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## Archaeological X-ray Fluorescence Reports

### Title

An Energy Dispersive X-Ray Fluorescence (EDXRF) Analysis of Obsidian Artifacts from The Salton Sea Region, Imperial County, California

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### Data Availability

The data associated with this publication are in the supplemental files.

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## **LETTER REPORT**

# **AN ENERGY DISPERSIVE X-RAY FLUORESCENCE (EDXRF) ANALYSIS OF OBSIDIAN ARTIFACTS FROM THE SALTON SEA REGION, IMPERIAL COUNTY, CALIFORNIA**

19 March 1997

Christy Dolan  
KEA Environmental  
1420 Kettner Blvd.  
San Diego, CA 92101

RE: Salton Sea region obsidian

Dear Christy:

I am sending a letter report due to the small sample size. The source provenance is shown in Table 1. Source assignment was made with data in the Berkeley EDXRF library (Shackley 1995). Instrument methodology is discussed in Shackley (1992, 1994, 1995). Note that one of the artifacts was produced from obsidian procured from the San Felipe source in northern Baja California and is not necessarily megascopically distinguishable from Obsidian Butte. Additionally, one specimen appears to have been produced from a mafic or intermediate volcanic rock and one piece of debitage was too small to yield reliable results. Numbering was too obscure to assign to a particular specimen; we assigned our own prefix on each.

Sincerely,

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

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**INTERNET:** shackley@qal.berkeley.edu  
<http://obsidian.pahma.berkeley.edu/xrflab.htm>  
<http://obsidian.pahma.berkeley.edu/swobsrscs.htm>

## REFERENCES CITED

Shackley, M. Steven

1992 The Upper Gila River Gravels as an Archaeological Obsidian Source Region: Implications for Models of Exchange and Interaction. *Geoarchaeology* 7(4):315-326.

1994 Intersource and Intrasource Geochemical Variability in Two Newly Discovered Archaeological Obsidian Sources in the Southern Great Basin. *Journal of California and Great Basin Anthropology* 16(1):118-129.

1995 Sources of Archaeological Obsidian in the Greater American Southwest: An Update and Quantitative Analysis. *American Antiquity* 60(3):531-551.

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

SAMPLE	Ti	Mn	Fe	Rb	Sr	Y	Zr	Nb	Source
1-SC4	1842.89	419.30	21651.78	139.75	42.77	105.52	426.35	22.09	Obsidian Butte
2-CS23	1245.40	416.53	18836.99	143.37	24.38	116.98	340.52	27.12	Obsidian Butte
3-RB1	791.79	270.97	11835.48	83.43	42.82	47.72	165.29	2.94	San Felipe, BC
4-DF166-1	1510.25	429.73	21971.99	146.57	30.06	114.91	371.52	28.18	Obsidian Butte
5-CS75	8947.04	1049.91	60379.71	112.66	346.52	32.51	319.08	21.83	mafic/intemed.
6-KEA-4	1936.54	469.81	19871.55	115.21	38.12	88.67	324.71	16.04	Obsidian Butte
7-DF166-2	1073.25	372.14	18060.40	149.96	8.25	142.54	310.37	39.75	Obsidian Butte
8-DF79	1943.82	39.04	4582.02	9.03	34.20	5.97	24.38	0.00	too small