Appendix A: Analytical details

## pXRF

The portable XRF was a Thermoniton analyser, which was used in Cu / Zn mining mode as this quantifies a broad range of elements and presumes a matrix approximating the compositions of the glasses here. The pXRF was used in a shielded cabinet, where it points upwards, so that the bangle fragments could be placed directly against the film protecting the detector. This ensures that the bangles were in contact with the analyser, which was difficult to achieve otherwise because of the rounded surface of the fragments, and also prevents any pressure being applied to the artefacts. A spot size of 3mm was targeted for a 60 second period, comprised of 15 seconds Main, 20 seconds Low, 15 seconds Light, and 10 seconds High (each of these periods analyses a certain energy range of elements as detailed in Dungworth *et al*. 2001). These settings were selected as a compromise between the time required for analysis, and improving the signal to noise ratio, particularly for lighter elements.

The pXRF results have not been normalised and totals should not exceed 80% due to the inability to detect the light elements, particularly sodium, present as an oxide at levels of about 15wt%. Instead the analyser reports a Balance figure, which provides a reasonable estimate for the lighter elements that it is unable to otherwise quantify. It is also a good indicator of the extent of contact between the sample and the analyser. If the sample is not flat, or the sample is not correctly placed, the reported Balance is elevated and the rest of the elemental results are abnormally low; these results were discarded.

Some of the decorative features that were analysed are small or thin, such as cords or spots, so it is also likely that X-rays from the glass beneath or surrounding the feature will be detected, meaning that some analyses may actually be for a combination of colours. Broken edges exposing fresher glass were selected where possible. Although the preservation of natron glass is typically good, some surface alteration or contamination of the glass must be considered. In most cases two analyses of a particular colour were undertaken, and the average is reported. However for areas of decoration, where the feature was small and poorly accessible, there may be only one analysis.

The detection limits, accuracy and precision for pXRF are good (0.1wt% or better) for elements heavier than potassium but poor for lighter elements. The fluorescent X-rays from light elements are weak without a vacuum or helium flush, and so sodium and magnesium were not detected. For phosphorus, aluminium and silica the accuracy and detection limits could be improved by increasing analysis times (Dungworth *et al.* 2011), but the results for these elements were also strongly affected by differences in the matrix of the sample (such as increased levels of lead in some colours) or the presence of a weathered surface, so the data for these elements are disregarded in the interpretation. The results for sulphur and arsenic are discounted because they are strongly affected by the presence of lead, due to overlap in the X-ray peaks for these elements. For example around 30wt% of sulphur trioxide was erroneously reported for Corning standard C because it contains a high proportion of lead oxide, and the results for the light elements were supressed. In general, where the glass had a lead-rich matrix, the quantification for the light elements was less accurate compared to known standards (see Table 4). When analysing flat, clean surfaces on homogenous, compositionally similar, glass samples in laboratory conditions, and in the absence of problematic overlaps between element X-rays, then detection limits of 0.02wt% and better can be achieved for heavier elements (from titanium) with portable XRF (Dungworth *et al.* 2011). With archaeological objects however, these conditions cannot be met and so detection has been presumed to be no better than 0.1wt%.

Using the pXRF, there might be an underestimation for heavier elements when thin layers of glass are analysed because the pXRF quantification assumes that the sample is infinitely thick, whereas heavy elements produce energetic fluorescent X-rays that can escape from a depth of several millimeters in a light glass matrix (Dungworth *et al.* 2011). All of the archaeological material analysed here was greater than 3mm thick however, with the exception of decorative cords and spots, in which case the underlying glass may also be detected with some colour compositions.

## EMPA

A JEOL JXA-8200 electron microprobe in the Department of Archaeology, University of Nottingham was used to analyse the samples from South Shields, which were mounted and polished. Operating conditions were the same as those in Siu *et al.* 2016. The samples were routinely analysed three times, the data was not normalised and totals exceeded 97%.

## SEM-EDS

An FEI Inspect F with X-act EDS detector and INCA software, was used to analyse the Welsh samples, which were mounted in resin, polished and carbon coated. The conditions were 25KeV and at least three analyses of each area were undertaken, of a bulk area including opacifiers if these were present. The totals typically exceeded 95%, except where the glass was vesicular, and the results were normalised.

## Standards

A series of Corning standards were analysed by all of the techniques used, and the results are compared below. The detection limits for the microprobe were typically 0.01wt%, versus 0.1wt% for the majority of oxides detected by SEM-EDS, and precision and accuracy were good for both (Table 1).

## References

Dungworth, D and Girbal, B 2011. ‘Ightham Mote, Ightham, Kent: Portable XRF Analysis of the Window Glass’, Historic England Research Report 96/2011, English Heritage, Swindon

Siu, I, Henderson, J and Faber, E 2016. ‘The production and circulation of Carthaginian Glass under the rule of the Romans and the Vandals (Fourth to Sixth Century AD): A chemical Investigation’, *Archaeometry* **59** (2)

