

## APPENDIX 7.2

### ICP-MS STATISTICAL ANALYSIS

#### Northern Ireland Chalk formation t-tests – patinated vs unpatinated flint

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| MAGNESIUM                                     |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.3435            | 1.256625          |
| Variance                                      | 0.147295          | 0.933242896       |
| Observations                                  | 4                 | 4                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 4                 |                   |
| t Stat  | -1.75687243       |                   |
| P(T<=t) one-tail                              | 0.076888597       |                   |
| t Critical one-tail                           | 2.131846786       |                   |
| P(T<=t) two-tail                              | 0.153777194       |                   |
| t Critical two-tail                           | 2.776445105       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| ALUMINIUM                                     |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 1.8495            | 2.3695            |
| Variance                                      | 2.330635          | 1.874988167       |
| Observations                                  | 4                 | 4                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 6                 |                   |
| t Stat  | -0.50712867       |                   |
| P(T<=t) one-tail                              | 0.315079614       |                   |
| t Critical one-tail                           | 1.943180281       |                   |
| P(T<=t) two-tail                              | 0.630159229       |                   |
| t Critical two-tail                           | 2.446911851       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CHROMIUM                                      |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 1.00175     | 0.8935      |
| Variance                                      | 0.09855225  | 0.022158833 |
| Observations                                  | 4           | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 4           |             |
| t Stat  | 0.62313813  |             |
| P(T<=t) one-tail                              | 0.283481466 |             |
| t Critical one-tail                           | 2.131846786 |             |
| P(T<=t) two-tail                              | 0.566962932 |             |
| t Critical two-tail                           | 2.776445105 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MANGANESE                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.10825     | 0.061125    |
| Variance                                      | 0.004318917 | 0.000476729 |
| Observations                                  | 4           | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 4           |             |
| t Stat  | 1.360999005 |             |
| P(T<=t) one-tail                              | 0.122572274 |             |
| t Critical one-tail                           | 2.131846786 |             |
| P(T<=t) two-tail                              | 0.245144549 |             |
| t Critical two-tail                           | 2.776445105 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COBALT  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.00175     | 0.38075     |
| Variance                                      | 9.16667E-07 | 0.235121583 |
| Observations                                  | 4           | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | -1.56322723 |             |
| P(T<=t) one-tail                              | 0.107971739 |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.215943479 |             |
| t Critical two-tail                           | 3.182446305 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COPPER  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.093       | 0.0965     |
| Variance                                      | 0.006566    | 0.0017115  |
| Observations                                  | 4           | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 4           |            |
| t Stat  | -0.07693934 |            |
| P(T<=t) one-tail                              | 0.471183275 |            |
| t Critical one-tail                           | 2.131846786 |            |
| P(T<=t) two-tail                              | 0.942366551 |            |
| t Critical two-tail                           | 2.776445105 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| RUBIDIUM                                      |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.0015      | 0.020625    |
| Variance                                      | 1.66667E-06 | 0.000523229 |
| Observations                                  | 4           | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | -1.6695325  |             |
| P(T<=t) one-tail                              | 0.09680216  |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.19360432  |             |
| t Critical two-tail                           | 3.182446305 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| STRONTIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.01975     | 0.3925      |
| Variance                                      | 6.09167E-05 | 0.225619833 |
| Observations                                  | 4           | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | -1.56927982 |             |
| P(T<=t) one-tail                              | 0.107298438 |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.214596876 |             |
| t Critical two-tail                           | 3.182446305 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CADMIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.00075     | 0.0055      |
| Variance                                      | 0.00000225  | 3.76667E-05 |
| Observations                                  | 4           | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | -1.50364901 |             |
| P(T<=t) one-tail                              | 0.114854901 |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.229709802 |             |
| t Critical two-tail                           | 3.182446305 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| BARIUM  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.1015      | 0.06125    |
| Variance                                      | 0.005941667 | 0.00145175 |
| Observations                                  | 4           | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 4           |            |
| t Stat  | 0.936210029 |            |
| P(T<=t) one-tail                              | 0.201084003 |            |
| t Critical one-tail                           | 2.131846786 |            |
| P(T<=t) two-tail                              | 0.402168006 |            |
| t Critical two-tail                           | 2.776445105 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| LEAD  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.02175     | 0.112375    |
| Variance                                      | 0.000176917 | 0.018229563 |
| Observations                                  | 4           | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | -1.33595753 |             |
| P(T<=t) one-tail                              | 0.136932772 |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.273865544 |             |
| t Critical two-tail                           | 3.182446305 |             |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| SODIUM  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 3.324             | 23.57225          |
| Variance                                      | 4.115214667       | 684.4268641       |
| Observations                                  | 4                 | 4                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 3                 |                   |
| t Stat  | -1.54330672       |                   |
| P(T<=t) one-tail                              | 0.11022107        |                   |
| t Critical one-tail                           | 2.353363435       |                   |
| P(T<=t) two-tail                              | 0.22044214        |                   |
| t Critical two-tail                           | 3.182446305       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| IRON  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 10.31125          | 6.207             |
| Variance                                      | 27.66654892       | 0.649766          |
| Observations                                  | 4                 | 4                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 3                 |                   |
| t Stat  | 1.542571971       |                   |
| P(T<=t) one-tail                              | 0.110305021       |                   |
| t Critical one-tail                           | 2.353363435       |                   |
| P(T<=t) two-tail                              | 0.220610043       |                   |
| t Critical two-tail                           | 3.182446305       |                   |

**South Downs - patinated vs unpatinated flint**

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| SODIUM  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 11.36383333 | 5.22549     |
| Variance                                      | 483.6687878 | 27.87586426 |
| Observations                                  | 6           | 5           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 6           |             |
| t Stat  | 0.661197507 |             |
| P(T<=t) one-tail                              | 0.266519019 |             |
| t Critical one-tail                           | 1.943180281 |             |
| P(T<=t) two-tail                              | 0.533038038 |             |
| t Critical two-tail                           | 2.446911851 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| IRON  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 4.1905      | 6.04708     |
| Variance                                      | 3.9151319   | 0.892031957 |
| Observations                                  | 6           | 5           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 7           |             |
| t Stat  | -2.03672256 |             |
| P(T<=t) one-tail                              | 0.040552104 |             |
| t Critical one-tail                           | 1.894578605 |             |
| P(T<=t) two-tail                              | 0.081104207 |             |
| t Critical two-tail                           | 2.364624252 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COBALT  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.168833333 | 0.04204     |
| Variance                                      | 0.168204167 | 0.007817433 |
| Observations                                  | 6           | 5           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 6           |             |
| t Stat  | 0.737002225 |             |
| P(T<=t) one-tail                              | 0.244463176 |             |
| t Critical one-tail                           | 1.943180281 |             |
| P(T<=t) two-tail                              | 0.488926351 |             |
| t Critical two-tail                           | 2.446911851 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COPPER  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.072       | 0.05965     |
| Variance                                      | 0.003464    | 0.001212488 |
| Observations                                  | 6           | 5           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 8           |             |
| t Stat  | 0.431325201 |             |
| P(T<=t) one-tail                              | 0.33880969  |             |
| t Critical one-tail                           | 1.859548038 |             |
| P(T<=t) two-tail                              | 0.67761938  |             |
| t Critical two-tail                           | 2.306004135 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| RUBIDIUM                                      |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.01        | 0.00282     |
| Variance                                      | 0.0004248   | 0.000018962 |
| Observations                                  | 6           | 5           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 6           |             |
| t Stat  | 0.831337084 |             |
| P(T<=t) one-tail                              | 0.218804586 |             |
| t Critical one-tail                           | 1.943180281 |             |
| P(T<=t) two-tail                              | 0.437609172 |             |
| t Critical two-tail                           | 2.446911851 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| STRONTIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.1785      | 0.05989     |
| Variance                                      | 0.1612435   | 0.007589436 |
| Observations                                  | 6           | 5           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 6           |             |
| t Stat  | 0.703922446 |             |
| P(T<=t) one-tail                              | 0.253932801 |             |
| t Critical one-tail                           | 1.943180281 |             |
| P(T<=t) two-tail                              | 0.507865602 |             |
| t Critical two-tail                           | 2.446911851 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CADMIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.002666667 | 0.00102     |
| Variance                                      | 3.14667E-05 | 0.000002252 |
| Observations                                  | 6           | 5           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 6           |             |
| t Stat  | 0.690024898 |             |
| P(T<=t) one-tail                              | 0.257983184 |             |
| t Critical one-tail                           | 1.943180281 |             |
| P(T<=t) two-tail                              | 0.515966367 |             |
| t Critical two-tail                           | 2.446911851 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| BARIUM  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.047       | 0.06285     |
| Variance                                      | 0.0043148   | 0.002753238 |
| Observations                                  | 6           | 5           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 9           |             |
| t Stat  | -0.44480011 |             |
| P(T<=t) one-tail                              | 0.333484376 |             |
| t Critical one-tail                           | 1.833112933 |             |
| P(T<=t) two-tail                              | 0.666968752 |             |
| t Critical two-tail                           | 2.262157163 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| LEAD  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.0475      | 0.05409     |
| Variance                                      | 0.0103363   | 0.011670503 |
| Observations                                  | 6           | 5           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 8           |             |
| t Stat  | -0.10346482 |             |
| P(T<=t) one-tail                              | 0.460070387 |             |
| t Critical one-tail                           | 1.859548038 |             |
| P(T<=t) two-tail                              | 0.920140773 |             |
| t Critical two-tail                           | 2.306004135 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MANGANESE                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.041166667 | 0.03459     |
| Variance                                      | 0.000565367 | 4.60655E-05 |
| Observations                                  | 6           | 5           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 6           |             |
| t Stat  | 0.646635781 |             |
| P(T<=t) one-tail                              | 0.270898913 |             |
| t Critical one-tail                           | 1.943180281 |             |
| P(T<=t) two-tail                              | 0.541797827 |             |
| t Critical two-tail                           | 2.446911851 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MAGNESIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.600666667 | 0.34926     |
| Variance                                      | 0.826827867 | 0.159334788 |
| Observations                                  | 6           | 5           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 7           |             |
| t Stat  | 0.610340529 |             |
| P(T<=t) one-tail                              | 0.280460337 |             |
| t Critical one-tail                           | 1.894578605 |             |
| P(T<=t) two-tail                              | 0.560920673 |             |
| t Critical two-tail                           | 2.364624252 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| ALUMINIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 1.246833333 | 1.03242     |
| Variance                                      | 1.668618567 | 0.114898757 |
| Observations                                  | 6           | 5           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 6           |             |
| t Stat  | 0.390758814 |             |
| P(T<=t) one-tail                              | 0.354736523 |             |
| t Critical one-tail                           | 1.943180281 |             |
| P(T<=t) two-tail                              | 0.709473046 |             |
| t Critical two-tail                           | 2.446911851 |             |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| CHROMIUM                                      |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.650833333       | 0.84056           |
| Variance                                      | 0.019234167       | 0.017714268       |
| Observations                                  | 6                 | 5                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 9                 |                   |
| t Stat  | -2.30952785       |                   |
| P(T<=t) one-tail                              | 0.023136122       |                   |
| t Critical one-tail                           | 1.833112933       |                   |
| P(T<=t) two-tail                              | 0.046272245       |                   |
| t Critical two-tail                           | 2.262157163       |                   |

**Northern Chalk province – Yorkshire Wolds vs Lincolnshire Wolds**

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| SODIUM  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 2.4965      | 2.832071429 |
| Variance                                      | 0.256220091 | 0.691291148 |
| Observations                                  | 12          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 22          |             |
| t Stat  | -1.26178202 |             |
| P(T<=t) one-tail                              | 0.110120778 |             |
| t Critical one-tail                           | 1.717144374 |             |
| P(T<=t) two-tail                              | 0.220241557 |             |
| t Critical two-tail                           | 2.073873068 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MAGNESIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.278916667 | 0.394642857 |
| Variance                                      | 0.044079902 | 0.091575478 |
| Observations                                  | 12          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 23          |             |
| t Stat  | -1.14505032 |             |
| P(T<=t) one-tail                              | 0.131982111 |             |
| t Critical one-tail                           | 1.713871528 |             |
| P(T<=t) two-tail                              | 0.263964221 |             |
| t Critical two-tail                           | 2.06865761  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| BERYLLIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.000166667 | 0          |
| Variance                                      | 1.51515E-07 | 0          |
| Observations                                  | 12          | 11         |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 11          |            |
| t Stat  | 1.483239697 |            |
| P(T<=t) one-tail                              | 0.083043407 |            |
| t Critical one-tail                           | 1.795884819 |            |
| P(T<=t) two-tail                              | 0.166086814 |            |
| t Critical two-tail                           | 2.20098516  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CALCIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 14.11066667 | 23.447625  |
| Variance                                      | 281.9960031 | 353.069228 |
| Observations                                  | 6           | 8          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 12          |            |
| t Stat  | -0.97806477 |            |
| P(T<=t) one-tail                              | 0.173674482 |            |
| t Critical one-tail                           | 1.782287556 |            |
| P(T<=t) two-tail                              | 0.347348964 |            |
| t Critical two-tail                           | 2.17881283  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| ZINC  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.0065      | 0.2565      |
| Variance                                      | 0.0000045   | 0.065715667 |
| Observations                                  | 2           | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | -1.9503197  |             |
| P(T<=t) one-tail                              | 0.073114038 |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.146228077 |             |
| t Critical two-tail                           | 3.182446305 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| ALUMINIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 1.041083333 | 1.128428571 |
| Variance                                      | 0.098257902 | 0.12438411  |
| Observations                                  | 12          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 24          |             |
| t Stat  | -0.66847882 |             |
| P(T<=t) one-tail                              | 0.255103427 |             |
| t Critical one-tail                           | 1.71088208  |             |
| P(T<=t) two-tail                              | 0.510206853 |             |
| t Critical two-tail                           | 2.063898562 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| POTASSIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.41475     | 0.570857143 |
| Variance                                      | 0.041033841 | 0.19152644  |
| Observations                                  | 12          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 19          |             |
| t Stat  | -1.19378302 |             |
| P(T<=t) one-tail                              | 0.123627746 |             |
| t Critical one-tail                           | 1.729132812 |             |
| P(T<=t) two-tail                              | 0.247255492 |             |
| t Critical two-tail                           | 2.093024054 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CHROMIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.9515      | 0.79       |
| Variance                                      | 0.048727545 | 0.067354   |
| Observations                                  | 12          | 14         |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 24          |            |
| t Stat  | 1.714631689 |            |
| P(T<=t) one-tail                              | 0.049649775 |            |
| t Critical one-tail                           | 1.71088208  |            |
| P(T<=t) two-tail                              | 0.09929955  |            |
| t Critical two-tail                           | 2.063898562 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MANGANESE                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.062333333 | 0.062571429 |
| Variance                                      | 0.001034424 | 0.000635341 |
| Observations                                  | 12          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 21          |             |
| t Stat  | -0.0207563  |             |
| P(T<=t) one-tail                              | 0.491818006 |             |
| t Critical one-tail                           | 1.720742903 |             |
| P(T<=t) two-tail                              | 0.983636011 |             |
| t Critical two-tail                           | 2.079613845 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| IRON  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 7.799666667 | 6.030357143 |
| Variance                                      | 5.391640606 | 2.97153394  |
| Observations                                  | 12          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 20          |             |
| t Stat  | 2.175307073 |             |
| P(T<=t) one-tail                              | 0.02088704  |             |
| t Critical one-tail                           | 1.724718243 |             |
| P(T<=t) two-tail                              | 0.041774079 |             |
| t Critical two-tail                           | 2.085963447 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COBALT  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.00225     | 0.002357143 |
| Variance                                      | 9.31818E-07 | 3.32418E-06 |
| Observations                                  | 12          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 20          |             |
| t Stat  | -0.19087282 |             |
| P(T<=t) one-tail                              | 0.425274752 |             |
| t Critical one-tail                           | 1.724718243 |             |
| P(T<=t) two-tail                              | 0.850549505 |             |
| t Critical two-tail                           | 2.085963447 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| NICKEL  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.0255      | 0.0275      |
| Variance                                      | 9.71818E-05 | 9.65769E-05 |
| Observations                                  | 12          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 23          |             |
| t Stat  | -0.51645224 |             |
| P(T<=t) one-tail                              | 0.305234417 |             |
| t Critical one-tail                           | 1.713871528 |             |
| P(T<=t) two-tail                              | 0.610468834 |             |
| t Critical two-tail                           | 2.06865761  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COPPER  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.07425     | 0.116285714 |
| Variance                                      | 0.008482932 | 0.044848989 |
| Observations                                  | 12          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 18          |             |
| t Stat  | -0.67221357 |             |
| P(T<=t) one-tail                              | 0.25499254  |             |
| t Critical one-tail                           | 1.734063607 |             |
| P(T<=t) two-tail                              | 0.50998508  |             |
| t Critical two-tail                           | 2.10092204  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| RUBIDIUM                                      |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.00075     | 0.000928571 |
| Variance                                      | 2.04545E-07 | 3.79121E-07 |
| Observations                                  | 12          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 24          |             |
| t Stat  | -0.85009423 |             |
| P(T<=t) one-tail                              | 0.201836957 |             |
| t Critical one-tail                           | 1.71088208  |             |
| P(T<=t) two-tail                              | 0.403673914 |             |
| t Critical two-tail                           | 2.063898562 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| STRONTIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.025       | 0.035857143 |
| Variance                                      | 0.000400364 | 0.000580593 |
| Observations                                  | 12          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 24          |             |
| t Stat  | -1.2550596  |             |
| P(T<=t) one-tail                              | 0.11077051  |             |
| t Critical one-tail                           | 1.71088208  |             |
| P(T<=t) two-tail                              | 0.221541021 |             |
| t Critical two-tail                           | 2.063898562 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MOLYBDENUM                                    |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.003333333 | 0.003357143 |
| Variance                                      | 1.33333E-06 | 6.86264E-06 |
| Observations                                  | 12          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 18          |             |
| t Stat  | -0.03070473 |             |
| P(T<=t) one-tail                              | 0.487921457 |             |
| t Critical one-tail                           | 1.734063607 |             |
| P(T<=t) two-tail                              | 0.975842914 |             |
| t Critical two-tail                           | 2.10092204  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CADMIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.000166667 | 7.14286E-05 |
| Variance                                      | 3.33333E-07 | 7.14286E-08 |
| Observations                                  | 12          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 15          |             |
| t Stat  | 0.525225731 |             |
| P(T<=t) one-tail                              | 0.303551642 |             |
| t Critical one-tail                           | 1.753050356 |             |
| P(T<=t) two-tail                              | 0.607103285 |             |
| t Critical two-tail                           | 2.131449546 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| BARIUM  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.02625     | 0.050142857 |
| Variance                                      | 3.875E-05   | 0.001773516 |
| Observations                                  | 12          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 14          |             |
| t Stat  | -2.0962767  |             |
| P(T<=t) one-tail                              | 0.027354301 |             |
| t Critical one-tail                           | 1.761310136 |             |
| P(T<=t) two-tail                              | 0.054708602 |             |
| t Critical two-tail                           | 2.144786688 |             |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| LEAD  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.002833333       | 0.001285714       |
| Variance                                      | 3.06061E-06       | 6.81319E-07       |
| Observations                                  | 12                | 14                |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 15                |                   |
| t Stat  | 2.808213618       |                   |
| P(T<=t) one-tail                              | 0.006619232       |                   |
| t Critical one-tail                           | 1.753050356       |                   |
| P(T<=t) two-tail                              | 0.013238464       |                   |
| t Critical two-tail                           | 2.131449546       |                   |

### South Downs flint vs North Downs flint

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MAGNESIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.462071429 | 0.747333333 |
| Variance                                      | 0.762926071 | 1.143990667 |
| Observations                                  | 14          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 8           |             |
| t Stat  | 0.576128184 | -           |
| P(T<=t) one-tail                              | 0.290185424 |             |
| t Critical one-tail                           | 1.859548038 |             |
| P(T<=t) two-tail                              | 0.580370847 |             |
| t Critical two-tail                           | 2.306004135 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| ALUMINIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.9875      | 1.451833333 |
| Variance                                      | 0.635918115 | 0.339682167 |
| Observations                                  | 14          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 13          |             |
| t Stat  | 1.453624592 | -           |
| P(T<=t) one-tail                              | 0.084881386 |             |
| t Critical one-tail                           | 1.770933396 |             |
| P(T<=t) two-tail                              | 0.169762772 |             |
| t Critical two-tail                           | 2.160368656 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CHROMIUM                                      |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.8695      | 0.969833333 |
| Variance                                      | 0.0715255   | 0.076792967 |
| Observations                                  | 14          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 9           |             |
| t Stat  | 0.749763371 | -           |
| P(T<=t) one-tail                              | 0.236270038 |             |
| t Critical one-tail                           | 1.833112933 |             |
| P(T<=t) two-tail                              | 0.472540075 |             |
| t Critical two-tail                           | 2.262157163 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MANGANESE                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.036285714 | 0.038333333 |
| Variance                                      | 0.000134681 | 7.62667E-05 |
| Observations                                  | 14          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 13          |             |
| t Stat  | -0.43330438 |             |
| P(T<=t) one-tail                              | 0.335948303 |             |
| t Critical one-tail                           | 1.770933396 |             |
| P(T<=t) two-tail                              | 0.671896605 |             |
| t Critical two-tail                           | 2.160368656 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COBALT  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.073071429 | 0.002166667 |
| Variance                                      | 0.070106687 | 5.66667E-07 |
| Observations                                  | 14          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 13          |             |
| t Stat  | 1.001972043 |             |
| P(T<=t) one-tail                              | 0.167321693 |             |
| t Critical one-tail                           | 1.770933396 |             |
| P(T<=t) two-tail                              | 0.334643386 |             |
| t Critical two-tail                           | 2.160368656 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COPPER  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.067142857 | 0.122      |
| Variance                                      | 0.004899824 | 0.0156216  |
| Observations                                  | 14          | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 6           |            |
| t Stat  | 1.009388304 |            |
| P(T<=t) one-tail                              | 0.175873739 |            |
| t Critical one-tail                           | 1.943180281 |            |
| P(T<=t) two-tail                              | 0.351747479 |            |
| t Critical two-tail                           | 2.446911851 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| RUBIDIUM                                      |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.004285714 | 0.003166667 |
| Variance                                      | 0.000173451 | 6.16667E-06 |
| Observations                                  | 14          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 15          |             |
| t Stat  | 0.305505614 |             |
| P(T<=t) one-tail                              | 0.382089878 |             |
| t Critical one-tail                           | 1.753050356 |             |
| P(T<=t) two-tail                              | 0.764179756 |             |
| t Critical two-tail                           | 2.131449546 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| STRONTIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.089142857 | 0.019166667 |
| Variance                                      | 0.066326747 | 0.000417367 |
| Observations                                  | 14          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 13          |             |
| t Stat  | 1.009264125 |             |
| P(T<=t) one-tail                              | 0.165632499 |             |
| t Critical one-tail                           | 1.770933396 |             |
| P(T<=t) two-tail                              | 0.331264997 |             |
| t Critical two-tail                           | 2.160368656 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CADMIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.001571429 | 0          |
| Variance                                      | 1.51868E-05 | 0          |
| Observations                                  | 14          | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 13          |            |
| t Stat  | 1.508777982 |            |
| P(T<=t) one-tail                              | 0.077635154 |            |
| t Critical one-tail                           | 1.770933396 |            |
| P(T<=t) two-tail                              | 0.155270308 |            |
| t Critical two-tail                           | 2.160368656 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| BARIUM  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.066214286 | 0.141833333 |
| Variance                                      | 0.019317566 | 0.034784167 |
| Observations                                  | 14          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 7           |             |
| t Stat  | 0.892594209 | -           |
| P(T<=t) one-tail                              | 0.20085801  |             |
| t Critical one-tail                           | 1.894578605 |             |
| P(T<=t) two-tail                              | 0.401716021 |             |
| t Critical two-tail                           | 2.364624252 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| LEAD  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.093285714 | 0.002166667 |
| Variance                                      | 0.104863604 | 2.16667E-06 |
| Observations                                  | 14          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 13          |             |
| t Stat  | 1.052810798 |             |
| P(T<=t) one-tail                              | 0.155801946 |             |
| t Critical one-tail                           | 1.770933396 |             |
| P(T<=t) two-tail                              | 0.311603893 |             |
| t Critical two-tail                           | 2.160368656 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| SODIUM  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 6.731285714 | 7.054666667 |
| Variance                                      | 200.2569059 | 36.70358947 |
| Observations                                  | 14          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 18          |             |
| t Stat  | 0.071560345 | -           |
| P(T<=t) one-tail                              | 0.47187046  |             |
| t Critical one-tail                           | 1.734063607 |             |
| P(T<=t) two-tail                              | 0.943740919 |             |
| t Critical two-tail                           | 2.10092204  |             |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| IRON  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 6.180571429       | 8.102666667       |
| Variance                                      | 3.744984418       | 9.980155067       |
| Observations                                  | 14                | 6                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 7                 |                   |
| t Stat  | -1.38324697       |                   |
| P(T<=t) one-tail                              | 0.104548522       |                   |
| t Critical one-tail                           | 1.894578605       |                   |
| P(T<=t) two-tail                              | 0.209097044       |                   |
| t Critical two-tail                           | 2.364624252       |                   |

### South Downs flint vs Southwestern Chalk flint

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MAGNESIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.462071429 | 1.5015     |
| Variance                                      | 0.762926071 | 1.7653205  |
| Observations                                  | 14          | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | 1.073714812 | -          |
| P(T<=t) one-tail                              | 0.238689728 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.477379457 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| ALUMINIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.9875      | 2.721      |
| Variance                                      | 0.635918115 | 0.868562   |
| Observations                                  | 14          | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | 2.502864288 | -          |
| P(T<=t) one-tail                              | 0.12099331  |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.241986619 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CHROMIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.8695      | 0.8675     |
| Variance                                      | 0.0715255   | 8.45E-05   |
| Observations                                  | 14          | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 13          |            |
| t Stat  | 0.027866036 |            |
| P(T<=t) one-tail                              | 0.489096119 |            |
| t Critical one-tail                           | 1.770933396 |            |
| P(T<=t) two-tail                              | 0.978192239 |            |
| t Critical two-tail                           | 2.160368656 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MANGANESE                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.036285714 | 0.0495     |
| Variance                                      | 0.000134681 | 0.0003645  |
| Observations                                  | 14          | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | -0.95398171 |            |
| P(T<=t) one-tail                              | 0.257495141 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.514990283 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COBALT  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.073071429 | 0.51       |
| Variance                                      | 0.070106687 | 0.516128   |
| Observations                                  | 14          | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | 0.851870237 |            |
| P(T<=t) one-tail                              | 0.275407282 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.550814565 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COPPER  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.067142857 | 0.1175     |
| Variance                                      | 0.004899824 | 0.0022445  |
| Observations                                  | 14          | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 2           |            |
| t Stat  | 1.312417921 |            |
| P(T<=t) one-tail                              | 0.159883065 |            |
| t Critical one-tail                           | 2.91998558  |            |
| P(T<=t) two-tail                              | 0.31976613  |            |
| t Critical two-tail                           | 4.30265273  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| RUBIDIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.004285714 | 0.028      |
| Variance                                      | 0.000173451 | 0.00125    |
| Observations                                  | 14          | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | 0.939307208 |            |
| P(T<=t) one-tail                              | 0.259958614 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.519917228 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| STRONTIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.089142857 | 0.5305     |
| Variance                                      | 0.066326747 | 0.4930245  |
| Observations                                  | 14          | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | -0.88051596 |            |
| P(T<=t) one-tail                              | 0.270197592 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.540395184 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CADMIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.001571429 | 0.007      |
| Variance                                      | 1.51868E-05 | 0.000098   |
| Observations                                  | 14          | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | 0.767065949 |            |
| P(T<=t) one-tail                              | 0.291718972 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.583437943 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |                    |                   |
|---|--------------------|-------------------|
| <b>BARIUM</b>                                 |                    |                   |
|   | <i>Variable 1</i>  | <i>Variable 2</i> |
| Mean  | 0.066214286        | 0.1025            |
| Variance                                      | 0.019317566        | 0.0078125         |
| Observations                                  | 14                 | 2                 |
| Hypothesized Mean Difference                  | 0                  |                   |
| df  | 2                  |                   |
| t Stat  | 0.499078625        | -                 |
| P(T<=t) one-tail                              | 0.333606417        |                   |
| t Critical one-tail                           | 2.91998558         |                   |
| P(T<=t) two-tail                              | <b>0.667212835</b> |                   |
| t Critical two-tail                           | 4.30265273         |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| <b>LEAD</b>                                   |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.093285714       | 0.2205            |
| Variance                                      | 0.104863604       | 0.0937445         |
| Observations                                  | 14                | 2                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 1                 |                   |
| t Stat  | 0.545614802       | -                 |
| P(T<=t) one-tail                              | 0.34101369        |                   |
| t Critical one-tail                           | 6.313751515       |                   |
| P(T<=t) two-tail                              | <b>0.68202738</b> |                   |
| t Critical two-tail                           | 12.70620474       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                    |                   |
|---|--------------------|-------------------|
| <b>SODIUM</b>                                 |                    |                   |
|   | <i>Variable 1</i>  | <i>Variable 2</i> |
| Mean  | 6.731285714        | 30.473            |
| Variance                                      | 200.2569059        | 1407.3635         |
| Observations                                  | 14                 | 2                 |
| Hypothesized Mean Difference                  | 0                  |                   |
| df  | 1                  |                   |
| t Stat  | 0.886041673        | -                 |
| P(T<=t) one-tail                              | 0.269209552        |                   |
| t Critical one-tail                           | 6.313751515        |                   |
| P(T<=t) two-tail                              | <b>0.538419104</b> |                   |
| t Critical two-tail                           | 12.70620474        |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| IRON  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 6.180571429       | 6.49              |
| Variance                                      | 3.744984418       | 0.003528          |
| Observations                                  | 14                | 2                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 13                |                   |
| t Stat  | 0.596310097       | -                 |
| P(T<=t) one-tail                              | 0.280604282       |                   |
| t Critical one-tail                           | 1.770933396       |                   |
| P(T<=t) two-tail                              | 0.561208564       |                   |
| t Critical two-tail                           | 2.160368656       |                   |

