

# Fremont-Style Pottery in the Western Mojave Desert?

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## Abstract

Two pottery types were recognized from excavations at CA-KER-6286/H, a multiple component site in Jawbone Canyon near Mojave, California, in the Great Basin. One type was Owens Valley Brown Ware (OVBW), the expected Late Prehistoric period ceramic type. The other was a Fremont style pottery similar to Snake Valley Gray (SVG) pottery, most familiar from southern Utah. In Utah SVG pottery dates between AD 900 and 1200, considerably earlier than the local California OVBW pottery. Geochemical and mineralogical analyses of the unusual Kern County potsherds suggest that they were made from close-at-hand raw materials. Consequently, they could not have been Southwestern imports. Similar local variants of SVG pottery have been found on the Fremont periphery but are rare within California.

## CA-KER-6286/H

Archaeological field research at CA-KER-6286/H took place in January 2009. Excavations were conducted by URS Corporation under the auspices of the Pine Tree Wind Farm Project, jointly supported by the Los Angeles Department of Water and Power (LADWP), the Bureau of Land Management (BLM), and the Integrated Engineers & Contractors Corporation (IEC). The purpose of excavation was to salvage portions of KER-6286/H prior to road-widening activity.

KER-6286/H is a multi-component site located in Jawbone Canyon, about 24 km north of Mojave, California (Figure 1). The site is on a small, sheltered, northeast-facing bench above Jawbone Canyon, a narrow creek channel fed by nearby springs. A modern house was built on the site in the 1950s or 1960s. Historic remnants include foundations, rock walls, a well,

water tanks, and an access road. Despite this disturbance, the site's prehistoric component is still visible on the surface, and a midden deposit and bedrock milling station remain.

The site was excavated using arbitrary 10 cm levels. Seven shovel test units (STU), each .5-x-1 m, and three excavation units (EU) were dug. Two excavation units measured 1 x 2 m, and one measured 1 x 1 m. All excavated materials were screened with 1/8 in mesh. Test excavations revealed that the prehistoric deposit descended at least 50 cm below ground surface. Excavations produced a diversified prehistoric assemblage that included 1,902 pieces of obsidian and cryptocrystalline silicate debitage, 23 edge-modified flakes, 16 bifaces, eight projectile points, four cores, 26 pieces of ground stone, five *Olivella* shell beads, two steatite pendants, one *Haliotis* pendant, three Fremont-style sherds similar to Snake Valley Gray (SVG) pottery (Figures 2 and 3), and one Owens Valley Brownware (OVBW) sherd (Figure 4). Flaked artifacts were manufactured from local materials, dominated by obsidian from the neighboring Coso Volcanic Field but also with local silicates. Similarly, the ground stone artifacts were made from welded tuff material derived from the local Kinnick Formation. The non-utilitarian items, including the *Olivella* shell beads and a single *Haliotis* pendant, represent trade between coastal and interior groups, a pattern known to extend inland as far as central Utah (Hughes and Bennyhoff 1987:240).

