

# A Reference Section for the Pennsylvanian Lorton Coal Bed (Root Shale: Wabaunsee Group) in Kansas

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## Abstract

The Lorton coal bed (Wabaunsee Group: Virgilian) of Late Pennsylvanian age is formally recognized as a bed-level stratigraphic unit in the Root Shale in Kansas. A stratigraphic reference section in Lyon County, Kansas, is given for the Lorton coal bed.

## Introduction

The Wabaunsee Group (Pennsylvanian:Virgilian) in Kansas is notable for its general historical lack of coal-mining activity compared with older, Desmoinesian coals of the Cherokee Group. Over the years, the most consistently mined coal from the Wabaunsee Group in Kansas has been the Nodaway coal bed (Howard Limestone). Whitla (1940) and Schoewe (1946) provided excellent summaries of mining efforts and nomenclatural histories for many of the Wabaunsee Group coal beds.

During work on a stratigraphic lexicon for the state of Kansas, it became apparent that the informally named Lorton coal in the Wabaunsee Group was laterally extensive enough to form a coal horizon of stratigraphic importance and sufficiently easy to recognize to justify formal bed status. It is the purpose of this paper to assign formal bed status to the Lorton coal bed in the upper part of the Root Shale. In addition, a measured reference section of the Lorton coal bed in Kansas is given.

## Lorton Coal Bed

The Lorton coal bed has been well known in an informal sense in Kansas for most of this century. Moore (1935 [1936], p. 240) noted that the Lorton coal bed was one of the most persistent and well-known late Paleozoic coal beds in the midcontinent, with exposures from Oklahoma to Nebraska. Schoewe (1946, p. 49) noted that the Lorton coal was one of the few Wabaunsee Group coals that had been mined in more than one county (Greenwood, Pottawatomie, Lyon, and Wabaunsee). In Nebraska, the Lorton Coal, one of only three Wabaunsee Group coals formally recognized (Burchett, 1977, p. 23), occurs in the French Creek Shale Member (Root Shale), immediately below the Nebraska City Limestone Member of the Wood Siding Formation.

The Lorton coal bed can be observed in Kansas where the upper 10-ft (3-m) interval of the Root Shale (=French Creek Shale Member) is exposed. Overlying the Root Shale

is the Nebraska City Limestone Member of the Wood Siding Formation. The Lorton coal bed commonly is at least 1–3 inches (2–8 cm) thick throughout the outcrop belt of the Root Shale in Kansas, however a maximum thickness of 17 inches (43 cm) has been reported for the Lorton coal bed in Lyon County, Kansas (Schoewe, 1946, p. 100–102). Mohler (1891) reported a coal in Greenwood County near the Greenwood–Lyon County line that was 37 inches (94 cm) thick, which was noted by Schoewe (1946, p. 93) as possibly being the Lorton coal. We selected a reference section for the Lorton coal bed in Kansas along the Kansas Turnpike in Lyon County, Kansas (figs. 1 and 2), because of the unusually good quality of this exposure (which generally is poor in the Root Shale), ease of accessibility, and typical thickness for the Lorton coal bed (fig. 3).