### South Downs flint vs Salisbury Plain/Pewsey flint

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MAGNESIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.417666667 | 0.462071429 |
| Variance                                      | 0.060982267 | 0.762926071 |
| Observations                                  | 6           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 17          |             |
| t Stat  | 0.174629241 | -           |
| P(T<=t) one-tail                              | 0.431716917 |             |
| t Critical one-tail                           | 1.739606726 |             |
| P(T<=t) two-tail                              | 0.863433834 |             |
| t Critical two-tail                           | 2.109815578 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| ALUMINIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 1.5765      | 0.9875      |
| Variance                                      | 0.5169111   | 0.635918115 |
| Observations                                  | 6           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 11          |             |
| t Stat  | 1.623787938 |             |
| P(T<=t) one-tail                              | 0.066352285 |             |
| t Critical one-tail                           | 1.795884819 |             |
| P(T<=t) two-tail                              | 0.13270457  |             |
| t Critical two-tail                           | 2.20098516  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CHROMIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.7685      | 0.8695     |
| Variance                                      | 0.0687291   | 0.0715255  |
| Observations                                  | 6           | 14         |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 10          |            |
| t Stat  | 0.784767841 | -          |
| P(T<=t) one-tail                              | 0.225390311 |            |
| t Critical one-tail                           | 1.812461123 |            |
| P(T<=t) two-tail                              | 0.450780622 |            |
| t Critical two-tail                           | 2.228138852 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MANGANESE                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.029166667 | 0.036285714 |
| Variance                                      | 4.45667E-05 | 0.000134681 |
| Observations                                  | 6           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 16          |             |
| t Stat  | 1.724196703 |             |
| P(T<=t) one-tail                              | 0.051967632 |             |
| t Critical one-tail                           | 1.745883676 |             |
| P(T<=t) two-tail                              | 0.103935264 |             |
| t Critical two-tail                           | 2.119905299 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COBALT  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.002166667 | 0.073071429 |
| Variance                                      | 2.16667E-06 | 0.070106687 |
| Observations                                  | 6           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 13          |             |
| t Stat  | 1.001945366 |             |
| P(T<=t) one-tail                              | 0.167327895 |             |
| t Critical one-tail                           | 1.770933396 |             |
| P(T<=t) two-tail                              | 0.334655791 |             |
| t Critical two-tail                           | 2.160368656 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COPPER  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.1425      | 0.067142857 |
| Variance                                      | 0.0042163   | 0.004899824 |
| Observations                                  | 6           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 10          |             |
| t Stat  | 2.322583119 |             |
| P(T<=t) one-tail                              | 0.021292484 |             |
| t Critical one-tail                           | 1.812461123 |             |
| P(T<=t) two-tail                              | 0.042584968 |             |
| t Critical two-tail                           | 2.228138852 |             |

| t-Test: Two-Sample Assuming Unequal Variances |            |             |
|---|------------|-------------|
| RUBIDIUM                                      |            |             |
|   | Variable 1 | Variable 2  |
| Mean  | 0.003      | 0.004285714 |
| Variance                                      | 0.0000056  | 0.000173451 |
| Observations                                  | 6          | 14          |
| Hypothesized Mean Difference                  | 0          |             |
| df  | 15         |             |
| t Stat  | -          | 0.352248397 |
| P(T<=t) one-tail                              |            | 0.364776066 |
| t Critical one-tail                           |            | 1.753050356 |
| P(T<=t) two-tail                              |            | 0.729552131 |
| t Critical two-tail                           |            | 2.131449546 |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| STRONTIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.014666667 | 0.089142857 |
| Variance                                      | 2.62667E-05 | 0.066326747 |
| Observations                                  | 6           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 13          |             |
| t Stat  | -           | 1.081524995 |
| P(T<=t) one-tail                              |             | 0.149559241 |
| t Critical one-tail                           |             | 1.770933396 |
| P(T<=t) two-tail                              |             | 0.299118483 |
| t Critical two-tail                           |             | 2.160368656 |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CADMIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.000166667 | 0.001571429 |
| Variance                                      | 1.66667E-07 | 1.51868E-05 |
| Observations                                  | 6           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 14          |             |
| t Stat  | -           | 1.331811999 |
| P(T<=t) one-tail                              |             | 0.102099683 |
| t Critical one-tail                           |             | 1.761310136 |
| P(T<=t) two-tail                              |             | 0.204199365 |
| t Critical two-tail                           |             | 2.144786688 |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| BARIUM  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.059666667 | 0.066214286 |
| Variance                                      | 0.002996267 | 0.019317566 |
| Observations                                  | 6           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 18          |             |
| t Stat  | 0.151041555 | -           |
| P(T<=t) one-tail                              | 0.440811388 |             |
| t Critical one-tail                           | 1.734063607 |             |
| P(T<=t) two-tail                              | 0.881622776 |             |
| t Critical two-tail                           | 2.10092204  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| LEAD  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.005833333 | 0.093285714 |
| Variance                                      | 1.17667E-05 | 0.104863604 |
| Observations                                  | 6           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 13          |             |
| t Stat  | 1.010337374 | -           |
| P(T<=t) one-tail                              | 0.165384928 |             |
| t Critical one-tail                           | 1.770933396 |             |
| P(T<=t) two-tail                              | 0.330769855 |             |
| t Critical two-tail                           | 2.160368656 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| SODIUM  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 3.942833333 | 6.731285714 |
| Variance                                      | 4.001013767 | 200.2569059 |
| Observations                                  | 6           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 14          |             |
| t Stat  | 0.720674695 | -           |
| P(T<=t) one-tail                              | 0.241485303 |             |
| t Critical one-tail                           | 1.761310136 |             |
| P(T<=t) two-tail                              | 0.482970606 |             |
| t Critical two-tail                           | 2.144786688 |             |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| IRON  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 4.8415            | 6.180571429       |
| Variance                                      | 6.6272107         | 3.744984418       |
| Observations                                  | 6                 | 14                |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 8                 |                   |
| t Stat  | 1.143197606       | -                 |
| P(T<=t) one-tail                              | 0.143005628       |                   |
| t Critical one-tail                           | 1.859548038       |                   |
| P(T<=t) two-tail                              | 0.286011257       |                   |
| t Critical two-tail                           | 2.306004135       |                   |

### North Downs flint vs Southwestern Chalk flint

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MAGNESIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.747333333 | 1.5015     |
| Variance                                      | 1.143990667 | 1.7653205  |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | 0.727950146 |            |
| P(T<=t) one-tail                              | 0.299706938 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.599413876 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| ALUMINIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 1.451833333 | 2.721      |
| Variance                                      | 0.339682167 | 0.868562   |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | -1.81144223 |            |
| P(T<=t) one-tail                              | 0.160559618 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.321119237 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CHROMIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.969833333 | 0.8675     |
| Variance                                      | 0.076792967 | 8.45E-05   |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 5           |            |
| t Stat  | 0.903059535 |            |
| P(T<=t) one-tail                              | 0.203946415 |            |
| t Critical one-tail                           | 2.015048373 |            |
| P(T<=t) two-tail                              | 0.407892831 |            |
| t Critical two-tail                           | 2.570581836 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MANGANESE                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.038333333 | 0.0495     |
| Variance                                      | 7.62667E-05 | 0.0003645  |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | -0.79974136 |            |
| P(T<=t) one-tail                              | 0.285273494 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.570546987 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COBALT  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.002166667 | 0.51       |
| Variance                                      | 5.66667E-07 | 0.516128   |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | 0.999671733 |            |
| P(T<=t) one-tail                              | 0.250052254 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.500104508 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COPPER  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.122       | 0.1175     |
| Variance                                      | 0.0156216   | 0.0022445  |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 5           |            |
| t Stat  | 0.073722462 |            |
| P(T<=t) one-tail                              | 0.472044841 |            |
| t Critical one-tail                           | 2.015048373 |            |
| P(T<=t) two-tail                              | 0.944089682 |            |
| t Critical two-tail                           | 2.570581836 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| RUBIDIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.003166667 | 0.028      |
| Variance                                      | 6.16667E-06 | 0.00125    |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | 0.992517599 | -          |
| P(T<=t) one-tail                              | 0.251195328 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.502390655 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| STRONTIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.019166667 | 0.5305     |
| Variance                                      | 0.000417367 | 0.4930245  |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | 1.029730522 | -          |
| P(T<=t) one-tail                              | 0.245337882 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.490675765 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CADMIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0           | 0.007      |
| Variance                                      | 0           | 0.000098   |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | -1          |            |
| P(T<=t) one-tail                              | 0.25        |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.5         |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| BARIUM  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.141833333 | 0.1025     |
| Variance                                      | 0.034784167 | 0.0078125  |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 4           |            |
| t Stat  | 0.399295174 |            |
| P(T<=t) one-tail                              | 0.355038295 |            |
| t Critical one-tail                           | 2.131846786 |            |
| P(T<=t) two-tail                              | 0.71007659  |            |
| t Critical two-tail                           | 2.776445105 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| LEAD  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.002166667 | 0.2205     |
| Variance                                      | 2.16667E-06 | 0.0937445  |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | 1.008464168 |            |
| P(T<=t) one-tail                              | 0.248658571 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.497317142 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| SODIUM  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 7.054666667 | 30.473     |
| Variance                                      | 36.70358947 | 1407.3635  |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | 0.878998823 |            |
| P(T<=t) one-tail                              | 0.270469817 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.540939634 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| IRON  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 8.102666667       | 6.49              |
| Variance                                      | 9.980155067       | 0.003528          |
| Observations                                  | 6                 | 2                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 5                 |                   |
| t Stat  | 1.249745053       |                   |
| P(T<=t) one-tail                              | 0.133350922       |                   |
| t Critical one-tail                           | 2.015048373       |                   |
| P(T<=t) two-tail                              | 0.266701844       |                   |
| t Critical two-tail                           | 2.570581836       |                   |

**North Downs flint vs Salisbury Plain/Pewsey flint**

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| MAGNESIUM                                     |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.417666667       | 0.747333333       |
| Variance                                      | 0.060982267       | 1.143990667       |
| Observations                                  | 6                 | 6                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 6                 |                   |
| t Stat  | 0.735634377       | -                 |
| P(T<=t) one-tail                              | 0.244849932       |                   |
| t Critical one-tail                           | 1.943180281       |                   |
| P(T<=t) two-tail                              | 0.489699865       |                   |
| t Critical two-tail                           | 2.446911851       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| ALUMINIUM                                     |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 1.5765            | 1.451833333       |
| Variance                                      | 0.5169111         | 0.339682167       |
| Observations                                  | 6                 | 6                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 10                |                   |
| t Stat  | 0.329942792       |                   |
| P(T<=t) one-tail                              | 0.374125428       |                   |
| t Critical one-tail                           | 1.812461123       |                   |
| P(T<=t) two-tail                              | 0.748250855       |                   |
| t Critical two-tail                           | 2.228138852       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| CHROMIUM                                      |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.7685            | 0.969833333       |
| Variance                                      | 0.0687291         | 0.076792967       |
| Observations                                  | 6                 | 6                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 10                |                   |
| t Stat  | -1.29278672       |                   |
| P(T<=t) one-tail                              | 0.112577278       |                   |
| t Critical one-tail                           | 1.812461123       |                   |
| P(T<=t) two-tail                              | 0.225154555       |                   |
| t Critical two-tail                           | 2.228138852       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MANGANESE                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.029166667 | 0.038333333 |
| Variance                                      | 4.45667E-05 | 7.62667E-05 |
| Observations                                  | 6           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 9           |             |
| t Stat  | -2.04264872 |             |
| P(T<=t) one-tail                              | 0.035729201 |             |
| t Critical one-tail                           | 1.833112933 |             |
| P(T<=t) two-tail                              | 0.071458401 |             |
| t Critical two-tail                           | 2.262157163 |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| COBALT  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.002166667  | 0.002166667 |
| Variance                                      | 2.16667E-06  | 5.66667E-07 |
| Observations                                  | 6            | 6           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 7            |             |
| t Stat  | -6.42539E-16 |             |
| P(T<=t) one-tail                              | 0.5          |             |
| t Critical one-tail                           | 1.894578605  |             |
| P(T<=t) two-tail                              | 1            |             |
| t Critical two-tail                           | 2.364624252  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COPPER  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.1425      | 0.122      |
| Variance                                      | 0.0042163   | 0.0156216  |
| Observations                                  | 6           | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 8           |            |
| t Stat  | 0.356518145 |            |
| P(T<=t) one-tail                              | 0.365336353 |            |
| t Critical one-tail                           | 1.859548038 |            |
| P(T<=t) two-tail                              | 0.730672705 |            |
| t Critical two-tail                           | 2.306004135 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| RUBIDIUM                                      |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.003       | 0.003166667 |
| Variance                                      | 0.0000056   | 6.16667E-06 |
| Observations                                  | 6           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 10          |             |
| t Stat  | -0.11901389 |             |
| P(T<=t) one-tail                              | 0.453810622 |             |
| t Critical one-tail                           | 1.812461123 |             |
| P(T<=t) two-tail                              | 0.907621244 |             |
| t Critical two-tail                           | 2.228138852 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| STRONTIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.014666667 | 0.019166667 |
| Variance                                      | 2.62667E-05 | 0.000417367 |
| Observations                                  | 6           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 6           |             |
| t Stat  | 0.523330509 |             |
| P(T<=t) one-tail                              | 0.309750557 |             |
| t Critical one-tail                           | 1.943180281 |             |
| P(T<=t) two-tail                              | 0.619501114 |             |
| t Critical two-tail                           | 2.446911851 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CADMIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.000166667 | 0          |
| Variance                                      | 1.66667E-07 | 0          |
| Observations                                  | 6           | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 5           |            |
| t Stat  | 1           |            |
| P(T<=t) one-tail                              | 0.181608734 |            |
| t Critical one-tail                           | 2.015048373 |            |
| P(T<=t) two-tail                              | 0.363217468 |            |
| t Critical two-tail                           | 2.570581836 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| BARIUM  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.059666667 | 0.141833333 |
| Variance                                      | 0.002996267 | 0.034784167 |
| Observations                                  | 6           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 6           |             |
| t Stat  | 1.035470729 |             |
| P(T<=t) one-tail                              | 0.170183697 |             |
| t Critical one-tail                           | 1.943180281 |             |
| P(T<=t) two-tail                              | 0.340367394 |             |
| t Critical two-tail                           | 2.446911851 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| LEAD  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.005833333 | 0.002166667 |
| Variance                                      | 1.17667E-05 | 2.16667E-06 |
| Observations                                  | 6           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 7           |             |
| t Stat  | 2.406132516 |             |
| P(T<=t) one-tail                              | 0.023520225 |             |
| t Critical one-tail                           | 1.894578605 |             |
| P(T<=t) two-tail                              | 0.04704045  |             |
| t Critical two-tail                           | 2.364624252 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| SODIUM  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 3.942833333 | 7.054666667 |
| Variance                                      | 4.001013767 | 36.70358947 |
| Observations                                  | 6           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 6           |             |
| t Stat  | -1.19473116 |             |
| P(T<=t) one-tail                              | 0.138636215 |             |
| t Critical one-tail                           | 1.943180281 |             |
| P(T<=t) two-tail                              | 0.27727243  |             |
| t Critical two-tail                           | 2.446911851 |             |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| IRON  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 4.8415            | 8.102666667       |
| Variance                                      | 6.6272107         | 9.980155067       |
| Observations                                  | 6                 | 6                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 10                |                   |
| t Stat  | 1.960190339       | -                 |
| P(T<=t) one-tail                              | 0.039205732       |                   |
| t Critical one-tail                           | 1.812461123       |                   |
| P(T<=t) two-tail                              | 0.078411464       |                   |
| t Critical two-tail                           | 2.228138852       |                   |

**Southwestern Chalk flint vs Salisbury Plain/Pewsey flint**

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MAGNESIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.417666667 | 1.5015     |
| Variance                                      | 0.060982267 | 1.7653205  |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | 1.147042699 | -          |
| P(T<=t) one-tail                              | 0.228234167 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.456468334 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| ALUMINIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 1.5765      | 2.721      |
| Variance                                      | 0.5169111   | 0.868562   |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | -1.58647578 |            |
| P(T<=t) one-tail                              | 0.179024313 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.358048627 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CHROMIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.7685      | 0.8675     |
| Variance                                      | 0.0687291   | 8.45E-05   |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 5           |            |
| t Stat  | 0.923296183 | -          |
| P(T<=t) one-tail                              | 0.199110174 |            |
| t Critical one-tail                           | 2.015048373 |            |
| P(T<=t) two-tail                              | 0.398220347 |            |
| t Critical two-tail                           | 2.570581836 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MANGANESE                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.029166667 | 0.0495     |
| Variance                                      | 4.45667E-05 | 0.0003645  |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | 1.476387481 | -          |
| P(T<=t) one-tail                              | 0.189505127 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.379010253 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COBALT  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.002166667 | 0.51       |
| Variance                                      | 2.16667E-06 | 0.516128   |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | 0.999671217 | -          |
| P(T<=t) one-tail                              | 0.250052336 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.500104672 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COPPER  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.1425      | 0.1175     |
| Variance                                      | 0.0042163   | 0.0022445  |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 2           |            |
| t Stat  | 0.58521108  |            |
| P(T<=t) one-tail                              | 0.308818731 |            |
| t Critical one-tail                           | 2.91998558  |            |
| P(T<=t) two-tail                              | 0.617637462 |            |
| t Critical two-tail                           | 4.30265273  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| RUBIDIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.003       | 0.028      |
| Variance                                      | 0.0000056   | 0.00125    |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | -           |            |
|   | 0.999254169 |            |
| P(T<=t) one-tail                              | 0.250118747 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.500237494 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| STRONTIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.014666667 | 0.5305     |
| Variance                                      | 2.62667E-05 | 0.4930245  |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | -           |            |
|   | 1.038930016 |            |
| P(T<=t) one-tail                              | 0.243923134 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.487846269 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CADMIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.000166667 | 0.007      |
| Variance                                      | 1.66667E-07 | 0.000098   |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | -           |            |
|   | 0.975913896 |            |
| P(T<=t) one-tail                              | 0.253879959 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.507759918 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |                    |                   |
|---|--------------------|-------------------|
| <b>BARIUM</b>                                 |                    |                   |
|   | <i>Variable 1</i>  | <i>Variable 2</i> |
| Mean  | 0.059666667        | 0.1025            |
| Variance                                      | 0.002996267        | 0.0078125         |
| Observations                                  | 6                  | 2                 |
| Hypothesized Mean Difference                  | 0                  |                   |
| df  | 1                  |                   |
| t Stat  | -0.64532423        |                   |
| P(T<=t) one-tail                              | 0.317582593        |                   |
| t Critical one-tail                           | 6.313751515        |                   |
| P(T<=t) two-tail                              | <b>0.635165186</b> |                   |
| t Critical two-tail                           | 12.70620474        |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                    |                   |
|---|--------------------|-------------------|
| <b>LEAD</b>                                   |                    |                   |
|   | <i>Variable 1</i>  | <i>Variable 2</i> |
| Mean  | 0.005833333        | 0.2205            |
| Variance                                      | 1.17667E-05        | 0.0937445         |
| Observations                                  | 6                  | 2                 |
| Hypothesized Mean Difference                  | 0                  |                   |
| df  | 1                  |                   |
| t Stat  | -0.991511206       |                   |
| P(T<=t) one-tail                              | 0.251356784        |                   |
| t Critical one-tail                           | 6.313751515        |                   |
| P(T<=t) two-tail                              | <b>0.502713568</b> |                   |
| t Critical two-tail                           | 12.70620474        |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                    |                   |
|---|--------------------|-------------------|
| <b>SODIUM</b>                                 |                    |                   |
|   | <i>Variable 1</i>  | <i>Variable 2</i> |
| Mean  | 3.942833333        | 30.473            |
| Variance                                      | 4.001013767        | 1407.3635         |
| Observations                                  | 6                  | 2                 |
| Hypothesized Mean Difference                  | 0                  |                   |
| df  | 1                  |                   |
| t Stat  | -0.999645836       |                   |
| P(T<=t) one-tail                              | 0.250056377        |                   |
| t Critical one-tail                           | 6.313751515        |                   |
| P(T<=t) two-tail                              | <b>0.500112754</b> |                   |
| t Critical two-tail                           | 12.70620474        |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| IRON  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 4.8415            | 6.49              |
| Variance                                      | 6.6272107         | 0.003528          |
| Observations                                  | 6                 | 2                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 5                 |                   |
| t Stat  | 1.567301931       | -                 |
| P(T<=t) one-tail                              | 0.088913913       |                   |
| t Critical one-tail                           | 2.015048373       |                   |
| P(T<=t) two-tail                              | 0.177827826       |                   |
| t Critical two-tail                           | 2.570581836       |                   |

**Inland vs coastal flint from Northern Ireland Chalk formation**

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| BERYLLIUM                                     |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.000422222  | 0.000888889 |
| Variance                                      | 5.22222E-07  | 1.36111E-06 |
| Observations                                  | 45           | 9           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 9            |             |
| t Stat  | -1.156450086 |             |
| P(T<=t) one-tail                              | 0.13863531   |             |
| t Critical one-tail                           | 1.833112933  |             |
| P(T<=t) two-tail                              | 0.27727062   |             |
| t Critical two-tail                           | 2.262157163  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| LEAD  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.051169811 | 0.029090909 |
| Variance                                      | 0.063708259 | 0.007158891 |
| Observations                                  | 53          | 11          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 49          |             |
| t Stat  | 0.512928985 |             |
| P(T<=t) one-tail                              | 0.305152903 |             |
| t Critical one-tail                           | 1.676550893 |             |
| P(T<=t) two-tail                              | 0.610305806 |             |
| t Critical two-tail                           | 2.009575237 |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| CALCIUM                                       |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 25.08124444  | 26.92625    |
| Variance                                      | 197.6065005  | 5.476855357 |
| Observations                                  | 45           | 8           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 51           |             |
| t Stat  | -0.818922407 |             |
| P(T<=t) one-tail                              | 0.20832052   |             |
| t Critical one-tail                           | 1.67528495   |             |
| P(T<=t) two-tail                              | 0.416641039  |             |
| t Critical two-tail                           | 2.00758377   |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| NICKEL  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.06725     | 0.047555556 |
| Variance                                      | 0.03602675  | 0.001770528 |
| Observations                                  | 44          | 9           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 50          |             |
| t Stat  | 0.618017177 |             |
| P(T<=t) one-tail                              | 0.269684505 |             |
| t Critical one-tail                           | 1.675905025 |             |
| P(T<=t) two-tail                              | 0.539369009 |             |
| t Critical two-tail                           | 2.008559112 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| SODIUM  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 9.815       | 8.327454545 |
| Variance                                      | 327.3691907 | 268.6963411 |
| Observations                                  | 55          | 11          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 15          |             |
| t Stat  | 0.269887482 |             |
| P(T<=t) one-tail                              | 0.395462227 |             |
| t Critical one-tail                           | 1.753050356 |             |
| P(T<=t) two-tail                              | 0.790924454 |             |
| t Critical two-tail                           | 2.131449546 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MAGNESIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.815127273 | 0.666727273 |
| Variance                                      | 0.704154854 | 0.394451218 |
| Observations                                  | 55          | 11          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 18          |             |
| t Stat  | 0.672726982 |             |
| P(T<=t) one-tail                              | 0.25483296  |             |
| t Critical one-tail                           | 1.734063607 |             |
| P(T<=t) two-tail                              | 0.50966592  |             |
| t Critical two-tail                           | 2.10092204  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| ALUMINIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 1.587836364  | 2.444      |
| Variance                                      | 1.108518102  | 1.7309644  |
| Observations                                  | 55           | 11         |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 13           |            |
| t Stat  | -2.032071168 |            |
| P(T<=t) one-tail                              | 0.031550829  |            |
| t Critical one-tail                           | 1.770933396  |            |
| P(T<=t) two-tail                              | 0.063101658  |            |
| t Critical two-tail                           | 2.160368656  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| CHROMIUM                                      |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.938309091  | 0.992818182 |
| Variance                                      | 0.146375218  | 0.084575364 |
| Observations                                  | 55           | 11          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 18           |             |
| t Stat  | -0.535794175 |             |
| P(T<=t) one-tail                              | 0.299329872  |             |
| t Critical one-tail                           | 1.734063607  |             |
| P(T<=t) two-tail                              | 0.598659743  |             |
| t Critical two-tail                           | 2.10092204   |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| MANGANESE                                     |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.0464       | 0.088090909 |
| Variance                                      | 0.000288763  | 0.001725291 |
| Observations                                  | 55           | 11          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 11           |             |
| t Stat  | -3.274588545 |             |
| P(T<=t) one-tail                              | 0.003702295  |             |
| t Critical one-tail                           | 1.795884819  |             |
| P(T<=t) two-tail                              | 0.007404589  |             |
| t Critical two-tail                           | 2.20098516   |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| IRON  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 6.361163636  | 6.597545455 |
| Variance                                      | 7.288315139  | 3.166435073 |
| Observations                                  | 55           | 11          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 21           |             |
| t Stat  | -0.364583401 |             |
| P(T<=t) one-tail                              | 0.359534014  |             |
| t Critical one-tail                           | 1.720742903  |             |
| P(T<=t) two-tail                              | 0.719068028  |             |
| t Critical two-tail                           | 2.079613845  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| COBALT  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.057527273  | 0.093363636 |
| Variance                                      | 0.053423513  | 0.093233855 |
| Observations                                  | 55           | 11          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 12           |             |
| t Stat  | -0.368700497 |             |
| P(T<=t) one-tail                              | 0.359386852  |             |
| t Critical one-tail                           | 1.782287556  |             |
| P(T<=t) two-tail                              | 0.718773705  |             |
| t Critical two-tail                           | 2.17881283   |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COPPER  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.076854545 | 0.087272727 |
| Variance                                      | 0.004416312 | 0.001808418 |
| Observations                                  | 55          | 11          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 21          |             |
| t Stat  | -0.66600351 |             |
| P(T<=t) one-tail                              | 0.256329584 |             |
| t Critical one-tail                           | 1.720742903 |             |
| P(T<=t) two-tail                              | 0.512659167 |             |
| t Critical two-tail                           | 2.079613845 |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| RUBIDIUM                                      |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.004781818  | 0.006818182 |
| Variance                                      | 0.000126766  | 0.000216364 |
| Observations                                  | 55           | 11          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 12           |             |
| t Stat  | -0.434408351 |             |
| P(T<=t) one-tail                              | 0.335850256  |             |
| t Critical one-tail                           | 1.782287556  |             |
| P(T<=t) two-tail                              | 0.671700512  |             |
| t Critical two-tail                           | 2.17881283   |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| STRONTIUM                                     |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.1098       | 0.116090909 |
| Variance                                      | 0.052947237  | 0.087135291 |
| Observations                                  | 55           | 11          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 13           |             |
| t Stat  | -0.066743272 |             |
| P(T<=t) one-tail                              | 0.473900822  |             |
| t Critical one-tail                           | 1.770933396  |             |
| P(T<=t) two-tail                              | 0.947801644  |             |
| t Critical two-tail                           | 2.160368656  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| BARIUM  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.045309091  | 0.109636364 |
| Variance                                      | 0.014432069  | 0.004972855 |
| Observations                                  | 55           | 11          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 24           |             |
| t Stat  | -2.406580653 |             |
| P(T<=t) one-tail                              | 0.012079555  |             |
| t Critical one-tail                           | 1.71088208   |             |
| P(T<=t) two-tail                              | 0.02415911   |             |
| t Critical two-tail                           | 2.063898562  |             |

**Ballintoy vs Garron Point flint from Northern Ireland Chalk formation**

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| BERYLLIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0           | 0.000166667 |
| Variance                                      | 0           | 1.66667E-07 |
| Observations                                  | 3           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 5           |             |
| t Stat  | -1          |             |
| P(T<=t) one-tail                              | 0.181608734 |             |
| t Critical one-tail                           | 2.015048373 |             |
| P(T<=t) two-tail                              | 0.363217468 |             |
| t Critical two-tail                           | 2.570581836 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| POTASSIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 69.75525    | 0.683       |
| Variance                                      | 2145.428657 | 0.205668667 |
| Observations                                  | 4           | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | 2.982330326 |             |
| P(T<=t) one-tail                              | 0.029243962 |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.058487924 |             |
| t Critical two-tail                           | 3.182446305 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CALCIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 26.34333333 | 13.86625    |
| Variance                                      | 0.829733333 | 180.4563563 |
| Observations                                  | 3           | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | 1.85195229  |             |
| P(T<=t) one-tail                              | 0.080555947 |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.161111894 |             |
| t Critical two-tail                           | 3.182446305 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| NICKEL  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.0665      | 0.0438     |
| Variance                                      | 0.000809667 | 0.0003802  |
| Observations                                  | 4           | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 5           |            |
| t Stat  | 1.360338681 |            |
| P(T<=t) one-tail                              | 0.115919028 |            |
| t Critical one-tail                           | 2.015048373 |            |
| P(T<=t) two-tail                              | 0.231838055 |            |
| t Critical two-tail                           | 2.570581836 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| MOLYBDENUM                                    |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.0515       | 0.0875     |
| Variance                                      | 0.001196333  | 0.028113   |
| Observations                                  | 4            | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -0.420561513 |            |
| P(T<=t) one-tail                              | 0.351191948  |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.702383897  |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| SODIUM  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 43.04425    | 2.678      |
| Variance                                      | 661.8950323 | 6.515662   |
| Observations                                  | 4           | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | 3.127760123 |            |
| P(T<=t) one-tail                              | 0.02607807  |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.052156139 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MAGNESIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 2.02075     | 0.328333333 |
| Variance                                      | 0.867402917 | 0.074391867 |
| Observations                                  | 4           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | 3.534705329 |             |
| P(T<=t) one-tail                              | 0.019254635 |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.038509271 |             |
| t Critical two-tail                           | 3.182446305 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| ALUMINIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 2.59075     | 1.024333333 |
| Variance                                      | 2.844280917 | 1.433846667 |
| Observations                                  | 4           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 5           |             |
| t Stat  | 1.607071805 |             |
| P(T<=t) one-tail                              | 0.084474474 |             |
| t Critical one-tail                           | 2.015048373 |             |
| P(T<=t) two-tail                              | 0.168948948 |             |
| t Critical two-tail                           | 2.570581836 |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| CHROMIUM                                      |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.7695       | 1.010666667 |
| Variance                                      | 0.010289667  | 0.110722267 |
| Observations                                  | 4            | 6           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 6            |             |
| t Stat  | -1.663173785 |             |
| P(T<=t) one-tail                              | 0.073668596  |             |
| t Critical one-tail                           | 1.943180281  |             |
| P(T<=t) two-tail                              | 0.147337192  |             |
| t Critical two-tail                           | 2.446911851  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MANGANESE                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.05375     | 0.042      |
| Variance                                      | 0.000523583 | 0.0002028  |
| Observations                                  | 4           | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 5           |            |
| t Stat  | 0.915580555 |            |
| P(T<=t) one-tail                              | 0.200943248 |            |
| t Critical one-tail                           | 2.015048373 |            |
| P(T<=t) two-tail                              | 0.401886496 |            |
| t Critical two-tail                           | 2.570581836 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| IRON  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 5.8175       | 6.851833333 |
| Variance                                      | 0.554041667  | 5.692144167 |
| Observations                                  | 4            | 6           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 6            |             |
| t Stat  | -0.991986078 |             |
| P(T<=t) one-tail                              | 0.179754258  |             |
| t Critical one-tail                           | 1.943180281  |             |
| P(T<=t) two-tail                              | 0.359508515  |             |
| t Critical two-tail                           | 2.446911851  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COBALT  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.75875     | 0.001833333 |
| Variance                                      | 0.254528917 | 5.66667E-07 |
| Observations                                  | 4           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | 3.000607407 |             |
| P(T<=t) one-tail                              | 0.028820494 |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.057640987 |             |
| t Critical two-tail                           | 3.182446305 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COPPER  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.13475     | 0.039      |
| Variance                                      | 0.001414917 | 0.0008728  |
| Observations                                  | 4           | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 5           |            |
| t Stat  | 4.285517834 |            |
| P(T<=t) one-tail                              | 0.003911167 |            |
| t Critical one-tail                           | 2.015048373 |            |
| P(T<=t) two-tail                              | 0.007822335 |            |
| t Critical two-tail                           | 2.570581836 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| RUBIDIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.038       | 0.0015     |
| Variance                                      | 0.000642    | 0.0000007  |
| Observations                                  | 4           | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | 2.880033638 |            |
| P(T<=t) one-tail                              | 0.03176364  |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.06352728  |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| STRONTIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.77        | 0.0245     |
| Variance                                      | 0.244228667 | 5.91E-05   |
| Observations                                  | 4           | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | 3.016784555 |            |
| P(T<=t) one-tail                              | 0.028452082 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.056904164 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CADMIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.011       | 0.000333333 |
| Variance                                      | 5.46667E-05 | 2.66667E-07 |
| Observations                                  | 4           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | 2.880662629 |             |
| P(T<=t) one-tail                              | 0.031747335 |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.063494669 |             |
| t Critical two-tail                           | 3.182446305 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| BARIUM  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.26825     | 0.026833333 |
| Variance                                      | 0.164972917 | 0.002518967 |
| Observations                                  | 4           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | 1.182746531 |             |
| P(T<=t) one-tail                              | 0.16105334  |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.322106679 |             |
| t Critical two-tail                           | 3.182446305 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| LEAD  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.608       | 0.001333333 |
| Variance                                      | 0.655051333 | 1.86667E-06 |
| Observations                                  | 4           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | 1.499139506 |             |
| P(T<=t) one-tail                              | 0.115395258 |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.230790515 |             |
| t Critical two-tail                           | 3.182446305 |             |

