S Coal Company - Elkville Mine - Jackson County

Notes by John Nelson on visit with Scott Elrick of ISGS, Howard Falcon-Lang of Royal Holloway University in London, England; Chris Fielding from the University of Nebraska, September 15, 2009.

We met owner Van Villenes, who guided us to the pit but did not accompany us. The Herrin Coal is being mined in a pit advancing toward the south.

Approximate location: N ½ NE 1/4 NW 1/4, Sec. 30, T7S, R1W, Jackson County.

The following is a composite section. Some parts of the succession were measured and examined in place, other units estimated, eyeballed and described from material in fallen blocks and spoils.

TOP - 15 to 20 feet surficial sediment, may include deeply weathered shale.

5-6' Piasa Limestone, mottled medium to light gray and light brownish gray, microgranular, slightly recrystallized, scarce crinoid stems and brachiopods, thickly bedded except basal ½ foot is very thinly bedded. Lower contact gradational.

5' Shale, black, hard, fissile, upper part a typical black "slate" and lower part grayish-black and less fissile. Basal few inches contains abundant pyritic fossil debris. Contact sharp.

1.8-2.2' Danville Coal, bright banded, cleat well developed, little pyrite, lower contact sharp.

2.5' Claystone, dark gray at top, olive-gray below, blocky, slickensided, non-calcareous, roots abundant throughout. Silty near base, lower contact rapidly gradational.

1.5' Sandstone, medium gray, very fine-grained, argillaceous, micaceous; indistinct wavy and lenticular lamination, low-angle crossbedding dips northwest. Lower contact gradational.

4.0' Shale, dark gray, upper part silty and shows planar and ripple lamination, grading downward to fissile clay-shale that contains fossil plants (*Macroneuropteris, Pecopteris*), conchostrachians, ostracods, and fish remains. Ostracods are abundant in basal black shale. Contact sharp.

0.1-0.2' Cottage Coal, very shaly grading to carbonaceous shale, unevenly laminated, lower contact sharp.

3' Claystone, olive gray, darkest at top; blocky, slickensided, rooted. Lower 2/3 contains nodules of argillaceous carbonate rock less than 0.1 ft across. Lower contact gradational through a couple inches of carbonaceous shale.

1.0' Baker Coal, bright banded, blocky, contacts sharp; poorly exposed where accessible. The coal appears to vary in thickness from a little less than 1 foot to about 2 feet.

5' Claystone, olive-gray, blocky, soft, poorly accessible; lower contact rapidly gradational.

3' Shale, olive-gray, silty, moderately fissile, contains abundant irregular, intergrown calcareous nodules along the upper contact. Lower contact sharp.

10' Bankston Fork Limestone, light brownish gray to light gray, dolomitic lime mudstone, thick bedded, tabular. Thickness estimated, lithology from fallen

blocks.

12-20' Lawson Shale, dark gray, evenly layered, silty to silt-free, thin siderite layers numerous. Not accessible. Conant and Jamestown Members probably absent, contact to Brereton appears sharp.

0-5' Brereton Limestone, medium-dark gray, lime mudstone, argillaceous, medium-bedded. Contact sharp.

3-5' Anna Shale, black, hard, fissile. Where observed in direct contact with Herrin the basal few inches was calcareous shale loaded with pyritized fossil fragments.

0-15' Energy Shale, dark gray, moderately well layered. Occurs as lenses to 15 feet thick which tend to occur over topographic lows in the coal. Where the Energy is thickest, the Anna is thin and the Brereton generally absent. The interval from the Herrin to the base of the Bankston Fork remains nearly constant, so the Energy Shale thickens at the expense of the Lawson as well as Anna and Brereton.

8'± Herrin Coal, bright banded, "blue band" of dark gray carbonaceous shale 0.2 to 0.3 ft thick at 6.5 ft from top. Base covered.

Finding the Baker Coal so well developed here was surprising, and especially finding the thin Cottage Coal, a "rider" of the Baker best known around the Cottage Grove Mine, which straddles the Saline-Gallatin County line some 50 miles east of here. We have observed the Cottage Coal at several mines in southern Indiana and it is reported in the literature from western Kentucky, including the original description of the Baker Coal. This thin layer thus has a regional extent and apparently represents a minor eustatic event/depositional sequence.

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