
PRE-MEETING FIELD TRIP #1

MANCOS - NIOBRARA STRATIGRAPHY OF SOUTHWESTERN COLORADO

DATES: September 11-13th (3 days).

LEADERS: *Walter Nelson*

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DESCRIPTION: Trip participants will observe regional changes in the Niobrara while traversing stratigraphic strike and dip sections through the Western Interior Seaway. The goals of this field trip are 1) to understand thickness and facies changes in the Niobrara in a regional context, and 2) to geologically consider the organic-rich calcareous mudstones (i.e. the



Mancos Shale, Durango, CO.

“marls”) in terms of horizontal oil and gas production beyond the areas of recent horizontal development. The marl lithology is essentially “as chalky as it gets” in the Smoky Hill section west of Wolcott and New Castle. Even farther west, the Fort Hays Limestone is absent and overall carbonate content decreases in the rest of the section. We will emphasize and discuss relationships between what we see on this trip and the more typical facies assemblages and sequences of the Niobrara Formation present along the Front Range.

Departing from Grand Junction, we will travel along strike through extensive outcrops near Delta, enjoy a very scenic drive through the San Juan Mountains on the Million Dollar Highway through Ouray and Silverton, and then dig into the spectacular Mancos-Niobrara outcrops in Durango. Traversing east, and down dip, we will also dig into the section along the Piedra River and then see the Fort Hays Limestone return to the basal Niobrara section in beautiful Pagosa Springs, CO. For convenience, both nights of this trip will be spent in Durango within walking distance of town life. As we head back to Grand Junction participants will be able to visually follow the recently familiarized ‘Mancobrara’ units seen on the trip.

ITINERARY:

Tentative Free, Optional Day - Thursday, September 10th: Anyone registered for the trip is welcome to meet on September 10th, the day before the field trip starts, to look at the classic Niobrara section in Wolcott, CO. Wolcott is 117 miles west of Denver on I-70 and 128 miles east of Grand Junction. Meeting time and place TBA. We will explore Wolcott’s classic lower Niobrara outcrop by the railroad tracks and the remainder of the overlying section in nearby gulch and slope exposures. This location will place the chalky Niobrara Formation within the context of its Mancos counterpart farther west. After completion of the field stop participants will travel on to Grand Junction. Group transportation is not provided for this day.

Friday, September 11th: Depart in the morning from Two Rivers Convention Center and head south to Durango, CO. We will stop along the way near Delta to see the basal Niobrara section where the Fort Hays is present. Upon arrival in Durango we will visit two outcrops before checking into the hotel.

Saturday, September 12th: Short drive east from Durango down dip to Piedra to explore an extensive Niobrara outcrop of the entire section. In Pagosa Springs, just 15 miles east of Piedra (and farther down-dip), we will see the Fort Hays return to the basal Niobrara section. Short drive back to Durango. Visit the Animas River Brewery.

Sunday, September 13th: Brisk morning hike to see a vast outcrop of the B-equivalent section. Check out of the hotel and head back to Grand Junction. We will pass through cliffs of the B-equivalent section again in Ridgway, which can be traced all the way back to GJ. Arrive in time for the Ice Breaker at the Two Rivers Convention Center.

PARTICIPANT LIMIT and COST: TBA