Title
A Wavelength Dispersive X-Ray Fluorescence (EDXRF) Analysis of Obsidian Artifacts from CA-RIV 6066, 6068, 6084 and Isolates Along the Inland Feeder Project Alignment, Riverside County, California

Permalink
https://escholarship.org/uc/item/7bj5j2kj

Author
Shackley, M. Steven

Publication Date
2000-02-02

Data Availability
Associated data will be made available after this publication is published.

License
https://creativecommons.org/licenses/by-sa/4.0/ 4.0
LETTER REPORT

A WAVELENGTH DISPERSIVE X-RAY FLUORESCENCE (EDXRF) ANALYSIS OF OBSIDIAN ARTIFACTS FROM CA-RIV 6066, 6068, 6084 AND ISOLATES ALONG THE INLAND FEEDER PROJECT ALIGNMENT, RIVERSIDE COUNTY, CALIFORNIA

2 February 2000

Marilyn Wyss
EarthWorks
3292 E. Florida Avenue, Suite A
Hemet, CA 92545-4941

Dear Marilyn:

The following report documents the geochemical analysis of obsidian artifacts from three sites and isolated artifacts along the Inland Feeder Project Alignment. While the source provenance of the artifacts is dominated by one of the chemical groups in the Coso Volcanic Field, similar to a previous study (Shackley 1999), two of the samples most closely match the San Felipe source standard data from northern Baja California, and one exhibits elemental concentrations that do not match any published sources in Californian, Nevada, or Baja California. Since the elemental concentrations of Rb and Sr of the two possible Baja California assigned pieces do not match the source standards well, I suspect they are as yet unlocated sources in the western Great Basin. Source assignment was made based on data published in Hughes (1988), Nelson (1984, and unpublished data), and Shackley (1995). The samples were analyzed with a Philips PW2400 sequential wavelength dispersive x-ray spectrometer in the Department of Geology/Geophysics, University of California, Berkeley. This crystal spectrometer uses specific software written by Philips (SuperQ/quantitative) and modifies the instrument settings between elements of interest. Practical detection limits have not been calculated for this new instrument, but should be available later this year. Sample selection is automated and controlled by the Philips software. Further information on this instrument is available in Shackley (1998).

Sincerely,

M. Steven Shackley, Ph.D.
Associate Research Archaeologist

VOICE MAIL: (510) 643-1193 ext. 3
FAX: (510) 642-6271
INTERNET: shackley@qal.berkeley.edu
http://obsidian.pahma.berkeley.edu/
REFERENCES CITED

Hughes, R.E.  

Nelson, Fred W., Jr.  

Shackley, M. Steven  


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

<table>
<thead>
<tr>
<th>Sample</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>ISOLATES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>669-2</td>
<td>151</td>
<td>63</td>
<td>35</td>
<td>132</td>
<td>10</td>
<td>1015</td>
<td>San Felipe, BC?</td>
</tr>
<tr>
<td>671-1</td>
<td>305</td>
<td>14</td>
<td>57</td>
<td>156</td>
<td>53</td>
<td>125</td>
<td>Coso</td>
</tr>
<tr>
<td>RIV-6066</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>69-3</td>
<td>252</td>
<td>13</td>
<td>49</td>
<td>137</td>
<td>45</td>
<td>88</td>
<td>Coso</td>
</tr>
<tr>
<td>108-3</td>
<td>236</td>
<td>12</td>
<td>42</td>
<td>115</td>
<td>40</td>
<td>37</td>
<td>Coso</td>
</tr>
<tr>
<td>RIV-6068</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>76-1</td>
<td>-7</td>
<td>10</td>
<td>4</td>
<td>22</td>
<td>0</td>
<td>38</td>
<td>Not obsidian?</td>
</tr>
<tr>
<td>RIV-6084</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17-2</td>
<td>148</td>
<td>66</td>
<td>33</td>
<td>132</td>
<td>10</td>
<td>1153</td>
<td>San Felipe, BC?</td>
</tr>
<tr>
<td>38-2</td>
<td>163</td>
<td>34</td>
<td>37</td>
<td>113</td>
<td>10</td>
<td>1015</td>
<td>unknown</td>
</tr>
</tbody>
</table>