Supplemental Materials:

Table 1: Elemental data collected by LA-ICP-MS on Virginia copper artifacts.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Cu** | **Ni** | **Ag** | **As** | **Sb** | **Sn** | **Zn** | **Pb** |
|  |  |  |  |  |  |  |  |  |
| *Abbyville (44HA65)* | *(n=20)* |  |  |  |  |  |  |
| DHR1011 | 86.66 | 0.315 | 0.127 | 0.913 | 0.094 | 7.91 | 1.77 | 0.25 |
| DHR1012 | 98.20 | 0.294 | 0.083 | 0.075 | 0.472 | 0.07 | 0.03 | 0.23 |
| DHR1013 | 98.93 | 0.066 | 0.001 | 0.048 | 0.204 | 0.00 | 0.01 | 0.30 |
| DHR1014 | 99.23 | 0.045 | 0.123 | 0.131 | 0.158 | 0.03 | 0.00 | 0.17 |
| DHR1015 | 97.34 | 0.084 | 0.173 | 0.598 | 0.115 | 0.02 | 0.00 | 0.13 |
| DHR1016 | 79.23 | 0.026 | 0.141 | 0.023 | 0.007 | 0.01 | 18.18 | 0.16 |
| DHR1017 | 94.58 | 0.002 | 0.179 | 0.025 | 0.015 | 0.02 | 2.64 | 1.27 |
| DHR1018 | 92.85 | 0.001 | 0.126 | 0.076 | 0.017 | 0.01 | 2.01 | 2.54 |
| DHR1019 | 96.71 | 0.002 | 0.160 | 0.015 | 0.005 | 0.01 | 1.95 | 0.43 |
| DHR1020 | 96.58 | 0.002 | 0.165 | 0.022 | 0.010 | 0.01 | 2.09 | 0.32 |
| DHR1021 | 97.98 | 0.134 | 0.044 | 0.084 | 0.546 | 0.00 | 0.01 | 0.35 |
| DHR1022 | 74.87 | 0.137 | 0.077 | 0.068 | 0.046 | 1.80 | 20.92 | 0.80 |
| DHR1023 | 85.78 | 0.084 | 0.061 | 0.135 | 0.049 | 0.73 | 11.84 | 0.32 |
| DHR1024 | 99.27 | 0.064 | 0.099 | 0.037 | 0.154 | 0.00 | 0.00 | 0.20 |
| DHR1026 | 77.12 | 0.175 | 0.173 | 0.056 | 0.136 | 0.01 | 18.35 | 3.08 |
| DHR1027 | 96.25 | 0.128 | 0.102 | 0.529 | 0.156 | 0.08 | 0.01 | 0.39 |
| DHR1028 | 98.23 | 0.092 | 0.154 | 0.042 | 0.297 | 0.02 | 0.01 | 0.30 |
| DHR1029 | 97.79 | 0.091 | 0.114 | 0.057 | 0.420 | 0.20 | 0.48 | 0.60 |
| DHR1030 | 98.77 | 0.066 | 0.070 | 0.047 | 0.212 | 0.01 | 0.00 | 0.28 |
| DHR1031 | 98.80 | 0.076 | 0.069 | 0.050 | 0.207 | 0.03 | 4.79 | 0.21 |
|  |  |  |  |  |  |  |  |  |
| *Ft. San Juan (31BK22)* | *(n=10)* |  |  |  |  |  |  |  |
| 004-238  | 95.89 | 0.21 | 0.21 | 0.07 | 0.34 | 0.20 | 0.02 | 0.14 |
| 004-296  | 72.06 | 0.06 | 0.08 | 0.05 | 0.02 | 1.89 | 24.48 | 0.64 |
| 008-351/1  | 97.64 | 0.63 | 0.07 | 0.10 | 0.91 | 0.01 | 0.01 | 0.11 |
| 011-508  | 74.94 | 0.03 | 0.09 | 0.08 | 0.01 | 1.62 | 22.00 | 0.31 |
| 082-490  | 99.38 | 0.00 | 0.02 | 0.00 | 0.00 | 0.08 | 0.01 | 0.01 |
| 082-526  | 97.53 | 0.00 | 0.12 | 0.02 | 0.01 | 0.02 | 1.84 | 0.04 |
| 088-832  | 72.69 | 0.11 | 0.06 | 0.08 | 0.04 | 1.32 | 24.14 | 0.77 |
| 089-1172  | 72.97 | 0.06 | 0.22 | 0.96 | 0.39 | 17.06 | 3.79 | 1.01 |
| 089-230  | 73.52 | 0.04 | 0.09 | 0.04 | 0.02 | 0.89 | 24.02 | 0.28 |
| 093-1248 | 83.45 | 0.09 | 0.19 | 0.40 | 0.08 | 5.66 | 8.28 | 0.71 |
|  |  |  |  |  |  |  |  |  |
| *Ft. Christanna (44BR3) (n=20)* |  |  |  |  |  |  |
| DHR685 | 89.86 | 0.033 | 0.099 | 0.122 | 0.028 | 0.10 | 6.72 | 1.30 |
| DHR686 | 72.90 | 0.023 | 0.060 | 0.069 | 0.022 | 0.41 | 23.67 | 2.15 |
| DHR687 | 94.31 | 0.001 | 0.083 | 0.075 | 0.028 | 0.17 | 3.14 | 0.96 |
| DHR688 | 98.46 | 0.028 | 0.190 | 0.539 | 0.038 | 0.01 | 0.02 | 0.19 |
| DHR689 | 72.73 | 0.052 | 0.017 | 0.046 | 0.004 | 0.02 | 25.19 | 1.58 |
| DHR690 | 69.83 | 0.122 | 0.069 | 0.136 | 0.023 | 0.30 | 27.44 | 1.04 |
| DHR692 | 82.38 | 0.093 | 0.041 | 0.111 | 0.035 | 0.09 | 14.61 | 1.39 |
| DHR693 | 94.91 | 0.005 | 0.109 | 0.152 | 0.036 | 0.16 | 2.99 | 0.83 |
