any further information or clarification, please do not hesitate to contact us.

Yours Sincerely



.....

For and on behalf of Arc Environmental Ltd
Geoff Heron
Senior Field Technician

T: 0191 378 6380
E: admin@arc-environmental.com
W: www.arc-environmental.com
Registered in England No. 05539784

# Laboratory Results

# Clean Cover Validation Record Sheets

T: 0191 378 6380
E: admin@arc-environmental.com
W: www.arc-environmental.com
Registered in England No. 05539784

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# ANALYTICAL TEST REPORT

**Contract no:** 69079

**Contract name:** Plots 4-11 Lairds Way, Penistone

**Client reference:** 16-384

**Clients name:** ARC Environmental

**Clients address:** Solum House, Unit 1 Elliott Court
St Johns Road
Meadowfield
DH7 8PN

**Samples received:** 13 December 2017

**Analysis started:** 13 December 2017

**Analysis completed** 20 December 2017

**Report issued:** 20 December 2017

**Notes:**
Opinions and interpretations expressed herein are outside the UKAS accreditation scope.
Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.
Methods, procedures and performance data are available on request.
Results reported herein relate only to the material supplied to the laboratory.
This report shall not be reproduced except in full, without prior written approval.
Samples will be disposed of 6 weeks from initial receipt unless otherwise instructed.

**Key:**
U UKAS accredited test
M MCERTS & UKAS accredited test
$ Test carried out by an approved subcontractor
I/S Insufficient sample to carry out test
N/S Sample not suitable for testing
NAD No Asbestos Detected

**Approved by:** [redacted]

Dave Bowerbank
Customer Services Co-ordinator

# Chemtech Environmental Limited

# SAMPLE INFORMATION

**MCERTS (Soils):**

Soil descriptions are only intended to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions. MCERTS accreditation applies for sand, clay and loam/topsoil, or combinations of these whether these are derived from naturally occurring soils or from made ground, as long as these materials constitute the major part of the sample. Other materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

All results are reported on a dry basis. Samples dried at no more than 30°C in a drying cabinet.
Analytical results are inclusive of stones.

| Lab ref | Sample id | Depth (m) | Sample description | Material removed | % Removed | % Moisture |
|---|---|---|---|---|---|---|
| 69079-1 | Plots 4-6 Clean Cover | - | Clayey Sand with Gravel | - | - | 12.0 |
| 69079-2 | Plots 7-9 Clean Cover | - | Clayey Sand with Gravel | - | - | 8.6 |
| 69079-3 | Plots 10-11 Clean Cover | - | Clayey Sand with Gravel | - | - | 8.7 |

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# SOILS

| **Lab number** | | | 69079-1 | 69079-2 | 69079-3 |
|---|---|---|---|---|---|
| **Sample id** | | | Plots 4-6 Clean Cover | Plots 7-9 Clean Cover | Plots 10-11 Clean Cover |
| **Depth (m)** | | | - | - | - |
| **Date sampled** | | | 12/12/2017 | 12/12/2017 | 12/12/2017 |
| **Test** | **Method** | **Units** | | | |
| Arsenic (total) | CE127 M | mg/kg As | 7.2 | 6.5 | 5.6 |
| Cadmium (total) | CE127 M | mg/kg Cd | 0.9 | 0.7 | 0.6 |
| Chromium (total) | CE127 M | mg/kg Cr | 162 | 125 | 132 |
| Chromium (III) | - | mg/kg CrIII | 162 | 125 | 132 |
| Chromium (VI) | CE146 | mg/kg CrVI | <1 | <1 | <1 |
| Copper (total) | CE127 M | mg/kg Cu | 24 | 22 | 20 |
| Lead (total) | CE127 M | mg/kg Pb | 19 | 17 | 15 |
| Mercury (total) | CE127 M | mg/kg Hg | <0.5 | <0.5 | <0.5 |
| Nickel (total) | CE127 M | mg/kg Ni | 42 | 39 | 32 |
| Selenium (total) | CE127 M | mg/kg Se | 1.4 | 1.3 | 1.3 |
| Zinc (total) | CE127 M | mg/kg Zn | 78 | 78 | 58 |
| pH | CE004 M | units | 7.8 | 7.7 | 7.7 |
| Sulphate (2:1 water soluble) | CE061 M | mg/l $SO_4$ | 41 | 38 | 34 |
| Cyanide (free) | CE077 | mg/kg CN | <1 | <1 | <1 |
| Total Organic Carbon (TOC) | CE072 M | % w/w C | 0.22 | 0.14 | 0.15 |
| **PAH** | | | | | |
| Acenaphthene | CE087 M | mg/kg | <0.01 | <0.01 | <0.01 |
| Acenaphthylene | CE087 M | mg/kg | <0.01 | <0.01 | <0.01 |
| Anthracene | CE087 U | mg/kg | 0.11 | 0.04 | 0.05 |
| Benzo(a)anthracene | CE087 U | mg/kg | <0.02 | <0.02 | <0.02 |
| Benzo(a)pyrene | CE087 U | mg/kg | <0.02 | <0.02 | <0.02 |
| Benzo(b)fluoranthene | CE087 M | mg/kg | <0.02 | <0.02 | <0.02 |
| Benzo(ghi)perylene | CE087 M | mg/kg | <0.02 | <0.02 | <0.02 |
| Benzo(k)fluoranthene | CE087 M | mg/kg | <0.02 | <0.02 | <0.02 |
| Chrysene | CE087 M | mg/kg | 0.04 | 0.06 | 0.04 |
| Dibenz(ah)anthracene | CE087 M | mg/kg | <0.02 | <0.02 | <0.02 |
| Fluoranthene | CE087 M | mg/kg | 0.17 | 0.19 | 0.16 |
| Fluorene | CE087 U | mg/kg | <0.01 | <0.01 | <0.01 |
| Indeno(123cd)pyrene | CE087 M | mg/kg | <0.02 | <0.02 | <0.02 |
| Naphthalene | CE087 M | mg/kg | <0.01 | <0.01 | <0.01 |
| Phenanthrene | CE087 M | mg/kg | 0.10 | 0.07 | 0.08 |
| Pyrene | CE087 M | mg/kg | 0.15 | 0.17 | 0.13 |
| PAH (total of USEPA 16) | CE087 | mg/kg | 0.57 | 0.54 | 0.45 |
| Benzo(j)fluoranthene | CE087 | mg/kg | <0.02 | <0.02 | <0.02 |
| PAH (total of OIL 8) | CE087 | mg/kg | <0.15 | <0.15 | <0.15 |
| **Subcontracted analysis** | | | | | |
| Asbestos (qualitative) | $ | - | NAD | NAD | NAD |

