FILE 2461/05



JPA
JOYNES PIKE & ASSOCIATES LTD
CONSULTING ENGINEERS

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Doncaster DN4 5NL
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Your Ref:

Our Ref: RGF/RMB/232095.20070072

23 January 2007

Barnsley Metropolitan Borough Council
Regulatory Services
Central Offices
Kendray Street
Barnsley
S70 2TN

**For the Attention of Mr John Scott**

Dear John

**Re: Wombwell Foundry, Hough Lane, Wombwell**

Further to the ongoing imported topsoil and subsoil capping for the front and rear gardens at the above mentioned site, we are pleased to enclose test certificates for the imported material as per our approved Reclamation and Remediation Method Statement (ref: DRS/DRS/232095.20060450).

It has been estimated by Ben Bailey Homes Ltd that the front and rear gardens of the proposed housing development on site will require approximately 7,000m$^3$ of topsoil and 10,000m$^3$ of clay subsoil capping in total. Currently Jakto Ltd has imported the full amount of topsoil required and approximately 5,000m$^3$ of clay subsoil from the RSPB site at Bolton Ings. Both these materials are as dug natural soils from a Greenfield site.

At present, the imported capping has been tested at a rate of 1 sample per 250m$^3$ as per our approved Reclamation and Remediation Method Statement and subsequent telephone conversations with yourself. There have been 28 No. samples of topsoil and 12 No. samples of clay subsoil submitted in appropriate sterile containers to ECoS Environmental a UKAS and MCERTS approved laboratory for the approved suite of contaminants. The results, a copy of which are included in Appendix A, have been assessed using statistical analysis as outlined in CLR 7 with appropriate $US_{95}$ values being calculated for each determinant. We enclose as Appendix B copies of the statistical analysis which show all values are below the limits set in our Remediation Method Statement for the site.

Considering the above, it is Joynes Pike and Associates Ltd view that the material is suitable for its intended use as capping for front and rear garden areas on the site.

As the test results of the clay subsoil currently imported to site has shown consistent contaminant levels below the approved levels and the remaining material shall be imported from Bolton Ings, we kindly request that testing rate is reduced to 1 test per 500m$^3$ for the remaining material.

We trust that the above and enclosed is satisfactory for your current needs and we look forward to receiving your written approval on this matter. These details will be incorporated into our final validation report. Should you have any queries please do not hesitate to contact the undersigned.

Yours sincerely
**For and on behalf of Joynes Pike & Associates Limited**

**R G Fone BSc (Hons)**
**Graduate Geo-Environmental Engineer**
rfone@joynespike.co.uk

**R M Butterworth BSc (Hons) Grad IMMM FGS**
**Principal Engineer**
rbutterworth@joynespike.co.uk

Enc

CC: J Booth - Ben Bailey Homes Ltd.

# Appendix A

Chemical Contamination Test Results

ECōS

**Client:** **Joynes Pike & Associates Ltd.**
1-2 Aire House
Sidings Court
Richmond Business Park
Doncaster
South Yorkshire
DN4 5NL

**FAO:** Mr R Fone


...ster
Pro... 12060286
Re... J.S. 2
22 JAN 2007
RMB | RGF
OES | DM | File: 2


**Analytical Report Number: R06/2280s**

| | |
|---|---|
| **Client Project Name:** | **Bolton Ings** |
| **Client Project Number:** | **12060286** |
| **Your Order Number:** | **22829** |
| **Order Receipt Date:** | **20/12/06** |
| **Reporting Date:** | **Thursday 18 January 2007** |

If you have any queries regarding this report please contact our Customer Services Section



ECōS Environmental Limited
Low Moor Business Park, Common Road, Bradford BD12 0NB
Tel: 01274 691122 Fax: 01274 608100

**Client Project Name: Bolton Ings**

**Project Number: 12060286**

**Client: Joynes Pike & Associates Ltd.**

**Reporting Date: Thursday 18 January 2007**

## Comments

All analyses are carried out using the laboratory's standard methods unless otherwise agreed.

The test results in this report refer only to the actual samples on which testing has been performed.

*Any opinions and/or interpretations expressed herein are outside the scope of the testing laboratory's UKAS accreditation.*

The test report shall not be reproduced, except in full, without the testing laboratory's written approval.

This testing laboratory cannot be held responsible for the condition or suitability of samples submitted for testing by a third party or for the competency of personnel other than its own staff.

## Soil Samples

Results are expressed based on air dried mass @ 40°C unless otherwise stated.

See key in Notes section for explanation of numerical categories for asbestos results, if applicable.

Stones (for example inert flints and inorganic minerals) >10mm are removed prior to analysis. Unless otherwise stated, results have not been corrected for this loss.

Samples submitted for leachate determination were prepared using agreed procedures and analysed using UKAS accredited methodology where appropriate.

Results are expressed without correction for recovery factors.

## Key:

### Accreditation:

MCERTS = This test is accredited to the British Standard BS EN ISO/IEC 17025:2005 and the Environment Agency MCERTS for soil standard.

17025 = This test is accredited to the British Standard BS EN ISO/IEC 17025:2005.

None = This test is currently not on our scope of accreditation.

### Sample Pretreatment (Appended to Method of Detection)

D = Air Dried @ 40°C

R = As Received

### Sample Type

B = Bulk disturbed sample
C = Core Sample
D = Small disturbed sample
P = Piston sample
U = Undisturbed sample - open drive
W = Water Sample

### Sample Results

# Analysis not requested
*** *Test not completed. Please see notes on last page*

**Signed:** _____

**For and on behalf of ECõS Environmental Limited**

*Approved signatories:*

| Name | Position |
|---|---|
| J R Brown | Business Development Manager |
| L Dewell | Production Manager |
| P Richardson | Section Head |
| J Stoddart | Technical Manager |

**Client Project Name: Bolton Ings**

**Project Number: 12060286**

**Client: Joynes Pike & Associates Ltd.**

**Reporting Date: Thursday 18 January 2007**

## Soil Samples

## Method Statement

| Determinand | Method of Detection | Sample Pretreatment | Limit of Detection | Accredi-tation | Sub-Contracted | Result Date |
|---|---|---|---|---|---|---|
| Arsenic | ICP-OES | D | 0.1 mg/kg | 17025 | No | 03/01/07 |
| Cadmium | ICP-OES | D | 0.2 mg/kg | 17025 | No | 03/01/07 |
| Chromium (total) | ICP-OES | D | 0.2 mg/kg | 17025 | No | 03/01/07 |
| Lead | ICP-OES | D | 0.5 mg/kg | 17025 | No | 03/01/07 |
| Mercury | ICP-OES | D | 0.1 mg/kg | 17025 | No | 03/01/07 |
| Selenium | ICP-OES | D | 1.0 mg/kg | 17025 | No | 03/01/07 |
| Boron (water soluble) | ICP-OES | D | 0.5 mg/kg | None | No | 04/01/07 |
| Copper | ICP-OES | D | 0.2 mg/kg | 17025 | No | 03/01/07 |
| Nickel | ICP-OES | D | 0.2 mg/kg | 17025 | No | 03/01/07 |
| Zinc | ICP-OES | D | 0.2 mg/kg | 17025 | No | 03/01/07 |
| PAH (sum of EPA 16) | GC-MS | D | 0.1 mg/kg | 17025 | No | 10/01/07 |
| Sulphide | Colorimetry | R | 2.0 mg/kg | 17025 | No | 02/01/07 |
| pH | pH-meter | D | N/A | 17025 | No | 04/01/07 |
| Naphthalene | GC-MS | D | 0.1 mg/kg | 17025 | No | 10/01/07 |
| Acenaphthylene | GC-MS | D | 0.1 mg/kg | 17025 | No | 10/01/07 |
| Acenaphthene | GC-MS | D | 0.1 mg/kg | 17025 | No | 10/01/07 |
| Fluorene | GC-MS | D | 0.1 mg/kg | 17025 | No | 10/01/07 |
| Phenanthrene | GC-MS | D | 0.1 mg/kg | 17025 | No | 10/01/07 |
| Anthracene | GC-MS | D | 0.1 mg/kg | 17025 | No | 10/01/07 |
| Fluoranthene | GC-MS | D | 0.1 mg/kg | 17025 | No | 10/01/07 |
| Pyrene | GC-MS | D | 0.1 mg/kg | 17025 | No | 10/01/07 |
| Benzo(a)anthracene | GC-MS | D | 0.1 mg/kg | 17025 | No | 10/01/07 |
| Chrysene | GC-MS | D | 0.1 mg/kg | 17025 | No | 10/01/07 |
| Benzo(b)fluoranthene | GC-MS | D | 0.1 mg/kg | 17025 | No | 10/01/07 |
| Benzo(k)fluoranthene | GC-MS | D | 0.1 mg/kg | 17025 | No | 10/01/07 |
| Benzo(a)pyrene | GC-MS | D | 0.1 mg/kg | 17025 | No | 10/01/07 |
| Indeno(1,2,3-cd)pyrene | GC-MS | D | 0.1 mg/kg | 17025 | No | 10/01/07 |
| Dibenz(a,h)anthracene | GC-MS | D | 0.1 mg/kg | 17025 | No | 10/01/07 |
| Benzo(g,h,i)perylene | GC-MS | D | 0.1 mg/kg | 17025 | No | 10/01/07 |
| Fraction Organic Carbon | Titration | D | 0.001 N/A | None | No | 04/01/07 |
| Chromium (hexavalent) | ICP-OES | D | 1.0 mg/kg | 17025 | No | 03/01/07 |

**Client Project Name: Bolton Ings**

**Client: Joynes Pike & Associates Ltd.**

**Project Number: 12060286**

**Reporting Date: Thursday 18 January 2007**

| | | | | | | |
|---|---|---|---|---|---|---|
| | **Hole No./Sample ID** | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile |
| | **Top Depth / m** | | | | | |
| | **Bottom Depth / m** | | | | | |
| | **Sample No.** | D1 | D2 | D3 | D4 | D5 |
| | **Sample Type** | | | | | |
| | **Date Sampled** | | | | | |
| | **Receipt Date** | 20/12/06 | 20/12/06 | 20/12/06 | 20/12/06 | 20/12/06 |
| | **ECõS Sample ID** | S0616633 | S0616634 | S0616635 | S0616636 | S0616637 |
| | **Matrix Type** | Soil | Soil | Soil | Soil | Soil |
| **Determinand** | **Units** | | | | | |
| Arsenic | mg/kg | 16.6 | 17.1 | 16.1 | 17.1 | 16.1 |
| Cadmium | mg/kg | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Chromium (total) | mg/kg | 28.3 | 21.3 | 20.7 | 21.0 | 20.9 |
| Lead | mg/kg | 59.5 | 85.4 | 50.1 | 53.4 | 50.4 |
| Mercury | mg/kg | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 |
| Selenium | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Boron (water soluble) | mg/kg | 0.6 | 0.9 | 0.7 | 0.8 | 0.7 |
| Copper | mg/kg | 45.6 | 37.2 | 33.3 | 34.8 | 34.8 |
| Nickel | mg/kg | 31.6 | 30.0 | 27.6 | 27.3 | 27.3 |
| Zinc | mg/kg | 116.3 | 113.7 | 100.3 | 103.4 | 104.2 |
| PAH (sum of EPA 16) | mg/kg | 14.5 | 6.6 | 5.3 | 8.0 | 10.0 |
| Sulphide | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| pH | N/A | 7.6 | 7.1 | 7.0 | 7.2 | 7.1 |
| Naphthalene | mg/kg | 1.7 | 1.2 | 1.1 | 2.1 | 2.4 |
| Acenaphthylene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 2.1 | 0.7 | 0.6 | 1.0 | 1.5 |
| Anthracene | mg/kg | 0.3 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 2.7 | 1.0 | 0.7 | 1.3 | 1.6 |
| Pyrene | mg/kg | 2.2 | 1.0 | 0.8 | 1.2 | 1.5 |
| Benzo(a)anthracene | mg/kg | 0.8 | 0.4 | 0.3 | 0.4 | 0.5 |
| Chrysene | mg/kg | 0.9 | 0.5 | 0.3 | 0.6 | 0.6 |
| Benzo(b)fluoranthene | mg/kg | 1.2 | 0.5 | 0.4 | 0.6 | 0.5 |
| Benzo(k)fluoranthene | mg/kg | 0.5 | 0.3 | 0.3 | 0.3 | 0.3 |
| Benzo(a)pyrene | mg/kg | 1.0 | 0.3 | 0.2 | 0.3 | 0.3 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.6 | 0.5 | 0.3 | <0.1 | 0.5 |
| Dibenz(a,h)anthracene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(g,h,i)perylene | mg/kg | 0.6 | 0.4 | 0.3 | 0.3 | 0.4 |
| Fraction Organic Carbon | N/A | 0.029 | # | # | # | # |
| Chromium (hexavalent) | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

