

Hopi Pottery and Prehistoric Salt Procurement in the Southern Utah Canyon Country, an article published in Kiva Journal.

This supporting material was not included in the journal article, and is presented for use by researchers who are interested in prehistoric salt procurement in the southwest, and to those interested in the presence of Hopi pottery in southern Utah.

Table 1. PCA Factor Loadings Table

Factor Loadings (Varimax normalized) (2013_1111_salt analysis.data.2011.2013)	
Extraction: Principal components	
(Marked loadings are >.700000)	
Variable	Factor 1
Li	0.63518
Be	0.92382
Sc	0.94868
V	0.95313
Cr	0.95897
Co	0.90998
Ni	0.75505
Cu	0.96558
Zn	0.00001
Ga	0.93376
Rb	0.91785
Sr	0.15267
Y	0.97833
Zr	0.97608
Nb	0.96805
Sn	-0.09151
Sb	0.95789
Cs	0.25030
Ba	0.96455
La	0.98765
Ce	0.92766
Pr	0.92035
Nd	0.98214
Sm	0.95732
Eu	0.93929
Gd	0.96127
Tb	0.95054
Dy	0.97408
Ho	0.97831
Er	0.98539
Tm	0.96326
Yb	0.98756
Lu	0.97524
Hf	0.98295
Ta	0.87493
W	0.96597
Pb	0.96373
Bi	0.93503
Th	0.98442
U	-0.13497
Expl.Var	31.27933
Prp.Totl	0.78198

Table 2. Raw data results of ICP-MS Analysis of 14 Salt Samples. Associated uncertainties vary between 2-5% (2 sigma level), trace element concentrations and detection limits in ppm.