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# METHOD DETAILS

| METHOD | SOILS | METHOD SUMMARY | SAMPLE | STATUS | LOD | UNITS |
|---|---|---|---|---|---|---|
| CE127 | Arsenic (total) | Aqua regia digest, ICP-MS | Dry | M | 1 | mg/kg As |
| CE127 | Cadmium (total) | Aqua regia digest, ICP-MS | Dry | M | 0.2 | mg/kg Cd |
| CE127 | Chromium (total) | Aqua regia digest, ICP-MS | Dry | M | 1 | mg/kg Cr |
| - | Chromium (III) | Calculation: Cr (total) - Cr (VI) | Dry | | 1 | mg/kg CrIII |
| CE146 | Chromium (VI) | Acid extraction, Colorimetry | Dry | | 1 | mg/kg CrVI |
| CE127 | Copper (total) | Aqua regia digest, ICP-MS | Dry | M | 1 | mg/kg Cu |
| CE127 | Lead (total) | Aqua regia digest, ICP-MS | Dry | M | 1 | mg/kg Pb |
| CE127 | Mercury (total) | Aqua regia digest, ICP-MS | Dry | M | 0.5 | mg/kg Hg |
| CE127 | Nickel (total) | Aqua regia digest, ICP-MS | Dry | M | 1 | mg/kg Ni |
| CE127 | Selenium (total) | Aqua regia digest, ICP-MS | Dry | M | 0.3 | mg/kg Se |
| CE127 | Zinc (total) | Aqua regia digest, ICP-MS | Dry | M | 5 | mg/kg Zn |
| CE004 | pH | Based on BS 1377, pH Meter | Wet | M | - | units |
| CE061 | Sulphate (2:1 water soluble) | Aqueous extraction, ICP-OES | Dry | M | 10 | mg/l $SO_4$ |
| CE077 | Cyanide (free) | Extraction, Continuous Flow Colorimetry | Wet | | 1 | mg/kg CN |
| CE072 | Total Organic Carbon (TOC) | Removal of IC by acidification, Carbon Analyser | Dry | M | 0.1 | % w/w C |
| CE087 | Acenaphthene | Solvent extraction, GC-MS | Wet | M | 0.01 | mg/kg |
| CE087 | Acenaphthylene | Solvent extraction, GC-MS | Wet | M | 0.01 | mg/kg |
| CE087 | Anthracene | Solvent extraction, GC-MS | Wet | U | 0.02 | mg/kg |
| CE087 | Benzo(a)anthracene | Solvent extraction, GC-MS | Wet | U | 0.02 | mg/kg |
| CE087 | Benzo(a)pyrene | Solvent extraction, GC-MS | Wet | U | 0.02 | mg/kg |
| CE087 | Benzo(b)fluoranthene | Solvent extraction, GC-MS | Wet | M | 0.02 | mg/kg |
| CE087 | Benzo(ghi)perylene | Solvent extraction, GC-MS | Wet | M | 0.02 | mg/kg |
| CE087 | Benzo(k)fluoranthene | Solvent extraction, GC-MS | Wet | M | 0.02 | mg/kg |
| CE087 | Chrysene | Solvent extraction, GC-MS | Wet | M | 0.01 | mg/kg |
| CE087 | Dibenz(ah)anthracene | Solvent extraction, GC-MS | Wet | M | 0.02 | mg/kg |
| CE087 | Fluoranthene | Solvent extraction, GC-MS | Wet | M | 0.02 | mg/kg |
| CE087 | Fluorene | Solvent extraction, GC-MS | Wet | U | 0.01 | mg/kg |
| CE087 | Indeno(123cd)pyrene | Solvent extraction, GC-MS | Wet | M | 0.02 | mg/kg |
| CE087 | Naphthalene | Solvent extraction, GC-MS | Wet | M | 0.01 | mg/kg |
| CE087 | Phenanthrene | Solvent extraction, GC-MS | Wet | M | 0.02 | mg/kg |
| CE087 | Pyrene | Solvent extraction, GC-MS | Wet | M | 0.02 | mg/kg |
| CE087 | PAH (total of USEPA 16) | Solvent extraction, GC-MS | Wet | | 0.27 | mg/kg |
| CE087 | Benzo(j)fluoranthene | Solvent extraction, GC-MS | Wet | | 0.02 | mg/kg |
| CE087 | PAH (total of OIL 8) | Solvent extraction, GC-MS | Wet | | 0.15 | mg/kg |
| $ | Asbestos (qualitative) | HSG 248, Microscopy | Dry | U | - | - |