ECõS

**Client Project Name: Bolton Ings**

**Project Number: 12060286**

**Client: Joynes Pike & Associates Ltd.**

**Reporting Date: Thursday 18 January 2007**

| | | | | | | |
|---|---|---|---|---|---|---|
| | **Hole No./Sample ID** | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile |
| | **Top Depth / m** | | | | | |
| | **Bottom Depth / m** | | | | | |
| | **Sample No.** | D6 | 07 | D8 | D9 | D10 |
| | **Sample Type** | | | | | |
| | **Date Sampled** | | | | | |
| | **Receipt Date** | 20/12/06 | 20/12/06 | 20/12/06 | 20/12/06 | 20/12/06 |
| | **ECõS Sample ID** | S0616638 | S0616639 | S0616640 | S0616641 | S0616642 |
| | **Matrix Type** | Soil | Soil | Soil | Soil | Soil |
| **Determinand** | **Units** | | | | | |
| Arsenic | mg/kg | 15.9 | 15.3 | 17.8 | 14.8 | 16.6 |
| Cadmium | mg/kg | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Chromium (total) | mg/kg | 24.5 | 19.1 | 20.3 | 20.4 | 20.1 |
| Lead | mg/kg | 50.0 | 43.7 | 56.2 | 44.5 | 47.8 |
| Mercury | mg/kg | 0.3 | 0.2 | 0.3 | 0.2 | 0.2 |
| Selenium | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Boron (water soluble) | mg/kg | 0.9 | 0.7 | 0.9 | 0.8 | 0.8 |
| Copper | mg/kg | 35.7 | 31.1 | 36.0 | 30.6 | 30.3 |
| Nickel | mg/kg | 31.3 | 28.6 | 27.1 | 26.0 | 28.2 |
| Zinc | mg/kg | 106.3 | 99.7 | 106.0 | 93.3 | 92.5 |
| PAH (sum of EPA 16) | mg/kg | 6.0 | 4.8 | 6.3 | 4.5 | 2.9 |
| Sulphide | mg/kg | <2.0 | <2.0 | 2.7 | <2.0 | 4.1 |
| pH | N/A | 7.2 | 6.9 | 7.1 | 6.9 | 7.0 |
| Naphthalene | mg/kg | 1.9 | 1.3 | 1.3 | 1.2 | 0.6 |
| Acenaphthylene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.8 | 0.7 | 0.8 | 0.7 | 0.6 |
| Anthracene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.9 | 0.7 | 1.1 | 0.7 | 0.6 |
| Pyrene | mg/kg | 0.8 | 0.6 | 1.0 | 0.6 | 0.5 |
| Benzo(a)anthracene | mg/kg | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 |
| Chrysene | mg/kg | 0.5 | 0.3 | 0.4 | 0.3 | 0.3 |
| Benzo(b)fluoranthene | mg/kg | 0.4 | 0.3 | 0.5 | 0.3 | 0.2 |
| Benzo(k)fluoranthene | mg/kg | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 |
| Benzo(a)pyrene | mg/kg | 0.2 | 0.2 | 0.3 | 0.2 | <0.1 |
| Indeno(1,2,3-cd)pyrene | mg/kg | <0.1 | 0.3 | 0.5 | <0.1 | <0.1 |
| Dibenz(a,h)anthracene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(g,h,i)perylene | mg/kg | 0.3 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chromium (hexavalent) | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

ECõS

**Client Project Name: Bolton Ings**

**Project Number: 12060286**

**Client: Joynes Pike & Associates Ltd.**

**Reporting Date: Thursday 18 January 2007**

| | | | | | | |
|---|---|---|---|---|---|---|
| | **Hole No./Sample ID** | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile |
| | **Top Depth / m** | | | | | |
| | **Bottom Depth / m** | | | | | |
| | **Sample No.** | D11 | D10 | D13 | D14 | D15 |
| | **Sample Type** | | | | | |
| | **Date Sampled** | | | | | |
| | **Receipt Date** | 20/12/06 | 20/12/06 | 20/12/06 | 20/12/06 | 20/12/06 |
| | **ECõS Sample ID** | S0616643 | S0616644 | S0616645 | S0616646 | S0616647 |
| | **Matrix Type** | Soil | Soil | Soil | Soil | Soil |
| **Determinand** | **Units** | | | | | |
| Arsenic | mg/kg | 16.0 | 16.6 | 16.6 | 17.0 | 16.3 |
| Cadmium | mg/kg | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Chromium (total) | mg/kg | 21.2 | 21.7 | 21.2 | 19.9 | 19.3 |
| Lead | mg/kg | 74.8 | 58.9 | 52.4 | 48.3 | 50.5 |
| Mercury | mg/kg | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 |
| Selenium | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Boron (water soluble) | mg/kg | 0.9 | 1.0 | 1.1 | 1.1 | 0.9 |
| Copper | mg/kg | 33.0 | 34.5 | 34.7 | 34.6 | 34.0 |
| Nickel | mg/kg | 28.6 | 28.0 | 28.6 | 28.6 | 27.9 |
| Zinc | mg/kg | 93.8 | 104.2 | 102.4 | 104.9 | 102.3 |
| PAH (sum of EPA 16) | mg/kg | 4.9 | 6.3 | 7.9 | 6.9 | 7.0 |
| Sulphide | mg/kg | 5.8 | <2.0 | <2.0 | <2.0 | <2.0 |
| pH | N/A | 6.6 | 7.2 | 7.2 | 7.2 | 7.1 |
| Naphthalene | mg/kg | 0.5 | 1.1 | 2.1 | 2.1 | 2.2 |
| Acenaphthylene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.6 | 0.9 | 1.1 | 0.9 | 0.9 |
| Anthracene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 1.1 | 1.2 | 1.3 | 1.1 | 1.1 |
| Pyrene | mg/kg | 1.0 | 1.1 | 1.2 | 1.1 | 1.0 |
| Benzo(a)anthracene | mg/kg | 0.4 | 0.3 | 0.4 | 0.3 | 0.3 |
| Chrysene | mg/kg | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 |
| Benzo(b)fluoranthene | mg/kg | 0.5 | 0.5 | 0.5 | 0.4 | 0.5 |
| Benzo(k)fluoranthene | mg/kg | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 |
| Benzo(a)pyrene | mg/kg | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 |
| Indeno(1,2,3-cd)pyrene | mg/kg | <0.1 | <0.1 | 0.5 | <0.1 | <0.1 |
| Dibenz(a,h)anthracene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(g,h,i)perylene | mg/kg | <0.1 | 0.3 | <0.1 | <0.1 | <0.1 |
| Chromium (hexavalent) | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

**Client Project Name: Bolton Ings**

**Project Number: 12060286**

**Client: Joynes Pike & Associates Ltd.**

**Reporting Date: Thursday 18 January 2007**

| | | | | | | |
|---|---|---|---|---|---|---|
| | **Hole No./Sample ID** | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile |
| | **Top Depth / m** | | | | | |
| | **Bottom Depth / m** | | | | | |
| | **Sample No.** | D16 | D17 | D18 | D19 | D20 |
| | **Sample Type** | | | | | |
| | **Date Sampled** | | | | | |
| | **Receipt Date** | 20/12/06 | 20/12/06 | 20/12/06 | 20/12/06 | 20/12/06 |
| | **ECõS Sample ID** | S0616648 | S0616649 | S0616650 | S0616651 | S0616652 |
| | **Matrix Type** | Soil | Soil | Soil | Soil | Soil |
| **Determinand** | **Units** | | | | | |
| Arsenic | mg/kg | 17.9 | 20.9 | 19.6 | 15.6 | 15.8 |
| Cadmium | mg/kg | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Chromium (total) | mg/kg | 19.6 | 24.1 | 25.3 | 19.2 | 19.3 |
| Lead | mg/kg | 53.4 | 57.4 | 61.4 | 43.3 | 45.6 |
| Mercury | mg/kg | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 |
| Selenium | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Boron (water soluble) | mg/kg | 0.8 | 0.8 | 0.7 | 0.6 | 0.7 |
| Copper | mg/kg | 35.7 | 39.7 | 42.0 | 30.1 | 33.0 |
| Nickel | mg/kg | 28.5 | 29.9 | 33.3 | 26.1 | 28.5 |
| Zinc | mg/kg | 109.8 | 115.5 | 125.0 | 95.7 | 105.6 |
| PAH (sum of EPA 16) | mg/kg | 8.0 | 6.7 | 10.3 | 4.4 | 7.1 |
| Sulphide | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| pH | N/A | 7.1 | 7.3 | 7.3 | 7.2 | 7.1 |
| Naphthalene | mg/kg | 2.2 | 1.3 | 2.6 | 1.3 | 2.4 |
| Acenaphthylene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 1.0 | 1.0 | 1.5 | 0.6 | 1.0 |
| Anthracene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 1.3 | 1.3 | 1.7 | 0.7 | 1.2 |
| Pyrene | mg/kg | 1.2 | 1.2 | 1.4 | 0.6 | 1.0 |
| Benzo(a)anthracene | mg/kg | 0.4 | 0.3 | 0.6 | 0.3 | 0.3 |
| Chrysene | mg/kg | 0.5 | 0.5 | 0.7 | 0.3 | 0.3 |
| Benzo(b)fluoranthene | mg/kg | 0.6 | 0.5 | 0.6 | 0.3 | 0.4 |
| Benzo(k)fluoranthene | mg/kg | 0.3 | 0.2 | 0.3 | 0.2 | 0.3 |
| Benzo(a)pyrene | mg/kg | 0.3 | 0.3 | 0.4 | 0.2 | 0.2 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.4 | <0.1 | <0.1 | <0.1 | <0.1 |
| Dibenz(a,h)anthracene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(g,h,i)perylene | mg/kg | <0.1 | 0.3 | 0.5 | <0.1 | <0.1 |
| Chromium (hexavalent) | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

ECõS

Client Project Name: Bolton Ings

Project Number: 12060286

Client: Joynes Pike & Associates Ltd.

Reporting Date: Thursday 18 January 2007

| | Hole No./Sample ID | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile |
|---|---|---|---|---|---|---|
| | Top Depth / m | | | | | |
| | Bottom Depth / m | | | | | |
| | Sample No. | D21 | D22 | D23 | D24 | D25 |
| | Sample Type | | | | | |
| | Date Sampled | | | | | |
| | Receipt Date | 20/12/06 | 20/12/06 | 20/12/06 | 20/12/06 | 20/12/06 |
| | ECõS Sample ID | S0616655 | S0616656 | S0616657 | S0616658 | S0616659 |
| | Matrix Type | Soil | Soil | Soil | Soil | Soil |
| Determinand | Units | | | | | |
| Arsenic | mg/kg | 15.2 | 17.8 | 16.1 | 16.6 | 15.6 |
| Cadmium | mg/kg | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Chromium (total) | mg/kg | 20.7 | 26.1 | 20.4 | 19.0 | 22.7 |
| Lead | mg/kg | 49.9 | 59.5 | 50.4 | 57.8 | 52.2 |
| Mercury | mg/kg | 0.7 | 0.6 | 0.5 | 0.5 | 0.5 |
| Selenium | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Boron (water soluble) | mg/kg | 1.1 | 1.1 | 1.1 | 1.2 | 0.9 |
| Copper | mg/kg | 32.8 | 40.0 | 34.2 | 37.2 | 35.2 |
| Nickel | mg/kg | 29.5 | 32.4 | 29.9 | 29.0 | 29.8 |
| Zinc | mg/kg | 103.0 | 115.7 | 104.3 | 107.3 | 95.4 |
| PAH (sum of EPA 16) | mg/kg | 8.2 | 8.4 | 8.8 | 12.0 | 6.6 |
| Sulphide | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| pH | N/A | 7.1 | 7.2 | 7.2 | 7.1 | 7.4 |
| Naphthalene | mg/kg | 1.9 | 2.1 | 2.5 | 3.0 | 1.2 |
| Acenaphthylene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 1.4 | 1.3 | 1.4 | 1.7 | 0.9 |
| Anthracene | mg/kg | 0.2 | <0.1 | 0.2 | 0.2 | 0.2 |
| Fluoranthene | mg/kg | 1.5 | 1.3 | 1.3 | 1.9 | 1.3 |
| Pyrene | mg/kg | 1.2 | 1.2 | 1.2 | 1.7 | 1.1 |
| Benzo(a)anthracene | mg/kg | 0.3 | 0.4 | 0.4 | 0.5 | 0.4 |
| Chrysene | mg/kg | 0.5 | 0.6 | 0.5 | 0.8 | 0.5 |
| Benzo(b)fluoranthene | mg/kg | 0.4 | 0.6 | 0.4 | 0.7 | 0.5 |
| Benzo(k)fluoranthene | mg/kg | 0.3 | 0.3 | 0.2 | 0.3 | 0.2 |
| Benzo(a)pyrene | mg/kg | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| Indeno(1,2,3-cd)pyrene | mg/kg | <0.1 | 0.5 | 0.3 | 0.5 | 0.3 |
| Dibenz(a,h)anthracene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(g,h,i)perylene | mg/kg | 0.3 | <0.1 | 0.3 | 0.5 | <0.1 |
| Chromium (hexavalent) | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

