Title
An Energy-Dispersive X-Ray Fluorescence Analysis of Obsidian Artifacts from the Martin Site, New Mexico

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Dr. Bruce Huckell
Maxwell Museum of Anthropology
University of New Mexico
Albuquerque, NM 87131

Dear Bruce,

The Folsom base fragment was produced from Valles Rhyolite (Cerro del Medio) obsidian, and the flake from Cerro Toledo Rhyolite obsidian, the latter available in the Rio Grande Quaternary alluvium from Española to El Paso (Table 1). While both rhyolites were produced during collapses of the Valles Caldera in northern New Mexico, Valles Rhyolite did not erode into the Rio Grande in any real quantity (Shackley 2005, 2010). All analyses for this study were conducted on a ThermoScientific Quant’X XRF spectrometer at the Archaeological XRF Laboratory, Albuquerque, New Mexico. Specific instrumental methods can be found at http://www.swxrflab.net/anlysis.htm, and Shackley (2005). Source assignment was made by comparison to source standard data in the Archaeological XRF Laboratory. Analysis of the USGS RGM-1 standard indicates high machine precision for the elements of interest (USGS; Table 1 here).

Sincerely,

M. Steven Shackley, Ph.D.
Director

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REFERENCES CITED

Shackley, M.S.


Table 1. Elemental concentrations for the archaeological samples. All measurements in parts per million (ppm).

<table>
<thead>
<tr>
<th>Sample</th>
<th>Ti</th>
<th>Mn</th>
<th>Fe</th>
<th>Rb</th>
<th>Sr</th>
<th>Y</th>
<th>Zr</th>
<th>Nb</th>
<th>Ba</th>
<th>Source</th>
</tr>
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<tr>
<td>M11-176</td>
<td>1079</td>
<td>403</td>
<td>1055</td>
<td>159</td>
<td>13</td>
<td>41</td>
<td>162</td>
<td>53</td>
<td>13</td>
<td>Valles Rhyolite (Cerro del Medio)</td>
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<tr>
<td>M11-213</td>
<td>931</td>
<td>471</td>
<td>1048</td>
<td>205</td>
<td>8</td>
<td>65</td>
<td>179</td>
<td>96</td>
<td>5</td>
<td>Cerro Toledo Rhyolite</td>
</tr>
<tr>
<td>RGM1-S4</td>
<td>1562</td>
<td>297</td>
<td>1330</td>
<td>149</td>
<td>107</td>
<td>26</td>
<td>215</td>
<td>11</td>
<td>864</td>
<td>standard</td>
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</tbody>
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