## References

- Burchett, R. R., 1977, Coal resources of Nebraska: Nebraska Geological Survey, Resource Report No. 8, 183 p.
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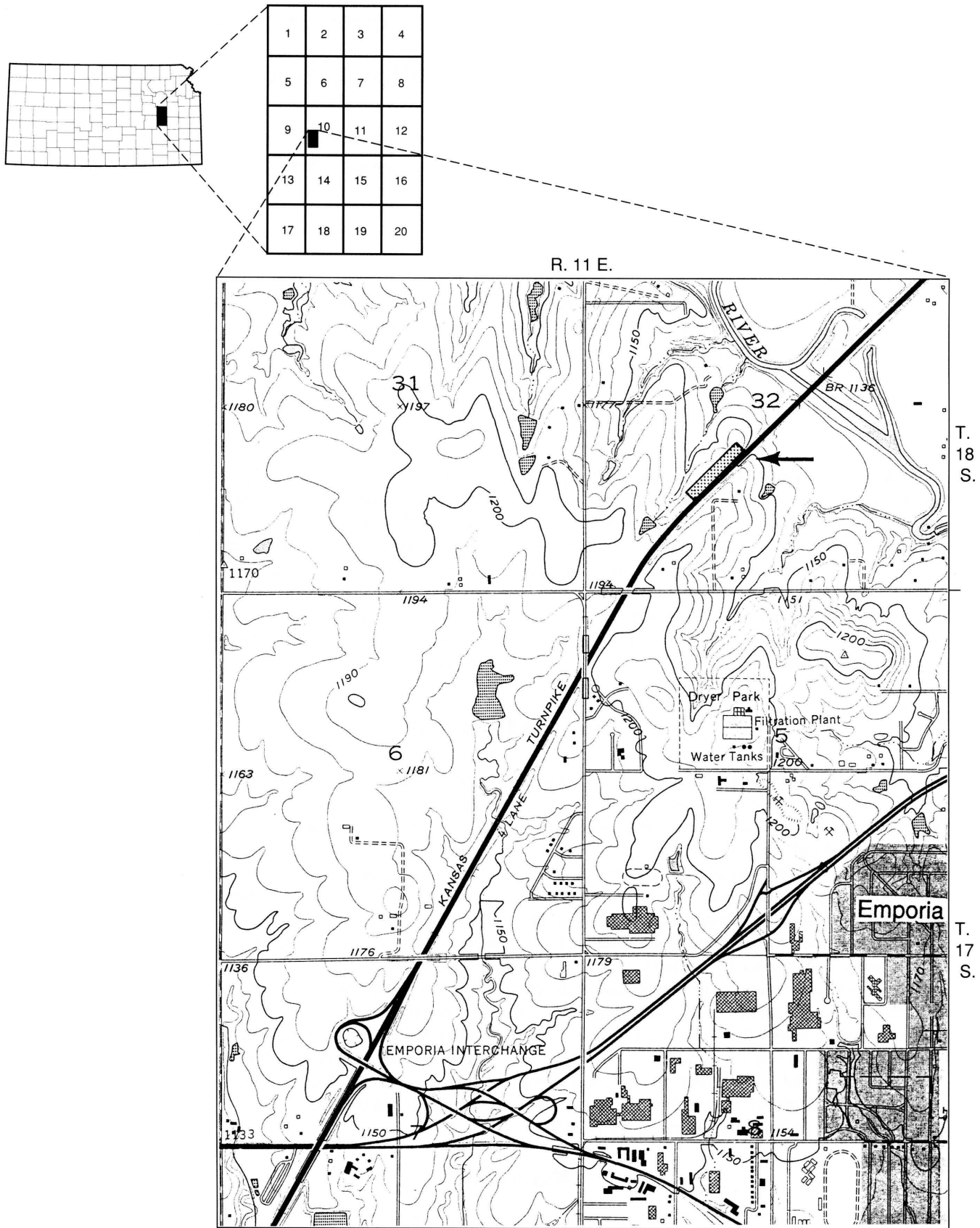
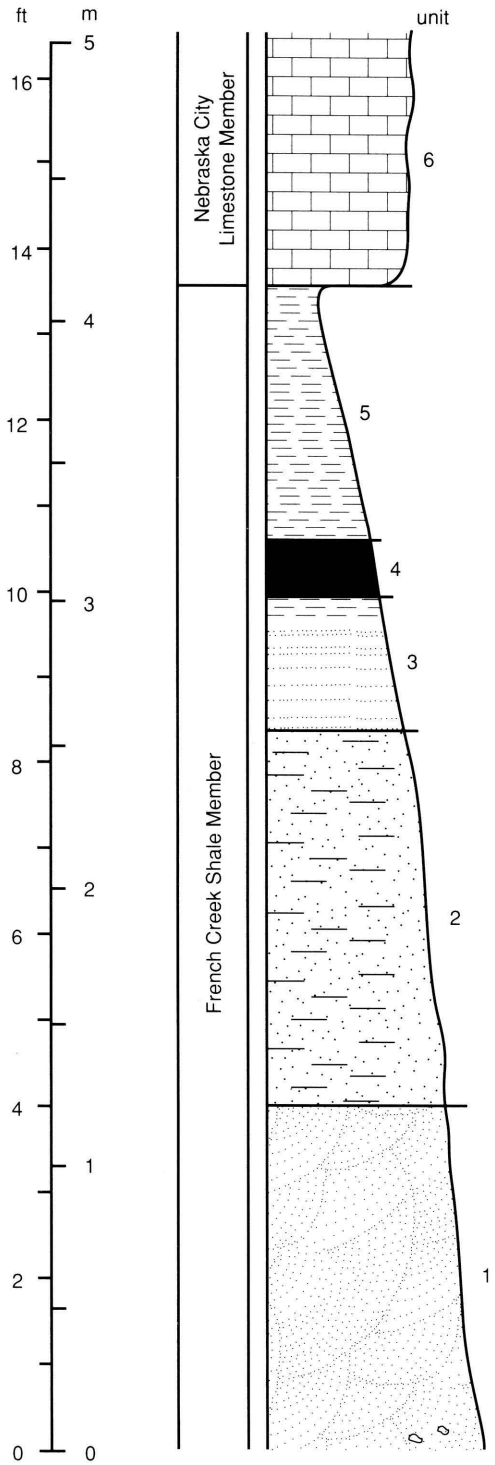