### Ballintoy vs White Rocks flint from Northern Ireland Chalk formation

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| BERYLLIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.000461538 | 0.000166667 |
| Variance                                      | 6.02564E-07 | 1.66667E-07 |
| Observations                                  | 13          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 16          |             |
| t Stat  | 1.083027702 |             |
| P(T<=t) one-tail                              | 0.147424089 |             |
| t Critical one-tail                           | 1.745883676 |             |
| P(T<=t) two-tail                              | 0.294848178 |             |
| t Critical two-tail                           | 2.119905299 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| POTASSIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.533333333 | 0.683       |
| Variance                                      | 0.122270267 | 0.205668667 |
| Observations                                  | 6           | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 5           |             |
| t Stat  | -0.55856837 |             |
| P(T<=t) one-tail                              | 0.30027258  |             |
| t Critical one-tail                           | 2.015048373 |             |
| P(T<=t) two-tail                              | 0.600545159 |             |
| t Critical two-tail                           | 2.570581836 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CALCIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 22.98706667 | 13.86625    |
| Variance                                      | 86.2263655  | 180.4563563 |
| Observations                                  | 15          | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 4           |             |
| t Stat  | 1.278894788 |             |
| P(T<=t) one-tail                              | 0.13504493  |             |
| t Critical one-tail                           | 2.131846786 |             |
| P(T<=t) two-tail                              | 0.27008986  |             |
| t Critical two-tail                           | 2.776445105 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| NICKEL  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.03        | 0.0438     |
| Variance                                      | 0.000997818 | 0.0003802  |
| Observations                                  | 12          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 12          |            |
| t Stat  | -1.09375268 |            |
| P(T<=t) one-tail                              | 0.147766597 |            |
| t Critical one-tail                           | 1.782287556 |            |
| P(T<=t) two-tail                              | 0.295533193 |            |
| t Critical two-tail                           | 2.17881283  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MOLYBDENUM                                    |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.022888889 | 0.0875     |
| Variance                                      | 0.001054611 | 0.028113   |
| Observations                                  | 9           | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | -0.76435138 |            |
| P(T<=t) one-tail                              | 0.250139259 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.500278518 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CAESIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.004555556 | 0.0034     |
| Variance                                      | 9.67778E-05 | 0.0000118  |
| Observations                                  | 9           | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 11          |            |
| t Stat  | 0.319108497 |            |
| P(T<=t) one-tail                              | 0.377811062 |            |
| t Critical one-tail                           | 1.795884819 |            |
| P(T<=t) two-tail                              | 0.755622124 |            |
| t Critical two-tail                           | 2.20098516  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| LEAD  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.004692308 | 0.001333333 |
| Variance                                      | 1.60641E-05 | 1.86667E-06 |
| Observations                                  | 13          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 16          |             |
| t Stat  | 2.700772603 |             |
| P(T<=t) one-tail                              | 0.007873533 |             |
| t Critical one-tail                           | 1.745883676 |             |
| P(T<=t) two-tail                              | 0.015747066 |             |
| t Critical two-tail                           | 2.119905299 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| SODIUM  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 4.5438      | 2.678      |
| Variance                                      | 12.7573916  | 6.515662   |
| Observations                                  | 15          | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 13          |            |
| t Stat  | 1.340798346 |            |
| P(T<=t) one-tail                              | 0.101472632 |            |
| t Critical one-tail                           | 1.770933396 |            |
| P(T<=t) two-tail                              | 0.202945264 |            |
| t Critical two-tail                           | 2.160368656 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MAGNESIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.606066667 | 0.328333333 |
| Variance                                      | 0.067756495 | 0.074391867 |
| Observations                                  | 15          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 9           |             |
| t Stat  | 2.135415806 |             |
| P(T<=t) one-tail                              | 0.03073891  |             |
| t Critical one-tail                           | 1.833112933 |             |
| P(T<=t) two-tail                              | 0.06147782  |             |
| t Critical two-tail                           | 2.262157163 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| ALUMINIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 1.787533333 | 1.024333333 |
| Variance                                      | 0.64906841  | 1.433846667 |
| Observations                                  | 15          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 7           |             |
| t Stat  | 1.436563131 |             |
| P(T<=t) one-tail                              | 0.096995204 |             |
| t Critical one-tail                           | 1.894578605 |             |
| P(T<=t) two-tail                              | 0.193990408 |             |
| t Critical two-tail                           | 2.364624252 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CHROMIUM                                      |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.895666667 | 1.010666667 |
| Variance                                      | 0.161424381 | 0.110722267 |
| Observations                                  | 15          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 11          |             |
| t Stat  | -0.67280993 |             |
| P(T<=t) one-tail                              | 0.257476869 |             |
| t Critical one-tail                           | 1.795884819 |             |
| P(T<=t) two-tail                              | 0.514953738 |             |
| t Critical two-tail                           | 2.20098516  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MANGANESE                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.0468      | 0.042      |
| Variance                                      | 0.000355029 | 0.0002028  |
| Observations                                  | 15          | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 12          |            |
| t Stat  | 0.633178321 |            |
| P(T<=t) one-tail                              | 0.269248669 |            |
| t Critical one-tail                           | 1.782287556 |            |
| P(T<=t) two-tail                              | 0.538497338 |            |
| t Critical two-tail                           | 2.17881283  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| IRON  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 6.018666667 | 6.851833333 |
| Variance                                      | 7.639789381 | 5.692144167 |
| Observations                                  | 15          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 11          |             |
| t Stat  | -0.69000405 |             |
| P(T<=t) one-tail                              | 0.252244506 |             |
| t Critical one-tail                           | 1.795884819 |             |
| P(T<=t) two-tail                              | 0.504489011 |             |
| t Critical two-tail                           | 2.20098516  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COBALT  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.002       | 0.001833333 |
| Variance                                      | 3.28571E-06 | 5.66667E-07 |
| Observations                                  | 15          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 19          |             |
| t Stat  | 0.297670279 |             |
| P(T<=t) one-tail                              | 0.384592591 |             |
| t Critical one-tail                           | 1.729132812 |             |
| P(T<=t) two-tail                              | 0.769185182 |             |
| t Critical two-tail                           | 2.093024054 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COPPER  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.089733333 | 0.039      |
| Variance                                      | 0.006897067 | 0.0008728  |
| Observations                                  | 15          | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 19          |            |
| t Stat  | 2.062141321 |            |
| P(T<=t) one-tail                              | 0.026569965 |            |
| t Critical one-tail                           | 1.729132812 |            |
| P(T<=t) two-tail                              | 0.053139929 |            |
| t Critical two-tail                           | 2.093024054 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| RUBIDIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.0028      | 0.0015     |
| Variance                                      | 4.31429E-06 | 0.0000007  |
| Observations                                  | 15          | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 19          |            |
| t Stat  | 2.044556679 |            |
| P(T<=t) one-tail                              | 0.02750314  |            |
| t Critical one-tail                           | 1.729132812 |            |
| P(T<=t) two-tail                              | 0.055006279 |            |
| t Critical two-tail                           | 2.093024054 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| STRONTIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.0562      | 0.0245     |
| Variance                                      | 0.0014416   | 5.91E-05   |
| Observations                                  | 15          | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 17          |            |
| t Stat  | 3.079605727 |            |
| P(T<=t) one-tail                              | 0.003397476 |            |
| t Critical one-tail                           | 1.739606726 |            |
| P(T<=t) two-tail                              | 0.006794952 |            |
| t Critical two-tail                           | 2.109815578 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CADMIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.000533333 | 0.000333333 |
| Variance                                      | 4.09524E-07 | 2.66667E-07 |
| Observations                                  | 15          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 11          |             |
| t Stat  | 0.746674041 |             |
| P(T<=t) one-tail                              | 0.235459268 |             |
| t Critical one-tail                           | 1.795884819 |             |
| P(T<=t) two-tail                              | 0.470918536 |             |
| t Critical two-tail                           | 2.20098516  |             |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| BARIUM  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.0328            | 0.026833333       |
| Variance                                      | 0.001717743       | 0.002518967       |
| Observations                                  | 15                | 6                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 8                 |                   |
| t Stat  | 0.2581198         |                   |
| P(T<=t) one-tail                              | 0.401415329       |                   |
| t Critical one-tail                           | 1.859548038       |                   |
| P(T<=t) two-tail                              | 0.802830657       |                   |
| t Critical two-tail                           | 2.306004135       |                   |

**Ballintoy vs White Park Bay flint from Northern Ireland Chalk formation**

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| POTASSIUM                                     |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.598        | 0.683       |
| Variance                                      | 0.173104     | 0.205668667 |
| Observations                                  | 3            | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 5            |             |
| t Stat  | -0.257317742 |             |
| P(T<=t) one-tail                              | 0.403593747  |             |
| t Critical one-tail                           | 2.015048373  |             |
| P(T<=t) two-tail                              | 0.807187494  |             |
| t Critical two-tail                           | 2.570581836  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CALCIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 27.54933333 | 13.86625    |
| Variance                                      | 484.9094235 | 180.4563563 |
| Observations                                  | 6           | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 8           |             |
| t Stat  | 1.219313434 |             |
| P(T<=t) one-tail                              | 0.128726384 |             |
| t Critical one-tail                           | 1.859548038 |             |
| P(T<=t) two-tail                              | 0.257452769 |             |
| t Critical two-tail                           | 2.306004135 |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| NICKEL  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.0258       | 0.0438     |
| Variance                                      | 0.0001247    | 0.0003802  |
| Observations                                  | 5            | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 6            |            |
| t Stat  | -1.791244302 |            |
| P(T<=t) one-tail                              | 0.061720014  |            |
| t Critical one-tail                           | 1.943180281  |            |
| P(T<=t) two-tail                              | 0.123440027  |            |
| t Critical two-tail                           | 2.446911851  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| MOLYBDENUM                                    |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.020166667  | 0.0875     |
| Variance                                      | 0.001032967  | 0.028113   |
| Observations                                  | 6            | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -0.793508289 |            |
| P(T<=t) one-tail                              | 0.24272486   |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.48544972   |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CAESIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.001666667 | 0.0034     |
| Variance                                      | 3.86667E-06 | 0.0000118  |
| Observations                                  | 6           | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 6           |            |
| t Stat  | -1          |            |
| P(T<=t) one-tail                              | 0.177958842 |            |
| t Critical one-tail                           | 1.943180281 |            |
| P(T<=t) two-tail                              | 0.355917684 |            |
| t Critical two-tail                           | 2.446911851 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| BERYLLIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.000625    | 0.000166667 |
| Variance                                      | 0.000001125 | 1.66667E-07 |
| Observations                                  | 8           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 10          |             |
| t Stat  | 1.116880782 |             |
| P(T<=t) one-tail                              | 0.145080722 |             |
| t Critical one-tail                           | 1.812461123 |             |
| P(T<=t) two-tail                              | 0.290161444 |             |
| t Critical two-tail                           | 2.228138852 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| SODIUM  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 4.248875    | 2.678      |
| Variance                                      | 3.182408125 | 6.515662   |
| Observations                                  | 8           | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 9           |            |
| t Stat  | 1.289620833 |            |
| P(T<=t) one-tail                              | 0.114667523 |            |
| t Critical one-tail                           | 1.833112933 |            |
| P(T<=t) two-tail                              | 0.229335045 |            |
| t Critical two-tail                           | 2.262157163 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MAGNESIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.694125    | 0.328333333 |
| Variance                                      | 0.076577554 | 0.074391867 |
| Observations                                  | 8           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 11          |             |
| t Stat  | 2.467803013 |             |
| P(T<=t) one-tail                              | 0.015621529 |             |
| t Critical one-tail                           | 1.795884819 |             |
| P(T<=t) two-tail                              | 0.031243059 |             |
| t Critical two-tail                           | 2.20098516  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| ALUMINIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 1.34375     | 1.024333333 |
| Variance                                      | 0.563129071 | 1.433846667 |
| Observations                                  | 8           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 8           |             |
| t Stat  | 0.574277205 |             |
| P(T<=t) one-tail                              | 0.290781876 |             |
| t Critical one-tail                           | 1.859548038 |             |
| P(T<=t) two-tail                              | 0.581563752 |             |
| t Critical two-tail                           | 2.306004135 |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| CHROMIUM                                      |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.72975      | 1.010666667 |
| Variance                                      | 0.038567929  | 0.110722267 |
| Observations                                  | 8            | 6           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 8            |             |
| t Stat  | -1.841346159 |             |
| P(T<=t) one-tail                              | 0.051416435  |             |
| t Critical one-tail                           | 1.859548038  |             |
| P(T<=t) two-tail                              | 0.102832871  |             |
| t Critical two-tail                           | 2.306004135  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| MANGANESE                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.0375       | 0.042      |
| Variance                                      | 0.000119714  | 0.0002028  |
| Observations                                  | 8            | 6          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 9            |            |
| t Stat  | -0.644408975 |            |
| P(T<=t) one-tail                              | 0.267693571  |            |
| t Critical one-tail                           | 1.833112933  |            |
| P(T<=t) two-tail                              | 0.535387142  |            |
| t Critical two-tail                           | 2.262157163  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| IRON  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 4.72625      | 6.851833333 |
| Variance                                      | 2.576081071  | 5.692144167 |
| Observations                                  | 8            | 6           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 8            |             |
| t Stat  | -1.885630002 |             |
| P(T<=t) one-tail                              | 0.048034916  |             |
| t Critical one-tail                           | 1.859548038  |             |
| P(T<=t) two-tail                              | 0.096069832  |             |
| t Critical two-tail                           | 2.306004135  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COBALT  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.002       | 0.001833333 |
| Variance                                      | 8.57143E-07 | 5.66667E-07 |
| Observations                                  | 8           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 12          |             |
| t Stat  | 0.37120786  |             |
| P(T<=t) one-tail                              | 0.358476782 |             |
| t Critical one-tail                           | 1.782287556 |             |
| P(T<=t) two-tail                              | 0.716953563 |             |
| t Critical two-tail                           | 2.17881283  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COPPER  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.057625    | 0.039      |
| Variance                                      | 0.002543696 | 0.0008728  |
| Observations                                  | 8           | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 12          |            |
| t Stat  | 0.865176688 |            |
| P(T<=t) one-tail                              | 0.201953323 |            |
| t Critical one-tail                           | 1.782287556 |            |
| P(T<=t) two-tail                              | 0.403906647 |            |
| t Critical two-tail                           | 2.17881283  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| RUBIDIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.00175     | 0.0015     |
| Variance                                      | 1.64286E-06 | 0.0000007  |
| Observations                                  | 8           | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 12          |            |
| t Stat  | 0.440550823 |            |
| P(T<=t) one-tail                              | 0.333684808 |            |
| t Critical one-tail                           | 1.782287556 |            |
| P(T<=t) two-tail                              | 0.667369616 |            |
| t Critical two-tail                           | 2.17881283  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| STRONTIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.055375    | 0.0245     |
| Variance                                      | 0.001878268 | 5.91E-05   |
| Observations                                  | 8           | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 8           |            |
| t Stat  | 1.974008497 |            |
| P(T<=t) one-tail                              | 0.041911126 |            |
| t Critical one-tail                           | 1.859548038 |            |
| P(T<=t) two-tail                              | 0.083822253 |            |
| t Critical two-tail                           | 2.306004135 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CADMIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.0005      | 0.000333333 |
| Variance                                      | 5.71429E-07 | 2.66667E-07 |
| Observations                                  | 8           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 12          |             |
| t Stat  | 0.489618247 |             |
| P(T<=t) one-tail                              | 0.316616081 |             |
| t Critical one-tail                           | 1.782287556 |             |
| P(T<=t) two-tail                              | 0.633232161 |             |
| t Critical two-tail                           | 2.17881283  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| BARIUM  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.02275      | 0.026833333 |
| Variance                                      | 0.000863643  | 0.002518967 |
| Observations                                  | 8            | 6           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 8            |             |
| t Stat  | -0.177740779 |             |
| P(T<=t) one-tail                              | 0.43167231   |             |
| t Critical one-tail                           | 1.859548038  |             |
| P(T<=t) two-tail                              | 0.863344621  |             |
| t Critical two-tail                           | 2.306004135  |             |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| LEAD  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.003625          | 0.001333333       |
| Variance                                      | 7.69643E-06       | 1.86667E-06       |
| Observations                                  | 8                 | 6                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 11                |                   |
| t Stat  | 2.030996413       |                   |
| P(T<=t) one-tail                              | 0.033567877       |                   |
| t Critical one-tail                           | 1.795884819       |                   |
| P(T<=t) two-tail                              | 0.067135755       |                   |
| t Critical two-tail                           | 2.20098516        |                   |

**Ballintoy vs Cloughastucan flint from Northern Ireland Chalk formation**

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| POTASSIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 41.6185     | 0.683       |
| Variance                                      | 3222.680045 | 0.205668667 |
| Observations                                  | 2           | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 1           |             |
| t Stat  | 1.019763758 |             |
| P(T<=t) one-tail                              | 0.246885379 |             |
| t Critical one-tail                           | 6.313751515 |             |
| P(T<=t) two-tail                              | 0.493770758 |             |
| t Critical two-tail                           | 12.70620474 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CALCIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 33.144      | 13.86625    |
| Variance                                      | 183.21293   | 180.4563563 |
| Observations                                  | 5           | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 7           |             |
| t Stat  | 2.132036981 |             |
| P(T<=t) one-tail                              | 0.035228974 |             |
| t Critical one-tail                           | 1.894578605 |             |
| P(T<=t) two-tail                              | 0.070457947 |             |
| t Critical two-tail                           | 2.364624252 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| NICKEL  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.36225     | 0.0438     |
| Variance                                      | 0.380036917 | 0.0003802  |
| Observations                                  | 4           | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | 1.032724864 |            |
| P(T<=t) one-tail                              | 0.188845385 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.377690771 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MOLYBDENUM                                    |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.035666667 | 0.0875     |
| Variance                                      | 0.001161333 | 0.028113   |
| Observations                                  | 3           | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | -0.60192584 |            |
| P(T<=t) one-tail                              | 0.294836701 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.589673402 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CAESIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.03325     | 0.0034     |
| Variance                                      | 0.00335425  | 0.0000118  |
| Observations                                  | 4           | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | 1.029357775 |            |
| P(T<=t) one-tail                              | 0.189520089 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.379040178 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CADMIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.00075     | 0.000333333 |
| Variance                                      | 0.00000025  | 2.66667E-07 |
| Observations                                  | 4           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 7           |             |
| t Stat  | 1.274117979 |             |
| P(T<=t) one-tail                              | 0.12164459  |             |
| t Critical one-tail                           | 1.894578605 |             |
| P(T<=t) two-tail                              | 0.24328918  |             |
| t Critical two-tail                           | 2.364624252 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| SODIUM  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 22.356      | 2.678      |
| Variance                                      | 1506.30376  | 6.515662   |
| Observations                                  | 5           | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 4           |            |
| t Stat  | 1.131692253 |            |
| P(T<=t) one-tail                              | 0.160505692 |            |
| t Critical one-tail                           | 2.131846786 |            |
| P(T<=t) two-tail                              | 0.321011384 |            |
| t Critical two-tail                           | 2.776445105 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MAGNESIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 1.2456      | 0.328333333 |
| Variance                                      | 0.9438343   | 0.074391867 |
| Observations                                  | 5           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 5           |             |
| t Stat  | 2.045120285 |             |
| P(T<=t) one-tail                              | 0.04811951  |             |
| t Critical one-tail                           | 2.015048373 |             |
| P(T<=t) two-tail                              | 0.09623902  |             |
| t Critical two-tail                           | 2.570581836 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| ALUMINIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 2.4336      | 1.024333333 |
| Variance                                      | 1.4293483   | 1.433846667 |
| Observations                                  | 5           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 9           |             |
| t Stat  | 1.945261619 |             |
| P(T<=t) one-tail                              | 0.041800175 |             |
| t Critical one-tail                           | 1.833112933 |             |
| P(T<=t) two-tail                              | 0.083600349 |             |
| t Critical two-tail                           | 2.262157163 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CHROMIUM                                      |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.886       | 1.010666667 |
| Variance                                      | 0.0595685   | 0.110722267 |
| Observations                                  | 5           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 9           |             |
| t Stat  | -0.71539593 |             |
| P(T<=t) one-tail                              | 0.246252527 |             |
| t Critical one-tail                           | 1.833112933 |             |
| P(T<=t) two-tail                              | 0.492505054 |             |
| t Critical two-tail                           | 2.262157163 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MANGANESE                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.0526      | 0.042      |
| Variance                                      | 0.0003428   | 0.0002028  |
| Observations                                  | 5           | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 7           |            |
| t Stat  | 1.047709126 |            |
| P(T<=t) one-tail                              | 0.164797304 |            |
| t Critical one-tail                           | 1.894578605 |            |
| P(T<=t) two-tail                              | 0.329594608 |            |
| t Critical two-tail                           | 2.364624252 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| IRON  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 5.9724      | 6.851833333 |
| Variance                                      | 6.6355783   | 5.692144167 |
| Observations                                  | 5           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 8           |             |
| t Stat  | -0.58295532 |             |
| P(T<=t) one-tail                              | 0.287991421 |             |
| t Critical one-tail                           | 1.859548038 |             |
| P(T<=t) two-tail                              | 0.575982842 |             |
| t Critical two-tail                           | 2.306004135 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COBALT  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.0042      | 0.001833333 |
| Variance                                      | 7.2E-06     | 5.66667E-07 |
| Observations                                  | 5           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 5           |             |
| t Stat  | 1.910563644 |             |
| P(T<=t) one-tail                              | 0.057151797 |             |
| t Critical one-tail                           | 2.015048373 |             |
| P(T<=t) two-tail                              | 0.114303595 |             |
| t Critical two-tail                           | 2.570581836 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COPPER  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.0824      | 0.039      |
| Variance                                      | 0.0028283   | 0.0008728  |
| Observations                                  | 5           | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 6           |            |
| t Stat  | 1.6274822   |            |
| P(T<=t) one-tail                              | 0.077379384 |            |
| t Critical one-tail                           | 1.943180281 |            |
| P(T<=t) two-tail                              | 0.154758767 |            |
| t Critical two-tail                           | 2.446911851 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| RUBIDIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.003       | 0.0015     |
| Variance                                      | 0.0000035   | 0.0000007  |
| Observations                                  | 5           | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 5           |            |
| t Stat  | 1.659850006 |            |
| P(T<=t) one-tail                              | 0.078919405 |            |
| t Critical one-tail                           | 2.015048373 |            |
| P(T<=t) two-tail                              | 0.157838811 |            |
| t Critical two-tail                           | 2.570581836 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| STRONTIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.115       | 0.0245     |
| Variance                                      | 0.0112325   | 5.91E-05   |
| Observations                                  | 5           | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 4           |            |
| t Stat  | 1.905220937 |            |
| P(T<=t) one-tail                              | 0.064728537 |            |
| t Critical one-tail                           | 2.131846786 |            |
| P(T<=t) two-tail                              | 0.129457075 |            |
| t Critical two-tail                           | 2.776445105 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| BARIUM  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.0484      | 0.026833333 |
| Variance                                      | 0.0033628   | 0.002518967 |
| Observations                                  | 5           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 8           |             |
| t Stat  | 0.652521175 |             |
| P(T<=t) one-tail                              | 0.26618141  |             |
| t Critical one-tail                           | 1.859548038 |             |
| P(T<=t) two-tail                              | 0.53236282  |             |
| t Critical two-tail                           | 2.306004135 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| LEAD  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.0054      | 0.001333333 |
| Variance                                      | 0.0000118   | 1.86667E-06 |
| Observations                                  | 5           | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 5           |             |
| t Stat  | 2.4882419   |             |
| P(T<=t) one-tail                              | 0.027639991 |             |
| t Critical one-tail                           | 2.015048373 |             |
| P(T<=t) two-tail                              | 0.055279982 |             |
| t Critical two-tail                           | 2.570581836 |             |

**Ballintoy vs Portbraddan flint from Northern Ireland Chalk formation**

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| POTASSIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.683        | 1.0235     |
| Variance                                      | 0.205668667  | 0.2642645  |
| Observations                                  | 4            | 2          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 2            |            |
| t Stat  | -0.794768438 |            |
| P(T<=t) one-tail                              | 0.255039542  |            |
| t Critical one-tail                           | 2.91998558   |            |
| P(T<=t) two-tail                              | 0.510079085  |            |
| t Critical two-tail                           | 4.30265273   |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CALCIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 13.86625    | 18.503     |
| Variance                                      | 180.4563563 | 106.24063  |
| Observations                                  | 4           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 5           |            |
| t Stat  | -0.51670328 |            |
| P(T<=t) one-tail                              | 0.313698439 |            |
| t Critical one-tail                           | 2.015048373 |            |
| P(T<=t) two-tail                              | 0.627396877 |            |
| t Critical two-tail                           | 2.570581836 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| NICKEL  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.0438       | 0.0483333  |
| Variance                                      | 0.0003802    | 0.0004723  |
| Observations                                  | 5            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 4            |            |
| t Stat  | -0.296680278 |            |
| P(T<=t) one-tail                              | 0.390738966  |            |
| t Critical one-tail                           | 2.131846786  |            |
| P(T<=t) two-tail                              | 0.781477932  |            |
| t Critical two-tail                           | 2.776445105  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MOLYBDENUM                                    |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.0875      | 0.004      |
| Variance                                      | 0.028113    | 0.000008   |
| Observations                                  | 4           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | 0.995724801 |            |
| P(T<=t) one-tail                              | 0.19638689  |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.392773781 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| CAESIUM                                       |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.0034       | 0.004      |
| Variance                                      | 0.0000118    | 0.000018   |
| Observations                                  | 5            | 2          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 2            |            |
| t Stat  | -0.178017249 |            |
| P(T<=t) one-tail                              | 0.437554183  |            |
| t Critical one-tail                           | 2.91998558   |            |
| P(T<=t) two-tail                              | 0.875108366  |            |
| t Critical two-tail                           | 4.30265273   |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| BERYLLIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.000166667  | 0.0003333  |
| Variance                                      | 1.66667E-07  | 3.333E-07  |
| Observations                                  | 6            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -0.447213595 |            |
| P(T<=t) one-tail                              | 0.342518821  |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.685037642  |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| SODIUM  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 2.678        | 8.515      |
| Variance                                      | 6.515662     | 54.277825  |
| Observations                                  | 6            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 2            |            |
| t Stat  | -1.332851565 |            |
| P(T<=t) one-tail                              | 0.157068459  |            |
| t Critical one-tail                           | 2.91998558   |            |
| P(T<=t) two-tail                              | 0.314136917  |            |
| t Critical two-tail                           | 4.30265273   |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| MAGNESIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.328333333  | 1.636      |
| Variance                                      | 0.074391867  | 1.808044   |
| Observations                                  | 6            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 2            |            |
| t Stat  | -1.667367217 |            |
| P(T<=t) one-tail                              | 0.118686518  |            |
| t Critical one-tail                           | 2.91998558   |            |
| P(T<=t) two-tail                              | 0.237373035  |            |
| t Critical two-tail                           | 4.30265273   |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| ALUMINIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 1.024333333  | 1.2963333  |
| Variance                                      | 1.433846667  | 1.7071053  |
| Observations                                  | 6            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 4            |            |
| t Stat  | -0.302594239 |            |
| P(T<=t) one-tail                              | 0.388640951  |            |
| t Critical one-tail                           | 2.131846786  |            |
| P(T<=t) two-tail                              | 0.777281903  |            |
| t Critical two-tail                           | 2.776445105  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| CHROMIUM                                      |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 1.010666667  | 1.1863333  |
| Variance                                      | 0.110722267  | 0.4273663  |
| Observations                                  | 6            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -0.437924238 |            |
| P(T<=t) one-tail                              | 0.345527453  |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.691054905  |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| MANGANESE                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.042        | 0.0566667  |
| Variance                                      | 0.0002028    | 0.0003943  |
| Observations                                  | 6            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -1.140953613 |            |
| P(T<=t) one-tail                              | 0.168360221  |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.336720443  |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| IRON  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 6.851833333  | 8.164      |
| Variance                                      | 5.692144167  | 17.557897  |
| Observations                                  | 6            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -0.503144002 |            |
| P(T<=t) one-tail                              | 0.324740295  |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.649480589  |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| COBALT  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.001833333  | 0.002      |
| Variance                                      | 5.66667E-07  | 0          |
| Observations                                  | 6            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 5            |            |
| t Stat  | -0.542326145 |            |
| P(T<=t) one-tail                              | 0.305440592  |            |
| t Critical one-tail                           | 2.015048373  |            |
| P(T<=t) two-tail                              | 0.610881183  |            |
| t Critical two-tail                           | 2.570581836  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| COPPER  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.039        | 0.1296667  |
| Variance                                      | 0.0008728    | 0.0081923  |
| Observations                                  | 6            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 2            |            |
| t Stat  | -1.690576209 |            |
| P(T<=t) one-tail                              | 0.116492501  |            |
| t Critical one-tail                           | 2.91998558   |            |
| P(T<=t) two-tail                              | 0.232985003  |            |
| t Critical two-tail                           | 4.30265273   |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| RUBIDIUM                                      |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.0015       | 0.002      |
| Variance                                      | 0.0000007    | 0.000001   |
| Observations                                  | 6            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -0.745355992 |            |
| P(T<=t) one-tail                              | 0.255070102  |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.510140203  |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| STRONTIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.0245       | 0.0543333  |
| Variance                                      | 5.91E-05     | 0.0004603  |
| Observations                                  | 6            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 2            |            |
| t Stat  | -2.334619323 |            |
| P(T<=t) one-tail                              | 0.072343671  |            |
| t Critical one-tail                           | 2.91998558   |            |
| P(T<=t) two-tail                              | 0.144687341  |            |
| t Critical two-tail                           | 4.30265273   |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| CADMIUM                                       |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.000333333  | 0.0006667  |
| Variance                                      | 2.66667E-07  | 1.333E-06  |
| Observations                                  | 6            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 2            |            |
| t Stat  | -0.476731295 |            |
| P(T<=t) one-tail                              | 0.340280859  |            |
| t Critical one-tail                           | 2.91998558   |            |
| P(T<=t) two-tail                              | 0.680561718  |            |
| t Critical two-tail                           | 4.30265273   |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| BARIUM  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.026833333  | 0.033      |
| Variance                                      | 0.002518967  | 0.000741   |
| Observations                                  | 6            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 7            |            |
| t Stat  | -0.238805119 |            |
| P(T<=t) one-tail                              | 0.409048679  |            |
| t Critical one-tail                           | 1.894578605  |            |
| P(T<=t) two-tail                              | 0.818097357  |            |
| t Critical two-tail                           | 2.364624252  |            |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| LEAD  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.001333333       | 0.0053333         |
| Variance                                      | 1.86667E-06       | 1.733E-05         |
| Observations                                  | 6                 | 3                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 2                 |                   |
| t Stat  | -1.621029681      |                   |
| P(T<=t) one-tail                              | 0.123229731       |                   |
| t Critical one-tail                           | 2.91998558        |                   |
| P(T<=t) two-tail                              | 0.246459461       |                   |
| t Critical two-tail                           | 4.30265273        |                   |

