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An Energy-Dispersive X-Ray Fluorescence Analysis of Obsidian Artifacts from Coronado National Memorial, Southeastern Arizona

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Publication Date

2011-12-06

Supplemental Material

<https://escholarship.org/uc/item/3b13s33f#supplemental>

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LETTER REPORT

**AN ENERGY-DISPERSIVE X-RAY FLUORESCENCE ANALYSIS OF
OBSIDIAN ARTIFACTS FROM CORONADO NATIONAL MEMORIAL,
SOUTHEASTERN ARIZONA**

1 June 2011

Updated 6 December 2011

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

Dear Bruce,

All the artifacts were produced from the Antelope Wells (El Berrendo) source in southwestern New Mexico and northwestern Chihuahua, except for two from an unlocated source likely south of the border. This unknown has also been seen in Late Classic contexts at LA 49, the Black Mountain site, in southwestern New Mexico (Shackley 2010).

The samples were analyzed using a Thermo Scientific *Quant'X* EDXRF spectrometer in the Archaeological XRF Laboratory, Albuquerque, New Mexico. Source assignments were made by comparison to published source standard data and the source standard collection at this laboratory (Shackley 1995, 2005). Instrumental methods can be found at <http://www.swxrflab.net/anlysis.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, Ph.D.
Director

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REFERENCES CITED

Govindaraju, K., 1994, 1994 Compilation of working values and sample description for 383 geostandards. *Geostandards Newsletter* 18 (special issue).

Shackley, M.S., 2005, Sources of archaeological obsidian in the Greater American Southwest: an update and quantitative analysis. *American Antiquity* 60(3):531-551.

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

Shackley, M.S., 2010 Source provenance of obsidian artifacts from Late Classic contexts in western and southern New Mexico. Report prepared for the Center for Desert Archaeology, Tucson.

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

Sample	Ti	Mn	Fe	Zn	Rb	Sr	Y	Zr	Nb	Ba	Source
0009-3	1633	854	2104 1	228	336	10	129	1188	93	4	Antelope Wells
0009-9	1347	783	1927 5	187	336	11	131	1195	98	<1	Antelope Wells
0009-17	1582	946	2360 4	228	365	12	133	1224	101	36	Antelope Wells
5-20-1-52	1427	820	1994 4	193	343	10	131	1209	99	71	Antelope Wells
5-19-2-3	1446	794	1996 7	190	325	12	123	1170	96	8	Antelope Wells
1-11-1-1	1209	695	1099 4	76	341	9	70	210	50	8	unknown
00024-3	1431	655	1136 1	87	341	10	72	203	52	<1	unknown
RGM1-S4	1613	299	1319 1	37	152	108	24	216	8	874	standard