ECõS

*Client Project Name: Bolton Ings*

**Project Number: 12060286**

*Client: Joynes Pike & Associates Ltd.*

**Reporting Date: Thursday 18 January 2007**

| | | | | | | |
|---|---|---|---|---|---|---|
| | **Hole No./Sample ID** | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile |
| | **Top Depth / m** | | | | | |
| | **Bottom Depth / m** | | | | | |
| | **Sample No.** | D26 | D27 | D28 | D29 | D30 |
| | **Sample Type** | | | | | |
| | ***Date Sampled*** | | | | | |
| | **Receipt Date** | 20/12/06 | 20/12/06 | 20/12/06 | 20/12/06 | 20/12/06 |
| | **ECõS Sample ID** | S0616660 | S0616661 | S0616662 | S0616663 | S0616664 |
| | **Matrix Type** | Soil | Soil | Soil | Soil | Soil |
| **Determinand** | **Units** | | | | | |
| Arsenic | mg/kg | 14.2 | 15.8 | 15.2 | 8.5 | 6.0 |
| Cadmium | mg/kg | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Chromium (total) | mg/kg | 20.2 | 22.0 | 23.6 | 15.5 | 16.1 |
| Lead | mg/kg | 44.8 | 50.8 | 52.0 | 17.4 | 14.8 |
| Mercury | mg/kg | 0.3 | 0.3 | 0.3 | 0.2 | <0.1 |
| Selenium | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Boron (water soluble) | mg/kg | 1.0 | 1.0 | 1.2 | <0.5 | 0.5 |
| Copper | mg/kg | 30.9 | 33.8 | 33.1 | 17.3 | 17.2 |
| Nickel | mg/kg | 27.7 | 29.7 | 31.0 | 31.8 | 28.7 |
| Zinc | mg/kg | 84.9 | 96.5 | 100.5 | 80.8 | 74.9 |
| PAH (sum of EPA 16) | mg/kg | 4.4 | 3.7 | 3.0 | <0.1 | <0.1 |
| Sulphide | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| pH | N/A | 7.2 | 7.1 | 7.4 | 6.8 | 6.3 |
| Naphthalene | mg/kg | 0.4 | 0.8 | 0.6 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 1.1 | 0.6 | 0.5 | <0.1 | <0.1 |
| Anthracene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 1.2 | 0.6 | 0.6 | <0.1 | <0.1 |
| Pyrene | mg/kg | 1.0 | 0.6 | 0.5 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | 0.3 | 0.2 | 0.2 | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.3 | 0.3 | 0.3 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | <0.1 | 0.3 | 0.3 | <0.1 | <0.1 |
| Benzo(k)fluoranthene | mg/kg | <0.1 | 0.2 | 0.2 | <0.1 | <0.1 |
| Benzo(a)pyrene | mg/kg | 0.2 | 0.2 | <0.1 | <0.1 | <0.1 |
| Indeno(1,2,3-cd)pyrene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Dibenz(a,h)anthracene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(g,h,i)perylene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chromium (hexavalent) | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Fraction Organic Carbon | N/A | # | # | # | 0.009 | # |

ECõS

**Client Project Name: Bolton Ings**

**Project Number: 12060286**

**Client: Joynes Pike & Associates Ltd.**

**Reporting Date: Thursday 18 January 2007**

| | | | | | | |
|---|---|---|---|---|---|---|
| | Hole No./Sample ID | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile |
| | Top Depth / m | | | | | |
| | Bottom Depth / m | | | | | |
| | Sample No. | D31 | D32 | D33 | D34 | D35 |
| | Sample Type | | | | | |
| | Date Sampled | | | | | |
| | Receipt Date | 20/12/06 | 20/12/06 | 20/12/06 | 20/12/06 | 20/12/06 |
| | ECõS Sample ID | S0616665 | S0616666 | S0616667 | S0616668 | S0616669 |
| | Matrix Type | Soil | Soil | Soil | Soil | Soil |
| **Determinand** | **Units** | | | | | |
| Arsenic | mg/kg | 7.6 | 9.6 | 6.1 | 4.0 | 8.3 |
| Cadmium | mg/kg | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Chromium (total) | mg/kg | 17.4 | 17.3 | 16.6 | 17.4 | 17.2 |
| Lead | mg/kg | 19.4 | 23.1 | 15.3 | 14.7 | 14.3 |
| Mercury | mg/kg | 0.1 | 0.2 | 0.1 | <0.1 | <0.1 |
| Selenium | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Boron (water soluble) | mg/kg | 0.5 | 0.9 | 0.7 | 0.6 | 0.7 |
| Copper | mg/kg | 16.7 | 21.2 | 11.6 | 19.3 | 14.5 |
| Nickel | mg/kg | 29.9 | 27.1 | 19.7 | 31.3 | 22.5 |
| Zinc | mg/kg | 72.5 | 75.7 | 53.8 | 84.8 | 77.4 |
| PAH (sum of EPA 16) | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Sulphide | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| pH | N/A | 6.7 | 6.6 | 6.5 | 6.3 | 6.9 |
| Naphthalene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(k)fluoranthene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)pyrene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Indeno(1,2,3-cd)pyrene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Dibenz(a,h)anthracene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(g,h,i)perylene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chromium (hexavalent) | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

ECõS

**Client Project Name: Bolton Ings**

**Project Number: 12060286**

**Client: Joynes Pike & Associates Ltd.**

**Reporting Date: Thursday 18 January 2007**

| | | | | | | |
|---|---|---|---|---|---|---|
| | **Hole No./Sample ID** | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile |
| | **Top Depth / m** | | | | | |
| | **Bottom Depth / m** | | | | | |
| | **Sample No.** | D36 | D37 | D38 | D39 | D40 |
| | **Sample Type** | | | | | |
| | **Date Sampled** | | | | | |
| | **Receipt Date** | 20/12/06 | 20/12/06 | 20/12/06 | 20/12/06 | 20/12/06 |
| | **ECõS Sample ID** | S0616670 | S0616671 | S0616672 | S0616673 | S0616674 |
| | **Matrix Type** | Soil | Soil | Soil | Soil | Soil |
| **Determinand** | **Units** | | | | | |
| Arsenic | mg/kg | 8.2 | 9.4 | 13.0 | 7.8 | 9.2 |
| Cadmium | mg/kg | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Chromium (total) | mg/kg | 17.0 | 17.5 | 16.0 | 16.1 | 14.6 |
| Lead | mg/kg | 16.5 | 24.2 | 20.2 | 20.1 | 15.6 |
| Mercury | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Selenium | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Boron (water soluble) | mg/kg | <0.5 | 0.5 | <0.5 | 0.7 | <0.5 |
| Copper | mg/kg | 17.0 | 20.2 | 27.5 | 9.8 | 16.4 |
| Nickel | mg/kg | 32.7 | 28.2 | 47.2 | 12.3 | 25.6 |
| Zinc | mg/kg | 77.4 | 73.0 | 94.5 | 29.5 | 65.1 |
| PAH (sum of EPA 16) | mg/kg | <0.1 | 0.2 | <0.1 | <0.1 | 0.2 |
| Sulphide | mg/kg | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| pH | N/A | 6.6 | 6.8 | 5.9 | 6.5 | 6.6 |
| Naphthalene | mg/kg | <0.1 | 0.2 | <0.1 | <0.1 | 0.2 |
| Acenaphthylene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Pyrene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b)fluoranthene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(k)fluoranthene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(a)pyrene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Indeno(1,2,3-cd)pyrene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Dibenz(a,h)anthracene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(g,h,i)perylene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chromium (hexavalent) | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

## Notes and Preservation Details

Report R06/2280s is a supplement to R06/2280, containing amended project name and project number.

# Appendix B

Statistical Analysis

## Mean Value Test

232095 - Hough Lane, Wombwell - Imported TOPSOIL capping from Bolton Ings Wetlands - Metals - Residential with plant uptake and allotments.

| Key: | |
|---|---|
| | exceeds screen and is potential outlier |
| | Does not exceed screen but may be outlier |
| | Exceeds screen but is not an outlier |

To enter results into this table, click on column G and click the Insert Columns button, entering the number of columns needed. Then either type in the results, or paste them in. DO NOT try the 'Insert Copied Cells' option, as this loses the formating links.

| CAS REG No | Determinand | Units | *Screening Value | *Source of screening value | D1 | D2 | D3 | D4 | D5 | D6 | D7 | D8 | D9 | D10 | D11 | D12 | D13 | D14 | D15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Ref | D1 | D2 | D3 | D4 | D5 | D6 | D7 | D8 | D9 | D10 | D11 | D12 | D13 | D14 | D15 |
| | | | | trial pit / borehole ref | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile |
| | | | | Depth | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | Arsenic | mg/kg | 20 | SGV | 16 60 | 17 10 | 16 10 | 17 10 | 16 10 | 15 90 | 15 30 | 17 80 | 14 80 | 16 60 | 16 00 | 16 60 | 16 60 | 17 00 | 16 30 |
| | Cadmium | mg/kg | 1 | SGV | 0 20 | 0.20 | 0 20 | 0 20 | 0 20 | 0 20 | 0 20 | 0 20 | 0.20 | 0 20 | 0 20 | 0 20 | 0 20 | 0 20 | 0 20 |
| | Chromium | mg/kg | 130 | SGV | 28.80 | 21 30 | 20 70 | 21 00 | 20 90 | 24 50 | 19 10 | 20 30 | 20 40 | 20 10 | 21 20 | 21 70 | 21.20 | 19 90 | 19 30 |
| | Lead | mg/kg | 450 | SGV | 59 50 | 85 40 | 50 10 | 53 40 | 50.40 | 50 00 | 43 70 | 56 20 | 44 50 | 47 80 | 74 80 | 58 90 | 52 40 | 48 30 | 50 50 |
| | Mercury | mg/kg | 8 | SGV | 0.40 | 0 40 | 0 30 | 0 30 | 0 30 | 0 30 | 0 20 | 0 30 | 0 20 | 0 20 | 0 20 | 0 20 | 0.10 | 0 20 | 0 20 |
| | Nickel | mg/kg | 50 | SGV | 31 60 | 30 00 | 27 60 | 27 30 | 27 30 | 31 30 | 28 60 | 27 10 | 26 00 | 28 20 | 28 60 | 28 00 | 28 60 | 28 60 | 27 90 |
| | Selenium | mg/kg | 35 | SGV | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1 00 |
| | Copper | mg/kg | 8000 | IHSV Version 7 Nov 2006 | 45.60 | 37 20 | 33 30 | 34.80 | 34 80 | 35 70 | 31 10 | 36 00 | 30 60 | 30 30 | 33 00 | 34 50 | 34 70 | 34 60 | 34 00 |
| | Boron | mg/kg | 130 | IHSV Version 7 Nov 2006 | 0 60 | 0 90 | 0 70 | 0.80 | 0 70 | 0 90 | 0 70 | 0 90 | 0 80 | 0 80 | 0 90 | 1 00 | 1 10 | 1 10 | 0.90 |
| | Zinc | mg/kg | 8500 | IHSV Version 7 Nov 2006 | 116 30 | 113 70 | 100 30 | 103 40 | 104 20 | 106 30 | 99 70 | 106 00 | 93 30 | 92 50 | 93 80 | 104 20 | 102 40 | 104 90 | 102 30 |

