

7. Section across Graneros Shale-Dakota Formation T: 15S R: 9W S: 19

Latitude: 38.733044 Longitude: -98.364914 Elevation (GL): 1646.0 Depth: 41.0

Depth	Stratigraphic Units						Rock Color	Lithology		Fossils	Remarks
	Members	Formations	Subgroup	Stage	Subsystem	Era		Rock Column	Sedimentary Structures		
0		Graneros Shale		Colorado	Upper	Mesozoic					11. Shale dark-gray weathers medium light gray with bluish overtones dominantly kaolinitic but contains appreciable illite and mixed-layer clay thin-laminated fissile and papery plastic sparse zones of discoidal impure siderite concretions sparse light-gray siltstone beds as much as 0.1 foot thick. Fossils slopes littered with fragments weathered from siderite concretions and siltstone seams
5	Janssen Clay	Dakota									10. Siltstone and sandstone with interbedded shale. Siltstone and sandstone moderate-yellowish-brown to light-olive-gray. Intercalated shale medium-light-gray abundant limonite stain. Sandstone very fine grained.
10											9. Siltstone alternating light-brownish-gray and pinkish-gray to very pale orange laminae weathers pale grayish orange to very light gray. Laminae locally wavy and
15											8. Siltstone light-brownish-gray to light-pinkish gray grading down to moderate-brownish-gray weathers very light brownish gray to light brownish gray
20											7. Shale medium-dark-gray weathers light gray thin-laminated fissile papery hard dominantly kaolinitic. Basal 0.5 foot has sparse
25											6. Siltstone medium-gray to medium-dark-gray weathers medium light gray with bluish cast carbonaceous kaolinitic laminated in upper part but with poor fissility blocky to platy fracture. Scattered argillaceous limonite concretions as much as 0.5 foot in diameter. Grades into next below 4.7
30											5. Siltstone and sandstone medium-dark-gray to dark-gray weathers medium light gray. Very fine grained sandstone at base siltier in upper parts
35											4. Siltstone very light gray with abundant moderate-red mottles weathers to puffy very pale orange to dark-grayish-pink slope abundant yellowish-orange iron-oxide stain in top 2 feet kaolinitic plastic near top non-plastic below very silty near base. Abundant siderite spherules disseminated in gray parts much of the siderite largely oxidized to hematite. Grades sharply into next below 7.7
40											3. Siltstone very light gray but much weathered and stained dark yellowish orange by iron oxide moderate-red mottles where fresh contains abundant limonite speckles relict from siderite(?) spherules thin- to medium-bedded sparse gray shaly laminae 4.5
45											2. Clay medium-light-gray grading down to medium-dark-gray with sparse dusky-red mottles weathers to puffy light gray slope stained pale grayish orange by wash from next above dominantly kaolinitic plastic laminated and fissile in upper parts no obvious bedding in lower parts. Grades sharply into next below 5.6
50											1. Siltstone medium-light-gray with sparse moderate-red mottles weathers to puffy light-gray and yellowish-gray

Primary Rock Lithology

	Clay, Claystone
	Shale
	Silt, Siltstone

Secondary Rock Lithology

	Clayey, Argillaceous, clay
	Shaly, shale
	Silty, Silt
	Sandy, sand
	Carbonaceous, Carbonized
	Lignitic, lignite
	Sideritic, siderite
	Limonitic, limonite
	Gypsiferous, gypsum

Fossils

	Fresh Water		Few
	Brackish Water		Many
	Marine		Broken
	Roots		
	Burrows		

Sedimentary Structure Symbols

Depositional Structures	
	Lamination
	Parallel Laminations
	Stratification
	Horizontal bedding
	Normal grading/fining upward
Deformational Structures	
	Slumped, contorted bedding
	Concretions, nodules, geodes in general
	Syneresis cracks