Detect. Limits 2013	EBSS Estancia Basin	LCSS2 29-43-522	CVSM Camp Verde	BCGC 42KA433	LCSS 29-42-860	165176 Lang Collection	SCSS Sinbad Valley	STSM St. Thomas	MSVP Moapa Valley	Detect. Limits 2011	Dansdill	Salt Trail Canyon	Zuni Salt Lake	42SA13036	Redmond Salt Mine
Li	0.09	2.56	8.78	10.70	17.26	1.73	11.95	0.88	0.21	0.26	27.79	1.22	<b.d.	14.0	<b.d.
Be	0.02	0.05	<b.d.	0.20	0.61	0.06	0.23	<b.d.	<b.d.	0.02	0.20	0.09	<b.d.	0.26	<b.d.
Sc	0.009	0.56	0.21	0.56	3.75	0.44	1.53	<b.d.	<b.d.	0.002	0.86	0.10	<b.d.	0.85	<b.d.
V	0.015	2.96	2.91	3.69	29.38	3.26	12.51	<b.d.	0.026	0.004	7.40	0.10	<b.d.	9.38	0.011
Cr	0.11	1.92	1.10	2.08	18.83	1.23	7.08	<b.d.	<b.d.	0.03	3.97	0.06	<b.d.	4.74	<b.d.
Co	0.005	0.57	0.31	0.64	3.24	0.52	1.75	<b.d.	<b.d.	0.02	0.76	<b.d.	<b.d.	0.93	<b.d.
Ni	0.380	2.18	0.97	1.49	7.73	0.59	5.57	<b.d.	<b.d.	0.03	1.82	5.50	<b.d.	2.52	<b.d.
Cu	0.205	0.64	0.53	0.51	13.20	1.00	3.47	<b.d.	<b.d.	0.03	2.25	0.52	<b.d.	1.94	<b.d.
Zn	0.241	3.24	1.73	6.34	43.35	2.78	12.16	<b.d.	<b.d.	0.42	5.24	498	<b.d.	6.03	<b.d.
Ga	0.005	1.35	0.34	1.55	5.95	0.73	1.94	<b.d.	<b.d.	0.003	1.46	<b.d.	<b.d.	1.48	<b.d.
Rb	0.010	8.70	2.54	13.19	40.81	4.48	12.32	0.17	0.158	0.02	13.5	0.15	0.029	21.9	0.023
Sr	0.070	80.93	244	28.07	117	38.14	2411	0.37	0.305	0.07	342	623	4.75	1201	0.65
Y	0.001	1.70	0.37	1.22	8.63	0.71	2.09	<b.d.	0.007	0.0002	3.19	1.58	<b.d.	2.23	0.006
Zr	1.86	4.79	3.55	<b.d.	48.90	1.39	3.10	<b.d.	<b.d.	0.25	22.2	0.48	<b.d.	16.9	<b.d.
Nb	0.0004	0.07	0.29	0.07	5.97	0.17	<b.d.	<b.d.	0.002	0.001	1.26	0.10	<b.d.	1.23	0.002
Sn	5.039	9.33	5.44	<b.d.	3.20	<b.d.	<b.d.	<b.d.	<b.d.	8.1	<b.d.	<b.d.	<b.d.	<b.d.	<b.d.
Sb	0.002	0.02	0.02	0.039	0.40	0.03	0.07	0.004	<b.d.	0.01	0.069	<b.d.	<b.d.	0.05	<b.d.
Cs	0.004	0.30	0.29	4.72	2.32	0.48	0.83	0.06	0.074	0.0002	0.360	0.04	0.003	0.47	0.003
Ba	0.031	54.11	13.62	55.97	264	13.58	48.76	0.07	0.184	0.03	82.3	40.4	0.16	101	1.05
La	0.002	1.14	0.44	0.89	12.40	1.24	1.61	0.004	0.010	0.0009	4.08	0.12	<b.d.	3.56	0.007
Ce	0.0003	2.45	0.96	1.57	24.94	2.78	4.63	0.005	0.016	0.003	16.5	0.17	0.006	15.4	0.026
Pr	0.001	0.36	0.12	0.30	2.90	0.29	0.68	0.008	0.003	0.001	2.04	0.05	<b.d.	1.81	0.003
Nd	0.002	1.51	0.49	1.39	11.18	1.14	3.07	0.01	0.006	0.001	4.21	0.16	0.010	3.85	0.006
Sm	0.001	0.34	0.09	0.48	2.04	0.22	0.67	0.013	0.004	0.003	0.84	0.04	<b.d.	0.70	0.001
Eu	0.001	0.10	0.02	0.13	0.48	0.05	0.16	0.005	<b.d.	0.0004	0.14	0.006	<b.d.	0.14	<b.d.
Gd	0.004	0.37	0.08	0.43	2.16	0.23	0.65	<b.d.	<b.d.	0.002	0.57	0.09	<b.d.	0.57	<b.d.
Tb	0.0002	0.06	0.01	0.06	0.31	0.03	0.10	0.003	0.001	0.0003	0.08	0.01	<b.d.	0.06	<b.d.
Dy	0.001	0.31	0.07	0.27	1.61	0.15	0.47	0.005	<b.d.	0.0003	0.53	0.10	<b.d.	0.42	0.001
Ho	0.0003	0.06	0.02	0.05	0.31	0.03	0.08	0.003	0.001	0.0001	0.11	0.02	0.0004	0.08	0.0002
Er	0.001	0.16	0.04	0.11	0.91	0.06	0.22	0.006	0.002	0.0010	0.31	0.09	<b.d.	0.23	0.001
Tm	0.0004	0.02	0.01	0.03	0.13	0.01	0.03	0.002	0.001	0.0001	0.05	0.01	<b.d.	0.03	<b.d.
Yb	0.0003	0.14	0.04	0.08	0.89	0.06	0.18	0.001	<b.d.	0.0007	0.37	0.08	<b.d.	0.22	0.002
Lu	0.0003	0.02	0.004	0.02	0.13	0.01	0.02	0.001	0.001	0.0005	0.06	0.01	<b.d.	0.03	<b.d.
Hf	0.046	0.14	0.09	0.06	1.53	0.05	0.11	<b.d.	<b.d.	0.008	0.61	0.02	<b.d.	0.48	<b.d.
Ta	0.003	0.004	0.02	<b.d.	0.49	0.01	0.01	0.004	<b.d.	0.0002	0.26	0.24	<b.d.	0.28	<b.d.
W	0.017	0.03	0.10	0.08	1.63	<b.d.	0.12	<b.d.	<b.d.	0.011	0.32	0.13	<b.d.	0.26	0.02
Pb	0.005	2.31	0.24	2.07	15.48	0.87	1.99	0.006	<b.d.	0.022	2.76	1.15	<b.d.	6.00	0.42
Bi	0.001	0.01	0.004	0.01	0.09	0.01	0.02	<b.d.	<b.d.	0.0009	0.01	0.001	<b.d.	0.01	<b.d.
Th	0.001	0.31	0.13	0.31	3.92	0.38	0.71	<b.d.	<b.d.	0.0003	1.08	0.02	<b.d.	0.91	0.01
U	0.001	0.27	1.09	33.61	2.28	0.90	5.41	0.009	<b.d.	0.0003	1.37	2.75	<b.d.	0.49	0.01