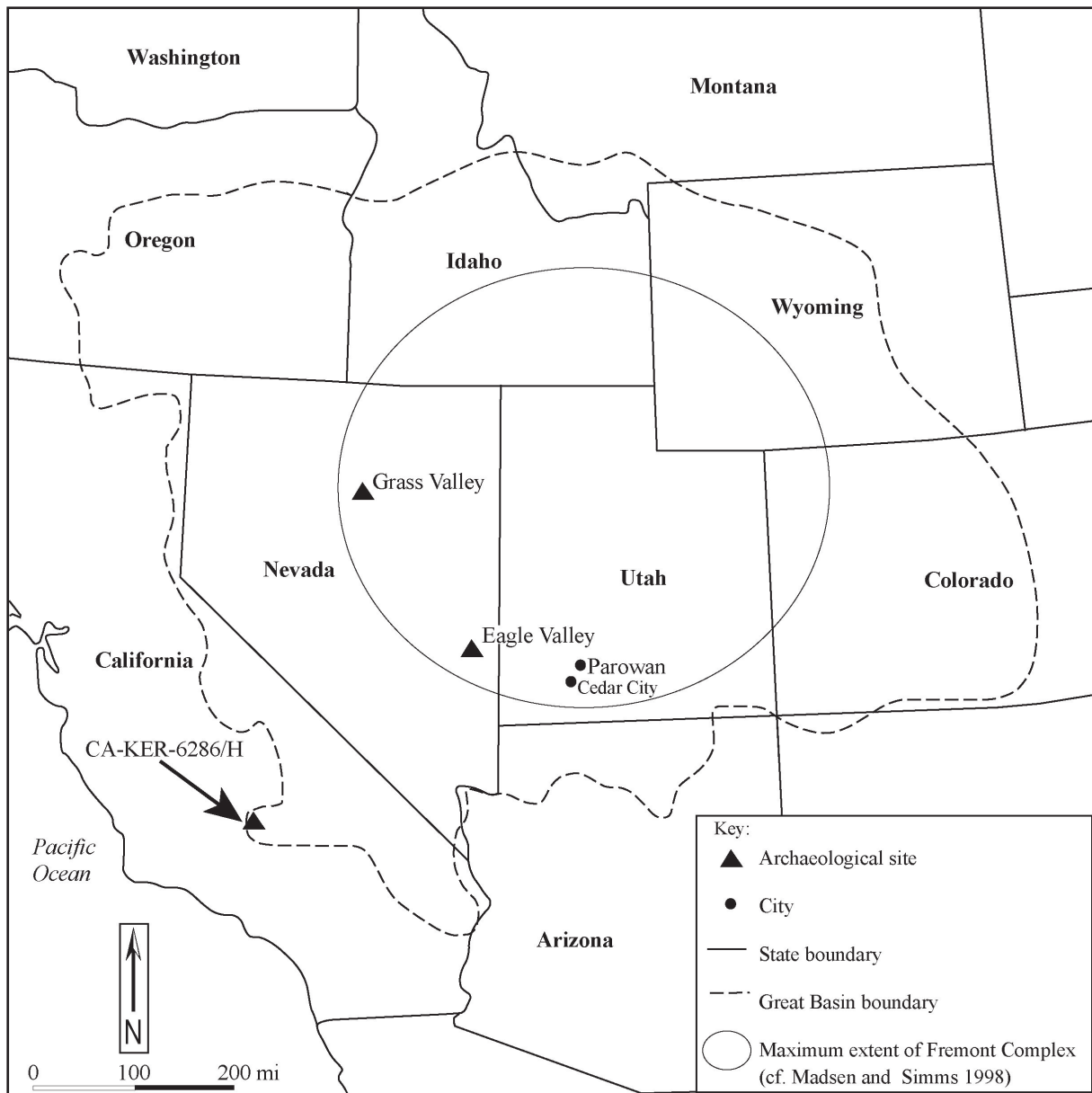


Figure 1. Location map. Arrow points to the study site. The Fremont complex flourished within the circled area.

### The CA-KER-6286/H Pottery

The four potsherds recovered from subsurface testing at KER-6286/H include one representing the local OVBW pottery tradition and three similar to the SVG variant of the Fremont ceramic style. One of these Fremont-style sherds (Figure 2) was collected

from the 0 to 10 cm level, while the other two were found at the 30 to 40 cm level of EU 1, a 1 x 2 m unit (Figure 3). The OVBW specimen was found in the 0–10 cm level of STU 4. Leaving the OVBW specimen from further discussion, all three Fremont-style specimens are body fragments from a vessel(s), most likely utilitarian, of undetermined shape and func-

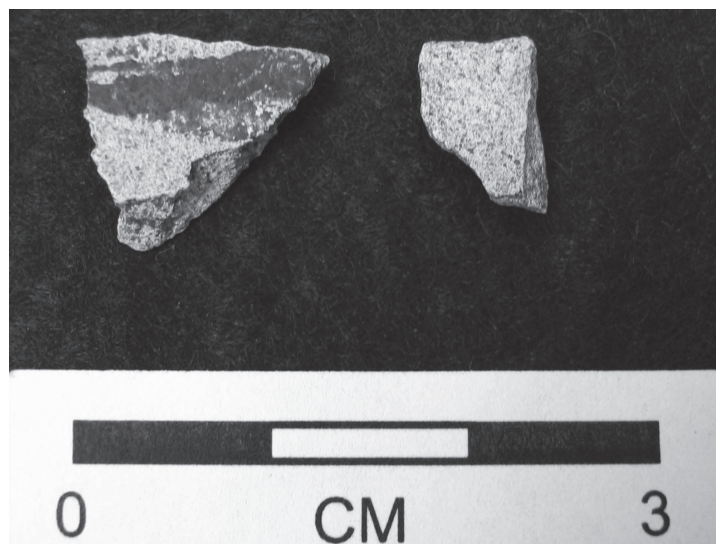


Figure 2. Fremont-style sherd (Catalog No. 05.03.100) from CA-KER-6286/H. Note pitch-like or asphaltum-like material on surface. Recovered from 0–10 cm below surface. Interior (left) and exterior (right).