Table 1: Results for Corning glass standards using all three techniques against known compositions (wt% oxides), average of ‘n’ analyses, SEM-EDS and microprobe data normalized, ns = not sought, bd = below detection.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Standard** | **Na2O** | **MgO** | **Al2O3** | **SiO2** | **P2O5** | **SO3** | **Cl** | **K2O** | **CaO** | **TiO2** | **MnO** | **FeO** | **CoO** | **NiO** | **CuO** | **ZnO** | **SrO** | **SnO2** | **Sb2O5** | **BaO** | **PbO** |
| A | 14.3 | 2.66 | 1 | 66.76 | 0.13 | 0.1 | 0.1 | 2.87 | 5.03 | 0.79 | 1 | 1.09 | 0.17 | 0.03 | 1.17 | 0.04 | 0.1 | 0.19 | 1.75 | 0.56 | 0.12 |
| B | 17 | 1.03 | 4.36 | 61.52 | 0.82 | 0.5 | 0.2 | 1 | 8.56 | 0.09 | 0.25 | 0.34 | 0.05 | 0.099 | 2.66 | 0.19 | 0.02 | 0.04 | 0.46 | 0.12 | 0.61 |
| C | 1.07 | 2.76 | 0.87 | 35.88 | 0.13 | 0.1 | 0.1 | 2.84 | 5.07 | 0.79 | 0 | 0.34 | 0.18 | 0.03 | 1.13 | 0.05 | 0.29 | 0.19 | 0.03 | 11.4 | 36.7 |
| D | 1.20 | 3.94 | 5.30 | 54.65 | 3.93 | 0.2 | 0.2 | 11.3 | 14.8 | 0.38 | 0.55 | 0.52 | 0.02 | 0.05 | 0.38 | 0.10 | 0.06 | 0.10 | 0.97 | 0.29 | 0.24 |
| **pXRF** | **Na2O** | **MgO** | **Al2O3** | **SiO2** | **P2O5** | **SO3** | **Cl** | **K2O** | **CaO** | **TiO2** | **MnO** | **FeO** | **CoO** | **NiO** | **CuO** | **ZnO** | **SrO** | **SnO2** | **Sb2O5** | **BaO** | **PbO** |
| B n= 2 | ns | ns | ns | 63.5 | ns | ns | ns | 0.9 | 8.4 | 0.1 | 0.2 | 0.4 | bd | 0.1 | 2.7 | 0.2 | bd | bd | 0.5 | 0.1 | 0.5 |
| C n=2 | ns | ns | ns | 30.2 | ns | ns | ns | 1.8 | 3.9 | 0.3 | 0.3 | 0.2 | 0.2 | bd | 1.0 | 0.1 | 0.1 | 0.2 | bd | 12.0 | 31.9 |
| D n=1 | ns | ns | ns | 65.6 | 4.3 | ns | ns | 10.2 | 14.0 | 0.4 | 0.5 | 0.5 | bd | bd | 0.4 | 0.1 | bd | 0.2 | 1.1 | 0.3 | 0.2 |
| **EPMA** | **Na2O** | **MgO** | **Al2O3** | **SiO2** | **P2O5** | **SO3** | **Cl** | **K2O** | **CaO** | **TiO2** | **MnO** | **FeO** | **CoO** | **NiO** | **CuO** | **ZnO** | **SrO** | **SnO2** | **Sb2O5** | **BaO** | **PbO** |
| B n=10 | 16.84 | 1.17 | 4.57 | 61.09 | 0.91 | 0.50 | 0.17 | 1.03 | 8.90 | 0.08 | 0.26 | 0.31 | 0.05 | 0.10 | 2.84 | 0.20 | bd | bd | 0.51 | bd | 0.39 |
| StD | 0.12 | 0.02 | 0.05 | 0.25 | 0.04 | 0.04 | 0.01 | 0.01 | 0.14 | 0.01 | 0.01 | 0.01 | 0.00 | 0.01 | 0.04 | 0.01 | - | - | 0.03 | - | 0.05 |
| C n=11 | 1.37 | 3.16 | 0.97 | 37.10 | 0.12 | bd | 0.08 | 2.88 | 5.21 | 1.27 | bd | 0.27 | 0.17 | 0.02 | 1.17 | bd | 0.19 | 0.04 | 0.12 | 11.72 | 34.08 |
| StD | 0.03 | 0.02 | 0.02 | 0.61 | 0.01 | 0.00 | 0.01 | 0.03 | 0.06 | 0.04 | - | 0.01 | 0.01 | 0.01 | 0.02 | - | 0.03 | 0.02 | 0.04 | 0.20 | 0.36 |
| D n=11 | 1.31 | 3.99 | 5.45 | 54.08 | 4.36 | 0.20 | 0.15 | 11.24 | 15.07 | 0.38 | 0.55 | 0.43 | 0.00 | 0.05 | 0.38 | 0.09 | bd | bd | 1.78 | 0.23 | 0.18 |
| StD | 0.03 | 0.02 | 0.04 | 0.57 | 0.08 | 0.01 | 0.01 | 0.19 | 0.28 | 0.02 | 0.01 | 0.01 | 0.00 | 0.01 | 0.01 | 0.01 | - | - | 0.05 | 0.03 | 0.04 |
| **SEM-EDS** | **Na2O** | **MgO** | **Al2O3** | **SiO2** | **P2O5** | **SO3** | **Cl** | **K2O** | **CaO** | **TiO2** | **MnO** | **FeO** | **CoO** | **NiO** | **CuO** | **ZnO** | **SrO** | **SnO2** | **Sb2O5** | **BaO** | **PbO** |
| A n=3 | 13.11 | 2.72 | 0.95 | 66.75 | bd | bd | 0.13 | 3.09 | 5.24 | 0.86 | 1.07 | 1.14 | 0.21 | bd | 1.30 | bd | bd | bd | 1.86 | 0.53 | bd |
| StD | 0.06 | 0.02 | 0.04 | 0.13 | - | - | 0.03 | 0.03 | 0.04 | 0.03 | 0.02 | 0.01 | 0.01 | - | 0.02 | - | - | - | 0.10 | 0.09 | - |