**Garron Point vs White Park Bay flint from Northern Ireland Chalk formation**

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| BERYLLIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.000625    | 0          |
| Variance                                      | 0.000001125 | 0          |
| Observations                                  | 8           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 7           |            |
| t Stat  | 1.666666667 |            |
| P(T<=t) one-tail                              | 0.069759792 |            |
| t Critical one-tail                           | 1.894578605 |            |
| P(T<=t) two-tail                              | 0.139519583 |            |
| t Critical two-tail                           | 2.364624252 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| POTASSIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.598        | 69.75525   |
| Variance                                      | 0.173104     | 2145.4287  |
| Observations                                  | 3            | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -2.985982878 |            |
| P(T<=t) one-tail                              | 0.029158714  |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.058317428  |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CALCIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 27.54933333 | 26.343333  |
| Variance                                      | 484.9094235 | 0.8297333  |
| Observations                                  | 6           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 5           |            |
| t Stat  | 0.133921642 |            |
| P(T<=t) one-tail                              | 0.449344022 |            |
| t Critical one-tail                           | 2.015048373 |            |
| P(T<=t) two-tail                              | 0.898688043 |            |
| t Critical two-tail                           | 2.570581836 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| NICKEL  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.0258       | 0.0665     |
| Variance                                      | 0.0001247    | 0.0008097  |
| Observations                                  | 5            | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 4            |            |
| t Stat  | -2.699234167 |            |
| P(T<=t) one-tail                              | 0.027068629  |            |
| t Critical one-tail                           | 2.131846786  |            |
| P(T<=t) two-tail                              | 0.054137257  |            |
| t Critical two-tail                           | 2.776445105  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| MOLYBDENUM                                    |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.020166667  | 0.0515     |
| Variance                                      | 0.001032967  | 0.0011963  |
| Observations                                  | 6            | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 6            |            |
| t Stat  | -1.443389286 |            |
| P(T<=t) one-tail                              | 0.099508903  |            |
| t Critical one-tail                           | 1.943180281  |            |
| P(T<=t) two-tail                              | 0.199017807  |            |
| t Critical two-tail                           | 2.446911851  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| CAESIUM                                       |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.001666667  | 0.1046667  |
| Variance                                      | 3.86667E-06  | 3.333E-07  |
| Observations                                  | 6            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 6            |            |
| t Stat  | -118.4960908 |            |
| P(T<=t) one-tail                              | 1.21776E-11  |            |
| t Critical one-tail                           | 1.943180281  |            |
| P(T<=t) two-tail                              | 2.43553E-11  |            |
| t Critical two-tail                           | 2.446911851  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| SODIUM  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 4.248875     | 43.04425   |
| Variance                                      | 3.182408125  | 661.89503  |
| Observations                                  | 8            | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -3.012270654 |            |
| P(T<=t) one-tail                              | 0.028554282  |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.057108564  |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| MAGNESIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.694125     | 2.02075    |
| Variance                                      | 0.076577554  | 0.8674029  |
| Observations                                  | 8            | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -2.787969258 |            |
| P(T<=t) one-tail                              | 0.03426725   |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.0685345    |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| ALUMINIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 1.34375      | 2.59075    |
| Variance                                      | 0.563129071  | 2.8442809  |
| Observations                                  | 8            | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 4            |            |
| t Stat  | -1.410628644 |            |
| P(T<=t) one-tail                              | 0.115588698  |            |
| t Critical one-tail                           | 2.131846786  |            |
| P(T<=t) two-tail                              | 0.231177396  |            |
| t Critical two-tail                           | 2.776445105  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| CHROMIUM                                      |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.72975      | 0.7695     |
| Variance                                      | 0.038567929  | 0.0102897  |
| Observations                                  | 8            | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 10           |            |
| t Stat  | -0.462290325 |            |
| P(T<=t) one-tail                              | 0.32688392   |            |
| t Critical one-tail                           | 1.812461123  |            |
| P(T<=t) two-tail                              | 0.653767839  |            |
| t Critical two-tail                           | 2.228138852  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MANGANESE                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.0375      | 0.05375    |
| Variance                                      | 0.000119714 | 0.0005236  |
| Observations                                  | 8           | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 4           |            |
| t Stat  | -1.34550428 |            |
| P(T<=t) one-tail                              | 0.1248367   |            |
| t Critical one-tail                           | 2.131846786 |            |
| P(T<=t) two-tail                              | 0.249673399 |            |
| t Critical two-tail                           | 2.776445105 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| IRON  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 4.72625      | 5.8175     |
| Variance                                      | 2.576081071  | 0.5540417  |
| Observations                                  | 8            | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 10           |            |
| t Stat  | -1.608050743 |            |
| P(T<=t) one-tail                              | 0.069451649  |            |
| t Critical one-tail                           | 1.812461123  |            |
| P(T<=t) two-tail                              | 0.138903299  |            |
| t Critical two-tail                           | 2.228138852  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| COBALT  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.002        | 0.75875    |
| Variance                                      | 8.57143E-07  | 0.2545289  |
| Observations                                  | 8            | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -2.999946399 |            |
| P(T<=t) one-tail                              | 0.028835674  |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.057671348  |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| COPPER  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.057625     | 0.13475    |
| Variance                                      | 0.002543696  | 0.0014149  |
| Observations                                  | 8            | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 8            |            |
| t Stat  | -2.975845236 |            |
| P(T<=t) one-tail                              | 0.008856186  |            |
| t Critical one-tail                           | 1.859548038  |            |
| P(T<=t) two-tail                              | 0.017712373  |            |
| t Critical two-tail                           | 2.306004135  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| RUBIDIUM                                      |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.00175      | 0.038      |
| Variance                                      | 1.64286E-06  | 0.000642   |
| Observations                                  | 8            | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -2.859517994 |            |
| P(T<=t) one-tail                              | 0.032301244  |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.064602488  |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| STRONTIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.055375     | 0.77       |
| Variance                                      | 0.001878268  | 0.2442287  |
| Observations                                  | 8            | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -2.886532724 |            |
| P(T<=t) one-tail                              | 0.031595669  |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.063191337  |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| CADMIUM                                       |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.0005       | 0.011      |
| Variance                                      | 5.71429E-07  | 5.467E-05  |
| Observations                                  | 8            | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -2.832866037 |            |
| P(T<=t) one-tail                              | 0.033016724  |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.066033448  |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| BARIUM  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.02275      | 0.26825    |
| Variance                                      | 0.000863643  | 0.1649729  |
| Observations                                  | 8            | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -1.207278646 |            |
| P(T<=t) one-tail                              | 0.156914485  |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.31382897   |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| LEAD  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.003625          | 0.608             |
| Variance                                      | 7.69643E-06       | 0.6550513         |
| Observations                                  | 8                 | 4                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 3                 |                   |
| t Stat  | -1.493473579      |                   |
| P(T<=t) one-tail                              | 0.116078143       |                   |
| t Critical one-tail                           | 2.353363435       |                   |
| P(T<=t) two-tail                              | 0.232156286       |                   |
| t Critical two-tail                           | 3.182446305       |                   |

**Garron Point vs White Rocks flint from Northern Ireland Chalk formation**

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| BERYLLIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.000461538 | 0          |
| Variance                                      | 6.02564E-07 | 0          |
| Observations                                  | 13          | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 12          |            |
| t Stat  | 2.143768803 |            |
| P(T<=t) one-tail                              | 0.026615993 |            |
| t Critical one-tail                           | 1.782287556 |            |
| P(T<=t) two-tail                              | 0.053231985 |            |
| t Critical two-tail                           | 2.17881283  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| POTASSIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.533333333 | 69.75525   |
| Variance                                      | 0.122270267 | 2145.4287  |
| Observations                                  | 6           | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | -2.98887895 |            |
| P(T<=t) one-tail                              | 0.029091343 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.058182685 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CALCIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 22.98706667 | 26.343333  |
| Variance                                      | 86.2263655  | 0.8297333  |
| Observations                                  | 15          | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 15          |            |
| t Stat  | -1.36734421 |            |
| P(T<=t) one-tail                              | 0.095829248 |            |
| t Critical one-tail                           | 1.753050356 |            |
| P(T<=t) two-tail                              | 0.191658495 |            |
| t Critical two-tail                           | 2.131449546 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| NICKEL  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.03        | 0.0665     |
| Variance                                      | 0.000997818 | 0.0008097  |
| Observations                                  | 12          | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 6           |            |
| t Stat  | -2.15992144 |            |
| P(T<=t) one-tail                              | 0.037042448 |            |
| t Critical one-tail                           | 1.943180281 |            |
| P(T<=t) two-tail                              | 0.074084896 |            |
| t Critical two-tail                           | 2.446911851 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MOLYBDENUM                                    |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.022888889 | 0.0515     |
| Variance                                      | 0.001054611 | 0.0011963  |
| Observations                                  | 9           | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 5           |            |
| t Stat  | -1.40233302 |            |
| P(T<=t) one-tail                              | 0.109874054 |            |
| t Critical one-tail                           | 2.015048373 |            |
| P(T<=t) two-tail                              | 0.219748107 |            |
| t Critical two-tail                           | 2.570581836 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CAESIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.004555556 | 0.1046667  |
| Variance                                      | 9.67778E-05 | 3.333E-07  |
| Observations                                  | 9           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 8           |            |
| t Stat  | -30.3727038 |            |
| P(T<=t) one-tail                              | 7.49582E-10 |            |
| t Critical one-tail                           | 1.859548038 |            |
| P(T<=t) two-tail                              | 1.49916E-09 |            |
| t Critical two-tail                           | 2.306004135 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| LEAD  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.004692308 | 0.608      |
| Variance                                      | 1.60641E-05 | 0.6550513  |
| Observations                                  | 13          | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | -1.49083491 |            |
| P(T<=t) one-tail                              | 0.116397681 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.232795361 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| SODIUM  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 4.5438      | 43.04425   |
| Variance                                      | 12.7573916  | 661.89503  |
| Observations                                  | 15          | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | -2.98530025 |            |
| P(T<=t) one-tail                              | 0.029174622 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.058349244 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MAGNESIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.606066667 | 2.02075    |
| Variance                                      | 0.067756495 | 0.8674029  |
| Observations                                  | 15          | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | -3.00678229 |            |
| P(T<=t) one-tail                              | 0.028679167 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.057358333 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| ALUMINIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 1.787533333 | 2.59075    |
| Variance                                      | 0.64906841  | 2.8442809  |
| Observations                                  | 15          | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | -0.92480192 |            |
| P(T<=t) one-tail                              | 0.21163963  |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.42327926  |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CHROMIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.895666667 | 0.7695     |
| Variance                                      | 0.161424381 | 0.0102897  |
| Observations                                  | 15          | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 17          |            |
| t Stat  | 1.092606346 |            |
| P(T<=t) one-tail                              | 0.144904481 |            |
| t Critical one-tail                           | 1.739606726 |            |
| P(T<=t) two-tail                              | 0.289808961 |            |
| t Critical two-tail                           | 2.109815578 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MANGANESE                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.0468      | 0.05375    |
| Variance                                      | 0.000355029 | 0.0005236  |
| Observations                                  | 15          | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 4           |            |
| t Stat  | -0.5590235  |            |
| P(T<=t) one-tail                              | 0.302981414 |            |
| t Critical one-tail                           | 2.131846786 |            |
| P(T<=t) two-tail                              | 0.605962829 |            |
| t Critical two-tail                           | 2.776445105 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| IRON  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 6.018666667 | 5.8175     |
| Variance                                      | 7.639789381 | 0.5540417  |
| Observations                                  | 15          | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 17          |            |
| t Stat  | 0.249934144 |            |
| P(T<=t) one-tail                              | 0.40281675  |            |
| t Critical one-tail                           | 1.739606726 |            |
| P(T<=t) two-tail                              | 0.8056335   |            |
| t Critical two-tail                           | 2.109815578 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COBALT  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.002       | 0.75875    |
| Variance                                      | 3.28571E-06 | 0.2545289  |
| Observations                                  | 15          | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | -2.99994376 |            |
| P(T<=t) one-tail                              | 0.028835735 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.05767147  |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COPPER  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.089733333 | 0.13475    |
| Variance                                      | 0.006897067 | 0.0014149  |
| Observations                                  | 15          | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 12          |            |
| t Stat  | -1.57828556 |            |
| P(T<=t) one-tail                              | 0.070242047 |            |
| t Critical one-tail                           | 1.782287556 |            |
| P(T<=t) two-tail                              | 0.140484095 |            |
| t Critical two-tail                           | 2.17881283  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| RUBIDIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.0028      | 0.038      |
| Variance                                      | 4.31429E-06 | 0.000642   |
| Observations                                  | 15          | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | -2.77598018 |            |
| P(T<=t) one-tail                              | 0.034611119 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.069222237 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| STRONTIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.0562      | 0.77       |
| Variance                                      | 0.0014416   | 0.2442287  |
| Observations                                  | 15          | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | -2.88646762 |            |
| P(T<=t) one-tail                              | 0.031597346 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.063194691 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CADMIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.000533333 | 0.011      |
| Variance                                      | 4.09524E-07 | 5.467E-05  |
| Observations                                  | 15          | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | -2.82841893 |            |
| P(T<=t) one-tail                              | 0.033138025 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.066276051 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| BARIUM  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.0328            | 0.26825           |
| Variance                                      | 0.001717743       | 0.1649729         |
| Observations                                  | 15                | 4                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 3                 |                   |
| t Stat  | -1.1577646        |                   |
| P(T<=t) one-tail                              | 0.165381805       |                   |
| t Critical one-tail                           | 2.353363435       |                   |
| P(T<=t) two-tail                              | 0.33076361        |                   |
| t Critical two-tail                           | 3.182446305       |                   |

**Garron Point vs Portbraddan flint from Northern Ireland Chalk formation**

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| BERYLLIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0           | 0.000333333 |
| Variance                                      | 0           | 3.33333E-07 |
| Observations                                  | 3           | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 2           |             |
| t Stat  | -1          |             |
| P(T<=t) one-tail                              | 0.211324865 |             |
| t Critical one-tail                           | 2.91998558  |             |
| P(T<=t) two-tail                              | 0.422649731 |             |
| t Critical two-tail                           | 4.30265273  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CALCIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 26.34333333 | 18.503     |
| Variance                                      | 0.829733333 | 106.240627 |
| Observations                                  | 3           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 2           |            |
| t Stat  | 1.312382777 |            |
| P(T<=t) one-tail                              | 0.159887959 |            |
| t Critical one-tail                           | 2.91998558  |            |
| P(T<=t) two-tail                              | 0.319775917 |            |
| t Critical two-tail                           | 4.30265273  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CAESIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.104666667 | 0.004      |
| Variance                                      | 3.33333E-07 | 0.000018   |
| Observations                                  | 3           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | 33.35032087 |            |
| P(T<=t) one-tail                              | 0.009541574 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.019083147 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| POTASSIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 69.75525    | 1.0235     |
| Variance                                      | 2145.428657 | 0.2642645  |
| Observations                                  | 4           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | 2.967405319 |            |
| P(T<=t) one-tail                              | 0.029595568 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.059191136 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MOLYBDENUM                                    |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.0515      | 0.004      |
| Variance                                      | 0.001196333 | 0.000008   |
| Observations                                  | 4           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | 2.72842853  |            |
| P(T<=t) one-tail                              | 0.036017971 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.072035941 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| SODIUM  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 43.04425    | 8.515      |
| Variance                                      | 661.8950323 | 54.277825  |
| Observations                                  | 4           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 4           |            |
| t Stat  | 2.548534925 |            |
| P(T<=t) one-tail                              | 0.031701935 |            |
| t Critical one-tail                           | 2.131846786 |            |
| P(T<=t) two-tail                              | 0.06340387  |            |
| t Critical two-tail                           | 2.776445105 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MAGNESIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 2.02075     | 1.636      |
| Variance                                      | 0.867402917 | 1.808044   |
| Observations                                  | 4           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | 0.42500658  |            |
| P(T<=t) one-tail                              | 0.34973673  |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.699473459 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| ALUMINIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 2.59075     | 1.296333333 |
| Variance                                      | 2.844280917 | 1.707105333 |
| Observations                                  | 4           | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 5           |             |
| t Stat  | 1.144066428 |             |
| P(T<=t) one-tail                              | 0.152197041 |             |
| t Critical one-tail                           | 2.015048373 |             |
| P(T<=t) two-tail                              | 0.304394082 |             |
| t Critical two-tail                           | 2.570581836 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CHROMIUM                                      |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.7695      | 1.186333333 |
| Variance                                      | 0.010289667 | 0.427366333 |
| Observations                                  | 4           | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 2           |             |
| t Stat  | -1.09455281 |             |
| P(T<=t) one-tail                              | 0.193969733 |             |
| t Critical one-tail                           | 2.91998558  |             |
| P(T<=t) two-tail                              | 0.387939466 |             |
| t Critical two-tail                           | 4.30265273  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MANGANESE                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.05375     | 0.056666667 |
| Variance                                      | 0.000523583 | 0.000394333 |
| Observations                                  | 4           | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 5           |             |
| t Stat  | -0.18007537 |             |
| P(T<=t) one-tail                              | 0.432082091 |             |
| t Critical one-tail                           | 2.015048373 |             |
| P(T<=t) two-tail                              | 0.864164183 |             |
| t Critical two-tail                           | 2.570581836 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| IRON  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 5.8175      | 8.164      |
| Variance                                      | 0.554041667 | 17.557897  |
| Observations                                  | 4           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 2           |            |
| t Stat  | -0.95866247 |            |
| P(T<=t) one-tail                              | 0.219446189 |            |
| t Critical one-tail                           | 2.91998558  |            |
| P(T<=t) two-tail                              | 0.438892378 |            |
| t Critical two-tail                           | 4.30265273  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COBALT  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.75875     | 0.002      |
| Variance                                      | 0.254528917 | 0          |
| Observations                                  | 4           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | 2.999948925 |            |
| P(T<=t) one-tail                              | 0.028835616 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.057671232 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| NICKEL  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.0665      | 0.048333333 |
| Variance                                      | 0.000809667 | 0.000472333 |
| Observations                                  | 4           | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 5           |             |
| t Stat  | 0.957652153 |             |
| P(T<=t) one-tail                              | 0.191109554 |             |
| t Critical one-tail                           | 2.015048373 |             |
| P(T<=t) two-tail                              | 0.382219108 |             |
| t Critical two-tail                           | 2.570581836 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COPPER  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.13475     | 0.129666667 |
| Variance                                      | 0.001414917 | 0.008192333 |
| Observations                                  | 4           | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | 0.091528367 |             |
| P(T<=t) one-tail                              | 0.466420983 |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.932841966 |             |
| t Critical two-tail                           | 3.182446305 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| RUBIDIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.038       | 0.002      |
| Variance                                      | 0.000642    | 0.000001   |
| Observations                                  | 4           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | 2.838667132 |            |
| P(T<=t) one-tail                              | 0.032859322 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.065718644 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| STRONTIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.77        | 0.054333333 |
| Variance                                      | 0.244228667 | 0.000460333 |
| Observations                                  | 4           | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | 2.892660279 |             |
| P(T<=t) one-tail                              | 0.031438315 |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.06287663  |             |
| t Critical two-tail                           | 3.182446305 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CADMIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.011       | 0.000666667 |
| Variance                                      | 5.46667E-05 | 1.33333E-06 |
| Observations                                  | 4           | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | 2.750805179 |             |
| P(T<=t) one-tail                              | 0.03534726  |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.070694521 |             |
| t Critical two-tail                           | 3.182446305 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| BARIUM  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.26825     | 0.033      |
| Variance                                      | 0.164972917 | 0.000741   |
| Observations                                  | 4           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | 1.1549328   |            |
| P(T<=t) one-tail                              | 0.165879792 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.331759584 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| LEAD  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.608             | 0.005333333       |
| Variance                                      | 0.655051333       | 1.73333E-05       |
| Observations                                  | 4                 | 3                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 3                 |                   |
| t Stat  | 1.489230213       |                   |
| P(T<=t) one-tail                              | 0.116592477       |                   |
| t Critical one-tail                           | 2.353363435       |                   |
| P(T<=t) two-tail                              | 0.233184953       |                   |
| t Critical two-tail                           | 3.182446305       |                   |

**White Rocks vs Portbraddan flint from Northern Ireland Chalk formation**

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| BERYLLIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.000461538 | 0.000333333 |
| Variance                                      | 6.02564E-07 | 3.33333E-07 |
| Observations                                  | 13          | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 4           |             |
| t Stat  | 0.323085335 |             |
| P(T<=t) one-tail                              | 0.381407533 |             |
| t Critical one-tail                           | 2.131846786 |             |
| P(T<=t) two-tail                              | 0.762815065 |             |
| t Critical two-tail                           | 2.776445105 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| POTASSIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.533333333 | 1.0235     |
| Variance                                      | 0.122270267 | 0.2642645  |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | -1.25514448 |            |
| P(T<=t) one-tail                              | 0.214139274 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.428278547 |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| NICKEL  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.03        | 0.048333333 |
| Variance                                      | 0.000997818 | 0.000472333 |
| Observations                                  | 12          | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 4           |             |
| t Stat  | -1.18194501 |             |
| P(T<=t) one-tail                              | 0.151346011 |             |
| t Critical one-tail                           | 2.131846786 |             |
| P(T<=t) two-tail                              | 0.302692023 |             |
| t Critical two-tail                           | 2.776445105 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MOLYBDENUM                                    |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.022888889 | 0.004      |
| Variance                                      | 0.001054611 | 0.000008   |
| Observations                                  | 9           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 8           |            |
| t Stat  | 1.715902898 |            |
| P(T<=t) one-tail                              | 0.062258409 |            |
| t Critical one-tail                           | 1.859548038 |            |
| P(T<=t) two-tail                              | 0.124516818 |            |
| t Critical two-tail                           | 2.306004135 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CAESIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.004555556 | 0.004      |
| Variance                                      | 9.67778E-05 | 0.000018   |
| Observations                                  | 9           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 4           |            |
| t Stat  | 0.125       |            |
| P(T<=t) one-tail                              | 0.453276965 |            |
| t Critical one-tail                           | 2.131846786 |            |
| P(T<=t) two-tail                              | 0.906553929 |            |
| t Critical two-tail                           | 2.776445105 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| LEAD  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.004692308 | 0.005333333 |
| Variance                                      | 1.60641E-05 | 1.73333E-05 |
| Observations                                  | 13          | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | -0.242052   |             |
| P(T<=t) one-tail                              | 0.412171501 |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.824343002 |             |
| t Critical two-tail                           | 3.182446305 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| SODIUM  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 4.5438      | 8.515      |
| Variance                                      | 12.7573916  | 54.277825  |
| Observations                                  | 15          | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 2           |            |
| t Stat  | -0.91242299 |            |
| P(T<=t) one-tail                              | 0.22893087  |            |
| t Critical one-tail                           | 2.91998558  |            |
| P(T<=t) two-tail                              | 0.457861741 |            |
| t Critical two-tail                           | 4.30265273  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MAGNESIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.606066667 | 1.636      |
| Variance                                      | 0.067756495 | 1.808044   |
| Observations                                  | 15          | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 2           |            |
| t Stat  | -1.32173318 |            |
| P(T<=t) one-tail                              | 0.158592395 |            |
| t Critical one-tail                           | 2.91998558  |            |
| P(T<=t) two-tail                              | 0.31718479  |            |
| t Critical two-tail                           | 4.30265273  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| ALUMINIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 1.787533333 | 1.296333333 |
| Variance                                      | 0.64906841  | 1.707105333 |
| Observations                                  | 15          | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 2           |             |
| t Stat  | 0.627731584 |             |
| P(T<=t) one-tail                              | 0.297148766 |             |
| t Critical one-tail                           | 2.91998558  |             |
| P(T<=t) two-tail                              | 0.594297532 |             |
| t Critical two-tail                           | 4.30265273  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CALCIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 22.98706667 | 18.503     |
| Variance                                      | 86.2263655  | 106.240627 |
| Observations                                  | 15          | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | 0.698914422 |            |
| P(T<=t) one-tail                              | 0.267458458 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.534916916 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CHROMIUM                                      |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.895666667 | 1.186333333 |
| Variance                                      | 0.161424381 | 0.427366333 |
| Observations                                  | 15          | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 2           |             |
| t Stat  | -0.74257727 |             |
| P(T<=t) one-tail                              | 0.267554793 |             |
| t Critical one-tail                           | 2.91998558  |             |
| P(T<=t) two-tail                              | 0.535109587 |             |
| t Critical two-tail                           | 4.30265273  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MANGANESE                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.0468      | 0.056666667 |
| Variance                                      | 0.000355029 | 0.000394333 |
| Observations                                  | 15          | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | -0.79222097 |             |
| P(T<=t) one-tail                              | 0.243048276 |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.486096552 |             |
| t Critical two-tail                           | 3.182446305 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| IRON  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 6.018666667 | 8.164      |
| Variance                                      | 7.639789381 | 17.557897  |
| Observations                                  | 15          | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 2           |            |
| t Stat  | -0.85054951 |            |
| P(T<=t) one-tail                              | 0.242301946 |            |
| t Critical one-tail                           | 2.91998558  |            |
| P(T<=t) two-tail                              | 0.484603892 |            |
| t Critical two-tail                           | 4.30265273  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COBALT  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.002       | 0.002      |
| Variance                                      | 3.28571E-06 | 0          |
| Observations                                  | 15          | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 14          |            |
| t Stat  | 0           |            |
| P(T<=t) one-tail                              | 0.5         |            |
| t Critical one-tail                           | 1.761310136 |            |
| P(T<=t) two-tail                              | 1           |            |
| t Critical two-tail                           | 2.144786688 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COPPER  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.089733333 | 0.129666667 |
| Variance                                      | 0.006897067 | 0.008192333 |
| Observations                                  | 15          | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | -0.70696936 |             |
| P(T<=t) one-tail                              | 0.265275996 |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.530551992 |             |
| t Critical two-tail                           | 3.182446305 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| RUBIDIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.0028      | 0.002      |
| Variance                                      | 4.31429E-06 | 0.000001   |
| Observations                                  | 15          | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 6           |            |
| t Stat  | 1.015221575 |            |
| P(T<=t) one-tail                              | 0.174588077 |            |
| t Critical one-tail                           | 1.943180281 |            |
| P(T<=t) two-tail                              | 0.349176154 |            |
| t Critical two-tail                           | 2.446911851 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| STRONTIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.0562      | 0.054333333 |
| Variance                                      | 0.0014416   | 0.000460333 |
| Observations                                  | 15          | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 5           |             |
| t Stat  | 0.118164499 |             |
| P(T<=t) one-tail                              | 0.455268811 |             |
| t Critical one-tail                           | 2.015048373 |             |
| P(T<=t) two-tail                              | 0.910537622 |             |
| t Critical two-tail                           | 2.570581836 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CADMIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.000533333 | 0.000666667 |
| Variance                                      | 4.09524E-07 | 1.33333E-06 |
| Observations                                  | 15          | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 2           |             |
| t Stat  | -0.1941264  |             |
| P(T<=t) one-tail                              | 0.432003575 |             |
| t Critical one-tail                           | 2.91998558  |             |
| P(T<=t) two-tail                              | 0.864007149 |             |
| t Critical two-tail                           | 4.30265273  |             |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| BARIUM  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.0328            | 0.033             |
| Variance                                      | 0.001717743       | 0.000741          |
| Observations                                  | 15                | 3                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 4                 |                   |
| t Stat  | -0.0105188        |                   |
| P(T<=t) one-tail                              | 0.496055542       |                   |
| t Critical one-tail                           | 2.131846786       |                   |
| P(T<=t) two-tail                              | 0.992111083       |                   |
| t Critical two-tail                           | 2.776445105       |                   |

