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LETTER REPORT

AN ENERGY-DISPERSIVE X-RAY FLUORESCENCE ANALYSIS OF LATE PALEOINDIAN AND EARLY ARCHAIC OBSIDIAN ARTIFACTS FROM CENTRAL NEW MEXICO

6 April 2007

Dr. Philippe LeTourneau
6227 24th Avenue NE
Seattle, WA 98115

Dear Phil,

As we discussed the artifact source provenance was expectable, but interesting. Source determination was by reference to source standards at Berkeley (<http://www.swxrflab.net/>) as reported in Shackley (1988, 1995, 2005; Table 1 and Figure 1 here).

The samples were analyzed with a Spectrace (Thermo) *QuanX* EDXRF spectrometer in the Archaeological XRF Laboratory, University of California, Berkeley. Instrumental methods can be found at <http://www.swxrflab.net/anlysis.htm>. Analysis of the USGS RGM-1 standard indicates high machine precision for the elements of interest (Govnidaraju 1994; Table 1 here).

Sincerely,

M. Steven Shackley
Professor and Director

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REFERENCES CITED

Govindaraju, K.

- 1994 1994 Compilation of Working Values and Sample Description for 383 Geostandards. *Geostandards Newsletter* 18 (special issue).

Shackley, M. Steven

- 1988 Sources of Archaeological Obsidian in the Southwest: An Archaeological, Petrological, and Geochemical Study. *American Antiquity* 53(4):752-772.

- 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 samples. All measurements in parts per million (ppm).

Sample	Ti	Mn	Fe	Rb	Sr	Y	Zr	Nb	Source
NP-28-1	1138	495	6891	149	9	20	67	48	El Rechuelos
OC-1-16	834	665	9945	214	8	64	175	111	Cerro Toldeo Rhy
Arroya la Jara	964	444	9224	162	8	41	169	59	Valles Rhy
TC-1	957	567	9758	210	8	65	171	101	Cerro Toldeo Rhy
OC-10-2	852	854	7520	490	9	75	106	187	Mt Taylor
GR-1-1	888	595	9103	191	10	64	176	102	Cerro Toldeo Rhy
SY-4-1	974	530	9575	172	9	42	166	59	Valles Rhy
MTC-1-2	804	922	7713	523	11	70	110	196	Mt Taylor
OC-9-7	995	472	6035	146	9	20	61	43	El Rechuelos
SY-C-1	940	420	8740	147	10	42	168	56	Valles Rhy
MTC-D-1	763	939	7320	516	13	74	112	197	Mt Taylor
RP-A (proj. dunes area)	1179	486	1015	159	13	47	160	56	Valles Rhy
SY-3-2	1235	1159	1041	195	8	66	177	96	Cerro Toldeo Rhy
Arroyo Solado #2	957	646	1019	219	6	69	190	112	Cerro Toldeo Rhy
SY-3-3	1040	500	9425	158	13	50	174	54	Valles Rhy
SY-3-1	1034	1039	6473	150	9	22	67	47	El Rechuelos
Arroyo Solado #1	1010	1345	1010	475	12	91	137	229	Mt Taylor
RGM-1 S-3	1686	279	1330	146	112	19	222	14	standard