| DHR694 | 95.82 | 0.001 | 0.215 | 0.040 | 0.019 | 0.09 | 2.43 | 0.46 |
| DHR695 | 90.94 | 0.093 | 0.085 | 0.296 | 0.199 | 1.47 | 4.62 | 1.28 |
| DHR696 | 76.97 | 0.071 | 0.030 | 0.047 | 0.005 | 0.03 | 21.85 | 0.60 |
| DHR697 | 70.49 | 0.031 | 0.060 | 0.092 | 0.016 | 0.07 | 27.11 | 1.37 |
| DHR698 | 74.09 | 0.032 | 0.142 | 0.080 | 0.012 | 0.14 | 22.37 | 2.14 |
| DHR699 | 74.71 | 0.023 | 0.067 | 0.042 | 0.009 | 0.10 | 23.84 | 0.80 |
| DHR700 | 78.64 | 0.021 | 0.038 | 0.045 | 0.011 | 0.10 | 19.20 | 1.44 |
| DHR701 | 90.14 | 0.032 | 0.111 | 0.431 | 0.211 | 1.79 | 4.68 | 1.31 |
| DHR702 | 72.08 | 0.038 | 0.056 | 0.148 | 0.006 | 0.01 | 26.58 | 0.70 |
| DHR703 | 95.91 | 0.011 | 0.120 | 0.112 | 0.024 | 0.12 | 2.47 | 0.78 |
| DHR704 | 88.22 | 0.008 | 0.174 | 0.060 | 0.039 | 0.15 | 9.88 | 1.01 |
| DHR705 | 81.59 | 0.007 | 0.040 | 0.023 | 0.011 | 0.07 | 17.51 | 0.40 |
|  |  |  |  |  |  |  |  |  |
| *Graham-White (44RN21) (n=9)* |  |  |  |  |  |  |
| DHR1002 | 77.40 | 0.018 | 0.081 | 0.019 | 0.010 | 0.10 | 20.87 | 0.69 |
| DHR1003 | 77.99 | 0.031 | 0.104 | 0.021 | 0.023 | 0.10 | 21.29 | 0.13 |
| DHR1004 | 74.54 | 0.074 | 0.079 | 0.033 | 0.029 | 0.32 | 24.05 | 0.55 |
| DHR1005 | 83.03 | 0.015 | 0.150 | 0.044 | 0.036 | 0.70 | 15.00 | 0.83 |
| DHR1006 | 79.22 | 0.047 | 0.068 | 0.017 | 0.020 | 0.04 | 19.73 | 0.35 |
| DHR1007 | 74.29 | 0.013 | 0.072 | 0.015 | 0.013 | 0.03 | 23.91 | 1.36 |
| DHR1008 | 98.83 | 0.012 | 0.130 | 0.037 | 0.030 | 0.19 | 0.10 | 0.42 |
| DHR1009 | 77.26 | 0.045 | 0.078 | 0.023 | 0.017 | 0.11 | 21.34 | 0.65 |
| DHR1010 | 72.94 | 0.016 | 0.077 | 0.015 | 0.012 | 0.02 | 25.75 | 0.51 |
|  |  |  |  |  |  |  |  |  |
| *Hurt Power Plant (44PY144)*  | *(n=12)* |  |  |  |  |  |
| DHR964 | 78.51 | 0.126 | 0.014 | 0.048 | 0.040 | 0.64 | 19.10 | 0.64 |
| DHR965 | 82.14 | 0.013 | 0.102 | 0.018 | 0.010 | 0.02 | 16.84 | 0.39 |
| DHR966 | 90.77 | 0.004 | 0.123 | 0.011 | 0.009 | 0.03 | 8.58 | 0.30 |
| DHR968 | 99.07 | 0.112 | 0.081 | 0.081 | 0.353 | 0.04 | 0.00 | 0.10 |
| DHR969 | 99.14 | 0.117 | 0.047 | 0.128 | 0.260 | 0.01 | 0.00 | 0.22 |
| DHR970 | 99.20 | 0.059 | 0.124 | 0.162 | 0.137 | 0.01 | 0.07 | 0.16 |
| DHR971 | 98.76 | 0.061 | 0.115 | 0.213 | 0.301 | 0.06 | 0.01 | 0.42 |
| DHR972 | 98.21 | 0.053 | 0.123 | 0.255 | 0.520 | 0.03 | 0.01 | 0.64 |
| DHR973 | 98.79 | 0.108 | 0.135 | 0.027 | 0.211 | 0.18 | 0.00 | 0.28 |
| DHR974 | 68.68 | 0.100 | 0.064 | 0.038 | 0.032 | 1.47 | 28.20 | 0.93 |
| DHR975 | 98.58 | 0.143 | 0.064 | 0.094 | 0.508 | 0.06 | 0.00 | 0.33 |
| DHR976 | 81.72 | 0.180 | 0.061 | 0.018 | 0.014 | 0.19 | 17.29 | 0.28 |
|  |  |  |  |  |  |  |  |  |
| *James Fort (Alloy) (n=22)* |  |  |  |  |  |  |
| 10016 | 69.79 | 0.174 | 0.043 | 0.043 | 0.010 | 0.040 | 27.897 | 1.31 |
| 129903 | 98.41 | 0.226 | 0.045 | 0.073 | 0.371 | 0.025 | 0.051 | 0.31 |
| 7305 | 77.87 | 0.301 | 0.031 | 0.084 | 0.027 | 2.517 | 17.102 | 1.67 |
| 129934 | 77.30 | 0.208 | 0.052 | 0.094 | 0.040 | 4.720 | 15.308 | 0.65 |
| 129974 | 80.30 | 0.299 | 0.028 | 0.055 | 0.027 | 2.400 | 15.802 | 0.55 |
| 130021 | 68.55 | 0.073 | 0.074 | 0.041 | 0.020 | 0.044 | 28.908 | 1.24 |
| 130048 | 92.31 | 0.037 | 0.141 | 0.123 | 0.201 | 3.390 | 3.269 | 0.23 |
| 130014 | 68.66 | 0.165 | 0.035 | 0.036 | 0.010 | 0.024 | 29.155 | 1.33 |
