

DATE: July 8, 2003

TO: Judy DeHaven

FROM: Steven M. Wallace

SUBJECT: Paleontological survey for the Lamar EA, conducted under project C 02871-026

On June 9 and 10, 2003, Colorado Department of Transportation staff paleontologist Steven M. Wallace conducted on-the-ground reconnaissance for paleontological resources for the Environmental Assessment for a proposed four-lane State Highway 287 bypass of the town of Lamar, with interchanges proposed at SH 287, SH 50, and SH 196. The study corridor takes off from the existing SH 287 alignment at a point south of Lamar on the boundary of the SW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ of section 29 and SE $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ of section 30, T23S, R46W, Prowers County, passes northward along the east side of Lamar, turns west when it reaches the existing SH 196 alignment northeast of Lamar, and terminates at the existing SH 50/287 alignment north of Lamar, at a point in the NE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$ of section 19, T22S, R46W, Prowers County. I examined a corridor 600 feet wide south of County Road HH, which lies on the Township 22/23 boundary; north of that boundary, the study corridor expanded to between 1200 and 2400 feet in width. The corridor I examined was that mapped in Figure 2 of the archaeological assessment report for this EA.

The geologic units mapped ((Voegeli and Hershey 1965) within the study corridor limits are, from youngest to oldest:

<u>Unit</u>	<u>Age</u>
unnamed alluvium	Holocene
unnamed dune sand	Holocene
unnamed terrace deposit ¹	Pleistocene
Greenhorn Limestone	Late Cretaceous
Graneros Shale	Late Cretaceous

I did not systematically examine unnamed alluvium and dune sand unit exposures in the field. These units can produce prehistoric bone, shell, and/or plant material, but because the sediments are less than 10,000 years old, any material found could be in an archaeological context and should be evaluated by a qualified archaeologist. Within the study corridor limits, the unnamed terrace deposit unit crops out only along portions of SH 196, north of the Arkansas River. This unit is poorly to occasionally moderately well-exposed within the study corridor limits. I saw no fossils in unnamed terrace deposit unit exposure I examined within the study corridor limits.

The Greenhorn Limestone and Graneros Shale crop out within the study corridor limits toward the south end of the study corridor, south of the rolling Holocene dune topography south of the Arkansas River. The Greenhorn/Graneros portion of the study corridor is moderately well-

¹ late Pleistocene Broadway Alluvium, as mapped by Sharps 1976

vegetated²; within the study corridor limits, I saw no exposures of either unit that merited on-the-ground reconnaissance for paleontological resources.

Furthermore, I know of no previously recorded fossil localities within the EA study corridor limits. The Broadway Alluvium [= unnamed terrace deposit of Voegeli and Hershey 1965] has produced mammoth, bison, horse, camel, jackrabbit, and white-tailed prairie dog specimens in the Denver and Greeley areas (Hunt 1954; G. R. Scott, personal communication, 1985; unpublished University of Colorado Museum and Colorado Department of Transportation fossil locality data), but fossil vertebrate occurrences in this unit are scattered, largely fragmentary, and generally unpredictable. The Greenhorn Limestone and Graneros Shale are only occasional vertebrate fossil producers. None of these three units produces scientifically important vertebrate fossils in a manner such that paleontological monitoring of construction excavation into these units is recommended. Invertebrate fossils are much more likely to be uncovered during construction excavation into the Greenhorn Limestone and Graneros Shale, but these fossils are common enough elsewhere in southeast Colorado that paleontological monitoring of construction excavation is not recommended for these units on that account, either.

As a result, paleontological clearance with no attached mitigation stipulations is recommended for the Environmental Assessment for a proposed four-lane SH 287 bypass of the town of Lamar. If paleontological resources are uncovered during the course of any future construction breakout projects set up within the EA study corridor limits, I should be notified immediately.

References

Hunt, C. B.

1954 Pleistocene and Recent Deposits in the Denver Area, Colorado. U. S. Geological Survey Bulletin 996-C, p. 91-140.

Sharps, J. A.

1976 Geologic Map of the Lamar Quadrangle, Colorado and Kansas. U. S. Geological Survey Miscellaneous Investigations Series Map I-944. 1:250,000 scale.

Voegeli, P. T., and L. A. Hershey

1965 Geology and Ground-Water Resources of Prowers County, Colorado. U. S. Geological Survey Water-Supply Paper 1772, 102 p., geologic map at the 1:62,500 scale.

SMW:smw

cc: RF, CF, Wallace

² Sharps (1976) maps Pleistocene loess (windblown silt and clay) in the area Voegeli and Hershey (1965) maps as Graneros Shale. Exposure was so poor that I could not determine with any certainty which assessment is correct, although the vegetation I saw was not suggestive of a loess substrate.