



Supplemental road log 1, from junction of NM-18 north and NM-18 east to junction of NM-18 and NM-325

Adrian P. Hunt and Spencer G. Lucas

1987, pp. 55-56. <https://doi.org/10.56577/FFC-38.55>

in:

Northeastern New Mexico, Lucas, S. G.; Hunt, A. P.; [eds.], New Mexico Geological Society 38th Annual Fall Field Conference Guidebook, 354 p. <https://doi.org/10.56577/FFC-38>

This is one of many related papers that were included in the 1987 NMGS Fall Field Conference Guidebook.

Annual NMGS Fall Field Conference Guidebooks

Every fall since 1950, the New Mexico Geological Society (NMGS) has held an annual [Fall Field Conference](#) that explores some region of New Mexico (or surrounding states). Always well attended, these conferences provide a guidebook to participants. Besides detailed road logs, the guidebooks contain many well written, edited, and peer-reviewed geoscience papers. These books have set the national standard for geologic guidebooks and are an essential geologic reference for anyone working in or around New Mexico.

Free Downloads

NMGS has decided to make peer-reviewed papers from our Fall Field Conference guidebooks available for free download. This is in keeping with our mission of promoting interest, research, and cooperation regarding geology in New Mexico. However, guidebook sales represent a significant proportion of our operating budget. Therefore, only *research papers* are available for download. *Road logs*, *mini-papers*, and other selected content are available only in print for recent guidebooks.

Copyright Information

Publications of the New Mexico Geological Society, printed and electronic, are protected by the copyright laws of the United States. No material from the NMGS website, or printed and electronic publications, may be reprinted or redistributed without NMGS permission. Contact us for permission to reprint portions of any of our publications.

One printed copy of any materials from the NMGS website or our print and electronic publications may be made for individual use without our permission. Teachers and students may make unlimited copies for educational use. Any other use of these materials requires explicit permission.

This page is intentionally left blank to maintain order of facing pages.

SUPPLEMENTAL ROAD LOG 1, FROM JUNCTION OF NM-18 NORTH AND NM-18 EAST TO JUNCTION OF NM-18 AND NM-325

ADRIAN P. HUNT and SPENCER G. LUCAS

Mileage

- 0.0 At junction of NM-18 N and NM-18 E, proceed N on NM-18 N toward Kenton (mile 25.0 of First-Day Road Log). **0.8**
- 0.8 Cattleguard. **0.7**
- 1.5 Cattleguard. **0.4**
- 1.9 Crest of hill with view from 11:00–12:00 of basalt-capped mesas on the skyline north of the Dry Cimarron. **0.9**
- 2.8 At 9:00 beyond the house are tan sandstones of the Mesa Rica Sandstone in the breaks of Road Canyon. **0.3**
- 3.1 Cattleguard. **0.7**
- 3.8 Cattleguard. **0.6**
- 4.4 Ogallala Formation on right of road. **0.6**
- 5.0 To the left down the creek valley, tan sandstones of the Mesa Rica are visible in canyon walls of the tributaries of Road Canyon. **0.6**
- 5.6 At crest of hill good overview from 10:00–1:00 of the canyon country of the Dry Cimarron. **0.8**
- 6.4 Pajarito Formation on left of road. **0.2**
- 6.6 Down the creek valley to the left is the tan sandstone of the Mesa Rica. **0.3**
- 6.9 Pajarito Formation on both sides of road for next 1.6 mi. **2.0**
- 8.9 Road bends sharply. Descend through Pajarito Formation. **0.1**
- 9.0 **STOP 1.** Excellent exposures of the Pajarito Formation on both sides of the road. The Pajarito was named for a sequence of "soft brown sandstone alternating with gray shale that contains *Ostrea [Lopha] quadriplicata*" (Dobrovolsky et al. 1946; Kues et al., 1985) in northwestern Quay County. At this locality the Pajarito consists of cyclically bedded very fine-grained orthoquartzites dominantly light gray (N 7) to grayish orange in color (10 YR 7/4) and silty shale of light gray color (N 7). At nearby Clayton Lake State Park, the Pajarito is only 12.5 ft (3.81 m) thick (Lucas et al., 1986). Dinosaur footprints have been found at three widely separated localities in the Pajarito (Lucas et al., in press). **Continue N on NM-18. 0.1**
- 9.1 Mesa Rica Sandstone to left of road at 1:00–2:00. Begin to descend through Mesa Rica. **0.2**
- 9.3 Roadcuts in the Mesa Rica Sandstone. **0.1**
- 9.4 Note gray siltstones of Pajarito lithology within the Mesa Rica Sandstone **0.2**
- 9.6 Roadcuts through Glencairn composed of interbedded massive and bioturbated sandstones and gray and green siltstones. At 3:00 there is an abandoned section of NM-18 which cuts through good exposures of the Lytle, Glencairn and Mesa Rica formations (Fig. S-1.1). **0.3**
- 9.9 Highway crosses cattleguard. **0.6**
- 10.5 Roadcuts of the upper Morrison Formation for the next