| 7311 | 70.12 | 0.195 | 0.029 | 0.042 | 0.013 | 1.339 | 27.070 | 0.76 |
| 129911 | 83.56 | 0.014 | 0.105 | 0.074 | 0.010 | 0.023 | 15.593 | 0.11 |
| 129916 | 86.84 | 0.047 | 0.043 | 0.059 | 0.009 | 0.058 | 5.587 | 7.02 |
| 129943 | 76.57 | 0.022 | 0.124 | 0.041 | 0.021 | 0.040 | 19.203 | 1.07 |
| 129973 | 79.42 | 0.019 | 0.098 | 0.025 | 0.010 | 3.060 | 16.580 | 0.36 |
| 130039 | 81.47 | 0.016 | 0.150 | 0.036 | 0.021 | 2.222 | 15.206 | 0.45 |
| 7841 | 84.05 | 0.042 | 0.137 | 0.129 | 0.119 | 4.865 | 8.906 | 0.43 |
| 129947 | 76.46 | 0.179 | 0.047 | 0.058 | 0.019 | 0.362 | 21.062 | 0.95 |
| 129990 | 70.58 | 0.148 | 0.082 | 0.061 | 0.017 | 0.075 | 25.929 | 1.65 |
| 129991 | 74.30 | 0.126 | 0.046 | 0.075 | 0.020 | 0.111 | 22.474 | 1.23 |
| 130033 | 79.77 | 0.276 | 0.028 | 0.060 | 0.027 | 2.496 | 16.443 | 0.36 |
| 130052 | 69.54 | 0.069 | 0.070 | 0.044 | 0.017 | 0.033 | 28.775 | 0.70 |
| 59748 | 75.66 | 0.006 | 0.091 | 0.020 | 0.018 | 0.063 | 21.833 | 1.50 |
| James Fort (Impure) | *(n=13)* |  |  |  |  |  |  |  |
| JR158A2 -78 | 99.12 | 0.09 | 0.04 | 0.08 | 0.37 | 0.00 | 0.00 | 0.18 |
| JR158ap-11  | 96.58 | 0.20 | 0.04 | 1.04 | 0.60 | 0.02 | 0.03 | 0.26 |
| JR158AP-2  | 98.49 | 0.17 | 0.06 | 0.35 | 0.11 | 0.04 | 0.05 | 0.18 |
| JR158AP-3  | 97.76 | 0.06 | 0.14 | 0.45 | 0.45 | 0.01 | 0.01 | 0.33 |
| JR158AP-4  | 99.17 | 0.09 | 0.05 | 0.45 | 0.04 | 0.02 | 0.00 | 0.07 |
| JR158BF-86  | 98.17 | 0.30 | 0.05 | 0.47 | 0.32 | 0.01 | 0.01 | 0.18 |
| JR158G-119  | 98.64 | 0.11 | 0.05 | 0.11 | 0.46 | 0.00 | 0.01 | 0.50 |
| JR158N-30  | 98.31 | 0.16 | 0.03 | 0.07 | 0.61 | 0.00 | 0.00 | 0.57 |
| JR158N-32  | 99.26 | 0.00 | 0.02 | 0.00 | 0.00 | 0.01 | 0.02 | 0.01 |
| JR158N-33  | 99.25 | 0.12 | 0.05 | 0.12 | 0.28 | 0.01 | 0.01 | 0.11 |
| JR158R-131  | 99.36 | 0.07 | 0.04 | 0.29 | 0.03 | 0.03 | 0.02 | 0.03 |
| JR158R-132  | 98.26 | 0.03 | 0.28 | 0.21 | 0.44 | 0.00 | 0.02 | 0.34 |
| JR158S-100  | 98.63 | 0.02 | 0.43 | 0.08 | 0.02 | 0.01 | 0.01 | 0.01 |
|  |  |  |  |  |  |  |  |  |
| *Trigg (44MY3)* | *(n=16)* |  |  |  |  |  |  |
| DHR711 | 75.90 | 0.299 | 0.035 | 0.075 | 0.015 | 2.00 | 19.88 | 1.00 |
| DHR675 | 77.87 | 0.952 | 0.036 | 0.065 | 0.104 | 0.04 | 18.87 | 1.39 |
| DHR676 | 77.06 | 0.244 | 0.052 | 0.025 | 0.076 | 0.01 | 21.51 | 0.83 |
| DHR677 | 81.53 | 1.094 | 0.045 | 0.090 | 0.114 | 0.67 | 13.90 | 2.08 |
| DHR678 | 89.49 | 0.445 | 0.058 | 0.142 | 0.210 | 0.18 | 7.59 | 1.15 |
| DHR679 | 81.44 | 0.659 | 0.062 | 0.172 | 0.389 | 2.41 | 11.73 | 2.28 |
| DHR720 | 81.66 | 0.076 | 0.131 | 0.254 | 0.075 | 9.07 | 7.33 | 1.12 |
| DHR721 | 99.21 | 0.103 | 0.082 | 0.047 | 0.123 | 0.03 | 0.03 | 0.12 |
| DHR723 | 94.00 | 0.087 | 0.049 | 0.150 | 0.047 | 0.01 | 0.06 | 0.13 |
| DHR725 | 97.70 | 0.183 | 0.043 | 0.399 | 0.198 | 0.01 | 0.01 | 0.24 |
| DHR727 | 92.32 | 0.124 | 0.099 | 0.071 | 0.021 | 0.05 | 6.81 | 0.41 |
| DHR1032 | 98.44 | 0.009 | 0.194 | 0.026 | 0.062 | 0.03 | 0.01 | 0.38 |
| DHR1033 | 98.21 | 0.090 | 0.099 | 0.175 | 0.064 | 0.01 | 0.02 | 0.15 |
| DHR1034 | 97.93 | 0.023 | 0.265 | 0.042 | 0.106 | 0.03 | 0.05 | 0.77 |
| DHR1035 | 94.92 | 0.095 | 0.094 | 0.089 | 0.428 | 0.01 | 1.05 | 0.34 |
| DHR1036 | 97.84 | 0.152 | 0.055 | 0.138 | 0.691 | 0.00 | 0.03 | 0.83 |

