



GEOARCHAEOLOGICAL XRF LAB

GEOARCHAEOLOGICAL X-RAY FLUORESCENCE SPECTROMETRY LABORATORY

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LETTER REPORT

AN ENERGY-DISPERSIVE X-RAY FLUORESCENCE ANALYSIS OF OBSIDIAN ARTIFACTS FROM SITE DHFL-10, GRAND COUNTY, UTAH

13 May 2014

Bonnie Gibson
Cultural Resource Analysts, Inc.
421 21st Avenue, Suite 8
Longmont, CO 80501

Dear Bonnie:

Two of the artifacts were produced from the Schoo Mine Area, Mineral Mountain Range in Beaver County, Utah about 300 km west of the site, and one sample was produced from the Valles Rhyolite (Cerro del Medio) source in the Jemez Mountains, northern New Mexico about 400 km southeast of this site. Specific instrumental methods can be found at <http://www.swxrflab.net/analysis.htm>, and Shackley (2005). Source assignment was made by comparison to source standard data in the laboratory (Shackley 1995, 2005) and Nelson and Tingey (1997). Analysis of the USGS RGM-1 standard indicates high machine precision for the elements of interest (Table 1 here).

Sincerely,

M. Steven Shackley, Ph.D.
Director

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

REFERENCES CITED

Nelson, F., and D.G. Tingey (1997) X-ray fluorescence analysis of obsidians in western North America, Mexico, and Guatemala: data base for source identification. Unpublished report in possession of author.

Shackley, M.S. (1995) 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.

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

SAMPLE	Ti	Mn	Fe	Rb	Sr	Y	Zr	Nb	Ba	Pb	Th	SOURCE
2	895	368	7378	205	41	24	119	23	176	32	23	Mineral Mtns, UT
3	927	398	7859	217	40	25	125	22	123	29	36	Mineral Mtns, UT
4	691	442	9645	171	6	48	170	47	9	28	20	Valles Rhy, NM
RGM1-S4	1504	292	1302	148	106	25	227	11	727	21	15	standard