GEOARCHAEOLOGICAL XRF LAB

ARCHAEOLOGICAL X-RAY FLUORESCENCE SPECTROMETRY LABORATORY
8100 WYOMING BLVD., SUITE M4-158 ALBUQUERQUE, NM 87113 USA

# AN ENERGY-DISPERSIVE X-RAY FLUORESCENCE ANALYSIS OF OBSIDIAN ARTIFACTS FROM UNPROVENIENCED LOCALITIES IN SOUTHERN ARIZONA

8 December 2011

Rich Davis
1040 N Rosedale
Ajo, AZ 85321

Dear Rich,

This obsidian artifact assemblage was produced from obsidian from the Coconino Plateau (RS Hill/Sitgreaves, and Partridge Creek), as well as the Sonoran Desert sources (Los Vidrios and Sauceda Mountains; Table 1 here). This is not inconsistent with an obsidian source provenance from this region (Shackley 2005).

The samples were analyzed with a Thermo Scientific *Quant'X* EDXRF spectrometer in the Archaeological XRF Laboratory, Albuquerque, New Mexico. Specific instrumental methods can be found at http://www.swxrflab.net/anlysis.htm, and Shackley (2005). Source assignments made by reference to Shackley (1995, 2005 and others) and source data at this laboratory. 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

VOICE: (510) 393-39313
INTERNET: shackley@berkeley.edu
http://www.swxrflab.net/

## REFERENCES CITED

Shackley, M.S.

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

2005 *Obsidian: Geology and Archaeology in the North American Southwest*. University of Arizona Press, Tucson.

Table 1. Elemental concentrations for the archaeological specimens and USGS RGM-1 standard. All measurements in parts per million (ppm).

| Sample | Ti | Mn | Fe | Zn | Rb | Sr | Y | Zr | Nb | Source |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 947 | 234 | 12729 | 103 | 255 | 17 | 73 | 230 | 35 | Los Vidrios |
| 2 | 980 | 232 | 12054 | 124 | 242 | 13 | 64 | 217 | 31 | Los Vidrios |
| 3 | 1562 | 370 | 10502 | 90 | 160 | 71 | 31 | 191 | 25 | Sauceda Mtns |
| 4 | 771 | 404 | 10345 | 168 | 395 | 11 | 94 | 165 | 261 | RS Hill/Sitgreaves Pk |
| 5 | 1176 | 247 | 12999 | 114 | 238 | 15 | 69 | 221 | 29 | Los Vidrios |
| 6 | 777 | 454 | 9347 | 52 | 243 | 10 | 43 | 86 | 56 | Partridge Creek |
| 7 | 1609 | 359 | 10697 | 102 | 160 | 78 | 30 | 192 | 19 | Sauceda Mtns |
| 8 | 1556 | 361 | 10961 | 56 | 162 | 79 | 35 | 201 | 28 | Sauceda Mtns |
| 9 | 1776 | 404 | 11700 | 58 | 169 | 81 | 33 | 203 | 26 | Sauceda Mtns |
| 10 | 1543 | 299 | 10897 | 76 | 161 | 105 | 28 | 181 | 17 | Sauceda Mtns |
| RGM1-S4 | 1586 | 281 | 13302 | 41 | 151 | 108 | 24 | 218 | 9 | standard |