LEVEL 1 (

| D16 | D17 | D18 | D19 | D20 | D21 | D22 | D23 | D24 | D25 | D26 | D27 | D28 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | No of samples in the averaging area | Degrees of freedom | Arithmetic Mean | standard deviation | Coefficient of variation | *confidence bound required (%) | t value | normalised upper bound on confidence limit of population |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | | | | | | |
| 17 90 | [illegible] | 19 60 | 15 60 | 15 80 | 15 20 | 17 80 | 16 10 | 16 60 | 15.60 | 14 20 | 15.80 | 15 20 | 28 | 27 | 16.51 | 1.39 | 0.02 | 95 | 1.703 | 1.027 |
| 0 20 | 0 20 | 0 20 | 0 20 | 0 20 | 0 20 | 0 20 | 0 20 | 0.20 | 0 20 | 0 20 | 0 20 | 0 20 | 28 | 27 | 0.20 | 0.00 | 0.00 | 95 | 1.703 | 1.000 |
| 19 60 | 24 10 | 25 30 | 19 20 | 19 30 | 20 70 | 26 10 | 20.40 | 19 00 | 22 70 | 20 20 | 22 00 | 23 60 | 28 | 27 | 21.50 | 2.33 | 0.02 | 95 | 1.703 | 1.035 |
| 53 40 | 57 40 | 61 40 | 43 30 | 45.60 | 49 90 | 59 50 | 50 40 | 57 80 | 52 20 | 44 80 | 50 80 | 52 00 | 28 | 27 | 53.09 | 9.09 | 0.03 | 95 | 1.703 | 1.055 |
| 0 20 | 0 20 | 0 20 | 0 20 | 0 10 | 0 70 | 0 60 | 0 50 | 0 50 | 0 50 | 0 30 | 0 30 | 0 30 | 28 | 27 | 0.30 | 0.15 | 0 09 | 95 | 1.703 | 1.157 |
| 28 50 | 29 90 | 33 30 | 26 10 | 28 50 | 29 50 | 32 40 | 29 90 | 29 00 | 29.80 | 27 70 | 29 70 | 31 00 | 28 | 27 | 29.00 | 1.77 | 0.01 | 95 | 1.703 | 1.020 |
| 1 00 | 1 00 | 1 00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1 00 | 1 00 | 1.00 | 1.00 | 1.00 | 28 | 27 | 1.00 | 0.00 | 0.00 | 95 | 1.703 | 1.000 |
| 35 70 | 39 70 | 42 00 | 30 10 | 33 00 | 32 80 | 40 00 | 34 20 | 37.20 | 35 20 | 30 90 | 33 80 | 33 10 | 28 | 27 | 34.93 | 3.55 | 0.02 | 95 | 1.703 | 1.033 |
| 0 80 | 0 80 | 0 70 | 0 60 | 0 70 | 1 10 | 1 10 | 1 10 | 1 20 | 0 90 | 1 00 | 1 00 | 1 20 | 28 | 27 | 0.89 | 0.18 | 0.04 | 95 | 1.703 | 1.064 |
| 109 80 | 115 50 | 125 00 | 95 70 | 105 60 | 103 00 | 115.70 | 104 30 | 107 30 | 95 40 | 84 90 | 96 50 | 100 50 | 28 | 27 | 103.66 | 8.55 | 0.02 | 95 | 1.703 | 1.027 |

| CHECK | | | | | LEVEL 2 ('bonus') CHECK | | | | | | | | | | Max value Test |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Normalised upper bound (95% UCL of mean) | Soil Guideline Value | Source for SGV | Upper Bound less than the guideline value? | Action - note if no further action indicated still do maximum value test | Coefficient of variation | confidence interval (alpha) = mean - SGV | Is mean less than action value | Minimum number of samples required to be sure of mean being below | Is minimum number of samples less than number taken | Number of samples that may be required | to | t test | probability that true mean actually does not exceed action value | probability that true mean actually does exceed action value | Potential outlier value from max value sheet |
| 16.95 | 20 | SGV | YES | No action warranted | 0.084 | 3.493 | Yes | 0 | Yes | | 13.071 | 0.000 | 100% | 0% | 20.18 |
| 0.20 | 1 | SGV | YES | No action warranted | 0.000 | 0.800 | Yes | 0 | Yes | | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | 0.20 |
| 22.25 | 130 | SGV | YES | No action warranted | 0.108 | 108.496 | Yes | 0 | Yes | | 242.017 | 0.000 | 100% | 0% | 27.73 |
| 56.02 | 450 | SGV | YES | No action warranted | 0.171 | 396.906 | Yes | 0 | Yes | | 226.906 | 0.000 | 100% | 0% | 78.00 |
| 0.35 | 8 | SGV | YES | No action warranted | 0.489 | 7.700 | Yes | 0 | Yes | | 272.986 | 0.000 | 100% | 0% | 0.89 |
| 29.57 | 50 | SGV | YES | No action warranted | 0.061 | 21.000 | Yes | 0 | Yes | | 61.667 | 0.000 | 100% | 0% | 33.72 |
| 1.00 | 35 | SGV | YES | No action warranted | 0.000 | 34.000 | Yes | 0 | Yes | | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | 1.00 |
| 36.07 | 8000 | IHSV Version 7 Nov 2006 | YES | No action warranted | 0.102 | 7965.075 | Yes | 0 | Yes | | 11655.009 | 0.000 | 100% | 0% | 44.48 |
| 0.95 | 130 | IHSV Version 7 Nov 2006 | YES | No action warranted | 0.197 | 129.107 | Yes | 0 | Yes | | 3806.659 | 0.000 | 100% | 0% | 1.46 |
| 106.41 | 8500 | IHSV Version 7 Nov 2006 | YES | No action warranted | 0.083 | 8396.339 | Yes | 0 | Yes | | 5100.417 | 0.000 | 100% | 0% | 127.27 |

# Maximum Value Test

232095 - Hough Lane, Wombwell - Imported TOPSOIL capping from Bolton Ings Wetlands - Metals - Residential with plant uptake and allotments.

Log 10 concentrations

Key

may be an outlier

Insert extra columns using the button as with the Mean Value sheet. Then copy across the formulas from column E.

| CAS REG | Determinand | Units | Sample Ref | D1 | D2 | D3 | D4 | D5 | D6 | D7 | D8 | D9 | D10 | D11 | D12 | D13 | D14 | D15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | trial pit / borehole ref | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile |
| | | | Depth | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 0 | Arsenic | mg/kg | | 1.2201 | 1.233 | 1.2068 | 1.233 | 1.2068 | 1.2014 | 1.1847 | 1.2504 | 1.1703 | 1.2201 | 1.2041 | 1.2201 | 1.2201 | 1.2304 | 1.2122 |
| 0 | Cadmium | mg/kg | | -0.699 | -0.699 | -0.699 | -0.699 | -0.699 | -0.699 | -0.699 | -0.699 | -0.699 | -0.699 | -0.699 | -0.699 | -0.699 | -0.699 | -0.699 |
| 0 | Chromium | mg/kg | | [illegible] | 1.3284 | 1.316 | 1.3222 | 1.3201 | 1.3892 | 1.281 | 1.3075 | 1.3096 | 1.3032 | 1.3263 | 1.3365 | 1.3263 | 1.2989 | 1.2856 |
| 0 | Lead | mg/kg | | 1.7745 | [illegible] | 1.6998 | 1.7275 | 1.7024 | 1.699 | 1.6405 | 1.7497 | 1.6484 | 1.6794 | 1.8739 | 1.7701 | 1.7193 | 1.6839 | 1.7033 |
| 0 | Mercury | mg/kg | | -0.398 | -0.398 | -0.523 | -0.523 | -0.523 | -0.523 | -0.699 | -0.523 | -0.699 | -0.699 | -0.699 | -0.699 | -1 | -0.699 | -0.699 |
| 0 | Nickel | mg/kg | | 1.4997 | 1.4771 | 1.4409 | 1.4362 | 1.4362 | 1.4955 | 1.4564 | 1.433 | 1.415 | 1.4502 | 1.4564 | 1.4472 | 1.4564 | 1.4564 | 1.4456 |
| 0 | Selenium | mg/kg | | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 0 | Copper | mg/kg | | [illegible] | 1.5705 | 1.5224 | 1.5416 | 1.5416 | 1.5527 | 1.4928 | 1.5563 | 1.4857 | 1.4814 | 1.5185 | 1.5378 | 1.5403 | 1.5391 | 1.5315 |
| 0 | Boron | mg/kg | | -0.222 | -0.046 | -0.155 | -0.097 | -0.155 | -0.046 | -0.155 | -0.046 | -0.097 | -0.097 | -0.046 | 0 | 0.0414 | 0.0414 | -0.046 |
| 0 | Zinc | mg/kg | | 2.0656 | 2.0558 | 2.0013 | 2.0145 | 2.0179 | 2.0265 | 1.9987 | 2.0253 | 1.9699 | 1.9661 | 1.9722 | 2.0179 | 2.0103 | 2.0208 | 2.0099 |

| D16 | D17 | D18 | D19 | D20 | D21 | D22 | D23 | D24 | D25 | D26 | D27 | D28 | | | | | | | LEVEL 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Mean of Log10 of values | Unbiased standard deviation of log 10 values | Outlier Test T | % critical value required | n | Critical value Tcrit | Max Value |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | | | | | |
| 1.2529 | 1.3267 | 1 2923 | 1 1931 | 1 1987 | 1 1818 | 1 2504 | 1 2068 | 1 2201 | 1.1931 | 1.1523 | 1.1987 | 1.1818 | 1.216 | 0.035 | 2.971 | 10 | 28 | 2.534 | 20.90 |
| -0 699 | -0.699 | -0 699 | -0 699 | -0 699 | -0 699 | -0.699 | -0 699 | -0 699 | -0.699 | -0 699 | -0.699 | -0 699 | -0.699 | 0.000 | 0.000 | 10 | 28 | 2.534 | 0.20 |
| 1.2923 | 1.382 | 1 4031 | 1.2833 | 1.2856 | 1 316 | 1.4166 | 1 3096 | 1.2788 | 1.356 | 1.3054 | 1.3424 | 1.3729 | 1.330 | 0.044 | 2.733 | 10 | 28 | 2.534 | 28.30 |
| 1.7275 | 1.7589 | 1.7882 | 1 6365 | 1.659 | 1.6981 | 1.7745 | 1 7024 | 1 7619 | 1.7177 | 1 6513 | 1 7059 | 1 716 | 1.725 | 0.066 | 3.131 | 10 | 28 | 2.534 | 85.40 |
| -0 699 | -0.699 | -0 699 | -0 699 | -1 | -0 155 | -0 222 | -0.301 | -0.301 | -0.301 | -0.523 | -0.523 | -0 523 | -0.570 | 0.206 | 2.018 | 10 | 28 | 2.534 | 0.70 |
| 1.4548 | 1 4757 | 1 5224 | 1.4166 | 1.4548 | 1 4698 | 1.5105 | 1 4757 | 1.4624 | 1 4742 | 1 4425 | 1.4728 | 1.4914 | 1.462 | 0.026 | 2.325 | 10 | 28 | 2.534 | 33.30 |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 0.000 | 0.000 | #DIV/0! | 10 | 28 | 2.534 | 1.00 |
| 1 5527 | 1.5988 | 1 6232 | 1 4786 | 1 5185 | 1 5159 | 1.6021 | 1 534 | 1 5705 | 1.5465 | 1.49 | 1 5289 | 1.5198 | 1.541 | 0.042 | 2.790 | 10 | 28 | 2.534 | 45.60 |
| -0 097 | -0.097 | -0 155 | -0 222 | -0 155 | 0.0414 | 0.0414 | 0 0414 | 0.0792 | -0.046 | 0 | 0 | 0 0792 | -0.058 | 0.087 | 1.565 | 10 | 28 | 2.534 | 1.20 |
| 2.0406 | 2.0626 | 2 0969 | 1.9809 | 2.0237 | 2.0128 | 2.0633 | 2.0183 | 2.0306 | 1 9795 | 1.9289 | 1 9845 | 2 0022 | 2.014 | 0.036 | 2.315 | 10 | 28 | 2.534 | 125.00 |

| TEST | | | LEVEL 2 TEST | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Is maximum value less than selected critical value | | Approx Value of Outlier @ T = Tcrit | Multiplier on SGV | SGV | *Proposed maximum acceptable concentration (input) | *% population required less than limit x multiplier (p) | *Confidence limit (gamma) | Log of multiplier x action limit | Tolerance Factor (K) | Number of samples required to be sure (NOTE: fill in look up no samples sheetfirst) |
| NO | Maximum value may be an outlier | 20.18 | 2 | 20 | 40 | 95 | 90 | 1.602 | 11.036 | 1000 |
| YES | Assume maximum value is not an outlier | 0.20 | 6 | 1 | 6 | 95 | 90 | 0.778 | ####### | 30 |
| NO | Maximum value may be an outlier | 27.73 | 0.123077 | 130 | 16 | 95 | 90 | 1.204 | -2.836 | 37 |
| NO | Maximum value may be an outlier | 78.00 | 0.577778 | 450 | 260 | 95 | 90 | 2.415 | 10.466 | 3 |
| YES | Assume maximum value is not an outlier | 0.89 | 32.5 | 8 | 260 | 95 | 90 | 2.415 | 14.523 | 6 |
| YES | Assume maximum value is not an outlier | 33.72 | 18 | 50 | 900 | 95 | 90 | 2.954 | 57.065 | 1000 |
| #DIV/0! | #DIV/0! | 1.00 | 0.457143 | 35 | 16 | 95 | 90 | 1.204 | #DIV/0! | 3 |
| NO | Maximum value may be an outlier | 44.48 | 0.0125 | 8000 | 100 | 95 | 90 | 2.000 | 10.861 | 4 |
| YES | Assume maximum value is not an outlier | 1.46 | 0.538462 | 130 | 70 | 95 | 90 | 1.845 | 21.770 | 3 |
| YES | Assume maximum value is not an outlier | 127.27 | 0.070588 | 8500 | 600 | 95 | 90 | 2.778 | 21.381 | 21 |