Table 2. Copper artifacts from the Abbyville Site (44HA65). SB=Strong brass, WB=Weak brass; Country: 1=Continental, 2=Sweden, 3=England.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Lab ID** | **Provenience** | **Object Type** | **Copper** | **Brass** | **Country** |
| DHR1011 | N. Terrace, Burial 5 | Hawk Bell | ALLOY | WB | 1 |
| DHR1012 | N. Terrace, Burial 5 | Tinkler | IMPURE | N/A | 1 |
| DHR1013 | N. Terrace, Burial 5 | Tinkler | IMPURE | N/A | 2 |
| DHR1014 | N. Terrace, Burial 5 | Tinkler | IMPURE | N/A | 3 |
| DHR1015 | N. Terrace, Burial 9 | Bead | IMPURE | N/A | 3 |
| DHR1016 | N. Terrace, Burial 16 | Tinkler | ALLOY | WB | 2 |
| DHR1017 | N. Terrace, Burial 16 | Tinkler | IMPURE | N/A | 2 |
| DHR1018 | N. Terrace, Burial 16 | Tinkler | IMPURE | N/A | 3 |
| DHR1019 | N. Terrace, Burial 16 | Tinkler | IMPURE | N/A | 2 |
| DHR1020 | N. Terrace, Burial 16 | Tinkler | IMPURE | N/A | 2 |
| DHR1021 | Shoals Side, Burial 4 | Pendant | IMPURE | N/A | 1 |
| DHR1022 | Shoals Side, Burial 4 | Pendant | ALLOY | SB | 1 |
| DHR1023 | Park Side, Burial 5 | Pendant | ALLOY | WB | 2 |
| DHR1024 | Park Side, Burial 3 | Hawk Bell | IMPURE | N/A | 2 |
| DHR1026 | Park Side, Burial 3 | Tinkler | ALLOY | WB | 1 |
| DHR1027 | Park Side, Burial 3 | Tinkler | IMPURE | N/A | 1 |
| DHR1028 | Park Side, Burial 3 | Tinkler | IMPURE | N/A | 3 |
| DHR1029 | Park Side, Burial 3 | Tinkler | IMPURE | N/A | 2 |
| DHR1030 | Park Side, Burial 3 | Tinkler | IMPURE | N/A | 2 |
| DHR1031 | Park Side, Burial 3 | Tinkler | IMPURE | N/A | 2 |