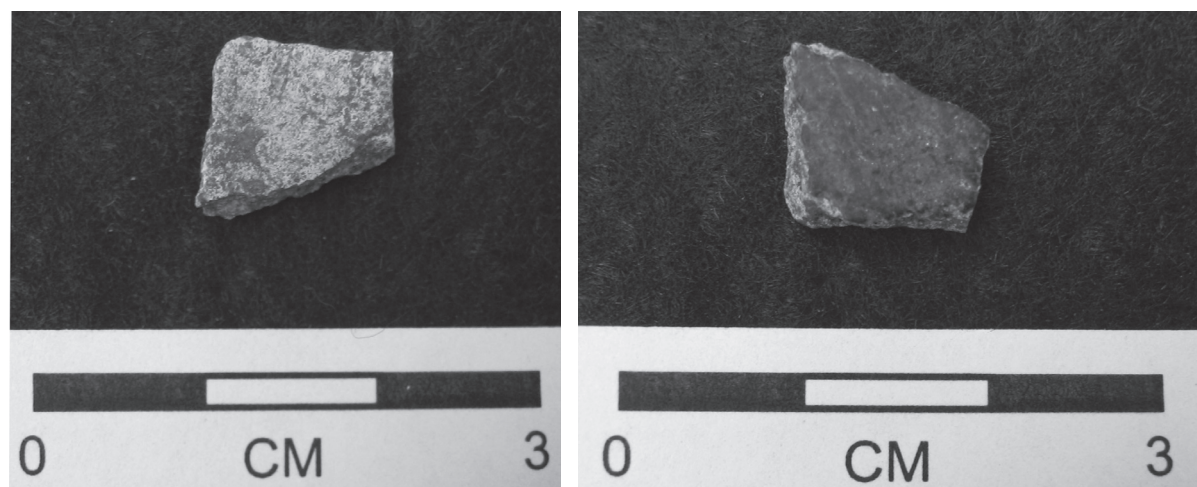


Figure 3. Fremont-style pottery sherds found at CA-KER-6286/H. Both specimens were found at the 30–40 cm level.

tion. The three sherds are visually similar to SVG ware that was produced in the southwest Fremont region near Cedar City and Parowan, Utah, between AD 900 and 1200 (Madsen 1977). Obsidian hydration dating of specimens from the KER-6286/H site place it within the Saratoga Springs period, 1500–750 BP (Warren and Crabtree 1986). This dating makes the site contemporaneous with SVG ceramic production in the central Great Basin.

Traditional SVG pottery is characterized as predominantly light gray (Munsell 5YR 5/1) in color and ranges in thickness from 3 to 7 mm (Madsen 1977). The sherds collected at KER-6286/H fall within this thickness range (3.03–3.11 mm), but they are slightly lighter in color (Munsell white, 5YR 8/1). Similar to SVG pottery, the interior and exterior surfaces indicate the vessel was scraped and then smoothed. Both the interior and exterior surfaces have been polished,