## Mean Value Test

*232095 - Hough Lane, Wombwell - Imported TOPSOIL CAPPING - Organics: Residential with Plant Uptake 5% Organics*

| Key: | |
|---|---|
| | exceeds screen and is potential outlier |
| | Does not exceed screen but may be outlier |
| | Exceeds screen but is not an outlier |

To enter results into this table, click on column G and click the 'Insert Columns' button, entering the number of columns needed. Then either type in the results, or paste them in. DO NOT try the 'Insert Copied Cells' option, as this loses the formatting links.

| CAS REG No | Determinand | Units | *Screening Value | *Source of screening value | D1 | D2 | D3 | D4 | D5 | D6 | D7 | D8 | D9 | D10 | D11 | D12 | D13 | D14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Ref | D1 | D2 | D3 | D4 | D5 | D6 | D7 | D8 | D9 | D10 | D11 | D12 | D13 | D14 |
| | | | | trial pit / borehole ref | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile |
| | | | | Depth | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | Benzo (a )pyrene | mg/kg | 1 1 | IHSV Version 7 November 2006 | 1.00 | 0.30 | 0 20 | 0 30 | 0 30 | 0 20 | 0 20 | 0 30 | 0.20 | 0 10 | 0 30 | 0.30 | 0 30 | 0 30 |
| | benz (a) anthracene | mg/kg | 9 7 | IHSV Version 7 November 2006 | 0.80 | 0 40 | 0 30 | 0 40 | 0 50 | 0 30 | 0.30 | 0 30 | 0 30 | 0 20 | 0 40 | 0.30 | 0.40 | 0 30 |
| | benz (b) fluoranthene | mg/kg | 9 9 | IHSV Version 7 November 2006 | 1 20 | 0.50 | 0 40 | 0 60 | 0 50 | 0 40 | 0 30 | 0 50 | 0 30 | 0 20 | 0 50 | 0.50 | 0 50 | 0 40 |
| | benz (k) fluoranthene | mg/kg | 99 | IHSV Version 7 November 2006 | 0 50 | 0 30 | 0 30 | 0 30 | 0 30 | 0 20 | 0 20 | 0 30 | 0 20 | 0 20 | 0 20 | 0 30 | 0 30 | 0 30 |
| | chrysene | mg/kg | 990 | IHSV Version 7 November 2006 | 0 90 | 0.50 | 0 30 | 0 60 | 0 60 | 0 50 | 0 30 | 0 40 | 0 30 | 0 30 | 0 40 | 0 50 | 0 50 | 0.50 |
| | dibenz (a,h) anthracene | mg/kg | 1 | IHSV Version 7 November 2006 | 0.10 | 0.10 | 0.10 | 0.30 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 |
| | indeno (1,2,2,c,d) pyrene | mg/kg | 8 4 | IHSV Version 7 November 2006 | 0.60 | 0 50 | 0 30 | 0 10 | 0 50 | 0 10 | 0 30 | 0 50 | 0 10 | 0 10 | 0.10 | 0 10 | 0 50 | 0 10 |
| | Naphthalene | mg/kg | 34 | Draft SGV | 1.70 | 1 20 | 1 10 | 2 10 | 2 40 | 1 90 | 1.30 | 1 30 | 1 20 | 0 60 | 0 50 | 1 10 | 2 10 | 2 10 |
| | Acenapthene | mg/kg | 410 | IHSV Version 7 November 2006 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0 10 |
| | Fluorene | mg/kg | 300 | IHSV Version 7 November 2006 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0 10 | 0.10 | 0.10 |
| | Anthracene | mg/kg | 2500 | IHSV Version 7 November 2006 | 0.30 | 0 10 | 0 10 | 0 10 | 0 10 | 0 10 | 0 10 | 0 10 | 0 10 | 0 10 | 0 10 | 0 10 | 0.10 | 0 10 |
| | Fluoranthene | mg/kg | 370 | IHSV Version 7 November 2006 | 2 70 | 1 00 | 0 70 | 1 30 | 1 60 | 0 90 | 0 70 | 1 10 | 0 70 | 0 60 | 1 10 | 1 20 | 1 30 | 1 10 |
| | Pyrene | mg/kg | 270 | IHSV Version 7 November 2006 | 2 20 | 1 00 | 0 80 | 1 20 | 1 50 | 0 80 | 0 60 | 1 00 | 0 60 | 0 50 | 1 00 | 1 10 | 1.20 | 1 10 |

| D15 | D16 | D17 | D18 | D19 | D20 | D21 | D22 | D23 | D24 | D25 | D26 | D27 | D28 | | | | | | | | LEVEL 1 C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | No of samples in the averaging area | Degrees of freedom | Arithmetic Mean | standard deviation | Coefficient of variation | % confidence bound required (%) | t value | normalised upper bound on confidence limit of population |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | | | | | | |
| | | | | | | | | | | | | | | 0 | 1 | #DIV/0! | #DIV/0! | #DIV/0! | 95 | #NUM! | #NUM! |
| 0.20 | 0.30 | 0.30 | 0.40 | 0.20 | 0.20 | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 | 0.20 | 0.20 | 0.10 | 28 | 27 | 0.28 | 0.16 | 0.10 | 95 | 1.703 | 1.179 |
| 0.30 | 0.40 | 0.30 | 0.60 | 0.30 | 0.30 | 0.30 | 0.40 | 0.40 | 0.50 | 0.40 | 0.30 | 0.20 | 0.20 | 28 | 27 | 0.36 | 0.13 | 0.07 | 95 | 1.703 | 1.112 |
| 0.50 | 0.60 | 0.50 | 0.60 | 0.30 | 0.40 | 0.40 | 0.60 | 0.40 | 0.70 | 0.50 | 0.10 | 0.30 | 0.30 | 28 | 27 | 0.46 | 0.20 | 0.08 | 95 | 1.703 | 1.136 |
| 0.30 | 0.30 | 0.20 | 0.30 | 0.20 | 0.30 | 0.30 | 0.30 | 0.20 | 0.30 | 0.20 | 0.10 | 0.20 | 0.20 | 28 | 27 | 0.26 | 0.07 | 0.05 | 95 | 1.703 | 1.091 |
| 0.50 | 0.50 | 0.50 | 0.70 | 0.30 | 0.30 | 0.50 | 0.60 | 0.50 | 0.80 | 0.50 | 0.30 | 0.30 | 0.30 | 28 | 27 | 0.47 | 0.16 | 0.06 | 95 | 1.703 | 1.108 |
| 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 28 | 27 | 0.10 | 0.00 | 0.00 | 95 | 1.703 | 1.000 |
| 0.10 | 0.40 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.50 | 0.30 | 0.50 | 0.30 | 0.10 | 0.10 | 0.10 | 28 | 27 | 0.24 | 0.18 | 0.14 | 95 | 1.703 | 1.240 |
| 2.20 | 2.20 | 1.30 | 2.60 | 1.30 | 2.40 | 1.90 | 2.10 | 2.50 | 3.00 | 1.20 | 0.40 | 0.80 | 0.60 | 28 | 27 | 1.61 | 0.71 | 0.08 | 95 | 1.703 | 1.142 |
| 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 28 | 27 | 0.10 | 0.00 | 0.00 | 95 | 1.703 | 1.000 |
| 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 28 | 27 | 0.10 | 0.00 | 0.00 | 95 | 1.703 | 1.000 |
| 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.20 | 0.10 | 0.20 | 0.20 | 0.20 | 0.10 | 0.10 | 0.10 | 28 | 27 | 0.12 | 0.05 | 0.08 | 95 | 1.703 | 1.132 |
| 1.10 | 1.30 | 1.30 | 1.70 | 0.70 | 1.20 | 1.50 | 1.30 | 1.30 | 1.90 | 1.30 | 1.20 | 0.60 | 0.60 | 28 | 27 | 1.18 | 0.45 | 0.07 | 95 | 1.703 | 1.124 |
| 1.00 | 1.20 | 1.20 | 1.40 | 0.60 | 1.00 | 1.20 | 1.20 | 1.20 | 1.70 | 1.10 | 1.00 | 0.60 | 0.50 | 28 | 27 | 1.05 | 0.37 | 0.07 | 95 | 1.703 | 1.114 |
| | | | | | | | | | | | | | | 0 | 1 | #DIV/0! | #DIV/0! | #DIV/0! | 95 | #NUM! | #NUM! |
| | | | | | | | | | | | | | | 0 | 1 | #DIV/0! | #DIV/0! | #DIV/0! | 95 | #NUM! | #NUM! |

| CHECK | | | | | LEVEL 2 ('bonus') CHECK | | | | | | | | | | Max value Test |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Normalised upper bound (95% UCL of mean) | Soil Guideline Value | Source for SGV | Upper Bound less than the guideline value? | Action note if no further action indicated still do maximum value test | Coefficient of variation | confidence interval (alpha) mean - SGV | Is mean less than action value | Minimum number of samples required to be sure of mean being below | Is minimum number of samples less than number taken | Number of samples that may be required to prove | to | t test | probability that true mean actually does not exceed action value | probability that true mean actually does exceed action value | Potential outlier value from max value sheet |
| #DIV/0! | 0 | | 0 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #NUM! | #NUM! | #NUM! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #VALUE! |
| 0.33 | 11.1 | IHSV Version 7 November 2006 | YES | No action warranted | 0.555 | 0.818 | Yes | 0 | Yes | | 27.159 | 0.000 | 100% | 0% | 0.74 |
| 0.40 | 9.7 | IHSV Version 7 November 2006 | YES | No action warranted | 0.349 | 9.339 | Yes | 0 | Yes | | 9385.987 | 0.000 | 100% | 0% | 0.75 |
| 0.53 | 9.9 | IHSV Version 7 November 2006 | YES | No action warranted | 0.424 | 9.436 | Yes | 0 | Yes | | 249.304 | 0.000 | 100% | 0% | 1.31 |
| 0.28 | 99 | IHSV Version 7 November 2006 | YES | No action warranted | 0.283 | 98.739 | Yes | 0 | Yes | | 6958.439 | 0.000 | 100% | 0% | 0.53 |
| 0.52 | 990 | IHSV Version 7 November 2006 | YES | No action warranted | 0.336 | 989.529 | Yes | 0 | Yes | | 32467.732 | 0.000 | 100% | 0% | 1.02 |
| 0.10 | 17 | IHSV Version 7 November 2006 | YES | No action warranted | 0.000 | 10.900 | Yes | 0 | Yes | | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | 0.10 |
| 0.30 | 8.4 | IHSV Version 7 November 2006 | YES | No action warranted | 0.747 | 8.157 | Yes | 0 | Yes | | 233.645 | 0.000 | 100% | 0% | 1.22 |
| 1.84 | 34 | Draft SGV | YES | No action warranted | 0.440 | 32.389 | Yes | 0 | Yes | | 237.250 | 0.000 | 100% | 0% | 5.56 |
| 0.10 | 410 | IHSV Version 7 November 2006 | YES | No action warranted | 0.000 | 409.900 | Yes | 0 | Yes | | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | 0.10 |
| 0.10 | 300 | IHSV Version 7 November 2006 | YES | No action warranted | 0.000 | 299.900 | Yes | 0 | Yes | | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | 0.10 |
| 0.14 | 2500 | IHSV Version 7 November 2006 | YES | No action warranted | 0.411 | 2499.879 | Yes | 0 | Yes | | ######## | 0.000 | 100% | 0% | 0.25 |
| 1.32 | 370 | IHSV Version 7 November 2006 | YES | No action warranted | 0.385 | 368.821 | Yes | 0 | Yes | | 14228.100 | 0.000 | 100% | 0% | 2.82 |
| 1.17 | 270 | IHSV Version 7 November 2006 | YES | No action warranted | 0.356 | 268.946 | Yes | 0 | Yes | | 3730.185 | 0.000 | 100% | 0% | 2.48 |
| #DIV/0! | 0 | | 0 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #NUM! | #NUM! | #NUM! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #VALUE! |
| #DIV/0! | 0 | | 0 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #NUM! | #NUM! | #NUM! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #VALUE! |