# Appendix B: Tables of Analyses

Table 2: The results of the bangle analyses (in wt% oxides save for chlorine), including site, find numbers, colour description and analytical technique, ns = not sought, bd = below detection. The detection limits differ for each technique (described in Appendix A). The letters in brackets for the Welsh bangles refer to the cut sections C, D, H illustrated in fig 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Site** | **Object no.** | **Colour** | **Type** | **Sub**  **type** | **Method** | **Area** | **Na2O** | **MgO** | **Al2O3** | **SiO2** | **P2O5** | **SO3** | **Cl** | **K2O** | **CaO** | **TiO2** | **MnO** | **FeO** | **CoO** | **CuO** | **SnO2** | **Sb2O5** | **PbO** | **n** |
| Traprain Law | GV 33 | Yellow | 3 | B | pXRF | Body | ns | ns | ns | 79.78 | ns | ns | ns | 0.51 | 5.95 | 0.08 | 0.21 | 0.44 | bd | bd | 0.03 | 0.27 | 1.62 | 2 |
| Traprain Law | GV 28 | Yellow | 3 | B | pXRF | Body | ns | ns | ns | 83.85 | ns | ns | ns | 0.47 | 5.41 | 0.12 | 0.67 | 0.67 | bd | bd | 0.04 | 0.56 | 2.05 | 2 |
| Traprain Law | GV 36 | Yellow | 3 | B | pXRF | Body | ns | ns | ns | 83.16 | ns | ns | ns | 0.53 | 6.12 | 0.07 | 0.23 | 0.43 | bd | bd | 0.03 | 0.29 | 1.68 | 2 |
| Traprain Law | GV 29 | Yellow | 3 | B | pXRF | Body | ns | ns | ns | 82.12 | ns | ns | ns | 0.61 | 6.44 | 0.08 | 0.45 | 0.49 | bd | bd | 0.02 | 0.35 | 1.53 | 2 |
| Traprain Law | GV 370 | Yellow | 3 | B | pXRF | Body | ns | ns | ns | 77.23 | ns | ns | ns | 0.79 | 6.35 | 0.07 | 0.31 | 0.50 | bd | 0.01 | 0.03 | 0.35 | 1.59 | 2 |
| Traprain Law | GV 140 | Yellow | 3 | B | pXRF | Body | ns | ns | ns | 70.62 | ns | ns | ns | 0.52 | 5.65 | 0.10 | 0.64 | 0.92 | bd | 0.00 | 0.17 | 0.68 | 5.83 | 2 |
| Traprain Law | GV 676 | Yellow | 3 | B | pXRF | Body | ns | ns | ns | 78.66 | ns | ns | ns | 0.68 | 6.83 | 0.07 | 0.38 | 0.53 | bd | 0.00 | 0.05 | 0.35 | 1.95 | 2 |
| Traprain Law | GV 145 | Yellow | 3 | B | pXRF | Body | ns | ns | ns | 81.22 | ns | ns | ns | 0.61 | 6.29 | 0.08 | 0.40 | 0.52 | bd | 0.00 | 0.03 | 0.35 | 1.50 | 2 |
| Traprain Law | GV 524 | Yellow | 3 | B | pXRF | Body | ns | ns | ns | 77.80 | ns | ns | ns | 0.66 | 5.74 | 0.09 | 0.42 | 0.55 | bd | 0.00 | 0.02 | 0.41 | 1.34 | 2 |
| Traprain Law | GV 1267 | Yellow | 3 | B | pXRF | Body | ns | ns | ns | 79.60 | ns | ns | ns | 0.67 | 6.24 | 0.09 | 0.48 | 0.59 | bd | 0.01 | 0.06 | 0.42 | 2.57 | 2 |
| Traprain Law | GV 131 | Yellow | 3 | B | pXRF | Body | ns | ns | ns | 75.76 | ns | ns | ns | 0.48 | 6.12 | 0.09 | 0.30 | 0.44 | bd | 0.00 | 0.03 | 0.34 | 1.72 | 2 |
| Arbeia (SS) | G1379 | Blue (opaque) | 3 | ? | EPMA | Body | 15.41 | 0.50 | 2.68 | 69.18 | 0.17 | 0.20 | 1.00 | 0.57 | 7.29 | 0.04 | 0.35 | 0.43 | 0.01 | 0.05 | bd | 0.76 | 0.04 | 3 |
| Arbeia (SS) | T1585 | White | 3 | A | EPMA | Body | 16.17 | 0.56 | 2.47 | 68.68 | 0.11 | 0.18 | 1.08 | 0.53 | 7.14 | 0.05 | 0.33 | 0.39 | bd | 0.02 | bd | 0.27 | 0.03 | 3 |
| Arbeia (SS) | T1584 | White | 3 | A | EPMA | Body | 15.20 | 0.55 | 2.59 | 68.85 | 0.15 | 0.20 | 0.98 | 0.58 | 7.44 | 0.03 | 0.46 | 0.36 | bd | 0.03 | bd | 0.96 | 0.09 | 3 |
| Arbeia (SS) | T1586 | White | 3 | A | EPMA | Body | 15.20 | 0.60 | 2.69 | 68.88 | 0.16 | 0.18 | 1.01 | 0.59 | 7.81 | 0.04 | 0.30 | 0.38 | 0.01 | 0.02 | bd | 0.41 | 0.05 | 4 |
| Arbeia (SS) | T1587 | White | 3 | H | EPMA | Body | 15.73 | 0.53 | 2.76 | 69.15 | 0.16 | 0.06 | 1.16 | 0.53 | 7.36 | 0.04 | 0.10 | 0.32 | bd | 0.02 | bd | 0.04 | bd | 3 |
| Newstead | FRA 5176 | Blue | 3 | I | pXRF | Body | ns | ns | ns | 82.17 | ns | ns | ns | 0.51 | 6.42 | 0.07 | 0.33 | 0.37 | 0.02 | 0.02 | bd | 0.03 | bd | 1 |
| Newstead | FRA 5176 | White | 3 | I | pXRF | Trail | ns | ns | ns | 72.31 | ns | ns | ns | 0.77 | 5.51 | 0.14 | 0.33 | 0.54 | bd | 0.03 | 0.03 | 0.77 | 0.14 | 1 |
| Traprain Law | GV 1195 | White | 3 | A | pXRF | Body | ns | ns | ns | 75.12 | ns | ns | ns | 0.71 | 5.84 | 0.08 | 0.27 | 0.38 | bd | bd | bd | 0.22 | 0.03 | 2 |
| Traprain Law | GV 1266 | White | 3 | A | pXRF | Body | ns | ns | ns | 62.64 | ns | ns | ns | 1.87 | 8.08 | 0.28 | 0.46 | 0.46 | bd | bd | 0.01 | 0.56 | 0.08 | 2 |
| Traprain Law | GV 1193 | White | 3 | A | pXRF | Body | ns | ns | ns | 81.86 | ns | ns | ns | 0.62 | 6.28 | 0.12 | 0.50 | 0.54 | bd | bd | bd | 0.33 | 0.04 | 2 |
| Traprain Law | GV 924 | White | 3 | A | pXRF | Body | ns | ns | ns | 81.08 | ns | ns | ns | 0.54 | 5.91 | 0.11 | 0.42 | 0.50 | bd | bd | 0.02 | 0.60 | 0.05 | 2 |
| Traprain Law | GV 1134 | White | 3 | A | pXRF | Body | ns | ns | ns | 76.02 | ns | ns | ns | 0.30 | 4.87 | 0.12 | 0.27 | 0.58 | bd | bd | 0.01 | 0.49 | 0.04 | 2 |
| Traprain Law | GV 975 | White(bluish) | 3 | A | pXRF | Body | ns | ns | ns | 75.89 | ns | ns | ns | 0.61 | 6.13 | 0.09 | 0.28 | 0.45 | bd | bd | 0.01 | 0.23 | 0.04 | 2 |