Table 3: Copper Artifacts found at the Fort San Juan (31BK22) SB=Strong brass, WB=Weak brass; Country: 1=Continental, 2=Sweden, 3=England

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Lab ID** | **Provenience** | **Object Type** | **Copper** | **Brass** | **Country** |
| 004-238 | Berry Site | Fragment | ALLOY | WB | 1 |
| 004-296 | Berry Site | Fragment | ALLOY | SB | 2 |
| 011-508 | Berry Site | Fragment | ALLOY | SB | 2 |
| 088-832 | Berry Site | Fragment | ALLOY | SB | 1 |
| 089-1172 | Berry Site | Fragment | ALLOY | WB | 3 |
| 089-230 | Berry Site | Fragment | ALLOY | SB | 2 |
| 093-1248 | Berry Site | Fragment | ALLOY | WB | 2 |
| 008-351/1 | Berry Site | Fragment | ANC | N/A | N/A |
| 082-526 | Berry Site | Punched | ANC | N/A | N/A |
| 082-490 | Berry Site | Fragment | IMPURE | N/A | N/A |

Table 4. Copper Artifacts found at Fort Christanna (44BR3). SB=Strong brass, WB=Weak brass; Country: 2=Sweden, 3=England

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Lab ID** | **Provenience** | **Object Type**  | **Copper** | **Brass** | **Country** |
| DHR685 | 100 R3-6 | Sheet | ALLOY | WB | 3 |
| DHR686 | 101G4A-5 | Sheet | ALLOY | SB | 2 |
| DHR687 | 1100 S1-4 | Tinkler | IMPURE | N/A | 3 |
| DHR688 | 1100 S1-3 | Tinkler | IMPURE | N/A | 3 |
| DHR689 | TU 166, L.3 | Ribbon | ALLOY | SB | 2 |
| DHR690 | 90 T4-30 | Sheet | ALLOY | SB | 3 |
| DHR692 | 100 B1-2 | Sheet | ALLOY | WB | 3 |
| DHR693 | TU 139, L.2 | Sheet | IMPURE | N/A | 3 |
| DHR694 | TU 174, L.2 | Sheet | IMPURE | N/A | 2 |
| DHR695 | 100 G2-36 | Ring | ALLOY | WB | 3 |
| DHR696 | 100 Q4-138 | Sheet | ALLOY | SB | 2 |
| DHR697 | 100 Q4-137 | Sheet | ALLOY | SB | 3 |
| DHR698 | 1100 S2b, F32, E1/2 | Sheet | ALLOY | SB | 3 |
| DHR699 | 100 Q4-6 | Sheet | ALLOY | SB | 2 |
| DHR700 | TU 167, L.2 | Tinkler | ALLOY | WB | 2 |
| DHR701 | TU 181, L.2 | Ring | ALLOY | WB | 3 |
| DHR702 | TU 150, L.2 | Sheet | ALLOY | SB | 3 |
| DHR703 | 100 F3A-SE-11, F15 | Sheet | IMPURE | N/A | 3 |
| DHR704 | 100 R1-3 | Sheet | ALLOY | WB | 2 |
| DHR705 | TU 169, L.2 | Tinkler | ALLOY | WB | 2 |