FIGURE S-1.1. View to north at mile 9.6 showing Glencairn Formation (G) overlain by Mesa Rica Sandstone (M). The old road bed of NM-18 is prominent in the foreground.

- 0.1 mi consist of green and red claystones and thin sandstones (Fig. S-1.2). **0.5**
- 11.0 Highway crosses cattleguard. Black Mesa at 12:00. **0.7**
- 11.7 Highway crosses cattleguard. **0.8**
- 12.5 Highway crosses bridge over Carrizozo Creek. Base of the Morrison Formation is exposed in the creek bed. At 3:00 is a good view of the main Mesozoic units exposed in the eastern Dry Cimarron Valley; in ascending order, the Morrison Formation, Lytle Sandstone, Glencairn Formation, Mesa Rica Sandstone, Pajarito Formation and Dakota Group. **0.3**
- 12.8 Unpaved road to left leads to Black Mesa Ranch. **0.5**
- 13.3 Small knobs at 9:00–10:00 represent erosional outliers of the Entrada Sandstone. **0.4**

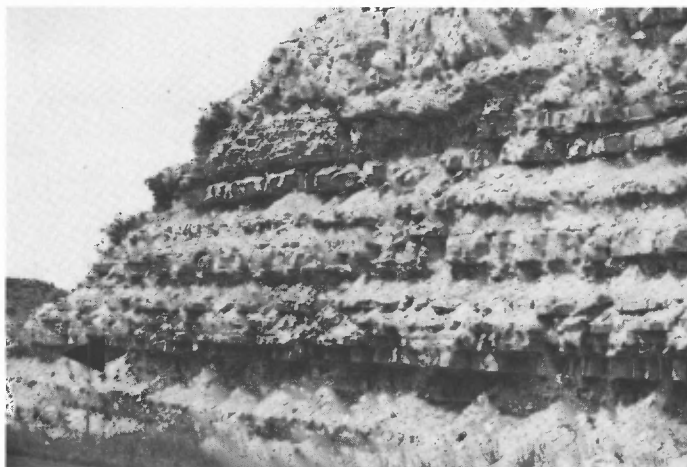


FIGURE S-1.2. Interbedded mudstones and thin sandstones of the Morrison Formation in roadcut at mile 10.6.

- 13.7 **Junction with NM-325.** At 12:00 Black Mesa dominates the horizon. At the base of the mesa the Triassic Sheep Pen Sandstone and Sloan Canyon Formation are exposed overlain by the Jurassic Entrada Sandstone. Above the Entrada are the Jurassic Morrison Formation,

the Cretaceous Lytle, Glencairn, Mesa Rica, Pajarito and Romeroville formations and the upper Tertiary Ogallala Formation overlain by Raton basalt (mile 61.6 on First-Day Road Log).