| Traprain Law | GV 1135 | White | 3 | A | pXRF | Body | ns | ns | ns | 80.46 | ns | ns | ns | 0.58 | 6.57 | 0.08 | 0.43 | 0.41 | bd | bd | 0.01 | 0.96 | 0.06 | 2 |
| Traprain Law | GV 1269 | White | 3 | A | pXRF | Body | ns | ns | ns | 78.71 | ns | ns | ns | 0.67 | 6.07 | 0.11 | 0.29 | 0.56 | bd | bd | bd | 0.35 | 0.04 | 2 |
| Traprain Law | GV 913 | White | 3 | A | pXRF | Body | ns | ns | ns | 75.48 | ns | ns | ns | 0.77 | 5.97 | 0.11 | 0.40 | 0.56 | bd | bd | bd | 0.62 | 0.06 | 2 |
| Traprain Law | GV 974 | White | 3 | A | pXRF | Body | ns | ns | ns | 75.83 | ns | ns | ns | 1.32 | 5.69 | 0.10 | 0.37 | 0.45 | bd | bd | 0.01 | 0.39 | 0.06 | 2 |
| Traprain Law | GV 670 | White | 3 | A | pXRF | Body | ns | ns | ns | 79.12 | ns | ns | ns | 0.45 | 5.76 | 0.12 | 0.22 | 0.49 | bd | bd | bd | 0.33 | 0.02 | 2 |
| Traprain Law | GV 1000 | White | 3 | A | pXRF | Body | ns | ns | ns | 77.72 | ns | ns | ns | 0.74 | 6.48 | 0.11 | 0.34 | 0.50 | bd | bd | bd | 0.24 | 0.04 | 2 |
| Traprain Law | GV855 | White | 3 | A | pXRF | Body | ns | ns | ns | 80.46 | ns | ns | ns | 0.49 | 6.38 | 0.08 | 0.42 | 0.39 | bd | bd | 0.01 | 0.44 | 0.11 | 2 |
| Traprain Law | GV 952 | White | 3 | A | pXRF | Body | ns | ns | ns | 77.56 | ns | ns | ns | 0.65 | 6.41 | 0.10 | 0.32 | 0.44 | bd | bd | bd | 0.24 | 0.04 | 2 |
| Traprain Law | GV 854 | White | 3 | A | pXRF | Body | ns | ns | ns | 79.43 | ns | ns | ns | 0.53 | 5.90 | 0.09 | 0.41 | 0.45 | bd | bd | 0.01 | 0.58 | 0.05 | 2 |
| Traprain Law | GV 601A | White | 3 | A | pXRF | Body | ns | ns | ns | 77.93 | ns | ns | ns | 0.59 | 6.09 | 0.08 | 0.42 | 0.42 | bd | bd | 0.01 | 0.32 | 0.05 | 2 |
| Traprain Law | GV 141 | White | 3 | A | pXRF | Body | ns | ns | ns | 73.03 | ns | ns | ns | 0.68 | 6.00 | 0.10 | 0.59 | 0.48 | bd | bd | 0.02 | 1.25 | 0.10 | 2 |
| Traprain Law | GV 146 | White | 3 | A | pXRF | Body | ns | ns | ns | 75.79 | ns | ns | ns | 1.17 | 5.83 | 0.10 | 0.35 | 0.41 | bd | bd | bd | 0.26 | 0.06 | 2 |
| Traprain Law | GV 765B | White | 3 | A | pXRF | Body | ns | ns | ns | 79.51 | ns | ns | ns | 0.50 | 5.67 | 0.10 | 0.32 | 0.43 | bd | bd | 0.01 | 0.48 | 0.07 | 2 |
| Traprain Law | GV 529C | White | 3 | A | pXRF | Body | ns | ns | ns | 74.87 | ns | ns | ns | 0.55 | 6.71 | 0.11 | 0.35 | 0.45 | bd | bd | bd | 0.33 | 0.00 | 2 |
| Traprain Law | GV 781 | White | 3 | A | pXRF | Body | ns | ns | ns | 77.36 | ns | ns | ns | 0.66 | 5.74 | 0.10 | 0.42 | 0.50 | bd | bd | 0.01 | 0.38 | 0.07 | 2 |
| Traprain Law | GV 760B | White? | 3 | A | pXRF | Body | ns | ns | ns | 72.68 | ns | ns | ns | 0.66 | 6.02 | 0.12 | 0.49 | 0.54 | bd | bd | 0.03 | 1.51 | 0.43 | 3 |
| Traprain Law | FJ 146 | Yellow | 1 | - | pXRF | Body | ns | ns | ns | 81.19 | ns | ns | ns | 0.73 | 5.43 | 0.10 | 0.33 | 0.48 | bd | 0.00 | 0.04 | 0.37 | 2.01 | 1 |
| Traprain Law | FJ 146 | red | 1 | - | pXRF | Decoration | ns | ns | ns | 64.86 | ns | ns | ns | 0.78 | 5.11 | 0.18 | 0.56 | 1.51 | bd | 1.03 | 0.21 | 1.25 | 10.44 | 1 |
| Traprain Law | FJ 146 | Yellow | 1 | - | pXRF | Overlay | ns | ns | ns | 73.26 | ns | ns | ns | 0.80 | 4.15 | 0.16 | 0.62 | 1.20 | bd | 0.10 | 0.11 | 0.86 | 7.07 | 1 |
| Traprain Law | FJ 146 | Blue | 1 | - | pXRF | Decoration | ns | ns | ns | 81.60 | ns | ns | ns | 0.81 | 6.23 | 0.11 | 0.85 | 1.06 | 0.09 | 0.24 | 0.05 | 0.48 | 2.27 | 1 |
| Traprain Law | GV 1017 | NC/C | 1 | - | pXRF | Body | ns | ns | ns | 74.49 | ns | ns | ns | 0.54 | 6.59 | 0.09 | 0.51 | 0.42 | bd | 0.02 | bd | 0.07 | 0.02 | 1 |
| Traprain Law | GV 1017 | Yellow | 1 | - | pXRF | Overlay | ns | ns | ns | 64.57 | ns | ns | ns | 1.00 | 4.04 | 0.18 | 0.43 | 1.22 | bd | 0.00 | 0.30 | 1.45 | 10.98 | 1 |
| Traprain Law | GV 1017 | NC/C | 1 | - | pXRF | Body | ns | ns | ns | 56.97 | ns | ns | ns | 0.65 | 2.61 | 0.04 | 0.25 | 0.41 | bd | 1.19 | bd | 0.12 | 1.07 | 1 |
| Traprain Law | GV 1137 | Yellow overlay | 1 | - | pXRF | Overlay | ns | ns | ns | 67.92 | ns | ns | ns | 1.12 | 3.91 | 0.14 | 0.45 | 1.28 | bd | 0.02 | 0.24 | 1.49 | 10.79 | 1 |
| Traprain Law | GV 1137 | NC/C | 1 | - | pXRF | Body | ns | ns | ns | 56.79 | ns | ns | ns | 1.04 | 3.97 | 0.08 | 0.30 | 0.37 | bd | 0.02 | bd | 0.12 | 0.04 | 1 |
| Traprain Law | GV 1137 | NC/C | 1 | - | pXRF | Body | ns | ns | ns | 67.43 | ns | ns | ns | 0.89 | 4.97 | 0.05 | 0.36 | 0.33 | bd | 0.00 | bd | 0.12 | 0.04 | 1 |
| Traprain Law | GV 147 | Pale yellow | 1 | - | pXRF | Body | ns | ns | ns | 79.12 | ns | ns | ns | 0.65 | 6.02 | 0.10 | 0.51 | 0.51 | bd | 0.03 | 0.03 | 0.16 | 0.30 | 1 |
| Traprain Law | GV 147 | Yellow | 1 | - | pXRF | Overlay | ns | ns | ns | 76.53 | ns | ns | ns | 0.44 | 4.43 | 0.08 | 0.19 | 0.96 | bd | 0.02 | 0.17 | 1.49 | 10.30 | 1 |