Table 3. Known sites in southeast Utah (and along the Utah-Arizona and Utah-Colorado borders) where Hopi ware has been documented. This table builds on a table presented in Bernardini and Kuwanwisiwma 2006.

Hopi Pottery in SE Utah		
Region	Pottery Type(s)	Information Source
Castle Valley, near Moab	Jeddito Yellow Ware	Hunt 1953, Pierson 1980
Cedar Point	Jeddito Yellow Ware	Winston Hurst, personal observation
Cedar Mesa	Jeddito Tooled	Personal communication to S. Kinnear-Ferris from W. Lipe and from E. Hughes (Museum of N. Ariz)
Cedar Mesa	Jeddito Black-on-yellow	Hurst, Matson & Lipe 2009, Lipe, Matson and Morin 2011
Near Cisco, northeast of Moab	Jeddito Black-on-yellow and Jeddito Tooled	Bernadini and Kuwanwisiwma 2006:348; Lindsay 1976:35
Comb Ridge/Comb Wash	Jeddito Yellow Ware, Jeddito Black-on-yellow, Awatobi Yellow Ware .	Hurst and Robinson 2009, Till 2001a, 2001b
Cottonwood Wash	Jeddito Yellow Ware	Winston Hurst, personal communication.
Cummings Mesa	Jeddito Yellow Ware	Bernadini and Kuwanwisiwma 2006:348; Ambler et al. 1964:12
Dark Canyon	Jeddito Yellow Ware	Winston Hurst, personal observation
Dolores River Valley, CO (5MT4449, 5MT4541, 5MT6669, 5MT6693)	Hopi Yellow Ware	Lucius 2014
Escalante Desert	Jeddito Black-on-yellow (early PIV), 3 sherds	Bernadini and Kuwanwisiwma 2006:348; Fowler et al. 1959:204
Fisher Valley, near Moab	Jeddito Yellow Ware	Hunt 1953, Pierson 1980
Glen Canyon	Jeddito Yellow Ware and Awatobi Yellow Ware, "occasional fragments"	Bernadini and Kuwanwisiwma 2006:348; Adams et al. 1961:24, 55
Glen Canyon	Jeddito Yellow Ware, Homolovi Corrugated, and Awatobi Corrugated	Bernadini and Kuwanwisiwma 2006:348; Fowler et al. 1959: 566
Glen Canyon	Jeddito plain (194 sherds), Jeddito Corrugated (45 sherds), Jeddito Black-on-yellow (7 sherds)	Bernadini and Kuwanwisiwma 2006:348; Fowler et al. 1959: 566
Glen Canyon (Barren Flats group, Forked Stick Alcove, and 42SA568 of the Ledge Ruin group)	Jeddito Yellow ware, small number of sherds	Bernadini and Kuwanwisiwma 2006:348; Lipe et al. 1960:6
Glen Canyon	Jeddito Corrugated, 14 sherds	Bernadini and Kuwanwisiwma 2006:348; Lipe et al. 1960:19
Glen Canyon (Barren Flats	Jeddito Black-on-yellow, one ladle	Bernadini and Kuwanwisiwma 2006:348; Lipe et al.

