LETTER REPORT

AN ENERGY-DISPERSIVE X-RAY FLUORESCENCE ANALYSIS OF AN OBSIDIAN ARTIFACT FROM AZ EE:9:87 (ASM), SANTA CRUZ COUNTY, ARIZONA

28 January 2011

Stacy Ryan
Desert Archaeology, Inc.
3975 N Tucson Blvd.
Tucson, AZ 85716

Dear Stacy,

The one artifact was produced from obsidian originally procured from the Antelope Wells (El Berrendo) source in southwestern New Mexico and northwestern Chihuahua (Table 1).

The samples were analyzed with a Thermo Scientific Quant’X EDXRF spectrometer in the Geoarchaeological XRF Laboratory. Specific instrumental methods can be found at http://www.swxrflab.net/analysis.htm, and Shackley (2005). Source assignment was made by comparison to source standard data at Berkeley and Shackley (1995, 2005). 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, Ph.D.
Director

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http://www.swxrflab.net/
REFERENCES CITED

Govindaraju, K.
   *Geostandards Newsletter* 18 (special issue).

Shackley, M.S.
1995 Sources of Archaeological Obsidian in the Greater American Southwest: An Update and

2005 *Obsidian: Geology and Archaeology in the North American Southwest*. University of Arizona
   Press, Tucson.

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

<table>
<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>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE:9:87-66</td>
<td>1504</td>
<td>771</td>
<td>3108</td>
<td>253</td>
<td>261</td>
<td>12</td>
<td>1442</td>
<td>110</td>
<td>19</td>
<td>5</td>
<td>Antelope Wells standard</td>
</tr>
<tr>
<td>RGM1-S4</td>
<td>1656</td>
<td>294</td>
<td>1314</td>
<td>37</td>
<td>152</td>
<td>107</td>
<td>218</td>
<td>5</td>
<td>872</td>
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