Table 5. Copper artifacts from the Graham-White Site (44RN21). SB=Strong brass, WB=Weak brass; Country: 2=Sweden.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Lab ID** | **Provenience** | **Object Type** | **Copper** | **Brass** | **Country** |
| DHR1002 | 3AA-S | Bead | ALLOY | SB | 2 |
| DHR1003 | 16C-E #26 | Sheet | ALLOY | SB | 2 |
| DHR1004 | 6C-W #11 | Pendant | ALLOY | SB | 2 |
| DHR1005 | 6C-W #12 | Pendant | ALLOY | WB | 2 |
| DHR1006 | 6C-W #13 | Pendant | ALLOY | WB | 2 |
| DHR1007 | 6C-W #15 | Pendant | ALLOY | SB | 2 |
| DHR1008 | 3A-N #10 | Sheet | IMPURE | N/A | 2 |
| DHR1009 | 3A-S #24 | Pendant | ALLOY | SB | 2 |
| DHR1010 | 6C | Bead | ALLOY | SB | 2 |

Table 6. Copper Artifacts from the Hurt Power Plant Site (44PY144). SB=Strong brass, WB=Weak brass; Country: 1=Continental, 2=Sweden, 3=England

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Lab ID** | **Provenience** | **Object Type** | **Copper** | **Brass** | **Country** |
| DHR964 | W390S5, L.1-Cu5 | Bead | ALLOY | WB | 1 |
| DHR965 | AXL1-Cu7 | Sheet | ALLOY | WB | 2 |
| DHR966 | BS2L-Cu8 | Sheet | ALLOY | WB | 2 |
| DHR968 | BSL2-Cu10 | Sheet | IMPURE | N/A | 1 |
| DHR969 | F92BL4-Cu19 | Sheet | IMPURE | N/A | 1 |
| DHR970 | F28BL4-Cu35 | Sheet | IMPURE | N/A | 3 |
| DHR971 | F28BL4-Cu37 | Sheet | IMPURE | N/A | 3 |
| DHR972 | F28BL5-Cu38 | Bead | IMPURE | N/A | 3 |
| DHR973 | F81L4-Cu48 | Sheet | IMPURE | N/A | 1 |
| DHR974 | F28BL4-Cu54 | Sheet | ALLOY | SB | 2 |
| DHR975 | AXN-ext-Cu56 | Sheet | IMPURE | N/A | 1 |
| DHR976 | F81, L2-Cu56 | Bead | ALLOY | WB | 1 |

Table 7. Copper Artifacts found at the James Fort water well. SB=Strong brass, WB=Weak brass; Country: 1=Continental, 2=Sweden

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Lab ID** | **Provenience** | **Object Type**  | **Copper** | **Brass** | **Country** |
| 129978 | Well | Sheet | IMPURE | N/A | N/A |
| 129901  | Well | Sheet | IMPURE | N/A | N/A |
| 10698  | Well | Sheet | IMPURE | N/A | N/A |
| 12656  | Well | Sheet | IMPURE | N/A | N/A |
| 34366  | Well | Sheet | IMPURE | N/A | N/A |
| 129986  | Well | Sheet | IMPURE | N/A | N/A |
| 130012  | Well | Sheet | IMPURE | N/A | N/A |
| 129921 | Well | Sheet | IMPURE | N/A | N/A |
| 129922  | Well | Sheet | IMPURE | N/A | N/A |
| 129923  | Well | Sheet | IMPURE | N/A | N/A |
| 130029  | Well | Sheet | IMPURE | N/A | N/A |
| 130030  | Well | Sheet | IMPURE | N/A | N/A |
| 129999  | Well | Sheet | IMPURE | N/A | N/A |
| 10016 | Well | Sheet | ALLOY | SB | 1 |
| 129903 | Well | Sheet | ALLOY | WB | 1 |
| 7305 | Well | Sheet | ALLOY | WB | 1 |
| 129934 | Well | Sheet | ALLOY | WB | 1 |
| 129974 | Well | Sheet | ALLOY | WB | 1 |
| 130021 | Well | Sheet | ALLOY | SB | 2 |
| 130048 | Well | Sheet | ALLOY | WB | 1 |
| 130014 | Well | Sheet | ALLOY | SB | 1 |
| 7311 | Well | Sheet | ALLOY | SB | 1 |
| 129911 | Well | Sheet | ALLOY | SB | 2 |
| 129916 | Well | Sheet | ALLOY | WB | 2 |
| 129943 | Well | Sheet | ALLOY | SB | 2 |
| 129973 | Well | Sheet | ALLOY | WB | 2 |
| 130039 | Well | Sheet | ALLOY | WB | 1 |
| 7841 | Well | Sheet | ALLOY | SB | 1 |
| 129947 | Well | Sheet | ALLOY | WB | 1 |
| 129990 | Well | Sheet | ALLOY | SB | 1 |
| 129991 | Well | Sheet | ALLOY | WB | 1 |
| 130033 | Well | Sheet | ALLOY | WB | 1 |
| 130052 | Well | Sheet | ALLOY | SB | 1 |
| 59748 | Well | Sheet | ALLOY | SB | 1 |