**Cloughastucan vs White Park Bay flint from Northern Ireland Chalk formation**

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| SODIUM  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 4.248875     | 22.356     |
| Variance                                      | 3.182408125  | 1506.30376 |
| Observations                                  | 8            | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 4            |            |
| t Stat  | -1.042537482 |            |
| P(T<=t) one-tail                              | 0.17801234   |            |
| t Critical one-tail                           | 2.131846786  |            |
| P(T<=t) two-tail                              | 0.356024679  |            |
| t Critical two-tail                           | 2.776445105  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| CALCIUM                                       |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 27.54933333  | 33.144     |
| Variance                                      | 484.9094235  | 183.21293  |
| Observations                                  | 6            | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 8            |            |
| t Stat  | -0.516211524 |            |
| P(T<=t) one-tail                              | 0.309834021  |            |
| t Critical one-tail                           | 1.859548038  |            |
| P(T<=t) two-tail                              | 0.619668043  |            |
| t Critical two-tail                           | 2.306004135  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| NICKEL  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.0258       | 0.36225    |
| Variance                                      | 0.0001247    | 0.38003692 |
| Observations                                  | 5            | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -1.091391687 |            |
| P(T<=t) one-tail                              | 0.177455468  |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.354910937  |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| MOLYBDENUM                                    |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.020166667  | 0.03566667 |
| Variance                                      | 0.001032967  | 0.00116133 |
| Observations                                  | 6            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 4            |            |
| t Stat  | -0.655420579 |            |
| P(T<=t) one-tail                              | 0.273989214  |            |
| t Critical one-tail                           | 2.131846786  |            |
| P(T<=t) two-tail                              | 0.547978429  |            |
| t Critical two-tail                           | 2.776445105  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| CADMIUM                                       |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.0005       | 0.00075    |
| Variance                                      | 5.71429E-07  | 0.00000025 |
| Observations                                  | 8            | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 9            |            |
| t Stat  | -0.683130051 |            |
| P(T<=t) one-tail                              | 0.255862544  |            |
| t Critical one-tail                           | 1.833112933  |            |
| P(T<=t) two-tail                              | 0.511725088  |            |
| t Critical two-tail                           | 2.262157163  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| CAESIUM                                       |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.001666667  | 0.03325    |
| Variance                                      | 3.86667E-06  | 0.00335425 |
| Observations                                  | 6            | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -1.090243308 |            |
| P(T<=t) one-tail                              | 0.177671862  |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.355343723  |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| MAGNESIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.694125     | 1.2456     |
| Variance                                      | 0.076577554  | 0.9438343  |
| Observations                                  | 8            | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 4            |            |
| t Stat  | -1.238288132 |            |
| P(T<=t) one-tail                              | 0.141658426  |            |
| t Critical one-tail                           | 2.131846786  |            |
| P(T<=t) two-tail                              | 0.283316851  |            |
| t Critical two-tail                           | 2.776445105  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| ALUMINIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 1.34375      | 2.4336     |
| Variance                                      | 0.563129071  | 1.4293483  |
| Observations                                  | 8            | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 6            |            |
| t Stat  | -1.825924066 |            |
| P(T<=t) one-tail                              | 0.058825353  |            |
| t Critical one-tail                           | 1.943180281  |            |
| P(T<=t) two-tail                              | 0.117650705  |            |
| t Critical two-tail                           | 2.446911851  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| CHROMIUM                                      |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.72975      | 0.886      |
| Variance                                      | 0.038567929  | 0.0595685  |
| Observations                                  | 8            | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 7            |            |
| t Stat  | -1.207844918 |            |
| P(T<=t) one-tail                              | 0.133163237  |            |
| t Critical one-tail                           | 1.894578605  |            |
| P(T<=t) two-tail                              | 0.266326474  |            |
| t Critical two-tail                           | 2.364624252  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| MANGANESE                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.0375       | 0.0526     |
| Variance                                      | 0.000119714  | 0.0003428  |
| Observations                                  | 8            | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 6            |            |
| t Stat  | -1.652230223 |            |
| P(T<=t) one-tail                              | 0.074787803  |            |
| t Critical one-tail                           | 1.943180281  |            |
| P(T<=t) two-tail                              | 0.149575606  |            |
| t Critical two-tail                           | 2.446911851  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| IRON  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 4.72625      | 5.9724     |
| Variance                                      | 2.576081071  | 6.6355783  |
| Observations                                  | 8            | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 6            |            |
| t Stat  | -0.970383559 |            |
| P(T<=t) one-tail                              | 0.184665648  |            |
| t Critical one-tail                           | 1.943180281  |            |
| P(T<=t) two-tail                              | 0.369331296  |            |
| t Critical two-tail                           | 2.446911851  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| COBALT  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.002        | 0.0042     |
| Variance                                      | 8.57143E-07  | 7.2E-06    |
| Observations                                  | 8            | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 5            |            |
| t Stat  | -1.768713426 |            |
| P(T<=t) one-tail                              | 0.068587385  |            |
| t Critical one-tail                           | 2.015048373  |            |
| P(T<=t) two-tail                              | 0.137174769  |            |
| t Critical two-tail                           | 2.570581836  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COPPER  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.057625    | 0.0824     |
| Variance                                      | 0.002543696 | 0.0028283  |
| Observations                                  | 8           | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 8           |            |
| t Stat  | -0.83345161 |            |
| P(T<=t) one-tail                              | 0.214385287 |            |
| t Critical one-tail                           | 1.859548038 |            |
| P(T<=t) two-tail                              | 0.428770574 |            |
| t Critical two-tail                           | 2.306004135 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| RUBIDIUM                                      |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.00175      | 0.003      |
| Variance                                      | 1.64286E-06  | 0.0000035  |
| Observations                                  | 8            | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 6            |            |
| t Stat  | -1.313711637 |            |
| P(T<=t) one-tail                              | 0.118468617  |            |
| t Critical one-tail                           | 1.943180281  |            |
| P(T<=t) two-tail                              | 0.236937235  |            |
| t Critical two-tail                           | 2.446911851  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| STRONTIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.055375     | 0.115      |
| Variance                                      | 0.001878268  | 0.0112325  |
| Observations                                  | 8            | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 5            |            |
| t Stat  | -1.196989111 |            |
| P(T<=t) one-tail                              | 0.14248134   |            |
| t Critical one-tail                           | 2.015048373  |            |
| P(T<=t) two-tail                              | 0.284962679  |            |
| t Critical two-tail                           | 2.570581836  |            |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| BARIUM  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.02275           | 0.0484            |
| Variance                                      | 0.000863643       | 0.0033628         |
| Observations                                  | 8                 | 5                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 5                 |                   |
| t Stat  | -0.91811407       |                   |
| P(T<=t) one-tail                              | 0.200339865       |                   |
| t Critical one-tail                           | 2.015048373       |                   |
| P(T<=t) two-tail                              | 0.40067973        |                   |
| t Critical two-tail                           | 2.570581836       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| LEAD  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.003625          | 0.0054            |
| Variance                                      | 7.69643E-06       | 0.0000118         |
| Observations                                  | 8                 | 5                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 7                 |                   |
| t Stat  | -0.973856667      |                   |
| P(T<=t) one-tail                              | 0.181285507       |                   |
| t Critical one-tail                           | 1.894578605       |                   |
| P(T<=t) two-tail                              | 0.362571014       |                   |
| t Critical two-tail                           | 2.364624252       |                   |

**Cloughastucan vs Portbraddan flint from Northern Ireland Chalk formation**

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| POTASSIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 41.6185     | 1.0235     |
| Variance                                      | 3222.680045 | 0.2642645  |
| Observations                                  | 2           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 1           |            |
| t Stat  | 1.011256074 |            |
| P(T<=t) one-tail                              | 0.248218585 |            |
| t Critical one-tail                           | 6.313751515 |            |
| P(T<=t) two-tail                              | 0.49643717  |            |
| t Critical two-tail                           | 12.70620474 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| NICKEL  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.36225     | 0.0483333  |
| Variance                                      | 0.380036917 | 0.0004723  |
| Observations                                  | 4           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | 1.017587889 |            |
| P(T<=t) one-tail                              | 0.191896725 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.38379345  |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MOLYBDENUM                                    |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.035666667 | 0.004      |
| Variance                                      | 0.001161333 | 0.000008   |
| Observations                                  | 3           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 2           |            |
| t Stat  | 1.601224673 |            |
| P(T<=t) one-tail                              | 0.125239988 |            |
| t Critical one-tail                           | 2.91998558  |            |
| P(T<=t) two-tail                              | 0.250479975 |            |
| t Critical two-tail                           | 4.30265273  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CADMIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.00075     | 0.0006667  |
| Variance                                      | 0.00000025  | 1.333E-06  |
| Observations                                  | 4           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | 0.117041147 |            |
| P(T<=t) one-tail                              | 0.457111642 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.914223283 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CAESIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.03325     | 0.004      |
| Variance                                      | 0.00335425  | 0.000018   |
| Observations                                  | 4           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | 1.004708332 |            |
| P(T<=t) one-tail                              | 0.19452996  |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.389059919 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| SODIUM  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 22.356      | 8.515      |
| Variance                                      | 1506.30376  | 54.277825  |
| Observations                                  | 5           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 4           |            |
| t Stat  | 0.774518371 |            |
| P(T<=t) one-tail                              | 0.240929411 |            |
| t Critical one-tail                           | 2.131846786 |            |
| P(T<=t) two-tail                              | 0.481858823 |            |
| t Critical two-tail                           | 2.776445105 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MAGNESIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 1.2456      | 1.636      |
| Variance                                      | 0.9438343   | 1.808044   |
| Observations                                  | 5           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | -0.43883228 |            |
| P(T<=t) one-tail                              | 0.345232676 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.690465352 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| ALUMINIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 2.4336      | 1.2963333  |
| Variance                                      | 1.4293483   | 1.7071053  |
| Observations                                  | 5           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 4           |            |
| t Stat  | 1.229995265 |            |
| P(T<=t) one-tail                              | 0.143046551 |            |
| t Critical one-tail                           | 2.131846786 |            |
| P(T<=t) two-tail                              | 0.286093101 |            |
| t Critical two-tail                           | 2.776445105 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CALCIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 33.144      | 18.503     |
| Variance                                      | 183.21293   | 106.24063  |
| Observations                                  | 5           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 5           |            |
| t Stat  | 1.724786241 |            |
| P(T<=t) one-tail                              | 0.072581851 |            |
| t Critical one-tail                           | 2.015048373 |            |
| P(T<=t) two-tail                              | 0.145163703 |            |
| t Critical two-tail                           | 2.570581836 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CHROMIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.886       | 1.1863333  |
| Variance                                      | 0.0595685   | 0.4273663  |
| Observations                                  | 5           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 2           |            |
| t Stat  | -0.76440459 |            |
| P(T<=t) one-tail                              | 0.262249948 |            |
| t Critical one-tail                           | 2.91998558  |            |
| P(T<=t) two-tail                              | 0.524499897 |            |
| t Critical two-tail                           | 4.30265273  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MANGANESE                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.0526      | 0.0566667  |
| Variance                                      | 0.0003428   | 0.0003943  |
| Observations                                  | 5           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 4           |            |
| t Stat  | -0.28755356 |            |
| P(T<=t) one-tail                              | 0.393985543 |            |
| t Critical one-tail                           | 2.131846786 |            |
| P(T<=t) two-tail                              | 0.787971086 |            |
| t Critical two-tail                           | 2.776445105 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| IRON  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 5.9724      | 8.164      |
| Variance                                      | 6.6355783   | 17.557897  |
| Observations                                  | 5           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | -0.81791221 |            |
| P(T<=t) one-tail                              | 0.236662602 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.473325204 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COBALT  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.0042      | 0.002      |
| Variance                                      | 7.2E-06     | 0          |
| Observations                                  | 5           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 4           |            |
| t Stat  | 1.833333333 |            |
| P(T<=t) one-tail                              | 0.070341132 |            |
| t Critical one-tail                           | 2.131846786 |            |
| P(T<=t) two-tail                              | 0.140682265 |            |
| t Critical two-tail                           | 2.776445105 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COPPER  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.0824      | 0.1296667  |
| Variance                                      | 0.0028283   | 0.0081923  |
| Observations                                  | 5           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | -0.82325151 |            |
| P(T<=t) one-tail                              | 0.235353659 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.470707319 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| RUBIDIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.003       | 0.002      |
| Variance                                      | 0.0000035   | 0.000001   |
| Observations                                  | 5           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 6           |            |
| t Stat  | 0.983738754 |            |
| P(T<=t) one-tail                              | 0.181616961 |            |
| t Critical one-tail                           | 1.943180281 |            |
| P(T<=t) two-tail                              | 0.363233921 |            |
| t Critical two-tail                           | 2.446911851 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| STRONTIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.115       | 0.0543333  |
| Variance                                      | 0.0112325   | 0.0004603  |
| Observations                                  | 5           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 5           |            |
| t Stat  | 1.238367481 |            |
| P(T<=t) one-tail                              | 0.135274163 |            |
| t Critical one-tail                           | 2.015048373 |            |
| P(T<=t) two-tail                              | 0.270548327 |            |
| t Critical two-tail                           | 2.570581836 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| BARIUM  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.0484      | 0.033      |
| Variance                                      | 0.0033628   | 0.000741   |
| Observations                                  | 5           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 6           |            |
| t Stat  | 0.50784442  |            |
| P(T<=t) one-tail                              | 0.314843145 |            |
| t Critical one-tail                           | 1.943180281 |            |
| P(T<=t) two-tail                              | 0.62968629  |            |
| t Critical two-tail                           | 2.446911851 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| LEAD  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.0054      | 0.0053333  |
| Variance                                      | 0.0000118   | 1.733E-05  |
| Observations                                  | 5           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 4           |            |
| t Stat  | 0.023369845 |            |
| P(T<=t) one-tail                              | 0.491237305 |            |
| t Critical one-tail                           | 2.131846786 |            |
| P(T<=t) two-tail                              | 0.98247461  |            |
| t Critical two-tail                           | 2.776445105 |            |

**White Park Bay vs Portbraddan flint from Northern Ireland Chalk formation**

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| POTASSIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.598        | 1.0235     |
| Variance                                      | 0.173104     | 0.2642645  |
| Observations                                  | 3            | 2          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 2            |            |
| t Stat  | -0.976591729 |            |
| P(T<=t) one-tail                              | 0.215882787  |            |
| t Critical one-tail                           | 2.91998558   |            |
| P(T<=t) two-tail                              | 0.431765574  |            |
| t Critical two-tail                           | 4.30265273   |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CALCIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 27.54933333 | 18.503     |
| Variance                                      | 484.9094235 | 106.24063  |
| Observations                                  | 6           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 7           |            |
| t Stat  | 0.839093086 |            |
| P(T<=t) one-tail                              | 0.214568979 |            |
| t Critical one-tail                           | 1.894578605 |            |
| P(T<=t) two-tail                              | 0.429137958 |            |
| t Critical two-tail                           | 2.364624252 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| NICKEL  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.0258       | 0.0483333  |
| Variance                                      | 0.0001247    | 0.0004723  |
| Observations                                  | 5            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -1.668520488 |            |
| P(T<=t) one-tail                              | 0.096902169  |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.193804339  |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MOLYBDENUM                                    |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.020166667 | 0.004      |
| Variance                                      | 0.001032967 | 0.000008   |
| Observations                                  | 6           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 5           |            |
| t Stat  | 1.218050974 |            |
| P(T<=t) one-tail                              | 0.138770848 |            |
| t Critical one-tail                           | 2.015048373 |            |
| P(T<=t) two-tail                              | 0.277541696 |            |
| t Critical two-tail                           | 2.570581836 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| CAESIUM                                       |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.001666667  | 0.004      |
| Variance                                      | 3.86667E-06  | 0.000018   |
| Observations                                  | 6            | 2          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 1            |            |
| t Stat  | -0.751342884 |            |
| P(T<=t) one-tail                              | 0.294893842  |            |
| t Critical one-tail                           | 6.313751515  |            |
| P(T<=t) two-tail                              | 0.589787683  |            |
| t Critical two-tail                           | 12.70620474  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| BERYLLIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.000625    | 0.0003333  |
| Variance                                      | 0.000001125 | 3.333E-07  |
| Observations                                  | 8           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 7           |            |
| t Stat  | 0.581318359 |            |
| P(T<=t) one-tail                              | 0.289627413 |            |
| t Critical one-tail                           | 1.894578605 |            |
| P(T<=t) two-tail                              | 0.579254826 |            |
| t Critical two-tail                           | 2.364624252 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| SODIUM  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 4.248875     | 8.515      |
| Variance                                      | 3.182408125  | 54.277825  |
| Observations                                  | 8            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 2            |            |
| t Stat  | -0.992111111 |            |
| P(T<=t) one-tail                              | 0.212849082  |            |
| t Critical one-tail                           | 2.91998558   |            |
| P(T<=t) two-tail                              | 0.425698164  |            |
| t Critical two-tail                           | 4.30265273   |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| MAGNESIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.694125     | 1.636      |
| Variance                                      | 0.076577554  | 1.808044   |
| Observations                                  | 8            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 2            |            |
| t Stat  | -1.203725946 |            |
| P(T<=t) one-tail                              | 0.175918836  |            |
| t Critical one-tail                           | 2.91998558   |            |
| P(T<=t) two-tail                              | 0.351837673  |            |
| t Critical two-tail                           | 4.30265273   |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| ALUMINIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 1.34375     | 1.2963333  |
| Variance                                      | 0.563129071 | 1.7071053  |
| Observations                                  | 8           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | 0.059297419 |            |
| P(T<=t) one-tail                              | 0.478222092 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.956444183 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| CHROMIUM                                      |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.72975           | 1.1863333         |
| Variance                                      | 0.038567929       | 0.4273663         |
| Observations                                  | 8                 | 3                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 2                 |                   |
| t Stat  | -1.189743723      |                   |
| P(T<=t) one-tail                              | 0.178117838       |                   |
| t Critical one-tail                           | 2.91998558        |                   |
| P(T<=t) two-tail                              | 0.356235676       |                   |
| t Critical two-tail                           | 4.30265273        |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| MANGANESE                                     |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.0375            | 0.0566667         |
| Variance                                      | 0.000119714       | 0.0003943         |
| Observations                                  | 8                 | 3                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 2                 |                   |
| t Stat  | -1.584028908      |                   |
| P(T<=t) one-tail                              | 0.12701971        |                   |
| t Critical one-tail                           | 2.91998558        |                   |
| P(T<=t) two-tail                              | 0.25403942        |                   |
| t Critical two-tail                           | 4.30265273        |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| IRON  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 4.72625           | 8.164             |
| Variance                                      | 2.576081071       | 17.557897         |
| Observations                                  | 8                 | 3                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 2                 |                   |
| t Stat  | -1.383465658      |                   |
| P(T<=t) one-tail                              | 0.150353456       |                   |
| t Critical one-tail                           | 2.91998558        |                   |
| P(T<=t) two-tail                              | 0.300706912       |                   |
| t Critical two-tail                           | 4.30265273        |                   |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COBALT  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.002       | 0.002      |
| Variance                                      | 8.57143E-07 | 0          |
| Observations                                  | 8           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 7           |            |
| t Stat  | 0           |            |
| P(T<=t) one-tail                              | 0.5         |            |
| t Critical one-tail                           | 1.894578605 |            |
| P(T<=t) two-tail                              | 1           |            |
| t Critical two-tail                           | 2.364624252 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| COPPER  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.057625     | 0.1296667  |
| Variance                                      | 0.002543696  | 0.0081923  |
| Observations                                  | 8            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 2            |            |
| t Stat  | -1.304738775 |            |
| P(T<=t) one-tail                              | 0.160956649  |            |
| t Critical one-tail                           | 2.91998558   |            |
| P(T<=t) two-tail                              | 0.321913298  |            |
| t Critical two-tail                           | 4.30265273   |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| RUBIDIUM                                      |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.00175      | 0.002      |
| Variance                                      | 1.64286E-06  | 0.000001   |
| Observations                                  | 8            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 5            |            |
| t Stat  | -0.340620169 |            |
| P(T<=t) one-tail                              | 0.373617377  |            |
| t Critical one-tail                           | 2.015048373  |            |
| P(T<=t) two-tail                              | 0.747234754  |            |
| t Critical two-tail                           | 2.570581836  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| STRONTIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.055375    | 0.0543333  |
| Variance                                      | 0.001878268 | 0.0004603  |
| Observations                                  | 8           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 8           |            |
| t Stat  | 0.052867087 |            |
| P(T<=t) one-tail                              | 0.479567057 |            |
| t Critical one-tail                           | 1.859548038 |            |
| P(T<=t) two-tail                              | 0.959134113 |            |
| t Critical two-tail                           | 2.306004135 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CADMIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.0005      | 0.0006667  |
| Variance                                      | 5.71429E-07 | 1.333E-06  |
| Observations                                  | 8           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | -0.23204774 |            |
| P(T<=t) one-tail                              | 0.415714602 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.831429205 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| BARIUM  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.02275      | 0.033      |
| Variance                                      | 0.000863643  | 0.000741   |
| Observations                                  | 8            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 4            |            |
| t Stat  | -0.544047724 |            |
| P(T<=t) one-tail                              | 0.307657033  |            |
| t Critical one-tail                           | 2.131846786  |            |
| P(T<=t) two-tail                              | 0.615314066  |            |
| t Critical two-tail                           | 2.776445105  |            |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| LEAD  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.003625          | 0.0053333         |
| Variance                                      | 7.69643E-06       | 1.733E-05         |
| Observations                                  | 8                 | 3                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 3                 |                   |
| t Stat  | -0.658033646      |                   |
| P(T<=t) one-tail                              | 0.27875225        |                   |
| t Critical one-tail                           | 2.353363435       |                   |
| P(T<=t) two-tail                              | 0.5575045         |                   |
| t Critical two-tail                           | 3.182446305       |                   |

**White Park Bay vs White Rocks flint from Northern Ireland Chalk formation**

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| SODIUM  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 4.248875     | 4.5438     |
| Variance                                      | 3.182408125  | 12.7573916 |
| Observations                                  | 8            | 15         |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 21           |            |
| t Stat  | -0.263969156 |            |
| P(T<=t) one-tail                              | 0.397188404  |            |
| t Critical one-tail                           | 1.720742903  |            |
| P(T<=t) two-tail                              | 0.794376808  |            |
| t Critical two-tail                           | 2.079613845  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MAGNESIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.694125    | 0.60606667 |
| Variance                                      | 0.076577554 | 0.0677565  |
| Observations                                  | 8           | 15         |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 14          |            |
| t Stat  | 0.741866649 |            |
| P(T<=t) one-tail                              | 0.235215827 |            |
| t Critical one-tail                           | 1.761310136 |            |
| P(T<=t) two-tail                              | 0.470431655 |            |
| t Critical two-tail                           | 2.144786688 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| ALUMINIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 1.34375      | 1.78753333 |
| Variance                                      | 0.563129071  | 0.64906841 |
| Observations                                  | 8            | 15         |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 15           |            |
| t Stat  | -1.316323549 |            |
| P(T<=t) one-tail                              | 0.103913011  |            |
| t Critical one-tail                           | 1.753050356  |            |
| P(T<=t) two-tail                              | 0.207826022  |            |
| t Critical two-tail                           | 2.131449546  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CHROMIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.72975     | 0.89566667 |
| Variance                                      | 0.038567929 | 0.16142438 |
| Observations                                  | 8           | 15         |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 21          |            |
| t Stat  | -1.32913723 |            |
| P(T<=t) one-tail                              | 0.09903172  |            |
| t Critical one-tail                           | 1.720742903 |            |
| P(T<=t) two-tail                              | 0.198063439 |            |
| t Critical two-tail                           | 2.079613845 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| MANGANESE                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.0375       | 0.0468     |
| Variance                                      | 0.000119714  | 0.00035503 |
| Observations                                  | 8            | 15         |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 21           |            |
| t Stat  | -1.496251278 |            |
| P(T<=t) one-tail                              | 0.07473345   |            |
| t Critical one-tail                           | 1.720742903  |            |
| P(T<=t) two-tail                              | 0.149466899  |            |
| t Critical two-tail                           | 2.079613845  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| IRON  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 4.72625      | 6.01866667 |
| Variance                                      | 2.576081071  | 7.63978938 |
| Observations                                  | 8            | 15         |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 21           |            |
| t Stat  | -1.417476845 |            |
| P(T<=t) one-tail                              | 0.085505414  |            |
| t Critical one-tail                           | 1.720742903  |            |
| P(T<=t) two-tail                              | 0.171010828  |            |
| t Critical two-tail                           | 2.079613845  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COBALT  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.002       | 0.002      |
| Variance                                      | 8.57143E-07 | 3.2857E-06 |
| Observations                                  | 8           | 15         |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 21          |            |
| t Stat  | 0           |            |
| P(T<=t) one-tail                              | 0.5         |            |
| t Critical one-tail                           | 1.720742903 |            |
| P(T<=t) two-tail                              | 1           |            |
| t Critical two-tail                           | 2.079613845 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| COPPER  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.057625     | 0.08973333 |
| Variance                                      | 0.002543696  | 0.00689707 |
| Observations                                  | 8            | 15         |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 20           |            |
| t Stat  | -1.151312306 |            |
| P(T<=t) one-tail                              | 0.131591125  |            |
| t Critical one-tail                           | 1.724718243  |            |
| P(T<=t) two-tail                              | 0.26318225   |            |
| t Critical two-tail                           | 2.085963447  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| RUBIDIUM                                      |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.00175      | 0.0028     |
| Variance                                      | 1.64286E-06  | 4.3143E-06 |
| Observations                                  | 8            | 15         |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 20           |            |
| t Stat  | -1.495465254 |            |
| P(T<=t) one-tail                              | 0.075203053  |            |
| t Critical one-tail                           | 1.724718243  |            |
| P(T<=t) two-tail                              | 0.150406106  |            |
| t Critical two-tail                           | 2.085963447  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| STRONTIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.055375     | 0.0562     |
| Variance                                      | 0.001878268  | 0.0014416  |
| Observations                                  | 8            | 15         |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 13           |            |
| t Stat  | -0.045353628 |            |
| P(T<=t) one-tail                              | 0.482257364  |            |
| t Critical one-tail                           | 1.770933396  |            |
| P(T<=t) two-tail                              | 0.964514728  |            |
| t Critical two-tail                           | 2.160368656  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| CADMIUM                                       |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.0005       | 0.00053333 |
| Variance                                      | 5.71429E-07  | 4.0952E-07 |
| Observations                                  | 8            | 15         |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 12           |            |
| t Stat  | -0.106084963 |            |
| P(T<=t) one-tail                              | 0.458633863  |            |
| t Critical one-tail                           | 1.782287556  |            |
| P(T<=t) two-tail                              | 0.917267726  |            |
| t Critical two-tail                           | 2.17881283   |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| BARIUM  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.02275      | 0.0328     |
| Variance                                      | 0.000863643  | 0.00171774 |
| Observations                                  | 8            | 15         |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 19           |            |
| t Stat  | -0.673796613 |            |
| P(T<=t) one-tail                              | 0.254277733  |            |
| t Critical one-tail                           | 1.729132812  |            |
| P(T<=t) two-tail                              | 0.508555467  |            |
| t Critical two-tail                           | 2.093024054  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| LEAD  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.003625     | 0.00469231 |
| Variance                                      | 7.69643E-06  | 1.6064E-05 |
| Observations                                  | 8            | 13         |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 19           |            |
| t Stat  | -0.719946331 |            |
| P(T<=t) one-tail                              | 0.240160779  |            |
| t Critical one-tail                           | 1.729132812  |            |
| P(T<=t) two-tail                              | 0.480321559  |            |
| t Critical two-tail                           | 2.093024054  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| BERYLLIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.000625    | 0.00046154 |
| Variance                                      | 0.000001125 | 6.0256E-07 |
| Observations                                  | 8           | 13         |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 12          |            |
| t Stat  | 0.378026766 |            |
| P(T<=t) one-tail                              | 0.356006397 |            |
| t Critical one-tail                           | 1.782287556 |            |
| P(T<=t) two-tail                              | 0.712012793 |            |
| t Critical two-tail                           | 2.17881283  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| POTASSIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.598       | 0.53333333 |
| Variance                                      | 0.173104    | 0.12227027 |
| Observations                                  | 3           | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | 0.231425588 |            |
| P(T<=t) one-tail                              | 0.415935304 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.831870608 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| CALCIUM                                       |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 27.54933333       | 22.9870667        |
| Variance                                      | 484.9094235       | 86.2263655        |
| Observations                                  | 6                 | 15                |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 6                 |                   |
| t Stat  | 0.490349043       |                   |
| P(T<=t) one-tail                              | 0.320650573       |                   |
| t Critical one-tail                           | 1.943180281       |                   |
| P(T<=t) two-tail                              | 0.641301145       |                   |
| t Critical two-tail                           | 2.446911851       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| NICKEL  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.0258            | 0.03              |
| Variance                                      | 0.0001247         | 0.00099782        |
| Observations                                  | 5                 | 12                |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 15                |                   |
| t Stat  | -0.403974068      |                   |
| P(T<=t) one-tail                              | 0.345966323       |                   |
| t Critical one-tail                           | 1.753050356       |                   |
| P(T<=t) two-tail                              | 0.691932647       |                   |
| t Critical two-tail                           | 2.131449546       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| MOLYBDENUM                                    |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.020166667       | 0.02288889        |
| Variance                                      | 0.001032967       | 0.00105461        |
| Observations                                  | 6                 | 9                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 11                |                   |
| t Stat  | -0.160036573      |                   |
| P(T<=t) one-tail                              | 0.437876596       |                   |
| t Critical one-tail                           | 1.795884819       |                   |
| P(T<=t) two-tail                              | 0.875753192       |                   |
| t Critical two-tail                           | 2.20098516        |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| CAESIUM                                       |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.001666667       | 0.004555556       |
| Variance                                      | 3.86667E-06       | 9.6778E-05        |
| Observations                                  | 6                 | 9                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 9                 |                   |
| t Stat  | -0.85570772       |                   |
| P(T<=t) one-tail                              | 0.207179832       |                   |
| t Critical one-tail                           | 1.833112933       |                   |
| P(T<=t) two-tail                              | 0.414359665       |                   |
| t Critical two-tail                           | 2.262157163       |                   |