# Chemtech Environmental Limited

# DEVIATING SAMPLE INFORMATION

**Comments**
Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.
For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.
Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

**Key**

| | |
|---|---|
| N | No (not deviating sample) |
| Y | Yes (deviating sample) |
| NSD | Sampling date not provided |
| NST | Sampling time not provided (waters only) |
| EHT | Sample exceeded holding time(s) |
| IC | Sample not received in appropriate containers |
| HP | Headspace present in sample container |
| NCF | Sample not chemically fixed (where appropriate) |
| IT | Sample not cooled |
| OR | Other (specify) |

| Lab ref | Sample id | Depth (m) | Deviating | Tests (Reason for deviation) |
|---|---|---|---|---|
| 69079-1 | Plots 4-6 Clean Cover | - | N | |
| 69079-2 | Plots 7-9 Clean Cover | - | N | |
| 69079-3 | Plots 10-11 Clean Cover | - | N | |

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# ANALYTICAL TEST REPORT

**Contract no:** 69328

**Contract name:** Plots 3-11 Lairds Way, Penistone

**Client reference:** 16-384

**Clients name:** ARC Environmental

**Clients address:** Solum House, Unit 1 Elliott Court
St Johns Road
Meadowfield
DH7 8PN

**Samples received:** 04 January 2018

**Analysis started:** 05 January 2018

**Analysis completed** 11 January 2018

**Report issued:** 11 January 2018

**Notes:**
Opinions and interpretations expressed herein are outside the UKAS accreditation scope.
Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.
Methods, procedures and performance data are available on request.
Results reported herein relate only to the material supplied to the laboratory.
This report shall not be reproduced except in full, without prior written approval.
Samples will be disposed of 6 weeks from initial receipt unless otherwise instructed.

**Key:**
U UKAS accredited test
M MCERTS & UKAS accredited test
$ Test carried out by an approved subcontractor
I/S Insufficient sample to carry out test
N/S Sample not suitable for testing
NAD No Asbestos Detected

**Approved by:** [redacted]

Dave Bowerbank
Customer Services Co-ordinator

# Chemtech Environmental Limited

# SAMPLE INFORMATION

**MCERTS (Soils):**

Soil descriptions are only intended to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions. MCERTS accreditation applies for sand, clay and loam/topsoil, or combinations of these whether these are derived from naturally occurring soils or from made ground, as long as these materials constitute the major part of the sample. Other materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

All results are reported on a dry basis. Samples dried at no more than 30°C in a drying cabinet.
Analytical results are inclusive of stones.

| Lab ref | Sample id | Depth (m) | Sample description | Material removed | % Removed | % Moisture |
|---|---|---|---|---|---|---|
| 69328-1 | Plot 3 Topsoil | - | Loamy Clay with Gravel and Roots | - | - | 35.8 |
| 69328-2 | Plot 3 Subsoil | - | Clay with Gravel | - | - | 13.2 |
| 69328-3 | Plot 5 Topsoil | - | Clay with Gravel and Roots | - | - | 31.4 |
| 69328-4 | Plot 9 Topsoil | - | Clay with Gravel and Roots | - | - | 36.6 |

