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An Energy-Dispersive X-Ray Fluorescence Analysis of an Obsidian Artifact From CA-SDI-10,965, Northwest San Diego County, California

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Publication Date

2002-12-10

Supplemental Material

<https://escholarship.org/uc/item/5k68k6fz#supplemental>

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LETTER REPORT

AN ENERGY-DISPERSIVE X-RAY FLUORESCENCE ANALYSIS OF AN OBSIDIAN ARTIFACT FROM CA-SDI-10,965, NORTHWEST SAN DIEGO COUNTY, CALIFORNIA

10 December 2002

Dr. Mark Becker
ASM Affiliates
543 Encinitas Blvd., Ste 114
Encinitas, CA 92024

Dear Mark,

The artifact analyzed was produced from obsidian procured from one of the domes at the Coso Volcanic Field, probably West Sugarloaf in Inyo County, California (Table 1). The source provenance is consistent with Archaic period procurement in San Diego County as discussed by Hughes and True (1985).

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://obsidian.pahma.berkeley.edu/analysis.htm>. Analysis of the USGS RGM-1 standard indicates high machine precision for the elements of interest (Govindaraju 1994; Table 1 here). Source determination was made using source standards at Berkeley, and reference to Hughes (1988).

Sincerely,

M. Steven Shackley, Ph.D.
Director

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<http://obsidian.pahma.berkeley.edu/>

REFERENCES CITED

- Hughes, R.E.
1988 The Coso Volcanic Field Reexamined: Implications for Obsidian Sourcing Studies and Hydration Dating Research. *Geoarchaeology* 3:253-265.
- Hughes, Richard E., and Delbert L. True
1985 Perspectives on the Distribution of Obsidians in San Diego County, California. *North American Archaeologist* 6(4):325-339.
- Govindaraju, K.
1994 1994 Compilation of Working Values and Sample Description for 383 Geostandards. *Geostandards Newsletter* 18 (special issue).

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

SAMPLE	Ti	Mn	Fe	Th	Rb	Sr	Y	Zr	Nb	Source
SDI10965-41.6	1461	246	12609	27	251	18	54	131	47	Coso
RGM-H1	1641	280	13998	6	151	116	19	219	13	standard