LETTER REPORT

AN ENERGY-DISPERSIVE X-RAY FLUORESCENCE ANALYSIS OF TWO LATE PALEOINDIAN ALLEN-FREDERICK OBSIDIAN POINT BASES FROM THE ESTANCIA BASIN, CENTRAL NEW MEXICO

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

Dear Bruce,

Both these artifacts were produced from Valles Rhyolite (Cerro del Medio), Jemez Mountains, northern New Mexico. While some Valles Rhyolite obsidian has entered the Rio Grande alluvium as a result of two minor pyroclastic events of Cerro del Medio, it is very rare and appears only to have reached as far south as Tijera Wash, and only in nodules less than 20 mm in diameter (Broxton et al. 2006; Shackley 2005, 2010). These relatively large projectile points could not be produced from Valles Rhyolite secondary deposits.

The samples were analyzed using a Thermo Scientific Quant’X EDXRF spectrometer in the Archaeological XRF Laboratory, El Cerrito, California. Instrumental methods can be found at http://www.swxrflab.net/analysis.htm. Analysis of the USGS RGM-1 standard indicates high machine precision for the elements of interest (Govindaraju 1994; Table 1 here).

Sincerely,

M. Steven Shackley
Professor and Director

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REFERENCES CITED


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

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<thead>
<tr>
<th>Sample</th>
<th>Ti</th>
<th>Mn</th>
<th>Fe</th>
<th>Zn</th>
<th>Rb</th>
<th>Sr</th>
<th>Y</th>
<th>Zr</th>
<th>Nb</th>
<th>Ba</th>
<th>Pb</th>
<th>Th</th>
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<td>106</td>
<td>42</td>
<td>1076</td>
<td>81</td>
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<td>10</td>
<td>44</td>
<td>16</td>
<td>61</td>
<td>&lt;1</td>
<td>29</td>
<td>24</td>
<td>Valles Rhy (Cerro del Medio)</td>
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<td>2010-100-12</td>
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<td>39</td>
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<td>46</td>
<td>16</td>
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<td>1309</td>
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<td>10</td>
<td>24</td>
<td>21</td>
<td>6</td>
<td>87</td>
<td>19</td>
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<td>standard</td>
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