# Chemtech Environmental Limited

# SOILS

| **Lab number** | | | 69328-1 | 69328-2 | 69328-3 | 69328-4 |
|---|---|---|---|---|---|---|
| **Sample id** | | | Plot 3 Topsoil | Plot 3 Subsoil | Plot 5 Topsoil | Plot 9 Topsoil |
| **Depth (m)** | | | - | - | - | - |
| **Date sampled** | | | 04/01/2018 | 04/01/2018 | 04/01/2018 | 04/01/2018 |
| **Test** | **Method** | **Units** | | | | |
| Arsenic (total) | CE127 M | mg/kg As | 12 | 7.0 | 6.4 | 10 |
| Cadmium (total) | CE127 M | mg/kg Cd | 1.2 | 0.6 | 1.1 | 1.2 |
| Chromium (total) | CE127 M | mg/kg Cr | 99 | 98 | 56 | 98 |
| Chromium (III) | - | mg/kg CrIII | 99 | 98 | 56 | 98 |
| Chromium (VI) | CE146 | mg/kg CrVI | <1 | <1 | <1 | <1 |
| Copper (total) | CE127 M | mg/kg Cu | 39 | 25 | 21 | 132 |
| Lead (total) | CE127 M | mg/kg Pb | 69 | 21 | 35 | 52 |
| Mercury (total) | CE127 M | mg/kg Hg | <0.5 | <0.5 | <0.5 | <0.5 |
| Nickel (total) | CE127 M | mg/kg Ni | 28 | 32 | 22 | 26 |
| Selenium (total) | CE127 M | mg/kg Se | 1.5 | 1.0 | 0.9 | 1.4 |
| Zinc (total) | CE127 M | mg/kg Zn | 135 | 79 | 79 | 122 |
| pH | CE004 M | units | 7.6 | 8.0 | 7.2 | 7.4 |
| Sulphate (2:1 water soluble) | CE061 M | mg/l $SO_4$ | 13 | 81 | 82 | 39 |
| Cyanide (free) | CE077 | mg/kg CN | <1 | <1 | <1 | <1 |
| Total Organic Carbon (TOC) | CE072 M | % w/w C | 4.34 | 0.47 | 3.17 | 3.95 |
| **PAH** | | | | | | |
| Acenaphthene | CE087 M | mg/kg | <0.01 | <0.01 | <0.01 | <0.01 |
| Acenaphthylene | CE087 M | mg/kg | <0.01 | <0.01 | <0.01 | <0.01 |
| Anthracene | CE087 U | mg/kg | <0.02 | <0.02 | <0.02 | <0.02 |
| Benzo(a)anthracene | CE087 U | mg/kg | 0.09 | 0.03 | 0.08 | 0.05 |
| Benzo(a)pyrene | CE087 U | mg/kg | 0.07 | <0.02 | 0.06 | 0.04 |
| Benzo(b)fluoranthene | CE087 M | mg/kg | 0.09 | <0.02 | 0.07 | 0.04 |
| Benzo(ghi)perylene | CE087 M | mg/kg | <0.02 | <0.02 | <0.02 | <0.02 |
| Benzo(k)fluoranthene | CE087 M | mg/kg | 0.04 | <0.02 | <0.02 | <0.02 |
| Chrysene | CE087 M | mg/kg | 0.07 | <0.01 | 0.06 | <0.01 |
| Dibenz(ah)anthracene | CE087 M | mg/kg | <0.02 | <0.02 | <0.02 | <0.02 |
| Fluoranthene | CE087 M | mg/kg | 0.14 | 0.04 | 0.12 | 0.07 |
| Fluorene | CE087 U | mg/kg | <0.01 | <0.01 | <0.01 | <0.01 |
| Indeno(123cd)pyrene | CE087 M | mg/kg | <0.02 | <0.02 | 0.03 | <0.02 |
| Naphthalene | CE087 M | mg/kg | <0.01 | <0.01 | <0.01 | <0.01 |
| Phenanthrene | CE087 M | mg/kg | 0.07 | 0.05 | 0.08 | 0.08 |
| Pyrene | CE087 M | mg/kg | 0.13 | 0.03 | 0.11 | 0.06 |
| PAH (total of USEPA 16) | CE087 | mg/kg | 0.70 | <0.27 | 0.60 | 0.34 |
| Benzo(j)fluoranthene | CE087 | mg/kg | <0.02 | <0.02 | <0.02 | <0.02 |
| PAH (total of OIL 8) | CE087 | mg/kg | 0.36 | <0.15 | 0.29 | <0.15 |
| **Subcontracted analysis** | | | | | | |
| Asbestos (qualitative) | $ | - | NAD | NAD | NAD | NAD |