End of Supplemental Road Log 1.

SUPPLEMENTAL ROAD LOG 2, TO BLACK MESA STATE PARK, OKLAHOMA

SPENCER G. LUCAS and ADRIAN P. HUNT

Mileage

- 0.0 **Turn left** on paved road to Lake Carl Etling (Black Mesa State Park) (mile 43.3 of First-Day Road Log). **0.1**
- 0.1 Ogallala Formation calcrete to left of highway. **0.1**
- 0.2 Basalt-capped Black Mesa and the Dry Cimarron Valley in front of it are visible on the skyline from 1:00 to 3:00. **0.3**
- 0.5 Begin descent into Swede Creek; Ogallala Formation exposed on both sides of highway. **0.6**
- 1.1 Cattleguard. **0.2**
- 1.3 Ogallala Formation calcretes and calcareous sandstones on both sides of highway, next 0.5 mi. **0.9**
- 2.2 Ferruginous sandstones and gray shales to left and right of highway are Upper Cretaceous Graneros Shale. The Upper Cretaceous strata (Graneros Shale and Greenhorn Formation) exposed in the vicinity of Black Mesa State Park are among the southeasternmost exposures of these strata in the Western Interior (Kauffman et al., 1977). **0.2**
- 2.4 At 9:00 a low bluff of Romeroville Sandstone is visible. **0.2**
- 2.6 Note Romeroville sandstone on hill at 3:00. **0.1**
- 2.7 Exposures of Graneros Shale on both sides of highway next 0.1 mi. **0.5**
- 3.2 Bridge over a fork of Swede Creek. Sandstones to the left and right of the highway are Pajarito Formation. To the left, gray shale of the Graneros Shale rests on ferruginous sandstone of the Pajarito Formation. **0.2**
- 3.4 Cattleguard. **0.2**
- 3.6 Bottom of Swede Creek valley; road on right to B. W. Dawson Ranch; continue ahead on highway. **0.6**
- 4.2 Crest of hill; valley of South Carrizo Creek visible ahead. **0.1**
- 4.3 Soils on sides of highway are developed in Graneros Shale. **0.1**
- 4.4 **Intersection** with unpaved road; **turn right** and continue on paved highway. To the left (south) of this intersection is the top of Kauffman et al.'s (1977) section 2 (Fig. S-2.1) in the Lincoln Member of the Greenhorn Formation. We will now drive down through this section through the majority of the Graneros Shale. The outcrops at the intersection are of the Graneros Shale, upper member. **0.1**



FIGURE S-2.1. Lincoln Member of Greenhorn Formation at mile 4.4.

- 4.5 Cattleguard. **0.1**
- 4.6 Prather Ranch road to left. **0.4**
- 5.0 The limy sandstone to the left and right of the highway is the Thatcher Limestone Member of the Graneros Shale. At 10:00, the Mesa Rica Sandstone is visible on the skyline. **0.1**
- 5.1 Gray shale of the lower member of the Graneros Shale is visible to the left of the highway. **0.2**
- 5.3 Cattleguard. **0.3**
- 5.6 Cattleguard; **turn left** and continue on paved highway. **0.4**
- 6.0 Lakeside Country Store on left. **0.1**
- 6.1 Slab crossing of South Carrizo Creek followed by cattleguard. The strata exposed in the western cutbank of South Carrizo Creek just above the slab crossing pertain to the Pajarito Formation. Here, these strata contain thin lignite beds and dinosaur footprints (Fig. S-2.2). Continue N on the paved highway. **0.3**
- 6.4 Enter developed camping area of Black Mesa State Park; outcrops on 9:00 are Mesa Rica Sandstone. **0.1**
- 6.5 **Intersection** with "Dump Station" and toilets on right; **bear left** and note outcrops of the Mesa Rica Sandstone across the creek. **0.1**