**Cloughastucan vs White Rocks flint from Northern Ireland Chalk formation**

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| SODIUM  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 4.5438       | 22.356     |
| Variance                                      | 12.7573916   | 1506.30376 |
| Observations                                  | 15           | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 4            |            |
| t Stat  | -1.024788204 |            |
| P(T<=t) one-tail                              | 0.181695111  |            |
| t Critical one-tail                           | 2.131846786  |            |
| P(T<=t) two-tail                              | 0.363390223  |            |
| t Critical two-tail                           | 2.776445105  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| MAGNESIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.606066667  | 1.2456     |
| Variance                                      | 0.067756495  | 0.9438343  |
| Observations                                  | 15           | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 4            |            |
| t Stat  | -1.454672666 |            |
| P(T<=t) one-tail                              | 0.109723627  |            |
| t Critical one-tail                           | 2.131846786  |            |
| P(T<=t) two-tail                              | 0.219447255  |            |
| t Critical two-tail                           | 2.776445105  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| ALUMINIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 1.787533333  | 2.4336     |
| Variance                                      | 0.64906841   | 1.4293483  |
| Observations                                  | 15           | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 5            |            |
| t Stat  | -1.126124525 |            |
| P(T<=t) one-tail                              | 0.155620671  |            |
| t Critical one-tail                           | 2.015048373  |            |
| P(T<=t) two-tail                              | 0.311241342  |            |
| t Critical two-tail                           | 2.570581836  |            |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| CALCIUM                                       |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 22.98706667       | 33.144            |
| Variance                                      | 86.2263655        | 183.21293         |
| Observations                                  | 15                | 5                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 5                 |                   |
| t Stat  | -1.560004022      |                   |
| P(T<=t) one-tail                              | 0.089753078       |                   |
| t Critical one-tail                           | 2.015048373       |                   |
| P(T<=t) two-tail                              | 0.179506157       |                   |
| t Critical two-tail                           | 2.570581836       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| CHROMIUM                                      |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.895666667       | 0.886             |
| Variance                                      | 0.161424381       | 0.0595685         |
| Observations                                  | 15                | 5                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 12                |                   |
| t Stat  | 0.064194819       |                   |
| P(T<=t) one-tail                              | 0.474936044       |                   |
| t Critical one-tail                           | 1.782287556       |                   |
| P(T<=t) two-tail                              | 0.949872088       |                   |
| t Critical two-tail                           | 2.17881283        |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| MANGANESE                                     |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.0468            | 0.0526            |
| Variance                                      | 0.000355029       | 0.0003428         |
| Observations                                  | 15                | 5                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 7                 |                   |
| t Stat  | -0.603942028      |                   |
| P(T<=t) one-tail                              | 0.282466546       |                   |
| t Critical one-tail                           | 1.894578605       |                   |
| P(T<=t) two-tail                              | 0.564933093       |                   |
| t Critical two-tail                           | 2.364624252       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| IRON  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 6.018666667 | 5.9724     |
| Variance                                      | 7.639789381 | 6.6355783  |
| Observations                                  | 15          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 7           |            |
| t Stat  | 0.03414133  |            |
| P(T<=t) one-tail                              | 0.486858797 |            |
| t Critical one-tail                           | 1.894578605 |            |
| P(T<=t) two-tail                              | 0.973717595 |            |
| t Critical two-tail                           | 2.364624252 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| COBALT  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.002        | 0.0042     |
| Variance                                      | 3.28571E-06  | 7.2E-06    |
| Observations                                  | 15           | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 5            |            |
| t Stat  | -1.708021193 |            |
| P(T<=t) one-tail                              | 0.074167488  |            |
| t Critical one-tail                           | 2.015048373  |            |
| P(T<=t) two-tail                              | 0.148334976  |            |
| t Critical two-tail                           | 2.570581836  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COPPER  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.089733333 | 0.0824     |
| Variance                                      | 0.006897067 | 0.0028283  |
| Observations                                  | 15          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 11          |            |
| t Stat  | 0.229002974 |            |
| P(T<=t) one-tail                              | 0.411534294 |            |
| t Critical one-tail                           | 1.795884819 |            |
| P(T<=t) two-tail                              | 0.823068589 |            |
| t Critical two-tail                           | 2.20098516  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| RUBIDIUM                                      |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.0028       | 0.003      |
| Variance                                      | 4.31429E-06  | 0.0000035  |
| Observations                                  | 15           | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 8            |            |
| t Stat  | -0.201249712 |            |
| P(T<=t) one-tail                              | 0.422763025  |            |
| t Critical one-tail                           | 1.859548038  |            |
| P(T<=t) two-tail                              | 0.84552605   |            |
| t Critical two-tail                           | 2.306004135  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| STRONTIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.0562       | 0.115      |
| Variance                                      | 0.0014416    | 0.0112325  |
| Observations                                  | 15           | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 4            |            |
| t Stat  | -1.214863932 |            |
| P(T<=t) one-tail                              | 0.145612654  |            |
| t Critical one-tail                           | 2.131846786  |            |
| P(T<=t) two-tail                              | 0.291225308  |            |
| t Critical two-tail                           | 2.776445105  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| BARIUM  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.0328       | 0.0484     |
| Variance                                      | 0.001717743  | 0.0033628  |
| Observations                                  | 15           | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 5            |            |
| t Stat  | -0.556053029 |            |
| P(T<=t) one-tail                              | 0.301069493  |            |
| t Critical one-tail                           | 2.015048373  |            |
| P(T<=t) two-tail                              | 0.602138986  |            |
| t Critical two-tail                           | 2.570581836  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| NICKEL  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.03         | 0.36225    |
| Variance                                      | 0.000997818  | 0.38003692 |
| Observations                                  | 12           | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -1.077437605 |            |
| P(T<=t) one-tail                              | 0.180102468  |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.360204937  |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| MOLYBDENUM                                    |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.022888889  | 0.03566667 |
| Variance                                      | 0.001054611  | 0.00116133 |
| Observations                                  | 9            | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -0.569003712 |            |
| P(T<=t) one-tail                              | 0.304582739  |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.609165479  |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| CADMIUM                                       |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.000533333  | 0.00075    |
| Variance                                      | 4.09524E-07  | 0.00000025 |
| Observations                                  | 15           | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 6            |            |
| t Stat  | -0.723019641 |            |
| P(T<=t) one-tail                              | 0.248436342  |            |
| t Critical one-tail                           | 1.943180281  |            |
| P(T<=t) two-tail                              | 0.496872683  |            |
| t Critical two-tail                           | 2.446911851  |            |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| CAESIUM                                       |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.004555556       | 0.03325           |
| Variance                                      | 9.67778E-05       | 0.00335425        |
| Observations                                  | 9                 | 4                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 3                 |                   |
| t Stat  | -0.984607804      |                   |
| P(T<=t) one-tail                              | 0.198707974       |                   |
| t Critical one-tail                           | 2.353363435       |                   |
| P(T<=t) two-tail                              | 0.397415948       |                   |
| t Critical two-tail                           | 3.182446305       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| LEAD  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.004692308       | 0.0054            |
| Variance                                      | 1.60641E-05       | 0.0000118         |
| Observations                                  | 13                | 5                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 9                 |                   |
| t Stat  | -0.373209541      |                   |
| P(T<=t) one-tail                              | 0.358815618       |                   |
| t Critical one-tail                           | 1.833112933       |                   |
| P(T<=t) two-tail                              | 0.717631235       |                   |
| t Critical two-tail                           | 2.262157163       |                   |

**Cloughastucan vs Garron Point flint from Northern Ireland Chalk formation**

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| LITHIUM                                       |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.0015       | 0.006666667 |
| Variance                                      | 0.0000045    | 5.33333E-06 |
| Observations                                  | 2            | 3           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 2            |             |
| t Stat  | -2.574409875 |             |
| P(T<=t) one-tail                              | 0.061769053  |             |
| t Critical one-tail                           | 2.91998558   |             |
| P(T<=t) two-tail                              | 0.123538106  |             |
| t Critical two-tail                           | 4.30265273   |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| POTASSIUM                                     |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 41.6185      | 69.75525    |
| Variance                                      | 3222.680045  | 2145.428657 |
| Observations                                  | 2            | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 2            |             |
| t Stat  | -0.607137989 |             |
| P(T<=t) one-tail                              | 0.302753169  |             |
| t Critical one-tail                           | 2.91998558   |             |
| P(T<=t) two-tail                              | 0.605506339  |             |
| t Critical two-tail                           | 4.30265273   |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CALCIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 33.144      | 26.34333333 |
| Variance                                      | 183.21293   | 0.829733333 |
| Observations                                  | 5           | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 4           |             |
| t Stat  | 1.119246025 |             |
| P(T<=t) one-tail                              | 0.162851964 |             |
| t Critical one-tail                           | 2.131846786 |             |
| P(T<=t) two-tail                              | 0.325703928 |             |
| t Critical two-tail                           | 2.776445105 |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| CADMIUM                                       |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.00075      | 0.011       |
| Variance                                      | 0.00000025   | 5.46667E-05 |
| Observations                                  | 4            | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 3            |             |
| t Stat  | -2.766315924 |             |
| P(T<=t) one-tail                              | 0.034891436  |             |
| t Critical one-tail                           | 2.353363435  |             |
| P(T<=t) two-tail                              | 0.069782872  |             |
| t Critical two-tail                           | 3.182446305  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| NICKEL  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.36225     | 0.0665      |
| Variance                                      | 0.380036917 | 0.000809667 |
| Observations                                  | 4           | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | 0.958472633 |             |
| P(T<=t) one-tail                              | 0.204266289 |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.408532577 |             |
| t Critical two-tail                           | 3.182446305 |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| MOLYBDENUM                                    |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.035666667  | 0.0515      |
| Variance                                      | 0.001161333  | 0.001196333 |
| Observations                                  | 3            | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 4            |             |
| t Stat  | -0.604433819 |             |
| P(T<=t) one-tail                              | 0.289082199  |             |
| t Critical one-tail                           | 2.131846786  |             |
| P(T<=t) two-tail                              | 0.578164398  |             |
| t Critical two-tail                           | 2.776445105  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| CAESIUM                                       |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.03325      | 0.104666667 |
| Variance                                      | 0.00335425   | 3.33333E-07 |
| Observations                                  | 4            | 3           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 3            |             |
| t Stat  | -2.466056865 |             |
| P(T<=t) one-tail                              | 0.045190029  |             |
| t Critical one-tail                           | 2.353363435  |             |
| P(T<=t) two-tail                              | 0.090380059  |             |
| t Critical two-tail                           | 3.182446305  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| SODIUM  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 22.356       | 43.04425    |
| Variance                                      | 1506.30376   | 661.8950323 |
| Observations                                  | 5            | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 7            |             |
| t Stat  | -0.957610278 |             |
| P(T<=t) one-tail                              | 0.185078043  |             |
| t Critical one-tail                           | 1.894578605  |             |
| P(T<=t) two-tail                              | 0.370156086  |             |
| t Critical two-tail                           | 2.364624252  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| MAGNESIUM                                     |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 1.2456       | 2.02075     |
| Variance                                      | 0.9438343    | 0.867402917 |
| Observations                                  | 5            | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 7            |             |
| t Stat  | -1.217103081 |             |
| P(T<=t) one-tail                              | 0.131500528  |             |
| t Critical one-tail                           | 1.894578605  |             |
| P(T<=t) two-tail                              | 0.263001055  |             |
| t Critical two-tail                           | 2.364624252  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| ALUMINIUM                                     |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 2.4336       | 2.59075     |
| Variance                                      | 1.4293483    | 2.844280917 |
| Observations                                  | 5            | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 5            |             |
| t Stat  | -0.157391001 |             |
| P(T<=t) one-tail                              | 0.440547581  |             |
| t Critical one-tail                           | 2.015048373  |             |
| P(T<=t) two-tail                              | 0.881095163  |             |
| t Critical two-tail                           | 2.570581836  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CHROMIUM                                      |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.886       | 0.7695      |
| Variance                                      | 0.0595685   | 0.010289667 |
| Observations                                  | 5           | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 6           |             |
| t Stat  | 0.96794334  |             |
| P(T<=t) one-tail                              | 0.185227024 |             |
| t Critical one-tail                           | 1.943180281 |             |
| P(T<=t) two-tail                              | 0.370454048 |             |
| t Critical two-tail                           | 2.446911851 |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| MANGANESE                                     |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.0526       | 0.05375     |
| Variance                                      | 0.0003428    | 0.000523583 |
| Observations                                  | 5            | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 6            |             |
| t Stat  | -0.081428131 |             |
| P(T<=t) one-tail                              | 0.468874906  |             |
| t Critical one-tail                           | 1.943180281  |             |
| P(T<=t) two-tail                              | 0.937749812  |             |
| t Critical two-tail                           | 2.446911851  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| IRON  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 5.9724      | 5.8175      |
| Variance                                      | 6.6355783   | 0.554041667 |
| Observations                                  | 5           | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 5           |             |
| t Stat  | 0.127949863 |             |
| P(T<=t) one-tail                              | 0.451587785 |             |
| t Critical one-tail                           | 2.015048373 |             |
| P(T<=t) two-tail                              | 0.90317557  |             |
| t Critical two-tail                           | 2.570581836 |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| COBALT  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.0042       | 0.75875     |
| Variance                                      | 7.2E-06      | 0.254528917 |
| Observations                                  | 5            | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 3            |             |
| t Stat  | -2.991193722 |             |
| P(T<=t) one-tail                              | 0.029037635  |             |
| t Critical one-tail                           | 2.353363435  |             |
| P(T<=t) two-tail                              | 0.05807527   |             |
| t Critical two-tail                           | 3.182446305  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| COPPER  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.0824       | 0.13475     |
| Variance                                      | 0.0028283    | 0.001414917 |
| Observations                                  | 5            | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 7            |             |
| t Stat  | -1.726501639 |             |
| P(T<=t) one-tail                              | 0.063950105  |             |
| t Critical one-tail                           | 1.894578605  |             |
| P(T<=t) two-tail                              | 0.12790021   |             |
| t Critical two-tail                           | 2.364624252  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| RUBIDIUM                                      |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.003        | 0.038      |
| Variance                                      | 0.0000035    | 0.000642   |
| Observations                                  | 5            | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -2.756674733 |            |
| P(T<=t) one-tail                              | 0.035173903  |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.070347805  |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| STRONTIUM                                     |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.115        | 0.77        |
| Variance                                      | 0.0112325    | 0.244228667 |
| Observations                                  | 5            | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 3            |             |
| t Stat  | -2.603315877 |             |
| P(T<=t) one-tail                              | 0.040072965  |             |
| t Critical one-tail                           | 2.353363435  |             |
| P(T<=t) two-tail                              | 0.080145931  |             |
| t Critical two-tail                           | 3.182446305  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| BARIUM  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.0484       | 0.26825     |
| Variance                                      | 0.0033628    | 0.164972917 |
| Observations                                  | 5            | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 3            |             |
| t Stat  | -1.073835226 |             |
| P(T<=t) one-tail                              | 0.180792061  |             |
| t Critical one-tail                           | 2.353363435  |             |
| P(T<=t) two-tail                              | 0.361584123  |             |
| t Critical two-tail                           | 3.182446305  |             |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| LEAD  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.0054            | 0.608             |
| Variance                                      | 0.0000118         | 0.655051333       |
| Observations                                  | 5                 | 4                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 3                 |                   |
| t Stat  | -1.489081014      |                   |
| P(T<=t) one-tail                              | 0.116610606       |                   |
| t Critical one-tail                           | 2.353363435       |                   |
| P(T<=t) two-tail                              | 0.233221213       |                   |
| t Critical two-tail                           | 3.182446305       |                   |

### Carnlough vs White Rocks flint from Northern Ireland Chalk formation

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CAESIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.004555556 | 0.029333333 |
| Variance                                      | 9.67778E-05 | 0.005168    |
| Observations                                  | 9           | 9           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 8           |             |
| t Stat  | -1.02445665 |             |
| P(T<=t) one-tail                              | 0.167798174 |             |
| t Critical one-tail                           | 1.859548038 |             |
| P(T<=t) two-tail                              | 0.335596348 |             |
| t Critical two-tail                           | 2.306004135 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| SODIUM  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 4.5438      | 8.007642857 |
| Variance                                      | 12.7573916  | 238.5266801 |
| Observations                                  | 15          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 14          |             |
| t Stat  | -0.81898495 |             |
| P(T<=t) one-tail                              | 0.213258532 |             |
| t Critical one-tail                           | 1.761310136 |             |
| P(T<=t) two-tail                              | 0.426517065 |             |
| t Critical two-tail                           | 2.144786688 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MAGNESIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.606066667 | 0.642785714 |
| Variance                                      | 0.067756495 | 1.13858772  |
| Observations                                  | 15          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 14          |             |
| t Stat  | -0.12532405 |             |
| P(T<=t) one-tail                              | 0.451024428 |             |
| t Critical one-tail                           | 1.761310136 |             |
| P(T<=t) two-tail                              | 0.902048857 |             |
| t Critical two-tail                           | 2.144786688 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| ALUMINIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 1.787533333 | 1.228714286 |
| Variance                                      | 0.64906841  | 0.719769758 |
| Observations                                  | 15          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 27          |             |
| t Stat  | 1.816077536 |             |
| P(T<=t) one-tail                              | 0.040239428 |             |
| t Critical one-tail                           | 1.703288446 |             |
| P(T<=t) two-tail                              | 0.080478856 |             |
| t Critical two-tail                           | 2.051830516 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CHROMIUM                                      |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.895666667 | 1.085928571 |
| Variance                                      | 0.161424381 | 0.205607456 |
| Observations                                  | 15          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 26          |             |
| t Stat  | -1.19268595 |             |
| P(T<=t) one-tail                              | 0.121881879 |             |
| t Critical one-tail                           | 1.70561792  |             |
| P(T<=t) two-tail                              | 0.243763758 |             |
| t Critical two-tail                           | 2.055529439 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MANGANESE                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.0468      | 0.046428571 |
| Variance                                      | 0.000355029 | 0.00027411  |
| Observations                                  | 15          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 27          |             |
| t Stat  | 0.056479787 |             |
| P(T<=t) one-tail                              | 0.477687748 |             |
| t Critical one-tail                           | 1.703288446 |             |
| P(T<=t) two-tail                              | 0.955375497 |             |
| t Critical two-tail                           | 2.051830516 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| IRON  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 6.018666667 | 7.359928571 |
| Variance                                      | 7.639789381 | 9.735133764 |
| Observations                                  | 15          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 26          |             |
| t Stat  | -1.22201535 |             |
| P(T<=t) one-tail                              | 0.11633279  |             |
| t Critical one-tail                           | 1.70561792  |             |
| P(T<=t) two-tail                              | 0.232665581 |             |
| t Critical two-tail                           | 2.055529439 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COBALT  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.002       | 0.003214286 |
| Variance                                      | 3.28571E-06 | 4.02747E-06 |
| Observations                                  | 15          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 26          |             |
| t Stat  | -1.70582726 |             |
| P(T<=t) one-tail                              | 0.049980245 |             |
| t Critical one-tail                           | 1.70561792  |             |
| P(T<=t) two-tail                              | 0.099960489 |             |
| t Critical two-tail                           | 2.055529439 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COPPER  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.089733333 | 0.060428571 |
| Variance                                      | 0.006897067 | 0.003696879 |
| Observations                                  | 15          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 26          |             |
| t Stat  | 1.089202768 |             |
| P(T<=t) one-tail                              | 0.143028743 |             |
| t Critical one-tail                           | 1.70561792  |             |
| P(T<=t) two-tail                              | 0.286057486 |             |
| t Critical two-tail                           | 2.055529439 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| RUBIDIUM                                      |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.0028      | 0.001785714 |
| Variance                                      | 4.31429E-06 | 4.02747E-06 |
| Observations                                  | 15          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 27          |             |
| t Stat  | 1.337256634 |             |
| P(T<=t) one-tail                              | 0.096148216 |             |
| t Critical one-tail                           | 1.703288446 |             |
| P(T<=t) two-tail                              | 0.192296433 |             |
| t Critical two-tail                           | 2.051830516 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| STRONTIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.0562      | 0.056285714 |
| Variance                                      | 0.0014416   | 0.01104822  |
| Observations                                  | 15          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 16          |             |
| t Stat  | -0.00288082 |             |
| P(T<=t) one-tail                              | 0.498868526 |             |
| t Critical one-tail                           | 1.745883676 |             |
| P(T<=t) two-tail                              | 0.997737053 |             |
| t Critical two-tail                           | 2.119905299 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CADMIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.000533333 | 0.000285714 |
| Variance                                      | 4.09524E-07 | 2.1978E-07  |
| Observations                                  | 15          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 26          |             |
| t Stat  | 1.194122662 |             |
| P(T<=t) one-tail                              | 0.121605545 |             |
| t Critical one-tail                           | 1.70561792  |             |
| P(T<=t) two-tail                              | 0.24321109  |             |
| t Critical two-tail                           | 2.055529439 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| BARIUM  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.0328      | 0.017357143 |
| Variance                                      | 0.001717743 | 0.000621016 |
| Observations                                  | 15          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 23          |             |
| t Stat  | 1.225181812 |             |
| P(T<=t) one-tail                              | 0.116453025 |             |
| t Critical one-tail                           | 1.713871528 |             |
| P(T<=t) two-tail                              | 0.232906051 |             |
| t Critical two-tail                           | 2.06865761  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| BERYLLIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.000461538 | 0.000545455 |
| Variance                                      | 6.02564E-07 | 4.72727E-07 |
| Observations                                  | 13          | 11          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 22          |             |
| t Stat  | -0.28077314 |             |
| P(T<=t) one-tail                              | 0.390753983 |             |
| t Critical one-tail                           | 1.717144374 |             |
| P(T<=t) two-tail                              | 0.781507966 |             |
| t Critical two-tail                           | 2.073873068 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| POTASSIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.533333333 | 21.30828571 |
| Variance                                      | 0.122270267 | 2322.224109 |
| Observations                                  | 6           | 7           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 6           |             |
| t Stat  | -1.14057449 |             |
| P(T<=t) one-tail                              | 0.148759781 |             |
| t Critical one-tail                           | 1.943180281 |             |
| P(T<=t) two-tail                              | 0.297519562 |             |
| t Critical two-tail                           | 2.446911851 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CALCIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 22.98706667 | 25.5901     |
| Variance                                      | 86.2263655  | 392.3999068 |
| Observations                                  | 15          | 10          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 12          |             |
| t Stat  | -0.38808726 |             |
| P(T<=t) one-tail                              | 0.352374096 |             |
| t Critical one-tail                           | 1.782287556 |             |
| P(T<=t) two-tail                              | 0.704748193 |             |
| t Critical two-tail                           | 2.17881283  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| NICKEL  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.03        | 0.035545455 |
| Variance                                      | 0.000997818 | 0.000444673 |
| Observations                                  | 12          | 11          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 19          |             |
| t Stat  | -0.4988495  |             |
| P(T<=t) one-tail                              | 0.311805843 |             |
| t Critical one-tail                           | 1.729132812 |             |
| P(T<=t) two-tail                              | 0.623611686 |             |
| t Critical two-tail                           | 2.093024054 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| LEAD  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.004692308 | 0.009928571 |
| Variance                                      | 1.60641E-05 | 0.000418533 |
| Observations                                  | 13          | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 14          |             |
| t Stat  | -0.93848123 |             |
| P(T<=t) one-tail                              | 0.181953507 |             |
| t Critical one-tail                           | 1.761310136 |             |
| P(T<=t) two-tail                              | 0.363907014 |             |
| t Critical two-tail                           | 2.144786688 |             |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| MOLYBDENUM                                    |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.022888889       | 0.031             |
| Variance                                      | 0.001054611       | 0.001363          |
| Observations                                  | 9                 | 11                |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 18                |                   |
| t Stat  | -0.52238712       |                   |
| P(T<=t) one-tail                              | 0.30388543        |                   |
| t Critical one-tail                           | 1.734063607       |                   |
| P(T<=t) two-tail                              | 0.60777086        |                   |
| t Critical two-tail                           | 2.10092204        |                   |

**Carnlough vs Garron Point flint from Northern Ireland Chalk formation**

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| CAESIUM                                       |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.029333333       | 0.104666667       |
| Variance                                      | 0.005168          | 3.33333E-07       |
| Observations                                  | 9                 | 3                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 8                 |                   |
| t Stat  | -3.143439984      |                   |
| P(T<=t) one-tail                              | 0.006866869       |                   |
| t Critical one-tail                           | 1.859548038       |                   |
| P(T<=t) two-tail                              | 0.013733739       |                   |
| t Critical two-tail                           | 2.306004135       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| MOLYBDENUM                                    |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.031             | 0.0515            |
| Variance                                      | 0.001363          | 0.001196333       |
| Observations                                  | 11                | 4                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 6                 |                   |
| t Stat  | -0.996753034      |                   |
| P(T<=t) one-tail                              | 0.178684554       |                   |
| t Critical one-tail                           | 1.943180281       |                   |
| P(T<=t) two-tail                              | 0.357369108       |                   |
| t Critical two-tail                           | 2.446911851       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| NICKEL  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.035545455       | 0.0665            |
| Variance                                      | 0.000444673       | 0.000809667       |
| Observations                                  | 11                | 4                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 4                 |                   |
| t Stat  | -1.986383108      |                   |
| P(T<=t) one-tail                              | 0.058968669       |                   |
| t Critical one-tail                           | 2.131846786       |                   |
| P(T<=t) two-tail                              | 0.117937337       |                   |
| t Critical two-tail                           | 2.776445105       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CALCIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 29.20333333 | 26.34333333 |
| Variance                                      | 294.576025  | 0.829733333 |
| Observations                                  | 9           | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 8           |             |
| t Stat  | 0.497807437 |             |
| P(T<=t) one-tail                              | 0.316006702 |             |
| t Critical one-tail                           | 1.859548038 |             |
| P(T<=t) two-tail                              | 0.632013403 |             |
| t Critical two-tail                           | 2.306004135 |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| POTASSIUM                                     |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 21.30828571  | 69.75525    |
| Variance                                      | 2322.224109  | 2145.428657 |
| Observations                                  | 7            | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 7            |             |
| t Stat  | -1.644299119 |             |
| P(T<=t) one-tail                              | 0.072056617  |             |
| t Critical one-tail                           | 1.894578605  |             |
| P(T<=t) two-tail                              | 0.144113235  |             |
| t Critical two-tail                           | 2.364624252  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| BERYLLIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.000545455 | 0          |
| Variance                                      | 4.72727E-07 | 0          |
| Observations                                  | 11          | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 10          |            |
| t Stat  | 2.631174058 |            |
| P(T<=t) one-tail                              | 0.012555751 |            |
| t Critical one-tail                           | 1.812461123 |            |
| P(T<=t) two-tail                              | 0.025111501 |            |
| t Critical two-tail                           | 2.228138852 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| SODIUM  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 8.007642857  | 43.04425    |
| Variance                                      | 238.5266801  | 661.8950323 |
| Observations                                  | 14           | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 4            |             |
| t Stat  | -2.593445174 |             |
| P(T<=t) one-tail                              | 0.030232003  |             |
| t Critical one-tail                           | 2.131846786  |             |
| P(T<=t) two-tail                              | 0.060464007  |             |
| t Critical two-tail                           | 2.776445105  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| MAGNESIUM                                     |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.642785714  | 2.02075     |
| Variance                                      | 1.13858772   | 0.867402917 |
| Observations                                  | 14           | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 5            |             |
| t Stat  | -2.523479927 |             |
| P(T<=t) one-tail                              | 0.02647467   |             |
| t Critical one-tail                           | 2.015048373  |             |
| P(T<=t) two-tail                              | 0.052949339  |             |
| t Critical two-tail                           | 2.570581836  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| ALUMINIUM                                     |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 1.228714286  | 2.59075     |
| Variance                                      | 0.719769758  | 2.844280917 |
| Observations                                  | 14           | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 3            |             |
| t Stat  | -1.559816811 |             |
| P(T<=t) one-tail                              | 0.108353187  |             |
| t Critical one-tail                           | 2.353363435  |             |
| P(T<=t) two-tail                              | 0.216706374  |             |
| t Critical two-tail                           | 3.182446305  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CHROMIUM                                      |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 1.085928571 | 0.7695      |
| Variance                                      | 0.205607456 | 0.010289667 |
| Observations                                  | 14          | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 16          |             |
| t Stat  | 2.408641194 |             |
| P(T<=t) one-tail                              | 0.01421298  |             |
| t Critical one-tail                           | 1.745883676 |             |
| P(T<=t) two-tail                              | 0.028425961 |             |
| t Critical two-tail                           | 2.119905299 |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| MANGANESE                                     |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.046428571  | 0.05375     |
| Variance                                      | 0.00027411   | 0.000523583 |
| Observations                                  | 14           | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 4            |             |
| t Stat  | -0.596847657 |             |
| P(T<=t) one-tail                              | 0.291374624  |             |
| t Critical one-tail                           | 2.131846786  |             |
| P(T<=t) two-tail                              | 0.582749248  |             |
| t Critical two-tail                           | 2.776445105  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| IRON  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 7.359928571 | 5.8175      |
| Variance                                      | 9.735133764 | 0.554041667 |
| Observations                                  | 14          | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 16          |             |
| t Stat  | 1.689094835 |             |
| P(T<=t) one-tail                              | 0.055295178 |             |
| t Critical one-tail                           | 1.745883676 |             |
| P(T<=t) two-tail                              | 0.110590356 |             |
| t Critical two-tail                           | 2.119905299 |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| COBALT  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.003214286  | 0.75875     |
| Variance                                      | 4.02747E-06  | 0.254528917 |
| Observations                                  | 14           | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 3            |             |
| t Stat  | -2.995128418 |             |
| P(T<=t) one-tail                              | 0.028946626  |             |
| t Critical one-tail                           | 2.353363435  |             |
| P(T<=t) two-tail                              | 0.057893252  |             |
| t Critical two-tail                           | 3.182446305  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| COPPER  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.060428571  | 0.13475     |
| Variance                                      | 0.003696879  | 0.001414917 |
| Observations                                  | 14           | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 8            |             |
| t Stat  | -2.990149638 |             |
| P(T<=t) one-tail                              | 0.008664996  |             |
| t Critical one-tail                           | 1.859548038  |             |
| P(T<=t) two-tail                              | 0.017329992  |             |
| t Critical two-tail                           | 2.306004135  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| RUBIDIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.001785714 | 0.038      |
| Variance                                      | 4.02747E-06 | 0.000642   |
| Observations                                  | 14          | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | -2.85596936 |            |
| P(T<=t) one-tail                              | 0.032395384 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.064790768 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| STRONTIUM                                     |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.056285714  | 0.77        |
| Variance                                      | 0.01104822   | 0.244228667 |
| Observations                                  | 14           | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 3            |             |
| t Stat  | -2.869904464 |             |
| P(T<=t) one-tail                              | 0.032027663  |             |
| t Critical one-tail                           | 2.353363435  |             |
| P(T<=t) two-tail                              | 0.064055325  |             |
| t Critical two-tail                           | 3.182446305  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| CADMIUM                                       |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.000285714  | 0.011       |
| Variance                                      | 2.1978E-07   | 5.46667E-05 |
| Observations                                  | 14           | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 3            |             |
| t Stat  | -2.896560697 |             |
| P(T<=t) one-tail                              | 0.031338664  |             |
| t Critical one-tail                           | 2.353363435  |             |
| P(T<=t) two-tail                              | 0.062677328  |             |
| t Critical two-tail                           | 3.182446305  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| BARIUM  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.017357143  | 0.26825     |
| Variance                                      | 0.000621016  | 0.164972917 |
| Observations                                  | 14           | 4           |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 3            |             |
| t Stat  | -1.234748604 |             |
| P(T<=t) one-tail                              | 0.152408702  |             |
| t Critical one-tail                           | 2.353363435  |             |
| P(T<=t) two-tail                              | 0.304817404  |             |
| t Critical two-tail                           | 3.182446305  |             |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| LEAD  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.009928571       | 0.608             |
| Variance                                      | 0.000418533       | 0.655051333       |
| Observations                                  | 14                | 4                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 3                 |                   |
| t Stat  | -1.47776626       |                   |
| P(T<=t) one-tail                              | 0.11799453        |                   |
| t Critical one-tail                           | 2.353363435       |                   |
| P(T<=t) two-tail                              | 0.235989059       |                   |
| t Critical two-tail                           | 3.182446305       |                   |