# Chemtech Environmental Limited

# METHOD DETAILS

| METHOD | SOILS | METHOD SUMMARY | SAMPLE | STATUS | LOD | UNITS |
|---|---|---|---|---|---|---|
| CE127 | Arsenic (total) | Aqua regia digest, ICP-MS | Dry | M | 1 | mg/kg As |
| CE127 | Cadmium (total) | Aqua regia digest, ICP-MS | Dry | M | 0.2 | mg/kg Cd |
| CE127 | Chromium (total) | Aqua regia digest, ICP-MS | Dry | M | 1 | mg/kg Cr |
| - | Chromium (III) | Calculation: Cr (total) - Cr (VI) | Dry | | 1 | mg/kg CrIII |
| CE146 | Chromium (VI) | Acid extraction, Colorimetry | Dry | | 1 | mg/kg CrVI |
| CE127 | Copper (total) | Aqua regia digest, ICP-MS | Dry | M | 1 | mg/kg Cu |
| CE127 | Lead (total) | Aqua regia digest, ICP-MS | Dry | M | 1 | mg/kg Pb |
| CE127 | Mercury (total) | Aqua regia digest, ICP-MS | Dry | M | 0.5 | mg/kg Hg |
| CE127 | Nickel (total) | Aqua regia digest, ICP-MS | Dry | M | 1 | mg/kg Ni |
| CE127 | Selenium (total) | Aqua regia digest, ICP-MS | Dry | M | 0.3 | mg/kg Se |
| CE127 | Zinc (total) | Aqua regia digest, ICP-MS | Dry | M | 5 | mg/kg Zn |
| CE004 | pH | Based on BS 1377, pH Meter | Wet | M | - | units |
| CE061 | Sulphate (2:1 water soluble) | Aqueous extraction, ICP-OES | Dry | M | 10 | mg/l $SO_4$ |
| CE077 | Cyanide (free) | Extraction, Continuous Flow Colorimetry | Wet | | 1 | mg/kg CN |
| CE072 | Total Organic Carbon (TOC) | Removal of IC by acidification, Carbon Analyser | Dry | M | 0.1 | % w/w C |
| CE087 | Acenaphthene | Solvent extraction, GC-MS | Wet | M | 0.01 | mg/kg |
| CE087 | Acenaphthylene | Solvent extraction, GC-MS | Wet | M | 0.01 | mg/kg |
| CE087 | Anthracene | Solvent extraction, GC-MS | Wet | U | 0.02 | mg/kg |
| CE087 | Benzo(a)anthracene | Solvent extraction, GC-MS | Wet | U | 0.02 | mg/kg |
| CE087 | Benzo(a)pyrene | Solvent extraction, GC-MS | Wet | U | 0.02 | mg/kg |
| CE087 | Benzo(b)fluoranthene | Solvent extraction, GC-MS | Wet | M | 0.02 | mg/kg |
| CE087 | Benzo(ghi)perylene | Solvent extraction, GC-MS | Wet | M | 0.02 | mg/kg |
| CE087 | Benzo(k)fluoranthene | Solvent extraction, GC-MS | Wet | M | 0.02 | mg/kg |
| CE087 | Chrysene | Solvent extraction, GC-MS | Wet | M | 0.01 | mg/kg |
| CE087 | Dibenz(ah)anthracene | Solvent extraction, GC-MS | Wet | M | 0.02 | mg/kg |
| CE087 | Fluoranthene | Solvent extraction, GC-MS | Wet | M | 0.02 | mg/kg |
| CE087 | Fluorene | Solvent extraction, GC-MS | Wet | U | 0.01 | mg/kg |
| CE087 | Indeno(123cd)pyrene | Solvent extraction, GC-MS | Wet | M | 0.02 | mg/kg |
| CE087 | Naphthalene | Solvent extraction, GC-MS | Wet | M | 0.01 | mg/kg |
| CE087 | Phenanthrene | Solvent extraction, GC-MS | Wet | M | 0.02 | mg/kg |
| CE087 | Pyrene | Solvent extraction, GC-MS | Wet | M | 0.02 | mg/kg |
| CE087 | PAH (total of USEPA 16) | Solvent extraction, GC-MS | Wet | | 0.27 | mg/kg |
| CE087 | Benzo(j)fluoranthene | Solvent extraction, GC-MS | Wet | | 0.02 | mg/kg |
| CE087 | PAH (total of OIL 8) | Solvent extraction, GC-MS | Wet | | 0.15 | mg/kg |
| $ | Asbestos (qualitative) | HSG 248, Microscopy | Dry | U | - | - |