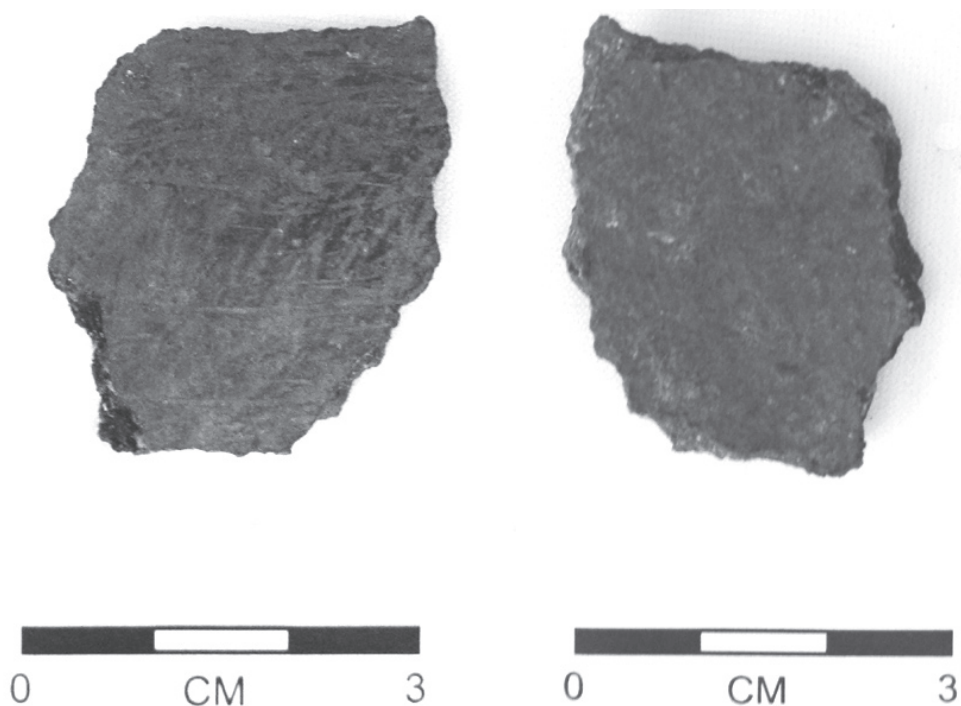


Figure 4. Owens Valley Brown Ware (OVBW) sherd (Catalog No. 05.03.050) from CA-KER-6286/H. Interior, left; exterior, right.

and two of the pieces exhibit a type of black material which was applied to one surface. The black material is too thick to be paint and may be pitch or natural tar (Morgenstein 2010).

#### Petrographic and Geochemical Analyses

Prior to petrographic and geochemical analyses, all three suspected SVG sherds were thin-sectioned and examined under crossed polarizers (Figure 5). The dominant temper was determined to be feldspar with very little quartz and no biotite mica. This differs greatly from SVG pottery produced in the Parowan area of Utah, where the temper is dominated by quartz with smaller quantities of feldspar and biotite mica, a defining mineralogical characteristic of “true SVG” temper (Hockett and Morgenstein 2003). The sherds from KER-6286/H therefore incorporate completely different temper than SVG pottery from southern Utah, which allowed for the original definition of

the type, and they cannot have been imported from that region.

To determine the geochemical and mineralogical composition of the Kern County pottery, one sherd collected from the 30–40 cm level was submitted for petrographic analysis and EDXRF analysis. EDXRF-geochemical studies were conducted using a NITON EDXRF spectrometer, and a Leitz Orthoplan Petrographic Microscope with long working distance epipolitics was used to determine the mineral composition of the paste. This latter analysis was conducted both on the sherd and the thin section.

Petrographic analysis of the Kern County sherds found the mineral composition of the temper is predominately pyrophyllite (or sericite-muscovite and/or paragonite), quartz, plagioclase, rutile, and carbon (Morgenstein 2010). The paste is dominated by poorly vitrified kaolinite that contains carbon debris; angular

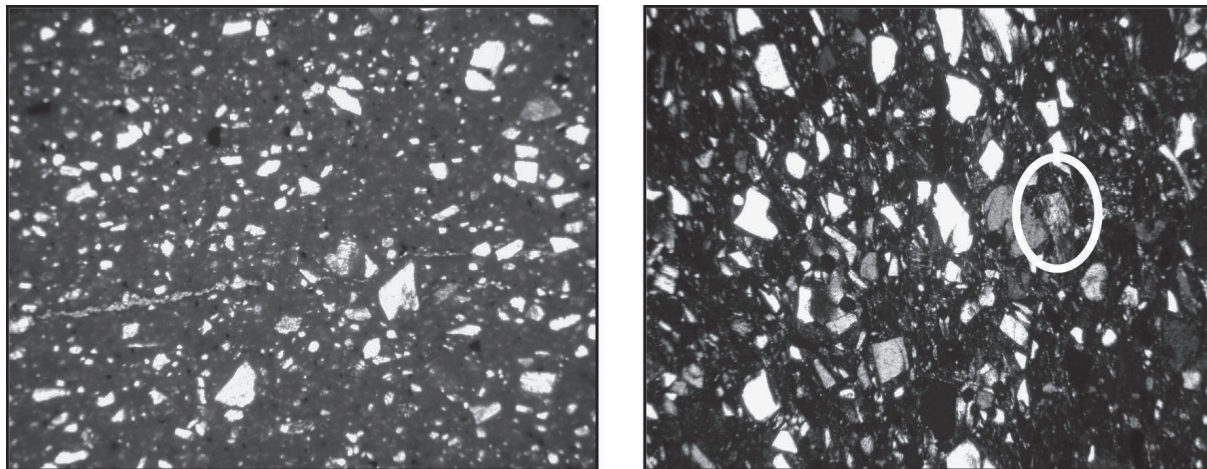


Figure 5. Enlargement of thin sections of pottery sherds from CA-KER-6286/H (left) and from Evan's Mound in Parowan Valley, Utah (right). The Utah specimen is of the Snake Valley Gray (SVG) type. Photographs courtesy of Clint Cole, UC Davis. The thin section from KER-6286/H (left) is dominated by feldspar with very little quartz and no biotite mica, while the thin section of Snake Valley Gray from Evan's Mound (right) is dominated by quartz with smaller quantities of feldspar and biotite mica (circled).

to very angular pieces of pyrophyllite, quartz, rutile, and limonite pseudomorphs after pyrite were noted as well. Carbon throughout the specimen indicates the presence of sedimentary organics prior to firing. This mineral association results from metamorphosed volcanic rock (Morgenstein 2010).