| Traprain Law | GV 533 | NC/C | 3 | F? | pXRF | Body | ns | ns | ns | 80.48 | ns | ns | ns | 0.57 | 6.45 | 0.06 | 0.53 | 0.30 | bd | bd | bd | bd | bd | 1 |
| Traprain Law | GV 1270 | NC/C | 3 | F? | pXRF | Body | ns | ns | ns | 77.80 | ns | ns | ns | 0.49 | 6.01 | 0.06 | 0.53 | 0.38 | bd | bd | bd | bd | bd | 1 |
| Traprain Law | GV 764 | NC/C | 3 | F | pXRF | Body | ns | ns | ns | 76.10 | ns | ns | ns | 1.33 | 8.73 | 0.09 | 0.12 | 0.33 | bd | bd | bd | bd | bd | 1 |
| Traprain Law | GV 764 | BG + white | 3 | F | pXRF | Trail | ns | ns | ns | 76.69 | ns | ns | ns | 1.17 | 5.57 | 0.09 | 0.31 | 0.44 | bd | bd | bd | 0.06 | 0.03 | 1 |
| Traprain Law | GV 678 | NC/C | 3 | F | pXRF | Body | ns | ns | ns | 81.54 | ns | ns | ns | 0.37 | 6.86 | 0.06 | 0.10 | 0.23 | bd | bd | bd | bd | bd | 1 |
| Traprain Law | GV 678 | NC/C + white | 3 | F | pXRF | Trail | ns | ns | ns | 78.38 | ns | ns | ns | 0.40 | 6.50 | 0.05 | 0.09 | 0.29 | bd | bd | bd | 0.02 | 0.01 | 1 |
| Traprain Law | GV 1229 | NC/C | 3 | F | pXRF | Body | ns | ns | ns | 69.17 | ns | ns | ns | 0.42 | 4.50 | 0.07 | 0.29 | 0.32 | bd | bd | bd | 0.28 | 0.06 | 1 |
| Traprain Law | GV 1229 | NC/C + white | 3 | F | pXRF | Trail | ns | ns | ns | 69.06 | ns | ns | ns | 0.27 | 3.35 | 0.09 | 0.21 | 0.38 | bd | bd | bd | 0.43 | 0.04 | 1 |
| Traprain Law | GV 330 | NC/C | 3 | F | pXRF | Body | ns | ns | ns | 82.52 | ns | ns | ns | 0.40 | 6.82 | 0.05 | 0.42 | 0.29 | bd | bd | bd | bd | bd | 1 |
| Traprain Law | GV 667 | NC/C | 3 | F | pXRF | Body | ns | ns | ns | 77.36 | ns | ns | ns | 1.54 | 6.31 | 0.07 | 0.48 | 0.44 | bd | bd | bd | 0.24 | 0.04 | 1 |
| Traprain Law | GV 667 | NC/C + white | 3 | F | pXRF | Trail | ns | ns | ns | 73.44 | ns | ns | ns | 1.37 | 5.33 | 0.13 | 0.40 | 0.56 | bd | bd | bd | 0.27 | 0.08 | 1 |
| Traprain Law | GV 20 | NC/C | 3 | F | pXRF | Body | ns | ns | ns | 78.82 | ns | ns | ns | 0.49 | 4.93 | 0.09 | 0.30 | 0.42 | bd | bd | bd | 0.38 | 0.03 | 1 |
| Traprain Law | GV 20 | NC/C + white | 3 | F | pXRF | Trail | ns | ns | ns | 80.39 | ns | ns | ns | 0.66 | 5.90 | 0.07 | 0.45 | 0.39 | bd | bd | 0.02 | 0.33 | 0.03 | 1 |
| Traprain Law | GV 37 | NC/C | 3 | F | pXRF | Body | ns | ns | ns | 81.17 | ns | ns | ns | 0.61 | 5.54 | 0.12 | 0.26 | 0.51 | bd | bd | bd | 0.42 | 0.04 | 1 |
| Traprain Law | GV 37 | NC/C + white | 3 | F | pXRF | Trail | ns | ns | ns | 71.07 | ns | ns | ns | 0.51 | 4.48 | 0.09 | 0.20 | 0.38 | bd | bd | bd | 0.49 | 0.03 | 1 |
| Traprain Law | GV 128 | NC/C | 3 | F | pXRF | Body | ns | ns | ns | 82.02 | ns | ns | ns | 0.35 | 7.53 | 0.06 | 0.14 | 0.33 | bd | bd | bd | bd | bd | 1 |
| Traprain Law | GV 128 | White | 3 | F | pXRF | Trail | ns | ns | ns | 78.44 | ns | ns | ns | 0.48 | 5.09 | 0.08 | 0.51 | 0.44 | bd | bd | bd | 0.07 | 0.02 | 1 |
| Traprain Law | GV 1138 | NC/C + white | 3 | F | pXRF | Trail | ns | ns | ns | 74.60 | ns | ns | ns | 0.50 | 5.37 | 0.09 | 0.36 | 0.41 | bd | bd | bd | 0.26 | 0.04 | 1 |
| Traprain Law | GV 1138 | NC/C | 3 | F | pXRF | Body | ns | ns | ns | 83.50 | ns | ns | ns | 0.47 | 6.08 | 0.07 | 0.40 | 0.41 | bd | bd | bd | 0.26 | 0.05 | 1 |
| Traprain Law | TRAPRAIN | NC/C | 3 | F/G? | pXRF | Body | ns | ns | ns | 81.63 | ns | ns | ns | 0.53 | 7.68 | 0.07 | 0.15 | 0.32 | bd | bd | bd | bd | bd | 1 |
| Traprain Law | TRAPRAIN | Blue streak | 3 | - | pXRF | Body | ns | ns | ns | 63.41 | ns | ns | ns | 0.69 | 4.37 | 0.12 | 0.60 | 0.85 | 0.10 | 0.14 | bd | 0.07 | 0.01 | 1 |
| Traprain Law | TRAPRAIN | Yellow/white trail | 3 | - | pXRF | Trail | ns | ns | ns | 74.80 | ns | ns | ns | 0.56 | 6.27 | 0.07 | 0.13 | 0.40 | bd | bd | 0.01 | 0.02 | 0.43 | 1 |
| Traprain Law | GV 40 | Blue streaky | ? | - | pXRF | Body | ns | ns | ns | 74.53 | ns | ns | ns | 0.58 | 5.45 | 0.07 | 0.67 | 0.54 | 0.03 | 0.05 | bd | 0.10 | 0.01 | 1 |
| Traprain Law | TRAPRAIN | NC/C | ? | - | pXRF | Body | ns | ns | ns | 74.01 | ns | ns | ns | 0.66 | 7.00 | 0.09 | 0.56 | 0.53 | bd | 0.04 | bd | 0.09 | 0.03 | 1 |
| Trprain Law | FJ 147 | Yellow | 3 | B | pXRF | Body | ns | ns | ns | 76.28 | ns | ns | ns | 0.77 | 6.31 | 0.09 | 0.33 | 0.77 | bd | bd | 0.06 | 0.32 | 2.81 | 2 |
| Traprain Law | GV 943 | NC/C | 2 | - | pXRF | Body | ns | ns | ns | 94.99 | ns | ns | ns | 0.69 | 8.08 | 0.09 | 0.50 | 0.56 | bd | 0.03 | bd | 0.19 | 0.10 | 1 |
| Traprain Law | GV 943 | Blue + white | 2 | - | pXRF | Cord | ns | ns | ns | 78.31 | ns | ns | ns | 0.82 | 5.87 | 0.08 | 0.36 | 0.45 | bd | 0.01 | bd | 0.23 | 0.05 | 1 |
| Crawcwellt | CCW11 (H) | White |  | ~2 | SEM-EDS | Twsited cable | 16.21 | 0.60 | 2.57 | 66.21 | 0.19 | 0.36 | 1.00 | 0.88 | 9.50 | 0.05 | 1.01 | 0.53 | bd | 0.09 | 0.03 | bd | bd | 3 |
| Crawcwellt | CCW11 (H) | Dark blue |  | ~2 | SEM-EDS | Body | 16.14 | 0.78 | 2.46 | 66.02 | bd | 0.37 | 1.20 | 0.75 | 9.07 | bd | 0.74 | 1.25 | bd | 0.29 | bd | bd | bd | 3 |