# Chemtech Environmental Limited

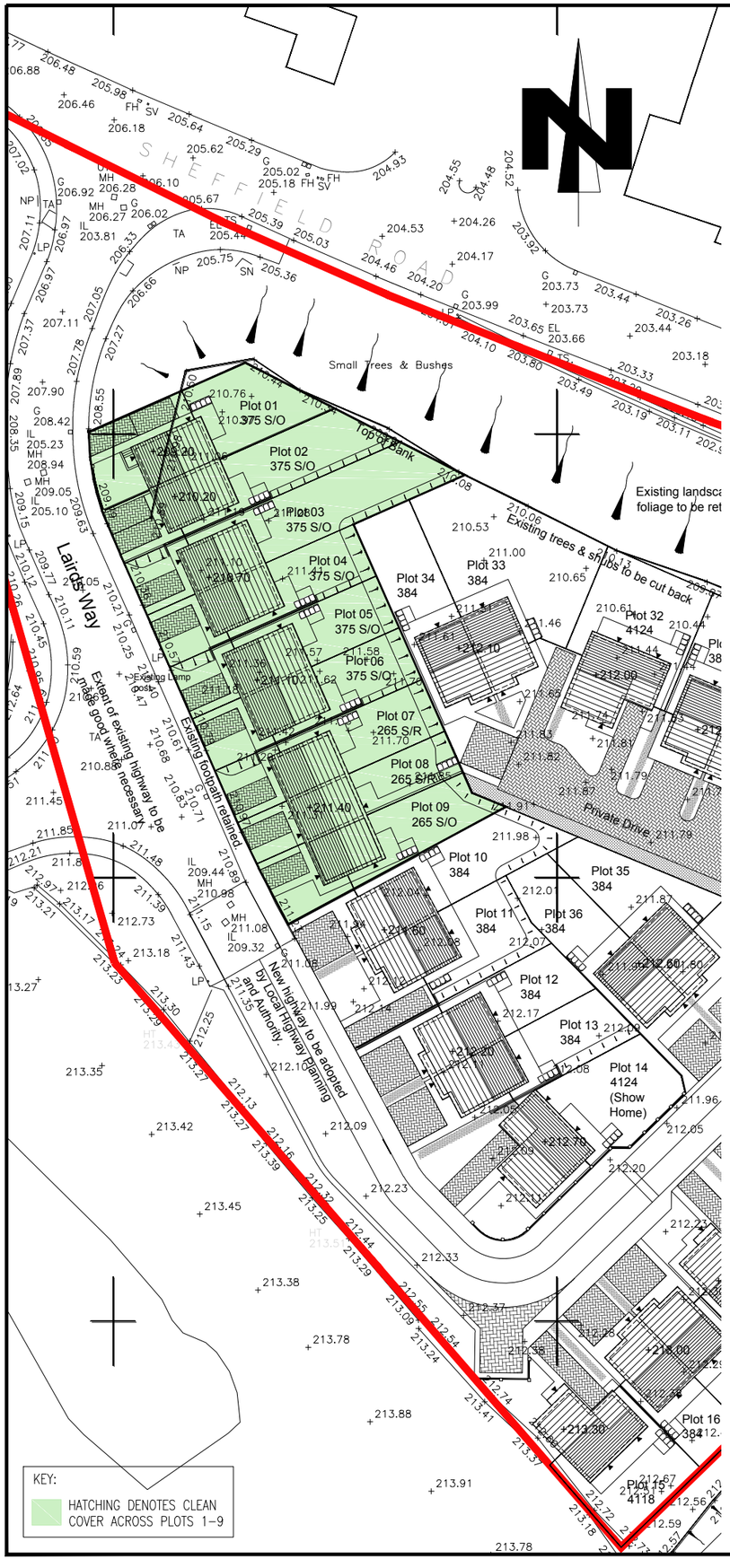
# DEVIATING SAMPLE INFORMATION

**Comments**
Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.
For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.
Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

**Key**

| | |
|---|---|
| N | No (not deviating sample) |
| Y | Yes (deviating sample) |
| NSD | Sampling date not provided |
| NST | Sampling time not provided (waters only) |
| EHT | Sample exceeded holding time(s) |
| IC | Sample not received in appropriate containers |
| HP | Headspace present in sample container |
| NCF | Sample not chemically fixed (where appropriate) |
| IT | Sample not cooled |
| OR | Other (specify) |

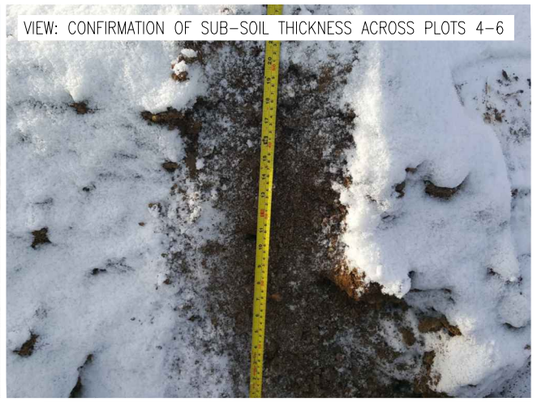
| Lab ref | Sample id | Depth (m) | Deviating | Tests (Reason for deviation) |
|---|---|---|---|---|
| 69328-1 | Plot 3 Topsoil | - | N | |
| 69328-2 | Plot 3 Subsoil | - | N | |
| 69328-3 | Plot 5 Topsoil | - | N | |
| 69328-4 | Plot 9 Topsoil | - | N | |