FIGURE 1—LOCALITY OF LORTON COAL BED REFERENCE SECTION NEAR ROAD MARKER 129, along northwest side of Kansas Turnpike (NE SW sec. 32, T. 18 S., R. 11 E.), Lyon County, Kansas (Emporia, Kansas, 7.5-min quadrangle).



**FIGURE 2—L. L. BRADY INDICATES THE BASE OF THE LORTON COAL BED AT ITS PRINCIPAL REFERENCE SECTION IN LYON COUNTY. Note the crossbedded sandstone (unit 1 in fig. 3) at the base of the exposure.**



6. Limestone (Nebraska City Limestone Member, Wood Siding Formation), argillaceous, and calcareous shale, weathered to yellowish gray (5Y7/2); contains *Myalina* (*Orthomyalina*), *Derbyia*, productid brachiopods, and crinoid debris; section incomplete—[>2.0 ft (>60 cm)].
5. Claystone (uppermost part of Root Shale), dark-gray (N3), grades upward to medium-gray (N5); contains plant debris; partially slump covered, but can be exposed with digging—[3.0 ft (91 cm)].
4. Coal (Lorton coal bed, French Creek Shale Member, Root Shale), black (N1), banded, mainly fusain and clarain, with shaly laminae in upper 0.1 ft (3 cm); 1-inch (2-cm)-thick clay ironstone zone at base—[0.7 ft (21 cm)].
3. Shale, light-olive-gray (5Y6/1) with thin siltstone to very fine grained sandstone laminae (lenticular bedding); grades upward into clay shale near base of Lorton coal bed; upper 0.5 ft (15 cm) carbonaceous with plant fossils; thickness variable—[1.0–3.5 ft (30–106 cm)].
2. Sandstone and shale, sandy to silty, light-olive-brown (5Y5/6) to light-olive-gray (5Y5/2); sandstone thin-bedded, fine to very fine grained, lenticular to flaser bedded depending on presence of shale; rare to common pyrite concretions up to 1 inch (2.5 cm) thick in sandstone—[4.3 ft (130 cm)].
1. Sandstone, light-olive-gray (5Y5/2), fine-grained, crossbedded, massive, micaceous, with pyrite nodules near base; basal part of section covered—[>4.0 ft (>120 cm)]. Elevation of base of exposed sandstone approximately 1,160 ft (estimated from Emporia, Kansas, 7.5-min quadrangle).

FIGURE 3—REFERENCE SECTION FOR THE LORTON COAL BED IN KANSAS.