| Bryn y Castell | 314 (D) | White | Early | ~3 | SEM-EDS | Twisted cable | 15.52 | 0.62 | 2.13 | 65.87 | 0.10 | 0.49 | 1.03 | 0.92 | 7.19 | 0.05 | 0.36 | 0.41 | 0.01 | 0.72 | 0.06 | 3.20 | 1.00 | 3 |
| Bryn y Castell | 314 (D) | Red (+ white) | Early | ~3 | SEM-EDS | Twsited cable | 13.35 | 1.12 | 2.39 | 56.10 | 0.29 | 0.24 | 0.90 | 1.02 | 7.67 | 0.11 | 0.66 | 1.70 | bd | 2.58 | 0.23 | 0.56 | 10.48 | 3 |
| Bryn y Castell | 314 (D) | Dark green | Early | ~3 | SEM-EDS | Body | 14.76 | 0.73 | 2.34 | 64.09 | bd | 0.25 | 1.03 | 0.93 | 9.30 | 0.06 | 0.84 | 0.56 | bd | 2.60 | 0.19 | bd | 1.66 | 3 |
| Bryn y Castell | 166 | NC/C | Early | - | SEM-EDS | Body | 16.27 | 0.75 | 2.39 | 67.62 | bd | 0.31 | 1.14 | 0.85 | 9.21 | bd | 0.54 | 0.42 | bd | bd | bd | bd | bd | 3 |
| Bryn y Castell | 224 | Dark green | Early | ~3 | SEM-EDS | Body | 15.10 | 0.75 | 2.39 | 63.75 | bd | bd | 0.94 | 0.90 | 9.43 | 0.12 | 0.84 | 0.56 | bd | 2.69 | bd | bd | 1.72 | 3 |
| Bryn y Castell | 67 | Dark green | Early | - | SEM-EDS | Body (misshapen) | 14.80 | 0.86 | 2.33 | 64.17 | bd | 0.35 | 0.96 | 0.90 | 9.24 | 0.15 | 0.83 | 0.55 | bd | 2.58 | bd | bd | 1.72 | 3 |
| Bryn y Castell | 330 (C') | Dark green | Early | ~2 | SEM-EDS | Twisted cable | 14.97 | 0.76 | 2.34 | 64.23 | bd | 0.25 | 1.01 | 0.92 | 9.18 | 0.07 | 0.85 | 0.55 | bd | 2.40 | bd | bd | 1.66 | 3 |
| Bryn y Castell | 330 (C') | Dark blue | Early | ~2 | SEM-EDS | Twisted cable | 16.96 | 0.65 | 2.40 | 65.27 | bd | 0.36 | 1.15 | 0.70 | 9.04 | bd | 0.76 | 1.27 | 0.12 | 0.30 | bd | bd | 0.12 | 3 |
| Bryn y Castell | 330 (C') | Yellow | Early | ~2 | SEM-EDS | Twisted cable | 12.44 | 0.50 | 2.06 | 54.12 | bd | bd | 0.91 | 0.60 | 6.44 | bd | 0.49 | 0.81 | bd | 0.36 | 0.87 | 1.00 | 18.36 | 3 |
| Bryn y Castell | 174 | Dark blue | Early | - | SEM-EDS | Body | 17.28 | 0.78 | 2.48 | 65.41 | bd | 0.37 | 1.07 | 0.73 | 9.08 | 0.10 | 0.73 | 1.14 | 0.12 | 0.25 | bd | bd | 0.17 | 3 |
| Bryn y Castell | 185 | Dark blue | Early | - | SEM-EDS | Body | 16.84 | 0.72 | 2.43 | 65.22 | bd | 0.38 | 1.04 | 0.77 | 9.27 | 0.08 | 0.70 | 1.21 | bd | 0.26 | bd | 0.38 | 0.31 | 3 |
| Bryn y Castell | 110 | Dark blue | Early | - | SEM-EDS | Body | 16.84 | 0.76 | 2.43 | 65.25 | bd | 0.35 | 1.07 | 0.79 | 9.23 | 0.12 | 0.75 | 1.27 | 0.10 | 0.27 | bd | 0.44 | 0.18 | 3 |
| Bryn y Castell | 355 | Dark green | Early | ~3 | SEM-EDS | Body | 14.99 | 0.73 | 2.35 | 63.81 | bd | bd | 0.92 | 0.94 | 9.53 | 0.10 | 0.85 | 0.61 | bd | 2.69 | bd | bd | 1.73 | 3 |
| Bryn y Castell | 355 | White | Early | ~3 | SEM-EDS | Trail | 11.28 | 0.51 | 1.87 | 54.37 | bd | 0.45 | 0.50 | 0.81 | 6.72 | bd | 0.76 | 0.51 | bd | 0.13 | bd | 5.23 | 16.54 | 3 |
| Bryn y Castell | 139 | White | Early | ~3 | SEM-EDS | Trail | 11.62 | 0.55 | 1.88 | 54.44 | bd | 0.48 | 0.56 | 0.74 | 6.49 | bd | 0.74 | 0.45 | bd | bd | bd | 5.12 | 16.55 | 3 |
| Bryn y Castell | 139 | NC/C | Early | ~3 | SEM-EDS | Body | 16.63 | 0.76 | 2.42 | 67.42 | bd | 0.34 | 1.26 | 0.83 | 8.83 | bd | 0.51 | 0.41 | bd | bd | bd | bd | bd | 3 |
| Bryn y Castell | 388 | White | Early | ~2 | SEM-EDS | Twisted cord | 11.29 | 0.56 | 1.86 | 54.09 | bd | 0.46 | 0.56 | 0.75 | 6.65 | bd | 0.80 | 0.50 | bd | bd | bd | 5.47 | 16.66 | 3 |
| Bryn y Castell | 388 | Purple | Early | ~2 | SEM-EDS | Twisted cord | 18.45 | 0.60 | 2.29 | 65.57 | bd | 0.46 | 1.05 | 0.68 | 8.49 | bd | 1.50 | 0.41 | bd | bd | bd | bd | bd | 3 |
| Bryn y Castell | 388 | NC/C | Early | ~2 | SEM-EDS | Body | 16.29 | 0.74 | 2.39 | 67.43 | bd | 0.34 | 1.15 | 0.84 | 9.10 | bd | 0.57 | 0.41 | bd | bd | bd | bd | bd | 3 |
| Thearne | RF101 | Dark blue | 2 | Trail | EPMA |  | 15.48 | 0.44 | 2.42 | 70.57 | 0.12 | 0.11 | 1.05 | 0.51 | 6.38 | 0.03 | 0.68 | 0.82 | 0.16 | 0.22 | bd | 0.06 | 0.04 | 3 |
| Thearne | RF101 | White | 2 | Trail | EPMA |  | 14.37 | 0.61 | 2.58 | 66.64 | 0.18 | 0.32 | 0.69 | 0.67 | 6.78 | 0.05 | 0.52 | 0.56 | bd | 0.04 | 0.02 | 3.88 | 0.86 | 5 |
| Thearne | RF108 | White | 2 | Trail end | EPMA |  | 13.88 | 0.53 | 2.50 | 65.99 | 0.17 | 0.31 | 0.64 | 0.70 | 7.01 | 0.04 | 0.55 | 0.42 | bd | 0.03 | bd | 5.05 | 0.10 | 4 |
| Thearne | RF225 | Dark blue | 2 | Rod | EPMA |  | 14.33 | 0.48 | 2.73 | 67.14 | 0.10 | 0.17 | 1.02 | 2.28 | 7.48 | 0.03 | 0.86 | 0.68 | 0.19 | 0.18 | bd | 0.16 | bd | 3 |
| Thearne | RF226 | Dark blue | 2 | Rod | EPMA |  | 15.70 | 0.50 | 2.39 | 69.42 | 0.14 | 0.12 | 1.03 | 0.57 | 6.40 | 0.05 | 1.10 | 0.79 | 0.16 | 0.17 | bd | 0.10 | 0.09 | 6 |
| Thearne | RF266 | Yellow | 2 | Trail end | EPMA |  | 16.44 | 1.87 | 2.03 | 63.96 | 0.61 | 0.30 | 0.99 | 0.68 | 6.09 | 0.12 | 0.76 | 1.22 | 0.07 | 0.32 | 0.11 | 1.30 | 1.72 | 3 |