# Maximum Value Test

232095 - Hough Lane, Wombwell - Imported TOPSOIL CAPPING - Organics: Residential with Plant Uptake 5% Organics

Log 10 concentrations

Key

may be an outlier

Insert extra columns using the button as with the Mean Value sheet. Then copy across the formulas from column E.

| CAS REG | Determinand | Units | Sample Ref | D1 | D2 | D3 | D4 | D5 | D6 | D7 | D8 | D9 | D10 | D11 | D12 | D13 | D14 | D15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | trial pit / borehole ref | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile |
| | | | Depth | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | | | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! |
| 0 | Benzo (a )pyrene | mg/kg | | [illegible] | -0.523 | -0.699 | -0 523 | -0.523 | -0.699 | -0.699 | -0.523 | -0 699 | -1 | -0 523 | -0 523 | -0.523 | -0 523 | -0 699 |
| 0 | benz (a) anthracene | mg/kg | | [illegible] | -0.398 | -0 523 | -0 398 | -0.301 | -0.523 | -0.523 | -0 523 | -0 523 | -0.699 | -0.398 | -0 523 | -0.398 | -0.523 | -0.523 |
| 0 | benz (b) fluoranthene | mg/kg | | 0 0792 | -0.301 | -0.398 | -0 222 | -0.301 | -0 398 | -0.523 | -0 301 | -0 523 | -0 699 | -0 301 | -0.301 | -0.301 | -0.398 | -0 301 |
| 0 | benz (k) fluoranthene | mg/kg | | -0.301 | -0 523 | -0.523 | -0 523 | -0.523 | -0 699 | -0 699 | -0.523 | -0 699 | -0 699 | -0 699 | -0 523 | -0 523 | -0 523 | -0 523 |
| 0 | chrysene | mg/kg | | -0 046 | -0 301 | -0 523 | -0 222 | -0 222 | -0 301 | -0.523 | -0 398 | -0 523 | -0 523 | -0.398 | -0 301 | -0.301 | -0 301 | -0.301 |
| 0 | dibenz (a,h) anthracene | mg/kg | | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 0 | indeno (1,2 2,c.d) pyrene | mg/kg | | -0 222 | -0 301 | -0 523 | -1 | -0 301 | -1 | -0.523 | -0.301 | -1 | -1 | -1 | -1 | -0.301 | -1 | -1 |
| 0 | Naphthalene | mg/kg | | 0 2304 | 0 0792 | 0 0414 | 0 3222 | 0 3802 | 0 2788 | 0.1139 | 0 1139 | 0.0792 | -0.222 | -0 301 | 0.0414 | 0 3222 | 0.3222 | 0.3424 |
| 0 | Acenapthene | mg/kg | | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 0 | Fluorene | mg/kg | | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 0 | Anthracene | mg/kg | | [illegible] | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 |
| 0 | Fluoranthene | mg/kg | | 0.4314 | 0 | -0.155 | 0.1139 | 0.2041 | -0 046 | -0 155 | 0.0414 | -0 155 | -0.222 | 0 0414 | 0.0792 | 0.1139 | 0 0414 | 0.0414 |
| 0 | Pyrene | mg/kg | | 0 3424 | 0 | -0 097 | 0 0792 | 0 1761 | -0.097 | -0 222 | 0 | -0 222 | -0.301 | 0 | 0.0414 | 0 0792 | 0.0414 | 0 |
| 0 | 0 | 0 | | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! |
| 0 | 0 | 0 | | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! |

| D16 | D17 | D18 | D19 | D20 | D21 | D22 | D23 | D24 | D25 | D26 | D27 | D28 | | | | | | | LEVEL 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Mean of Log10 of values | Unbiased standard deviation of log 10 values | Outlier Test T | *% critical value required | n | Critical value Tcrit | Max Value |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | | | | | |
| #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | 10 | 0 | nsert valu | 0.00 |
| -0 523 | -0 523 | -0 398 | -0.699 | -0 699 | -0.523 | -0 523 | -0.523 | -0 523 | -0.523 | -0 699 | -0 699 | -1 | -0.590 | 0.182 | 3.242 | 10 | 28 | 2.534 | 1.00 |
| -0.398 | -0 523 | -0.222 | -0.523 | -0.523 | -0.523 | -0.398 | -0.398 | -0.301 | -0.398 | -0.523 | -0 699 | -0 699 | -0.464 | 0.135 | 2.721 | 10 | 28 | 2.534 | 0.80 |
| -0.222 | -0 301 | -0.222 | -0 523 | -0.398 | -0 398 | -0 222 | -0 398 | -0 155 | -0.301 | -1 | -0 523 | -0 523 | -0.370 | 0.193 | 2.330 | 10 | 28 | 2.534 | 1.20 |
| -0.523 | -0 699 | -0.523 | -0 699 | -0.523 | -0.523 | -0 523 | -0 699 | -0 523 | -0.699 | -1 | -0 699 | -0 699 | -0.601 | 0.129 | 2.335 | 10 | 28 | 2.534 | 0.50 |
| -0.301 | -0.301 | -0.155 | -0.523 | -0 523 | -0.301 | -0 222 | -0.301 | -0.097 | -0.301 | -0.523 | -0.523 | -0 523 | -0.349 | 0.142 | 2.138 | 10 | 28 | 2.534 | 0.90 |
| | | | | | | | | | | | | | -1.000 | 0.000 | #DIV/0! | 10 | 28 | 2.534 | 0.10 |
| -0 398 | -1 | -1 | -1 | -1 | -1 | -0 301 | -0.523 | -0 301 | -0.523 | -1 | -1 | -1 | -0 733 | 0.323 | 1.584 | 10 | 28 | 2.534 | 0.60 |
| 0.3424 | 0.1139 | 0.415 | 0 1139 | 0.3802 | 0 2788 | 0 3222 | 0 3979 | 0 4771 | 0 0792 | -0.398 | -0 097 | -0.222 | 0.155 | 0.233 | 1.383 | 10 | 28 | 2.534 | 3.00 |
| | | | | | | | | | | | | | -1.000 | 0.000 | #DIV/0! | 10 | 28 | 2.534 | 0.10 |
| | | | | | | | | | | | | | -1 000 | 0.000 | #DIV/0! | 10 | 28 | 2.534 | 0.10 |
| -1 | -1 | -1 | -1 | -1 | -0 699 | -1 | -0 699 | -0 699 | -0 699 | -1 | -1 | -1 | -0.940 | 0.135 | 3.099 | 10 | 28 | 2.534 | 0.30 |
| 0.1139 | 0 1139 | 0.2304 | -0 155 | 0 0792 | 0 1761 | 0 1139 | 0 1139 | 0 2788 | 0.1139 | 0.0792 | -0 222 | -0 222 | 0.043 | 0.161 | 2.413 | 10 | 28 | 2.534 | 2.70 |
| 0 0792 | 0.0792 | 0.1461 | -0.222 | 0 | 0.0792 | 0 0792 | 0 0792 | 0 2304 | 0.0414 | 0 | -0.222 | -0.301 | -0.004 | 0.157 | 2.202 | 10 | 28 | 2.534 | 2.20 |
| #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | 10 | 0 | nsert valu | 0.00 |
| #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | 10 | 0 | nsert valu | 0.00 |

| TEST | | | LEVEL 2 TEST | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Is maximum value less than selected critical value | | Approx Value of Outlier @T=Tcrit | Multiplier on SGV | SGV | Proposed maximum acceptable concentration (input) | % population required less than limit x multiplier (p) | Confidence limit (gamma) | Log of multiplier x action limit | Tolerance Factor (K) | Number of samples required to be sure (NOTE: fill in look up sheetfirst) no samples |
| #NUM! | #NUM! | #VALUE! | #DIV/0! | 0 | 40 | 95 | 90 | #DIV/0! | #DIV/0! | 1000 |
| NO | Maximum value may be an outlier | 0.74 | 5.454545 | 1.1 | 6 | 95 | 90 | 0.778 | 7.514 | 30 |
| NO | Maximum value may be an outlier | 0.75 | 1.649485 | 9.7 | 16 | 95 | 90 | 1.204 | 12.358 | 37 |
| YES | Assume maximum value is not an outlier | 1.31 | 26.26263 | 9.9 | 260 | 95 | 90 | 2.415 | 14.435 | 3 |
| YES | Assume maximum value is not an outlier | 0.53 | 2.626263 | 99 | 260 | 95 | 90 | 2.415 | 23.459 | 6 |
| YES | Assume maximum value is not an outlier | 1.02 | 0.909091 | 990 | 900 | 95 | 90 | 2.954 | 23.275 | 1000 |
| #DIV/0! | #DIV/0! | 0.10 | 16 | 1 | 16 | 95 | 90 | 1.204 | #DIV/0! | 3 |
| YES | Assume maximum value is not an outlier | 1.22 | 11.90476 | 8.4 | 100 | 95 | 90 | 2.000 | 8.470 | 4 |
| YES | Assume maximum value is not an outlier | 5.56 | 2.058824 | 34 | 70 | 95 | 90 | 1.845 | 7.264 | 3 |
| #DIV/0! | #DIV/0! | 0.10 | 1.463415 | 410 | 600 | 95 | 90 | 2.778 | #DIV/0! | 21 |
| #DIV/0! | #DIV/0! | 0.10 | 1.666667 | 300 | 500 | 95 | 90 | 2.699 | #DIV/0! | 2 |
| NO | Maximum value may be an outlier | 10.25 | 0.004 | 2500 | 10 | 95 | 90 | 1.000 | 14.413 | 3 |
| YES | Assume maximum value is not an outlier | 2.82 | 0.001081 | 370 | 0.04 | 95 | 90 | -0.398 | -2.733 | 9 |
| YES | Assume maximum value is not an outlier | 2.48 | 1.851852 | 270 | 500 | 95 | 90 | 2.699 | 17.181 | 2 |
| #NUM! | #NUM! | #VALUE! | #DIV/0! | 0 | 20 | 95 | 90 | #DIV/0! | #DIV/0! | 2 |
| #NUM! | #NUM! | #VALUE! | #DIV/0! | 0 | 10000 | 95 | 90 | #DIV/0! | #DIV/0! | 0 |

# Mean Value Test

232095 - Hough Lane, Wombwell - Imported CLAY SUBSOIL from Bolton Ings - METALS - Residential with plant uptake and allotments.

| Key: | |
|---|---|
| | exceeds screen and is potential outlier |
| | Does not exceed screen but may be outlier |
| .. | Exceeds screen but is not an outlier |

To enter results into this table, click on column G and click the Insert Columns button, entering the number of columns needed. Then either type in the results, or paste them in. DO NOT try the 'Insert Copied Cells' option, as this loses the formating links.