VIEW: LOOKING ACROSS REAR GARDENS OF PLOTS 1-9



VIEW: CONFIRMATION OF SUB-SOIL THICKNESS ACROSS PLOTS 4-6



VIEW: CONFIRMATION OF SUB-SOIL THICKNESS ACROSS PLOTS 4-6



VIEW: LOCATION OF VALIDATION TRIAL PIT WITHIN PLOT 5



VIEW: LOCATION OF VALIDATION TRIAL PIT WITHIN PLOT 8



VIEW: CONFIRMATION OF SUB-SOIL THICKNESS ACROSS PLOTS 7-9



VIEW: CONFIRMATION OF SUB-SOIL THICKNESS ACROSS PLOTS 7-9



VIEW: SHOWING CLEAN IMPORTED SUB-SOIL MATERIALS



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| rev. | date | amendments | drawn | chckd |
|---|---|---|---|---|

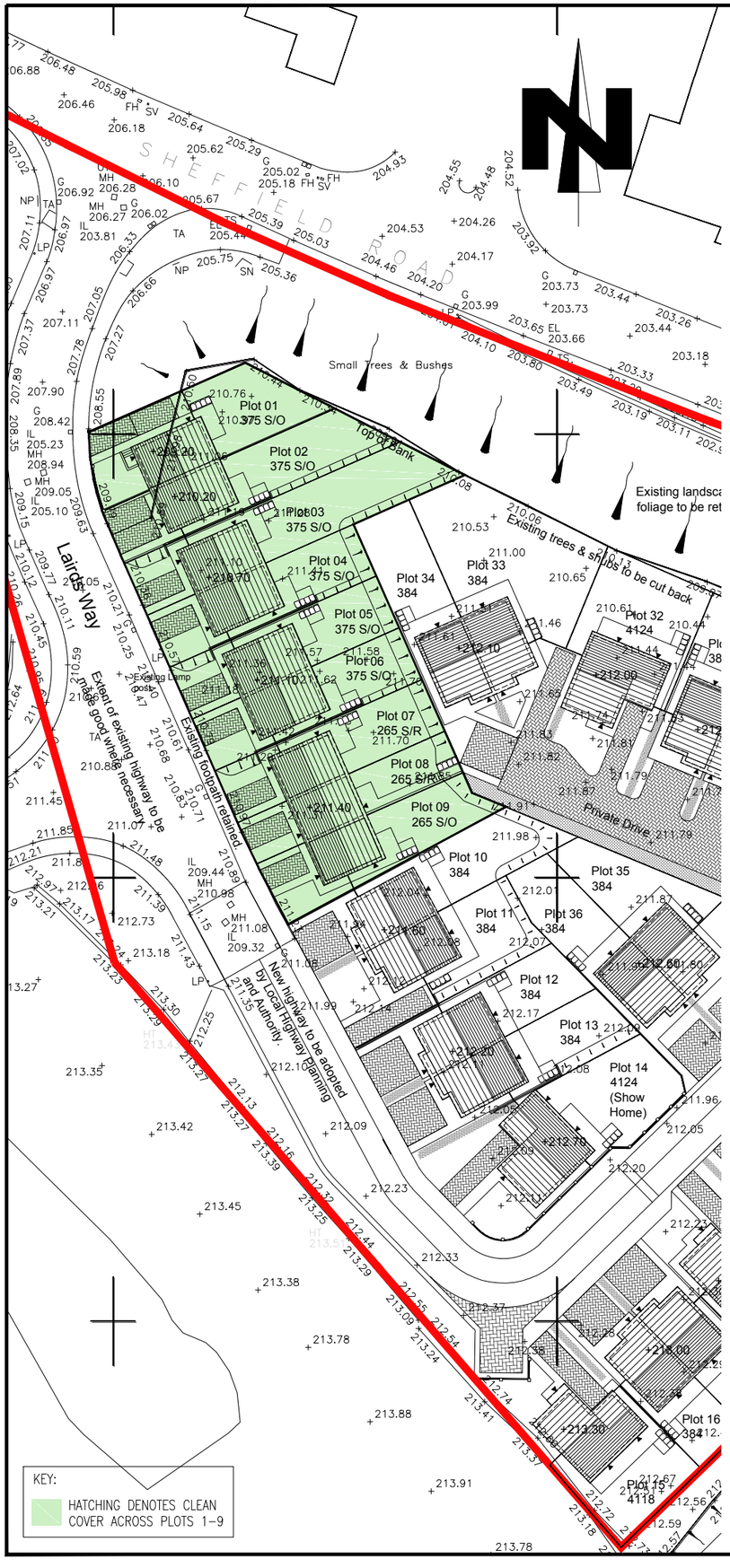
Client:
**STRATEGIC TEAM GROUP**

**Project Title:**
Proposed Residential Development
Lairds Way
Penistone, South Yorkshire

**Drawing Title:**
Clean Cover Validation
Record Sheet Plots 1-9 (Sub-Soil)

| Scale at A3: | Date: | Drawn by: | Approved by: |
|---|---|---|---|
| NTS @ A3 | 29.01.18 | P.D | G.H |