| Thearne | RF290 | White | 2 | Rod | EPMA |  | 14.78 | 0.53 | 2.45 | 67.62 | 0.10 | 0.37 | 0.65 | 0.61 | 6.15 | 0.06 | 0.45 | 0.51 | bd | 0.05 | bd | 4.81 | 0.07 | 5 |
| Thearne | RF308 | Dark blue | 2 | Aii | EPMA |  | 15.96 | 0.52 | 2.41 | 68.55 | 0.16 | 0.13 | 1.06 | 0.58 | 7.74 | 0.04 | 0.60 | 1.07 | 0.22 | 0.44 | bd | 0.05 | 0.04 | 3 |
| Thearne | RF315 | Dark blue | 2 | Rod | EPMA |  | 16.00 | 0.51 | 2.38 | 68.68 | 0.14 | 0.17 | 1.08 | 0.55 | 6.81 | 0.04 | 0.64 | 0.59 | 0.12 | 0.15 | bd | 0.12 | 0.05 | 6 |
| Thearne | RF315 | Dark blue | 2 | Rod | EPMA |  | 15.08 | 0.53 | 2.59 | 66.76 | 0.09 | 0.17 | 1.04 | 0.48 | 7.41 | 0.03 | 1.47 | 1.96 | 0.47 | 0.59 | bd | bd | bd | 2 |
| Thearne | RF315i | Opaque blue? | 2 | Rod pinched | EPMA |  | 14.34 | 0.46 | 2.34 | 67.94 | 0.12 | 0.30 | 0.83 | 0.51 | 7.30 | 0.05 | 0.57 | 0.58 | 0.08 | 0.12 | bd | 3.14 | 0.04 | 1 |
| Thearne | RF328 | Dark blue | 2 | Rod pinched | EPMA |  | 14.83 | 0.53 | 2.47 | 67.61 | 0.24 | 0.17 | 0.94 | 0.59 | 8.78 | 0.03 | 0.66 | 0.88 | 0.13 | 0.19 | bd | 0.04 | 0.05 | 4 |
| Thearne | RF328 | White | 2 | Rod pinched | EPMA |  | 14.83 | 0.51 | 2.56 | 67.80 | 0.12 | 0.37 | 0.72 | 0.61 | 6.72 | 0.05 | 0.47 | 0.45 | bd | 0.03 | bd | 4.07 | 0.05 | 3 |
| Thearne | RF352 | Dark blue | 2 | Rod | EPMA |  | 14.76 | 0.50 | 2.12 | 67.97 | 0.17 | 0.12 | 0.99 | 0.59 | 7.92 | 0.05 | 0.65 | 0.78 | 0.12 | 0.19 | bd | 0.07 | 0.04 | 3 |
| Thearne | RF352 | White | 2 | Rod | EPMA |  | 13.80 | 0.53 | 2.31 | 66.21 | 0.17 | 0.24 | 0.77 | 0.59 | 7.57 | 0.05 | 0.47 | 0.50 | 0.04 | 0.10 | bd | 3.89 | 0.04 | 3 |
| Thearne | RF352 | Yellow | 2 | Rod | EPMA |  | 10.15 | 0.35 | 1.88 | 49.81 | 0.13 | 0.27 | 0.51 | 0.46 | 4.92 | 0.02 | 0.35 | 1.62 | 0.03 | 0.10 | 0.46 | 2.78 | 19.37 | 4 |
| Thearne | RF355 | Dark blue | 2 | Ai (no twist) | EPMA |  | 15.16 | 0.56 | 2.69 | 68.97 | 0.17 | 0.25 | 0.88 | 0.52 | 7.31 | 0.03 | 0.44 | 0.50 | 0.04 | 0.15 | bd | 1.49 | 0.08 | 3 |
| Thearne | RF363 | Dark blue | 2 | Aii (no twist) | EPMA |  | 14.62 | 0.46 | 2.69 | 69.73 | 0.13 | 0.14 | 1.08 | 0.52 | 7.20 | 0.05 | 0.50 | 0.84 | 0.14 | 0.14 | bd | 0.04 | 0.04 | 3 |
| Thearne | RF368 | White | 2 | Ai | EPMA | Dotted stripe | 15.21 | 0.56 | 2.58 | 67.79 | 0.11 | 0.40 | 0.63 | 0.68 | 6.37 | 0.07 | 0.37 | 0.60 | bd | 0.10 | bd | 4.44 | bd | 3 |
| Thearne | RF368 | Dark blue | 2 | Ai | EPMA | Stripe | 16.07 | 0.52 | 2.38 | 67.55 | 0.15 | 0.12 | 1.16 | 0.55 | 6.65 | 0.04 | 1.87 | 1.18 | 0.34 | 0.27 | bd | 0.04 | bd | 3 |
| Thearne | RF371 | Dark blue | 2 | Rod | EPMA | Twists | 15.95 | 0.43 | 3.42 | 69.33 | 0.16 | 0.12 | 1.08 | 0.78 | 5.55 | 0.04 | 0.82 | 0.63 | 0.16 | 0.18 | bd | 0.25 | 0.06 | 5 |
| Thearne | RF371 | White | 2 | Rod | EPMA | Twists | 13.47 | 0.53 | 2.75 | 64.57 | 0.15 | 0.34 | 0.64 | 0.64 | 7.71 | 0.04 | 0.16 | 0.47 | 0.03 | 0.03 | bd | 6.82 | 0.10 | 6 |
| Thearne | RF266 | Dark blue | 2 | Rod end | EPMA | - | 15.92 | 0.41 | 2.29 | 68.91 | 0.14 | 0.13 | 1.12 | 0.60 | 6.13 | 0.03 | 0.44 | 0.75 | 0.17 | 0.13 | bd | 0.05 | bd | 3 |
| Thearne | RF326 | Dark blue |  | Drip | EPMA | - | 14.74 | 0.48 | 2.73 | 67.64 | 0.11 | 0.19 | 1.08 | 0.50 | 7.57 | 0.05 | 0.46 | 0.85 | 0.14 | 0.18 | bd | 0.03 | 0.09 | 3 |
| Thearne | RF108 | Purple(+white) | 2 | Rod end | EPMA |  | 15.58 | 0.66 | 2.51 | 66.17 | 0.13 | 0.16 | 0.99 | 0.70 | 6.67 | 0.05 | 2.93 | 0.45 | bd | 0.04 | bd | 0.16 | 0.04 | 3 |
| Thearne | RF114 | NC/C | 3 | I | EPMA | Body | 16.94 | 0.65 | 2.72 | 68.94 | 0.18 | 0.16 | 0.98 | 0.76 | 6.92 | 0.06 | 0.49 | 0.54 | 0.01 | 0.10 | bd | 0.21 | 0.06 | 3 |
| Thearne | RF150 | NC/C | 2 | Aii (var) | EPMA | Body | 16.06 | 0.46 | 2.35 | 70.72 | 0.19 | 0.13 | 1.09 | 0.72 | 5.88 | 0.06 | 0.20 | 0.37 | bd | 0.04 | bd | 0.09 | 0.03 | 3 |
| Thearne | RF150 | Brown+white | 2 | Aii (var) | EPMA | Cord | 15.25 | 0.65 | 2.82 | 66.74 | 0.11 | 0.43 | 0.62 | 0.80 | 6.04 | 0.10 | 0.37 | 0.63 | bd | 0.05 | bd | 4.50 | 0.09 | 3 |
| Thearne | RF156 | NC/C | ? |  | EPMA | Body | 16.34 | 0.49 | 2.60 | 69.33 | 0.15 | 0.15 | 1.17 | 0.62 | 7.20 | 0.04 | 0.46 | 0.38 | bd | 0.02 | bd | 0.03 | bd | 3 |
| Thearne | RF201 | NC/C | 2 | Aii | EPMA | Body | 16.29 | 0.56 | 2.59 | 68.90 | 0.17 | 0.16 | 1.03 | 0.68 | 7.69 | 0.04 | 0.38 | 0.41 | bd | 0.04 | bd | 0.09 | 0.06 | 4 |
| Thearne | RF210 | NC/C | 2 | Aii | EPMA | Body | 16.59 | 0.58 | 2.63 | 69.27 | 0.17 | 0.16 | 1.03 | 0.69 | 7.16 | 0.06 | 0.49 | 0.43 | bd | 0.04 | bd | 0.15 | 0.05 | 3 |
| Thearne | RF211 | NC/C | 2 | Bii | EPMA | Body | 16.88 | 0.44 | 2.48 | 68.16 | 0.09 | 0.17 | 1.23 | 0.49 | 7.73 | 0.03 | 0.50 | 0.26 | bd | 0.02 | bd | 0.04 | bd | 3 |
| Thearne | RF216 | NC/C | 2 | Aii (var) | EPMA | Body | 15.50 | 0.45 | 3.22 | 69.74 | 0.14 | 0.11 | 1.10 | 0.70 | 6.98 | 0.04 | 0.27 | 0.28 | bd | 0.02 | bd | 0.05 | 0.05 | 4 |