**Carnlough vs Ballintoy flint from Northern Ireland Chalk formation**

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| BERYLLIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.000545455 | 0.000166667 |
| Variance                                      | 4.72727E-07 | 1.66667E-07 |
| Observations                                  | 11          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 15          |             |
| t Stat  | 1.424044929 |             |
| P(T<=t) one-tail                              | 0.08745175  |             |
| t Critical one-tail                           | 1.753050356 |             |
| P(T<=t) two-tail                              | 0.174903499 |             |
| t Critical two-tail                           | 2.131449546 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| POTASSIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 21.30828571 | 0.683       |
| Variance                                      | 2322.224109 | 0.205668667 |
| Observations                                  | 7           | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 6           |             |
| t Stat  | 1.132304611 |             |
| P(T<=t) one-tail                              | 0.150359585 |             |
| t Critical one-tail                           | 1.943180281 |             |
| P(T<=t) two-tail                              | 0.300719171 |             |
| t Critical two-tail                           | 2.446911851 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CALCIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 29.20333333 | 13.86625    |
| Variance                                      | 294.576025  | 180.4563563 |
| Observations                                  | 9           | 4           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 7           |             |
| t Stat  | 1.738313446 |             |
| P(T<=t) one-tail                              | 0.062858793 |             |
| t Critical one-tail                           | 1.894578605 |             |
| P(T<=t) two-tail                              | 0.125717586 |             |
| t Critical two-tail                           | 2.364624252 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| NICKEL  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.035545455 | 0.0438     |
| Variance                                      | 0.000444673 | 0.0003802  |
| Observations                                  | 11          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 8           |            |
| t Stat  | -0.76488445 |            |
| P(T<=t) one-tail                              | 0.233151072 |            |
| t Critical one-tail                           | 1.859548038 |            |
| P(T<=t) two-tail                              | 0.466302143 |            |
| t Critical two-tail                           | 2.306004135 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MOLYBDENUM                                    |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.031       | 0.0875     |
| Variance                                      | 0.001363    | 0.028113   |
| Observations                                  | 11          | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | -0.66808214 |            |
| P(T<=t) one-tail                              | 0.27594271  |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.55188542  |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CAESIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.029333333 | 0.0034     |
| Variance                                      | 0.005168    | 0.0000118  |
| Observations                                  | 9           | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 8           |            |
| t Stat  | 1.080009855 |            |
| P(T<=t) one-tail                              | 0.155809396 |            |
| t Critical one-tail                           | 1.859548038 |            |
| P(T<=t) two-tail                              | 0.311618792 |            |
| t Critical two-tail                           | 2.306004135 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| SODIUM  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 8.007642857 | 2.678      |
| Variance                                      | 238.5266801 | 6.515662   |
| Observations                                  | 14          | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 15          |            |
| t Stat  | 1.251919225 |            |
| P(T<=t) one-tail                              | 0.11488487  |            |
| t Critical one-tail                           | 1.753050356 |            |
| P(T<=t) two-tail                              | 0.22976974  |            |
| t Critical two-tail                           | 2.131449546 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MAGNESIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.642785714 | 0.328333333 |
| Variance                                      | 1.13858772  | 0.074391867 |
| Observations                                  | 14          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 16          |             |
| t Stat  | 1.027126801 |             |
| P(T<=t) one-tail                              | 0.159819693 |             |
| t Critical one-tail                           | 1.745883676 |             |
| P(T<=t) two-tail                              | 0.319639385 |             |
| t Critical two-tail                           | 2.119905299 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| ALUMINIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 1.228714286 | 1.024333333 |
| Variance                                      | 0.719769758 | 1.433846667 |
| Observations                                  | 14          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 7           |             |
| t Stat  | 0.379273199 |             |
| P(T<=t) one-tail                              | 0.357864072 |             |
| t Critical one-tail                           | 1.894578605 |             |
| P(T<=t) two-tail                              | 0.715728144 |             |
| t Critical two-tail                           | 2.364624252 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CHROMIUM                                      |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 1.085928571 | 1.010666667 |
| Variance                                      | 0.205607456 | 0.110722267 |
| Observations                                  | 14          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 13          |             |
| t Stat  | 0.413427374 |             |
| P(T<=t) one-tail                              | 0.343016077 |             |
| t Critical one-tail                           | 1.770933396 |             |
| P(T<=t) two-tail                              | 0.686032153 |             |
| t Critical two-tail                           | 2.160368656 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MANGANESE                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.046428571 | 0.042      |
| Variance                                      | 0.00027411  | 0.0002028  |
| Observations                                  | 14          | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 11          |            |
| t Stat  | 0.606146088 |            |
| P(T<=t) one-tail                              | 0.278359612 |            |
| t Critical one-tail                           | 1.795884819 |            |
| P(T<=t) two-tail                              | 0.556719224 |            |
| t Critical two-tail                           | 2.20098516  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| IRON  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 7.359928571 | 6.851833333 |
| Variance                                      | 9.735133764 | 5.692144167 |
| Observations                                  | 14          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 12          |             |
| t Stat  | 0.396265842 |             |
| P(T<=t) one-tail                              | 0.349432394 |             |
| t Critical one-tail                           | 1.782287556 |             |
| P(T<=t) two-tail                              | 0.698864788 |             |
| t Critical two-tail                           | 2.17881283  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COBALT  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.003214286 | 0.001833333 |
| Variance                                      | 4.02747E-06 | 5.66667E-07 |
| Observations                                  | 14          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 18          |             |
| t Stat  | 2.233974543 |             |
| P(T<=t) one-tail                              | 0.019205207 |             |
| t Critical one-tail                           | 1.734063607 |             |
| P(T<=t) two-tail                              | 0.038410414 |             |
| t Critical two-tail                           | 2.10092204  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COPPER  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.060428571 | 0.039      |
| Variance                                      | 0.003696879 | 0.0008728  |
| Observations                                  | 14          | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 17          |            |
| t Stat  | 1.058889506 |            |
| P(T<=t) one-tail                              | 0.152232265 |            |
| t Critical one-tail                           | 1.739606726 |            |
| P(T<=t) two-tail                              | 0.30446453  |            |
| t Critical two-tail                           | 2.109815578 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| RUBIDIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.001785714 | 0.0015     |
| Variance                                      | 4.02747E-06 | 0.0000007  |
| Observations                                  | 14          | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 18          |            |
| t Stat  | 0.449321131 |            |
| P(T<=t) one-tail                              | 0.329281631 |            |
| t Critical one-tail                           | 1.734063607 |            |
| P(T<=t) two-tail                              | 0.658563262 |            |
| t Critical two-tail                           | 2.10092204  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| STRONTIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.056285714 | 0.0245     |
| Variance                                      | 0.01104822  | 5.91E-05   |
| Observations                                  | 14          | 6          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 13          |            |
| t Stat  | 1.124491716 |            |
| P(T<=t) one-tail                              | 0.140569687 |            |
| t Critical one-tail                           | 1.770933396 |            |
| P(T<=t) two-tail                              | 0.281139374 |            |
| t Critical two-tail                           | 2.160368656 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CADMIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.000285714 | 0.000333333 |
| Variance                                      | 2.1978E-07  | 2.66667E-07 |
| Observations                                  | 14          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 9           |             |
| t Stat  | -0.19417265 |             |
| P(T<=t) one-tail                              | 0.425176363 |             |
| t Critical one-tail                           | 1.833112933 |             |
| P(T<=t) two-tail                              | 0.850352726 |             |
| t Critical two-tail                           | 2.262157163 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| BARIUM  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.017357143 | 0.026833333 |
| Variance                                      | 0.000621016 | 0.002518967 |
| Observations                                  | 14          | 6           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 6           |             |
| t Stat  | -0.4398329  |             |
| P(T<=t) one-tail                              | 0.337729289 |             |
| t Critical one-tail                           | 1.943180281 |             |
| P(T<=t) two-tail                              | 0.675458578 |             |
| t Critical two-tail                           | 2.446911851 |             |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| LEAD  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.009928571       | 0.001333333       |
| Variance                                      | 0.000418533       | 1.86667E-06       |
| Observations                                  | 14                | 6                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 13                |                   |
| t Stat  | 1.563900002       |                   |
| P(T<=t) one-tail                              | 0.070924532       |                   |
| t Critical one-tail                           | 1.770933396       |                   |
| P(T<=t) two-tail                              | 0.141849063       |                   |
| t Critical two-tail                           | 2.160368656       |                   |

**Carnlough vs Portbraddan flint from Northern Ireland Chalk formation**

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| BERYLLIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.000545455 | 0.000333333 |
| Variance                                      | 4.72727E-07 | 3.33333E-07 |
| Observations                                  | 11          | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 4           |             |
| t Stat  | 0.540383477 |             |
| P(T<=t) one-tail                              | 0.308807863 |             |
| t Critical one-tail                           | 2.131846786 |             |
| P(T<=t) two-tail                              | 0.617615727 |             |
| t Critical two-tail                           | 2.776445105 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| POTASSIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 21.30828571 | 1.0235     |
| Variance                                      | 2322.224109 | 0.2642645  |
| Observations                                  | 7           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 6           |            |
| t Stat  | 1.113476123 |            |
| P(T<=t) one-tail                              | 0.154056002 |            |
| t Critical one-tail                           | 1.943180281 |            |
| P(T<=t) two-tail                              | 0.308112005 |            |
| t Critical two-tail                           | 2.446911851 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CALCIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 29.20333333 | 18.503     |
| Variance                                      | 294.576025  | 106.240627 |
| Observations                                  | 9           | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 6           |            |
| t Stat  | 1.296232245 |            |
| P(T<=t) one-tail                              | 0.121258951 |            |
| t Critical one-tail                           | 1.943180281 |            |
| P(T<=t) two-tail                              | 0.242517903 |            |
| t Critical two-tail                           | 2.446911851 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| NICKEL  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.035545455 | 0.048333333 |
| Variance                                      | 0.000444673 | 0.000472333 |
| Observations                                  | 11          | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | -0.90909521 |             |
| P(T<=t) one-tail                              | 0.215161769 |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.430323538 |             |
| t Critical two-tail                           | 3.182446305 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MOLYBDENUM                                    |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.031       | 0.004      |
| Variance                                      | 0.001363    | 0.000008   |
| Observations                                  | 11          | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 11          |            |
| t Stat  | 2.387333312 |            |
| P(T<=t) one-tail                              | 0.018015456 |            |
| t Critical one-tail                           | 1.795884819 |            |
| P(T<=t) two-tail                              | 0.036030911 |            |
| t Critical two-tail                           | 2.20098516  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CAESIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.029333333 | 0.004      |
| Variance                                      | 0.005168    | 0.000018   |
| Observations                                  | 9           | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 8           |            |
| t Stat  | 1.04899956  |            |
| P(T<=t) one-tail                              | 0.162416227 |            |
| t Critical one-tail                           | 1.859548038 |            |
| P(T<=t) two-tail                              | 0.324832454 |            |
| t Critical two-tail                           | 2.306004135 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| SODIUM  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 8.007642857 | 8.515      |
| Variance                                      | 238.5266801 | 54.277825  |
| Observations                                  | 14          | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 7           |            |
| t Stat  | -0.08559991 |            |
| P(T<=t) one-tail                              | 0.467090691 |            |
| t Critical one-tail                           | 1.894578605 |            |
| P(T<=t) two-tail                              | 0.934181381 |            |
| t Critical two-tail                           | 2.364624252 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MAGNESIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.642785714 | 1.636      |
| Variance                                      | 1.13858772  | 1.808044   |
| Observations                                  | 14          | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | -1.20091437 |            |
| P(T<=t) one-tail                              | 0.157977701 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.315955402 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| ALUMINIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 1.228714286 | 1.296333333 |
| Variance                                      | 0.719769758 | 1.707105333 |
| Observations                                  | 14          | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 2           |             |
| t Stat  | -0.08584532 |             |
| P(T<=t) one-tail                              | 0.469704859 |             |
| t Critical one-tail                           | 2.91998558  |             |
| P(T<=t) two-tail                              | 0.939409718 |             |
| t Critical two-tail                           | 4.30265273  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CHROMIUM                                      |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 1.085928571 | 1.186333333 |
| Variance                                      | 0.205607456 | 0.427366333 |
| Observations                                  | 14          | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 2           |             |
| t Stat  | -0.25328449 |             |
| P(T<=t) one-tail                              | 0.411852975 |             |
| t Critical one-tail                           | 2.91998558  |             |
| P(T<=t) two-tail                              | 0.823705951 |             |
| t Critical two-tail                           | 4.30265273  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MANGANESE                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.046428571 | 0.056666667 |
| Variance                                      | 0.00027411  | 0.000394333 |
| Observations                                  | 14          | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 3           |             |
| t Stat  | -0.83309894 |             |
| P(T<=t) one-tail                              | 0.232955909 |             |
| t Critical one-tail                           | 2.353363435 |             |
| P(T<=t) two-tail                              | 0.465911817 |             |
| t Critical two-tail                           | 3.182446305 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| IRON  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 7.359928571 | 8.164      |
| Variance                                      | 9.735133764 | 17.557897  |
| Observations                                  | 14          | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 2           |            |
| t Stat  | -0.31422471 |            |
| P(T<=t) one-tail                              | 0.391549563 |            |
| t Critical one-tail                           | 2.91998558  |            |
| P(T<=t) two-tail                              | 0.783099127 |            |
| t Critical two-tail                           | 4.30265273  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COBALT  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.003214286 | 0.002      |
| Variance                                      | 4.02747E-06 | 0          |
| Observations                                  | 14          | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 13          |            |
| t Stat  | 2.263959274 |            |
| P(T<=t) one-tail                              | 0.020663823 |            |
| t Critical one-tail                           | 1.770933396 |            |
| P(T<=t) two-tail                              | 0.041327645 |            |
| t Critical two-tail                           | 2.160368656 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COPPER  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.060428571 | 0.129666667 |
| Variance                                      | 0.003696879 | 0.008192333 |
| Observations                                  | 14          | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 2           |             |
| t Stat  | -1.2651973  |             |
| P(T<=t) one-tail                              | 0.166624767 |             |
| t Critical one-tail                           | 2.91998558  |             |
| P(T<=t) two-tail                              | 0.333249534 |             |
| t Critical two-tail                           | 4.30265273  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| RUBIDIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.001785714 | 0.002      |
| Variance                                      | 4.02747E-06 | 0.000001   |
| Observations                                  | 14          | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 6           |            |
| t Stat  | -0.27192175 |            |
| P(T<=t) one-tail                              | 0.397398452 |            |
| t Critical one-tail                           | 1.943180281 |            |
| P(T<=t) two-tail                              | 0.794796905 |            |
| t Critical two-tail                           | 2.446911851 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| STRONTIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.056285714 | 0.054333333 |
| Variance                                      | 0.01104822  | 0.000460333 |
| Observations                                  | 14          | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 15          |             |
| t Stat  | 0.063591659 |             |
| P(T<=t) one-tail                              | 0.475067536 |             |
| t Critical one-tail                           | 1.753050356 |             |
| P(T<=t) two-tail                              | 0.950135071 |             |
| t Critical two-tail                           | 2.131449546 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CADMIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.000285714 | 0.000666667 |
| Variance                                      | 2.1978E-07  | 1.33333E-06 |
| Observations                                  | 14          | 3           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 2           |             |
| t Stat  | -0.56159634 |             |
| P(T<=t) one-tail                              | 0.315463554 |             |
| t Critical one-tail                           | 2.91998558  |             |
| P(T<=t) two-tail                              | 0.630927107 |             |
| t Critical two-tail                           | 4.30265273  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| BARIUM  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.017357143 | 0.033      |
| Variance                                      | 0.000621016 | 0.000741   |
| Observations                                  | 14          | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 3           |            |
| t Stat  | -0.91643648 |            |
| P(T<=t) one-tail                              | 0.213508957 |            |
| t Critical one-tail                           | 2.353363435 |            |
| P(T<=t) two-tail                              | 0.427017914 |            |
| t Critical two-tail                           | 3.182446305 |            |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| LEAD  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.009928571       | 0.005333333       |
| Variance                                      | 0.000418533       | 1.73333E-05       |
| Observations                                  | 14                | 3                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 15                |                   |
| t Stat  | 0.769375344       |                   |
| P(T<=t) one-tail                              | 0.226808084       |                   |
| t Critical one-tail                           | 1.753050356       |                   |
| P(T<=t) two-tail                              | 0.453616169       |                   |
| t Critical two-tail                           | 2.131449546       |                   |

**Carnlough vs White Park Bay flint from Northern Ireland Chalk formation**

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| BERYLLIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.000625    | 0.000545455 |
| Variance                                      | 0.000001125 | 4.72727E-07 |
| Observations                                  | 8           | 11          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 11          |             |
| t Stat  | 0.185643089 |             |
| P(T<=t) one-tail                              | 0.428051786 |             |
| t Critical one-tail                           | 1.795884819 |             |
| P(T<=t) two-tail                              | 0.856103572 |             |
| t Critical two-tail                           | 2.20098516  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| POTASSIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.598       | 21.30828571 |
| Variance                                      | 0.173104    | 2322.224109 |
| Observations                                  | 3           | 7           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 6           |             |
| t Stat  | -1.13696025 |             |
| P(T<=t) one-tail                              | 0.149457179 |             |
| t Critical one-tail                           | 1.943180281 |             |
| P(T<=t) two-tail                              | 0.298914358 |             |
| t Critical two-tail                           | 2.446911851 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CALCIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 27.54933333 | 29.20333333 |
| Variance                                      | 484.9094235 | 294.576025  |
| Observations                                  | 6           | 9           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 9           |             |
| t Stat  | -0.15521869 |             |
| P(T<=t) one-tail                              | 0.440037165 |             |
| t Critical one-tail                           | 1.833112933 |             |
| P(T<=t) two-tail                              | 0.880074329 |             |
| t Critical two-tail                           | 2.262157163 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| NICKEL  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.0258      | 0.035545455 |
| Variance                                      | 0.0001247   | 0.000444673 |
| Observations                                  | 5           | 11          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 13          |             |
| t Stat  | -1.20539713 |             |
| P(T<=t) one-tail                              | 0.124766652 |             |
| t Critical one-tail                           | 1.770933396 |             |
| P(T<=t) two-tail                              | 0.249533304 |             |
| t Critical two-tail                           | 2.160368656 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MOLYBDENUM                                    |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.020166667 | 0.031      |
| Variance                                      | 0.001032967 | 0.001363   |
| Observations                                  | 6           | 11         |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 12          |            |
| t Stat  | -0.62960005 |            |
| P(T<=t) one-tail                              | 0.270379218 |            |
| t Critical one-tail                           | 1.782287556 |            |
| P(T<=t) two-tail                              | 0.540758435 |            |
| t Critical two-tail                           | 2.17881283  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CAESIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.001666667 | 0.029333333 |
| Variance                                      | 3.86667E-06 | 0.005168    |
| Observations                                  | 6           | 9           |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 8           |             |
| t Stat  | -1.15391355 |             |
| P(T<=t) one-tail                              | 0.140920609 |             |
| t Critical one-tail                           | 1.859548038 |             |
| P(T<=t) two-tail                              | 0.281841219 |             |
| t Critical two-tail                           | 2.306004135 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| SODIUM  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 4.248875    | 8.007642857 |
| Variance                                      | 3.182408125 | 238.5266801 |
| Observations                                  | 8           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 14          |             |
| t Stat  | -0.90017984 |             |
| P(T<=t) one-tail                              | 0.191623957 |             |
| t Critical one-tail                           | 1.761310136 |             |
| P(T<=t) two-tail                              | 0.383247914 |             |
| t Critical two-tail                           | 2.144786688 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MAGNESIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.694125    | 0.642785714 |
| Variance                                      | 0.076577554 | 1.13858772  |
| Observations                                  | 8           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 16          |             |
| t Stat  | 0.170281766 |             |
| P(T<=t) one-tail                              | 0.433461566 |             |
| t Critical one-tail                           | 1.745883676 |             |
| P(T<=t) two-tail                              | 0.866923133 |             |
| t Critical two-tail                           | 2.119905299 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| ALUMINIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 1.34375     | 1.228714286 |
| Variance                                      | 0.563129071 | 0.719769758 |
| Observations                                  | 8           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 16          |             |
| t Stat  | 0.32961217  |             |
| P(T<=t) one-tail                              | 0.372984394 |             |
| t Critical one-tail                           | 1.745883676 |             |
| P(T<=t) two-tail                              | 0.745968787 |             |
| t Critical two-tail                           | 2.119905299 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CHROMIUM                                      |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.72975     | 1.085928571 |
| Variance                                      | 0.038567929 | 0.205607456 |
| Observations                                  | 8           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 19          |             |
| t Stat  | -2.55017449 |             |
| P(T<=t) one-tail                              | 0.009775904 |             |
| t Critical one-tail                           | 1.729132812 |             |
| P(T<=t) two-tail                              | 0.019551808 |             |
| t Critical two-tail                           | 2.093024054 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MANGANESE                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.0375      | 0.046428571 |
| Variance                                      | 0.000119714 | 0.00027411  |
| Observations                                  | 8           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 19          |             |
| t Stat  | -1.51914213 |             |
| P(T<=t) one-tail                              | 0.072596198 |             |
| t Critical one-tail                           | 1.729132812 |             |
| P(T<=t) two-tail                              | 0.145192396 |             |
| t Critical two-tail                           | 2.093024054 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| IRON  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 4.72625     | 7.359928571 |
| Variance                                      | 2.576081071 | 9.735133764 |
| Observations                                  | 8           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 20          |             |
| t Stat  | -2.61109004 |             |
| P(T<=t) one-tail                              | 0.008360369 |             |
| t Critical one-tail                           | 1.724718243 |             |
| P(T<=t) two-tail                              | 0.016720739 |             |
| t Critical two-tail                           | 2.085963447 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COBALT  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.002       | 0.003214286 |
| Variance                                      | 8.57143E-07 | 4.02747E-06 |
| Observations                                  | 8           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 19          |             |
| t Stat  | -1.93250936 |             |
| P(T<=t) one-tail                              | 0.034172035 |             |
| t Critical one-tail                           | 1.729132812 |             |
| P(T<=t) two-tail                              | 0.06834407  |             |
| t Critical two-tail                           | 2.093024054 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COPPER  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.057625    | 0.060428571 |
| Variance                                      | 0.002543696 | 0.003696879 |
| Observations                                  | 8           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 17          |             |
| t Stat  | -0.11620929 |             |
| P(T<=t) one-tail                              | 0.454424216 |             |
| t Critical one-tail                           | 1.739606726 |             |
| P(T<=t) two-tail                              | 0.908848432 |             |
| t Critical two-tail                           | 2.109815578 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| RUBIDIUM                                      |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.00175     | 0.001785714 |
| Variance                                      | 1.64286E-06 | 4.02747E-06 |
| Observations                                  | 8           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 20          |             |
| t Stat  | -0.0508632  |             |
| P(T<=t) one-tail                              | 0.47996955  |             |
| t Critical one-tail                           | 1.724718243 |             |
| P(T<=t) two-tail                              | 0.9599391   |             |
| t Critical two-tail                           | 2.085963447 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| STRONTIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.055375    | 0.056285714 |
| Variance                                      | 0.001878268 | 0.01104822  |
| Observations                                  | 8           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 19          |             |
| t Stat  | -0.02846063 |             |
| P(T<=t) one-tail                              | 0.488795795 |             |
| t Critical one-tail                           | 1.729132812 |             |
| P(T<=t) two-tail                              | 0.97759159  |             |
| t Critical two-tail                           | 2.093024054 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| CADMIUM                                       |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.0005      | 0.000285714 |
| Variance                                      | 5.71429E-07 | 2.1978E-07  |
| Observations                                  | 8           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 10          |             |
| t Stat  | 0.725966271 |             |
| P(T<=t) one-tail                              | 0.242251831 |             |
| t Critical one-tail                           | 1.812461123 |             |
| P(T<=t) two-tail                              | 0.484503662 |             |
| t Critical two-tail                           | 2.228138852 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| BARIUM  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.02275     | 0.017357143 |
| Variance                                      | 0.000863643 | 0.000621016 |
| Observations                                  | 8           | 14          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 13          |             |
| t Stat  | 0.436967829 |             |
| P(T<=t) one-tail                              | 0.334652623 |             |
| t Critical one-tail                           | 1.770933396 |             |
| P(T<=t) two-tail                              | 0.669305246 |             |
| t Critical two-tail                           | 2.160368656 |             |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| LEAD  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.003625          | 0.009928571       |
| Variance                                      | 7.69643E-06       | 0.000418533       |
| Observations                                  | 8                 | 14                |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 14                |                   |
| t Stat  | -1.1347703        |                   |
| P(T<=t) one-tail                              | 0.137763754       |                   |
| t Critical one-tail                           | 1.761310136       |                   |
| P(T<=t) two-tail                              | 0.275527509       |                   |
| t Critical two-tail                           | 2.144786688       |                   |

**Northern Chalk province vs Transitional Chalk province flint**

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| CALCIUM                                       |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 19.44607143  | 30.77      |
| Variance                                      | 321.5664095  | 2.0808     |
| Observations                                  | 14           | 2          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 14           |            |
| t Stat  | -2.311033299 |            |
| P(T<=t) one-tail                              | 0.018288277  |            |
| t Critical one-tail                           | 1.761310136  |            |
| P(T<=t) two-tail                              | 0.036576554  |            |
| t Critical two-tail                           | 2.144786688  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| MOLYBDENUM                                    |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.003346154  | 0.004      |
| Variance                                      | 4.15538E-06  | 0.000004   |
| Observations                                  | 26           | 3          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -0.535085285 |            |
| P(T<=t) one-tail                              | 0.314856003  |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.629712005  |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| BERYLLIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 8.69565E-05  | 0.0002     |
| Variance                                      | 8.3004E-08   | 0.0000002  |
| Observations                                  | 23           | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 5            |            |
| t Stat  | -0.541325029 |            |
| P(T<=t) one-tail                              | 0.305760836  |            |
| t Critical one-tail                           | 2.015048373  |            |
| P(T<=t) two-tail                              | 0.611521671  |            |
| t Critical two-tail                           | 2.570581836  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| SODIUM  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 2.677192308  | 69.8282    |
| Variance                                      | 0.501313122  | 21271.749  |
| Observations                                  | 26           | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 4            |            |
| t Stat  | -1.029520388 |            |
| P(T<=t) one-tail                              | 0.180706717  |            |
| t Critical one-tail                           | 2.131846786  |            |
| P(T<=t) two-tail                              | 0.361413434  |            |
| t Critical two-tail                           | 2.776445105  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| MAGNESIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.341230769  | 0.5002     |
| Variance                                      | 0.070475865  | 0.3672757  |
| Observations                                  | 26           | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 4            |            |
| t Stat  | -0.576014228 |            |
| P(T<=t) one-tail                              | 0.297731418  |            |
| t Critical one-tail                           | 2.131846786  |            |
| P(T<=t) two-tail                              | 0.595462835  |            |
| t Critical two-tail                           | 2.776445105  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| ALUMINIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 1.088115385 | 1.0304     |
| Variance                                      | 0.109885066 | 0.5484728  |
| Observations                                  | 26          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 4           |            |
| t Stat  | 0.170997544 |            |
| P(T<=t) one-tail                              | 0.436263571 |            |
| t Critical one-tail                           | 2.131846786 |            |
| P(T<=t) two-tail                              | 0.872527141 |            |
| t Critical two-tail                           | 2.776445105 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| POTASSIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.498807692  | 6.9065     |
| Variance                                      | 0.123947202  | 174.13262  |
| Observations                                  | 26           | 4          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 3            |            |
| t Stat  | -0.971108592 |            |
| P(T<=t) one-tail                              | 0.201561054  |            |
| t Critical one-tail                           | 2.353363435  |            |
| P(T<=t) two-tail                              | 0.403122108  |            |
| t Critical two-tail                           | 3.182446305  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| CHROMIUM                                      |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.864538462  | 0.9688     |
| Variance                                      | 0.063205458  | 0.1132527  |
| Observations                                  | 26           | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 5            |            |
| t Stat  | -0.658335402 |            |
| P(T<=t) one-tail                              | 0.269711694  |            |
| t Critical one-tail                           | 2.015048373  |            |
| P(T<=t) two-tail                              | 0.539423388  |            |
| t Critical two-tail                           | 2.570581836  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MANGANESE                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.062461538 | 0.042      |
| Variance                                      | 0.000785538 | 0.0002285  |
| Observations                                  | 26          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 10          |            |
| t Stat  | 2.348443717 |            |
| P(T<=t) one-tail                              | 0.020374323 |            |
| t Critical one-tail                           | 1.812461123 |            |
| P(T<=t) two-tail                              | 0.040748646 |            |
| t Critical two-tail                           | 2.228138852 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| IRON  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 6.846961538 | 6.46       |
| Variance                                      | 4.726622038 | 8.2225655  |
| Observations                                  | 26          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 5           |            |
| t Stat  | 0.286339326 |            |
| P(T<=t) one-tail                              | 0.393051682 |            |
| t Critical one-tail                           | 2.015048373 |            |
| P(T<=t) two-tail                              | 0.786103363 |            |
| t Critical two-tail                           | 2.570581836 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| COBALT  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.002307692  | 0.003      |
| Variance                                      | 2.14154E-06  | 0.0000035  |
| Observations                                  | 26           | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 5            |            |
| t Stat  | -0.782697475 |            |
| P(T<=t) one-tail                              | 0.23461702   |            |
| t Critical one-tail                           | 2.015048373  |            |
| P(T<=t) two-tail                              | 0.469234039  |            |
| t Critical two-tail                           | 2.570581836  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| NICKEL  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.026576923 | 0.0156     |
| Variance                                      | 9.40138E-05 | 0.0001928  |
| Observations                                  | 26          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 5           |            |
| t Stat  | 1.690239914 |            |
| P(T<=t) one-tail                              | 0.075887266 |            |
| t Critical one-tail                           | 2.015048373 |            |
| P(T<=t) two-tail                              | 0.151774532 |            |
| t Critical two-tail                           | 2.570581836 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COPPER  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.096884615 | 0.035      |
| Variance                                      | 0.027510666 | 0.000606   |
| Observations                                  | 26          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 29          |            |
| t Stat  | 1.80206345  |            |
| P(T<=t) one-tail                              | 0.040969936 |            |
| t Critical one-tail                           | 1.699127027 |            |
| P(T<=t) two-tail                              | 0.081939872 |            |
| t Critical two-tail                           | 2.045229642 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| RUBIDIUM                                      |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.000846154  | 0.0024     |
| Variance                                      | 2.95385E-07  | 0.0000018  |
| Observations                                  | 26           | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 4            |            |
| t Stat  | -2.549822224 |            |
| P(T<=t) one-tail                              | 0.031658677  |            |
| t Critical one-tail                           | 2.131846786  |            |
| P(T<=t) two-tail                              | 0.063317355  |            |
| t Critical two-tail                           | 2.776445105  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| STRONTIUM                                     |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.030846154  | 0.0318     |
| Variance                                      | 0.000508535  | 0.0007652  |
| Observations                                  | 26           | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 5            |            |
| t Stat  | -0.072603763 |            |
| P(T<=t) one-tail                              | 0.472468146  |            |
| t Critical one-tail                           | 2.015048373  |            |
| P(T<=t) two-tail                              | 0.944936291  |            |
| t Critical two-tail                           | 2.570581836  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CADMIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.000115385 | 0          |
| Variance                                      | 1.86154E-07 | 0          |
| Observations                                  | 26          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 25          |            |
| t Stat  | 1.363636364 |            |
| P(T<=t) one-tail                              | 0.092417998 |            |
| t Critical one-tail                           | 1.708140761 |            |
| P(T<=t) two-tail                              | 0.184835996 |            |
| t Critical two-tail                           | 2.059538553 |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| BARIUM  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.039115385  | 0.0448     |
| Variance                                      | 0.001086826  | 0.0053082  |
| Observations                                  | 26           | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 4            |            |
| t Stat  | -0.171130148 |            |
| P(T<=t) one-tail                              | 0.436214742  |            |
| t Critical one-tail                           | 2.131846786  |            |
| P(T<=t) two-tail                              | 0.872429484  |            |
| t Critical two-tail                           | 2.776445105  |            |

| t-Test: Two-Sample Assuming Unequal Variances |              |            |
|---|--------------|------------|
| LEAD  |              |            |
|   | Variable 1   | Variable 2 |
| Mean  | 0.002        | 0.0044     |
| Variance                                      | 0.00000232   | 0.0000128  |
| Observations                                  | 26           | 5          |
| Hypothesized Mean Difference                  | 0            |            |
| df  | 4            |            |
| t Stat  | -1.474522305 |            |
| P(T<=t) one-tail                              | 0.107178969  |            |
| t Critical one-tail                           | 2.131846786  |            |
| P(T<=t) two-tail                              | 0.214357939  |            |
| t Critical two-tail                           | 2.776445105  |            |