| Job Ref: | Drg no: | Rev: |
|---|---|---|
| 16-384 | - | - |



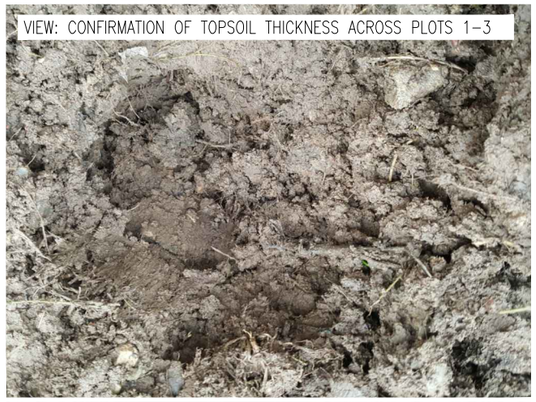

VIEW: LOOKING ACROSS REAR GARDENS OF PLOTS 1-3 FOLLOWING EMPLACEMENT OF SUB-SOIL AND TOPSOIL



VIEW: CONFIRMATION OF SUB-SOIL ACROSS PLOTS 1-3



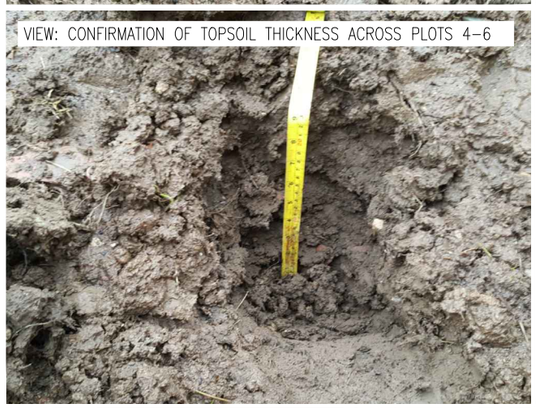
VIEW: CONFIRMATION OF TOPSOIL THICKNESS ACROSS PLOTS 1-3



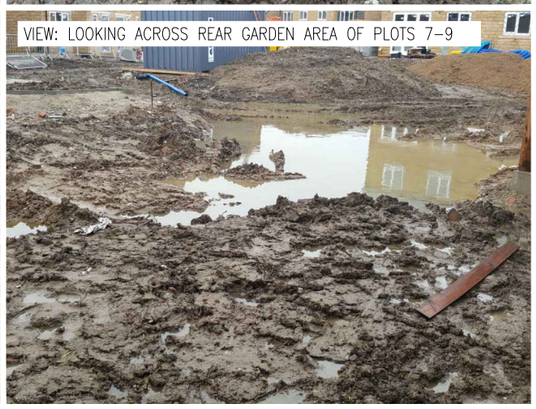
VIEW: LOCATION OF VALIDATION TRIAL PIT WITHIN PLOT 5



VIEW: CONFIRMATION OF TOPSOIL THICKNESS ACROSS PLOTS 4-6



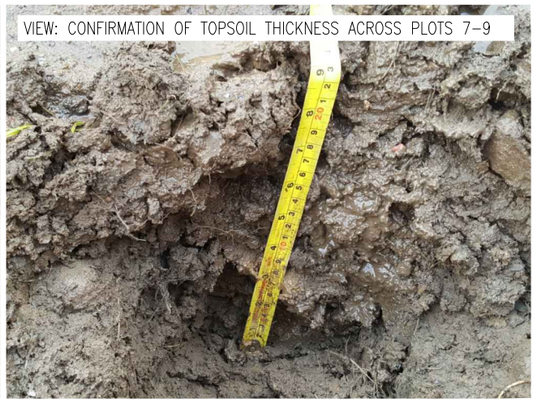
VIEW: LOOKING ACROSS REAR GARDEN AREA OF PLOTS 7-9



VIEW: LOOKING ACROSS REAR GARDEN AREA OF PLOT 8 FOLLOWING EMPLACEMENT OF TOPSOIL MATERIALS



VIEW: CONFIRMATION OF TOPSOIL THICKNESS ACROSS PLOTS 7-9



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Client:
**STRATEGIC TEAM GROUP**

Project Title:
Proposed Residential Development
Lairds Way
Penistone, South Yorkshire

Drawing Title:
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Record Sheet Plots 1-9 (Top-Soil)

| Scale at A3: | Date: | Drawn by: | Approved by: |
|---|---|---|---|
| NTS @ A3 | 29.01.18 | P.D | G.H |

| Job Ref: | Drg no: | Rev: |
|---|---|---|
| 16-384 | – | – |