| CAS REG No | Determinand | Units | *Screening Value | *Source of screening value | Sample Ref | D29 | D30 | D31 | D32 | D33 | D34 | D35 | D36 | D37 | D38 | D39 | D40 | No of samples in the averaging area | Degrees of freedom | Arithmetic Mean | standard deviation | Coefficient of variation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | trial pit / borehole ref | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | | | | | |
| | | | | | Depth | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | | | |
| | Arsenic | mg/kg | 20 | SGV | | 8.50 | 6.00 | 7.60 | 9.60 | 6.10 | 4.00 | 8.30 | 8.20 | 9.40 | 13.00 | 7.80 | 9.20 | 12 | 11 | 8.14 | 2.23 | 0.08 |
| | Cadmium | mg/kg | 1 | SGV | | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 12 | 11 | 0.20 | 0.00 | 0.00 |
| | Chromium | mg/kg | 130 | SGV | | 15.50 | 16.10 | 17.40 | 17.30 | 16.60 | 17.40 | 17.20 | 17.00 | 17.50 | 16.00 | 16.10 | 14.60 | 12 | 11 | 16.56 | 0.91 | 0.02 |
| | Lead | mg/kg | 450 | SGV | | 17.40 | 14.80 | 19.40 | 23.10 | 15.30 | 14.70 | 14.30 | 16.50 | 24.20 | 20.20 | 20.10 | 15.60 | 12 | 11 | 17.69 | 3.39 | 0.06 |
| | Mercury | mg/kg | 8 | SGV | | 0.20 | 0.10 | 0.10 | 0.20 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 12 | 11 | 0.12 | 0.04 | 0.10 |
| | Nickel | mg/kg | 50 | SGV | | 31.80 | 28.70 | 29.90 | 27.10 | 19.70 | 31.30 | 22.50 | 32.70 | 28.20 | 47.20 | 12.30 | 25.60 | 12 | 11 | 28.08 | 8.36 | 0.09 |
| | Selenium | mg/kg | 35 | SGV | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 12 | 11 | 1.00 | 0.00 | 0.00 |
| | Copper | mg/kg | 8000 | BISV Version 7 Nov 2006 | | 17.30 | 17.20 | 16.70 | 21.20 | 11.60 | 19.30 | 14.50 | 17.00 | 20.20 | 27.50 | 9.80 | 16.40 | 12 | 11 | 17.39 | 4.57 | 0.08 |
| | Boron | mg/kg | 130 | BISV Version 7 Nov 2006 | | 0.50 | 0.50 | 0.50 | 0.90 | 0.70 | 0.60 | 0.70 | 0.50 | 0.50 | 0.50 | 0.70 | 0.50 | 12 | 11 | 0.59 | 0.13 | 0.06 |
| | Zinc | mg/kg | 8500 | BISV Version 7 Nov 2006 | | 80.80 | 74.90 | 72.50 | 75.70 | 53.80 | 84.80 | 77.40 | 77.40 | 73.00 | 94.50 | 29.50 | 65.10 | 12 | 11 | 71.62 | 16.55 | 0.07 |

| LEVEL 1 CHECK | | | | | | | | | LEVEL 2 ('bonus') CHECK | | | | | | | | | | Max value Test |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| confidence bound required (%) | t value | normalised upper bound on confidence limit of population | Normalised upper bound (95% UCL of mean) | Soil Guideline Value | Source for SGV | Upper Bound less than the guideline value? | Action - note if no further action indicated still do maximum value test | Coefficient of variation | confidence interval [alpha] mean - SGV | Is mean less than action value | Minimum number of samples required to be sure of mean being below | Is minimum number of samples less than number taken | Number of samples that may be required | t | t test | probability that true mean actually does not exceed action value | probability that true mean actually does exceed action value | Potential outlier value from max value sheet |
| 95 | 1.796 | 1.142 | 9.30 | 20 | SGV | YES | No action warranted | 0.274 | 11.858 | Yes | 0 | Yes | | 17.603 | 0.000 | 100% | 0% | 14.71 |
| 95 | 1.796 | 1.000 | 0.20 | | SGV | YES | No action warranted | 0.000 | 0.800 | Yes | 0 | Yes | ######## | | 0.000 | 100% | 0% | 0.20 |
| 95 | 1.796 | 1.029 | 17.03 | 130 | SGV | YES | No action warranted | 0.055 | 113.442 | Yes | 0 | Yes | | 412.548 | 0.000 | 100% | 0% | 18.65 |
| 95 | 1.796 | 1.099 | 19.44 | 450 | SGV | YES | No action warranted | 0.191 | 432.311 | Yes | 0 | Yes | | 423.433 | 0.000 | 100% | 0% | 26.10 |
| 95 | 1.796 | 1.173 | 0.14 | 8 | SGV | YES | No action warranted | 0.334 | 17.883 | Yes | 0 | Yes | | 671.704 | 0.000 | 100% | 0% | 0.20 |
| 95 | 1.796 | 1.155 | 32.43 | 80 | SGV | YES | No action warranted | 0.298 | 21.917 | Yes | 0 | Yes | | 8.675 | 0.000 | 100% | 0% | 53.80 |
| 95 | 1.796 | 1.000 | 1.00 | 35 | SGV | YES | No action warranted | 0.000 | 34.000 | Yes | 0 | Yes | | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | 1.00 |
| 95 | 1.796 | 1.136 | 19.76 | 8000 | IHSV Version 7 Nov 2006 | YES | No action warranted | 0.263 | 7982.608 | Yes | 0 | Yes | | 5797.385 | 0.000 | 100% | 0% | 29.95 |
| 95 | 1.796 | 1.115 | 0.66 | 130 | IHSV Version 7 Nov 2006 | YES | No action warranted | 0.222 | 129.408 | Yes | 0 | Yes | | 3272.899 | 0.000 | 100% | 0% | 0.89 |
| 95 | 1.796 | 1.120 | 80.20 | 8500 | IHSV Version 7 Nov 2006 | YES | No action warranted | 0.231 | 8428.383 | Yes | 0 | Yes | | 1689.160 | 0.000 | 100% | 0% | 131.70 |

# Maximum Value Test

232095 - Hough Lane, Wombwell - Imported CLAY SUBSOIL from Bolton Ings - METALS - Residential with plant uptake and allotments.

Log 10 concentrations

Key

may be an outlier

Insert extra columns using the button as with the Mean Value sheet. Then copy across the formulas from column E.

| CAS REG | Determinand | Units | Sample Ref | D29 | D30 | D31 | D32 | D33 | D34 | D35 | D36 | D37 | D38 | D39 | D40 | Mean of Log10 of values | Unbiased standard deviation of log 10 values | Outlier Test T | *% critical value required |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | trial pit / borehole ref | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | | | | |
| | | | Depth | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | | |
| 0 | Arsenic | mg/kg | | 0.9294 | 0.7782 | 0.8808 | 0.9823 | 0.7853 | 0.6021 | 0.9191 | 0.9138 | 0.9731 | 1.1139 | 0.8921 | 0.9638 | 0.894 | 0.128 | 1.715 | 10 |
| 0 | Cadmium | mg/kg | | -0.699 | -0.699 | -0.699 | -0.699 | -0.699 | -0.699 | -0.699 | -0.699 | -0.699 | -0.699 | -0.699 | -0.699 | -0.699 | 0.000 | 0.000 | 10 |
| 0 | Chromium | mg/kg | | 1.1903 | 1.2068 | 1.2405 | 1.238 | 1.2201 | 1.2405 | 1.2355 | 1.2304 | 1.243 | 1.2041 | 1.2068 | 1.1644 | 1.218 | 0.024 | 1.006 | 10 |
| 0 | Lead | mg/kg | | 1.2405 | 1.1703 | 1.2878 | 1.3636 | 1.1847 | 1.1673 | 1.1553 | 1.2175 | 1.3838 | 1.3054 | 1.3032 | 1.1931 | 1.248 | 0.079 | 1.720 | 10 |
| 0 | Mercury | mg/kg | | -0.699 | -1 | -1 | -0.699 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -0.950 | 0.117 | 2.141 | 10 |
| 0 | Nickel | mg/kg | | 1.5024 | 1.4579 | 1.4757 | 1.433 | 1.2945 | 1.4955 | 1.3522 | 1.5145 | 1.4502 | 1.6739 | 1.0899 | 1.4082 | 1.429 | 0.141 | 1.732 | 10 |
| 0 | Selenium | mg/kg | | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | 0.000 | 0.000 | #DIV/0! | 10 |
| 0 | Copper | mg/kg | | 1.238 | 1.2355 | 1.2227 | 1.3263 | 1.0645 | 1.2856 | 1.1614 | 1.2304 | 1.3054 | 1.4393 | 0.9912 | 1.2148 | 1.226 | 0.117 | 1.817 | 10 |
| 0 | Boron | mg/kg | | -0.301 | -0.301 | -0.301 | -0.155 | -0.155 | -0.222 | -0.155 | -0.301 | -0.301 | -0.301 | -0.155 | -0.301 | -0.237 | 0.088 | 2.162 | 10 |
| 0 | Zinc | mg/kg | | 1.9074 | 1.8745 | 1.8603 | 1.8791 | 1.7308 | 1.9284 | 1.8887 | 1.8887 | 1.8633 | 1.9754 | 1.4698 | 1.8136 | 1.840 | 0.131 | 1.034 | 10 |

| | LEVEL 1 TEST | | | | | LEVEL 2 TEST | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Critical value Tcrit | Max Value | Is maximum value less than selected critical value? | | Approx Value of Outlier @ Tcrit | Multiplier on SGV | SGV | Proposed maximum acceptable concentration (input) | % population required less than limit x multiplier (p) | Confidence limit 1-α (gamma) | Log of multiplier x action limit | Tolerance Factor (K) | Number of samples required to be sure (NOTE: fill in look up no samples sheet first) |
| 12 | 2.134 | 13.00 | YES | Assume maximum value is not an outlier | 14.71 | 2 | 20 | 40 | 95 | 90 | 1.602 | 5.528 | 1000 |
| 12 | 2.134 | 0.20 | YES | Assume maximum value is not an outlier | 0.20 | 3.6 | 13 | 6 | 95 | 90 | 0.778 | ###### | 30 |
| 12 | 2.134 | 17.50 | YES | Assume maximum value is not an outlier | 18.65 | 0.123077 | 130 | 16 | 95 | 90 | 1.204 | 0.583 | 37 |
| 12 | 2.134 | 24.20 | YES | Assume maximum value is not an outlier | 26.10 | 0.577778 | 450 | 260 | 95 | 90 | 2.415 | 14.751 | 3 |
| 12 | 2.134 | 0.20 | NO | Maximum value may be an outlier | 0.20 | 32.5 | 8 | 260 | 95 | 90 | 2.415 | 28.716 | 6 |
| 12 | 2.134 | 47.20 | YES | Assume maximum value is not an outlier | 53.80 | 18 | 50 | 900 | 95 | 90 | 2.954 | 10.784 | 1000 |
| 12 | 2.134 | 1.00 | #DIV/0! | #DIV/0! | 1.00 | 0.457143 | 35 | 16 | 95 | 90 | 1.204 | #DIV/0! | 3 |
| 12 | 2.134 | 27.50 | YES | Assume maximum value is not an outlier | 29.95 | 0.0125 | 8000 | 100 | 95 | 90 | 2.000 | 6.599 | 4 |
| 12 | 2.134 | 0.90 | NO | Maximum value may be an outlier | 0.89 | 0.538462 | 130 | 70 | 95 | 90 | 1.845 | 23.582 | 3 |
| 12 | 2.134 | 94.50 | YES | Assume maximum value is not an outlier | 131.70 | 0.070588 | 8500 | 600 | 95 | 90 | 2.778 | 7.161 | 21 |

# Mean Value Test

232095 - Hough Lane, Wombwell - Imported CLAY SUBSOIL from Bolton Ings - ORGANICS - Residential with Plant Uptake - 2.5% SOM

| Key: | |
|---|---|
| | exceeds screen and is potential outlier |
| | Does not exceed screen but may be outlier |
| | Exceeds screen but is not an outlier |

To enter results into this table, click on column G and click the 'Insert Columns' button, entering the number of columns needed. Then either type in the results, or paste them in. DO NOT try the 'Insert Copied Cells' option, as this loses the formatting links.