Geochemical EDXRF analysis revealed that the California sample had a high concentration of titanium and a low concentration of manganese. These findings are also consistent with weathered volcanic rock that has been metamorphosed by additional volcanism. Similar descriptions have been applied to other SVG variants which were produced using locally procured welded volcanic tuffs (Watkins 2006). The Kinnick Formation, located on the south-facing slopes of the mountains north of the project area, is dominated by various volcanic tuffs (DeBusk and Corsetti 2008). These provided the raw material for some of the ground stone artifacts at KER-6286/H.

Natural deposits very similar to those of the analyzed specimen include the Champion Spark Plug Mine

located in Laws, Mono County, near the town of Bishop, California (Morgenstein 2010).<sup>1</sup> Other deposits are found in Imperial, Mariposa, Kern, and San Diego counties. The similarity of the paste and temper of the analyzed sherd to these natural deposits indicates that the archaeological ceramics had a local origin. The sherds collected from KER-6286/H were soft and low-fired, indicating the specimen is part of the prehistoric component of the site (Morgenstein 2010).

### Discussion

Though visually similar in style and technique to Fremont pottery (Watkins 2009), the three suspected SVG sherds from KER-6286/H appear to have been produced from local materials. This conclusion is supported by the lack of biotite mica and by petrographic and EDXRF analyses. Additionally, the pieces are low-fired and friable, making long-distance transport difficult (Margaret Lyneis, personal communication 2008). Thus, the sherds are probably the result of diffusion of stylistic innovation from the eastern Great Basin rather than long distance trade.

The local manufacture of Fremont variants outside the core Fremont territory is rare but not unheard of (Madsen 1989; Hockett and Morgenstein 2003). SVG variants made from local materials using Fremont potting techniques have been found in Grass Valley, Nevada (Madsen 1989), and Eagle Valley, Nevada (Clint Cole, personal communication 2008) (see Figure 1). Christopher Watkins (2006:80) found that SVG pottery had a wider zone of production in comparison to other wares in the Snake Valley series and hypothesized that SVG was a type of utility ware and thus more widely produced. If so, then KER-6286/H fits this pattern, as its artifact assemblage is dominated by utilitarian items such as bifaces and ground stone tools. The site's function was predominantly food processing which could have required food storage or cooking vessels. This identification can also account for the presence of OVBW pottery at the same site, but this should not be stressed too strongly as similar sites existed in this part of the western Great Basin long before the appearance of pottery of any kind.

The manufacturing techniques represented by the probable SVG sherds may have been acquired by local Mojave Desert potters through contact with easterners. These need not have involved long distance trade per se, but such diffusion could have occurred at feasting and gathering festivals, intercommunity gaming events, or ceremonies having distributions attendant with births, marriages, and funerals (Janetski 2002). Thus, ceramic techniques could have passed from the Fremont area to the western Mojave Desert before the local OVBW pottery tradition took hold and became the dominant ceramic expression in the region.

### Conclusions

The movement of material objects across great distances is a well-recognized phenomenon throughout the Desert West (Hughes and Bennyhoff 1986). Exotic artifacts in local sites indicate long distance transport of goods. Among these portable artifacts Fremont

ceramics provide evidence of cultural interaction between peoples of the western and eastern Great Basin. While the spread of Fremont pottery and potting techniques are documented across the Great Basin, such occurrences along the western periphery are rare. The SVG variant sherds at KER-6286/H suggest that at least one group living in the western Great Basin had been exposed to a more easterly ceramic tradition and had produced some vessels very similar to those from the eastern Great Basin. The recovery of Fremont-style pottery at KER-6286/H extends the distribution of this ceramic tradition west of its previously understood westernmost extension. Also, scientific testing reveals that the Fremont-style pottery was not imported but made locally, perhaps inspired by traders or perhaps inspired in the course of noneconomic activities.

### End Note

1. Clay quarried from the Mono County Champion Spark Plug Mine is used in the manufacturing of porcelain spark plug insulators. To create porcelain, the clay must be fired at higher temperatures than was ever possible in the prehistoric Great Basin, Southwest, or California.

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