Table 8. Copper Artifacts from the Trigg Site (44MY3). WB=Weak brass; Country: 1=Continental, 2=Sweden, 3=England, 4= ANC.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Lab ID** | **Provenience** | **Object** **Type** | **Copper** | **Brass** | **Country** |
| DHR711 | Storage Pit (Cat. 446) | Sheet | ALLOY | WB | 1 |
| DHR713 | Storage Pit (Cat. 692) | Sheet | IMPURE | N/A | 1 |
| DHR714 | Burial 22 (Cat. 52A) | Pendant | IMPURE | N/A | 1 |
| DHR715 | Burial 22 (Cat. 52A) | Bead | IMPURE | N/A | 2 |
| DHR716 | Burial 247 (Cat. 594A) | Pendant | IMPURE | N/A | 1 |
| DHR717 | Burial 248(Cat. 588A) | Bead | IMPURE | N/A | 1 |
| DHR720 | Burial 227 (Cat. 557A) | Cone | ALLOY | WB | 3 |
| DHR721 | Burial 291(Cat. 668A) | Bead | IMPURE | N/A | 1 |
| DHR723 | Burial 296 (Cat. 673A) | Bead | IMPURE | N/A | 3 |
| DHR725 | Burial 238 (Cat. 576A) | Bead | IMPURE | N/A | 1 |
| DHR727 | Burial 127 (Cat. 707) | Hawk Bell | IMPURE | N/A | 1 |
| DHR1032 | Burial 291 (Cat. 668A) | Bead | IMPURE | N/A | 2 |
| DHR1033 | Burial 291 (Cat. 668A) | Bead | IMPURE | N/A | 3 |
| DHR1034 | Burial 291 (Cat. 668A) | Bead | IMPURE | N/A | 2 |
| DHR1035 | Burial 291 (Cat. 668A) | Bead | IMPURE | N/A | 3 |

Archaeological Site descriptions:

*Abbyville (44HA65)*

The Abbyville Site consisted of seven mudflats on the floodplain of the Dan River that were exposed during low water periods of the Kerr Reservoir in Halifax County, Virginia (Figure 1). Excavations by the Archaeological Society of Virginia between 1966 and 1971 documented hundreds of subsurface pits and postmolds (Wells 2002). Trade copper was confined to burial contexts and included lizard and claw pendants, spirals, tubular and coiled beads, cone-shaped “tinklers,” flat squares, hawk bells, and buttons. Glass beads were often associated with copper items. Their polychromed and cored forms were highly similar to those found in the Northeast region of North America and suggested that the initial inhabitants of the area originated from, or had contact with, persons well to the north of the Dan River drainage in the early AD 1600s (Keith Egloff, personal communication). A second grouping of glass beads consisting almost exclusively of cored white beads that were in circulation from ca. AD1620-1650 indicated that trade relations likely shifted to the English colony of colonists in Chesapeake Bay during this period (Lapham 2002). A shift in the acquisition of trade copper may have also paralleled the exchange of glass beads. Tinklers, beads, pendants and two hawk bells were selected for analysis (n=20). These artifacts (DHR1011-1031) and their provenience are listed in Table S2.

*Fort Christanna (44BR3)*

 Fort Christanna (44BR3)was established by Virginia Governor Alexander Spotswood in AD 1713 as a trading post on the Virginia frontier along the Meherrin River in Brunswick County (Figure 1). The three-acre pentagonal enclosure was palisaded with split posts and a bastion at each of the five vertices (Beaudry 1982, 1983). Copper sheet fragments, “tinklers,” a thin ribbon, and a ring (DHR685-687, 689-690, 692-705; Table S3) were recovered almost exclusively from plow zone contexts (Beaudry 1982, 1983). The fort remained active until about AD 1719 and was then abandoned (Neale 1975).