| CAS REG No | Determinand | Units | *Screening Value | *Source of screening value | D29 | D30 | D31 | D32 | D33 | D34 | D35 | D36 | D37 | D38 | D39 | D40 | No of samples in the averaging area | Degrees of freedom | Arithmetic Mean | standard deviation | Coefficient of variation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | trial pit / borehole ref | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | | | | | |
| | | | | Depth | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | | | |
| | | | | | | | | | | | | | | | | | 0 | 1 | #DIV/0! | #DIV/0! | #DIV/0! |
| | benzo (a )pyrene | mg/kg | 1.1 | IHSV Version 7 November 2006 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 12 | 11 | 0.10 | 0.00 | 0.00 |
| | benz (a) anthracene | mg/kg | 9.3 | IHSV Version 7 November 2006 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 12 | 11 | 0.10 | 0.00 | 0.00 |
| | benz (b) fluoranthene | mg/kg | 9.6 | IHSV Version 7 November 2006 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 12 | 11 | 0.10 | 0.00 | 0.00 |
| | benz (k) fluoranthene | mg/kg | 96 | IHSV Version 7 November 2006 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 12 | 11 | 0.10 | 0.00 | 0.00 |
| | chrysene | mg/kg | 880 | IHSV Version 7 November 2006 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 12 | 11 | 0.10 | 0.00 | 0.00 |
| | dibenz (a,h) anthracene | mg/kg | 1 | IHSV Version 7 November 2006 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 12 | 11 | 0.10 | 0.00 | 0.00 |
| | indeno (1,2,3,c,d) pyrene | mg/kg | 8.3 | IHSV Version 7 November 2006 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 12 | 11 | 0.10 | 0.00 | 0.00 |
| | Naphthalene | mg/kg | 17 | Draft SGV | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.20 | 0.10 | 0.10 | 0.20 | 12 | 11 | 0.12 | 0.04 | 0.10 |
| | Acenapthene | mg/kg | 380 | IHSV Version 7 November 2006 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 12 | 11 | 0.10 | 0.00 | 0.00 |
| | Fluorene | mg/kg | 290 | IHSV Version 7 November 2006 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 12 | 11 | 0.10 | 0.00 | 0.00 |
| | Anthracene | mg/kg | 2400 | IHSV Version 7 November 2006 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 12 | 11 | 0.10 | 0.00 | 0.00 |
| | Fluoranthene | mg/kg | 350 | IHSV Version 7 November 2006 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 12 | 11 | 0.10 | 0.00 | 0.00 |
| | Pyrene | mg/kg | 260 | IHSV Version 7 November 2006 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 12 | 11 | 0.10 | 0.00 | 0.00 |
| | | | | | | | | | | | | | | | | | 0 | 1 | #DIV/0! | #DIV/0! | #DIV/0! |
| | | | | | | | | | | | | | | | | | 0 | 1 | #DIV/0! | #DIV/0! | #DIV/0! |

| LEVEL 1 CHECK | | | | | | | | LEVEL 2 ('bonus') CHECK | | | | | | | | | | Max value Test |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| % confidence bound required (%) | t (value) | normalised upper bound on confidence limit of population | Normalised upper bound (95% UCL of mean) | Soil Guideline Value | Source for SGV | Upper Bound less than the guideline value? | Action : note if no further action indicated still do maximum value test | Coefficient of variation | % confidence interval (alpha) = mean SGV | is mean less than action value | Minimum number of samples required to be sure of mean being below | is minimum number of samples less than number taken | Number of samples that may be required | Kto | t test | probability that true mean actually does not exceed action value | probability that true mean actually does exceed action value | Potential outlier value from max value sheet |
| 95 | #NUM! | #NUM! | #DIV/0! | 0 | | 0 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #NUM! | #NUM! | #NUM! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #VALUE! |
| 95 | 1.796 | 1.000 | 0.10 | 1 | IHSV Version 7.November 2006 | YES | No action warranted | 0.000 | 1.000 | Yes | 0 | Yes | | ######## | 0.000 | 100% | 0% | 0.10 |
| 95 | 1.796 | 1.000 | 0.10 | 9.3 | IHSV Version 7.November 2006 | YES | No action warranted | 0.000 | 9.200 | Yes | 0 | Yes | | ######## | 0.000 | 100% | 0% | 0.10 |
| 95 | 1.796 | 1.000 | 0.10 | 9.6 | IHSV Version 7.November 2006 | YES | No action warranted | 0.000 | 9.500 | Yes | 0 | Yes | | ######## | 0.000 | 100% | 0% | 0.10 |
| 95 | 1.796 | 1.000 | 0.10 | 96 | IHSV Version 7.November 2006 | YES | No action warranted | 0.000 | 95.900 | Yes | 0 | Yes | | ######## | 0.000 | 100% | 0% | 0.10 |
| 95 | 1.796 | 1.000 | 0.10 | 880 | IHSV Version 7.November 2006 | YES | No action warranted | 0.000 | 879.900 | Yes | 0 | Yes | | ######## | 0.000 | 100% | 0% | 0.10 |
| 95 | 1.796 | 1.000 | 0.10 | 1 | IHSV Version 7.November 2006 | YES | No action warranted | 0.000 | 0.900 | Yes | 0 | Yes | | ######## | 0.000 | 100% | 0% | 0.10 |
| 95 | 1.796 | 1.000 | 0.10 | 8.3 | IHSV Version 7.November 2006 | YES | No action warranted | 0.000 | 8.200 | Yes | 0 | Yes | | ######## | 0.000 | 100% | 0% | 0.10 |
| 95 | 1.796 | 1.173 | 0.14 | 17 | Draft SGV | YES | No action warranted | 0.334 | 16.883 | Yes | 0 | Yes | | 1438.555 | 0.000 | 100% | 0% | 0.20 |
| 95 | 1.796 | 1.000 | 0.10 | 380 | IHSV Version 7.November 2006 | YES | No action warranted | 0.000 | 379.900 | Yes | 0 | Yes | | ######## | 0.000 | 100% | 0% | 0.10 |
| 95 | 1.796 | 1.000 | 0.10 | 290 | IHSV Version 7.November 2006 | YES | No action warranted | 0.000 | 289.900 | Yes | 0 | Yes | | ######## | 0.000 | 100% | 0% | 0.10 |
| 95 | 1.796 | 1.000 | 0.10 | 2400 | IHSV Version 7.November 2006 | YES | No action warranted | 0.000 | 2399.900 | Yes | 0 | Yes | | ######## | 0.000 | 100% | 0% | 0.10 |
| 95 | 1.796 | 1.000 | 0.10 | 350 | IHSV Version 7.November 2006 | YES | No action warranted | 0.000 | 349.900 | Yes | 0 | Yes | | ######## | 0.000 | 100% | 0% | 0.10 |
| 95 | 1.796 | 1.000 | 0.10 | 260 | IHSV Version 7.November 2006 | YES | No action warranted | 0.000 | 259.900 | Yes | 0 | Yes | | ######## | 0.000 | 100% | 0% | 0.10 |
| 95 | #NUM! | #NUM! | #DIV/0! | 0 | | 0 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #NUM! | #NUM! | #NUM! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #VALUE! |
| 95 | #NUM! | #NUM! | #DIV/0! | 0 | | 0 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #NUM! | #NUM! | #NUM! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #VALUE! |

# Maximum Value Test

232095 - Hough Lane, Wombwell - Imported CLAY SUBSOIL from Bolton Ings - ORGANICS - Residential with Plant Uptake - 2.5% SOM

Log 10 concentrations

Key:

may be an outlier

Insert extra columns using the button as with the *Mean Value sheet*. Then copy across the formulas from column E.

| CAS REG | Determinand | Units | Sample Ref | D29 | D30 | D31 | D32 | D33 | D34 | D35 | D36 | D37 | D38 | D39 | D40 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | trial pit / borehole ref | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile | Mean of Log10 of values | Unbiased standard deviation of log 10 values | Outlier Test T | critical value required |
| | | | Depth | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | | |
| | | | | | | | | | | | | | | | | #DIV/0! | #DIV/0! | #DIV/0! | 10 |
| 0 | Benzo (a )pyrene | mg/kg | | | | | | | | | | | | | | 1.000 | 0.000 | #DIV/0! | 10 |
| 0 | benz (a) anthracene | mg/kg | | | | | | | | | | | | | | 1.000 | 0.000 | #DIV/0! | 10 |
| 0 | benz (b) fluoranthene | mg/kg | | | | | | | | | | | | | | 1.000 | 0.000 | #DIV/0! | 10 |
| 0 | benz (k) fluoranthene | mg/kg | | | | | | | | | | | | | | 1.000 | 0.000 | #DIV/0! | 10 |
| 0 | chrysene | mg/kg | | | | | | | | | | | | | | 1.000 | 0.000 | #DIV/0! | 10 |
| 0 | dibenz (a,h) anthracene | mg/kg | | | | | | | | | | | | | | 1.000 | 0.000 | #DIV/0! | 10 |
| 0 | indeno (1,2,2,c,d) pyrene | mg/kg | | | | | | | | | | | | | | 1.000 | 0.000 | #DIV/0! | 10 |
| 0 | Naphthalene | mg/kg | | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | 0.699 | -1 | -1 | 0.699 | 0.950 | 0.117 | 2.141 | 10 |
| 0 | Acenapthene | mg/kg | | | | | | | | | | | | | | 1.000 | 0.000 | #DIV/0! | 10 |
| 0 | Fluorene | mg/kg | | | | | | | | | | | | | | 1.000 | 0.000 | #DIV/0! | 10 |
| 0 | Anthracene | mg/kg | | | | | | | | | | | | | | 1.000 | 0.000 | #DIV/0! | 10 |
| 0 | Fluoranthene | mg/kg | | | | | | | | | | | | | | 1.000 | 0.000 | #DIV/0! | 10 |
| 0 | Pyrene | mg/kg | | | | | | | | | | | | | | 1.000 | 0.000 | #DIV/0! | 10 |
| 0 | 0 | 0 | | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | 10 |
| 0 | 0 | 0 | | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | #NUM! | 10 |

| | LEVEL 1 TEST | | | | | | | | LEVEL 2 TEST | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Critical value T crit | Max Value | Is maximum value less than selected critical value | | | Approx Value of Outlier @ T crit | Multiplier on SGV | SGV | Proposed maximum acceptable concentration (input) | % population required less than limit x multiplier (p) | Confidence limit (gamma) | Log of multiplier x action limit | Tolerance Factor (K) | Number of samples required to be sure (NOTE: fill in look up no samples sheetfirst) |
| 0 | nsert valu | 0.00 | #DIV/0! | | #DIV/0! | #VALUE! | #DIV/0! | 0 | 40 | 95 | 90 | #DIV/0! | #DIV/0! | 1000 |
| 12 | 2.134 | 0.10 | #DIV/0! | | #DIV/0! | 0.10 | 5.454545 | 11 | 6 | 95 | 90 | 0.778 | #DIV/0! | 30 |
| 12 | 2.134 | 0.10 | #DIV/0! | | #DIV/0! | 0.10 | 1.172043 | 9.3 | 16 | 95 | 90 | 1.204 | #DIV/0! | 37 |
| 12 | 2.134 | 0.10 | #DIV/0! | | #DIV/0! | 0.10 | 27.08333 | 9.6 | 260 | 95 | 90 | 2.415 | #DIV/0! | 3 |
| 12 | 2.134 | 0.10 | #DIV/0! | | #DIV/0! | 0.10 | 2.708333 | 96 | 260 | 95 | 90 | 2.415 | #DIV/0! | 6 |
| 12 | 2.134 | 0.10 | #DIV/0! | | #DIV/0! | 0.10 | 1.022727 | 880 | 900 | 95 | 90 | 2.954 | #DIV/0! | 1000 |
| 12 | 2.134 | 0.10 | #DIV/0! | | #DIV/0! | 0.10 | 16 | 1 | 16 | 95 | 90 | 1.204 | #DIV/0! | 3 |
| 12 | 2.134 | 0.10 | #DIV/0! | | #DIV/0! | 0.10 | 12.04819 | 8.3 | 100 | 95 | 90 | 2.000 | #DIV/0! | 4 |
| 12 | 2.134 | 0.20 | | | Maximum value may be an outlier. | 0.20 | 4.117647 | 17 | 70 | 95 | 90 | 1.845 | 23.852 | 3 |
| 12 | 2.134 | 0.10 | #DIV/0! | | #DIV/0! | 0.10 | 1.578947 | 380 | 600 | 95 | 90 | 2.778 | #DIV/0! | 21 |
| 12 | 2.134 | 0.10 | #DIV/0! | | #DIV/0! | 0.10 | 1.724138 | 290 | 500 | 95 | 90 | 2.699 | #DIV/0! | 2 |
| 12 | 2.134 | 0.10 | #DIV/0! | | #DIV/0! | 0.10 | 0.004167 | 2400 | 10 | 95 | 90 | 1.000 | #DIV/0! | 3 |
| 12 | 2.134 | 0.10 | #DIV/0! | | #DIV/0! | 0.10 | 0.001143 | 350 | 0.4 | 95 | 90 | -0.398 | #DIV/0! | 9 |
| 12 | 2.134 | 0.10 | #DIV/0! | | #DIV/0! | 0.10 | 1.923077 | 260 | 500 | 95 | 90 | 2.699 | #DIV/0! | 2 |
| 0 | nsert valu | 0.00 | #NUM! | | #NUM! | #VALUE! | #DIV/0! | 0 | 20 | 95 | 90 | #DIV/0! | #DIV/0! | 2 |
| 0 | nsert valu | 0.00 | #NUM! | | #NUM! | #VALUE! | #DIV/0! | 0 | 10000 | 95 | 90 | #DIV/0! | #DIV/0! | 0 |