

# BERKELEY ARCHAEOLOGICAL



## XRF LAB

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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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## 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