*Fort San Juan (31BK22)*

The Berry Site (31BK22) consists of the Native town of Joara (ca. AD 1400-1600) and the Spanish military outpost of Fort San Juan, established by the Juan Pardo expedition in 1567 (Beck et al. 2006). This outpost was built to link the coastal Spanish settlement of Santa Elena to the interior (Figure 1). Although the fort was short-lived, and eventually burned by Native Americans by June of 1568 (Hudson 1990), the historical and archaeological records document the material inventory of the Spanish (Hudson 2005; Beck et al. 2016). The gifting of European items such as iron tools and cloth to the Joara residents was used by Juan Pardo to initially establish a relationship with the community and to acquire food for the poorly provisioned expedition. The absence of mules and horses required that all materials be hand carried, and as such, trade items are a small part of the inventory and trade copper is not specifically listed. However, the recovered items from the Spanish fort on the northern end of the village do note the presence of sheet copper, brass aglets, copper bells, brass disks, copper stars, and brass scrap. It is likely that some of the copper items made it into the hands of Joara residents since the Spanish lived amongst the villagers who assisted in the preparation of their meals and were also involved in personal relationships with the Spanish men (Beck et al. 2016). Ten fragments of scrap copper from the excavations were provided for analysis (Table S4).

*Graham-White (44RN21)*

 The Graham-White Site (44RN21)was a large settlement on the floodplain of the Roanoke River in the City of Salem, Virginia (Figure 1). It was partially excavated as part of a salvage effort in the early 1990s and 111 subsurface features were investigated (Klatka and Klein 1998). Four radiocarbon dates suggested that two occupations were present, dating to the 15th and 17th centuries AD. European trade items such as copper, glass beads, and iron were present in approximately 15% of the excavated features. An in-depth look at feature densities and glass trade beads by the investigators suggested that a middle 17th century hamlet formed the later occupation. Twenty-seven metal artifacts were recovered from refuse pit contexts and five copper items were chemically analyzed for trace and major elements. They were determined to be copper alloy with 26-33% zinc. In this analysis, trade items consisting of two beads, two pieces of sheet copper and five pendants were submitted for analysis (DHR1002-1010, Table S5).

*Hurt Power Plant (44PY144)*

The Hurt Power Plant site was a palisaded village on the south bank of the Roanoke River in Pittsylvania County, Virginia (Figure 1). Fifty-five copper artifacts were found within midden, pit features, or burial fill as were European glass trade beads (Barber et al. 1998). Ten radiocarbon dates ranged between AD 1400+/-60 and AD 1830+/-60 although most of the mean radiocarbon values fell within the 17th century. A Contact Period age (ca. AD 1607-1644) for the site was preferred by the authors because of large amount of trade goods and low mortality of the site occupants; an indicator that European diseases had not reached this area. A direct date on trash pit fill (Feature 28B; BP 360+/-60) containing 13 fragments of copper and 58 glass trade beads was calibrated to AD 1590+/-60 (Beta 75737). Fifteen artifacts consisting of rolled beads and sheet fragments were analyzed (DHR961-966, 968-976; Table S6).

*James Fort (VLR 047-0009)*

 The three-sided timber fort on Jamestowne Island was the first permanent English settlement in the Americas (AD 1607-1624). The founding population of 104 English men was sponsored by the Virginia Company of London with the expressed goal of locating and extracting marketable resources for export. Large scale excavations since 1994 have uncovered over 8,000 pieces of sheet copper that was supplied directly to the Jamestowne Colony by the Society for Mines Royal and/or the Society of Mineral and Battery Works for the following purposes: trade with Virginia Native groups and experimentation with any newly discovered deposits of zinc carbonate (Hudgins 2005). A prior analysis of 258 samples from this deposit revealed that the majority of samples (n=210) were made of an impure copper, while lesser frequencies of strong brass (n=35) and weak brass (n=11) were present (Hudgins 2005). For our purposes, we have included 10 samples of James Fort impure copper and 22 pieces of copper alloy in our study (Table S7). These artifacts originated from the infilled water well that represents the 1609 cleanup of the fort grounds (Kelso et al. 2012).

*Trigg (44MY3)*

The Trigg Site(44MY3)was a palisaded Late Woodland village located on the southeast bank on the New River near Radford, Virginia (Figure 1). A total of 762 subsurface features (included 278 burials) were identified and mapped (Buchanan 1984). Copper in the form of rolled beads, “tinklers,” pendants, and sheet copper fragments (DHR706, 708-725,727, 1032-1036) were recovered from both storage pit and burial contexts (Table S8). Also recovered were 350 glass trade beads. These items indicate a Contact Period age for the site with an estimated age of AD 1600-1630 (Buchanan 1984). A conventional radiocarbon date on bone from Feature 84 returned a date of AD 1630+/-60 (2 sigma AD 1440-1670) and an AMS date on carbonized a maize kernel from Feature 640 provided a date of AD 1630+/-30 (2 sigma AD 1480-1650). Considered together, all chronometric data for the site suggest an occupational date range of AD 1620-1650 (Lapham 2005).