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An Energy-Dispersive X-Ray Fluorescence Analysis of Obsidian Artifacts From CA-SDI-13,037B in Northern San Diego County, California

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LETTER REPORT

AN ENERGY-DISPERSIVE X-RAY FLUORESCENCE ANALYSIS OF OBSIDIAN ARTIFACTS FROM CA-SDI-13,037B IN NORTHERN SAN DIEGO COUNTY, CALIFORNIA

30 June 2004

Carol Serr
Mooney & Associates
9903 Businesspark Avenue
San Diego, CA 92131-1120

Dear Carol,

One of the artifacts matches the trace element concentrations for Coso Volcanic Field obsidian, Inyo County, California, and the other Obsidian Butte, Imperial County, California (Table 1). Source determination was made using source standards at Berkeley (<http://www.swxrflab.net>), and reference to Hughes (1988).

The samples were analyzed with a Spectrace (ThermoNoran) *QuanX* EDXRF spectrometer in the Archaeological XRF Laboratory, University of California, Berkeley. 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, Ph.D.
Director

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<http://www.swxrflab.net/>

REFERENCES CITED

Govindaraju, K.

1994 1994 Compilation of Working Values and Sample Description for 383 Geostandards. *Geostandards Newsletter* 18 (special issue).

Hughes, R.E.

1988 The Coso Volcanic Field Reexamined: Implications for Obsidian Sourcing and Hydration Dating Research. *Geoarchaeology* 3:253-265.

Table 1. Elemental concentrations for the archaeological sample. Ti, Mn, and Fe measurements in weight percent, all other measurements in parts per million (ppm).

Sample	Ti	Mn	Fe	Rb	Sr	Y	Zr	Nb	Source
SDI-13037B									
118B	0.158	0.048	1.861	12 8	44	11 6	33 6	31	Obsidian Butte
2003-1	0.11	0.036	0.99	24 0	16	57	13 4	48	Coso
RGM-1	0.167	0.028	1.379	15 6	115	23	22 3	10	standard