**Northern Chalk province vs Southern Chalk province flint**

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| BERYLLIUM                                     |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 8.69565E-05  | 0.000352941 |
| Variance                                      | 8.3004E-08   | 4.92647E-07 |
| Observations                                  | 23           | 17          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 20           |             |
| t Stat  | -1.473421559 |             |
| P(T<=t) one-tail                              | 0.078101422  |             |
| t Critical one-tail                           | 1.724718243  |             |
| P(T<=t) two-tail                              | 0.156202844  |             |
| t Critical two-tail                           | 2.085963447  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| POTASSIUM                                     |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.498807692  | 15.08930769 |
| Variance                                      | 0.123947202  | 1241.902123 |
| Observations                                  | 26           | 13          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 12           |             |
| t Stat  | -1.492750862 |             |
| P(T<=t) one-tail                              | 0.080660276  |             |
| t Critical one-tail                           | 1.782287556  |             |
| P(T<=t) two-tail                              | 0.161320551  |             |
| t Critical two-tail                           | 2.17881283   |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| CALCIUM                                       |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 19.44607143  | 24.67070588 |
| Variance                                      | 321.5664095  | 27.37747597 |
| Observations                                  | 14           | 17          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 15           |             |
| t Stat  | -1.053827826 |             |
| P(T<=t) one-tail                              | 0.154320902  |             |
| t Critical one-tail                           | 1.753050356  |             |
| P(T<=t) two-tail                              | 0.308641804  |             |
| t Critical two-tail                           | 2.131449546  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| NICKEL  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.026576923  | 0.035166667 |
| Variance                                      | 9.40138E-05  | 0.000752853 |
| Observations                                  | 26           | 18          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 20           |             |
| t Stat  | -1.274253617 |             |
| P(T<=t) one-tail                              | 0.108590759  |             |
| t Critical one-tail                           | 1.724718243  |             |
| P(T<=t) two-tail                              | 0.217181517  |             |
| t Critical two-tail                           | 2.085963447  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| MOLYBDENUM                                    |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.003346154  | 0.022052632 |
| Variance                                      | 4.15538E-06  | 0.000949942 |
| Observations                                  | 26           | 19          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 18           |             |
| t Stat  | -2.641358504 |             |
| P(T<=t) one-tail                              | 0.008294477  |             |
| t Critical one-tail                           | 1.734063607  |             |
| P(T<=t) two-tail                              | 0.016588955  |             |
| t Critical two-tail                           | 2.10092204   |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| CAESIUM                                       |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0            | 0.013421053 |
| Variance                                      | 0            | 0.001072368 |
| Observations                                  | 3            | 19          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 18           |             |
| t Stat  | -1.786452082 |             |
| P(T<=t) one-tail                              | 0.045440602  |             |
| t Critical one-tail                           | 1.734063607  |             |
| P(T<=t) two-tail                              | 0.090881203  |             |
| t Critical two-tail                           | 2.10092204   |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| SODIUM  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 2.677192308  | 7.898892857 |
| Variance                                      | 0.501313122  | 198.173034  |
| Observations                                  | 26           | 28          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 27           |             |
| t Stat  | -1.960098684 |             |
| P(T<=t) one-tail                              | 0.030189808  |             |
| t Critical one-tail                           | 1.703288446  |             |
| P(T<=t) two-tail                              | 0.060379616  |             |
| t Critical two-tail                           | 2.051830516  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| MAGNESIUM                                     |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.341230769  | 0.587928571 |
| Variance                                      | 0.070475865  | 0.737985328 |
| Observations                                  | 26           | 28          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 32           |             |
| t Stat  | -1.446983118 |             |
| P(T<=t) one-tail                              | 0.07881373   |             |
| t Critical one-tail                           | 1.693888748  |             |
| P(T<=t) two-tail                              | 0.157627461  |             |
| t Critical two-tail                           | 2.036933343  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| ALUMINIUM                                     |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 1.088115385  | 1.337035714 |
| Variance                                      | 0.109885066  | 0.717880036 |
| Observations                                  | 26           | 28          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 36           |             |
| t Stat  | -1.440388613 |             |
| P(T<=t) one-tail                              | 0.079199231  |             |
| t Critical one-tail                           | 1.688297714  |             |
| P(T<=t) two-tail                              | 0.158398463  |             |
| t Critical two-tail                           | 2.028094001  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| CHROMIUM                                      |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.864538462  | 0.869214286 |
| Variance                                      | 0.063205458  | 0.065894026 |
| Observations                                  | 26           | 28          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 52           |             |
| t Stat  | -0.067600091 |             |
| P(T<=t) one-tail                              | 0.473181622  |             |
| t Critical one-tail                           | 1.674689154  |             |
| P(T<=t) two-tail                              | 0.946363245  |             |
| t Critical two-tail                           | 2.006646805  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MANGANESE                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.062461538 | 0.036142857 |
| Variance                                      | 0.000785538 | 0.000125831 |
| Observations                                  | 26          | 28          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 32          |             |
| t Stat  | 4.467409564 |             |
| P(T<=t) one-tail                              | 4.63569E-05 |             |
| t Critical one-tail                           | 1.693888748 |             |
| P(T<=t) two-tail                              | 9.27139E-05 |             |
| t Critical two-tail                           | 2.036933343 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| IRON  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 6.846961538 | 6.327607143 |
| Variance                                      | 4.726622038 | 6.082839803 |
| Observations                                  | 26          | 28          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 52          |             |
| t Stat  | 0.822161228 |             |
| P(T<=t) one-tail                              | 0.207369604 |             |
| t Critical one-tail                           | 1.674689154 |             |
| P(T<=t) two-tail                              | 0.414739208 |             |
| t Critical two-tail                           | 2.006646805 |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| COBALT  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.002307692  | 0.073892857 |
| Variance                                      | 2.14154E-06  | 0.069246396 |
| Observations                                  | 26           | 28          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 27           |             |
| t Stat  | -1.439448817 |             |
| P(T<=t) one-tail                              | 0.080758694  |             |
| t Critical one-tail                           | 1.703288446  |             |
| P(T<=t) two-tail                              | 0.161517387  |             |
| t Critical two-tail                           | 2.051830516  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| COPPER  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.096884615  | 0.098642857 |
| Variance                                      | 0.027510666  | 0.007205497 |
| Observations                                  | 26           | 28          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 37           |             |
| t Stat  | -0.048477787 |             |
| P(T<=t) one-tail                              | 0.480798104  |             |
| t Critical one-tail                           | 1.68709362   |             |
| P(T<=t) two-tail                              | 0.961596208  |             |
| t Critical two-tail                           | 2.026192463  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| RUBIDIUM                                      |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.000846154  | 0.005464286 |
| Variance                                      | 2.95385E-07  | 0.000172851 |
| Observations                                  | 26           | 28          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 27           |             |
| t Stat  | -1.856994972 |             |
| P(T<=t) one-tail                              | 0.037126599  |             |
| t Critical one-tail                           | 1.703288446  |             |
| P(T<=t) two-tail                              | 0.074253198  |             |
| t Critical two-tail                           | 2.051830516  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| STRONTIUM                                     |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.030846154  | 0.089714286 |
| Variance                                      | 0.000508535  | 0.067027175 |
| Observations                                  | 26           | 28          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 27           |             |
| t Stat  | -1.198303409 |             |
| P(T<=t) one-tail                              | 0.120605941  |             |
| t Critical one-tail                           | 1.703288446  |             |
| P(T<=t) two-tail                              | 0.241211883  |             |
| t Critical two-tail                           | 2.051830516  |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| CADMIUM                                       |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.000115385  | 0.001321429 |
| Variance                                      | 1.86154E-07  | 1.4078E-05  |
| Observations                                  | 26           | 28          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 28           |             |
| t Stat  | -1.688887108 |             |
| P(T<=t) one-tail                              | 0.051174471  |             |
| t Critical one-tail                           | 1.701130934  |             |
| P(T<=t) two-tail                              | 0.102348942  |             |
| t Critical two-tail                           | 2.048407142  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| BARIUM  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.039115385 | 0.083607143 |
| Variance                                      | 0.001086826 | 0.01765084  |
| Observations                                  | 26          | 28          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 31          |             |
| t Stat  | -1.71606662 |             |
| P(T<=t) one-tail                              | 0.048064531 |             |
| t Critical one-tail                           | 1.695518783 |             |
| P(T<=t) two-tail                              | 0.096129061 |             |
| t Critical two-tail                           | 2.039513446 |             |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| LEAD  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.002             | 0.064107143       |
| Variance                                      | 0.00000232        | 0.057824914       |
| Observations                                  | 26                | 28                |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 27                |                   |
| t Stat  | -1.366638611      |                   |
| P(T<=t) one-tail                              | 0.091506014       |                   |
| t Critical one-tail                           | 1.703288446       |                   |
| P(T<=t) two-tail                              | 0.183012028       |                   |
| t Critical two-tail                           | 2.051830516       |                   |

**Transitional Chalk province vs Southern Chalk province flint**

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| BERYLLIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.000352941 | 0.0002     |
| Variance                                      | 4.92647E-07 | 0.0000002  |
| Observations                                  | 17          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 11          |            |
| t Stat  | 0.582324722 |            |
| P(T<=t) one-tail                              | 0.286045242 |            |
| t Critical one-tail                           | 1.795884819 |            |
| P(T<=t) two-tail                              | 0.572090484 |            |
| t Critical two-tail                           | 2.20098516  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| POTASSIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 15.08930769 | 6.9065     |
| Variance                                      | 1241.902123 | 174.13262  |
| Observations                                  | 13          | 4          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 14          |            |
| t Stat  | 0.693896742 |            |
| P(T<=t) one-tail                              | 0.249549787 |            |
| t Critical one-tail                           | 1.761310136 |            |
| P(T<=t) two-tail                              | 0.499099574 |            |
| t Critical two-tail                           | 2.144786688 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CALCIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 24.67070588 | 30.77      |
| Variance                                      | 27.37747597 | 2.0808     |
| Observations                                  | 17          | 2          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 6           |            |
| t Stat  | -3.74617307 |            |
| P(T<=t) one-tail                              | 0.004776363 |            |
| t Critical one-tail                           | 1.943180281 |            |
| P(T<=t) two-tail                              | 0.009552726 |            |
| t Critical two-tail                           | 2.446911851 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| NICKEL  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.035166667 | 0.0156     |
| Variance                                      | 0.000752853 | 0.0001928  |
| Observations                                  | 18          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 14          |            |
| t Stat  | 2.182372583 |            |
| P(T<=t) one-tail                              | 0.023306836 |            |
| t Critical one-tail                           | 1.761310136 |            |
| P(T<=t) two-tail                              | 0.046613671 |            |
| t Critical two-tail                           | 2.144786688 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MOLYBDENUM                                    |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.022052632 | 0.004      |
| Variance                                      | 0.000949942 | 0.000004   |
| Observations                                  | 19          | 3          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 19          |            |
| t Stat  | 2.519728837 |            |
| P(T<=t) one-tail                              | 0.010426847 |            |
| t Critical one-tail                           | 1.729132812 |            |
| P(T<=t) two-tail                              | 0.020853694 |            |
| t Critical two-tail                           | 2.093024054 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CAESIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.013421053 | 0.006      |
| Variance                                      | 0.001072368 | 0.000114   |
| Observations                                  | 19          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 20          |            |
| t Stat  | 0.83366595  |            |
| P(T<=t) one-tail                              | 0.207157702 |            |
| t Critical one-tail                           | 1.724718243 |            |
| P(T<=t) two-tail                              | 0.414315403 |            |
| t Critical two-tail                           | 2.085963447 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| SODIUM  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 7.898892857 | 69.8282    |
| Variance                                      | 198.173034  | 21271.749  |
| Observations                                  | 28          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 4           |            |
| t Stat  | -0.94867766 |            |
| P(T<=t) one-tail                              | 0.198252002 |            |
| t Critical one-tail                           | 2.131846786 |            |
| P(T<=t) two-tail                              | 0.396504004 |            |
| t Critical two-tail                           | 2.776445105 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MAGNESIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.587928571 | 0.5002     |
| Variance                                      | 0.737985328 | 0.3672757  |
| Observations                                  | 28          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 7           |            |
| t Stat  | 0.277683582 |            |
| P(T<=t) one-tail                              | 0.394638808 |            |
| t Critical one-tail                           | 1.894578605 |            |
| P(T<=t) two-tail                              | 0.789277615 |            |
| t Critical two-tail                           | 2.364624252 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| ALUMINIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 1.337035714 | 1.0304     |
| Variance                                      | 0.717880036 | 0.5484728  |
| Observations                                  | 28          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 6           |            |
| t Stat  | 0.833528913 |            |
| P(T<=t) one-tail                              | 0.218232355 |            |
| t Critical one-tail                           | 1.943180281 |            |
| P(T<=t) two-tail                              | 0.43646471  |            |
| t Critical two-tail                           | 2.446911851 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CHROMIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.869214286 | 0.9688     |
| Variance                                      | 0.065894026 | 0.1132527  |
| Observations                                  | 28          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 5           |            |
| t Stat  | -0.62978626 |            |
| P(T<=t) one-tail                              | 0.278244264 |            |
| t Critical one-tail                           | 2.015048373 |            |
| P(T<=t) two-tail                              | 0.556488528 |            |
| t Critical two-tail                           | 2.570581836 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| MANGANESE                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.036142857 | 0.042      |
| Variance                                      | 0.000125831 | 0.0002285  |
| Observations                                  | 28          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 5           |            |
| t Stat  | -0.82672318 |            |
| P(T<=t) one-tail                              | 0.223019507 |            |
| t Critical one-tail                           | 2.015048373 |            |
| P(T<=t) two-tail                              | 0.446039013 |            |
| t Critical two-tail                           | 2.570581836 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| IRON  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 6.327607143 | 6.46       |
| Variance                                      | 6.082839803 | 8.2225655  |
| Observations                                  | 28          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 5           |            |
| t Stat  | -0.09702933 |            |
| P(T<=t) one-tail                              | 0.463236217 |            |
| t Critical one-tail                           | 2.015048373 |            |
| P(T<=t) two-tail                              | 0.926472434 |            |
| t Critical two-tail                           | 2.570581836 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COBALT  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.073892857 | 0.003      |
| Variance                                      | 0.069246396 | 0.0000035  |
| Observations                                  | 28          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 27          |            |
| t Stat  | 1.425349787 |            |
| P(T<=t) one-tail                              | 0.082757449 |            |
| t Critical one-tail                           | 1.703288446 |            |
| P(T<=t) two-tail                              | 0.165514898 |            |
| t Critical two-tail                           | 2.051830516 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| COPPER  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.098642857 | 0.035      |
| Variance                                      | 0.007205497 | 0.000606   |
| Observations                                  | 28          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 23          |            |
| t Stat  | 3.271103181 |            |
| P(T<=t) one-tail                              | 0.001677735 |            |
| t Critical one-tail                           | 1.713871528 |            |
| P(T<=t) two-tail                              | 0.003355469 |            |
| t Critical two-tail                           | 2.06865761  |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| RUBIDIUM                                      |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.005464286 | 0.0024     |
| Variance                                      | 0.000172851 | 0.0000018  |
| Observations                                  | 28          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 30          |            |
| t Stat  | 1.198850909 |            |
| P(T<=t) one-tail                              | 0.119985134 |            |
| t Critical one-tail                           | 1.697260887 |            |
| P(T<=t) two-tail                              | 0.239970268 |            |
| t Critical two-tail                           | 2.042272456 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| STRONTIUM                                     |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.089714286 | 0.0318     |
| Variance                                      | 0.067027175 | 0.0007652  |
| Observations                                  | 28          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 30          |            |
| t Stat  | 1.147578795 |            |
| P(T<=t) one-tail                              | 0.130106007 |            |
| t Critical one-tail                           | 1.697260887 |            |
| P(T<=t) two-tail                              | 0.260212014 |            |
| t Critical two-tail                           | 2.042272456 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| CADMIUM                                       |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.001321429 | 0          |
| Variance                                      | 1.4078E-05  | 0          |
| Observations                                  | 28          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 27          |            |
| t Stat  | 1.863595165 |            |
| P(T<=t) one-tail                              | 0.036644448 |            |
| t Critical one-tail                           | 1.703288446 |            |
| P(T<=t) two-tail                              | 0.073288897 |            |
| t Critical two-tail                           | 2.051830516 |            |

| t-Test: Two-Sample Assuming Unequal Variances |             |            |
|---|-------------|------------|
| BARIUM  |             |            |
|   | Variable 1  | Variable 2 |
| Mean  | 0.083607143 | 0.0448     |
| Variance                                      | 0.01765084  | 0.0053082  |
| Observations                                  | 28          | 5          |
| Hypothesized Mean Difference                  | 0           |            |
| df  | 10          |            |
| t Stat  | 0.943426361 |            |
| P(T<=t) one-tail                              | 0.183848698 |            |
| t Critical one-tail                           | 1.812461123 |            |
| P(T<=t) two-tail                              | 0.367697395 |            |
| t Critical two-tail                           | 2.228138852 |            |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| LEAD  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.064107143       | 0.0044            |
| Variance                                      | 0.057824914       | 0.0000128         |
| Observations                                  | 28                | 5                 |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 27                |                   |
| t Stat  | 1.313042543       |                   |
| P(T<=t) one-tail                              | 0.100109683       |                   |
| t Critical one-tail                           | 1.703288446       |                   |
| P(T<=t) two-tail                              | 0.200219367       |                   |
| t Critical two-tail                           | 2.051830516       |                   |

**Northern Ireland Chalk formation flint vs all English Chalk province flint**

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| SODIUM  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 9.516656716  | 10.84605085 |
| Variance                                      | 309.036738   | 1893.497549 |
| Observations                                  | 67           | 59          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 75           |             |
| t Stat  | -0.219425549 |             |
| P(T<=t) one-tail                              | 0.413457329  |             |
| t Critical one-tail                           | 1.665425373  |             |
| P(T<=t) two-tail                              | 0.826914659  |             |
| t Critical two-tail                           | 1.992102154  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| MAGNESIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.786537313 | 0.471779661 |
| Variance                                      | 0.639947252 | 0.413474071 |
| Observations                                  | 67          | 59          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 123         |             |
| t Stat  | 2.445979783 |             |
| P(T<=t) one-tail                              | 0.007930313 |             |
| t Critical one-tail                           | 1.657336397 |             |
| P(T<=t) two-tail                              | 0.015860625 |             |
| t Critical two-tail                           | 1.979438685 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| ALUMINIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 1.735134328 | 1.201355932 |
| Variance                                      | 1.272464694 | 0.436530509 |
| Observations                                  | 67          | 59          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 109         |             |
| t Stat  | 3.285749473 |             |
| P(T<=t) one-tail                              | 0.000684306 |             |
| t Critical one-tail                           | 1.658953458 |             |
| P(T<=t) two-tail                              | 0.001368612 |             |
| t Critical two-tail                           | 1.98196749  |             |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| CHROMIUM                                      |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.945552239       | 0.87559322        |
| Variance                                      | 0.133215918       | 0.066552418       |
| Observations                                  | 67                | 59                |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 119               |                   |
| t Stat  | 1.253209776       |                   |
| P(T<=t) one-tail                              | 0.106293073       |                   |
| t Critical one-tail                           | 1.657759285       |                   |
| P(T<=t) two-tail                              | 0.212586146       |                   |
| t Critical two-tail                           | 1.980099876       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| MANGANESE                                     |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.052910448       | 0.048237288       |
| Variance                                      | 0.000751931       | 0.000577598       |
| Observations                                  | 67                | 59                |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 124               |                   |
| t Stat  | 1.019460044       |                   |
| P(T<=t) one-tail                              | 0.15498476        |                   |
| t Critical one-tail                           | 1.65723497        |                   |
| P(T<=t) two-tail                              | 0.309969519       |                   |
| t Critical two-tail                           | 1.979280117       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| IRON  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 6.397164179       | 6.567694915       |
| Variance                                      | 6.451463321       | 5.499865423       |
| Observations                                  | 67                | 59                |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 124               |                   |
| t Stat  | -0.391731284      |                   |
| P(T<=t) one-tail                              | 0.347964584       |                   |
| t Critical one-tail                           | 1.65723497        |                   |
| P(T<=t) two-tail                              | 0.695929167       |                   |
| t Critical two-tail                           | 1.979280117       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| COBALT  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.062626866 | 0.036338983 |
| Variance                                      | 0.058065934 | 0.033532366 |
| Observations                                  | 67          | 59          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 121         |             |
| t Stat  | 0.693952136 |             |
| P(T<=t) one-tail                              | 0.24452118  |             |
| t Critical one-tail                           | 1.657544319 |             |
| P(T<=t) two-tail                              | 0.48904236  |             |
| t Critical two-tail                           | 1.979763763 |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| COPPER  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.079731343  | 0.092474576 |
| Variance                                      | 0.003989563  | 0.015565978 |
| Observations                                  | 67           | 59          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 83           |             |
| t Stat  | -0.708640276 |             |
| P(T<=t) one-tail                              | 0.240266673  |             |
| t Critical one-tail                           | 1.663420175  |             |
| P(T<=t) two-tail                              | 0.480533346  |             |
| t Critical two-tail                           | 1.98895978   |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| RUBIDIUM                                      |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.005059701 | 0.003169492 |
| Variance                                      | 0.00013733  | 8.57294E-05 |
| Observations                                  | 67          | 59          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 123         |             |
| t Stat  | 1.00996478  |             |
| P(T<=t) one-tail                              | 0.15724742  |             |
| t Critical one-tail                           | 1.657336397 |             |
| P(T<=t) two-tail                              | 0.31449484  |             |
| t Critical two-tail                           | 1.979438685 |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| STRONTIUM                                     |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.10961194  | 0.058864407 |
| Variance                                      | 0.056630726 | 0.032348774 |
| Observations                                  | 67          | 59          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 121         |             |
| t Stat  | 1.359435127 |             |
| P(T<=t) one-tail                              | 0.088268423 |             |
| t Critical one-tail                           | 1.657544319 |             |
| P(T<=t) two-tail                              | 0.176536846 |             |
| t Critical two-tail                           | 1.979763763 |             |

| t-Test: Two-Sample Assuming Unequal Variances |              |             |
|---|--------------|-------------|
| BARIUM  |              |             |
|   | Variable 1   | Variable 2  |
| Mean  | 0.058910448  | 0.060711864 |
| Variance                                      | 0.013692022  | 0.009535278 |
| Observations                                  | 67           | 59          |
| Hypothesized Mean Difference                  | 0            |             |
| df  | 124          |             |
| t Stat  | -0.094164977 |             |
| P(T<=t) one-tail                              | 0.462565047  |             |
| t Critical one-tail                           | 1.65723497   |             |
| P(T<=t) two-tail                              | 0.925130094  |             |
| t Critical two-tail                           | 1.979280117  |             |

| t-Test: Two-Sample Assuming Unequal Variances |             |             |
|---|-------------|-------------|
| LEAD  |             |             |
|   | Variable 1  | Variable 2  |
| Mean  | 0.046723077 | 0.031677966 |
| Variance                                      | 0.052978547 | 0.02788705  |
| Observations                                  | 65          | 59          |
| Hypothesized Mean Difference                  | 0           |             |
| df  | 117         |             |
| t Stat  | 0.419261779 |             |
| P(T<=t) one-tail                              | 0.337896796 |             |
| t Critical one-tail                           | 1.657981659 |             |
| P(T<=t) two-tail                              | 0.675793593 |             |
| t Critical two-tail                           | 1.980447599 |             |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| LITHIUM                                       |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.003095238       | 0.004615385       |
| Variance                                      | 8.09048E-06       | 1.44231E-05       |
| Observations                                  | 21                | 13                |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 20                |                   |
| t Stat  | -1.243381301      |                   |
| P(T<=t) one-tail                              | 0.114052898       |                   |
| t Critical one-tail                           | 1.724718243       |                   |
| P(T<=t) two-tail                              | 0.228105796       |                   |
| t Critical two-tail                           | 2.085963447       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| BERYLLIUM                                     |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.0005            | 0.0002            |
| Variance                                      | 6.69811E-07       | 2.54545E-07       |
| Observations                                  | 54                | 45                |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 90                |                   |
| t Stat  | 2.232320885       |                   |
| P(T<=t) one-tail                              | 0.014037654       |                   |
| t Critical one-tail                           | 1.661961084       |                   |
| P(T<=t) two-tail                              | 0.028075308       |                   |
| t Critical two-tail                           | 1.986674541       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| POTASSIUM                                     |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 19.91745161       | 5.505953488       |
| Variance                                      | 1545.998457       | 411.4751473       |
| Observations                                  | 31                | 43                |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 42                |                   |
| t Stat  | 1.869258382       |                   |
| P(T<=t) one-tail                              | 0.034285051       |                   |
| t Critical one-tail                           | 1.681952357       |                   |
| P(T<=t) two-tail                              | 0.068570103       |                   |
| t Critical two-tail                           | 2.018081703       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| CALCIUM                                       |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 25.34140741       | 22.82384848       |
| Variance                                      | 165.228439        | 155.1400836       |
| Observations                                  | 54                | 33                |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 69                |                   |
| t Stat  | 0.903692726       |                   |
| P(T<=t) one-tail                              | 0.18465132        |                   |
| t Critical one-tail                           | 1.667238549       |                   |
| P(T<=t) two-tail                              | 0.369302639       |                   |
| t Critical two-tail                           | 1.994945415       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| NICKEL  |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.062981481       | 0.027958333       |
| Variance                                      | 0.029597302       | 0.000354083       |
| Observations                                  | 54                | 48                |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 54                |                   |
| t Stat  | 1.48601419        |                   |
| P(T<=t) one-tail                              | 0.071545374       |                   |
| t Critical one-tail                           | 1.673564906       |                   |
| P(T<=t) two-tail                              | 0.143090749       |                   |
| t Critical two-tail                           | 2.004879288       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| MOLYBDENUM                                    |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.035022222       | 0.010791667       |
| Variance                                      | 0.003275431       | 0.000451062       |
| Observations                                  | 45                | 48                |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 55                |                   |
| t Stat  | 2.672812187       |                   |
| P(T<=t) one-tail                              | 0.00493992        |                   |
| t Critical one-tail                           | 1.673033965       |                   |
| P(T<=t) two-tail                              | 0.009879839       |                   |
| t Critical two-tail                           | 2.004044783       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| CADMIUM                                       |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.001257576       | 0.000677966       |
| Variance                                      | 1.14557E-05       | 7.0152E-06        |
| Observations                                  | 66                | 59                |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 121               |                   |
| t Stat  | 1.071748096       |                   |
| P(T<=t) one-tail                              | 0.142983094       |                   |
| t Critical one-tail                           | 1.657544319       |                   |
| P(T<=t) two-tail                              | 0.285966188       |                   |
| t Critical two-tail                           | 1.979763763       |                   |

| t-Test: Two-Sample Assuming Unequal Variances |                   |                   |
|---|-------------------|-------------------|
| CAESIUM                                       |                   |                   |
|   | <i>Variable 1</i> | <i>Variable 2</i> |
| Mean  | 0.019847826       | 0.010555556       |
| Variance                                      | 0.002017999       | 0.000782795       |
| Observations                                  | 46                | 27                |
| Hypothesized Mean Difference                  | 0                 |                   |
| df  | 71                |                   |
| t Stat  | 1.088607923       |                   |
| P(T<=t) one-tail                              | 0.140004111       |                   |
| t Critical one-tail                           | 1.666599658       |                   |
| P(T<=t) two-tail                              | 0.280008222       |                   |
| t Critical two-tail                           | 1.993943368       |                   |