Hopi Pottery in SE Utah		
Region	Pottery Type(s)	Information Source
Group)	fragment	1960:125
Glen Canyon (42SA413)	Sikyatki Polychrome, 1 sherd	Bernadini and Kuwanwisiwma 2006:348; Lipe et al. 1960: 131
Glen Canyon (Ledge Ruin Group)	Jeddito Yellow ware, 13 sherds	Bernadini and Kuwanwisiwma 2006:348; Lipe et al. 1959:204
Hopi Buttes (3 sites), AZ	Jeddito Black-on-yellow, Sikyatki Polychrome, 14 sherds	Bernadini and Kuwanwisiwma 2006:348; Gumerman 1988:55
Fiftymile Mountain	Jeddito Black-on-yellow, 2 sherds	Bernadini and Kuwanwisiwma 2006:348; Gunnerson 1959a:349
Kaibab Plateau, (C:13:010, the Furnace Flat site)	Jeddito Yellow Ware	Bernadini and Kuwanwisiwma 2006:348; Spangler 2000:652
Kaiparowits Plateau (42KA4572 and 42KA4827)	Jeddito Yellow Ware, 5 sherds at two sites	Bernadini and Kuwanwisiwma 2006; Geib, Collettem and Spurr 2002:278
Kaiparowits Plateau	Jeddito Black-on-yellow, 2 sherds from a single site	Bernadini and Kuwanwisiwma 2006:348; Fowler et al. 1959: 349
Kaiparowits Plateau	Forty sherds of Jeddito Black-on-yellow, Jeddito Corrugated, Homolovi Corrugated.	Bernadini and Kuwanwisiwma 2006:348; Lister 1964:62
Kayenta area (Tsegi Canyon and Black Mesa), AZ	Jeddito Yellow Ware	Bernadini and Kuwanwisiwma 2006:348; Adams 1989:25
Kayenta area (Inscription House), AZ	Jeddito Yellow Ware	Bernadini and Kuwanwisiwma 2006:348; Adams 1989:25
Klondike Bluffs, north of Moab, Utah	Awatovi Black-on-yellow or Jeddito Black-on-yellow	Montoya 2012
LaSal Mountains (42SA182 and 42SA194)	Jeddito Yellow ware	Hunt 1953, Pierson 1980
LaSal Mountains (11 sites)	Awatovi and Jeddito Yellow wares	Bernadini and Kuwanwisiwma 2006:348; Lindsay 1976:35
Lime Ridge	Jeddito Black-on-yellow.	Westfall 1994, Jay Willian, personal communication 2012.
Montezuma Canyon	Jeddito Yellow Ware	Winston Hurst personal observation
Monument Valley (11 sites), AZ	Jeddito Yellow Ware	Bernadini and Kuwanwisiwma 2006:348; Neeley and Olsen 1977:72
Natural Bridges National Monument	Jeddito Yellow Ware	Janet McVickar (personal communication to A. Anderson)
Navajo Mountain (Red House), UT-AZ border	Jeddito Yellow Ware, 3-4 sherds	Bernadini and Kuwanwisiwma 2006:348; Morss 1931: 15
Navajo Mountain (Upper Desha Pueblo and Cactus Rock Pueblo), AZ	Four Jeddito Black-on-yellow sherds, Thirty-two Jeddito Plain sherds	Bernadini and Kuwanwisiwma 2006:348; Lindsay et al. 1968: 182

Hopi Pottery in SE Utah		
Region	Pottery Type(s)	Information Source
Paria Canyon (42KA5724), UT-AZ border	Jeddito Corrugated, Jeddito Black-on-yellow, 7 sherds	Bernadini and Kuwanwisiwma 2006:348; McFadden 2003
Paria Plateau (NA10,154), AZ	Jeddito Black-on-yellow, 12 sherds	Bernadini and Kuwanwisiwma 2006:348; Mueller et al. 1968
Shivwits Plateau (A:16:14)	Jeddito Black-on-yellow, 3 sherds	Bernadini and Kuwanwisiwma 2006:348; Baldwin 1944:14
Red Rock Plateau (20 sites)	Jeddito Corrugated, Jeddito Plain, Jeddito Black-on-yellow, Sikyatki Polychrome, and Unidentified Jeddito Yellow Ware, 444 sherds	Bernadini and Kuwanwisiwma 2006:348; Lipe 1966:314
Rainbow Plateau	Hopi pottery--sherds and whole vessels	Bernadini and Kuwanwisiwma 2006:348; Long 1966:365
Tenmile Canyon	Jeddito Corrugated	Keller 1975
Torrey, Utah	Jeddito Black-on-yellow	Lupo (In preparation)
Vernal Site (42UN5406)	Jeddito Black-on-yellow	Truesdale 2006
Whisker's Draw	Jeddito Yellow Ware	Winston Hurst, personal observation with O. Severence. See Severence 1999.
White Mesa, near Blanding, UT	Jeddito Yellow Ware.	Hurst 1983