| Thearne | RF225 | Light blue | 2 | Rod | EPMA |  | 16.86 | 0.48 | 2.41 | 65.18 | 0.22 | 0.25 | 1.41 | 2.11 | 8.11 | 0.03 | 0.11 | 0.27 | 0.00 | 0.80 | bd | 0.18 | 0.08 | 2 |
| Thearne | RF226 | Dark blue | 2 | Rod | EPMA |  | 15.70 | 0.50 | 2.39 | 69.42 | 0.14 | 0.12 | 1.03 | 0.57 | 6.40 | 0.05 | 1.10 | 0.79 | 0.16 | 0.17 | bd | 0.10 | 0.09 | 6 |
| Thearne | RF266 | Blue | 2 | Rod end | EPMA |  | 15.92 | 0.41 | 2.29 | 68.91 | 0.14 | 0.13 | 1.12 | 0.60 | 6.13 | 0.03 | 0.44 | 0.75 | 0.17 | 0.13 | bd | 0.05 | bd | 3 |
| Thearne | RF266 | White | 2 | Rod end | EPMA |  | 16.44 | 1.87 | 2.03 | 63.96 | 0.61 | 0.30 | 0.99 | 0.68 | 6.09 | 0.12 | 0.76 | 1.22 | 0.07 | 0.32 | 0.11 | 1.30 | 1.72 | 3 |
| Thearne | RF274 | NC/C | 2 | Ciii (var) | EPMA | Body | 15.96 | 0.56 | 2.60 | 69.11 | 0.18 | 0.14 | 1.00 | 0.72 | 7.76 | 0.06 | 0.39 | 0.43 | bd | 0.04 | bd | 0.13 | 0.05 | 3 |
| Thearne | RF274 | Brown+white | 2 | Ciii (var) | EPMA | Cord | 14.51 | 0.59 | 2.65 | 66.12 | 0.18 | 0.48 | 0.58 | 0.74 | 7.34 | 0.04 | 0.37 | 0.54 | bd | 0.04 | bd | 6.07 | 0.07 | 3 |
| Thearne | RF290 | Blue/white | 2 | Rod | EPMA |  | 14.78 | 0.53 | 2.45 | 67.62 | 0.10 | 0.37 | 0.65 | 0.61 | 6.15 | 0.06 | 0.45 | 0.51 | bd | 0.05 | bd | 4.81 | 0.07 | 5 |
| Thearne | RF295 | NC/C |  | Drip | EPMA |  | 15.73 | 0.55 | 2.60 | 67.47 | 0.18 | 0.14 | 0.98 | 0.79 | 7.41 | 0.05 | 0.48 | 0.44 | bd | 0.06 | bd | 0.14 | 0.09 | 3 |
| Thearne | RF308 | NC/C | 2 | Aii | EPMA |  | 15.99 | 0.47 | 2.52 | 70.29 | 0.11 | 0.11 | 1.19 | 0.45 | 7.47 | 0.04 | 0.27 | 0.31 | bd | bd | bd | 0.04 | bd | 3 |
| Thearne | RF311 | White |  | Rod end | EPMA |  | 14.18 | 0.50 | 2.24 | 66.23 | 0.15 | 0.33 | 0.68 | 0.66 | 7.27 | 0.04 | 1.04 | 0.44 | bd | 0.04 | bd | 5.35 | 0.08 | 4 |
| Thearne | RF311 | Purple |  | Rod end | EPMA |  | 15.73 | 0.64 | 2.57 | 66.99 | 0.14 | 0.16 | 0.95 | 0.71 | 6.58 | 0.05 | 3.45 | 0.52 | bd | 0.06 | bd | 0.16 | 0.09 | 3 |
| Thearne | RF315 | Yellow / blue | 2 | Rod | EPMA |  | 16.03 | 1.84 | 2.28 | 63.83 | 0.66 | 0.23 | 0.99 | 1.28 | 5.77 | 0.14 | 0.81 | 1.30 | bd | 2.04 | 0.09 | 0.42 | 2.13 | 6 |
| Thearne | RF332 | NC/C | 2 | Ci | EPMA | Body | 15.77 | 0.46 | 2.66 | 69.43 | 0.12 | 0.15 | 1.12 | 0.51 | 7.22 | 0.04 | 0.36 | 0.29 | 0.01 | 0.02 | bd | bd | 0.05 | 3 |
| Thearne | RF348 | NC/C | 2 | ? | EPMA | Body | 16.13 | 0.59 | 2.60 | 68.53 | 0.17 | 0.17 | 1.03 | 0.71 | 7.44 | 0.05 | 0.38 | 0.42 | bd | 0.04 | bd | 0.14 | 0.03 | 4 |
| Thearne | RF351 | NC/C | 2 | Ai (no twist) | EPMA | Body | 15.49 | 0.47 | 2.72 | 70.08 | 0.11 | 0.11 | 1.10 | 0.47 | 7.61 | 0.03 | 0.01 | 0.28 | bd | 0.01 | bd | 0.05 | bd | 3 |
| Thearne | RF351 | Turq blue | 2 | Ai (no twist) | EPMA | Body streak | 16.23 | 0.65 | 2.74 | 68.57 | 0.18 | 0.17 | 0.97 | 0.82 | 7.00 | 0.06 | 0.48 | 0.57 | bd | 0.11 | bd | 0.21 | bd | 2 |
| Thearne | RF353 | NC/C | ?Plain |  | EPMA | Body | 16.67 | 0.43 | 2.65 | 68.93 | 0.13 | 0.15 | 1.17 | 0.57 | 7.17 | 0.03 | 0.21 | 0.33 | bd | bd | bd | 0.05 | 0.05 | 3 |
| Thearne | RF355 | NC/C | 2 | Ai (no twist) | EPMA | Body | 14.47 | 0.43 | 2.71 | 71.08 | 0.12 | 0.12 | 1.05 | 0.54 | 7.63 | 0.02 | 0.05 | 0.26 | bd | bd | bd | 0.05 | bd | 3 |
| Thearne | RF360 | NC/C | ?3 |  | EPMA | Body | 15.61 | 0.47 | 2.50 | 70.64 | 0.12 | 0.15 | 1.08 | 0.50 | 7.69 | 0.02 | 0.11 | 0.29 | bd | 0.02 | bd | 0.03 | bd | 3 |
| Thearne | RF363 | Pale blue | ? |  | EPMA | Body | 17.00 | 0.42 | 2.21 | 69.20 | 0.14 | 0.12 | 1.24 | 0.46 | 5.96 | 0.03 | 0.77 | 0.29 | bd | 0.03 | bd | 0.04 | 0.06 | 4 |
| Thearne | RF365 | Pale blue |  | Rod | EPMA |  | 14.08 | 0.09 | 0.25 | 68.89 | 0.05 | 0.47 | 0.13 | 4.75 | 7.24 | 0.02 | 0.01 | 0.06 | 0.01 | 0.02 | bd | 0.37 | 0.23 | 5 |
| Thearne | RF368 | NC/C | 2 | Ai | EPMA | Body | 15.85 | 0.47 | 2.45 | 68.82 | 0.17 | 0.14 | 1.04 | 0.61 | 7.01 | 0.03 | 0.63 | 1.03 | 0.14 | 0.22 | bd | 0.09 | bd | 3 |
| Segedunum | WSG114 | NC/C | 2 | Ai | EPMA | Body | 16.43 | 0.61 | 2.57 | 67.88 | 0.15 | 0.21 | 1.07 | 0.63 | 6.97 | 0.05 | 0.74 | 0.43 | bd | 0.02 | bd | 0.23 | 0.12 | 3 |
| Bainbridge | 269E14 gl | NC/C | 2 | ?A | EPMA | Body | 15.86 | 0.61 | 2.56 | 67.85 | 0.17 | 0.20 | 0.92 | 0.69 | 7.95 | 0.05 | 0.39 | 0.43 | bd | 0.03 | bd | 0.17 | 0.05 | 3 |
| Arbeia (SS) | G1382 | NC/C | 2 | ?Ai | EPMA | Body | 16.53 | 0.57 | 2.44 | 66.56 | 0.12 | 0.19 | 1.15 | 0.52 | 8.44 | 0.03 | 0.78 | 0.41 | bd | 0.02 | bd | 0.03 | 0.05 | 3 |
| Bainbridge | XXI26B74 | NC/C | ?2 | - | EPMA | Body | 16.27 | 0.57 | 2.72 | 67.42 | 0.17 | 0.17 | 0.99 | 0.71 | 8.19 | 0.05 | 0.38 | 0.50 | 0.08 | 0.07 | bd | 0.09 | 0.04 | 4 |
| Arbeia (SS) | T1625 | NC/C? | 2 | - | EPMA | Body | 15.53 | 0.54 | 2.66 | 69.21 | 0.15 | 0.10 | 1.07 | 0.61 | 7.40 | 0.03 | 0.50 | 0.34 | bd | 0.02 | bd | 0.07 | 0.04 | 3 |